WATER SUPPLY ~ WATER QUALITY ~ FLOOD PROTECTION

Zone 7 Water Agency

Fiscal Year 2015/16
Capital Improvement Program
Ten-Year Water System Plan
Five-Year Flood Protection Plan

October 2014

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 2015/16
Capital Improvement Program

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

Adopted by the Zone 7 Board of Directors
on October 15, 2014

ZONE 7 WATER AGENCY

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Table of Contents

Table of Contents

FIGURES

Table of Contents

APPENDICES

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
AMP	Asset Management Program
COL	Chain of Lakes
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
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
O&M	Operations and Maintenance

Acronyms and Terms Glossary

PPWTP	Patterson Pass Water Treatment Plant
R/R	Renewal/Replacement
SBA	South Bay Aqueduct
SDA	Special Drainage Area
SMMP	Stream Management Master Plan
SNMP	Salt Nutrient Management Plan
SWI	System-Wide Improvements
SWP	State Water Project
SWRU	Stored Water Recovery Unit
UWMP	Urban Water Management Plan
WSE	Water Supply Evaluation
WTP	Water Treatment Plant
Zone 7	Zone 7 Water Agency

WATER SUPPLY ~ WATER QUALITY ~ FLOOD PROTECTION

EXECUTIVE SUMMARY

LIVERMORE-AMADOR VALLEY ZONE 7 WATER SUPPLY • FLOOD PROTECTION 19 57

EXECUTIVE SUMMARY

Background

On a biennial basis, Zone 7 Water Agency (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. The CIP incorporates the projects, costs, schedules, and priorities for the next five and ten years starting with FY 15/16, for the Flood Protection and Water Systems, respectively.

For the Ten-Year Water System CIP period (FY 15/16 through FY 24/25), a number of key issues drove the project development. These include source water quality challenges that can reduce the production capacity of the surface water treatment plants, poor performance and obsolescence of the Patterson Pass Ultrafiltration Plant membranes, and unexpected well pump failures. Together, these issues have undermined Zone 7's ability to meet peak demands in the near- and long-term and therefore require modification of previously identified projects and the addition of new projects. Newly-promulgated regulations, particularly the new Maximum Contaminant Level (MCL) for Chromium-6, have also required the addition of new projects. Finally, the 2014 Drought State of Emergency—and the prospect of continuing drought conditions—have necessitated new projects to improve system reliability.

Purpose

This Executive Summary provides an overview of the proposed Water and Flood Protection capital plan, key projects and the financial condition of the various capital funds. A list of all proposed projects for both systems are included in Sections 2 and 3.

Systems and Sources of Funds

The CIP plans for two Systems (Water System and Flood Protection) and is funded by four sources of funds:

- Water System
  - Renewal/Replacement – Fund 120 – Indirectly from Water Rates
  - System-Wide Improvements – Fund 120 – Indirectly from Water Rates
  - Expansion – Fund 130 – Connection Fees
- Flood Protection
  - General Flood Protection – Fund 200 – Property Taxes
  - Flood Protection and Stormwater Drainage – Fund 210 – Development Impact Fees

Water System CIP Overview

For the Ten-Year Water System CIP period (FY 15/16 through FY 24/25), ninety-four Water System projects have been identified totaling $546 million ($392M in Expansion, $67M Renewal/Replacement, $87M in Improvements). Projects are categorized into the following eight program areas shown in Table ES-1 below. Note that funding for individual projects can be split between the two water capital funds (Fund 120 and Fund 130).

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

Table ES-1 Water System CIP Breakdown by Program ($ Millions)

Program / Fiscal Year	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total
Buildings & Grounds	1.93	1.96	1.99	2.02	0.68	0.00	0.00	0.00	0.00	0.00	8.59
Groundwater Basin Management	0.11	0.00	0.15	0.00	0.16	0.00	0.17	0.00	0.19	0.20	0.98
Program Management	0.38	0.11	0.16	0.11	0.17	0.42	0.19	0.13	0.20	0.14	2.01
Regulatory Compliance	0.12	0.13	0.12	0.13	0.14	0.15	0.15	0.16	0.17	0.17	1.44
Transmission & Distribution	5.29	0.00	0.06	1.51	6.25	0.00	1.08	0.05	0.92	2.93	18.09
Water Supply & Conveyance	23.97	22.58	24.94	32.31	53.52	45.08	48.27	49.44	21.83	21.97	343.93
Water Treatment Facilities	10.11	22.14	28.06	6.53	6.82	23.98	4.29	9.06	11.32	7.34	129.65
Wells	3.20	2.01	8.60	1.53	11.79	0.94	0.22	0.00	0.00	13.00	41.29
Total	**45.12**	**48.92**	**64.09**	**44.14**	**79.54**	**70.57**	**54.38**	**58.84**	**34.64**	**45.74**	**545.98**

Table ES-2 presents the appropriations for the Ten-Year Water System CIP by Strategy/Fund.

Table ES-2 Water System CIP Fund Breakdown

Strategy	Ten-Year Total ($ Millions)	Percentage
Expansion	$392	72%
Renewal/Replacement	$67	12%
System-Wide Improvements	$87	16%
Total	**$546**	**100%**

Recent Challenges and Issues Driving the Water System CIP

Meeting Peak Demands

With continuing drought conditions resulting in poor source water quality, Zone 7's production capacity was reduced, requiring a re-evaluation of Zone 7's ability to meet peak demands in the near- and long –term, especially in similar water quality conditions. Preliminary analysis completed by staff indicated that the primary causes for reduced production capacity are: 1) variations/degradation of source water quality, 2) poor-performing and soon-to-be obsolete membranes, and 3) unexpected well pump failures. The staff analysis recommends a number of studies, operational improvements, and capital projects to meet current and future peak day demands. These recommendations have been incorporated in this CIP. Key recommended projects, which have been modified, have had schedules advanced or have been in the CIP, include:

- ***Ozonation at DVWTP and PPWTP*** – The addition of ozone facilities was included in previous CIPs with the primary goal of improving delivered water quality. Recent staff analysis of production needs identified ozonation as the best technical option at this time for bolstering the DVWTP's and PPWTP's ability to handle source water quality variations while maintaining high production rates. For planning purposes, staff therefore recommends installing ozone treatment at DVWTP by 2018—five years earlier than the previously-planned date of 2023—due to the urgency of restoring capacity at DVWTP to meet near-term peak demands during what may be continuing periods of poor water quality. This will also have the significant added benefit of improving taste and odor of delivered water sooner than anticipated, and improving DVWTP's ability to meet current and future regulations for trihalomethanes (THMs), haloacetic acids (HAAs), and contaminants of emerging concern (CECs). Staff recommends deferring PPWTP ozonation to 2028 – the same year as the potential expansion at PPWTP, so the two Patterson Pass projects can be combined. PPWTP has been able to handle source water quality challenges better than DVWTP, perhaps due to the Patterson Pass raw water reservoir's buffering capacity.

  Zone 7 recently hired a consultant to further evaluate filter performance at both treatment plants and develop potential treatment alternatives for improving production capacity. In particular, the addition of carbon dioxide has the potential to significantly improve production capacity. While additional plant-scale testing is planned, installation of permanent carbon dioxide facilities at both plants has been included in the CIP.

For DVWTP, the plan is to complete the facility by 2016; if carbon dioxide by itself successfully restores production capacity, the installation of full ozonation (which requires carbon dioxide addition) at DVWTP may not be as urgent and could be deferred past 2018.

The asset management program (AMP) included funding for ozonation at both plants assuming an in-service date of 2023. The annual AMP contribution assumes that a portion of the funding would be set aside to build up reserves to fund the project with cash. With ozonation at DVWTP accelerated to an in-service year of 2018, there is less time to build up reserves to fund the project with cash. Assuming ozonation proceeds at the schedule identified in this CIP, debt financing is a potential strategy for addressing this cash deficit. This funding example is further discussed in the Funding Analysis section.

- ***PPWTP Expansion/New Media Filters*** – This project was included in the FY 12/13 CIP with a similar timeline. With continuing problems experienced with the membranes at the Patterson Pass Ultrafiltration Plant, it has become clear that replacement of the membranes with conventional media filters is the most logical solution. In addition to poor performance of the existing membranes, replacement with membrane will also become challenging as they have ceased to be produced by the manufacturer. This project would not only replace the capacity of the existing membrane plant at 8 MGD, but also provide the opportunity to expand capacity at PPWTP by an additional 4 MGD, helping to meet peak demands reliably.

- ***Well Rehabilitation*** – To improve the reliable production capacity of the wells—which are critical for meeting peak day demands and drought demands—Zone 7 undertook several well rehabilitation projects in 2014 to address unexpected well pump failures. For example, the reduced capacity of Mocho Well 4 was found to result from a hole in the pump bowl. In this CIP, the inspection and rehabilitation of the remaining wells (e.g., Hopyard Well No. 6) have been included.

Chromium 6 Treatment

The State of California adopted a new maximum contaminant level (MCL) of 10 µg/L for hexavalent chromium (or chromium-6) in drinking water which became effective on July 1, 2014. Zone 7 has a Water Quality Policy goal for potable water delivered to the M&I Contractors' turnouts be of a quality that contains no greater than 80% of primary MCLs. Therefore, Zone 7's delivered water quality target is 8 µg/L for chromium-6. Based upon current available data, several wells do not

meet this target and may slightly exceed or are near the MCL. These wells are Stoneridge and Chain of Lakes (COL) 1, 2, and 5. The Mocho and Hopyard wells are currently below the target and are not expected to require treatment. Zone 7 currently plans to meet the new MCL and its water quality target via blending with surface water and/or groundwater with lower chromium-6 concentrations. A new booster pump station is also being planned for FY15/16 to help improve distribution flexibility and, in certain scenarios, enhance blending capability. In case blending is not sufficient for meeting the MCL or the water quality target, on-site treatment would be needed. Staff has developed capital and O&M cost estimates for the chromium-6 treatment facilities for Stoneridge and COL wells. The estimated capital costs are ~$5M for the Stoneridge Well and ~$11M for the COL wells in 2014 dollars. Since the near-term plan to meet the new MCL is via blending and/or utilizing leased chromium-6 treatment, equipment if needed, the permanent treatment facilities have been scheduled for FY 20/21 to allow the treatment technologies to mature.

Drought Response

On January 17, 2014, Governor Jerry Brown declared a State of Emergency in California due to the current drought conditions and asked all citizens to cut back water use by 20%. On January 29, 2014 at a special meeting of the Zone 7 Board, a local Drought Emergency was declared and a Drought Emergency Response Plan was accepted. The Zone 7 Board approved three emergency projects at that time to partially recover groundwater mining losses and increase groundwater production capacity: 1) Lake I - Cope Lake Pipeline Project - completed, 2) construction of Chain of Lakes Well No. 5 - planned functional testing of the well by the end of October 2014, and 3) construction of Busch Valley Well No. 1 – basis of design to be finalized by the end of November 2014 and construction proposed for 2025.

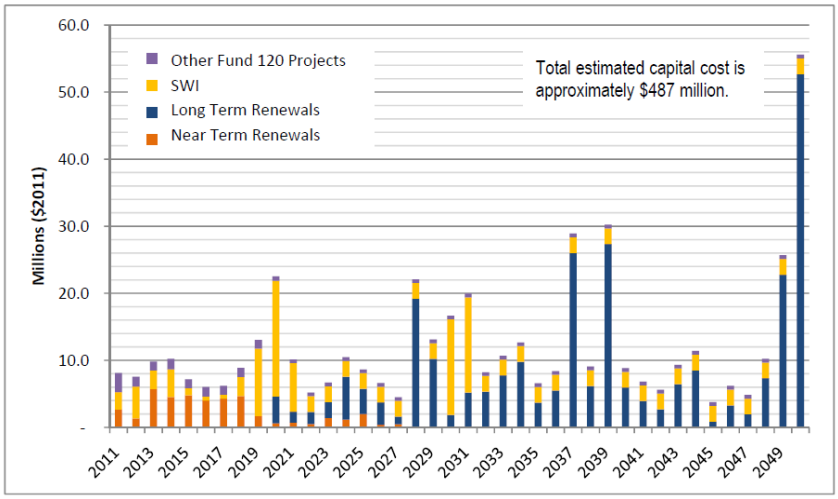
In preparation for continuing drought conditions, an additional drought response project has been included in this CIP: the installation of a Booster Pump Station (BPS). The BPS, or intermediate pump station, would increase well production capacity by lowering system pressures in the west side of the water system and allowing more water to be delivered throughout Zone 7's service area under reduced or zero surface water supply conditions. Given several years of drought, another year of extremely low—or zero—State Water Project (SWP) Table A allocation is quite possible in 2015. With very limited surface water, Zone 7 would be highly reliant on groundwater supply, making the ability to optimize groundwater production capacity and delivery critical. Over the long-term, the BPS will also bolster Zone 7's reliability during SBA outages and generally improve system operational flexibility.

Asset Management Program (AMP)

Beginning in 2010, staff re-evaluated the AMP and on June 15, 2011, the Zone 7 Board adopted Resolution 11-4092 accepting the AMP Update (attached as Appendix B). The AMP update identified short- and long-term renewal/improvement needs and the associated annual funding level necessary to implement these projects. The initial annual funding recommendation was $12.5M (in 2011 dollars) based on project needs (Figure ES-1 below) through FY 49/50. However, after discussions with the Retailers and Finance Committee, a level of $11.4M (in 2011 dollars) was accepted, with an adjustment for inflation and six year ramp-up to this amount by FY 16/17 million in order to reduce rate impacts. It was also agreed that the AMP would be updated every five years.

The AMP update provided funding for a well-defined schedule of projects for the renewal or replacement of existing facilities, based on sustainable infrastructure factors such as asset condition and estimated useful life. Funding for system-wide improvements was estimated based on small improvement projects planned in the near-term and identified major improvements such as ozone treatment. The chromium-6 treatment project was not anticipated and therefore not included in the AMP calculations. Since no additional funding was set aside for unanticipated projects such as chromium-6 treatment, the 2016 AMP update must consider funding for such projects. An adjustment to the annual funding levels may be necessary, because the actual capital project reserve balance will be significantly less than what is projected, and required for implementing future projects beyond the ten-year CIP (see Figure ES-1 below). Staff plans to begin an update to the AMP in 2015, with possible Board adoption in 2016.

Figure ES-1 – Total Forecasted Renewal and System-Wide Improvements Funding Requirement, 2011-2050



Source: Zone 7 Asset Management Plan 2011 Update

Water System Funding Analysis

Fund 120

Fund 120 funds projects, or portions thereof, to maintain, replace or improve water system infrastructure. In the 2004 Asset Management Program (AMP) Study, it was determined that the then-current $4 million annual water rate contribution to capital projects would no longer be adequate to fund the program. That 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.

Beginning in 2010, staff re-evaluated the AMP and on June 15, 2011, the Zone 7 Board adopted Resolution 11-4092 accepting the AMP Update The major objectives were to 1) identify and near and long-term renewal needs and a 15-year renewal CIP; 2) develop a long-term renewal forecast and associated annual funding level necessary to implement future renewal and improvement needs.

The funding analysis included short- and long-term project needs through FY 49/50. The initial funding recommendation was $12.5M (in 2011 dollars) annually. However, after discussions with the Retailers and Finance Committee, a level of $11.4M (in 2011 dollars) was accepted, with an eventual ramp-up to this amount (adjusted for inflation) by FY 16/17. The annual funding level estimate did not include funding for the Third Demineralization Facility or water conservation programs, to allow additional evaluation and confirmation of assumptions. Fund 120's share of water conservation programs was shifted to the Water Enterprise Fund (Fund 100), while the funding provided by Fund 130 remained.

Table ES-3 and Figure ES-2 below show the projected funding outlook for Fund 120 through FY 24/25, incorporating the Board-approved AMP funding. As illustrated in Table ES-3 and Figure ES-2, there is not sufficient cash in Fund 120 to pay for phase 1 of the ozone project tentatively scheduled for completion at DVWTP in 2018 and chromium-6 treatment. The capital reserve balance goes negative in FY 17/18 because the AMP funding schedule did not provide funding for unanticipated projects such as chromium-6 treatment and assumed a 2023 in-service date for ozone treatment at both plants (i.e., enough time to build up cash reserves). To address the

potential funding shortfall, created by adding new projects and accelerating others (such as ozone at DVWTP) debt financing is a potential alternative for funding the projects. This example is illustrated in Figure ES-3.

The debt financing example assumes a debt issuance of $48M, financed in two phases. The first phase in this example could include $28M for ozone at DVWTP over thirty years at 4% interest ($1.6M annually) incurred in FY 15/16. The second phase in this example could include $20M for chromium-6 treatment also over thirty years at 4% interest ($1.1M annually incurred in 20/21). This example provides adequate funding for the planned ten-year CIP, however, the projected capital project reserve balance is less than what has been estimated in the AMP for implementing future projects beyond the ten-year CIP. An adjustment to the annual funding levels may be necessary. Staff plans to begin updating the AMP in 2015, with possible Board adoption in 2016. In addition, many of the projects proposed are contingent on further feasibility studies, evaluations and discussions on debt. The outcomes will guide future budgeting and CIP decisions.

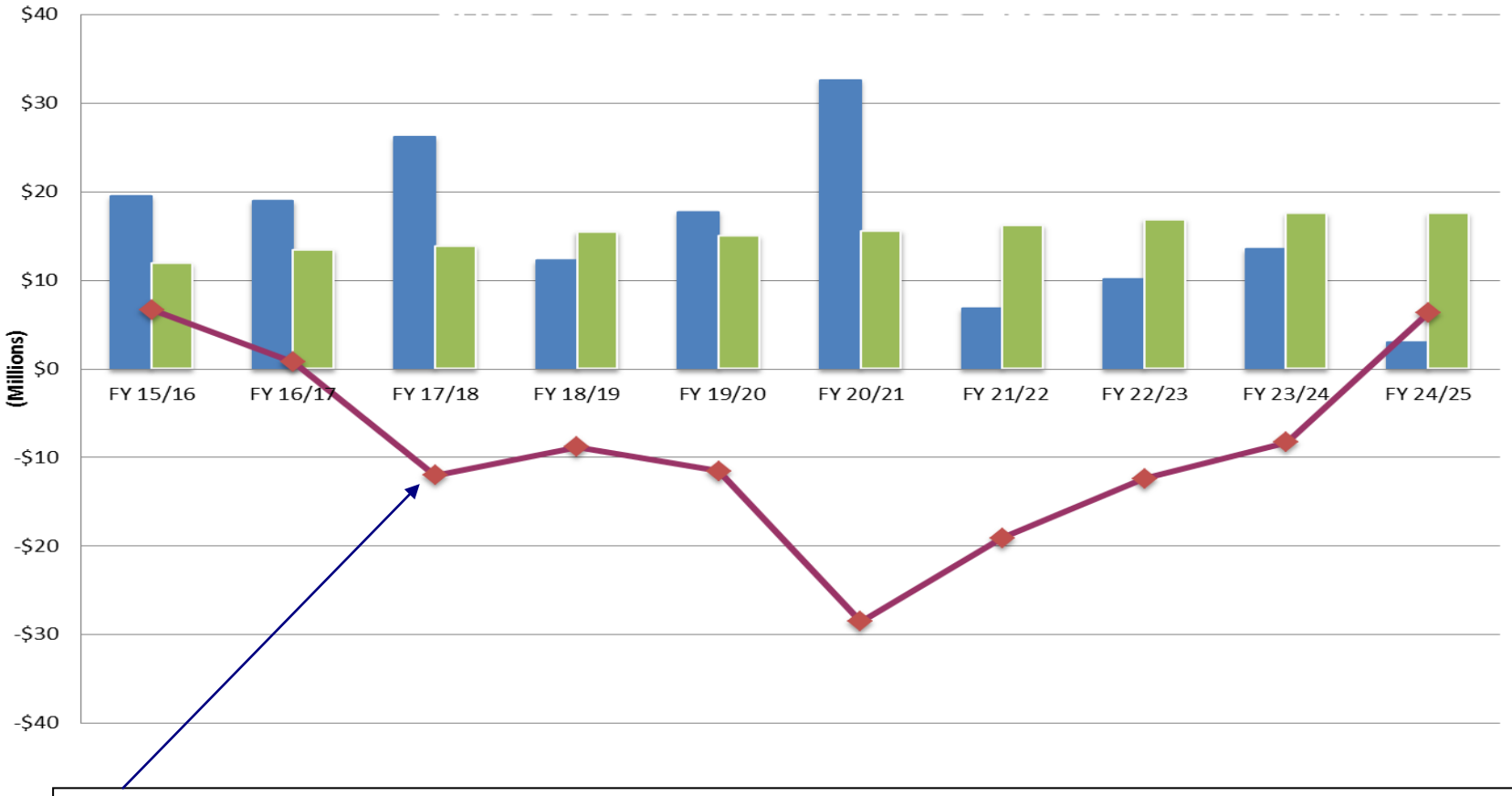
TABLE ES-3
Fund 120 (Water Rates)
PROJECTED FUNDING OUTLOOK – BASE CASE
($ Millions)

	Fiscal year (FY)	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
2	**Beginning Available Capital Reserve Balance**	**$14.31**	**$6.26**	**$0.30**	**-$12.05**	**-$8.79**	**-$11.51**	**-$28.52**	**-$19.08**	**-$12.35**	**-$8.28**
3	**Revenue**										
4	**AMP Transfer from Fund 100**	10.50	12.66	13.40	13.95	14.53	15.13	15.76	16.82	17.50	17.50
5	**Facility Use Fees**	1.05	0.62	0.42	0.42	0.42	0.42	0.42			
6	**Interest Income**	0.29	0.13	0.01							
7	**Other Income**				1.05						
8	**Total Revenue**	11.84	13.41	13.83	15.42	14.95	15.55	16.18	16.82	17.50	17.50
9	**Expenditures**										
10	**R&R Expenditures**	6.96	4.29	12.27	6.27	3.83	2.62	5.89	9.33	12.10	2.04
11	**SWI Expenditures**	11.74	13.87	13.10	5.13	13.09	29.20	0.10	0.01	0.59	0.11
12	**Carryovers/Encumbrances**										
13	**Contingency**	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
14	**Total Expenditures**	19.4	18.9	26.1	12.2	17.7	32.6	6.7	10.1	13.4	2.9
15	***Capital Reserve Balance***	***6.70***	***0.75***	***-11.99***	***-8.79***	***-11.51***	***-28.52***	***-19.08***	***-12.35***	***-8.28***	***6.31***
16	***AMP TARGET***	***22.51***	***30.49***	***35.52***	***35.21***	***21.31***	***24.03***	***33.22***	***40.20***	***41.57***	***45.65***
17	**Reserved Funds**										
18	**Annual Building Sinking Fund Contribution**	0.44	0.45	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	**Reserve Policy Minimum**	31.97	32.20	20.99	33.95	35.93	11.79	16.81	14.88	10.91	16.01
20	***Estimated Available Capital Reserve Balance (Line 15 minus 18)***	***$6.26***	***$0.30***	***($12.05)***	***($8.79)***	***($11.51)***	***($28.52)***	***($19.08)***	***($12.35)***	***($8.28)***	***$6.31***

Key Assumptions

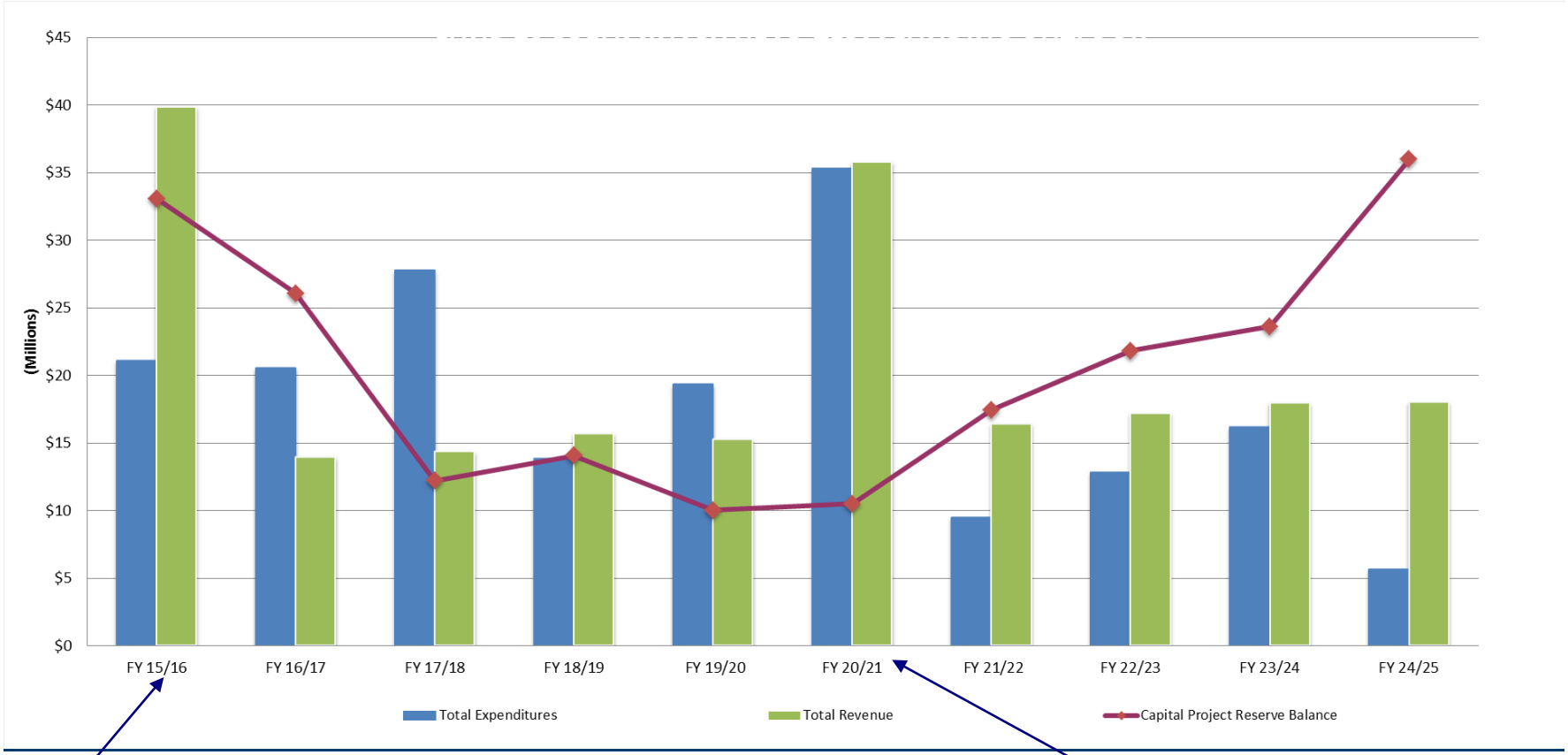
Line 2 FY 15/16 estimated Beginning Available Capital Reserve is based on projected prior year revenue and expense estimates.
Line 4 The annual AMP transfer from Fund 100, Water Enterprise to Fund 120.
Line 5 Facility use fees are charged to the Dougherty Valley Service Area to compensate Zone 7 for the use of Zone 7's existing facilities to provide water to this area.
Line 6 Assumes 1% interest in FY 13/14 gradually increasing to 4% by FY 16/17.
Line 7 Other income includes a reimbursement from DSRSD for the Dougherty Reservoir Recoating Project.
Line 9 Expenditures are shown in actual dollars (current dollars adjusted by a 4% annual inflation factor).
Line 16 Recommended Capital Reserve per the AMP.
Line 19 The reserve policy recommends a minimum Capital Reserve of 100% of the current year's expenditures plus 50% of the subsequent year.

Figure ES-2
Fund 120 (Water Rates)
Projected Funding Outlook – Base Case
BASE CASE
($ Millions)



The Capital Project Reserve Balance goes negative in FY 17/18 assuming no grant funding is received. Debt financing is a possible alternative to address this deficit.

Figure ES-3
Fund 120 – Projected Funding Outlook
Example 1 - Debt Financing Of Ozone and Cr6 Treatment - $48M



FY 15/16 assumes a debt issuance of $28M to fund phase 1 of ozone treatment at DVWTP. A second issuance of $20M is assumed in FY 20/21 for Cr6 treatment.

Fund 130

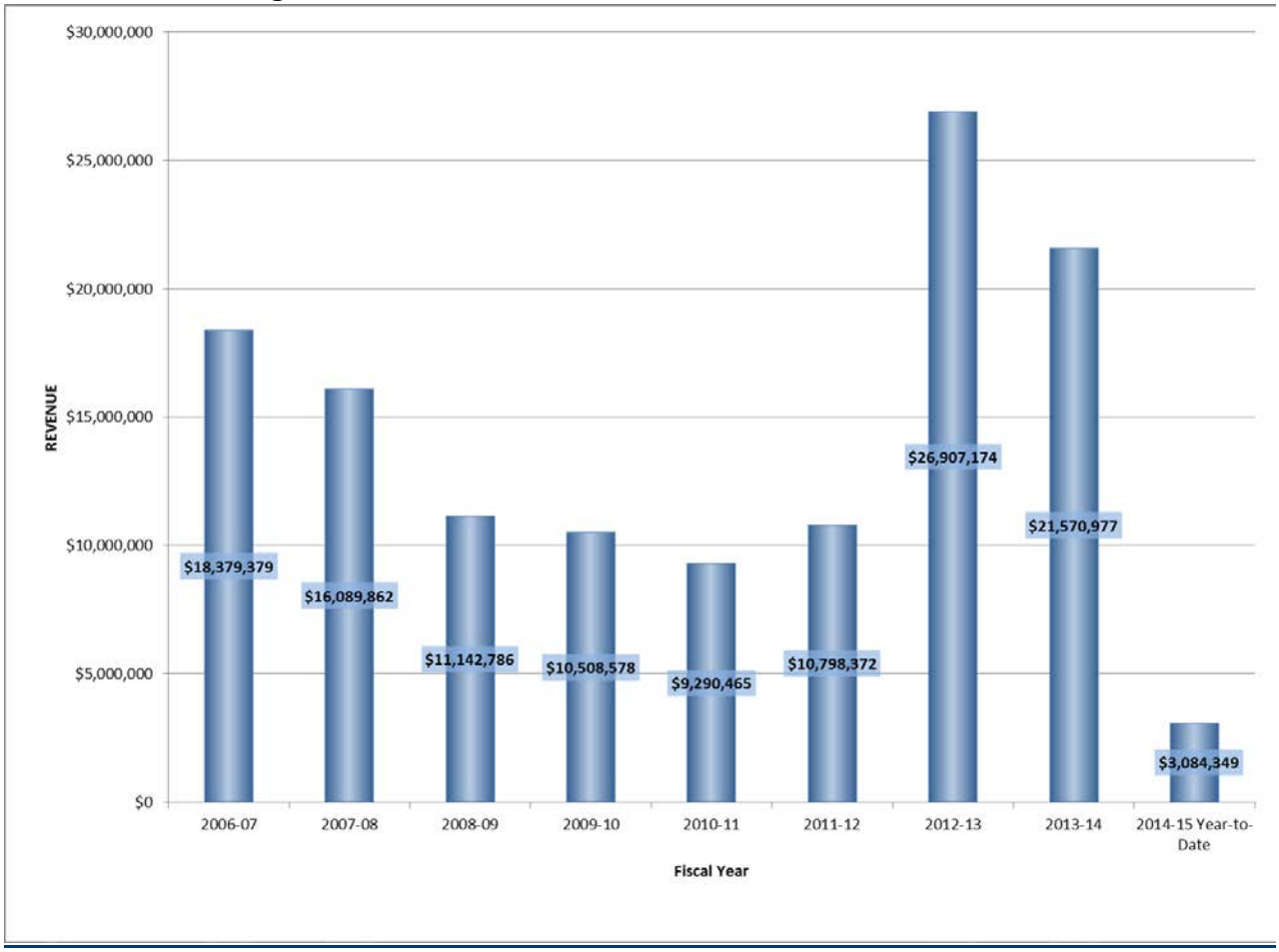
Fund 130 funds projects, or portions thereof, that are needed because of additional demands on the Water System from new development. This includes water purchases, conveyance facilities (e.g., SBA Enlargement Project), treatment and transmission facilities.

On January 15, 2008, Zone 7 completed the necessary documents required to close on a $60 million Installment Sale Agreement (ISA) with Wells Fargo, a form of lease financing that functions similarly to a line of credit. This funding was acquired to bridge a short-term funding gap between anticipated expenditures and revenue. In February 2010, Zone 7 drew $30.5M from the $60M ISA to fund the Altamont Pipeline, Livermore Reach. Interest-only payments were made monthly while the principal amount was due on January 1, 2014. The ISA was paid off on December 20, 2013.

In 2011, staff completed an update to the Municipal and Industrial (M&I) Treated Water Connection Fee Program. The M&I Connection Fee Program was established to ensure that Zone 7 is able to fund the necessary projects within Zone 7's Water System Expansion Program, which will serve the demands of new growth over the next 30 years. More details about the Water System Expansion Program and connection fees can be found in the M&I 2011 Connection Fee Program Update (Zone 7 Water Agency, 2011).

The economic downturn in 2008 had a significant impact on system expansion revenue, the timing of system expansion needs and the ability to fund expansion projects. Since the downturn, expansion projects have been limited to non-discretionary expenses, planning and partial funding for drought emergency projects (i.e., Chain of Lakes Well 5, Chain of Lakes Pipeline and Busch Valley Well 1 land acquisition and basis of design). An uptick in connection fee revenue was experienced in FY 12/13 (see Figure ES-4 below).

Figure ES-4 - Historical Connection Fee Revenue since FY 06/07



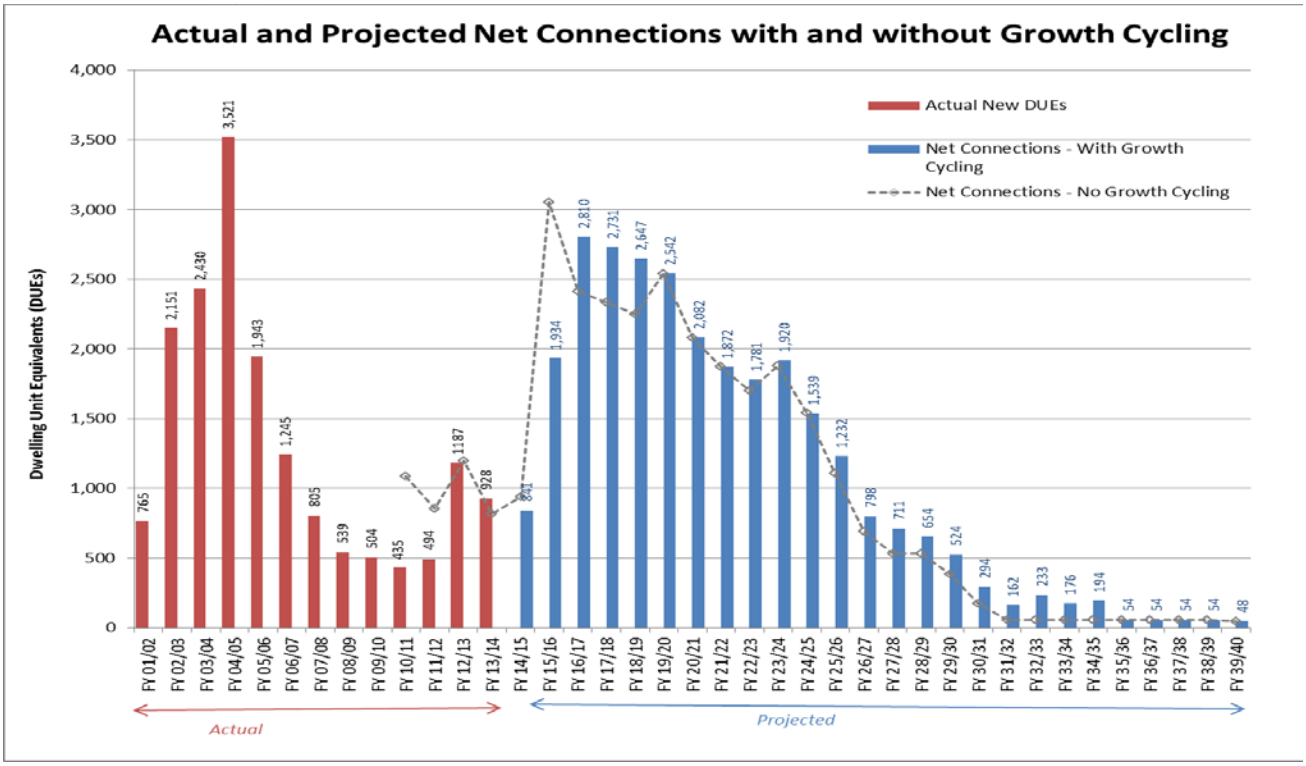
According to a 2013 analysis by the UCLA Anderson School of Business, "home prices are rising and housing starts have approximately doubled off of their depression lows of a few years ago.[1]" For future years, the analysis states, "specifically, we are forecasting that housing starts will increase from the 782,000 units recorded in 2012 to 1.03 million units and 1.35 million units in 2013 and 2014, respectively. For 2015 we are projecting housing starts to reach 1.56 million units." This equates to 50% increase in housing starts from 2012 to 2015. This study supports staff's projection of connection revenue increasing over the next few years.

The 2011 M&I Connection Fee Program Update undertook a comprehensive re-evaluation of projected demands, and new connections in the Zone 7 service area, and the necessary water system expansion projects to meet the needs of future customers. Actual and projected connections from the study are

[1] David Shulman. "Housing Recovery – How Strong? How Long?" in Allen Matkins /UCLA Anderson Forecast: The Recovery in Residential Construction (Summer/Fall 2013).

shown in Figure ES-5 below. Continued recovery in connection fee revenue will facilitate a shift away from funding only non-discretionary expenditures, and support construction of new facilities needed to serve the demands of growth. Staff closely monitors connection fee revenue to assure funding availability.

Figure ES-5 – 2011 M& I Connection Fee Program Actual and Projected Net Connections



*Net connections are calculated from the gross connections adjusted for prepaid connections and credits. Net connections with growth cycling was used for the revenue projections. This growth cycling concept assumes only 70% of the first five years' projections are assumed to occur at that time and the remaining 30% are assumed to occur over FY 25/26 through FY 34/35.

This CIP plans for a total expenditure of $392 million in Expansion projects starting in FY 15/16 through FY 24/25. Of this amount, non-discretionary obligations for the ten-year CIP total close to $220M. Non-discretionary obligations are payments to other agencies, such as the Department of Water Resources for debt incurred on Zone 7's behalf and, that Zone 7 is obligated to pay, including payments for the following projects over the ten-year CIP period:

- SBA Improvement and Enlargement: $151M
- Future Contractor's Share of SBA: $30M
- Sinking Funds: $21M
- Cawelo Groundwater Banking Program: $12.5M
- Administrative and Engineering Building Lease: $2M
- Semitropic Storage: $0.5M
- SWP Peaking Payment: $0.4M
- Bay Delta Conservation Plan/DHCCP: $0.4M
- Fixed Cost of Water Entitlement $0.05M

A large percentage the of non-discretionary expenses is for DWR's capitalization of the SBA Enlargement Project with annual payments of about $15M charged to Fund 130. Fund 110, State Water Project pays roughly $2.5M annually to cover the improvement portion. The project construction costs (excluding debt costs) have increased significantly since the initial estimate of $100M in 2006 to $260M in 2013. In the scheduling and prioritization of Expansion projects, the first priority was to ensure that there were adequate funds to pay for non-discretionary obligations such as the SBA Enlargement Project. Per the Zone 7 capital reserve policy for the Water Expansion Fund, the minimum fund balance should be maintained at 60% of the following year's non-discretionary obligations (~$12.6 million annually). Since Zone 7's projection and economic forecast anticipate continued recovery of housing starts, a number of capital projects have been scheduled in the near term. Table ES-4 (base case) shows projected available funding in Fund 130 through FY 24/25. Based on staff's assumption for connection fees as show in Figure ES-5, sufficient funding is projected to fund expansion projects as planned in the CIP. The red line in Figure ES-6 shows the projected capital project reserve balance through FY 29/30. A longer term view is shown to demonstrate the use of reserves to fund a potential PPWTP expansion/new plant. The line is well above the reserve balance target of $12.6M annually.

Additional analysis was performed to determine the impact on the capital reserve if connection fee revenue does not increase as projected in the 2011 Connection Fee Study (Figure ES-5). Gathering

projected near-term connection projections from the Retailers, staff developed the funding example illustrated in Figure ES-7. The analysis finds that there would be enough cash to fund the projects planned in the CIP, however, the FY 24/25 balance is significantly less than Figure ES-6. If connection fee revenue does not increase as projected, it is recommended that capital construction projects are delayed. Construction projects are planned to meet demand growth, so if housing is slow to recover, construction schedules can be adjusted and deferred as necessary. If deferring projects if not a feasible alternative, debt financing could be explored. Zone 7 will continue to monitor the cash flow in this fund to assure cash availability to fund projects above and beyond non-discretionary expenditures.

TABLE ES-4
Fund 130 – Connection Fees
Projected Funding Outlook - Base Case
($ Millions)

	Fiscal year (FY)	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
1	**Beginning Available Capital Reserve Balance**	**26.41**	**32.81**	**80.62**	**121.91**	**170.28**	**188.89**	**220.15**	**237.96**	**253.18**	**300.87**
2	**Revenue**										
3	**Connection Fees**	29.52	74.86	75.51	75.76	75.31	63.79	59.34	57.50	62.09	49.86
4	**DWR Refunds**	3.12	3.12	2.95	2.96	2.95	2.95	2.95	2.96	2.99	2.99
5	**Interest**	0.26	0.66	1.61	2.44	3.41	3.78	4.40	4.76	5.06	6.02
6	**Total Revenue**	32.90	78.64	80.07	81.16	81.66	70.52	66.69	65.22	70.15	58.87
7	**Expenditures**										
8	**Expenditures**	23.88	28.14	36.03	29.96	60.68	36.81	46.36	47.40	19.76	41.31
9	**Contigency**	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
10	**Total Expenditures**	24.38	28.64	36.53	30.46	61.18	37.31	46.86	47.90	20.26	41.81
11	**Annual Sinking Fund Contributions**	2.12	2.19	2.25	2.32	1.88	1.95	2.03	2.10	2.19	2.28
12	**Net Available Capital Reserve Balance**	32.81	80.62	121.91	170.28	188.89	220.15	237.96	253.18	300.87	315.65
13	**Designated Reserves (Sinking Funds)**	13.70	15.89	18.14	20.46	22.34	24.29	26.32	28.42	30.61	32.89
14											
15	***Capital Reserve Total***	***32.81***	***80.62***	***121.91***	***170.28***	***188.89***	***220.15***	***237.96***	***253.18***	***300.87***	***315.65***
16	***Reserve Policy Minimum***	***12.60***	***12.60***	***12.60***	***12.60***	***12.60***	***12.60***	***12.60***	***12.60***	***12.60***	***12.60***

Footnotes/Assumptions

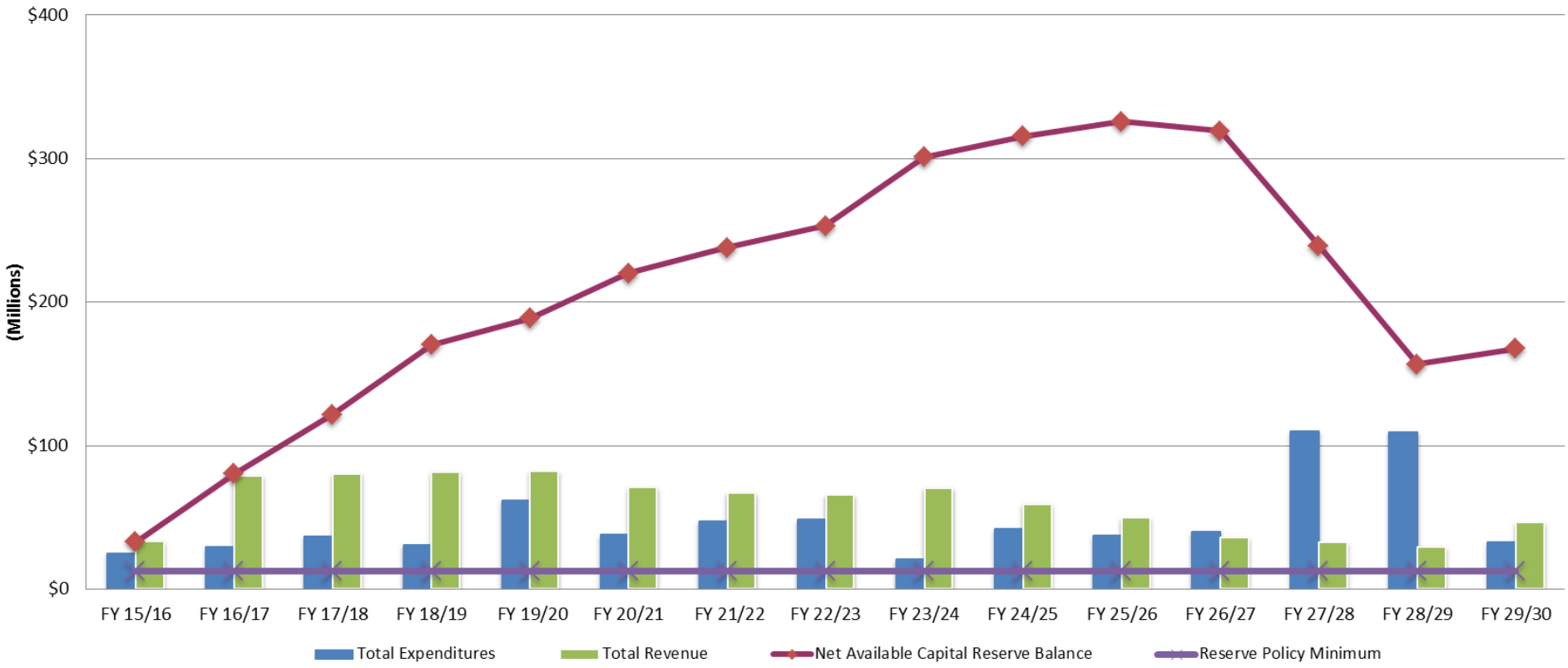
Line 3 - Revenue assumes annual inflationary adjustments to connection fees to keep pace with inflation.

Line 5 -Interest earnings assume 1% interest earned on beginning cash and sinking fund balances in 13/14, gradually increasing to 4% by FY 16/17.

Line 13 - Sinking Fund Contributions/Reserves includes: balance of Future Contractor's Share of the SBA, SBA Enlargement and Administration & Engineering Building sinking funds plus the annual sinking fund contributions.

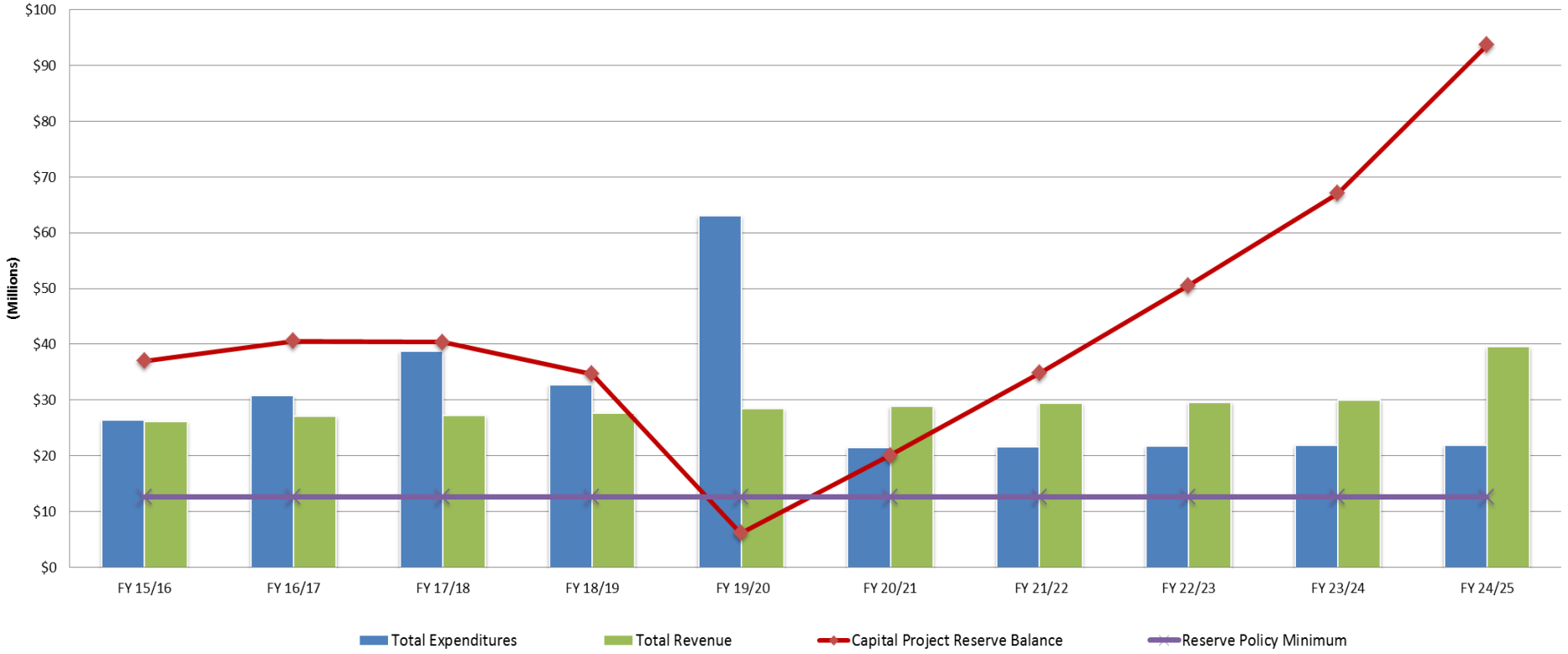
Line 16 - Fund Balance Target is 60% of the following year's non-discretionary expenditures or ~$13M per the Zone 7 Reserve Policy.

FIGURE ES-6
Fund 130 – Connection Fees
Long-term Projected Funding Outlook – Base Case*
($ Millions)



*Connection fee revenue as projected in the 2011 M&I Connection Fee Program Update.

Figure ES-7
Fund 130 – Connection Fees
Projected Funding Outlook – Example 1
($ Millions)



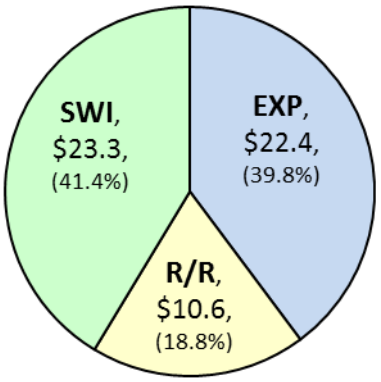
Flood Protection CIP Overview

Zone 7's capital improvements for flood protection are divided into three funding strategies: (1) Renewal/Replacement (R/R); (2) System-wide Improvements (SWI); and (3) Expansion (EXP). Renewal/Replacement covers operation and maintenance of the existing system. System-wide Improvements and Expansion cover the capital cost share of existing and future users, respectively. The respective shares are defined in the Development Impact fees
for Flood Protection and Storm Water Drainage report dated March 7, 2009.

Funding Need Divided into 3 Strategies

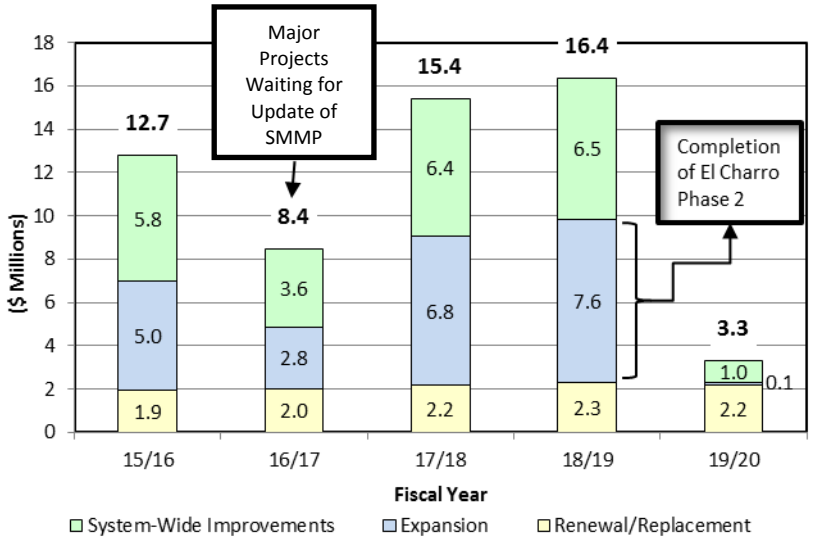
Strategy	Examples
Renewal/Replacement *(i.e., Operation & Maintenance)*	• Channel slope repair • Fencing/Gate installation and replacement • Landscaping and hydroseeding
System-Wide Improvements *(Existing user share of programs & projects)*	• Major flood enhancement projects (e.g., detention basin) • Major planning studies (e.g., SMMP update)
Expansion (Future user share of programs & projects)	•Major flood enhancement projects (e.g., detention basin) •Major planning studies (e.g., SMMP update)

Funding Need: $56.3 Million,
but less than 20% is Renewal/Replacement



Zone 7 projects $56.3 M in capital expenditures over the next five years. Over 80% of the projected expenditure is associated with major flood protection programs and projects, while less than 20% is associated with Renewal/Replacement type activities. The large allocation of funding to major flood protection programs and projects reflects ongoing projects previously identified in the SMMP, including major wetland/stormwater detention projects at the Chain of Lakes, upstream of Chabot Canal, and along the Arroyo Mocho.

Small Drop in Expenditures Expected in 16/17
as the SMMP Update is completed and additional funding secured



Flood Protection Funding Analysis

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 200, while revenue from development impact fees is placed in Fund 210; each is discussed in more detail below.

Fund 200 – Flood Protection General Fund

Alameda County provides Zone 7 with 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 200, and can be used to support both renewal/replacement activities and improvements. Zone 7 may sometimes supplement these revenues with state and federal grant funding. Table ES-5 and Figure ES-8 below presents the projected funding for Fund 200 over the next five years.

Table ES-5 Fund 200 (Property Taxes) - NEAR-TERM FUNDING ($ Millions)

	Fiscal year (FY)	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20
2	**Beginning. Available Fund Balance**	**$12.73**	**$11.90**	**$13.38**	**$12.26**	**$11.15**
3	**Revenue**					
4	Property Tax Revenue	6.38	6.64	6.90	7.18	7.47
5	Other Revenue	0.51	0.48	0.54	0.49	0.45
6	Total Revenue	6.89	7.11	7.44	7.67	7.91
7	**Expenditures**					
8	Capital and O&M Expenditures	7.73	5.64	8.56	8.78	3.23
9	Total Expenditures	7.73	5.64	8.56	8.78	3.23
10	**Fund Balance**	11.9	13.4	12.3	11.2	15.8
11	**Reserve Balances**					
12	**Capital Projects**	6.98	9.40	6.71	5.38	12.72
13	**Operating Reserves**	3.86	2.82	4.28	4.39	1.61
14	**Sinking Fund**	1.049	1.154	1.264	1.384	1.509
15	Reserve Total	$ 11.90	$ 13.38	$ 12.26	$ 11.15	$ 15.84

Key Assumptions

Line 1 Beginning fund balance excludes prior year encumbrance carryovers.

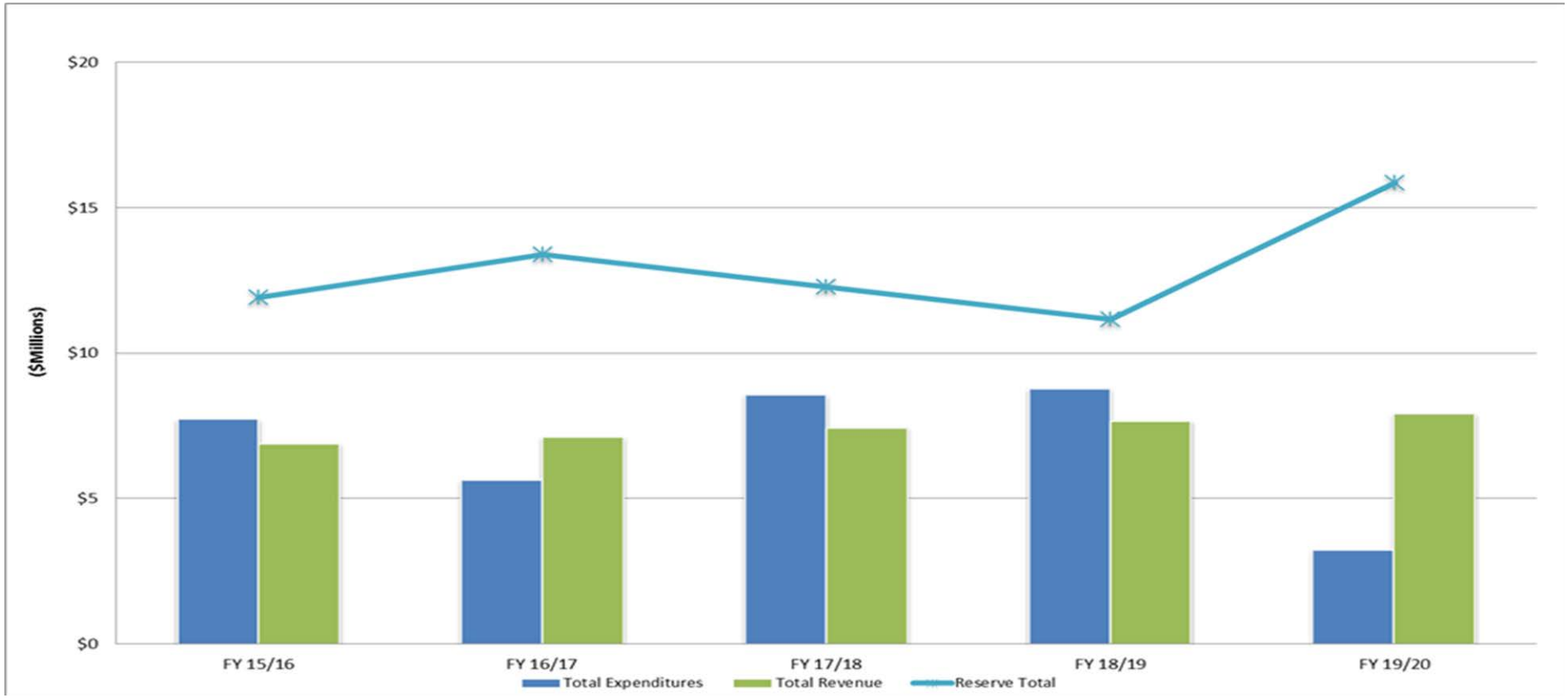
Line 4 Since taxes are based on the assessed property value, which fluctuates over time, Zone 7 has based the contribution on historic experience. A three percent annual increase is conservatively estimated to account for growth in assessed valuation.

Line5 Assumes 1% interest income earned on cash and sinking fund balances, increasing to 4% by FY 16/17.

Line 7 Expenditures are shown in actual dollars (current dollars adjusted by a 4% annual inflation factor) and include capital (System-wide Improvements) and O&M (Renewal/Replacement).

Line 13 Reserve policy recommends a reserve policy minimum of at least 50% of following year's operating expenses.

Figure ES-8 Fund 200 (Property Taxes) –
NEAR-TERM FUNDING ($ Millions)



Fund 210 – Flood Protection and Storm Water Drainage Development Impact Fee

Twenty-six million of the total flood protection projects are funded by Fund 210. Fund 210 - holds all fees collected from future development in support of Zone 7's flood protection and stormwater drainage activities.

The Zone 7 Board approved the Stream Management Master Plan (SMMP) in August 2006. Subsequently, Zone 7 adopted Ordinance 2009-01 to establish the new development impact fee (DIF) necessary to support SMMP projects within the Alameda Creek Watershed. This study recommended a fee of $1.423 per square-foot of impervious area created by new development. The calculation included $11,981,769 as the starting balance. After discussions with the cities and Zone 7 Board, this fee was subsequently capped at $1.10, and is currently $1.00. Over the next few years, Zone 7 will update the SMMP and DIF studies. These updates will reassess the projects and costs proposed in the SMMP and also reevaluate the current fee structure.

The SMMP and DIF identified $222 million in flood protection projects to be funded by this fund. Incorporating the projected expenditures planned within this CIP, Zone 7 projects a fund balance of $29M million in FY 18/19. This fund balance, along with other funding sources (to be examined in the DIF and SMMP updates) will be used to fund future flood protection and stormwater drainage projects identified in the SMMP.

The near term funding outlook for Fund 210 is shown in Table ES-6 and Figure ES-9 below.

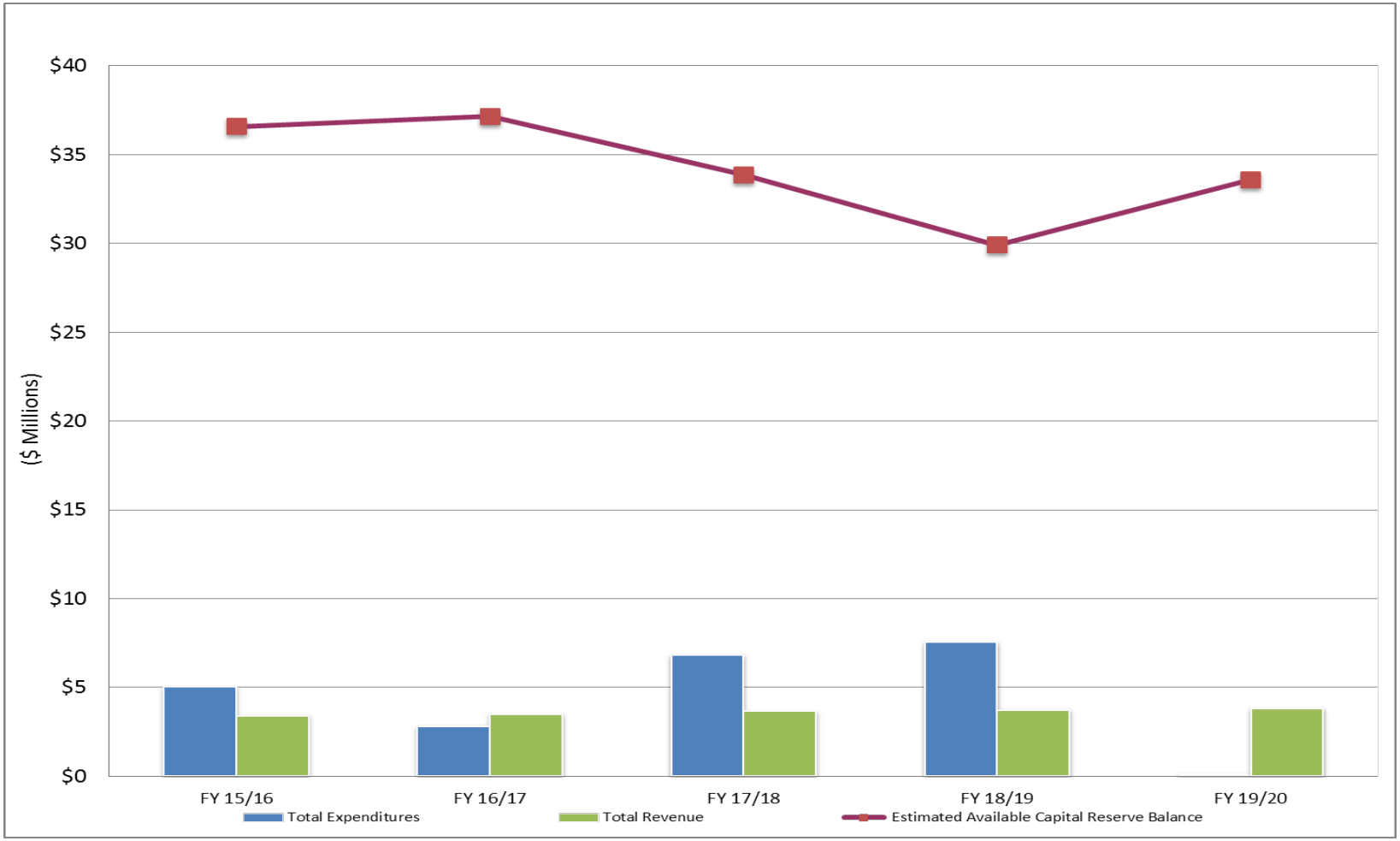
Table ES-6 Fund 210 (Development Impact Fees) - NEAR-TERM FUNDING ($ Millions)

	Fiscal year (FY)	15/16	16/17	17/18	18/19	19/20
1	**Beg. Available Capital Reserve Balance**	**$38.30**	**$36.57**	**$37.14**	**$33.85**	**$29.90**
2	**Revenue**					
3	Development Impact Fees	2.66	2.79	2.93	3.08	3.23
4	Other Revenue	0.77	0.73	0.74	0.68	0.60
5	Total Revenue	3.422	3.521	3.672	3.752	3.827
6	**Expenditures**					
7	Capital Expenditures	5.05	2.84	6.84	7.58	0.12
8	Total Expenditures	5.05	2.84	6.84	7.58	0.12
9	**Capital Reserve Balance**	**$36.67**	**$37.25**	**$33.97**	**$30.03**	**$33.61**
10	**Sinking Funds**					
11	Annual Building Sinking Fund Contribution	0.105	0.110	0.120	0.125	0.020
11	Building Sinking Fund Reserve Balance	1.05	1.16	1.28	1.41	1.43
12	**Estimated Available Capital Reserve Balance**	**$36.57**	**$37.14**	**$33.85**	**$29.90**	**$33.59**

Key Assumptions

Line 1 Beginning fund balance excludes prior year encumbrance carryovers.
Line 3 Development Impact Fee revenue based on a conservative growth projection.
Line 4 Assumes 1% interest income earned on cash and sinking fund balances, increasing to 4% by FY 16/17.
Line 6 Expenditures are shown in actual dollars (current dollars adjusted by a 4% annual inflation factor).
Line 12 Net available capital reserves after sinking fund contribution.

Figure ES-9 Fund 210 (Development Impact Fees)
Near-Term Funding Outlook ($ Millions)



Wente Vineyard and Golf Course in Livermore

SECTION ONE

INTRODUCTION

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 220,000 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 1-1 below shows the Zone 7 Service Area (in orange).

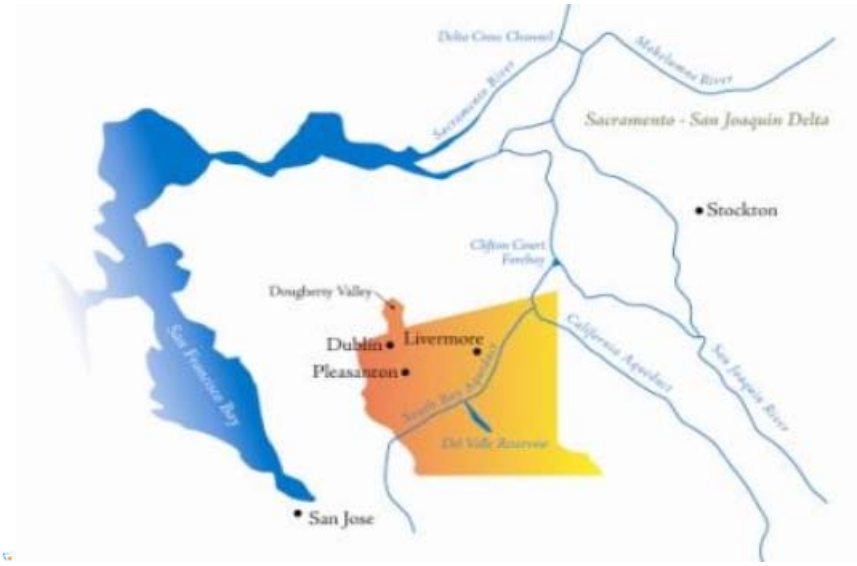
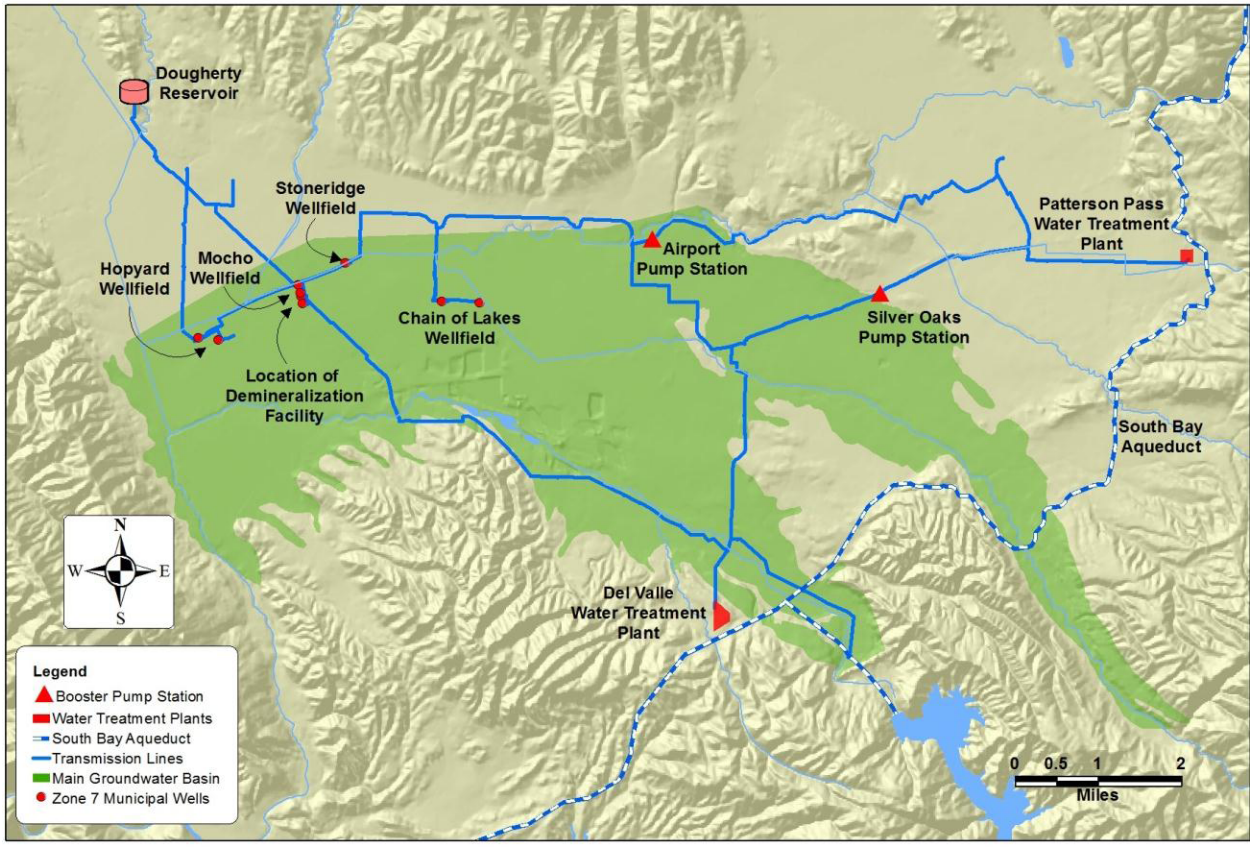


Figure 1-1. Zone 7 Service Area (shown in orange)

WATER SYSTEM

The majority of Zone 7's water supply originates as snowmelt in the Sierra Nevada, and makes its way here using the Sacramento-San Joaquin Delta (Delta) as a conveyance system. The water is imported to the Livermore-Amador Valley through State Water Project's South Bay Aqueduct. Roughly 80% the water supply used in the Zone 7 service area is conveyed through the Delta and the remainder comes from local rain runoff stored in Lake Del Valle and from groundwater pumped from the Valley's groundwater basin. Surface 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. Groundwater production wells located in the Hopyard, Mocho, and Stoneridge wellfields provide 32 million gallons per day (MGD) of peak capacity, while the new Chain of Lakes Wells 1 and 2 supply an additional 9 MGD for use during emergencies or drought conditions. The Mocho Groundwater Demineralization Facility helps to reduce the total dissolved solids (salts) and hardness of groundwater supplies. Figure 1-2 on the following page shows Zone 7's major treated water system facilities.

Figure 1-2. Zone 7's Major Treated Water System Facilities



FLOOD PROTECTION

Arroyo Mocho in Livermore

In addition to providing water to the Livermore-Amador Valley, Zone 7 owns and maintains 37 miles of local flood-protection channels, which is 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 storm drainage 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. Zone 7's flood protection system serves as the cornerstone of the Agency's integrated water resource management program, having multiple benefits, including water supply; water quality; erosion and sedimentation management; habitat, environment and watershed stewardship; and trails, recreation and public education.

PURPOSE

Every two years,[1] Zone 7 prepares the Capital Improvement Program document, which lays out the plan for the capital projects and programs needed to carry out the goals and policy objectives of the agency.

Specifically, this document:

- Communicates the projects, costs, schedules and priorities of Zone 7's 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; including the 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 and cash flow.
- 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. Together, the CIP's objective is to identify projects needed to accomplish Zone 7's Strategic Planning Priorities.

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, in keeping with its Mission Statement. Currently, the CIP has identified the following Systems:

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

[1] With the adoption of Resolution No. 10-3349, the Zone 7 Board approved updating and adopting the CIP on a biannual basis.

Flood Protection System – provides for the management, engineering, land acquisition, construction and operation and maintenance of flood protection facilities and the protection of watercourses, watersheds, public highways and life and property from damage or destruction from flooding. Also provides community (e.g., recreational) and environmental 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 Systems 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 through normal wear-and-tear 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 (Fund 120), while Flood Protection Projects are funded by property taxes (Fund 200).

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 (Fund 120), while Flood Protection Projects are funded by property taxes (Fund 200).

Expansion identifies the capital projects needed to meet the needs of future customers within Zone 7's service area. The Water System expansion projects are funded by water connection fees (Fund 130), while Flood Protection expansion projects are funded by Development Impact Fees (Fund 210), both of which are contributed by developers.

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 ten 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 objectives to minimize risk of emergencies and increase reliability during seismic or similar events.

- **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 conjunctive use of imported water (storing surplus supplies in the groundwater basin in wet years), stabilizing and reducing the buildup of minerals, minimizing pollution, and delivering high quality water and a reliable supply to its customers.

- **Program Management** accounts for staff time and related costs associated with managing capital programs.

- **Regulatory Compliance Monitoring** 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 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 groundwater deliveries during drought periods, peak demand periods and planned and unplanned outages of surface water treatment plants; also identifies facilities required 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 15/16 CIP has ninety-four Water System projects and twenty-seven Flood Protection projects. The Water System CIP covers FY 15/16 – FY 24/25 and the Flood Protection CIP covers FY 15/16 – FY 19/20. Descriptions of the capital projects associated with the Water and Flood Protection System are located at the end of Sections 2 and 3, respectively.

CIP PREPARATION

The 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 bi-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 identify 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 among the CIP Review Group, CIP Prioritization Group, Section Heads and Project Managers.

- Ensuring CIP Review Group decisions are reflected in the CIP.

- Reviewing the adequacy of Zone 7 financial and staffing resources to complete proposed projects.

CIP Review Group is made up of internal agency staff that are 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 Manager, Engineering, Assistant General Manager of Administration, Integrated Planning Manager, Engineering Manager, Operations Manager, Maintenance Manager, Facilities Supervisors, key Section Heads, Project Managers and the CIP Manager. The responsibilities of the group 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 General Manager, Assistant General Manager, Engineering, Assistant General Manager of Administration, Integrated Planning Manager, Engineering Manager, Operations Manager, Maintenance Manager, and Finance Staff Analyst. This group's role is to:

- Prioritize and recommend 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.
- Confirm proposed spending amounts for projects and programs and ensure 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.
- Meet with the Retailers during the development of the CIP to discuss priorities, project plans and cash flow.
- Present the CIP at various public meetings, including the Zone 7 Finance Committee and full Board for discussion, direction and adoption.

PRIORITIZATION CRITERIA

Prioritizing projects is an important part of the CIP planning process. The project prioritization criteria provide a method to evaluate projects in relation to the goals set forth in Zone 7's Strategic Plan. The criteria are a basis for deciding which projects will be included in the CIP, and the timing for implementation. The criteria used can be found in Exhibit C.

STRATEGIC PLANNING PRIORITIES

As part of Zone7's recent strategic planning efforts and with input from Staff, the Zone 7 Board identified five general strategic planning priorities. These priorities were developed to ensure all Zone 7 efforts are focused on fulfilling the mission of the agency; and to further ensure the most immediate needs are addressed in an efficient and cost-effective manner. The five general priorities (listed below) include a number of specific strategic planning sub-priorities.

1. Assist retailers in providing their customers with a reliable, cost-effective and safe water supply.
2. Provide the valley with an effective system of flood protection.
3. Provide the Agency with effective organization, administration and governance.
4. Operate the Agency in a cost-effective manner.
5. Improve public understanding of the Agency and the challenges it faces with respect to accomplishing its core functions of water supply and flood protection.

The specific priorities assist Zone 7 staff in focusing its capital improvement project efforts while ensuring that each project pursued is aligned with the mission of the agency. To this end, each CIP project summary (at the ends of Sections 2 and 3), include the strategic planning sub-priorities that

particular project fulfills. See Appendix D, Zone 7 Water Agency Strategic Planning Priorities, for more details and a listing of the priorities.

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 Impact Fees (DIFs). 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 each system and 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 Sections 2 and 3.

Fund 120 – Renewal/ Replacement & System-Wide Improvements	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 Fund 120. Another source of revenue for Fund 120 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. The facility use fee is $2,890 per new dwelling unit equivalent (DUE) connection, based on a 5/8" meter.
Fund 130 – Expansion	Funds a project, or portion thereof, that relates to additional demands placed on the existing Water System due to new development, which includes all water purchases; conveyance, treatment and transmission facilities; and associated costs (such as 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 meters for a development. As of January 2014, the Zone 7 connection fee is $24,030 per DUE, based on a 5/8" meter. A separate connection fee of $22,240 per DUE 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.
Fund 200 – Flood Protection/ General Fund	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.

Fund 210– 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 71) and the SDA 7-1 Trust Fund (Fund 90) were transferred to Fund 76 (now Fund 200), while all of the outstanding SDA 7-1 exemption credits were liquidated.[3] This fee is currently set at $1 per square foot of impervious surface area created. Fund 210 holds all fees collected from development in support of Zone 7's flood protection and storm water drainage activities. Section 3, Flood Protection describes Fund 210 in more detail.

[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.

A Recently Recoated Clearwell at DVWTP

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 15/16.

WATER SYSTEM GOALS

To ensure that the needs of Zone 7 customers are met, Zone 7 has set goals related to water supply and reliability, groundwater management and delivered water quality. These Water System goals, as defined by adopted Board policies, are outlined in the following pages. The current policies can be found in Appendix A. Every policy is subject to review and adjustment. For example, both the water reliability and water quality policies have been recently revised and the Groundwater Management Plan is currently under revision.

Water Supply 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 water supply system for existing and future water demands under varying hydrologic conditions.

In October 2012, the Zone 7 Board adopted a revised Reliability Policy for Industrial and Municipal Water Supplies. The revised level of service goals within the policy provide Zone 7 with the flexibility to manage uncertainties associated with the State Water Project, to reasonably respond to prolonged facility outages, and consistency with industry standards. A summary of the policy is below, and further detailed in Appendix A.

	RELIABILITY POLICY FOR MUNICIPAL AND INDUSTRIAL (M&I) WATER SUPPLIES (RESOLUTION NO. 13-4230)	
WATER SUPPLY AND RELIABILITY	**Goal 1:**	Zone 7 will meet 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 as specified in Zone 7's most recent Urban Water Management Plan (UWMP), during normal, average, and drought conditions, as follows: • At least 85% of M&I water demands 99% of the time • 100% of M&I water demands 90% of the time
	Goal 2:	Provide sufficient treated water production capacity and infrastructure to meet at least 80% of the maximum month M&I contractual demands should any one of Zone 7's major supply, production, or transmission facilities experience an extended unplanned outage of at least one week.

Groundwater Basin Management

The Livermore-Amador Valley's groundwater basin has an estimated storage capacity of 250,000 acre-feet, with approximately half of that considered operational storage. The groundwater basin supplies about 20% of valley-wide water demands and provides local storage to meet demands during dry years.

Zone 7 staff has been meeting with stakeholders and the San Francisco Bay Regional Water Quality Control Board to expand the Salt Management Plan (SMP) to include nutrient management and constituents of emerging concern (CEC) monitoring as suggested by the California Recycled Water Policy (State Water Resources Control Board Resolution No. 2009-0011). It is anticipated that the Board will consider adopting the Nutrient Management Plan in FY 14/15.

WATER QUALITY	*GROUNDWATER MANAGEMENT PLAN (RESOLUTION NO. 06-2796)*	
	Purpose	The Groundwater Management Plan (GMP) integrates various Zone 7 groundwater management policies and programs. One of these is the May 2004 Salt Management Plan (SMP), which was incorporated by reference into the GMP and was approved by the California Regional Water Quality Control Board – San Francisco Bay Area Region on September 24, 2004 as satisfying the requirements of Provision D.1.c.ii of the regional "Master Water Recycling Permit" order No. 93-159. This permit was issued to the Dublin San Ramon Services District (DSRSD), the City of Livermore and Zone 7, and authorizes the production and distribution of recycled water. The SMP sets forth a plan to facilitate recycling without degrading local water quality. In addition, the SMP goals are to maintain or improve groundwater mineral quality and delivered water quality through the following:
	Goal 1:	Protect and enhance the quality of groundwater.
	Goal 2:	Offset current and future salt loading, while facilitating reasonable regional recycled water use.
	Goal 3:	Maintain or improve groundwater mineral quality.
	Goal 4:	Provide more comparable delivered water quality to Retailers.
	Goal 5:	Utilize annual operations planning to achieve these goals.

Water Quality

All of the water Zone 7 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 continue meeting standards and 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, guide operational decisions, develop capital projects and set design standards. In 2003, the Zone 7's Board adopted a Water Quality Policy for potable and non-potable water; the policy was revised and adopted by the Zone 7 Board in April 2014. The goals of the policy are listed below.

W A T E R Q U A L I T Y	*WATER QUALITY POLICY FOR POTABLE AND NON-POTABLE WATER* ***RESOLUTION NO. 14-4365***	
	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 addition, Zone 7 shall deliver potable water of a quality that is as close as technically feasible and fiscally responsible to the Public Health Goals[2] (PHGs) and/or Maximum Contaminant Level Goals[3] (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 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[4] 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 untreated water turnouts, from a variety of sources, water of a quality that meets the irrigation needs 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 and Nutrient 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.
	Goal 5:	Zone 7 will partner with M&I Contractors to assist them in taking similar steps as those outlined in this policy to maintain or improve the quality of water delivered to the M&I Contractor's retail customers.

[1] Maximum Contaminant Level (MCL): The highest concentration 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 Goal (MCLGs) as is economically and technically feasible. Secondary MCLs are not health-related but regulate the odor, taste, and appearance of drinking water.

[2] Public Health Goal (PHG): The level of a primary contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the Office of Environmental Health Hazard Assessment.

[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.

[4] An event is defined as when three or more similar complaints are received in a 7-day period.

OVERVIEW OF THE WATER SYSTEM CIP

A primary function of the CIP is to provide Zone 7 with a clear and orderly process for planning and budgeting for capital needs and for making informed decisions with regard to project priorities and scheduling.

Various capital projects and programs are needed to ensure a reliable and high quality water supply in accordance with the mission, goals and policy objectives established by the Board. These projects anticipate the need to renew, replace and improve existing infrastructure (paid from Fund 120, Renewal/Replacement and System-Wide Improvements) and to construct new facilities needed to accommodate future growth (Fund 130, Expansion).

For the Ten-Year Water System CIP period (FY 15/16 through FY 24/25), a number of key issues drove the project development. These include source water quality challenges that can reduce the production capacity of the surface water treatment plants, poor performance and obsolescence of the Patterson Pass Ultrafiltration Plant membranes, and unexpected well pump failures. Together, these issues have undermined Zone 7's ability to meet peak demands in the near- and long-term and therefore require modification of previously identified projects and the addition of new projects. Newly-promulgated regulations, particularly the new Maximum Contaminant Level (MCL) for Chromium-6, have also required the addition of new projects. Finally, the 2014 Drought State of Emergency—and the prospect of continuing drought conditions—have necessitated new projects to improve system reliability.

For the Ten-Year Water System CIP period (FY 15/16 through FY 24/25), ninety-four Water System projects have been identified totaling $546 million ($392M in Expansion, $67M Renewal/Replacement, $87M in Improvements). Projects are categorized into the following eight program areas shown in Table 2-1 below. Note that funding for individual projects can be split between the two water capital funds (Fund 120 and Fund 130).

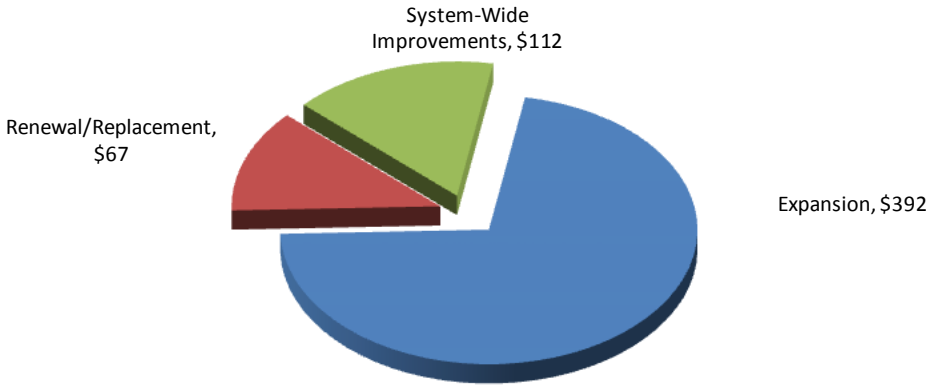
Table 2-1 Water System CIP Breakdown by Program ($ Millions)

Program / Fiscal Year	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total
Buildings & Grounds	1.93	1.96	1.99	2.02	0.68	0.00	0.00	0.00	0.00	0.00	8.59
Groundwater Basin Management	0.11	0.00	0.15	0.00	0.16	0.00	0.17	0.00	0.19	0.20	0.98
Program Management	0.38	0.11	0.16	0.11	0.17	0.42	0.19	0.13	0.20	0.14	2.01
Regulatory Compliance	0.12	0.13	0.12	0.13	0.14	0.15	0.15	0.16	0.17	0.17	1.44
Transmission & Distribution	5.29	0.00	0.06	1.51	6.25	0.00	1.08	0.05	0.92	2.93	18.09
Water Supply & Conveyance	23.97	22.58	24.94	32.31	53.52	45.08	48.27	49.44	21.83	21.97	343.93
Water Treatment Facilities	10.11	22.14	28.06	6.53	6.82	23.98	4.29	9.06	11.32	7.34	129.65
Wells	3.20	2.01	8.60	1.53	11.79	0.94	0.22	0.00	0.00	13.00	41.29
Total	**45.12**	**48.92**	**64.09**	**44.14**	**79.54**	**70.57**	**54.38**	**58.84**	**34.64**	**45.74**	**545.98**

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 120) are funded by water rates paid by existing customers via an annual transfer from Fund 100 – Water Enterprise (water rate revenue initially accrues to this fund) to Fund 120. Expansion (Fund 130) is funded by connection fees paid by new development.

The following charts and tables present the planned annual and ten-year total expenditures for the Ten-Year CIP by Strategy, Fiscal Year and Program.

Water System
Ten-Year CIP (FY 15/16 – FY 24/25)
Strategy Breakdown (shown in millions)



Strategy	Ten-Year Total ($ Millions)	Percentage
Expansion	$392	72%
Renewal/Replacement	$67	12%
System-Wide Improvements	$87	16%
Total	**$546**	**100%**

Water System
Ten-Year CIP (FY 15/16 – FY 24/25)
Planned Expenditures by Strategy and Fiscal Year
($ Millions)

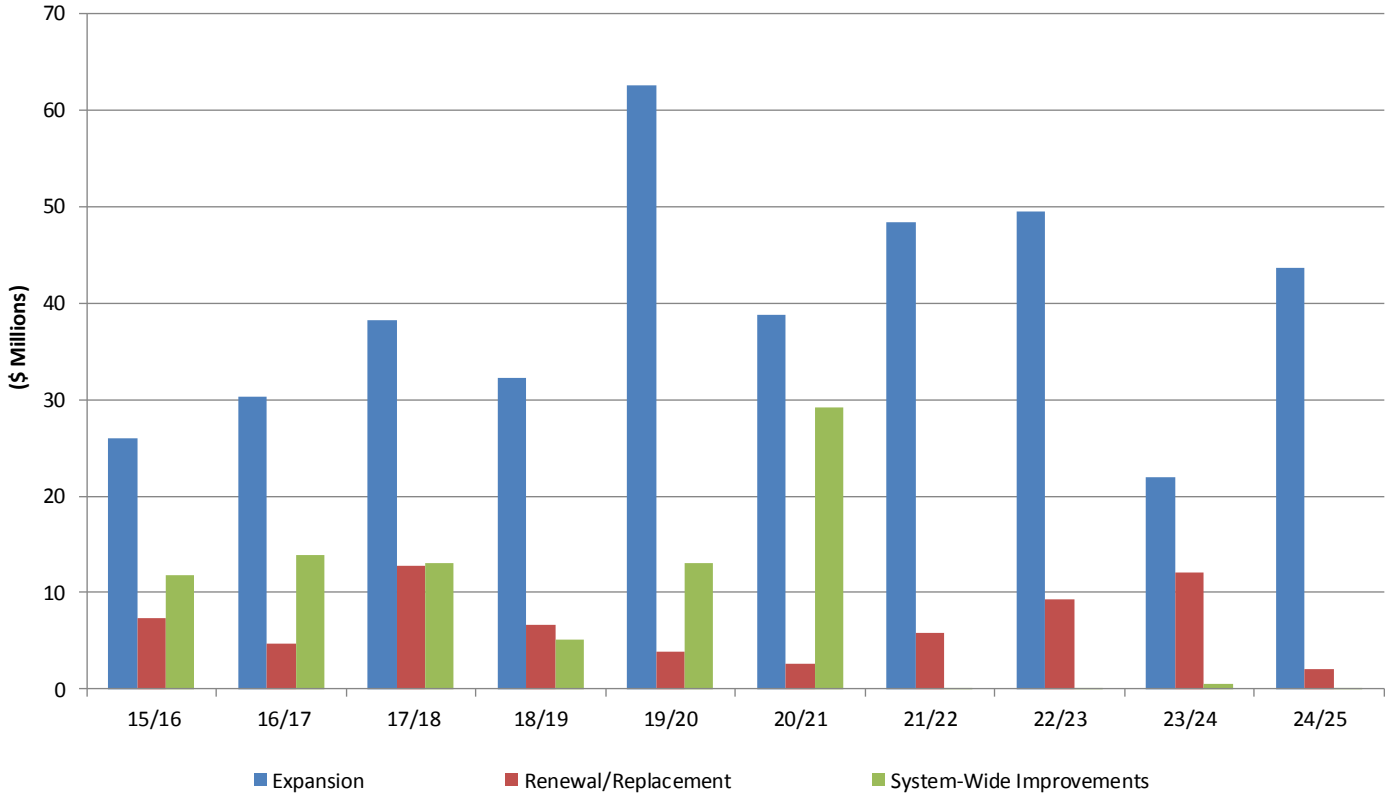


Table 2-3 Water System CIP Planned Expenditures by Strategy and Fiscal Year

Strategy (FY)	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	Total
Expansion	26.00	30.33	38.28	32.28	62.56	38.76	48.39	49.50	21.95	43.59	391.64
Renewal/Replacement	7.38	4.72	12.71	6.72	3.89	2.62	5.89	9.33	12.10	2.04	67.39
System-Wide Improvements	11.74	13.87	13.10	5.13	13.09	29.20	0.10	0.01	0.59	0.11	86.94
Total	**45.12**	**48.92**	**64.09**	**44.14**	**79.54**	**70.57**	**54.38**	**58.84**	**34.64**	**45.74**	**545.98**

Water System
Ten-Year CIP (FY 15/16 – FY 24/25)
($ Millions)

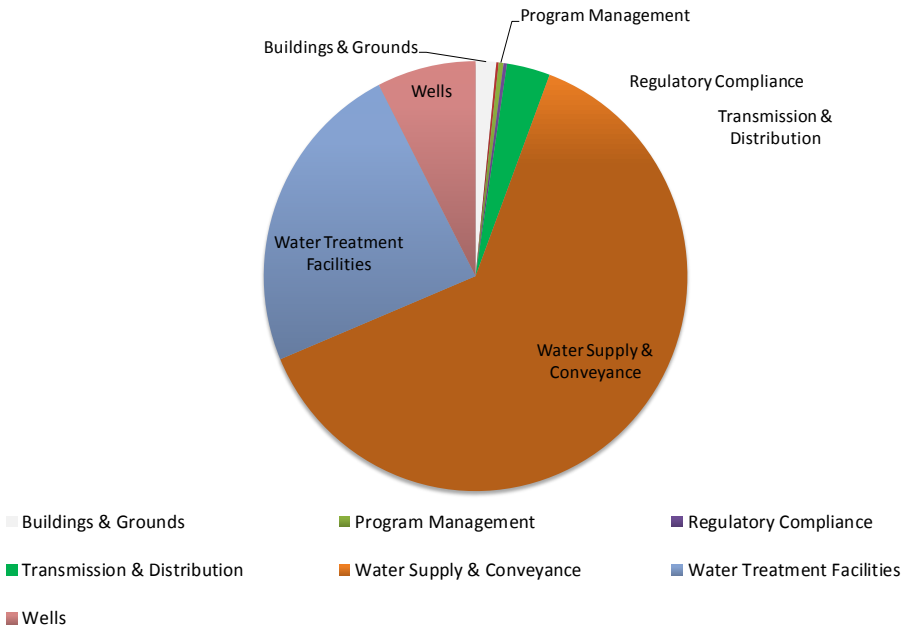
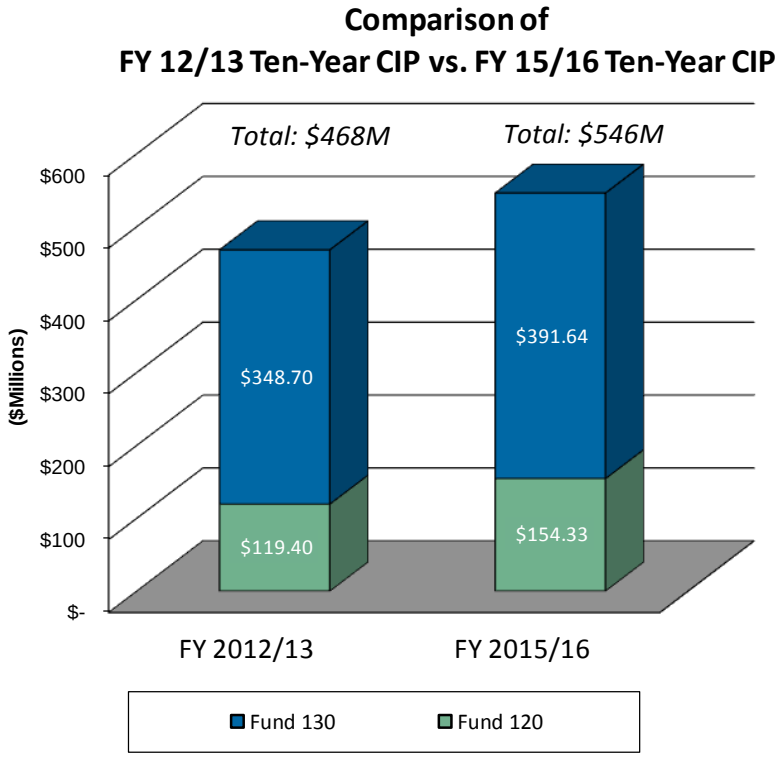


Table 2-4 Water System CIP Program Breakdown

Program	Ten-Year Total ($Millions)	Percentage
Buildings & Grounds	8.59	1.6%
Groundwater Basin Management	0.98	0.2%
Program Management	2.01	0.4%
Regulatory Compliance	1.44	0.3%
Transmission & Distribution	18.09	3.3%
Water Supply & Conveyance	343.93	63.0%
Water Treatment Facilities	129.65	23.7%
Wells	**41.29**	**7.6%**

Major Changes

The planned FY 2015/16 Ten-Year CIP expenditures total $546 million, which is $78 million or about 16% more than the FY 12/13 Ten-Year CIP total of $468 million. The increase is mainly due to the addition of new projects. The issues and challenges driving the most significant changes are discussed in the following pages.



Recent Challenges and Issues Driving the Water System CIP

Meeting Peak Demands

With continuing drought conditions resulting in poor source water quality, Zone 7's production capacity was reduced, requiring a re-evaluation of Zone 7's ability to meet peak demands in the near- and long –term, especially in similar water quality conditions. Preliminary analysis completed by staff indicated that the primary causes for reduced production capacity are: 1) variations/degradation of source water quality, 2) poor-performing and soon-to-be obsolete membranes, and 3) unexpected well pump failures. The staff analysis recommends a number of studies, operational improvements, and capital projects to meet current and future peak day demands. These recommendations have been incorporated in this CIP. Key recommended projects, which have been modified, have had schedules advanced or have been in the CIP, include:

- ***Ozonation at DVWTP and PPWTP*** – The addition of ozone facilities was included in previous CIPs with the primary goal of improving delivered water quality. Recent staff analysis of production needs identified ozonation as the best technical option at this time for bolstering the DVWTP's and PPWTP's ability to handle source water quality variations while maintaining high production rates. For planning purposes, staff therefore recommends installing ozone treatment at DVWTP by 2018—five years earlier than the previously-planned date of 2023—due to the urgency of restoring capacity at DVWTP to meet near-term peak demands during what may be continuing periods of poor water quality. This will also have the significant added benefit of improving taste and odor of delivered water sooner than anticipated, and improving DVWTP's ability to meet current and future regulations for trihalomethanes (THMs), haloacetic acids (HAAs), and contaminants of emerging concern (CECs). Staff recommends deferring PPWTP ozonation to 2028 – the same year as the potential expansion at PPWTP, so the two Patterson Pass projects can be combined. PPWTP has been able to handle source water quality challenges better than DVWTP, perhaps due to the Patterson Pass raw water reservoir's buffering capacity.

  Zone 7 recently hired a consultant to further evaluate filter performance at both treatment plants and develop potential treatment alternatives for improving production capacity. In particular, the addition of carbon dioxide has the potential to significantly improve production capacity. While additional plant-scale testing is planned, installation of permanent carbon dioxide facilities at both plants has been included in the CIP.

For DVWTP, the plan is to complete the facility by 2016; if carbon dioxide by itself successfully restores production capacity, the installation of full ozonation (which requires carbon dioxide addition) at DVWTP may not be as urgent and could be deferred past 2018.

The asset management program (AMP) included funding for ozonation at both plants assuming an in-service date of 2023. The annual AMP contribution assumes that a portion of the funding would be set aside to build up reserves to fund the project with cash. With ozonation at DVWTP accelerated to an in-service year of 2018, there is less time to build up reserves to fund the project with cash. Assuming ozonation proceeds at the schedule identified in this CIP, debt financing is a potential strategy for addressing this cash deficit. This funding example is further discussed in the Funding Analysis section.

- ***PPWTP Expansion/New Media Filters*** – This project was included in the FY 12/13 CIP with a similar timeline. With continuing problems experienced with the membranes at the Patterson Pass Ultrafiltration Plant, it has become clear that replacement of the membranes with conventional media filters is the most logical solution. In addition to poor performance of the existing membranes, replacement with membrane will also become challenging as they have ceased to be produced by the manufacturer. This project would not only replace the capacity of the existing membrane plant at 8 MGD, but also provide the opportunity to expand capacity at PPWTP by an additional 4 MGD, helping to meet peak demands reliably.

- ***Well Rehabilitation*** – To improve the reliable production capacity of the wells—which are critical for meeting peak day demands and drought demands—Zone 7 undertook several well rehabilitation projects in 2014 to address unexpected well pump failures. For example, the reduced capacity of Mocho Well 4 was found to result from a hole in the pump bowl. In this CIP, the inspection and rehabilitation of the remaining wells (e.g., Hopyard Well No. 6) have been included.

Chromium 6 Treatment

The State of California adopted a new maximum contaminant level (MCL) of 10 µg/L for hexavalent chromium (or chromium-6) in drinking water which became effective on July 1, 2014. Zone 7 has a Water Quality Policy goal for potable water delivered to the M&I Contractors' turnouts be of a quality that contains no greater than 80% of primary MCLs. Therefore, Zone 7's delivered water quality target is 8 µg/L for chromium-6. Based upon current available data, several wells do not meet this target and may slightly exceed or are near the MCL. These wells are Stoneridge and Chain

of Lakes (COL) 1, 2, and 5. The Mocho and Hopyard wells are currently below the target and are not expected to require treatment. Zone 7 currently plans to meet the new MCL and its water quality target via blending with surface water and/or groundwater with lower chromium-6 concentrations. A new booster pump station is also being planned for FY15/16 to help improve distribution flexibility and, in certain scenarios, enhance blending capability. In case blending is not sufficient for meeting the MCL or the water quality target, on-site treatment would be needed. Staff has developed capital and O&M cost estimates for the chromium-6 treatment facilities for Stoneridge and COL wells. The estimated capital costs are ~$5M for the Stoneridge Well and ~$11M for the COL wells in 2014 dollars. Since the near-term plan to meet the new MCL is via blending and/or utilizing leased chromium-6 treatment, equipment if needed, the permanent treatment facilities have been scheduled for FY 20/21 to allow the treatment technologies to mature.

Drought Response

On January 17, 2014, Governor Jerry Brown declared a State of Emergency in California due to the current drought conditions and asked all citizens to cut back water use by 20%. On January 29, 2014 at a special meeting of the Zone 7 Board, a local Drought Emergency was declared and a Drought Emergency Response Plan was accepted. The Zone 7 Board approved three emergency projects at that time to partially recover groundwater mining losses and increase groundwater production capacity: 1) Lake I - Cope Lake Pipeline Project - completed, 2) construction of Chain of Lakes Well No. 5 - planned functional testing of the well by the end of October 2014, and 3) construction of Busch Valley Well No. 1 – basis of design to be finalized by the end of November 2014 and construction proposed for 2025.

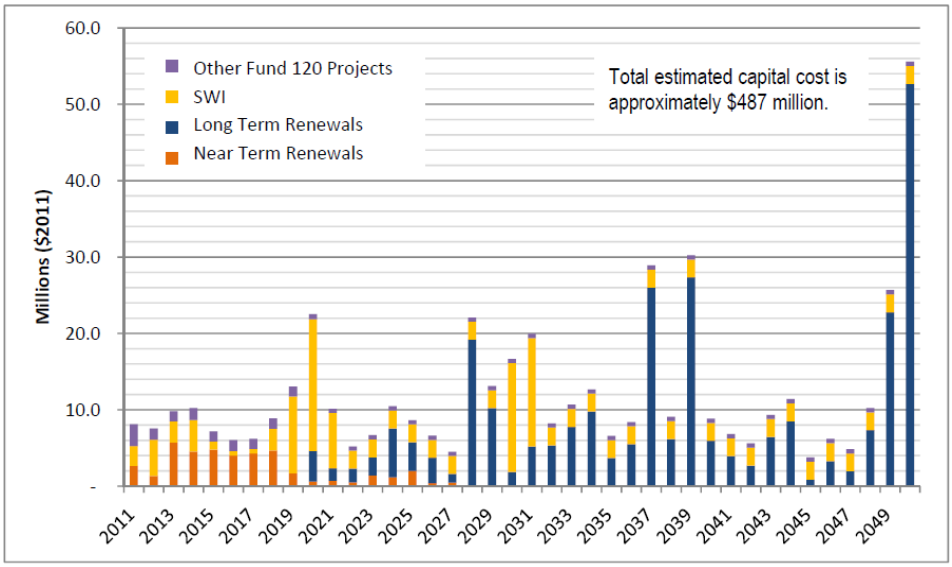
In preparation for continuing drought conditions, an additional drought response project has been included in this CIP: the installation of a Booster Pump Station (BPS). The BPS, or intermediate pump station, would increase well production capacity by lowering system pressures in the west side of the water system and allowing more water to be delivered throughout Zone 7's service area under reduced or zero surface water supply conditions. Given several years of drought, another year of extremely low—or zero—State Water Project (SWP) Table A allocation is quite possible in 2015. With very limited surface water, Zone 7 would be highly reliant on groundwater supply, making the ability to optimize groundwater production capacity and delivery critical. Over the long-term, the BPS will also bolster Zone 7's reliability during SBA outages and generally improve system operational flexibility.

Asset Management Program (AMP)

Beginning in 2010, staff re-evaluated the AMP and on June 15, 2011, the Zone 7 Board adopted Resolution 11-4092 accepting the AMP Update (attached as Appendix B). The AMP update identified short- and long-term renewal/improvement needs and the associated annual funding level necessary to implement these projects. The initial annual funding recommendation was $12.5M (in 2011 dollars) based on project needs (Figure ES-1 below) through FY 49/50. However, after discussions with the Retailers and Finance Committee, a level of $11.4M (in 2011 dollars) was accepted, with an adjustment for inflation and six year ramp-up to this amount by FY 16/17 million in order to reduce rate impacts. It was also agreed that the AMP would be updated every five years.

The AMP update provided funding for a well-defined schedule of projects for the renewal or replacement of existing facilities, based on sustainable infrastructure factors such as asset condition and estimated useful life. Funding for system-wide improvements was estimated based on small improvement projects planned in the near-term and identified major improvements such as ozone treatment. The chromium-6 treatment project was not anticipated and therefore not included in the AMP calculations. Since no additional funding was set aside for unanticipated projects such as chromium-6 treatment, the 2016 AMP update must consider funding for such projects. An adjustment to the annual funding levels may be necessary, because the actual capital project reserve balance will be significantly less than what is projected, and required for implementing future projects beyond the ten-year CIP (Figure 2-1 below). Staff plans to begin an update to the AMP in 2015, with possible Board adoption in 2016.

Figure 2-1 Total Forecasted Renewal and System-Wide Improvements Funding Requirement, 2011-2050



Source: Zone 7 Asset Management Plan 2011 Update

Other Noteworthy Changes

This CIP includes a number of newly-proposed projects dealing with production capacity restoration, AMP and other system-wide improvements. These projects and their respective costs are listed below.

New Projects	
COL Well No. 1,2 & 5 Chromium-6 Treatment	$14,170,000
DVWTP Washwater Recovery Ponds Improvements	8,440,000
DVWTP Drying Beds 1-4 Rehabilitation Project	8,200,000
Stoneridge Well Chromium-6 Treatment	6,020,000
Booster Pump Station	5,070,000
DVWTP Filter Rehabilitation - Phase 2	2,330,000
PPWTP Clarifiers Concrete Coating	1,600,000
Hopyard Well 6 & Stoneridge Sodium Hypochlorite Tank Replacement	1,030,000
DVWTP Carbon Dioxide Installation Project	730,000
PPWTP Rehabilitation Project	700,000
PPWTP Carbon Dioxide Installation Project	600,000
MGDP Water Softening System	530,000
MGDP Concentrate Discharge Pipeline Inspection and Cleaning	520,000
Mocho Well No. 3 OSG R/R	490,000
PPWTP HVAC Improvements	430,000
PPWTP-UF Clarifier Floor Rehabilitation Project	360,000
MGDP De-Mister Modifications	310,000
Mocho Well No.1 Sanding Investigation	300,000
DVWTP Main Plant Generator Replacement	240,000
Hopyard Well No. 6 Inspect & Rehabilitate Pump, Motor, and Well Casing-	220,000
Hopyard Well No. 9 Inspect & Rehabilitate Pump, Motor, and Well Casing-	220,000
Review of Well Implementation Plan	220,000
Stream Gage Replacement	200,000
Transmission System Planning Update	171,000
Mocho Wellfield Automation & Control Valves	100,000

OVERVIEW OF WATER SYSTEM CIP BY STRATEGY

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 in Table 2-5 with respect to their associated programs. The first year expenditure requirement for this strategy is $7.4 million, and the ten-year total is $67 million. A breakdown by program for the ten-year total is shown on the following pages.

Water System
Renewal/Replacement Strategy
Ten-Year Total

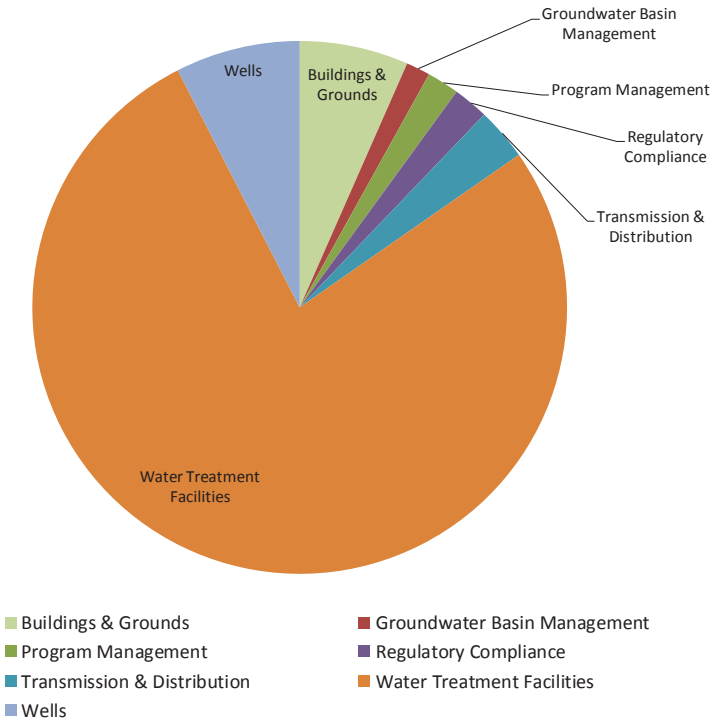


Table 2-5 Renewal/Replacement Strategy

Program	Ten-Year Total ($ Millions)	Percentage
Buildings & Grounds	4.44	7%
Groundwater Basin Management	0.98	1%
Program Management	1.31	2%
Regulatory Compliance	1.44	2%
Transmission & Distribution	2.14	3%
Water Treatment Facilities	52.00	77%
Wells	5.08	8%
Total	**67.39**	**100%**

Table 2-6 Renewal/Replacement Strategy Breakdown

	Expenditures ($Millions)										
	FY 15/16	**FY 16/17**	**FY 17/18**	**FY 18/19**	**FY 19/20**	**FY 20/21**	**FY 21/22**	**FY 22/23**	**FY 23/24**	**FY 24/25**	**Total**
Buildings & Grounds											
Administrative & Engineering Building - Sinking Fund (Fund 120)	$0.418	$0.429	$0.440	$0.450	$0.060						$1.797
Administrative & Engineering Building Lease (Water System)	$0.557	$0.567	$0.578	$0.590	$0.348						$2.640
Subtotal	**$0.975**	**$0.996**	**$1.018**	**$1.040**	**$0.408**						**$4.437**
Groundwater Basin Management											
Monitoring Well Replacements & Abandonments	$0.110		$0.150		$0.160		$0.170		$0.190		$0.780
Stream Gage Replacement										$0.200	$0.200
Subtotal	**$0.110**		**$0.150**		**$0.160**		**$0.170**		**$0.190**	**$0.200**	**$0.980**
Program Management											
Asset Management Program Management	$0.280	$0.050	$0.050	$0.050	$0.050	$0.350	$0.060	$0.060	$0.060	$0.070	$1.080
Capital Improvement Program Management	$0.026	$0.014	$0.029	$0.014	$0.031	$0.017	$0.033	$0.017	$0.036	$0.017	$0.233
Subtotal	**$0.306**	**$0.064**	**$0.079**	**$0.064**	**$0.081**	**$0.367**	**$0.093**	**$0.077**	**$0.096**	**$0.087**	**$1.313**
Regulatory Compliance Monitoring											
Laboratory Equipment Replacement	$0.120	$0.130	$0.120	$0.130	$0.140	$0.150	$0.150	$0.160	$0.170	$0.170	$1.440
Subtotal	**$0.120**	**$0.130**	**$0.120**	**$0.130**	**$0.140**	**$0.150**	**$0.150**	**$0.160**	**$0.170**	**$0.170**	**$1.440**
Transmission & Distribution											
Distribution System Control Station Replacement							$1.010				$1.010
Transmission System Planning Update	$0.060										$0.060
Turnout Replacement Program								$0.050	$0.360	$0.660	$1.070
Subtotal	**$0.060**						**$1.010**	**$0.050**	**$0.360**	**$0.660**	**$2.140**
Water Treatment Facilities											
Dougherty Reservoir Access Road Rehabilitation				$0.190							$0.190
Dougherty Reservoir Recoating				$2.110							$2.110
DVWTP Ammonia System Replacement			$2.250								$2.250
DVWTP Chemical Feed Lines and Pumps Replacement	$0.170	$0.880									$1.050
DVWTP Drying Beds 1-4 Rehabilitation Project						$0.060	$0.490	$7.650			$8.200
DVWTP Ferric Chloride System Improvements			$0.770								$0.770
DVWTP Filter Rehabilitation - Phase 1			$1.490								$1.490
DVWTP Filter Rehabilitation - Phase 2							$2.330				$2.330
DVWTP Filter Valves Replacement	$0.400										$0.400
DVWTP HVAC Replacement						$0.110	$0.620				$0.730
DVWTP Interior Coating Improvements to the 4.5 MG Steel Clearwell	$2.390										$2.390
DVWTP Main Plant Generator Replacement				$0.030	$0.210						$0.240

Table 2-6 Renewal/Replacement Strategy Breakdown

	Expenditures ($Millions)										
	FY 15/16	**FY 16/17**	**FY 17/18**	**FY 18/19**	**FY 19/20**	**FY 20/21**	**FY 21/22**	**FY 22/23**	**FY 23/24**	**FY 24/25**	**Total**
DVWTP Parking Lot Repair			$0.540								$0.540
DVWTP Rehabilitation Project		$0.330	$2.140								$2.470
DVWTP Roof Replacement and Rehabilitation for 3.0 MG Clearwell	$0.080	$0.500									$0.580
DVWTP Washwater Recovery Ponds Rehabilitation							$0.030	$0.380	$7.960	$0.070	$8.440
Minor Renewal/Replacement Projects	$0.360	$0.380	$0.400	$0.410	$0.430	$0.450	$0.470	$0.480	$0.490	$0.520	$4.390
PPWTP Aqua Ammonia Facility Installation				$0.350	$1.820	$0.250					$2.420
PPWTP Chemical Systems Replacement		$0.160	$0.600								$0.760
PPWTP Clarifiers Concrete Coating								$0.230	$1.370		$1.600
PPWTP Filter Pipe Replacement Project			$0.100	$0.600							$0.700
PPWTP Filter Rehabilitation		$0.160	$1.390								$1.550
PPWTP HVAC Improvements		$0.430									$0.430
PPWTP Rehabilitation Project			$0.100	$0.600							$0.700
PPWTP UF Clarifier Floor Rehabilitation Project					$0.360						$0.360
SCADA Enhancements	$0.240	$0.240	$0.260	$1.200	$0.280	$0.290	$0.310	$0.300	$1.460	$0.330	$4.910
Subtotal	**$3.640**	**$3.080**	**$10.040**	**$5.490**	**$3.100**	**$1.160**	**$4.250**	**$9.040**	**$11.280**	**$0.920**	**$52.000**
Wells											
Hopyard Well 6 & Stoneridge Sodium Hypochlorite Tank Replacement	$0.580	$0.450									$1.030
Hopyard Well No. 6 Inspect & Rehabilitate Pump, Motor, and Well Casing							$0.220				$0.220
Hopyard Well No. 9 Inspect & Rehabilitate Pump, Motor, and Well Casing						$0.220					$0.220
MGDP RO Membrane Replacement	$0.600					$0.720					$1.320
Mocho 2 Well Improvements/Rehabilitation	$0.200										$0.200
Mocho Well No. 3 OSG R/R	$0.490										$0.490
Mocho Well No.1 Sanding Investigation	$0.300										$0.300
Wellfield Switchboard Replacement Project			$1.300								$1.300
Subtotal	**$2.170**	**$0.450**	**$1.300**			**$0.940**	**$0.220**				**$5.080**
Total	**$7.380**	**$4.721**	**$12.707**	**$6.724**	**$3.889**	**$2.617**	**$5.893**	**$9.327**	**$12.096**	**$2.037**	**$67.390**

System-Wide Improvements Strategy

This strategy addresses enhancements to existing facilities that will improve water quality, safety, reliability, efficiency, operational flexibility, and/or cost effectiveness.

The specific projects that comprise the System-Wide Improvements Strategy are listed in Table 2-7 with respect to their associated programs. The first year expenditure requirement is $11.7 million, and the ten-year total for this strategy is $87 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

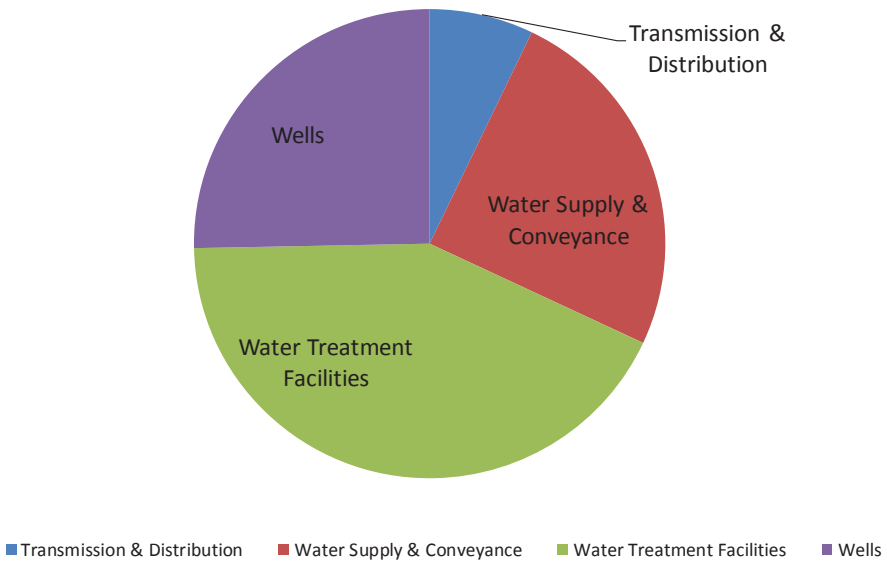


Table 2-7 System-Wide Improvements Strategy

Program	Ten-Year Total ($ Millions)	Percentage
Transmission & Distribution	6.21	7.1%
Water Supply & Conveyance	21.57	25%
Water Treatment Facilities	37.16	43%
Wells	22.00	25%
Total	**86.94**	**100%**

Table 2-8 System-Wide Improvements Strategy Breakdown

Programs	Expenditures ($Millions) FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	Total
Transmission & Distribution											
Booster Pump Station	$5.070										$5.070
Corrosion Master Plan Update				$0.270					$0.560		$0.830
System-Wide Installation of Line Valves	$0.050		$0.060		$0.060		$0.070			$0.070	$0.310
Subtotal	**$5.120**		**$0.060**	**$0.270**	**$0.060**		**$0.070**		**$0.560**	**$0.070**	**$6.210**
Water Supply & Conveyance											
Additional Treated Water Storage			$0.392	$2.864	$2.160						$5.416
Arroyo del Valle Permit Extension	$0.520										$0.520
Chain of Lakes Facilities and Improvements				$0.702	$3.651	$3.036					$7.389
Chain of Lakes Master Planning	$0.006	$0.042	$0.027	$0.006						$0.030	$0.111
Reliability Intertie	$0.015	$0.015	$0.354	$0.297	$3.795	$3.624					$8.100
Water System Master Plan	$0.035										$0.035
Subtotal	**$0.576**	**$0.057**	**$0.773**	**$3.869**	**$9.606**	**$6.660**				**$0.030**	**$21.571**
Water Treatment Facilities											
COL Well No. 1,2 & 5 Chromium-6 Treatment						$14.170					$14.170
DVWTP Carbon Dioxide Installation Project	$0.730										$0.730
Ozonation at DVWTP and PPWTP	$4.160	$11.900	$12.250								$28.310
PPWTP Carbon Dioxide Installation Project		$0.600									$0.600
PPWTP Clearwell Improvements	$0.100	$0.520									$0.620
PPWTP Maintenance Yard and Building Improvements				$0.091	$0.665	$0.651					$1.407
PPWTP Sludge Handling Improvements				$0.890	$2.730	$1.680					$5.300
Stoneridge Well Chromium-6 Treatment						$6.020					$6.020
Water Quality Management Program	$0.021	$0.014	$0.021	$0.014	$0.028	$0.014	$0.028	$0.014	$0.028	$0.014	$0.196
Subtotal	**$5.011**	**$13.034**	**$12.271**	**$0.995**	**$3.423**	**$22.535**	**$0.028**	**$0.014**	**$0.028**	**$0.014**	**$57.353**
Wells											
MGDP Water Softening System	$0.100	$0.430									$0.530
MGDP Concentrate Discharge Pipeline Inspection and Cleaning	$0.520										$0.520
MGDP De-Mister Modifications	$0.310										$0.310
Mocho Well 2 - VFD Retrofit		$0.350									$0.350
Mocho Wellfield Automation & Control Valves	$0.100										$0.100
Subtotal	**$1.030**	**$0.780**									**$1.810**
Total	**$11.737**	**$13.871**	**$13.104**	**$5.134**	**$13.089**	**$29.195**	**$0.098**	**$0.014**	**$0.588**	**$0.114**	**$86.944**

FUNDING ANALYSIS

The Water System CIP is funded by Fund 120 – Renewal/Replacement and System-Wide Improvements and Fund 130 – Expansion. The following sections discuss near-term funding over the next ten years for both funds.

Fund 120

Fund 120 funds projects, or portions thereof, to maintain, replace or improve water system infrastructure. In the 2004 Asset Management Program (AMP) Study, it was determined that the then-current $4 million annual water rate contribution to capital projects would no longer be adequate to fund the program. That 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.

Beginning in 2010, staff re-evaluated the AMP and on June 15, 2011, the Zone 7 Board adopted Resolution 11-4092 accepting the AMP Update The major objectives were to 1) identify and near and long-term renewal needs and a 15-year renewal CIP; 2) develop a long-term renewal forecast and associated annual funding level necessary to implement future renewal and improvement needs.

The funding analysis included short- and long-term project needs through FY 49/50. The initial funding recommendation was $12.5M (in 2011 dollars) annually. However, after discussions with the Retailers and Finance Committee, a level of $11.4M (in 2011 dollars) was accepted, with an eventual ramp-up to this amount (adjusted for inflation) by FY 16/17. The annual funding level estimate did not include funding for the Third Demineralization Facility or water conservation programs, to allow additional evaluation and confirmation of assumptions. Fund 120's share of water conservation programs was shifted to the Water Enterprise Fund (Fund 100), while the funding provided by Fund 130 remained.

Table 2-9 and Figure 2-2 below show the projected funding outlook for Fund 120 through FY 24/25, incorporating the Board-approved AMP funding. As illustrated in Table 2-9 and Figure 2-2, there is not sufficient cash in Fund 120 to pay for phase 1 of the ozone project tentatively scheduled

for completion at DVWTP in 2018 and chromium-6 treatment. The capital reserve balance goes negative in FY 17/18 because the AMP funding schedule did not provide funding for unanticipated projects such as chromium-6 treatment and assumed a 2023 in-service date for ozone treatment at both plants (i.e., enough time to build up cash reserves). To address the potential funding shortfall, created by adding new projects and accelerating others (such as ozone at DVWTP) debt financing is a potential alternative for funding the projects. This example is illustrated in Figure 2-3.

The debt financing example assumes a debt issuance of $48M, financed in two phases. The first phase in this example could include $28M for ozone at DVWTP over thirty years at 4% interest ($1.6M annually) incurred in FY 15/16. The second phase in this example could include $20M for chromium-6 treatment also over thirty years at 4% interest ($1.1M annually incurred in 20/21). This example provides adequate funding for the planned ten-year CIP, however, the projected capital project reserve balance is less than what has been estimated in the AMP for implementing future projects beyond the ten-year CIP. An adjustment to the annual funding levels may be necessary. Staff plans to begin updating the AMP in 2015, with possible Board adoption in 2016. In addition, many of the projects proposed are contingent on further feasibility studies, evaluations and discussions on debt. The outcomes will guide future budgeting and CIP decisions.

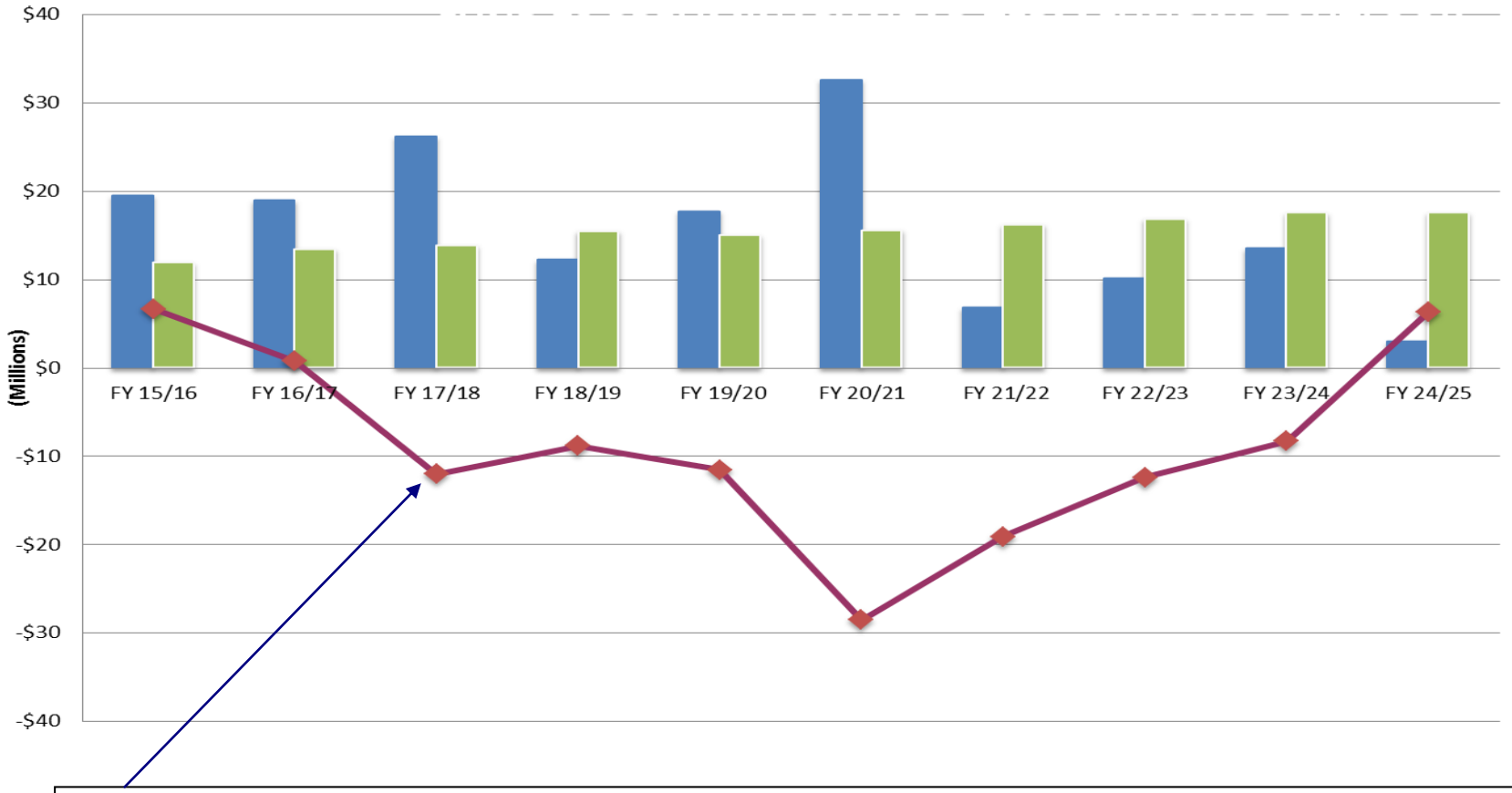
TABLE 2-9
Fund 120 (Water Rates)
PROJECTED FUNDING OUTLOOK – BASE CASE
($ Millions)

	Fiscal year (FY)	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
2	Beginning Available Capital Reserve Balance	$14.31	$6.26	$0.30	-$12.05	-$8.79	-$11.51	-$28.52	-$19.08	-$12.35	-$8.28
3	Revenue										
4	AMP Transfer from Fund 100	10.50	12.66	13.40	13.95	14.53	15.13	15.76	16.82	17.50	17.50
5	Facility Use Fees	1.05	0.62	0.42	0.42	0.42	0.42	0.42			
6	Interest Income	0.29	0.13	0.01							
7	Other Income				1.05						
8	Total Revenue	11.84	13.41	13.83	15.42	14.95	15.55	16.18	16.82	17.50	17.50
9	Expenditures										
10	R&R Expenditures	6.96	4.29	12.27	6.27	3.83	2.62	5.89	9.33	12.10	2.04
11	SWI Expenditures	11.74	13.87	13.10	5.13	13.09	29.20	0.10	0.01	0.59	0.11
12	Carryovers/Encumbrances										
13	Contingency	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
14	Total Expenditures	19.4	18.9	26.1	12.2	17.7	32.6	6.7	10.1	13.4	2.9
15	*Capital Reserve Balance*	***6.70***	***0.75***	***-11.99***	***-8.79***	***-11.51***	***-28.52***	***-19.08***	***-12.35***	***-8.28***	***6.31***
16	*AMP TARGET*	***22.51***	***30.49***	***35.52***	***35.21***	***21.31***	***24.03***	***33.22***	***40.20***	***41.57***	***45.65***
17	Reserved Funds										
18	Annual Building Sinking Fund Contribution	0.44	0.45	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	Reserve Policy Minimum	31.97	32.20	20.99	33.95	35.93	11.79	16.81	14.88	10.91	16.01
20	*Estimated Available Capital Reserve Balance (Line 15 minus 18)*	***$6.26***	***$0.30***	***($12.05)***	***($8.79)***	***($11.51)***	***($28.52)***	***($19.08)***	***($12.35)***	***($8.28)***	***$6.31***

Key Assumptions

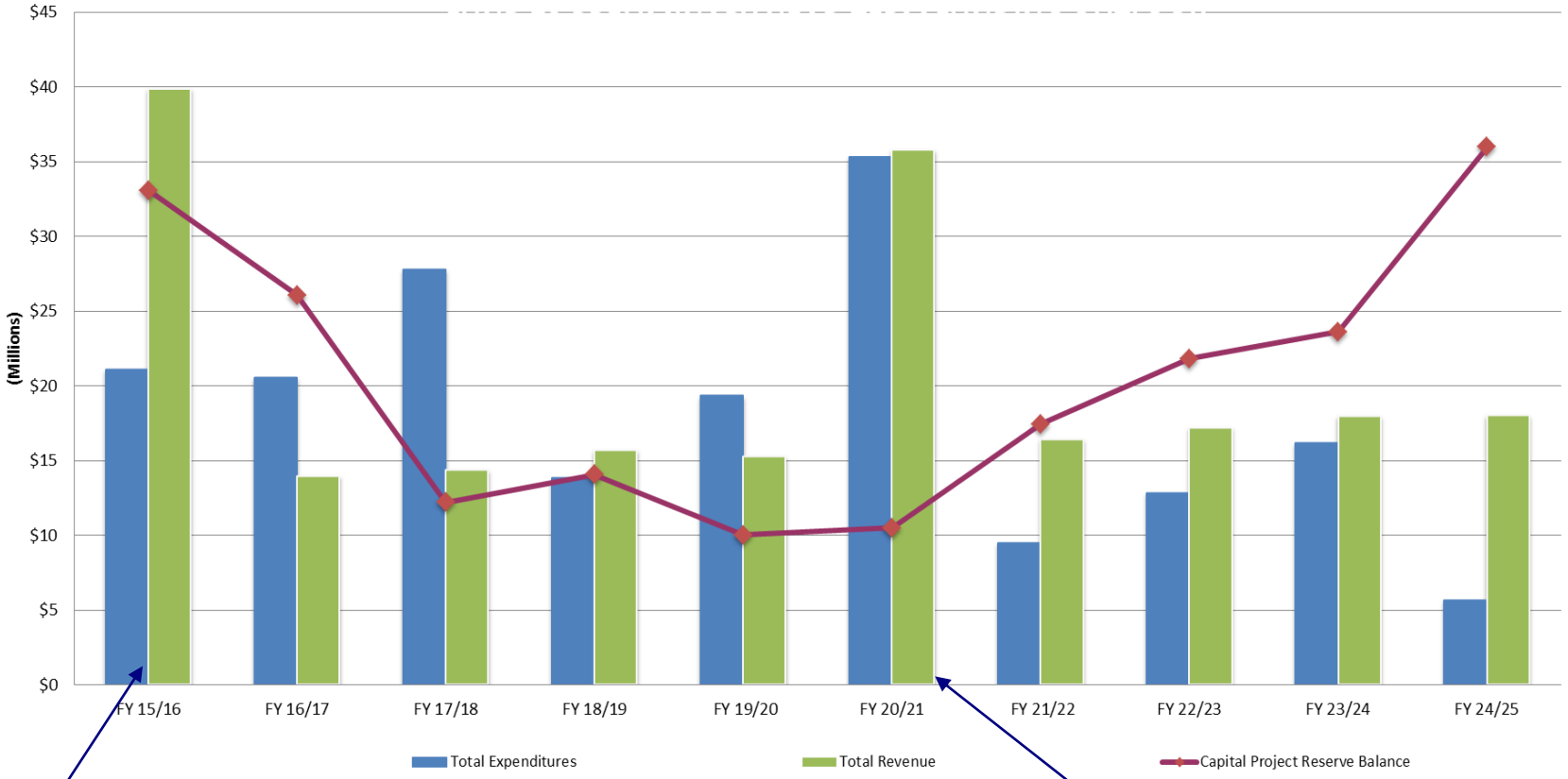
Line 2 FY 15/16 estimated Beginning Available Capital Reserve is based on projected prior year revenue and expense estimates.
Line 4 The annual AMP transfer from Fund 100, Water Enterprise to Fund 120.
Line 5 Facility use fees are charged to the Dougherty Valley Service Area to compensate Zone 7 for the use of Zone 7's existing facilities to provide water to this area.
Line 6 Assumes 1% interest in FY 13/14 gradually increasing to 4% by FY 16/17.
Line 7 Other income includes a reimbursement from DSRSD for the Dougherty Reservoir Recoating Project.
Line 9 Expenditures are shown in actual dollars (current dollars adjusted by a 4% annual inflation factor).
Line 16 Recommended Capital Reserve per the AMP.
Line 19 The interim reserve policy recommends a minimum Capital Reserve of 100% of the current year's expenditures plus 50% of the subsequent year.

Figure 2-2
Fund 120 (Water Rates)
Projected Funding Outlook – Base Case
BASE CASE
($ Millions)



The Capital Project Reserve Balance goes negative in FY 17/18 assuming no grant funding is received. Debt financing is a possible alternative to address this deficit.

Figure 2-3
Fund 120 – Projected Funding Outlook
Example 1 - Debt Financing Of Ozone and Cr6 Treatment - $48M



FY 15/16 assumes a debt issuance of $28M to fund phase 1 of ozone treatment at DVWTP. A second issuance of $20M is assumed in FY 20/21 for Cr6 treatment

Fund 130 – Expansion Strategy

The specific projects that comprise the Expansion Strategy are described in the following pages with respect to their associated programs. The first year expenditure requirement is $26 million while the ten-year total for this strategy is $392 million.

Water System
Expansion Strategy
Ten-Year Total by Program

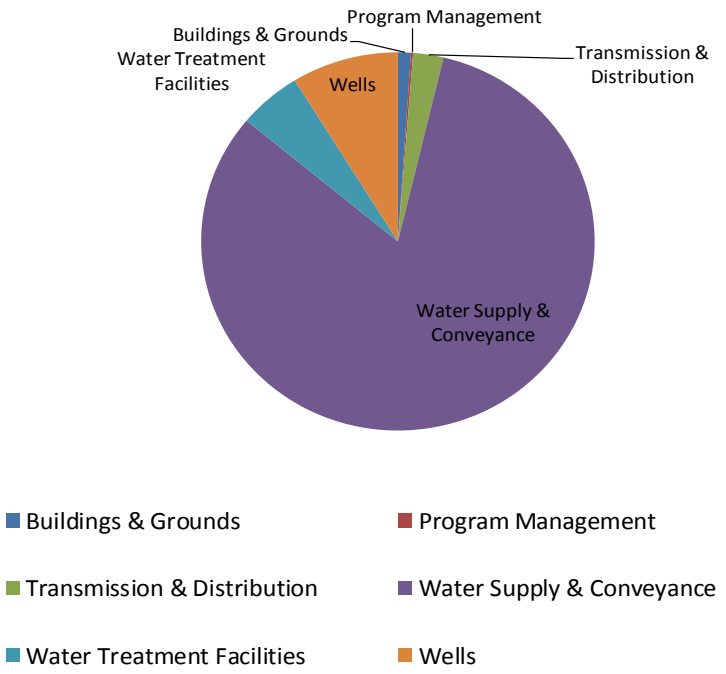


Table 2-10 Expansion Strategy

Program	Ten-Year Total ($ Millions)	Percentage
Buildings & Grounds	4.15	1%
Program Management	0.70	0.2%
Transmission & Distribution	9.74	2.5%
Water Supply & Conveyance	322.35	82%
Water Treatment Facilities	20.30	5%
Wells	34.40	9%
Total	**391.64**	**100%**

Table 2-11 Expansion Strategy Breakdown

Programs	Expenditures ($Millions) FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	Total
Buildings & Grounds											
Administrative & Engineering Building - Sinking Fund (Fund 130)	$0.520	$0.520	$0.520	$0.520							$2.080
Administrative & Engineering Building Lease (Water System)	$0.437	$0.446	$0.455	$0.463	$0.274						$2.075
Subtotal	**$0.957**	**$0.966**	**$0.975**	**$0.983**	**$0.274**						**$4.155**
Program Management											
Capital Improvement Program Management	$0.078	$0.043	$0.086	$0.043	$0.093	$0.050	$0.100	$0.050	$0.107	$0.050	$0.698
Subtotal	**$0.078**	**$0.043**	**$0.086**	**$0.043**	**$0.093**	**$0.050**	**$0.100**	**$0.050**	**$0.107**	**$0.050**	**$0.698**
Transmission & Distribution											
PPWTP Expansion Transmission Pipeline										$2.200	$2.200
Transmission System Planning Update	$0.111										$0.111
Westside Transmission System Improvements				$1.240	$6.190						$7.430
Subtotal	**$0.111**			**$1.240**	**$6.190**					**$2.200**	**$9.741**
Water Supply & Conveyance											
Additional Treated Water Storage			$0.588	$4.296	$3.240						$8.124
Arroyo Mocho Diversion Facility Coordination & Implementation	$0.120										$0.120
Arroyo Mocho Low Flow Crossings				$0.170	$0.540						$0.710
Bay Area Regional Desalination Project - Planning	$0.480	$0.500	$0.520								$1.500
Bay-Delta Conservation Planning (Zone 7)	$0.060	$0.060	$0.070	$0.070							$0.260
Cawelo Groundwater Banking Program	$1.240	$1.240	$1.240	$1.250	$1.250	$1.250	$1.250	$1.250	$1.250	$1.250	$12.470
Chain of Lakes Facilities and Improvements				$1.638	$8.519	$7.084					$17.241
Chain of Lakes Master Planning	$0.014	$0.098	$0.063	$0.014						$0.070	$0.259
Delta Habitat Conservation and Conveyance Program	$0.020	$0.020	$0.020	$0.020							$0.080
Delta Outreach Program	$0.040	$0.040	$0.040								$0.120
Fixed Cost of Water Entitlement	$0.033	$0.019									$0.052
Fourth Contractor's Share of the SBA - Sinking Fund	$0.530	$0.550	$0.570	$0.590	$0.620	$0.640	$0.670	$0.690	$0.720	$0.750	$6.330
Fourth Contractor's Share of the SBA (capital costs)	$3.000	$3.000	$3.000	$3.000	$3.000	$3.000	$3.000	$3.000	$3.000	$3.000	$30.000
High-Efficiency Toilet Rebate Program	$0.030	$0.030	$0.030								$0.090
High-Efficiency Washing Machine Rebate Program	$0.090	$0.070	$0.080	$0.060	$0.060	$0.040	$0.040				$0.440
Reliability Intertie	$0.035	$0.035	$0.826	$0.693	$8.855	$8.456					$18.900
Semitropic Stored Water Recovery Unit	$0.050	$0.050	$0.050	$0.050	$0.050	$0.050	$0.050	$0.050	$0.050	$0.050	$0.500
South Bay Aqueduct Enlargement Project - Sinking Fund	$1.070	$1.120	$1.160	$1.210	$1.260	$1.310	$1.360	$1.410	$1.470	$1.530	$12.900
South Bay Aqueduct Enlargement Project	$16.431	$15.606	$15.324	$14.771	$14.760	$14.762	$14.774	$14.843	$14.944	$14.888	$151.103
SWP Peaking Payment (Lost Hills & Belridge Water Districts)	$0.060	$0.060	$0.050	$0.050	$0.040	$0.030	$0.030	$0.020	$0.020	$0.010	$0.370
Water Conservation Best Management Practices	$0.030	$0.020	$0.020	$0.020	$0.020	$0.020	$0.020	$0.020	$0.020	$0.020	$0.210
Water Supply Replacement			$0.520	$0.540	$1.700	$1.780	$27.080	$28.160	$0.360	$0.370	$60.510

Table 2-11 Expansion Strategy Breakdown (Continued)

Programs	Expenditures ($Millions) FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	Total
Water System Master Plan	$0.065										$0.065
Subtotal	**$23.398**	**$22.518**	**$24.171**	**$28.442**	**$43.914**	**$38.422**	**$48.274**	**$49.443**	**$21.834**	**$21.938**	**$322.354**
Water Treatment Facilities											
Increased Water Treatment Plant Capacity										$6.400	$6.400
PPWTP Expansion/New Media Filters	$1.450	$6.020	$5.740								$13.210
PPWTP Maintenance Yard and Building Improvements				$0.039	$0.285	$0.279					$0.603
Water Quality Management Program	$0.009	$0.006	$0.009	$0.006	$0.012	$0.006	$0.012	$0.006	$0.012	$0.006	$0.084
Subtotal	**$1.459**	**$6.026**	**$5.749**	**$0.045**	**$0.297**	**$0.285**	**$0.012**	**$0.006**	**$0.012**	**$6.406**	**$20.297**
Wells											
Busch-Valley Well 1										$13.000	$13.000
Chain of Lakes Wells 3 & 4			$0.890	$0.920	$11.160						$12.970
El Charro Pipeline Phase 2		$0.560	$6.410	$0.610	$0.630						$8.210
Well Master Plan Update		$0.220									$0.220
Subtotal		**$0.780**	**$7.300**	**$1.530**	**$11.790**					**$13.000**	**$34.400**
Total	**$26.003**	**$30.332**	**$38.280**	**$32.283**	**$62.557**	**$38.757**	**$48.386**	**$49.499**	**$21.953**	**$43.594**	**$391.644**

FUND 130 - FUNDING ANALYSIS

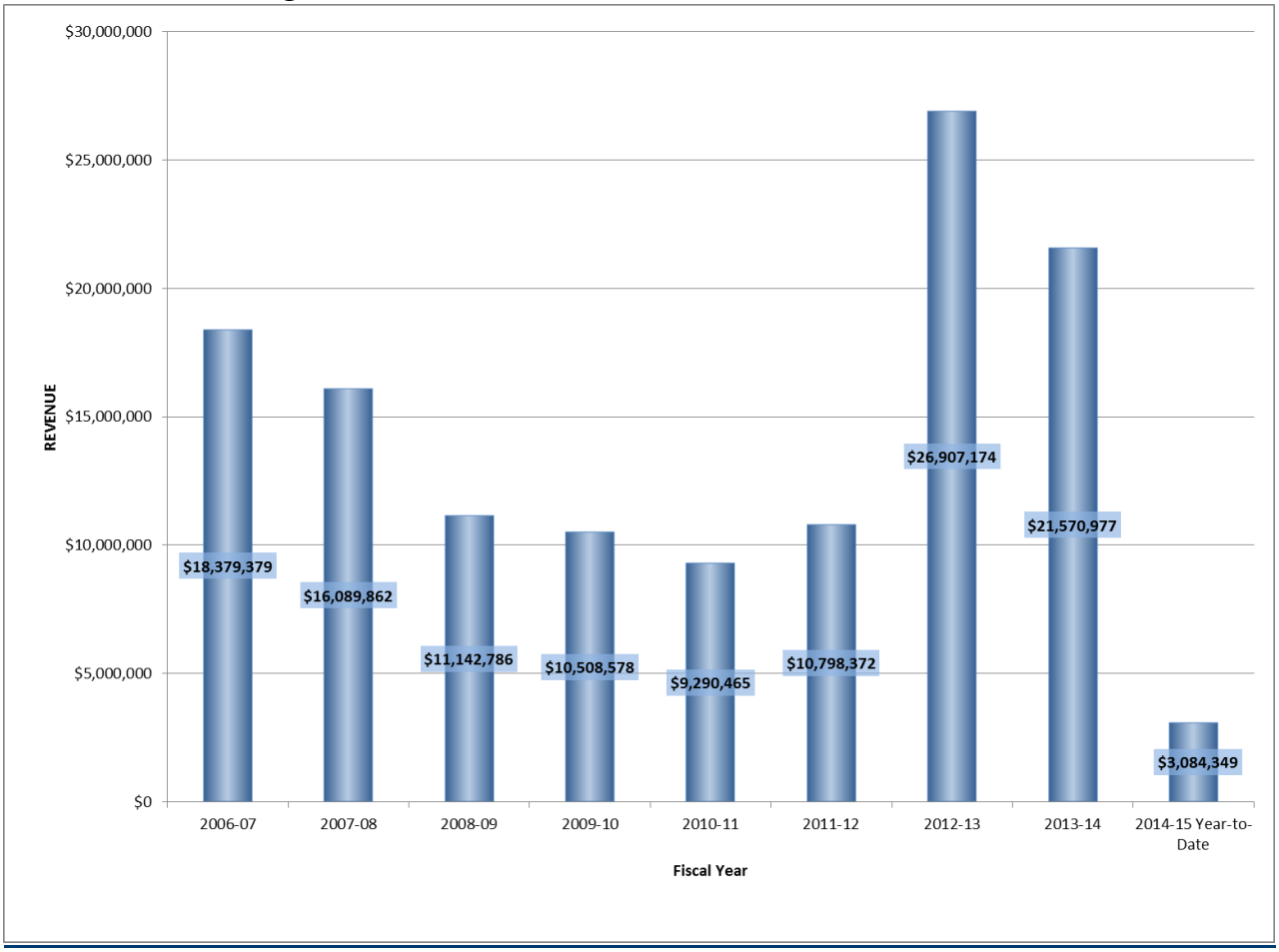
Fund 130 funds projects, or portions thereof, that are needed because of additional demands on the Water System from new development. This includes water purchases, conveyance facilities (e.g., SBA Enlargement Project), treatment and transmission facilities.

On January 15, 2008, Zone 7 completed the necessary documents required to close on a $60 million Installment Sale Agreement (ISA) with Wells Fargo, a form of lease financing that functions similarly to a line of credit. This funding was acquired to bridge a short-term funding gap between anticipated expenditures and revenue. In February 2010, Zone 7 drew $30.5M from the $60M ISA to fund the Altamont Pipeline, Livermore Reach. Interest-only payments were made monthly until the principal amount came due on January 1, 2014. The ISA was paid off on December 20, 2013.

In 2011, staff completed an update to the Municipal and Industrial (M&I) Treated Water Connection Fee Program. The M&I Connection Fee Program was established to ensure that Zone 7 is able to fund the necessary projects within Zone 7's Water System Expansion Program, which will serve the demands of new growth over the next 30 years. More details about the Water System Expansion Program and connection fees can be found in the M&I 2011 Connection Fee Program Update (Zone 7 Water Agency, 2011).

The economic downturn in 2008 had a significant impact on system expansion revenue, the timing of system expansion needs and the ability to fund expansion projects. Since the downturn, expansion projects have been limited to primarily non-discretionary expenses (about $20M/year), planning and partial funding for drought emergency projects (i.e., Chain of Lakes Well 5, Chain of Lakes Pipeline and Busch Valley Well 1 land acquisition and basis of design) and a small portion of the purchase price of Lake Del Valle property for watershed protection. An uptick in connection fee revenue was experienced in FY 12/13 (see Figure 2-4 below).

Figure 2-4 Historical Connection Fee Revenue since FY 06/07



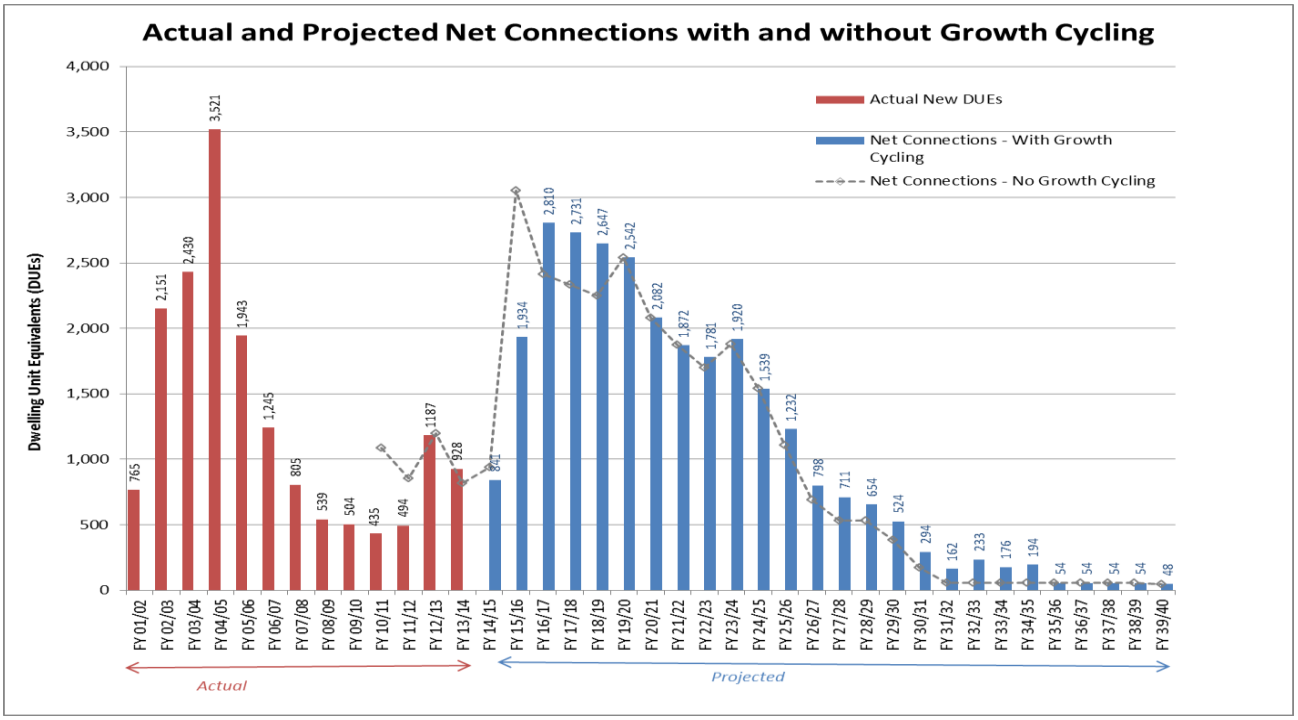
According to a 2013 analysis by the UCLA Anderson School of Business, "home prices are rising and housing starts have approximately doubled off of their depression lows of a few years ago.[2]" For future years, the analysis states, "specifically, we are forecasting that housing starts will increase from the 782,000 units recorded in 2012 to 1.03 million units and 1.35 million units in 2013 and 2014, respectively. For 2015 we are projecting housing starts to reach 1.56 million units." This equates to 50% increase in housing starts from 2012 to 2015. This study somewhat supports staff's projection of connection revenue increasing over the next few years.

The 2011 M&I Connection Fee Program Update undertook a comprehensive re-evaluation of projected demands, and new connections in the Zone 7 service area, and the necessary water system expansion

[2] David Shulman. "Housing Recovery – How Strong? How Long?" in Allen Matkins /UCLA Anderson Forecast: The Recovery in Residential Construction (Summer/Fall 2013).

projects to meet the needs of future customers. Actual and projected connections from the study are shown in Figure 2-5 below. Continued recovery in connection fee revenue will facilitate a shift away from funding only non-discretionary expenditures, and support construction of new facilities needed to serve the demands of growth. Staff closely monitors connection fee revenue to assure funding availability and confirm demand projections (and, by extension, required project timelines).

Figure 2-5 2011 M& I Connection Fee Program Actual and Projected Net Connections



*Net connections are calculated from the gross connections adjusted for prepaid connections and credits. Net connections with growth cycling was used for the revenue projections. This growth cycling concept assumes only 70% of the first five years' projections are assumed to occur at that time and the remaining 30% are assumed to occur over FY 25/26 through FY 34/35.

This CIP plans for a total expenditure of $392 million in Expansion projects starting in FY 15/16 through FY 24/25. Of this amount, non-discretionary obligations for the ten-year CIP total close to $220M. Non-discretionary obligations are payments to other agencies, such as the Department of Water Resources for debt incurred on Zone 7's behalf and, that Zone 7 is obligated to pay, including payments for the following projects over the ten-year CIP period. The following are all non-discretionary obligations (i.e. already committed contractually).

- SBA Improvement and Enlargement: $151M
- Future Contractor's Share of SBA: $30M
- Sinking Funds: $21M
- Cawelo Groundwater Banking Program: $12.5M
- Administrative and Engineering Building Lease: $2M
- Semitropic Storage: $0.5M
- SWP Peaking Payment: $0.4M
- Bay Delta Conservation Plan/DHCCP: $0.4M
- Fixed Cost of Water Entitlement $0.05M

A large percentage the of non-discretionary expenses is for DWR's capitalization of the SBA Enlargement Project with annual payments of about $15M charged to Fund 130. Fund 110, State Water Project pays roughly $2.5M annually to cover the improvement portion. The project construction costs (excluding debt costs) have increased significantly since the initial estimate of $100M in 2006 to $260M in 2013. In the scheduling and prioritization of Expansion projects, the first priority was to ensure that there were adequate funds to pay for non-discretionary obligations such as the SBA Enlargement Project. Per the Zone 7 capital reserve policy for the Water Expansion Fund, the minimum fund balance should be maintained at 60% of the following year's non-discretionary obligations (~$12.6 million annually). Since Zone 7's projection and economic forecast anticipate continued recovery of housing starts, a number of capital projects have been scheduled in the near term. Table 2-12 (base case) shows projected available funding in Fund 130 through FY 24/25. Based on staff's assumption for connection fees as shown in Figure 2-5, sufficient funding is projected to fund expansion projects as planned in the CIP. The red line in Figure 2-6 shows the projected capital project reserve balance through FY 29/30. A longer term view is shown to demonstrate the use of reserves to fund a potential PPWTP expansion/new plant. The line is well above the reserve balance target of $12.6M annually.

Additional analysis was performed to determine the impact on the capital reserve if connection fee revenue does not increase as projected Figure 2-5. Gathering projected near-term connection projections from the Retailers, staff developed the funding example illustrated in Figure 2-7. The analysis finds that there would be enough cash to fund the projects planned in the CIP, however, the FY 24/25 balance is significantly less than Figure 2-6. If connection fee revenue does not increase as projected, it is recommended that capital construction projects are delayed. Construction projects are planned to meet demand growth, so if housing is slow to recover, construction schedules can be adjusted and deferred as necessary. If deferring projects if not a feasible alternative, debt financing could be explored. Zone 7 will continue to monitor the cash flow in this fund to assure cash availability to fund projects above and beyond non-discretionary expenditures.

TABLE 2-12
Fund 130 – Connection Fees
Projected Funding Outlook - Base Case
($ Millions)

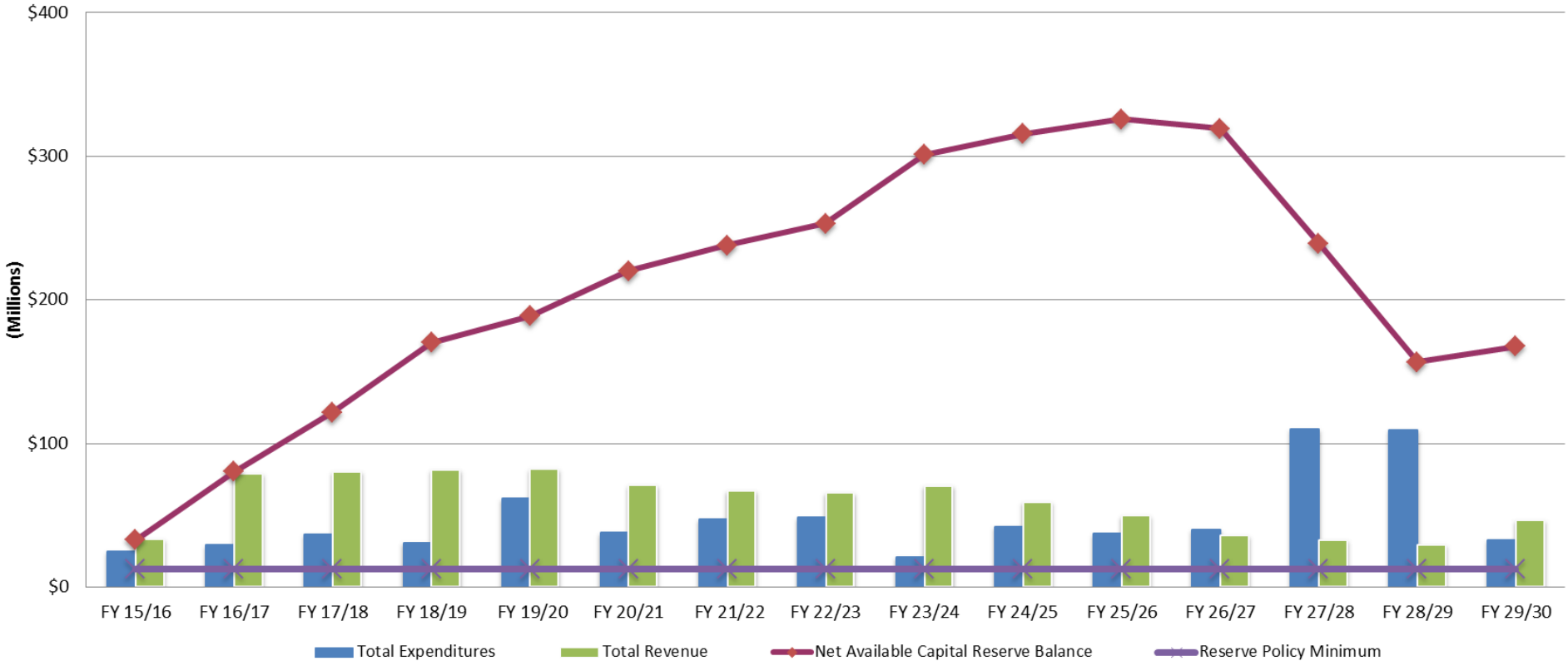
	Fiscal year (FY)	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
1	**Beginning Available Capital Reserve Balance**	**26.41**	**32.81**	**80.62**	**121.91**	**170.28**	**188.89**	**220.15**	**237.96**	**253.18**	**300.87**
2	**Revenue**										
3	**Connection Fees**	29.52	74.86	75.51	75.76	75.31	63.79	59.34	57.50	62.09	49.86
4	**DWR Refunds**	3.12	3.12	2.95	2.96	2.95	2.95	2.95	2.96	2.99	2.99
5	**Interest**	0.26	0.66	1.61	2.44	3.41	3.78	4.40	4.76	5.06	6.02
6	**Total Revenue**	32.90	78.64	80.07	81.16	81.66	70.52	66.69	65.22	70.15	58.87
7	**Expenditures**										
8	**Expenditures**	23.88	28.14	36.03	29.96	60.68	36.81	46.36	47.40	19.76	41.31
9	**Contigency**	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
10	**Total Expenditures**	24.38	28.64	36.53	30.46	61.18	37.31	46.86	47.90	20.26	41.81
11	**Annual Sinking Fund Contributions**	2.12	2.19	2.25	2.32	1.88	1.95	2.03	2.10	2.19	2.28
12	**Net Available Capital Reserve Balance**	32.81	80.62	121.91	170.28	188.89	220.15	237.96	253.18	300.87	315.65
13	**Designated Reserves (Sinking Funds)**	13.70	15.89	18.14	20.46	22.34	24.29	26.32	28.42	30.61	32.89
14											
15	***Capital Reserve Total***	***32.81***	***80.62***	***121.91***	***170.28***	***188.89***	***220.15***	***237.96***	***253.18***	***300.87***	***315.65***
16	***Reserve Policy Minimum***	***12.60***	***12.60***	***12.60***	***12.60***	***12.60***	***12.60***	***12.60***	***12.60***	***12.60***	***12.60***

Footnotes/Assumptions

Footnotes/Assumptions

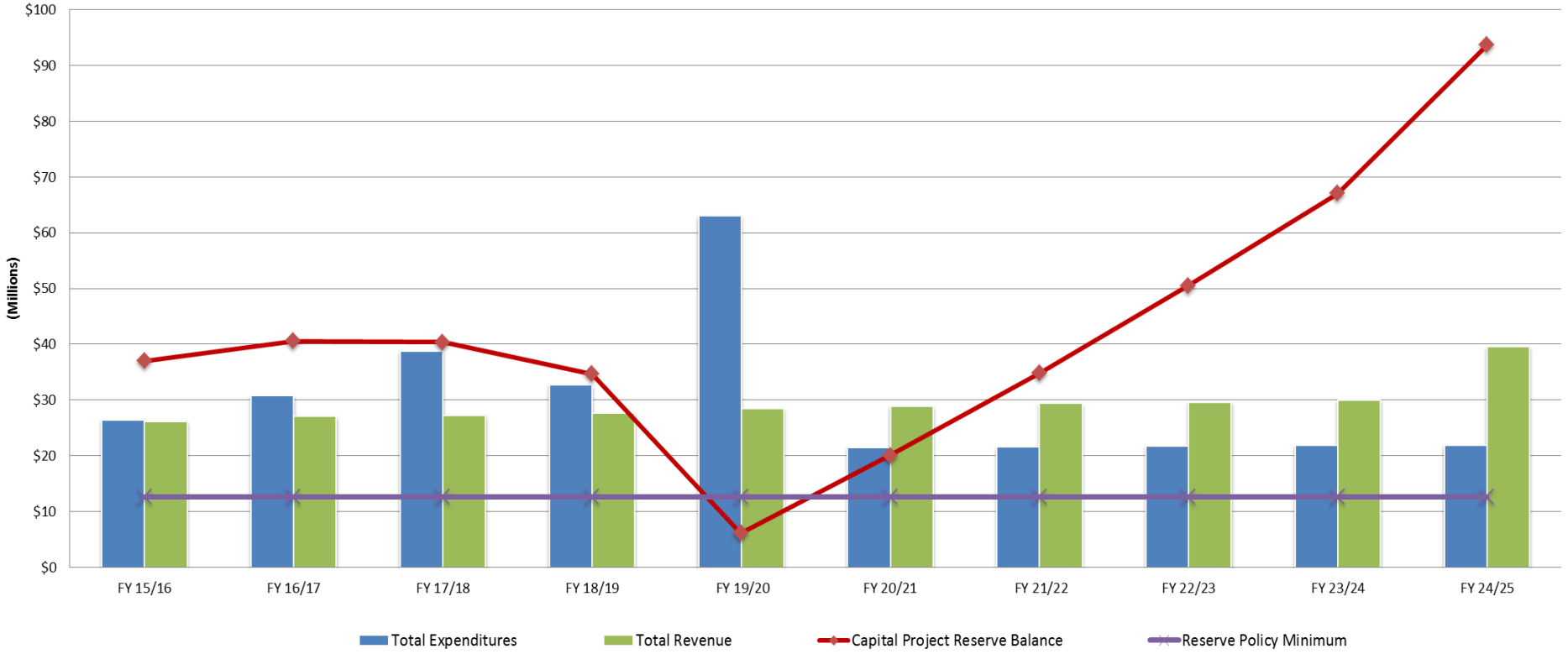
Line 3 - Revenue assumes annual inflationary adjustments to connection fees to keep pace with inflation.
Line 5 -Interest earnings assume 1% interest earned on beginning cash and sinking fund balances in 13/14, gradually increasing to 4% by FY 16/17.
Line 13 - Sinking Fund Contributions/Reserves includes: balance of Future Contractor's Share of the SBA, SBA Enlargement and Administration & Engineering Building sinking funds plus the annual sinking fund contributions.
Line 16 - Fund Balance Target is 60% of the following year's non-discretionary expenditures or ~$13M per the Zone 7 Reserve Policy.

FIGURE 2-6
Fund 130 – Connection Fees
Long-term Projected Funding Outlook – Base Case*
($ Millions)



*Connection fee revenue as projected in the 2011 M&I Connection Fee Program Update.

Figure 2-7
Fund 130 – Connection Fees
Projected Funding Outlook – Example 1
($ Millions)



CAPITAL PROJECTS EXPENDITURE SUMMARY BY PROGRAM

This section contains a ten-year estimated expenditure summary for the Water System capital projects included in FY 15/16 through FY 24/25, an alphabetical project summary listing and a project summary sheet for each project. Note that projects that are split between Funds 120 and 130 are shown twice on the following table, displaying the allocation to each fund as a separate line item.

Table 2-13 Capital Improvement Program
Project Appropriation Summary by Program

Programs	Appropriations ($Millions) FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	Total
Buildings & Grounds											
Administrative & Engineering Building - Sinking Fund (Fund 120)	$0.418	$0.429	$0.440	$0.450	$0.060						$1.797
Administrative & Engineering Building - Sinking Fund (Fund 130)	$0.520	$0.520	$0.520	$0.520							$2.080
Administrative & Engineering Building Lease (Water System - Fund 120)	$0.557	$0.567	$0.578	$0.590	$0.348						$2.640
Administrative & Engineering Building Lease (Water System – Fund 130)	$0.437	$0.446	$0.455	$0.463	$0.274						$2.075
Subtotal	**$1.932**	**$1.962**	**$1.993**	**$2.023**	**$0.682**						**$8.592**
Groundwater Basin Management											
Monitoring Well Replacements & Abandonments	$0.110		$0.150		$0.160		$0.170		$0.190		$0.780
Stream Gage Replacement										$0.200	$0.200
Subtotal	**$0.110**		**$0.150**		**$0.160**		**$0.170**		**$0.190**	**$0.200**	**$0.980**
Program Management											
Asset Management Program Management	$0.280	$0.050	$0.050	$0.050	$0.050	$0.350	$0.060	$0.060	$0.060	$0.070	$1.080
Capital Improvement Program Management (Fund 120)	$0.026	$0.014	$0.029	$0.014	$0.031	$0.017	$0.033	$0.017	$0.036	$0.017	$0.233
Capital Improvement Program Management (Fund 130)	$0.078	$0.043	$0.086	$0.043	$0.093	$0.050	$0.100	$0.050	$0.107	$0.050	$0.698
Subtotal	**$0.385**	**$0.107**	**$0.164**	**$0.107**	**$0.174**	**$0.417**	**$0.193**	**$0.127**	**$0.203**	**$0.137**	**$2.011**
Regulatory Compliance											
Laboratory Equipment Replacement	$0.120	$0.130	$0.120	$0.130	$0.140	$0.150	$0.150	$0.160	$0.170	$0.170	$1.440
Subtotal	**$0.120**	**$0.130**	**$0.120**	**$0.130**	**$0.140**	**$0.150**	**$0.150**	**$0.160**	**$0.170**	**$0.170**	**$1.440**
Transmission & Distribution											
Booster Pump Station	$5.070										$5.070
Corrosion Master Plan Update				$0.270					$0.560		$0.830
Distribution System Control Station Replacement							$1.010				$1.010
PPWTP Expansion Transmission Pipeline										$2.200	$2.200
System-Wide Installation of Line Valves	$0.050		$0.060		$0.060		$0.070			$0.070	$0.310
Transmission System Planning Update (Fund 130)	$0.111										$0.111
Transmission System Planning Update (Fund 120)	$0.060										$0.060
Turnout Replacement Program								$0.050	$0.360	$0.660	$1.070
Westside Transmission System Improvements				$1.240	$6.190						$7.430
Subtotal	**$5.290**		**$0.060**	**$1.510**	**$6.250**		**$1.080**	**$0.050**	**$0.920**	**$2.930**	**$18.090**
Water Supply & Conveyance											
Additional Treated Water Storage (Fund 120)			$0.392	$2.864	$2.160						$5.416
Additional Treated Water Storage (Fund 130)			$0.588	$4.296	$3.240						$8.124
Arroyo del Valle Permit Extension	$0.520										$0.520

Table 2-13 Capital Improvement Program
Project Appropriation Summary by Program
(Continued)

Programs	Appropriations ($Millions) FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	Total
Arroyo Mocho Diversion Facility Coordination & Implementation	$0.120										$0.120
Arroyo Mocho Low Flow Crossings				$0.170	$0.540						$0.710
Bay Area Regional Desalination Project - Planning	$0.480	$0.500	$0.520								$1.500
Bay-Delta Conservation Planning (Zone 7)	$0.060	$0.060	$0.070	$0.070							$0.260
Cawelo Groundwater Banking Program	$1.240	$1.240	$1.240	$1.250	$1.250	$1.250	$1.250	$1.250	$1.250	$1.250	$12.470
Chain of Lakes Facilities and Improvements (Fund 130)				$1.638	$8.519	$7.084					$17.241
Chain of Lakes Facilities and Improvements (Fund 120)				$0.702	$3.651	$3.036					$7.389
Chain of Lakes Master Planning (Fund 120)	$0.006	$0.042	$0.027	$0.006						$0.030	$0.111
Chain of Lakes Master Planning (Fund 130)	$0.014	$0.098	$0.063	$0.014						$0.070	$0.259
Delta Habitat Conservation and Conveyance Program	$0.020	$0.020	$0.020	$0.020							$0.080
Delta Outreach Program	$0.040	$0.040	$0.040								$0.120
Fixed Cost of Water Entitlement	$0.033	$0.019									$0.052
Fourth Contractor's Share of the SBA - Sinking Fund	$0.530	$0.550	$0.570	$0.590	$0.620	$0.640	$0.670	$0.690	$0.720	$0.750	$6.330
Fourth Contractor's Share of the SBA (capital costs)	$3.000	$3.000	$3.000	$3.000	$3.000	$3.000	$3.000	$3.000	$3.000	$3.000	$30.000
High-Efficiency Toilet Rebate Program	$0.030	$0.030	$0.030								$0.090
High-Efficiency Washing Machine Rebate Program	$0.090	$0.070	$0.080	$0.060	$0.060	$0.040	$0.040				$0.440
Reliability Intertie (Fund 120)	$0.015	$0.015	$0.354	$0.297	$3.795	$3.624					$8.100
Reliability Intertie (Fund 130)	$0.035	$0.035	$0.826	$0.693	$8.855	$8.456					$18.900
Semitropic Stored Water Recovery Unit	$0.050	$0.050	$0.050	$0.050	$0.050	$0.050	$0.050	$0.050	$0.050	$0.050	$0.500
South Bay Aqueduct Enlargement Project - Sinking Fund	$1.070	$1.120	$1.160	$1.210	$1.260	$1.310	$1.360	$1.410	$1.470	$1.530	$12.900
South Bay Aqueduct Enlargement Project	$16.431	$15.606	$15.324	$14.771	$14.760	$14.762	$14.774	$14.843	$14.944	$14.888	$151.103
SWP Peaking Payment (Lost Hills & Belridge Water Districts)	$0.060	$0.060	$0.050	$0.050	$0.040	$0.030	$0.030	$0.020	$0.020	$0.010	$0.370
Water Conservation Best Management Practices	$0.030	$0.020	$0.020	$0.020	$0.020	$0.020	$0.020	$0.020	$0.020	$0.020	$0.210
Water Supply Replacement			$0.520	$0.540	$1.700	$1.780	$27.080	$28.160	$0.360	$0.370	$60.510
Water System Master Plan (Fund 120)	$0.035										$0.035
Water System Master Plan (Fund 130)	$0.065										$0.065
Subtotal	**$23.974**	**$22.575**	**$24.944**	**$32.311**	**$53.520**	**$45.082**	**$48.274**	**$49.443**	**$21.834**	**$21.968**	**$343.925**
Water Treatment Facilities											
COL Well No. 1, 2 & 5 Chromium-6 Treatment						$14.170					$14.170
Dougherty Reservoir Access Road Rehabilitation				$0.190							$0.190
Dougherty Reservoir Recoating				$2.110							$2.110
DVWTP Ammonia System Replacement			$2.250								$2.250
DVWTP Carbon Dioxide Installation Project	$0.730										$0.730
DVWTP Chemical Feed Lines and Pumps Replacement	$0.170	$0.880									$1.050
DVWTP Drying Beds 1-4 Rehabilitation Project						$0.060	$0.490	$7.650			$8.200
DVWTP Ferric Chloride System Improvements			$0.770								$0.770
DVWTP Filter Rehabilitation - Phase 1			$1.490								$1.490

Table 2-13 Capital Improvement Program
Project Appropriation Summary by Program
(Continued)

Programs	Appropriations ($Millions) FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	Total
DVWTP Filter Rehabilitation - Phase 2							$2.330				$2.330
DVWTP Filter Valves Replacement	$0.400										$0.400
DVWTP HVAC Replacement						$0.110	$0.620				$0.730
DVWTP Interior Coating Improvements to the 4.5 MG Steel Clearwell	$2.390										$2.390
DVWTP Main Plant Generator Replacement				$0.030	$0.210						$0.240
DVWTP Parking Lot Repair			$0.540								$0.540
DVWTP Rehabilitation Project		$0.330	$2.140								$2.470
DVWTP Roof Replacement and Rehabilitation for 3.0 MG Clearwell	$0.080	$0.500									$0.580
DVWTP Washwater Recovery Ponds Rehabilitation							$0.030	$0.380	$7.960	$0.070	$8.440
Increased Water Treatment Plant Capacity										$6.400	$6.400
Minor Renewal/Replacement Projects	$0.360	$0.380	$0.400	$0.410	$0.430	$0.450	$0.470	$0.480	$0.490	$0.520	$4.390
Ozonation at DVWTP and PPWTP	$4.160	$11.900	$12.250								$28.310
PPWTP Aqua Ammonia Facility Installation				$0.350	$1.820	$0.250					$2.420
PPWTP Carbon Dioxide Installation Project		$0.600									$0.600
PPWTP Chemical Systems Replacement		$0.160	$0.600								$0.760
PPWTP Clarifiers Concrete Coating								$0.230	$1.370		$1.600
PPWTP Clearwell Improvements	$0.100	$0.520									$0.620
PPWTP Expansion/New Media Filters	$1.450	$6.020	$5.740								$13.210
PPWTP Filter Pipe Replacement Project			$0.100	$0.600							$0.700
PPWTP Filter Rehabilitation		$0.160	$1.390								$1.550
PPWTP HVAC Improvements		$0.430									$0.430
PPWTP Maintenance Yard and Building (Fund 120) Improvements				$0.091	$0.665	$0.651					$1.407
PPWTP Maintenance Yard and Building (Fund 130) Improvements				$0.039	$0.285	$0.279					$0.603
PPWTP Rehabilitation Project			$0.100	$0.600							$0.700
PPWTP Sludge Handling Improvements				$0.890	$2.730	$1.680					$5.300
PPWTP UF Clarifier Floor Rehabilitation Project					$0.360						$0.360
SCADA Enhancements	$0.240	$0.240	$0.260	$1.200	$0.280	$0.290	$0.310	$0.300	$1.460	$0.330	$4.910
Stoneridge Well Chromium-6 Treatment						$6.020					$6.020
Water Quality Management Program (Fund 120)	$0.009	$0.006	$0.009	$0.006	$0.012	$0.006	$0.012	$0.006	$0.012	$0.006	$0.084
Water Quality Management Program (Fund 130)	$0.021	$0.014	$0.021	$0.014	$0.028	$0.014	$0.028	$0.014	$0.028	$0.014	$0.196
Subtotal	**$10.110**	**$22.140**	**$28.060**	**$6.530**	**$6.820**	**$23.980**	**$4.290**	**$9.060**	**$11.320**	**$7.340**	**$129.650**
Wells											
Busch-Valley Well 1										$13.000	$13.000
Chain of Lakes Wells 3 & 4			$0.890	$0.920	$11.160						$12.970
El Charro Pipeline Phase 2		$0.560	$6.410	$0.610	$0.630						$8.210
Hopyard Well 6 & Stoneridge Sodium Hypochlorite Tank Replacement	$0.580	$0.450									$1.030
Hopyard Well No. 6 Inspect & Rehabilitate Pump, Motor, and Well Casing							$0.220				$0.220

Table 2-13 Capital Improvement Program
Project Appropriation Summary by Program
(Continued)

Programs	Appropriations ($Millions)										
	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	Total
Hopyard Well No. 9 Inspect & Rehabilitate Pump, Motor, and Well Casing						$0.220					$0.220
MDGP Water Softening System	$0.100	$0.430									$0.530
MGDP Concentrate Discharge Pipeline Inspection and Cleaning	$0.520										$0.520
MGDP De-Mister Modifications	$0.310										$0.310
MGDP RO Membrane Replacement	$0.600					$0.720					$1.320
Mocho 2 Well Improvements/Rehabilitation	$0.200										$0.200
Mocho Well 2 - VFD Retrofit		$0.350									$0.350
Mocho Well No. 3 OSG R/R	$0.490										$0.490
Mocho Well No.1 Sanding Investigation	$0.300										$0.300
Mocho Wellfield Automation & Control Valves	$0.100										$0.100
Review of Well Implementation Plan		$0.220									$0.220
Wellfield Switchboard Replacement Project			$1.300								$1.300
Subtotal	**$3.200**	**$2.010**	**$8.600**	**$1.530**	**$11.790**	**$0.940**	**$0.220**			**$13.000**	**$41.290**
Total	**$45.121**	**$48.924**	**$64.091**	**$44.141**	**$79.536**	**$70.569**	**$54.377**	**$58.840**	**$34.637**	**$45.745**	**$545.978**

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.

Project Summaries

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

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion

Program Water Supply & Conveyance

Project **Additional Treated Water Storage**

Project ID: WP27

Strategic Plan Priority **1.1, 1.12**

Project Description This project involves the construction of additional storage to meet peak hourly demands in the near-term and through buildout and to provide a source of emergency supply when necessary. The number, size/s, and location/s of new storage are to be determined based on the Transmission System Facilities Plan Update. The cost estimate is based on a 5-MG clearwell at PPWTP; actual costs may vary depending on the alternative implemented.

Justification As described above, this project is necessary to meet peak hourly demands and have a source of emergency supply in the near-term and through buildout. Furthermore, additional storage improves operations efficiency and flexibility by providing a buffer. Fluctuations in demands will not necessarily require sudden changes in operations, which can be challenging to implement and causes stress on the transmission system.

Origin: 2013 Draft Water Production Needs Analysis

Responsible Section FE Facilities Engineering

Operating Impact Operational flexibility and additional buffering capacity. More reliability in meeting hourly peak demands.

In Service Date **Month**: June **Year**: 2020

Total Project Cost $13,540,000

Source of Funds

Fund 120	Improvement, Renewal & Replacement	40%
Fund 130	Expansion	60%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$490	$0	$0	$0	$0	$0	$0	$0	$0	$490
Design	$0	$0	$0	$490	$1,030	$0	$0	$0	$0	$0	$0	$0	$1,520
Construction	$0	$0	$0	$0	$6,130	$5,400	$0	$0	$0	$0	$0	$0	$11,530
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$980**	**$7,160**	**$5,400**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$13,540**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Buildings & Grounds

Project **Administrative & Engineering Building - Sinking Fund (Fund 120)**

Project ID: SP21

Strategic Plan Priority **1.4**

Project Description In addition to the scheduled lease payment for the new building, an annual contribution is made 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 This sinking fund will cover the cost to purchase the new Administrative & Engineering Building after Zone 7's 15-year lease is completed.

Origin: Capital Improvement Program

Note: For a five-year period during the development slowdown, interest-only contributions were made from Fund 130, while principal contributions were deferred. Therefore, Fund 120 and 130 are on different schedules and the project was broken down into projects SP11 and SP21 to facilitate that.

Responsible Section ASD Administrative Services Division

Operating Impact None.

In Service Date **Month**: June **Year**: 2019

Total Project Cost $4,930,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$3,133	$418	$429	$440	$450	$60	$0	$0	$0	$0	$0	$0	$4,930
Total	**$3,133**	**$418**	**$429**	**$440**	**$450**	**$60**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$4,930**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Buildings & Grounds

Project **Administrative & Engineering Building - Sinking Fund (Fund 130)**

Project ID: SP11

Strategic Plan Priority **1.4**

Project Description In addition to the scheduled lease payment for the new building, an annual contribution is made 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 This sinking fund will cover the cost to purchase the new Administrative & Engineering Building after Zone 7's 15-year lease is completed.

Origin: Capital Improvement Program

Note: For a five-year period during the development slowdown, interest-only contributions were made from Fund 130, while principal contributions were deferred. Therefore, Fund 120 and 130 are on different schedules and the project was broken down into projects SP11 and SP21 to facilitate that.

Responsible Section ASD Administrative Services Division

Operating Impact None.

In Service Date **Month**: June **Year**: 2019

Total Project Cost $4,061,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$1,981	$520	$520	$520	$520	$0	$0	$0	$0	$0	$0	$0	$4,061
Total	**$1,981**	**$520**	**$520**	**$520**	**$520**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$4,061**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion
Renewal/Replacement

Program Buildings & Grounds

Project **Administrative & Engineering Building Lease (Water System)**

Project ID: SP1

Strategic Plan Priority **1.4**

Project Description A office building was constructed in 2005 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 than Zone 7's former office. The cost is based on "Build to Suit" option and includes lease payments. In addition to the scheduled lease payment for the new building, an annual contribution is made 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 at one site and brings both closer to operations. This project also accommodates future expansion. It reduces overall agency travel times, improves communications and staff productivity.

Origin: Capital Improvement Program

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 $13,992,000

Source of Funds

Fund 120	Improvement, Renewal & Replacement	56%
Fund 130	Expansion	44%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$9,277	$994	$1,013	$1,033	$1,053	$622	$0	$0	$0	$0	$0	$0	$13,992
Total	**$9,277**	**$994**	**$1,013**	**$1,033**	**$1,053**	**$622**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$13,992**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Water Supply & Conveyance

Project **Arroyo del Valle Permit Extension**

Project ID: WP22

Strategic Plan Priority **1.3**

Project Description Zone 7 Water Agency has an existing permit with the State Water Resources Control Board - Division of Water Rights to divert up to 60,000 acre-feet of water from Arroyo del Valle. The permit expired on December 31, 2007. Zone 7 filed a petition for extension on December 19, 2007. The purpose of this project is to secure an extension through 2040. Scope of work includes meetings with protestors, hydraulic/hydrologic/environmental/water supply technical work to help address issues raised by protestors. Work will also require a CEQA report.

Justification Zone 7 has been diligently pursuing and constructing the necessary facilities to divert up to 60,000 acre-feet of water under its existing water right permit on Arroyo del Valle. The majority of the project is complete and in use. However, Zone 7 cannot finish the project until a number of gravel mining pits are completed and title for the former pits is transferred to Zone7 (i.e., the future Chain of Lakes) - completion of the gravel mining pits is outside Zone 7's control. Ultimately, the long-term average yield could increase Zone 7's water supplies by approximately 3,800 acre-feet (AF) with completion of the gravel pits. Several organizations have filed a protest against the extension. This project is required to complete the extension, and ensure Zone 7 does not lose existing water supplies.

Origin: 2010 Urban Water Management Plan, 2011 Water Supply Evaluation

Responsible Section IP Integrated Planning

Operating Impact Firms up existing water rights.

In Service Date **Month**: December **Year**: 2016

Total Project Cost $970,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$450	$520	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$970
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	**$450**	**$520**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$970**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **Arroyo Mocho Diversion Facility Coordination & Implementation**

Project ID: COL9

Strategic Plan Priority **1.1, 1.3, 1.5**

Project Description This project is located along Arroyo Mocho near Cope Lake and Lake H. The diversion structure would consist of a concrete foundation within Arroyo Mocho equipped with a diversion facility (e.g., Obermeyer gates or an inflatable rubber dam), along with other appurtenances necessary to accomplish water management in an environmentally sensitive way. The project would also include pipelines and other equipment necessary to control the diversion facility and move water into the Chain of Lakes. Hansen Aggregates is responsible for designing, permitting, and constructing the diversion facility at no cost to Zone 7; therefore, the costs below only reflect Zone 7 staff time and consultant assistance to review and manage Hanson's efforts, as necessary, and costs for other necessary facilities (e.g., such as SCADA).

Justification Completion of this project is necessary to allow Zone 7 to manage water as described in the Specific Plan for Livermore-Amador Valley Quarry Area Reclamation.

Origin: Livermore-Amador Valley Quarry Area Reclamation Specific Plan, 2006
Stream Management Master Plan

Responsible Section IP Integrated Planning

Operating Impact Adds new O&M and repair & replacement expenses for Zone 7.

In Service Date **Month**: October **Year**: 2016

Total Project Cost $1,200,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$1,080	$120	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,200
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	$0
Total	**$,1080**	**$120**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,200**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.1, 1.3, 1.5, 1.6**

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 impair access to 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.

Origin: Arroyo Mocho Diversion Project

Responsible Section FE Facilities Engineering

Operating Impact Increases water supply reliability. Increases channel maintenance costs.

In Service Date **Month**: October **Year**: 2020

Total Project Cost $1,085,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$120	$0	$0	$0	$0	$0	$0	$0	$120
Design	$0	$0	$0	$0	$50	$50	$0	$0	$0	$0	$0	$0	$100
Construction	$0	$0	$0	$0	$0	$490	$0	$0	$0	$0	$0	$0	$490
Other	$375	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$375
Total	**$375**	**$0**	**$0**	**$0**	**$170**	**$540**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,085**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Program Management

Project **Asset Management Program Management**

Project ID: SP18

Strategic Plan Priority **1.1, 1.4**

Project Description Ongoing program management of the Asset Management Program (AMP). Activities include facilitating condition assessments, maintaining the asset database, regular updates of the AMP approximately every five years, and other ongoing implementation tasks.

Justification Assures that assets in need of repair or replacement are identified and addressed.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Increased operational effectiveness and reliability.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $3,840,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$330	$280	$50	$50	$50	$50	$350	$60	$60	$60	$70	$2,430	$3,840
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	**$330**	**$280**	**$50**	**$50**	**$50**	**$50**	**$350**	**$60**	**$60**	**$60**	**$70**	**$2,430**	**$3,840**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **Bay Area Regional Desalination Project - Planning**

Project ID: WP21

Strategic Plan Priority **1.1, 1.3, 1.7**

Project Description The Bay Area Regional Desalination Project (BARDP) is a joint effort with the San Francisco Public Utilities Commission (SFPUC), Santa Clara Valley Water District (SCVWD), East Bay Municipal Utility District (EBMUD), and Contra Costa Water District (CCWD) to develop a regional desalination facility. The facility would likely be located in eastern Contra Costa County with water wheeled to Zone 7 through a new intertie with EBMUD. Assuming that the project moves forward after completion of the site-specific analysis in 2013, the total project cost presented below covers Zone 7's share of estimated costs for the first three years of preliminary design and environmental permitting. Final design and construction is not included at this time. As the project progresses towards implementation, future funding requirements beyond FY 16-17 will be funded from WP16 (Water Supply Replacements).

Justification For Zone 7, the BARDP is a potential source of future water supply being evaluated along with other water supply options. The BARDP offers the benefit of a drought-resistant and high-quality water supply that reduces reliance on the SWP and diversifies Zone 7's existing water supply portfolio. Zone 7 can potentially receive 5,600 acre-feet of water every year, or only during normal/wet years, from the BARDP starting sometime between 2020 and 2025.

Origin: 2010 Urban Water Management Plan, 2011 Water Supply Evaluation Report

Responsible Section IP Integrated Planning

Operating Impact Increased water reliability.

In Service Date **Month**: June **Year**: 2018

Total Project Cost $2,446,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$250	$480	$500	$520	$0	$0	$0	$0	$0	$0	$0	$0	$1,750
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	$696	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$696
Total	**$946**	**$480**	**$500**	**$520**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,446**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **Bay-Delta Conservation Planning (Zone 7)**

Project ID: WP17

Strategic Plan Priority **1.1, 1.3, 1.9**

Project Description This project covers Zone 7's internal staff time and legal costs associated with participating in the development of the Bay Delta Conservation Plan (BDCP). The BDCP is a Habitat Conservation Plan/Natural Community Conservation Plan that provides a more flexible basis for endangered species protection. This project is split 70% Fund 120 and 30% Fund 130. The costs reflected here are Fund 130's share only.

Justification Develops a long-term plan for the Delta that ensures water supply reliablility in the future through continued use of the Delta as a conveyance system for water imported from the Sierra Nevada. The Delta as a conveyance is threatened by fragile levees, siesmic risk, climate change and uncertain environmental regulations.

Origin: Capital Improvement Program

Responsible Section OGM Office of the General Manager

Operating Impact Improved reliability.

In Service Date **Month**: June **Year**: 2019

Total Project Cost $1,200,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$69	$60	$60	$70	$70	$0	$0	$0	$0	$0	$0	$0	$329
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	$871	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$871
Total	**$940**	**$60**	**$60**	**$70**	**$70**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,200**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Transmission & Distribution

Project **Booster Pump Station**

Project ID: DS55

Strategic Plan Priority **1.1, 1.2, 1.3, 1.12**

Project Description Construction of a new pump station that could increase production capacity of existing wells, by lowering operating pressures on the wells on the west side of the distribution system and delivering more well water to the east side of the distribution system.

Justification During conditions of limited surface water, the wellfield capacities are constrained by having to pump up to the Del Valle WTP clearwell. Construction of an in-line pump station should reduce the pressures that the wellfields have to pump against thereby increasing their capacities. Additionally, a constructed pump station will improve operational flexibility, which is particularly necessary during limited surface water availability. A pump station could also provide improved blending options to meet Cr 6 regulations for some wells.

Origin: Proposed Intermediate Pump Station Memorandum, AHE June 11, 2014

Responsible Section FE Facilities Engineering

Operating Impact Potentially increase wellfield capacity and improve reliability during periods of limited surface water availability.

In Service Date **Month**: March **Year**: 2016

Total Project Cost $5,070,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$50	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$50
Design	$0	$450	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$450
Construction	$0	$4,570	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,570
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$5,070**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,070**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Wells

Project **Busch-Valley Well 1**

Project ID: W38

Strategic Plan Priority **1.1, 1.3, 1.5, 1.12**

Project Description This project is Phase 3 of the Well Master Plan, and consists of one new municipal water supply well and additional pipelines. The estimated project cost includes planning, land acquisition, well design and drilling, facility design and construction, pipeline additions, and miscellaneous site work. The costs also include construction of a new pipeline, which is required for Phase 3 to connect the new well to Zone 7's existing transmission system.

Justification Additional municipal water supply wells are required to maximize access to existing local storage in the Livermore-Amador Valley Groundwater Basin during droughts and facility outages. Maximizing local storage during drought and facility outages allows Zone 7 to meet projected water demands, even during worse-case drought conditions, as established in Zone 7 Resolutions 04-2662 and 06-2786. These wells will also provide Zone 7 more control over groundwater levels, groundwater flow, and dissolved salt build-up/removal.

Origin: 2003 Well Master Plan and 2011Water Supply Evaluation

Responsible Section FE Facilities Engineering

Operating Impact Improves system reliability.

In Service Date **Month**: April **Year**: 2025

Total Project Cost $14,700,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$13,000	$0	$13,000
Other	$1,700	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,700
Total	**$1,700**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$13,000**	**$0**	**$14,700**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.1, 1.2, 1.3, 1.4, 2.07**

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 and control of program management costs.

Origin: Capital Improvement Program

Responsible Section ASD Administrative Services Division
IP Integrated Planning

Operating Impact None

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $4,750,000

Source of Funds

Fund 120	Improvement, Renewal & Replacement	20%
Fund 130	Expansion	75%
Fund 200	Flood Protection Operations	3%
Fund 210	Flood Protection Development Impact Fees	2%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$8	$105	$57	$114	$57	$124	$67	$133	$67	$143	$67	$2,252	$3,190
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	$1,322	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,322
Total	**$1,330**	**$105**	**$57**	**$114**	**$57**	**$124**	**$67**	**$133**	**$67**	**$143**	**$67**	**$2,252**	**$4,513**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **Cawelo Groundwater Banking Program**

Project ID: WP11

Strategic Plan Priority **1.1, 1.3**

Project Description 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. Zone 7 will be able to store up to 120,000 acre-feet of water within the Cawelo Water District area. Cawelo financed this program by a $21.55 million sale of Certificates of Participation (COP) on August 15, 2006. The COPs run through 2035 with an interest rate of 4% that increases 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.

Justification Increases reliability by providing additional water supplies during drought years.

Origin: 1999 Water Supply Plan

Responsible Section FE Facilities Engineering

Operating Impact Increased operational reliability.

In Service Date **Month**: June **Year**: 2035

Total Project Cost $37,447,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$11,147	$1,240	$1,240	$1,240	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$13,830	$37,447
Total	**$11,147**	**$1,240**	**$1,240**	**$1,240**	**$1,250**	**$1,250**	**$1,250**	**$1,250**	**$1,250**	**$1,250**	**$1,250**	**$13,830**	**$37,447**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion

Program Water Supply & Conveyance

Project **Chain of Lakes Facilities and Improvements**

Project ID: COL10

Strategic Plan Priority **1.1, 1.2, 1.3, 1.4, 1.6, 2.2**

Project Description This project consists of the design and construction of elements of the Chain of Lakes identified and recommended for water supply needs by near-term and long-term planning efforts completed as part of the Chain of Lakes Program Management and Planning project, or projects required to operate and maintain the Chain of Lakes for water supply purposes. Examples of projects that could be completed under this project include, but are not limited to, diversion structure related improvements, pump stations, pipelines, flow meters, water level meters, recharge monitoring piezometers, fencing, access roads, and slope re-grading and landscaping. To address the potential delay in the dedication of Lakes A-G or C-G, a pipeline connecting the DVWTP/SBA, Lakes A/B, Arroyo Del Valle diversion structure, and Lakes H/I/Cope has been included in the cost estimate. Projects related to Flood Control are included in the CIP as separate projects (not part of this project).

Justification The COLs are a series of gravel mining pits that will be dedicated to Zone 7 over the next 40 years or more for water management purposes. More specifically, the COLs will allow Zone 7 to reduce evaporative losses, implement mitigative measures for salt loading in the Livermore Valley Groundwater Basin, enhance artificial recharge, provide surface water storage, and support flood protection activities. All of these activites are necessary to provide a reliable supply of high-quality water and an effective flood control system to the Livermore-Amador Valley. This project will allow Zone 7 to design and implement the projects necessary for Zone 7 to use the COLs for water management after dedication.

Origin: 2006 Stream Management Master Plan, 2011 Water Supply Evaluation Report

Responsible Section FE Facilities Engineering

Operating Impact Increases water supply reliability. Increased O&M costs.

In Service Date **Month**: December **Year**: 2035

Total Project Cost $26,740,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 30%
Fund 130 Expansion 70%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$50	$0	$0	$0	$2,340	$0	$0	$0	$0	$0	$0	$0	$2,390
Design	$40	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$40
Construction	$2,020	$0	$0	$0	$0	$12,170	$10,120	$0	$0	$0	$0	$0	$24,310
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$2,110**	**$0**	**$0**	**$0**	**$2,340**	**$12,170**	**$10,120**	**$0**	**$0**	**$0**	**$0**	**$0**	**$26,740**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion
System-Wide Improvements

Program Water Supply & Conveyance

Project **Chain of Lakes Master Planning**

Project ID: COL6

Strategic Plan Priority **1.1, 1.3, 1.5, 1.6, 2.1**

Project Description This project consists of the near-term and long-term program management and planning necessary to integrate the Chain of Lakes (COLs) into Zone 7's water supply and flood protection system, and into various general plans, specific plans, on-going construction, or other activities in the Livermore-Amador Valley. Program elements may include coordinating with the mining companies/quarry operators, developers, and government agencies (e.g., City of Pleasanton, East Bay Regional Parks District). Planning for the COLs will incorporate the recommendations from other Zone 7 planning efforts, including the Stream Management Master Plan and the Water System Master Plan update.

Justification The COLs are a series of gravel mining pits that will be dedicated to Zone 7 over the next 20 years or more for water management purposes. More specifically, the COLs will allow Zone 7 to reduce evaporative losses, implement mitigative measures for salt loading in the Livermore Valley Groundwater Basin, enhance artificial recharge, provide surface water storage, and support flood protection activities. All of these activites are necessary to provide a reliable supply of high-quality water and an effective flood control system to the Livermore-Amador Valley. This project will allow Zone 7 to design and implement the projects necessary for Zone 7 to use the COLs for water resource management after dedication.

Origin: 2006 Stream Management Master Plan, 2011 Water Supply Evaluation Report 2014 Preliminary Lake Use Evaluation for the Chain of Lakes

Responsible Section IP Integrated Planning

Operating Impact Enhances Zone 7's ability to manage water.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $4,397,000

Source of Funds

Fund 120	Improvement, Renewal & Replacement	30%
Fund 130	Expansion	70%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$900	$20	$110	$90	$20	$0	$0	$0	$0	$0	$100	$2,470	$3,710
Design	$300	$0	$30	$0	$0	$0	$0	$0	$0	$0	$0	$0	$330
Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other	$357	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$357
Total	**$1,557**	**$20**	**$140**	**$90**	**$20**	**$0**	**$0**	**$0**	**$0**	**$0**	**$100**	**$2,470**	**$4,397**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Wells

Project **Chain of Lakes Wells 3 & 4**

Project ID: W36

Strategic Plan Priority **1.1, 1.3, 1.5, 1.12**

Project Description This project is Phase 2 of the Well Master Plan and consists of two new municipal water supply wells and additional connecting pipelines. The estimated project cost includes planning, land acquisition, well design and drilling, facility design and construction, pipeline additions, and miscellaneous site work.

Justification Additional municipal water supply wells are required to maximize access to existing local storage in the Livermore Valley Groundwater Basin for use during droughts and facility outages. This allows Zone 7 to meet projected water demands, even during worse-case drought conditions, as established in Zone 7 Resolutions 04-2662 and 06-2786. These wells will also provide Zone 7 more control over groundwater levels, groundwater flow, dissolved salt build-up/removal.

Origin: 2003 Well Master Plan and 2011Water Supply Evaluation

Responsible Section FE Facilities Engineering

Operating Impact Improves system reliability.

In Service Date **Month**: April **Year**: 2020

Total Project Cost $12,970,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$890	$0	$0	$0	$0	$0	$0	$0	$0	$890
Design	$0	$0	$0	$0	$920	$0	$0	$0	$0	$0	$0	$0	$920
Construction	$0	$0	$0	$0	$0	$11,160	$0	$0	$0	$0	$0	$0	$11,160
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$890**	**$920**	**$11,160**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$12,970**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Water Treatment Facilities

Project **COL Well No. 1, 2 & 5 Chromium-6 Treatment**

Project ID: W47

Strategic Plan Priority **1.2**

Project Description This project is to install treatment if required for meeting 80% of a recently adopted MCL of 10 µg/L for chromium-6. The project estimate is based on installing Adsorption via Strong Base Anion (SBA) resin treatment facility at the COL 1 to treat all wells. Alternative treatment processes could be identified before installation of permanent faciltities.

Justification This project is a placeholder in the CIP while additional information is collected.

Origin: Chromium 6 White Paper and 2013 Technical Memorandum

Responsible Section WQ Water Quality

Operating Impact Increased flexibility for meeting peak summer demands and better ability to meet water quality goals. Additional annual operating cost are estimated between $682K to $1.4M.

In Service Date **Month**: December **Year**: 2021

Total Project Cost $14,170,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$630	$0	$0	$0	$0	$0	$630
Design	$0	$0	$0	$0	$0	$0	$1,900	$0	$0	$0	$0	$0	$1,900
Construction	$0	$0	$0	$0	$0	$0	$11,640	$0	$0	$0	$0	$0	$11,640
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$14,170**	**$0**	**$0**	**$0**	**$0**	**$0**	**$14,170**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.4**

Project Description This project includes periodic updates to the Corrosion Master Plan (every five years) and the evaluation of current conditions of Zone 7's facilities with respect to corrosion and cathodic protection. It will recommend future studies and implement projects to repair and upgrade cathodic protection to ensure that the service lives of facilities are in compliance with industry standards.

Justification This program is required to protect existing facilities from corrosion. In addition, the use of cathodic protection will lengthen facilities' service lives and help to minimize water rate increases.

Origin: Corrosion Master Plan

Responsible Section FE Facilities Engineering

Operating Impact Lengthen service life and improve reliability.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $3,498,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$60	$0	$0	$0	$80	$0	$0	$0	$0	$130	$0	$520	$790
Design	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$150	$0	$0	$0	$190	$0	$0	$0	$0	$430	$0	$1,590	$2,360
Other	$348	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$348
Total	**$558**	**$0**	**$0**	**$0**	**$270**	**$0**	**$0**	**$0**	**$0**	**$560**	**$0**	**$2,110**	**$3,498**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **Delta Habitat Conservation and Conveyance Program**

Project ID: WP19

Strategic Plan Priority **1.3, 1.9**

Project Description The purpose of the Delta Habitat Conservation and Conveyance Program (DHCCP) is to develop alternatives for reliably conveying State Water Project (SWP) and Central Valley Project (CVP) water under, across or around the Delta in an environmentally sound manner. The information produced by the DHCCP will be incorporated into the Bay Delta Conservation Plan.

This project is split 70% Fund 100 and 30% Fund 130. The costs reflected here are Fund 130's share only.

Justification The Delta Conveyance Facility is needed to restore SWP Reliability to previously anticipated levels (about 75% long-term average yield) 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.

Origin: Capital Improvement Program

Responsible Section OGM Office of the General Manager

Operating Impact Increased SWP reliability and improved water quality.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $613,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$58	$20	$20	$20	$20	$0	$0	$0	$0	$0	$0	$0	$138
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	$475	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$475
Total	**$533**	**$20**	**$20**	**$20**	**$20**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$613**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **Delta Outreach Program**

Project ID: WP18

Strategic Plan Priority **1.9**

Project Description Public outreach campaign to educate San Francisco Bay Area residents and leaders of the region's reliance on the Delta for water supply reliability and quality.

This project is split 70% Fund 100 and 30% Fund 130. The costs reflected here are Fund 130's share only.

Justification Educates the San Francisco Bay Area concerning Delta improvements to meet the challenges of the Delta as a conveyance system to import water from the Sierra Nevada. The system is threatened by fragile levees, seismic risk, climate change and uncertain environmental regulations.

Origin: Capital Improvement Program

Responsible Section OGM Office of the General Manager

Operating Impact Improved reliability.

In Service Date **Month**: June **Year**: 2018

Total Project Cost $337,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$60	$40	$40	$40	$0	$0	$0	$0	$0	$0	$0	$0	$180
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	$157	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$157
Total	**$217**	**$40**	**$40**	**$40**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$337**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Transmission & Distribution

Project **Distribution System Control Station Replacement**

Project ID: DS48

Strategic Plan Priority **1.1, 1.4**

Project Description This is a conceptual project recommended in the 2011 AMP study for condition assessment to better define the project scope, schedule, and cost. This project consists of the replacement of valves and ancillary equipment at the Cross Valley, Livermore (Station 220), and Vineyard Rate Control Stations.

Justification According to the 2011 AMP Update, the valves at these rate control stations are reaching the end of their useful life. Zone 7's rate control stations are critical to delivering an adequate water supply to Retailer turnouts.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Maintains operational functionality and reliability.

In Service Date **Month**: June **Year**: 2022

Total Project Cost $1,010,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$40	$0	$0	$0	$0	$40
Design	$0	$0	$0	$0	$0	$0	$0	$100	$0	$0	$0	$0	$100
Construction	$0	$0	$0	$0	$0	$0	$0	$870	$0	$0	$0	$0	$870
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,010**	**$0**	**$0**	**$0**	**$0**	**$1,010**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.1, 1.4**

Project Description Surface maintenance and road repairs to the Dougherty Reservoir access road are needed. This project consists of filling cracks and repairing localized damaged pavement areas, then providing slurry coat or chip seal over the entire pavement surface. This project should include an updated condition assessment to determine if the road repairs can be further deferred. As this facility is jointly owned with the Dublin San Ramon Services District, each agency is responsible for 50 percent of the total project cost shown. The full expense and reimbursement from DSRSD is captured in the CIP for cash flow purposes.

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.

Origin: 2007 DVWTP Access Road and Parking Lot/Dougherty Reservoir Access Road Pavement Rehabilitation Report, and Zone 7 Staff 2011 Feld Inspection

Responsible Section FE Facilities Engineering

Operating Impact Decrease maintenance, increase safety.

In Service Date **Month**: June **Year**: 2019

Total Project Cost $190,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$20	$0	$0	$0	$0	$0	$0	$0	$20
Design	$0	$0	$0	$0	$20	$0	$0	$0	$0	$0	$0	$0	$20
Construction	$0	$0	$0	$0	$150	$0	$0	$0	$0	$0	$0	$0	$150
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$190**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$190**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **Dougherty Reservoir Recoating**

Project ID: DV150

Strategic Plan Priority **1.1, 1.4**

Project Description This project involves the recoating of the exterior and interior of the 4 MG steel tank, including all submerged metals and piping appurtenances, such as the interior ladder, manways, inlet/outlet and overflow pipes. A new, more-efficient cathodic protection system will be installed as well as power system upgrade . Scope includes a coating consultant to provide a coating system design. A heavy metals analysis for both the interior and exterior coatings should also be completed. The next bi-annual inspection will help determine if the interior tank re-coating can be further deferred. As this facility is jointly owned with the Dublin San Ramon Services District, each agency is responsible for 50 percent of the total project cost shown. The full expense and reimbursement from DSRSD is captured in the CIP for cash flow purposes.

Justification The steel tank was constructed in 1984 and the original coating systems are nearing the end of their useful life. The 2011 bi-annual diver inspection found pockets of small blistering throughout the floor area, of which 10% are broken, which can lead to rusted nodules and steel damage. The walls and structural columns were reported to be in good condition. The roof panels and steel supports show rust bleeding.

Origin: 2007 DVWTP Access Road and Parking Lot/Dougherty Reservoir Access Road Pavement Rehabilitation Report, 2011 & 2014 Dougherty Reservoir Diver Inspection Report

Responsible Section FE Facilities Engineering

Operating Impact A new coating will provide better corrosion protection of the steel substrate and prolong the useful life of the storage reservoir.

In Service Date **Month**: June **Year**: 2019

Total Project Cost $2,110,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$20	$0	$0	$0	$0	$0	$0	$0	$20
Design	$0	$0	$0	$0	$60	$0	$0	$0	$0	$0	$0	$0	$60
Construction	$0	$0	$0	$0	$1,940	$0	$0	$0	$0	$0	$0	$0	$1,940
Other	$0	$0	$0	$0	$90	$0	$0	$0	$0	$0	$0	$0	$90
Total	**$0**	**$0**	**$0**	**$0**	**$2,110**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,110**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **DVWTP Ammonia System Replacement**

Project ID: DV125

Strategic Plan Priority **1.1, 1.4**

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.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Increase safety.

In Service Date **Month**: June **Year**: 2018

Total Project Cost $2,250,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design	$0	$0	$0	$100	$0	$0	$0	$0	$0	$0	$0	$0	$100
Construction	$0	$0	$0	$2,150	$0	$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**	**$2,250**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,250**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Water Treatment Facilities

Project **DVWTP Carbon Dioxide Installation Project**

Project ID: DV161

Strategic Plan Priority **1.1, 1.4**

Project Description This is a project that would install a permanent carbon dioxide injection system into the raw water pipeline at DVWTP. The system would include a 30 ton storage tank and a stand alone injection system using a carrier stream from the raw water line and injection of the carbon dioxide solution back into the raw water line.

Justification Due to the diurnal fluctuations in raw water quality at DVWTP, the plant experiences large raw water pH swings, especially during the summer and early fall months, ferric chloride must be used as a coagulant as well as a pH suppressor, which results in large amounts of ferric being used to control the pH. The high quantity of ferric used also results in large quantities of sludge being produced which can overload the solids handling at the plant. The installation of the CO_2 system would control the raw water pH and suppress it to a consistent level around 7.5 which would drastically reduce the amount of ferric required for good coagulation as well as significantly reduced the solids handling.

Origin: WQTS Technical Memo, 5/22/2014

Responsible Section FE Facilities Engineering

Operating Impact Improve plant performance and reliability and reduce chemical costs and sludge handling costs.

In Service Date **Month**: April **Year**: 2016

Total Project Cost $730,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10
Design	$0	$80	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$80
Construction	$0	$640	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$640
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$730**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$730**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **DVWTP Chemical Feed Lines and Pumps Replacement**

Project ID: DV145

Strategic Plan Priority **1.1, 1.4**

Project Description This is a project recommended in the 2011 AMP study for condition assessment to better define the project scope, equipment condition, schedule, and cost. Key chemical metering and associated chemical feed systems storage tank systems to be assessed and replaced include, but are not limited to:

(1) Sodium hypochlorite metering pumps for pre- and post- chlorination and for CT compliance
(2) Coagulant metering pumps for conventional plant and DAF
(3) Anionic polymer metering pumps for gravity thickener
(4) Ancillary support for each chemical feed system

Operations noted items (1) and (2) for pumps and variable speed drives have further service life. Condition assessment recommended in 2015. The sodium hydroxide storage tanks were rehabiltated in FY 13/14. The sodium hypochlorite storage tanks were replaced in 2010.

Justification According to the 2011 AMP Update, the above listed systems have either reached or are nearing the end of their original useful life.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Increases ability to comply with regulatory requirements, increases operational effectiveness and reliability, and decreases maintenance.

In Service Date **Month**: April **Year**: 2017

Total Project Cost $1,050,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$40	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$40
Design	$0	$120	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$120
Construction	$0	$0	$850	$0	$0	$0	$0	$0	$0	$0	$0	$0	$850
Other	$0	$10	$30	$0	$0	$0	$0	$0	$0	$0	$0	$0	$40
Total	**$0**	**$170**	**$880**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,050**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **DVWTP Drying Beds 1-4 Rehabilitation Project**

Project ID: DV157

Strategic Plan Priority **1.1, 1.4**

Project Description This is a project that would rebuild/rehab drying beds 1-4. Due to their proximity, these beds have a history of affecting adjacent properties as their poor underdrain system does not properly contain percolated flows. This project will pave the beds and make modifications to the underdrain system to minimize percolation while still providing underdrain use for other drying beds. .

Justification Improve system reliability, make sludge drying beds more manageble, and lower maintenance costs

Origin: 2014 Condition Assessment

Responsible Section FE Facilities Engineering

Operating Impact Improved operational reliability and lower maintenance cost

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

Total Project Cost $8,200,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$60	$70	$0	$0	$0	$0	$130
Design	$0	$0	$0	$0	$0	$0	$0	$420	$70	$0	$0	$0	$490
Construction	$0	$0	$0	$0	$0	$0	$0	$0	$7,580	$0	$0	$0	$7,580
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$60**	**$490**	**$7,650**	**$0**	**$0**	**$0**	**$8,200**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **DVWTP Ferric Chloride System Improvements**

Project ID: DV159

Strategic Plan Priority **1.1,1.4**

Project Description Replacement of existing ferric chloride and cationic polymer storage and feed systems. Improvements also include widening the fill alleyway using a retaining wall along the hillside and a widened paved roadway

Justification According to the 2011 AMP Update, the above listed systems have either reached or are nearing the end of their original useful life. The fill alleyway widening improves efficiency and safety at the plant as it enables chemical fill trucks to stop and reload the chemical tanks without blocking access for other plant vehicles.

Origin: Capital Improvement Program

Responsible Section FE Facilities Engineering

Operating Impact Increase safety and decrease maintenance.

In Service Date **Month**: June **Year**: 2018

Total Project Cost $770,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$10
Design	$0	$0	$0	$90	$0	$0	$0	$0	$0	$0	$0	$0	$90
Construction	$0	$0	$0	$670	$0	$0	$0	$0	$0	$0	$0	$0	$670
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$770**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$770**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement
Program Water Treatment Facilities
Project **DVWTP Filter Rehabilitation - Phase 1**

Project ID: DV152

Strategic Plan Priority **1.1, 1.4**

Project Description This project is to rehabilitate seven filters in two phases. Phase 1 will rehabilitate Filter Nos. 3, 4, and 5. The work includes replacement of filter media, including the gravel support, inspection and cleaning of the underdrain blocks and grout work, replacement of the surface wash supply manifolds and spray arms, and lining all interior concrete walls with an elastomeric polyurethane coating system, including repair of localized concrete damage and seepage. A corrosion evaluation should be completed for Filter No. 5 to complete a condition assessment for Filter Nos. 5 to 8 (Phase Two).

Filter No. 2 was rehabilitated in 2013 and is the proposed model for future filter rehabilitations. The underdrain blocks were in satisfactory working condition. (Filter media replenishment will be handled in a bi-annual program by Operations).

Justification This project is recommended in the 2011 AMP study since the filter media in Filters Nos. 3 and 4 have reached the end of their useful life. Anthracite media degrades and breaks down in size and angularity over time from backwashes. The perforations for underdrain blocks needs to be cleaned, as Filter No. 2 had substantive clogging identified in a 2013 rehabilation project. Also, Filter No. 5 has substantive gravel mounding issues since the media was replaced in 2001. An elastomeric polyurethane liner for the interior filter walls is needed to adequately replace the damaged concrete surface, and to protect the reinforcement steel from corrosion. Proposed system will extend the useful life of the structural walls by another 25 to 30 years. A stainless steel surface wash supply manifold will be more cost effective than a coated carbon stel piping over the life of the filter structure. (Typically, the carbon steel piping corrodes as the coating starts to fail in a low pH environment).

Origin: 2011 Asset Management Plan Update Report, 2012 JDH Corrosion Evaluation for Filter Nos. 2 & 4, and 2008 ERS filter surveillance.

Responsible Section FE Facilities Engineering
Operating Impact Improves filter operations, performance, and reliability
In Service Date **Month**: April **Year**: 2018

Total Project Cost $1,490,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$20
Design	$0	$0	$0	$120	$0	$0	$0	$0	$0	$0	$0	$0	$120
Construction	$0	$0	$0	$1,350	$0	$0	$0	$0	$0	$0	$0	$0	$1,350
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$1,490**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,490**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement
Program Water Treatment Facilities
Project **DVWTP Filter Rehabilitation - Phase 2**
Project ID: DV153
Strategic Plan Priority **1.1, 1.4**

Project Description

This project is to rehabilitate seven filters in two phases. Phase 2 will rehabilitate Filter Nos. 1, 6, 7, and 8. The work includes replacement of filter media, inspection and cleaning of the underdrain blocks and grout work, replacement of the surface wash supply manifolds and spray arms, and lining all interior concrete walls with an elastomeric polyurethane coating system, including repair of localized concrete damage and seepage. A corrosion evaluation should be completed for Filter Nos. 5 to 8 to complete a condition assessment for the interior concrete and metallic piping.

Filter No. 8 media was replaced in 2006 and has outperformed the other filters in terms of the unit filter run volume metrics. Filter No. 2 was rehabilitated in 2013 and is the proposed model for future filter rehabilitations. The underdrain blocks were in satisfactory working condition. (Filter media replenishment will be handled in a bi-annual program by Operations).

Justification

This project is recommended in the 2011 AMP study since the filter media in Filters Nos. 1, 6 and 7 will have reached the end of their useful life. Anthracite media degrades and breaks down in size and angularity over time from backwashes. The perforations for underdrain blocks needs to be cleaned, as Filter No. 2 had substantive clogging in a 2013 rehabilitation project. An elastomeric polyurethane liner for the interior filter walls is needed to adequately replace the damaged concrete surface, and to protect the reinforcement steel from corrosion. Proposed system will extend the useful life of the structural walls by another 25 to 30 years. A stainless steel surface wash supply manifold will be more cost effective than re-coationg carbon steel piping over the life of the filter structure. (Typically, the carbon steel piping corrodes as the coating starts to fail in a low pH environment).

Origin: 2011 Asset Management Plan Update Report and 2008 ERS filter surveillance.

Responsible Section FE Facilities Engineering

Operating Impact Improves filter operations, performance, and reliability

In Service Date **Month**: April **Year**: 2022

Total Project Cost $2,330,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$40	$0	$0	$0	$0	$40
Design	$0	$0	$0	$0	$0	$0	$0	$190	$0	$0	$0	$0	$190
Construction	$0	$0	$0	$0	$0	$0	$0	$2,100	$0	$0	$0	$0	$2,100
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,330**	**$0**	**$0**	**$0**	**$0**	**$2,330**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **DVWTP Filter Valves Replacement**

Project ID: DV120

Strategic Plan Priority **1.1, 1.4**

Project Description This project consists of the replacement of the isolation valves and associated appurtenances on the eight filters at DVWTP, and is being completed in two phases. All 32 isolation valves (eight per filter) on Filter Nos. 1 to 4 were replaced in 2010. In Phase 2, all 32 isolation valves on Filter Nos. 5 to 8 will be replaced. Each isolation valve system consists of a wafer style butterfly valve with a pneumatic actuator, limit switches, and solenoid valves. Piping and valve appurtenances, such as flexible couplings or adaptors, valve gaskets and bolts, and harness rods, will also be replaced. The extent of the rehabilitation of the original pipe spools will not be determined until the cement lining and any exposed steel are inspected during the installation. A filter-aid feed control panel, located at each filter, will need to be temporarily re-located to gain access to the filter pipe spools and valves. The filter rate-of-control valve on each filter was replaced in 2004.

Justification This project is recommended in the 2011 AMP study since the isolation valves on Filter Nos. 5 to 8 are reaching the end of their useful lives. It has been necessary to raise the plant air pressure in order to operate the actuators and valves.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Maintain plant capacity and reliability, improve operational effectiveness and flexibility, and decrease valve system maintenance.

In Service Date **Month**: May **Year**: 2016

Total Project Cost $400,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10
Design	$0	$60	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$60
Construction	$0	$310	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$310
Other	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$20
Total	**$0**	**$400**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$400**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **DVWTP HVAC Replacement**

Project ID: DV146

Strategic Plan Priority **1.1, 1.4**

Project Description This project was recommended in the 2011 AMP for condition assessment to better define the project scope, schedule, and cost. Key equipment to be assessed and replaced include, but are not limited to the following: boilers and appurtenances; air handling units and exhaust fans; air cooled chiller for the Laboratory Building; associated system control and pressure valves, switches, appurtenances; etc., and digital control systems for the HVAC.

Justification According to the 2011 AMP Update, the heating, ventilation, and air conditioning system will have reached the ends of its original useful life by FY 21/22. It is expected that more state-of-art technology and more efficient compressors and boilers, etc., will replace the equipment installed in the 2003 HVAC project. The project will continue to provide comfortable, safe and energy efficient operations and protect plant and laboratory personnel, equipment and instrumentation, SCADA system and servers against higher heating and colder temperatures throughout the year.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Increases operational reliability.

In Service Date **Month**: June **Year**: 2022

Total Project Cost $730,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$10	$0	$0	$0	$0	$0	$10
Design	$0	$0	$0	$0	$0	$0	$90	$0	$0	$0	$0	$0	$90
Construction	$0	$0	$0	$0	$0	$0	$0	$590	$0	$0	$0	$0	$590
Other	$0	$0	$0	$0	$0	$0	$10	$30	$0	$0	$0	$0	$40
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$110**	**$620**	**$0**	**$0**	**$0**	**$0**	**$730**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.1, 1.4**

Project Description This project involves the recoating of the interior of the 4.5 MG steel clearwell at DVWTP. This project will also replace the interior and exterior impressed-current cathodic protection systems.

Justification The interior coating has exceeded its original useful life. The 2011 and 2014 diver inspection reports recommended a recoating project to minimize steel damage. The report indicated the floor is in poor condition. Approximately 25% of the floor area has pockets of blisters, of which 10% are broken. Steel corrosion accelerates when the blisters break, leading to rust nodules and steel damage. The walls have blisters covering approximately 5% of the area. Support columns have severe coating failure. The roof and supports were reported to be in good condition, but have rust staining.

Origin: 2008 Pre-Design Review Report by V&A, 2011& 2014 Diver Inspection Reports

Responsible Section FE Facilities Engineering

Operating Impact A new coating system will provide better corrosion protection of the steel substrate and prolong the useful life of the clearwell.

In Service Date **Month**: April **Year**: 2016

Total Project Cost $2,390,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design	$0	$60	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$60
Construction	$0	$2,330	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,330
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$2,390**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,390**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **DVWTP Main Plant Generator Replacement**

Project ID: DV151

Strategic Plan Priority **1.4**

Project Description This project consists of the replacement of the main plant generator at DVWTP. This is a project recommended in the 2011 AMP Update Report for condition assessment to better define the project scope, schedule, and cost.

Justification The 2011 AMP Update Report recommended replacement of the generator because it is approaching the end of its useful life. The generator is critical to the reliability of DVWTP operations.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Increases operational reliability.

In Service Date **Month**: June **Year**: 2020

Total Project Cost $240,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$10	$0	$0	$0	$0	$0	$0	$0	$10
Design	$0	$0	$0	$0	$20	$0	$0	$0	$0	$0	$0	$0	$20
Construction	$0	$0	$0	$0	$0	$210	$0	$0	$0	$0	$0	$0	$210
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$30**	**$210**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$240**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **DVWTP Parking Lot Repair**

Project ID: DV160

Strategic Plan Priority **1.1, 1.4**

Project Description This project includes full depth asphalt concrete patches for damaged asphalt pavement followed by a leveling asphalt concrete layer.

Justification The east parking lot has damaged or failed asphalt pavement mainly around the travel way used by heavy vehicles. These areas need to be reconstructed with asphalt concrete patches then leveled with an asphalt concrete layer.

Origin: Capital Improvement Program

Responsible Section FE Facilities Engineering

Operating Impact Increase safety and decrease maintenance.

In Service Date **Month**: June **Year**: 2018

Total Project Cost $540,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$50	$0	$0	$0	$0	$0	$0	$0	$0	$50
Design	$0	$0	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$20
Construction	$0	$0	$0	$470	$0	$0	$0	$0	$0	$0	$0	$0	$470
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$540**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$540**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **DVWTP Rehabilitation Project**

Project ID: DV147

Strategic Plan Priority **1.1, 1.4**

Project Description This is a project recommended in the 2011 AMP study for condition assessment to better define the project scope, equipment condition, schedule, and cost. It consolidates a number of asset replacements or rehabilitations for key treatment process facilities or equipment at DVWTP including, but not limited to:

(1) Plant air system replacement
(2) Backwash rate control valve replacement for Backwash pump No. 1 or add second backwash pump at backwash pump station and replace control valve with VFD system for two pumps
(3) Upgrade underdrain pump station capacity and power supply capacity, including communications and controls
(4) Upgrade electrical and controls for french drain and Well Point pumps
(5) Ancillary support system, including mechanical, electrical, and instrumentation, system piping for above items

Justification According to the 2011 AMP Update, the above listed systems have either reached or are near the end of their original useful life. Also, the control gates at drain valves on the washwater recovery system have been high maintenance, characterized by frequent replacements.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Improve system reliability and enable Zone 7 to take advantage of the maximum treated water production capacity at DVWTP.

In Service Date **Month**: April **Year**: 2018

Total Project Cost $2,470,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$30	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30
Design	$0	$0	$160	$30	$0	$0	$0	$0	$0	$0	$0	$0	$190
Construction	$0	$0	$0	$2,050	$0	$0	$0	$0	$0	$0	$0	$0	$2,050
Other	$0	$0	$140	$60	$0	$0	$0	$0	$0	$0	$0	$0	$200
Total	**$0**	**$0**	**$330**	**$2,140**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,470**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **DVWTP Roof Replacement and Rehabilitation for 3.0 MG Clearwell**

Project ID: DV131

Strategic Plan Priority **1.1, 1.4**

Project Description The project replaces the metal roof and gravity vents installed on the 3.0 million gallon (MG) clearwell in 1997. The overall roof area is approximately 25,500 square foot. The metal panel is 22-gauge galvanized steel with coating for the exterior and interior. Three major structural beams, called glulams, and six cross members or purlins, for the wooden roof frame system needs to be repaired or replaced. Report also recommended cleaning/coating or replacing structural connections, including tension and beam-splice straps, and joist hangers that have corrosion damage.

Justification It is estimated that the useful life of the roof is approximately fifteen years under severe humid operating conditions in the clearwell. In addition, the interior roof panels were coated under adverse field conditions in 1997 and large portions of the roof coating have failed. The recoating project for the 3.0 MG clearwell, completed in March 2009, repaired only about 2,600 square foot. Because of budget constraints, about 2,500 square foot was left unrepaired/uncoated. The corrosion damage begins immediately as soon as the coating fails for the unrepaired or uncoated roof areas.

The wooden roof frame system installed in 1974 has reported moderate shrinkage cracks in the wood structural members. The metal connections, including bolts, for the structural members have corrosion damage. Rehabilitation or replacement should extend the life of the clearwell by another 15 to 20 years. Site evaluation of the glulam beams should be done to confirm the cracks are non-structural.

Origin: 2009 DVWTP 3 MG Clearwell Structural Engineer Site Visit Report by BCA

Responsible Section FE Facilities Engineering

Operating Impact Improvements will maintain plant and distribution capacity and storage reliability.

In Service Date **Month**: May **Year**: 2017

Total Project Cost $580,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design	$0	$70	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$70
Construction	$0	$0	$490	$0	$0	$0	$0	$0	$0	$0	$0	$0	$490
Other	$0	$10	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$20
Total	**$0**	**$80**	**$500**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$580**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **DVWTP Washwater Recovery Ponds Rehabilitation**

Project ID: DV156

Strategic Plan Priority **1.1, 1.4**

Project Description This is a project that would redesign the washwater recovery ponds as new concrete basins. The ponds would be designed to be narrow and deep to allow for better decanting as well as better sludge concentration at the bottom of the ponds. New valves and actuators, electrical, and SCADA would also be a part of the project to allow for automated decanting and sludge discharge to the equalization basin.

Justification The original recovery ponds were not designed to handle the full 40MGD plant capacity or the current Filter/Backwash Recycle Rules.

Origin: 2014 Condition Assessment

Responsible Section FE Facilities Engineering

Operating Impact Improve system reliability and enable Zone 7 to take advantage of the maximum water production capacity, also reduce maintenance costs.

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

Total Project Cost $8,440,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$30	$30	$0	$0	$0	$60
Design	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$70	$0	$70
Construction	$0	$0	$0	$0	$0	$0	$0	$0	$280	$7,890	$0	$0	$8,170
Other	$0	$0	$0	$0	$0	$0	$0	$0	$70	$70	$0	$0	$140
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$30**	**$380**	**$7,960**	**$70**	**$0**	**$8,440**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Wells

Project **El Charro Pipeline Phase 2**

Project ID: W42

Strategic Plan Priority **1.1, 1.12**

Project Description This project includes planning, land/easement acquisition, design, and construction of a pipeline that loops the transmission system in the vicinity of the Chain of Lakes wells.

Justification Phase 2 of the El Charro Pipeline is part of the Well Master Plan (WMP). This project has a different timeline than the associated wells planned as part of the WMP because it adds additional looping to Zone 7's transmission system and improves system water quality by helping to minimize stagnant water issues created by Phase 1 of the El Charro Pipeline, while reducing the frequency of flushing activities.

Origin: 2003 Well Master Plan

Responsible Section FE Facilities Engineering

Operating Impact No operational cost impact.

In Service Date **Month**: April **Year**: 2020

Total Project Cost $10,814,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$120	$0	$0	$0	$0	$0	$0	$0	$0	$0	$120
Design	$0	$0	$0	$120	$0	$0	$0	$0	$0	$0	$0	$0	$120
Construction	$0	$0	$440	$6,290	$610	$630	$0	$0	$0	$0	$0	$0	$7,970
Other	$2,604	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,604
Total	**$2,604**	**$0**	**$560**	**$6,410**	**$610**	**$630**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$10,814**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.1, 1.3**

Project Description Payment of a portion of the Water System Revenue Bond, Delta Water Charge and Transportation Capital Cost Component for 27,619 acre-feet of additional State Water Project (SWP) entitlements, purchased via Amendments 20, 21, 23, and 25 to Zone 7's SWP contract.

These costs are paid by Fund 110 and Fund 130 on a sliding scale. Cost shown here are Fund 130's cost only.

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 of the fixed SWP costs associated with water acquisitions that have not been used.

Origin: Amendments 19, 20, 21, 23, and 25 to Zone 7's water supply contract with DWR

Responsible Section ASD Administrative Services Division

Operating Impact Increased reliability.

In Service Date **Month**: June **Year**: 2017

Total Project Cost $2,744,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$30	$30
Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other	$2,662	$33	$19	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,714
Total	**$2,662**	**$33**	**$19**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$30**	**$2,744**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.1, 1.3**

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 scheduled payments for the 22,000 AFA, Zone 7 contributes annually into this sinking fund (beginning FY 2004/05 until FY 29/30), in order to cover contractual costs from the year 2030 to 2035 when connection fee revenue is projected to decline with the approach of buildout . The annual contributions to the sinking fund are funded by connection fees.

Justification This sinking fund is to cover contractual costs from the year 2030 to 2035.

Origin: Amendments 19, 20, 21, 23, and 25 to Zone 7's water supply contract with DWR

Responsible Section ASD Administrative Services Division

Operating Impact None.

In Service Date **Month**: **Year**: 2030

Total Project Cost $11,964,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$1,314	$530	$550	$570	$590	$620	$640	$670	$690	$720	$750	$4,320	$11,964
Total	**$1,314**	**$530**	**$550**	**$570**	**$590**	**$620**	**$640**	**$670**	**$690**	**$720**	**$750**	**$4,320**	**$11,964**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **Fourth Contractor's Share of the SBA (capital costs)**

Project ID: WP7

Strategic Plan Priority **1.1,1.3**

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. This project reflects Fund130's share of the Water System Revenue Bond and Transportation Capital Cost Component charges associated with this capacity per Amendments 19 and 20. A separate fund (Fund 110) pays for the Transportation Minimum (OMPR) Cost Component of this capacity.

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.

Origin: Amendments 19 and 20 to Zone 7's water supply contract with DWR.

Responsible Section ASD Administrative Services Division

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, while preserving system reliability.

In Service Date **Month**: June **Year**: 2035

Total Project Cost $75,726,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$12,726	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$33,000	$75,726
Total	**$12,726**	**$3,000**	**$3,000**	**$3,000**	**$3,000**	**$3,000**	**$3,000**	**$3,000**	**$3,000**	**$3,000**	**$3,000**	**$33,000**	**$75,726**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **High-Efficiency Toilet Rebate Program**

Project ID: PR1

Strategic Plan Priority **5.2**

Project Description This program encourages the replacement of existing high-water-using toilets with high-efficiency toilets (HET) that use 1.28 gallons or less per flush in residential dwelling by offering homeowners a $75- $125 rebate for installation of a HET.

This project is split 70% Fund 100 and 30% Fund 130. The costs reflected here are Fund 130's share only.

Justification This program replaces existing high-water-using toilets with HETs. The estimated water savings from an HET is about 48 gallons/day.

The toilet rebate program is a water conservation BMP that Zone 7 implements in conjunction with its retail water agencies.

Origin: Capital Improvement Program

Responsible Section IP Integrated Planning

Operating Impact Long-term water saving and less reliance on potable water supplies.

In Service Date **Month**: June **Year**: 2018

Total Project Cost $1,246,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$1,156	$30	$30	$30	$0	$0	$0	$0	$0	$0	$0	$0	$1,246
Total	**$1,156**	**$30**	**$30**	**$30**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,246**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **High-Efficiency Washing Machine Rebate Program**

Project ID: PR3

Strategic Plan Priority **5.2**

Project Description This program encourages the purchase and installation of high-efficiency clothes washers by offering water customers a $75 water rebate. Regulations require all washers to be water and energy-efficient.

This project is split 70% Fund 100 and 30% Fund 130. The costs reflected here are Fund 130's share only.

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, or an overall reduction of 8% of a household's water use.

Origin: Capital Improvement Program

Responsible Section IP Integrated Planning

Operating Impact Long-term water savings and less reliance on potable water supplies.

In Service Date **Month**: July **Year**: 2022

Total Project Cost $2,641,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$2,201	$90	$70	$80	$60	$60	$40	$40	$0	$0	$0	$0	$2,641
Total	**$2,201**	**$90**	**$70**	**$80**	**$60**	**$60**	**$40**	**$40**	**$0**	**$0**	**$0**	**$0**	**$2,641**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Wells

Project **Hopyard Well 6 & Stoneridge Sodium Hypochlorite Tank Replacement**

Project ID: W46

Strategic Plan Priority **1.1, 1.4**

Project Description Install new raised sodium hypochlorite tank(s) and chemical feed systems inside a concrete masonry building at Hopyard 6 & Stoneridge Well with a connection to the sanitary sewer. Remove old tanks, piping, etc.

Justification Hopyard Well No. 6 and Stoneridge Well Hypochlorite tanks were installed in 1992. The tanks are undersized and have been in-service more than the 15-year projected useful life for polyethylene tanks. However, recent condition assessments show that the 15-year projected life for these tanks may be too short. Due to the increase in size of tanks, the new tanks will not fit in the existing sodium hypochlorite rooms and buildings are needed. Additionally, a dedicated pipeline to the sanitary sewer is also planned as a way to purge sodium hypochlorite that has been depleted in strength.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact System reliability

In Service Date **Month**: May **Year**: 2017

Total Project Cost $1,030,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$50	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$50
Design	$0	$100	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$100
Construction	$0	$430	$450	$0	$0	$0	$0	$0	$0	$0	$0	$0	$880
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$580**	**$450**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,030**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Wells

Project **Hopyard Well No. 6 Inspect & Rehabilitate Pump, Motor, and Well Casing**

Project ID: W55

Strategic Plan Priority **1.4**

Project Description Pull production pump, clean and inspect well, rehabilitate well screen and filter pack, install water level monitoring equipment, and test well performance. Replace well pump, if needed.

Justification This project will: re-inspect the condition of the casing for signs of corrosion and estimation of remaining useful life for the Asset Management Program; remove bacterial encrustation on the well screen; attempt to restore the well productivity to a level that is practically and economically feasible; replace the water level measuring equipment with a new system that is more reliable; and test the well's post-rehab specific capacity to use as a baseline for future performance monitoring. Additionally, it will replace the well pump, if needed.

Origin: Capital Improvement Program

Responsible Section FE Facilities Engineering

Operating Impact Increases operational service life of the facility, and postpones the need for replacement.

In Service Date **Month**: December **Year**: 2022

Total Project Cost $220,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$10	$0	$0	$0	$0	$10
Design	$0	$0	$0	$0	$0	$0	$0	$30	$0	$0	$0	$0	$30
Construction	$0	$0	$0	$0	$0	$0	$0	$180	$0	$0	$0	$0	$180
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$220**	**$0**	**$0**	**$0**	**$0**	**$220**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Wells

Project **Hopyard Well No. 9 Inspect & Rehabilitate Pump, Motor, and Well Casing**

Project ID: W56

Strategic Plan Priority **1.4**

Project Description Pull production pump, clean and inspect well, rehabilitate well screen and filter pack, install water level monitoring equipment, and test well performance. Replace well pump, if needed.

Justification This project will: re-inspect the condition of the casing for signs of corrosion and estimation of remaining useful life for the Asset Management Program; remove bacterial encrustation on the well screen; attempt to restore the well productivity to a level that is practically and economically feasible; replace the water level measuring equipment with a new system that is more reliable; and test the well's post-rehab specific capacity to use as a baseline for future performance monitoring. Additionally, it will replace the well pump, if needed.

Origin: Capital Improvement Program

Responsible Section FE Facilities Engineering

Operating Impact Increases operational service life of the facility, and postpones the need for replacement.

In Service Date **Month**: December **Year**: 2021

Total Project Cost $220,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$10	$0	$0	$0	$0	$0	$10
Design	$0	$0	$0	$0	$0	$0	$30	$0	$0	$0	$0	$0	$30
Construction	$0	$0	$0	$0	$0	$0	$180	$0	$0	$0	$0	$0	$180
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$220**	**$0**	**$0**	**$0**	**$0**	**$0**	**$220**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Treatment Facilities

Project **Increased Water Treatment Plant Capacity**

Project ID: WTP106

Strategic Plan Priority **1.1, 1.12**

Project Description This project is a water treatment plant capacity expansion of up to 12-16 million gallon per day (MGD) that will be constructed at either the Altamont site near Dyer Reservoir or the Patterson Pass WTP. Project timing is tied to the need to replace the ultra-filtration (UF) Plant at the Patterson Pass WTP with a conventional unit and projected demands. The replacement of the UF plant will provide additional reliable capacity, delaying the need for the water treatnment plant expansion.

Justification Analysis completed as part of the 2011 Water System Evaluation indicates that additional water treatment plant capacity is required to meet projected maximum day demands. In addition, the UF Plant at Patterson Pass WTP is a temporary plant that was constructed to meet near-term shortages and therefore, the production from this plant eventually needs to be replaced. The currently-projected need for new treatment capacity, which includes replacement of the UF plant, is anticipated to be between 20 and 24 mgd.

Origin: 2009 Peer Review of the Altamont Water Treatment Plant Site and Treatment Process Study, 2014 PPWTP Expansion Feasibility Evaluation (in progress), 2011 Water Supply Evaluation

Responsible Section FE Facilities Engineering

Operating Impact Increases production and delivery capacity and improves operational flexibility.

In Service Date **Month**: June **Year**: 2028

Total Project Cost $190,730,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,400	$7,160	$13,560
Design	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,980	$3,980
Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$158,360	$158,360
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$14,830	$14,830
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$6,400**	**$184,330**	**$190,730**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Regulatory Compliance Monitoring

Project **Laboratory Equipment Replacement**

Project ID: LAB2

Strategic Plan Priority **1.1, 1.2**

Project Description Replacement of various monitoring and analytical laboratory equipment and components. Examples of major equipment to be replaced include, but are not limited to: HP 5890 GC systems with different detectors, ICPMS system ,Varian GCMS system, and IC system. All instruments include dedicated autosampler and data acquisition systems. This program allows replacements to be staggered thus flattening expenditures.

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.

Origin: Capital Improvement Program

Responsible Section LAB Laboratory

Operating Impact Procures equipment required to meet regulatory compliance.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $5,766,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$696	$120	$130	$120	$130	$140	$150	$150	$160	$170	$170	$3,630	$5,766
Total	**$696**	**$120**	**$130**	**$120**	**$130**	**$140**	**$150**	**$150**	**$160**	**$170**	**$170**	**$3,630**	**$5,766**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Wells

Project **MDGP Water Softening System**

Project ID: W52

Strategic Plan Priority **1.4**

Project Description This project consists of investigating alternatives for modification of the existing chemical injection water softening system to increase operational reliability and the design and implementation of the chosen alternative.

Justification The water softening system is an integral component of the chemical injection system at the plant. Periodic failures of the softening system limit the ability to treat water run through the plant as well as water from the Mocho wellfield.

Origin: MGDP Project Needs Assessment

Responsible Section FE Facilities Engineering

Operating Impact Increase operating reliability and effectiveness.

In Service Date **Month**: June **Year**: 2017

Total Project Cost $530,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10
Design	$0	$90	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$90
Construction	$0	$0	$430	$0	$0	$0	$0	$0	$0	$0	$0	$0	$430
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$100**	**$430**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$530**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Wells

Project **MGDP Concentrate Discharge Pipeline Inspection and Cleaning**

Project ID: W54

Strategic Plan Priority **1.4**

Project Description This project consists of the inspection of the concentrate discharge pipeline for possible mineral build up. If a visual inspection of the pipeline indicates a substantial build-up of minerals on the inside of the pipeline, then a cleaning operation will be needed to remove the scaling.

Justification During recent investigation of the discharge lines off of the concentrate sump it was discovered that the valves and appurtenances had become coated in a heavy scaling. If this scaling has occurred along the length of the concentrate discharge pipeline it could affect the efficiency of moving the brine through the pipeline and the pumps used to move the brine through the pipeline.

Origin: 2011 Asset Management Plan Update Report, 2013 Condition Assessment

Responsible Section FE Facilities Engineering

Operating Impact Increase operating reliability and effectiveness.

In Service Date **Month**: June **Year**: 2016

Total Project Cost $520,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$20
Design	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$20
Construction	$0	$480	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$480
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$520**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$520**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Wells

Project **MGDP De-Mister Modifications**

Project ID: W53

Strategic Plan Priority **1.4**

Project Description This project consists of improvements to the current de-mister configuration of the vents leading from the decarbonation towers. This will involve a redesign of the current system along with modified ducting, etc.

Justification Currently the demisters are emitting large water droplets which are settling on the roof of the MGDP. This constant moisture is allowing weeds & grasses to grow. Project is needed to reduce moisture exiting the vents.

Origin: MGDP Project Needs Assessment

Responsible Section FE Facilities Engineering

Operating Impact Increase operating reliability and effectiveness.

In Service Date **Month**: June **Year**: 2016

Total Project Cost $310,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10
Design	$0	$50	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$50
Construction	$0	$250	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$250
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$310**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$310**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Wells

Project **MGDP RO Membrane Replacement**

Project ID: W43

Strategic Plan Priority **1.1, 1.4**

Project Description This project consists of the replacement of the reverse osmosis membranes (RO) at the Mocho Groundwater Demineralization Plant. Membranes reach their useful lives and need to be replaced at regular intervals (approximately every five years).

Justification As recommended in the 2011 AMP Update Report study, the replacement of these membranes should be scheduled every five years, based on the useful life estimate, in order to maintain effective plant operation. Timing of membrane replacements would be adjusted based on actual performance.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Increase operating reliability and effectiveness.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $4,500,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10
Design	$0	$0	$0	$0	$0	$0	$10	$0	$0	$0	$0	$70	$80
Construction	$0	$590	$0	$0	$0	$0	$710	$0	$0	$0	$0	$3,110	$4,410
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$600**	**$0**	**$0**	**$0**	**$0**	**$720**	**$0**	**$0**	**$0**	**$0**	**$3,180**	**$4,500**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.4**

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.

Origin: Capital Improvement Program

Responsible Section OPS Operations & Maintenance

Operating Impact System operational reliability.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $13,990,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$280	$80	$90	$90	$90	$100	$100	$110	$110	$110	$120	$2,690	$3,970
Other	$1,000	$280	$290	$310	$320	$330	$350	$360	$370	$380	$400	$5,630	$10,020
Total	**$1,280**	**$360**	**$380**	**$400**	**$410**	**$430**	**$450**	**$470**	**$480**	**$490**	**$520**	**$8,320**	**$13,990**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Wells

Project **Mocho 2 Well Improvements/Rehabilitation**

Project ID: W44

Strategic Plan Priority **1.1, 1.4**

Project Description Pull production pump, clean and inspect well, rehabilitate well screen and filter pack, install water level monitoring equipment, and test well performance.

Justification Mocho 2 was constructed in 1964 and has not been redeveloped or rehabilitated since that time. Specific Capacity was last tested in 1995. However, the pump was replaced and the casing was inspected in 2005. The continuous water level sensing probe is no longer recording accurate water levels from which well performance can be determined. This project will: re-inspect the condition of the 48 year-old casing for signs of corrosion and estimation of remaining useful life for the Asset Management Program; remove bacterial encrustation on the well screen; attempt to restore the well productivity to a level that is practically and economically feasible; replace the water level measuring equipment with a new system that is more reliable; and test the well's post-rehab specific capacity to use as a baseline for future performance monitoring.

Origin: 2011 Mocho 2 Rehabilitation Project Well Team Memo

Responsible Section FE Facilities Engineering

Operating Impact Increases operational service life of the facility, and postpones the need for replacement.

In Service Date **Month**: May **Year**: 2016

Total Project Cost $200,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$20
Design	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$0	$180	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$180
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$200**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$200**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Wells

Project **Mocho Well 2 - VFD Retrofit**

Project ID: W41

Strategic Plan Priority **1.4**

Project Description Retrofit Mocho Well 2 with a variable frequency drive (VFD) to reduce excess bypass flow, thereby improving delivered water quality (hardness) and increasing operational flexibility because significant bypass inefficiency occurs with the well in operation (Mocho 2 is a leading candidate for a retrofit). This project will include constructing a new building for housing and replacing the motor control center (MCC).

Justification Excess bypass flow results in a decrease of delivered water quality. With the addition of a VFD, treatment trains and well capacity can be better matched. Significant inefficiencies from an excess bypass standpoint occur at Mocho 2, which can be rectified with a VFD. This project does not require a significant shutdown of the well; however, this project can be completed concurrently with the Mocho 2 Well Rehabilitation project.

Origin: 2011 Mocho Well 2 - VFD Retrofit Well Team Memo

Responsible Section FE Facilities Engineering

Operating Impact Increases operational flexibility and improves delivered water quality.

In Service Date **Month**: May **Year**: 2017

Total Project Cost $350,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10
Design	$0	$0	$30	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30
Construction	$0	$0	$310	$0	$0	$0	$0	$0	$0	$0	$0	$0	$310
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$350**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$350**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Wells

Project **Mocho Well No. 3 OSG R/R**

Project ID: W57

Strategic Plan Priority **1.1, 1.4**

Project Description Remove and replace existing OSG system (for sodium hypochlorite), salt tank, brine tank, chemical feed pumps, piping and appertenances with appropriate chlorination storage and feed system.

Justification Mocho Well 3 has an OSG system that was installed with the original well construction in 2002. The system is becoming obsolete and parts are more difficult to obtain. The system has been in-service beyond its expected useful life

Origin: 2014 Condition Assessment

Responsible Section FE Facilities Engineering

Operating Impact System reliability

In Service Date **Month**: June **Year**: 2016

Total Project Cost $490,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$20
Design	$0	$30	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30
Construction	$0	$440	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$440
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$490**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$490**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Wells

Project **Mocho Well No.1 Sanding Investigation**

Project ID: W45

Strategic Plan Priority **1.1, 1.4**

Project Description While Mocho 1 continues to operate at its design capacity, it has become unreliable because it pumps sand. This project will investigate and correct this problem. As the well is being investigated, by removing the pump and looking downhole, this project will also include possible replacement of the pump and well repairs.

Justification Mocho Well No. 1 sanding issue needs to be corrected to avoid a sudden breakdown of Mocho 1, which will compromise Zone 7's ability to meet near-term and long-term Maximum Day Demands and hourly peaking demands.

Origin: Engineering Service Request (ESR) No. DS-13-07

Responsible Section FE Facilities Engineering

Operating Impact Operational reliability.

In Service Date **Month**: June **Year**: 2016

Total Project Cost $300,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$260	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$260
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$300**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$300**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Wells

Project **Mocho Wellfield Automation & Control Valves**

Project ID: W51

Strategic Plan Priority **1.1, 1.4**

Project Description Installation or repair of rate controllers and actuators in valve 1611, 1612 & 1613 vault on valve 1612 and 1613, the Sutter Gate line valve on the Mocho Pipeline, Valve 921 on the Cross Valley Pipeline.

Justification The Mocho Wellfield is a key operational area which distributes flow through the Santa Rita Dougherty, Mocho, Cross Valley, and Vineyard pipelines. The installation of additional control and automation to the existing line valves in this area will increase operational flexibility.

Origin: Capital Improvement Program

Responsible Section FE Facilities Engineering

Operating Impact Improve operation and reduce service interruptions.

In Service Date **Month**: June **Year**: 2016

Total Project Cost $100,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$100	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$100
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$100**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$100**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.4, 1.5**

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 one multi-zone monitoring well will need to be replaced and/or destroyed year.

Justification Zone 7 operates an extensive monitoring well network for the monitoring of basin-wide groundwater levels and groundwater quality as part of the Groundwater Management Program. 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.

Origin: Capital Improvement Program

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 $2,651,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$25	$30	$0	$30	$0	$30	$0	$30	$0	$40	$0	$410	$595
Design	$10	$10	$0	$10	$0	$10	$0	$10	$0	$10	$0	$210	$270
Construction	$60	$70	$0	$110	$0	$120	$0	$130	$0	$140	$0	$600	$1,230
Other	$556	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$556
Total	**$651**	**$110**	**$0**	**$150**	**$0**	**$160**	**$0**	**$170**	**$0**	**$190**	**$0**	**$1,220**	**$2,651**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Program Water Treatment Facilities
Project **Ozonation at DVWTP and PPWTP**
Project ID: DV110
Strategic Plan Priority **1.1, 1.2, 1.13**

Project Description

This project consists of the design and construction of an ozonation process at each plant site as the recommended long-term taste and odor treatment (for existing plant capacity). The facilities at each site could include two ozone contactor basins, ozone generation and feed system 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 and modifications to existing facilities, electrical, instrumentation, and control. This projectwill be implemented in two phases: DVWTP in-service by 2018 followed by PPWTP in-service by 2029.

Justification

This project provides multiple benefits related to public health, aesthetics, and production capacity. Ozonation is expected to result in the reduction of trihalomethanes (THMs) and contaminants of emerging concern (CECs). It will mitigate seasonal earthy-musty taste and odor from treated surface water at PPWTP and DVWTP. Furthermore, the ozonation process has the potential to improve the treatment capacities of the WTPs by allowing them to handle varying raw water quality conditions while maintaining high production rates. The main reason to move up the schedule for the DVWTP Ozonation is to restore production capacity reliability to address projected near-term deficits in meeting Maximum Day Demand and hourly demand peaks.

Origin: 2003 Water Quality Management Program, 2009 Ozone and Peroxone Evaluation Report

Responsible Section FE Facilities 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 quality, increased production reliability, lower primary coagulant dosage, and less sludge production and handling.

In Service Date **Month**: June **Year**: 2018

Total Project Cost $55,170,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$2,080	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,850	$3,930
Design	$0	$2,080	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,920	$4,000
Construction	$0	$0	$11,900	$12,250	$0	$0	$0	$0	$0	$0	$0	$23,090	$47,240
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$4,160**	**$11,900**	**$12,250**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$26,860**	**$55,170**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **PPWTP Aqua Ammonia Facility Installation**

Project ID: PP76

Strategic Plan Priority **1.1, 1.4**

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, and motor control center will be housed in a concrete masonry block building.

Justification This project will replace or upgrade the last pure gaseous chemical system at PPWTP. Aqueous ammonia bulk storage will be approximately 19% ammonia and will be safer to handle and less of a hazardous threat.
The proposed replacement project improves safety for operations and maintanence personnel and other on-site plant personnel because the concentration levels from any off-gassing from leaks, spills, or a storage tank rupture would be significantly less than from the current system. Also, the use of aqueous ammonia is consistent with Zone 7's wellfields.

Origin: Capital Improvement Program

Responsible Section FE Facilities Engineering

Operating Impact Increase safety and decrease maintenance.

In Service Date **Month**: June **Year**: 2021

Total Project Cost $2,420,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$120	$0	$0	$0	$0	$0	$0	$0	$120
Design	$0	$0	$0	$0	$230	$0	$0	$0	$0	$0	$0	$0	$230
Construction	$0	$0	$0	$0	$0	$1,820	$250	$0	$0	$0	$0	$0	$2,070
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$350**	**$1,820**	**$250**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,420**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Water Treatment Facilities

Project **PPWTP Carbon Dioxide Installation Project**

Project ID: PP78

Strategic Plan Priority **1.1, 1.4**

Project Description Install a new carbon dioxide injection system for the raw water pipeline at PPWTP. The system would include a storage tank and a standalone injection system using a carrier stream from the raw water line and injection of the carbon dioxide solution back into the raw water line.

Justification Carbon dioxide addition to control pH would reduce ferric chloride coagulant use and reduce resulting amount of sludge production.

Origin: WQTS Technical Memo, 5/22/14

Responsible Section FE Facilities Engineering

Operating Impact Improve plant performance and reliability and reduce chemical costs, sludge handling costs, and maintenance costs.

In Service Date **Month**: June **Year**: 2017

Total Project Cost $600,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$10	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10
Design	$0	$0	$50	$0	$0	$0	$0	$0	$0	$0	$0	$0	$50
Construction	$0	$0	$540	$0	$0	$0	$0	$0	$0	$0	$0	$0	$540
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$600**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$600**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **PPWTP Chemical Systems Replacement**

Project ID: PP56

Strategic Plan Priority **1.1, 1.4**

Project Description This project consists of the replacement of chemical tanks, chemical feed pumps, and chemical feed piping in the PPWTP conventional plant. This is a project recommended in the 2011 AMP Update Report for condition assessment to better define the project scope, schedule, and cost. These assets include, but are not limited to: the storage tanks for ferric chloride, caustic soda, anionic polymer, cationic polymer, and spare chemical and the metering pumps for ferric chloride, caustic soda, and cationic polymer.

Justification Replacement of the chemical feed piping was identified as a priority in the 2004 PPWTP CIP Prioritization Study as it may be past its useful life. Also, the 2011 AMP Update Report recommended replacement of these chemical tanks and chemical feed pumps because they are approaching the end of their useful lives. The chemical storage and feed systems are critical for ensuring water quality of the water delivered.

Origin: 2004 PPWTP CIP Prioritization Study, 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Increases plant reliability and decreases maintenance.

In Service Date **Month**: June **Year**: 2018

Total Project Cost $760,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$80	$0	$0	$0	$0	$0	$0	$0	$0	$0	$80
Design	$0	$0	$80	$0	$0	$0	$0	$0	$0	$0	$0	$0	$80
Construction	$0	$0	$0	$600	$0	$0	$0	$0	$0	$0	$0	$0	$600
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$160**	**$600**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$760**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **PPWTP Clarifiers Concrete Coating**

Project ID: PP75

Strategic Plan Priority **1.1, 1.4**

Project Description This project consists of installation of an elastomeric lining system on the entire interior concrete surface of both the conventional and UF clarifiers at PPWTP.

Justification A condition assessment of the PPWTP conventional and UF clarifiers performed in 2009 and 2012, respectively, recommended complete coating of the interior concrete surfaces for preventive maintenance in order to increase the expected life of the clarifier structures. The clarifiers are critical to the reliability of PPWTP operations.

Origin: 2009 V&A condition assessment, 2012 JDH condition assessment

Responsible Section FE Facilities Engineering

Operating Impact Improve plant reliability.

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

Total Project Cost $1,600,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$80	$0	$0	$0	$80
Design	$0	$0	$0	$0	$0	$0	$0	$0	$150	$0	$0	$0	$150
Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,370	$0	$0	$1,370
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$230**	**$1,370**	**$0**	**$0**	**$1,600**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Water Treatment Facilities

Project **PPWTP Clearwell Improvements**

Project ID: PP63

Strategic Plan Priority **1.1, 1.2, 1.4**

Project Description This project includes additional structural support to the clearwell roof, improvements to contain potential overflow and relocation of a retailer waterline from upstream to downstream of the clearwell.

Justification A reliability assessment of the clearwell determined that structural modifications were needed to secure the roof from potential damage during seismic event. In addition, although there is a low probability, an overflow of the clearwell has a chance to reach the drainage ditch. Lessening the potential to reach the ditch will be done by re-grading away from the ditch, containment and/or dechlorination of the overflow water. Lastly, there is one retailer that receives water upstream of the clearwell. Relocating the connection downstream of the clearwell enables Zone 7 greater flexibility in providing a reliable water supply to this retailer.

Origin: ESR No. PC-08-01, 1994 Water System Reliability Assessment

Responsible Section FE Facilities Engineering

Operating Impact Increased operational reliability and safety.

In Service Date **Month**: May **Year**: 2017

Total Project Cost $720,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$50	$50	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$100
Design	$50	$50	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$100
Construction	$0	$0	$520	$0	$0	$0	$0	$0	$0	$0	$0	$0	$520
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$100**	**$100**	**$520**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$720**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Transmission & Distribution

Project **PPWTP Expansion Transmission Pipeline**

Project ID: DS49

Strategic Plan Priority **1.1, 1.12**

Project Description This project is a transmission pipeline from the Patterson Pass Water Treatment Plant (WTP) site to Zone 7's existing transmission system in phases, from PPWTP to the Liv1/Vasco pipeline connection (Phase I) and from the Liv1/Vasco pipeline connection to the Vasco Rate Control Station (Phase II). Phase I schedule is planned for some time after expanding the WTP and forecasted supply need to meet growing demands. Phase 2 is tied to the new water treatment plant and its final location.

Justification The existing pipeline from Patterson Pass WTP does not have the capacity to handle additional capacity from the WTP. At maximum production from an expanded treatment plant, there is inadequate pipeline capacity.

Origin: 2009 Peer Review of the Altamont Water Treatment Plant Site and Treatment Process Study, 2013 Draft Water Production Needs Analysis, 2014 PPWTP Expansion Feasibility Evaluation (in progress)

Responsible Section FE Facilities Engineering

Operating Impact Provides needed water system transmission capacity and operational flexibility.

In Service Date **Month**: July **Year**: 2026

Total Project Cost $20,250,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,480	$0	$1,480
Design	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$720	$770	$1,490
Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$17,280	$17,280
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,200**	**$18,050**	**$20,250**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Treatment Facilities

Project **PPWTP Expansion/New Media Filters**

Project ID: PP62

Strategic Plan Priority **1.1, 1.4, 1.12**

Project Description The 8 mgd Patterson Pass Ultrafiltration Plant (UF Plant) was constructed as a temporary plant to enable Zone 7 to assess membranes for a future larger plant expansion. This project includes construction of new dual media filters similar to the filtration system at the existing Patterson Pass conventional plant (PPWTP). The capacity provided by these filters will make the temporary 8 mgd capacity of the UF filtration permanent. The project will also include installation of an individual filter aid system (for treatment optimization) and expansion of the filter backwash/washwater system.

Justification The temporary UF Plant membrane systems production capacity has been reduced significantly over the years and its proprietary membrane modules are no longer being manufactured. An expansion of PPWTP is necessary to meet both near-term and long-term Maximum Day Demand and hourly peaking demands.

Origin: 2000 Treated Water Facilities Master Plan, 2009 Peer Review of the Altamont Water Treatment Plant Site and Treatment Process Study, 2011 Water Supply Evaluation, 2013 Draft Water Production Needs Analysis, 2014 PPWTP Expansion Feasibility Evaluation (in progress), ESR No. PC-12-01

Responsible Section FE Facilities Engineering

Operating Impact Increased operational reliability and efficiency, and increased production capacity.

In Service Date **Month**: May **Year**: 2018

Total Project Cost $13,210,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$970	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$970
Design	$0	$480	$500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$980
Construction	$0	$0	$5,520	$5,740	$0	$0	$0	$0	$0	$0	$0	$0	$11,260
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$1,450**	**$6,020**	**$5,740**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$13,210**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **PPWTP Filter Pipe Replacement Project**

Project ID: PP74

Strategic Plan Priority **1.1, 1.4**

Project Description This is a project recommended in the 2011 AMP study for condition assessment to better define the project scope, schedule, and cost. The scope of this project is to replace the existing PPWTP conventional plant filter valves, pumps, compressors, piping systems, and backwash system all of which are near or past their useful life. Also included will be installation of an individual filter aid system.

Justification According to the 2011 Asset Management Plan Update, the existing filter system is reaching the end of its useful life. Additionally, installation of an individual filter aid system would improve treatment optimization.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Increased operational reliability and efficiency, and extension of filter systems service life.

In Service Date **Month**: May **Year**: 2019

Total Project Cost $700,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$50	$0	$0	$0	$0	$0	$0	$0	$0	$50
Design	$0	$0	$0	$50	$0	$0	$0	$0	$0	$0	$0	$0	$50
Construction	$0	$0	$0	$0	$600	$0	$0	$0	$0	$0	$0	$0	$600
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$100**	**$600**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$700**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **PPWTP Filter Rehabilitation**

Project ID: PP64

Strategic Plan Priority **1.1, 1.4**

Project Description This project is to rehabilitate the existing three media filters at PPWTP. The work includes replacement of filter media, inspection and cleaning of the underdrain blocks and grout work, replacement of the surface wash supply manifolds and spray arms, and lining all interior concrete walls with an elastomeric polyurethane coating system, including repair of localized concrete damage and seepage. A condition assessment should be completed for the interior concrete and metallic piping. Also included will be installation of an individual filter aid system..

Justification This project is recommended in the 2011 AMP study since the filter media is reaching the end of its original useful life. Additionally, installation of an individual filter aid system would improve treatment optimization.

Origin: 2011 Asset Management Plan Update Report, ESR No. PC-12-01

Responsible Section FE Facilities Engineering

Operating Impact Improves filter operations, performance, and reliability.

In Service Date **Month**: April **Year**: 2018

Total Project Cost $1,550,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$30	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30
Design	$0	$0	$130	$0	$0	$0	$0	$0	$0	$0	$0	$0	$130
Construction	$0	$0	$0	$1,390	$0	$0	$0	$0	$0	$0	$0	$0	$1,390
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$160**	**$1,390**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,550**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **PPWTP HVAC Improvements**

Project ID: PP80

Strategic Plan Priority **1.1, 1.4**

Project Description Key equipment of the heating, ventilation, and air conditioning (HVAC) system at PPWTP that needs to be replaced includes, but is not limited to, the following: boiler and appurtenances; air handling units and exhaust fans; associated system control and pressure valves, switches, appurtenances; and digital control systems.

Justification The HVAC system at PPWTP is aging and has undergone repeated in-house repairs over the years. According to the 2011 AMP Update, the HVAC system will have reached the ends of its original useful life by FY 21/22. Based on a recent condition assessment, it is in need of replacement sooner. The project will continue to provide comfortable, safe and energy efficient operations and protect plant and laboratory personnel, equipment and instrumentation, SCADA system and servers against higher heating and colder temperatures throughout the year.

Origin: 2014 Condition Assessment

Responsible Section FE Facilities Engineering

Operating Impact Improve plant reliability and decreased mainteinace cost.

In Service Date **Month**: June **Year**: 2017

Total Project Cost $430,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$20	$0	$0	$0	$0	$0	$0	$0	$0	$0	$20
Design	$0	$0	$60	$0	$0	$0	$0	$0	$0	$0	$0	$0	$60
Construction	$0	$0	$350	$0	$0	$0	$0	$0	$0	$0	$0	$0	$350
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$430**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$430**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion
System-Wide Improvements

Program Water Treatment Facilities

Project **PPWTP Maintenance Yard and Building Improvements**

Project ID: PP67

Strategic Plan Priority **1.1, 1.4**

Project Description This project provides space for a maintenance yard and building that includes: 1) additional outdoor material storage and stockpile areas, 2) office building including amenities such as lunch area, showers/restrooms, locker room, and file storage, 3) storage area for equipment that needs to be stored in a climate controlled area, 4) warehouse storage and work areas for various maintenance disciplines such as electrical, SCADA/instrumentation, mechanical, general/carpentry, and mechanics, and, 5) covered areas for maintenance vehicles and various equipment.

Justification With increased reliance on in-house staff for facility maintenance responsibilities, Zone 7 has limited space for personnel, storage of spare parts, maintenance vehicles, maintenance gear, and files. Providing adequate space for personnel will improve work efficiency. Protecting spare parts and/or maintenance vehicles extends the useful life of facilities and allows Zone 7 to have the means readily available to deal with maintenance issues as they come.

Origin: ESR No. Z7-11-01, 2014 PPWTP Expansion Feasibility Evaluation (in progress)

Responsible Section FE Facilities Engineering

Operating Impact Provides operational and maintenance efficiency.

In Service Date **Month**: December **Year**: 2021

Total Project Cost $2,010,000

Source of Funds

Fund 120	Improvement, Renewal & Replacement	70%
Fund 130	Expansion	30%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design	$0	$0	$0	$0	$130	$50	$0	$0	$0	$0	$0	$0	$180
Construction	$0	$0	$0	$0	$0	$790	$820	$0	$0	$0	$0	$0	$1,610
Other	$0	$0	$0	$0	$0	$110	$110	$0	$0	$0	$0	$0	$220
Total	**$0**	**$0**	**$0**	**$0**	**$130**	**$950**	**$930**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,010**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **PPWTP Rehabilitation Project**

Project ID: PP73

Strategic Plan Priority **1.1, 1.4**

Project Description This project consists of the replacement or rehabilitation of the plant air system and the backwash system pumps and ancillary support, such as mechanical, electrical, instrumentation, and piping, at PPWTP. This is a project recommended in the 2011 AMP Update Report for condition assessment to better define the project scope, schedule, and cost.

Justification The 2011 AMP Update Report recommended replacement or rehabilitation of these components because they are approaching the end of their useful lives. These processes are critical to the reliability of PPWTP operations.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Improve plant reliability.

In Service Date **Month**: June **Year**: 2019

Total Project Cost $700,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$30	$0	$0	$0	$0	$0	$0	$0	$0	$30
Design	$0	$0	$0	$70	$0	$0	$0	$0	$0	$0	$0	$0	$70
Construction	$0	$0	$0	$0	$600	$0	$0	$0	$0	$0	$0	$0	$600
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$100**	**$600**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$700**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.1, 1.4**

Project Description The existing sludge beds lack the capacity needed to keep up with treatment plant production. This project will provide the additional sludge beds to meet the needed capacity, so that Zone 7 can replace the need for centrifuge rental contract services.

Justification This project will ensure the long-term reliable production of treated water at PPWTP by having greater control over cost and operation of sludge handling. This project's scope and cost only provide sludge bed capacity for the existing PPWTP capacity of 18-20 MGD.

Origin: 2011 Solids Handling at DVWTP and PPWTP Memo

Responsible Section FE Facilities Engineering

Operating Impact Increased operational reliability, flexibility and effectiveness.

In Service Date **Month**: June **Year**: 2021

Total Project Cost $5,300,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design	$0	$0	$0	$0	$890	$0	$0	$0	$0	$0	$0	$0	$890
Construction	$0	$0	$0	$0	$0	$2,730	$1,680	$0	$0	$0	$0	$0	$4,410
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$890**	**$2,730**	**$1,680**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,300**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **PPWTP UF Clarifier Floor Rehabilitation Project**

Project ID: PP77

Strategic Plan Priority **1.1, 1.4**

Project Description Replace two-inch mortar layer on the UF clarifier floor. The mortar layer has significant cracks and has separated from the concrete slab beneath.

Justification If a piece of the mortar layer were to dislodge while the plant is in service, it may require an unplanned plant shutdown and draining of the clarifier in order to remove the broken pieces and replace the mortar layer. Replacement of the mortar layer is necessary in order to minimize damage to the rotating rake arm mechanism, prevent water loss, and protect the concrete structure from deterioration.

Origin: 2014 Condition Assessment

Responsible Section FE Facilities Engineering

Operating Impact Increases plant reliability.

In Service Date **Month**: June **Year**: 2020

Total Project Cost $360,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$20	$0	$0	$0	$0	$0	$0	$20
Design	$0	$0	$0	$0	$0	$20	$0	$0	$0	$0	$0	$0	$20
Construction	$0	$0	$0	$0	$0	$320	$0	$0	$0	$0	$0	$0	$320
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$360**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$360**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion

Program Water Supply & Conveyance

Project **Reliability Intertie**

Project ID: WP24

Strategic Plan Priority **1.1, 1.3, 1.11, 1.12**

Project Description Zone 7 plans to investigate the feasibility of a reliability intertie with another major water agency (e.g., EBMUD or SFPUC). The cost estimates for this project are based on a 5.6-mile, 24-inch diameter pipeline that connects Zone 7's transmission system with another agency.

Justification Approximately 90% of Zone 7's long-term average water supplies are conveyed to its service via the South Bay Aqueduct (SBA); moreover, access to Zone 7's non-local storage in Semitropic and Cawelo during droughts is also dependent on the SBA. Consequently, an outage of the SBA or major disruptions of the Sacramento-San Joaquin Delta (Delta) would prevent Zone 7 from access to most of its water supplies, which could potentially have catastrophic results to Zone 7's service area. According to DWR's Delta Risk Management Study Phase 1 Report, there is a 62% chance of a major earthquake in the vicinity of the Delta Region sometime between 2003 and 2032.

In such an event, Zone 7 would only have access to groundwater and a portion of supplies in Lake Del Valle; these supplies may not be able to meet indoor use depending on hydrologic conditions when such an event occurs. This project will help mitigate these risks by constructing a new intertie with another major water agency that would provide additional means of acquiring water supplies during such an event.

Origin: 2011 Water Supply Evaluation Report

Responsible Section IP Integrated Planning

Operating Impact Increases reliability. Adds additional renewal/replacement costs.

In Service Date **Month**: October **Year**: 2021

Total Project Cost $29,000,000

Source of Funds

Fund 120	Improvement, Renewal & Replacement	30%
Fund 130	Expansion	70%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$2,000	$50	$50	$1,180	$0	$0	$0	$0	$0	$0	$0	$0	$3,280
Design	$0	$0	$0	$0	$990	$1,030	$0	$0	$0	$0	$0	$0	$2,020
Construction	$0	$0	$0	$0	$0	$11,620	$12,080	$0	$0	$0	$0	$0	$23,700
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$2,000**	**$50**	**$50**	**$1,180**	**$990**	**$12,650**	**$12,080**	**$0**	**$0**	**$0**	**$0**	**$0**	**$29,000**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Wells

Project **Review of Well Implementation Plan**

Project ID: W23

Strategic Plan Priority **1.1, 1.3, 1.5, 1.12**

Project Description This project will review the implementation of Well Master Plan schedule to reflect current water supply plans, updated treated water demands, salt management strategies, revised reliability policies, and current understanding of potential wellfield capacities.

Justification The Treated Water Reliability Policy and projected water demands were major drivers for the schedule of new production wells, but both have been recently revised. The Water Supply Evaluation and Salt Management Plan are also being updated with new well schedule assumptions.

Origin: 2013 Draft Water Production Needs Analysis

Responsible Section
FE Facilities Engineering
GP Groundwater Protection
IP Integrated Planning

Operating Impact Increases production capacity and operational flexibility. Maintains operational reliability

In Service Date **Month**: June **Year**: 2017

Total Project Cost $220,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$220	$0	$0	$0	$0	$0	$0	$0	$0	$0	$220
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**	**$220**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$220**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Water Treatment Facilities

Project **SCADA Enhancements**

Project ID: WTP103

Strategic Plan Priority **1.1, 1.4**

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.

Origin: Capital Improvement Program

Responsible Section FE Facilities Engineering

Operating Impact Improved control, monitoring and reporting through SCADA of process equipment.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $20,664,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$70	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$70
Design	$800	$100	$100	$110	$1,010	$120	$120	$130	$120	$1,230	$130	$7,950	$11,920
Construction	$830	$140	$140	$150	$190	$160	$170	$180	$180	$230	$200	$4,330	$6,900
Other	$1,774	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,774
Total	**$3,474**	**$240**	**$240**	**$260**	**$1,200**	**$280**	**$290**	**$310**	**$300**	**$1,460**	**$330**	**$12,280**	**$20,664**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.1, 1.3**

Project Description 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 AFA (from 5,850 AFA to 9,100 AFA).

Zone 7's cost share of the SWRU project will be about $1.4 million (not including interest). 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), and debt service will be passed on to Zone 7 as annual payments.

Justification Increase reliability by providing additional water supplies during drought years.

Origin: 2004 Agreement between Zone 7 and Semitropic Water Storage District

Responsible Section FE Facilities Engineering

Operating Impact Increased operational reliability.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $1,580,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$530	$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$550	$1,580
Total	**$530**	**$50**	**$50**	**$50**	**$50**	**$50**	**$50**	**$50**	**$50**	**$50**	**$50**	**$550**	**$1,580**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **South Bay Aqueduct Enlargement Project - Sinking Fund**

Project ID: SP12

Strategic Plan Priority **1.1, 1.4, 1.12**

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 and Patterson Pass Reservior, replacement of 54-inch pipe under I-580 with 78-inch pipe (completed March 2002), application of hydraulically smoother elastomeric polyurethane lining on the Altamont Pipeline (completed March 2002), enlarged Patterson Reservoir, and new 425 acre-foot (operational storage) raw water reservoir (Dyer Reservoir) located near Dyer Road.

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 ends 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 for the enlargement component.

Justification This sinking fund is necessary to cover contractual costs from 2030 to 2036, during which time there will essentially be minimal on-going water connection fee revenues available because development buildout within the Valley is expected to be nearly complete by this time.

Origin: 1999 Water Supply Master Plan, 2001 Water Conveyance Study

Responsible Section FE Facilities Engineering

Operating Impact None.

In Service Date **Month**: **Year**: 2030

Total Project Cost $28,979,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$166	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$166
Other	$7,303	$1,070	$1,120	$1,160	$1,210	$1,260	$1,310	$1,360	$1,410	$1,470	$1,530	$8,610	$28,813
Total	**$7,469**	**$1,070**	**$1,120**	**$1,160**	**$1,210**	**$1,260**	**$1,310**	**$1,360**	**$1,410**	**$1,470**	**$1,530**	**$8,610**	**$28,979**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **South Bay Aqueduct Enlargement Project**

Project ID: SP5

Strategic Plan Priority **1.1, 1.3, 1.11, 1.12**

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 and Patterson Pass Reservior, replacement of 54-inch pipe under I-580 with 78-inch pipe (completed March 2002), application of hydraulically smoother elastomeric polyurethane lining on the Altamont Pipeline (completed March 2002), and new 425 acre-foot (operational storage) raw water reservoir (Dyer Reservoir) located near Dyer Road.

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 ends 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 for the enlargement component of the project.

Justification Provides for long-term Zone 7 raw water conveyance capacity through planned service-area build-out.

Origin: 1999 Water Supply Master Plan, 2001 Water Conveyance Study

Responsible Section FE Facilities Engineering

Operating Impact Provides for enhanced long-term water supply, reliability and flexibility.

In Service Date **Month**: June **Year**: 2035

Total Project Cost $279,568,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$13,710	$16,431	$15,606	$15,324	$14,771	$14,760	$14,762	$14,774	$14,843	$14,944	$14,888	$114,755	$279,568
Total	**$13,710**	**$16,431**	**$15,606**	**$15,324**	**$14,771**	**$14,760**	**$14,762**	**$14,774**	**$14,843**	**$14,944**	**$14,888**	**$114,755**	**$279,568**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements

Program Water Treatment Facilties

Project **Stoneridge Well Chromium-6 Treatment**

Project ID: W49

Strategic Plan Priority **1.2**

Project Description This project is to install treatment if required for meeting 80% of a recently adopted MCL of 10 µg/L for chromium-6. The project estimate is based on installing Adsorption via Strong Base Anion (SBA) resin treatment facility the Stoneridge well.

Justification This project is a placeholder CIP in case current compliance strategy via blending with surface water and/or groundwater is not sufficent.

Origin: Chromium 6 White Paper and 2013 Technical Memorandum

Responsible Section WQ Water Quality

Operating Impact This project is a placeholder in the CIP while additional information is collected.

In Service Date **Month**: December **Year**: 2021

Total Project Cost $6,020,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$390	$0	$0	$0	$0	$0	$390
Design	$0	$0	$0	$0	$0	$0	$1,250	$0	$0	$0	$0	$0	$1,250
Construction	$0	$0	$0	$0	$0	$0	$4,380	$0	$0	$0	$0	$0	$4,380
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$6,020**	**$0**	**$0**	**$0**	**$0**	**$0**	**$6,020**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Groundwater Basin Management

Project **Stream Gage Replacement**

Project ID: GW3

Strategic Plan Priority **1.4, 1.5**

Project Description This project provides for the replacement of damaged or destroyed steam gages which are currently in Zone 7's monitoring network, on an as-needed basis. Zone 7 currently operates 7 recorder stream gaging stations in its surface water monitoring program. Future appropriations reflect the anticipated need to replace existing stations.

Justification Zone 7 operates an extensive stream gaging network for the monitoring of basin-wide surface water flow. The stream flow information is used to compute groundwater basin inflow, outflow and recharge. From time to time, these gaging stations are damaged or destroyed by storm events. In other cases, the stream courses may be altered, making it necessary to replace existing stations. Replacement of these stations is necessary for the on-going monitoring of basin recharge operations.

Origin: Capital Improvement Program

Responsible Section GP Groundwater Protection

Operating Impact Facilitates better monitoring of ongoing basin recharge operations including associated salt loading.

In Service Date **Month**: June **Year**: 2030

Total Project Cost $720,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$190	$190
Design	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$80	$80
Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$200	$250	$450
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$200**	**$520**	**$720**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.1, 1.3**

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). These costs are paid by existing and future users on a sliding scale. The sliding scale is determined by the percent of new connections remaining out of the total connections projected between 1999 and build-out. Cost shown here are Fund 73's cost only.

Justification Reliability of water supply.

Origin: Amendments 20, 21 and 25 to Zone 7's water supply contract with DWR

Responsible Section ASD Administrative Services Division

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 $544,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$134	$60	$60	$50	$50	$40	$30	$30	$20	$20	$10	$40	$544
Total	**$134**	**$60**	**$60**	**$50**	**$50**	**$40**	**$30**	**$30**	**$20**	**$20**	**$10**	**$40**	**$544**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.1, 1.4**

Project Description Periodic installation of approximately 30 new line valves in the transmission system, as needed, to provide a maximum of 2,000-2,500 feet separation between valves 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.

Origin: Capital Improvement Program

Responsible Section FE Facilities Engineering

Operating Impact Improve operation and reduce service interruptions.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $1,170,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$50	$0	$60	$0	$60	$0	$70	$0	$0	$70	$860	$1,170
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$50**	**$0**	**$60**	**$0**	**$60**	**$0**	**$70**	**$0**	**$0**	**$70**	**$860**	**$1,170**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion
Renewal/Replacement

Program Transmission & Distribution

Project **Transmission System Planning Update**

Project ID: DS53

Strategic Plan Priority **1.1, 1.4, 1.12**

Project Description This update will use the latest near term and long term demand estimates and hydraulic modeling to verify the capability of Zone 7's existing system and planned CIP projects to deliver treated water at an adequate level of service and to meet the revised reliablity policy. Policy review will also be conducted to include delivered water flows and pressures at various turnouts. As a result of updated hydraulic modeling scenarios, this project may also identify new transmission system project needs (e.g. pump stations, pipelines, and other appurtenances) and will determine additional storage needs (e.g., sizing, location) for incorporation to the CIP.

Justification This project is critical for ensuring that Zone 7 is able to meet Maximum Day Demand and hourly peaking demands. The findings from this study will be incorporated into the Water System Master Plan to be com pleted in 2016

Origin: 2011 Water Supply Evaluation Report, 2014 PPWTP Expansion Feasibility Evaluation (in progress)

Responsible Section FE Facilities Engineering
IP Integrated Planning

Operating Impact Improves reliability and production capacity.

In Service Date **Month**: June **Year**: 2015

Total Project Cost $570,000

Source of Funds

Fund 120	Improvement, Renewal & Replacement	35%
Fund 130	Expansion	65%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$400	$170	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$570
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	**$400**	**$170**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$570**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Transmission & Distribution

Project **Turnout Replacement Program**

Project ID: TO15

Strategic Plan Priority **1.1, 1.4**

Project Description This project consists of the replacement or rehabilitation of one to two turnouts per year over four years for those turnouts that were installed prior to 1970. These turnouts include Pleasanton-1, Livermore-1, 2, and 3, LLNL, VA-1, and VA-3/Wente/LARPD/BVYR. The actual replacement schedule will take operational requirements into consideration in order to minimize impact to deliveries. This is a project recommended in the 2011 AMP Update Report for condition assessment to better define the project scope, schedule, and cost.

Justification The 2011 AMP Update Report recommended replacement of these components because they are approaching the end of their useful lives. These turnouts are critical to water delivery to Zone 7's customers.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact Increases system reliability.

In Service Date **Month**: June **Year**: 2027

Total Project Cost $2,110,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$0	$0	$0	$0	$0	$20	$30	$30	$20	$100
Design	$0	$0	$0	$0	$0	$0	$0	$0	$30	$60	$70	$40	$200
Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$270	$560	$980	$1,810
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$50**	**$360**	**$660**	**$1,040**	**$2,110**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **Water Conservation Best Management Practices**

Project ID: PR2

Strategic Plan Priority **5.2**

Project Description This project includes the implementation of Water Conservation Best Management Practices as listed in the MOU regarding Urban Water Conservation in California, which includes financial and technical support for our retailers' conservation efforts; support and incentives to improve large landscape water efficiency; and public information and school education programs promoting water conservation. Additionally other practices include educational products, give-a-ways, workshops, professional training, community events, conservation advertisements, contributions in regional and state campaigns, and sponsorships to promoter water conservation.

This project is split 70% Fund 100 and 30% Fund 130. The costs reflected here are Fund 130's share only.

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.

Origin: Capital Improvement Program

Responsible Section OGM Office of the General Manager

Operating Impact Decreased potable water demands and increase system reliability.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $1,625,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	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	$1,095	$30	$20	$20	$20	$20	$20	$20	$20	$20	$20	$320	$1,625
Total	**$1,095**	**$30**	**$20**	**$20**	**$20**	**$20**	**$20**	**$20**	**$20**	**$20**	**$20**	**$320**	**$1,625**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, 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

Strategic Plan Priority **1.2, 1.13**

Project Description A comprehensive water quality management program and implementation plan (Water Quality Management Plan) was completed in April 2003. This plan addressed water quality concerns of our customers and the community. It has led 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 is one component of Zone 7's overall master planning process. It helps guide both our water system operations and our CIP over the next 20 years.

Justification Assists the Zone 7 Board of Directors in carrying out its WQ Policy goals by effectively managing treated and untreated water quality issues, providing guidance to Zone 7's water operations, and helping in establishing capital facilities needs and design guidelines.

Origin: 2003 Water Quality Management Program

Responsible Section WQ Water Quality

Operating Impact Provides clear operational guidelines. Potential additional treatment and blending facilities to operate.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $1,578,000

Source of Funds

Fund 120	Improvement, Renewal & Replacement	70%
Fund 130	Expansion	30%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$548	$30	$20	$30	$20	$40	$20	$40	$20	$40	$20	$750	$1,578
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	**$548**	**$30**	**$20**	**$30**	**$20**	**$40**	**$20**	**$40**	**$20**	**$40**	**$20**	**$750**	**$1,578**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Expansion

Program Water Supply & Conveyance

Project **Water Supply Replacement**

Project ID: WP16

Strategic Plan Priority **1.1, 1.3, 1.7**

Project Description An extensive list of potential replacement water supplies, including costs, were identified as part of the 2011 Water Supply Evaluation (2011 WSE) to replace the water supply lost due to a projected reduction in the long-term average yield of State Water Project (SWP) Table A Amounts. Pending the completion of additional analysis and studies recommended in the 2011 WSE, this project could include, but is not limited to, any combination of operational improvements, water conservation, recycled water, desalination, or water transfers.

Justification Most of the water transfers acquired by Zone 7 since 1999 for future development were Table A water associated with the SWP. The long-term average yield of Table A water used to be 75%; however, the projected yield is now only 60% (DWR's 2009 Reliability Report) due to legal and environmental constraints in the Sacramento-San Joaquin Delta. This project will pay for the additional supply necessary to replace the lost yield associated with the reduced reliability of the SWP.

Origin: 2011 Water Supply Evaluation Report

Responsible Section IP Integrated Planning

Operating Impact Ensures a reliable supply of high quality water.

In Service Date **Month**: June **Year**: 2025

Total Project Cost $115,080,000

Source of Funds Fund 130 Expansion 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$520	$540	$300	$320	$330	$340	$360	$370	$0	$3,080
Design	$0	$0	$0	$0	$0	$1,400	$1,460	$0	$0	$0	$0	$2,310	$5,170
Construction	$0	$0	$0	$0	$0	$0	$0	$26,750	$27,820	$0	$0	$52,260	$106,830
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$520**	**$540**	**$1,700**	**$1,780**	**$27,080**	**$28,160**	**$360**	**$370**	**$54,570**	**$115,080**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion

Program Water Supply & Conveyance

Project **Water System Master Plan**

Project ID: WP20

Strategic Plan Priority **1.1, 1.3, 1.4, 1.5, 1.6, 1.7, 1.11, 1.12**

Project Description The purpose of this update is to develop and recommend a roadmap of major water supply acquisitions and facility improvements necessary to meet water demands through buildout, per adopted general plans in the Livermore-Amador Valley. This "blueprint" for major water system infrastructure will incorporate all of the results of the additional studies recommended as part of the 2011 Water Supply Evaluation (2011 WSE), actual data to support the success of implementing water conservation targets established as part of the Water Conservation Act of 2009, revisions made to Zone 7's reliability policy, and findings from the Tranmission System Planning Update and WTP Facilities Optimization Study.

Justification In response to reduced reliability of the State Water Project, Zone 7 staff completed the 2011 WSE to help identify near- and long-term risks of water supply shortages, low-cost, zero impact actions that will minimize near-term risks of those shortage, and additional studies necessary to assist in refining yields and costs of various water supply options. Due to near-term uncertainty, the 2011 WSE did not layout the roadmap of investments necessary to meet water demands through buildout; however, a Water System Master Plan will layout this roadmap, which is required to help define priorities, funding sources, and facilitate required CEQA analysis.

Origin: 2011 Water Supply Evaluation Report

Responsible Section IP Integrated Planning

Operating Impact Adds additional costs to acquire water supplies and construct infrastructure.

In Service Date **Month**: June **Year**: 2016

Total Project Cost $635,000

Source of Funds

Fund 120	Improvement, Renewal & Replacement	35%
Fund 130	Expansion	65%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$535	$100	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$635
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	**$535**	**$100**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$635**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

Capital Improvement Project Summary Report

Strategy Renewal/Replacement

Program Wells

Project **Wellfield Switchboard Replacement Project**

Project ID: W40

Strategic Plan Priority **1.1, 1.4**

Project Description This is a project recommended in the 2011 AMP study for condition assessment to better define the project scope, schedule, and cost. This project will include all planning, design, and construction needed to replace existing switchboards at Hopyard Well 6 and Mocho Well 1.

Justification According to the 2011 AMP Update, these electric switchboards are reaching the end of their useful life. The switchboards are critical to the proper operation and function of the production wells.

Origin: 2011 Asset Management Plan Update Report

Responsible Section FE Facilities Engineering

Operating Impact System reliability.

In Service Date **Month**: June **Year**: 2018

Total Project Cost $1,300,000

Source of Funds Fund 120 Improvement, Renewal & Replacement 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	Future	Total
Planning	$0	$0	$0	$30	$0	$0	$0	$0	$0	$0	$0	$0	$30
Design	$0	$0	$0	$240	$0	$0	$0	$0	$0	$0	$0	$0	$240
Construction	$0	$0	$0	$1,030	$0	$0	$0	$0	$0	$0	$0	$0	$1,030
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$1,300**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,300**

Note: 'Future' means all the project costs from FY 25/26 through FY 39/40, which is the planning horizon.

SECTION THREE

FLOOD PROTECTION

SECTION III – FLOOD PROTECTION

Introduction

Flooding in December 1955
precipitated the formation of Zone 7 Water Agency

Due to significant flooding during the great storms of December 1955, local residents voted in 1957 to form Zone 7 Water Agency (Zone 7) to protect life and property in eastern Alameda County from major flood events.

The majority of flood protection in our service area is provided by 37-miles of engineered flood protection channels; these channels were originally completed as part of the original 1960 Flood Control Master Plan (1960 Plan) that focused on constructing trapezoidal channels to move water out of the Livermore-Amador Valley as quickly as possible.

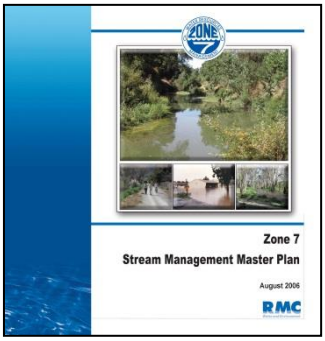
Existing Channel system providing flood protection after a large storm event in 1993

Existing System – Trapezoidal Channels

Although these channels have protected the Livermore-Amador Valley from major flooding over the past 57 years, existing regulatory and environmental constraints, in addition to higher operation and maintenance costs made completing the 1960 Plan difficult. Consequently, Zone 7 began exploring more environmentally friendly and cost-effective methods of managing stormwater runoff and drainage.

New Approach: Valley-wide Hydrologic Modeling and Inclusion of Watershed Ecology Components in Projects

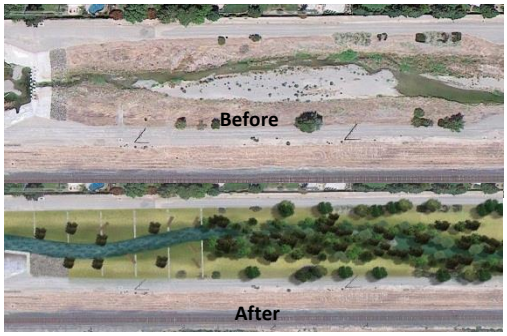
Zone 7 SMMP - staff plans to complete an **update by late 2015**



In 2006, Zone 7 adopted the Stream Management Master Plan (SMMP); an environmentally friendly, cost-effective plan, to help enhance Zone 7's ability to manage stormwater runoff and drainage in the Livermore-Amador Valley. The SMMP is currently being updated to address changed conditions and new data, including the use of more advanced modeling techniques, innovative flood protection methods, and incorporating natural – habitat friendly – components. Zone 7 plans to complete this update by late 2015. The update of the SMMP will also allow Zone 7 to update the Development Impact Fee analysis.

Arroyo Mocho - Stanley Reach Project: Example of innovative approach.

Completed in 2013



Purpose of the CIP

The purpose of this CIP is to capture the funding needs necessary to operate and maintain existing channels, while also capturing those programs and project necessary to enhance flood protection until the update of the SMMP is completed.

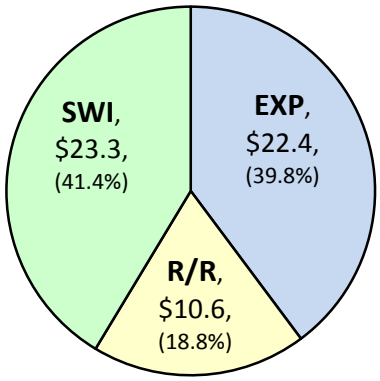
Summary of Funding Needs: Next Five Years

Zone 7's capital improvements for flood protection are divided into three funding strategies: (1) Renewal/Replacement (R/R); (2) System-wide Improvements (SWI); and (3) Expansion (EXP). Renewal/Replacement covers operation and maintenance of the existing system. System-wide Improvements and Expansion cover the capital cost share of existing and future users, respectively. The respective shares are defined in the Development Impact fees for Flood Protection and Storm Water Drainage report dated March 7, 2009.

Funding Need Divided into 3 Strategies

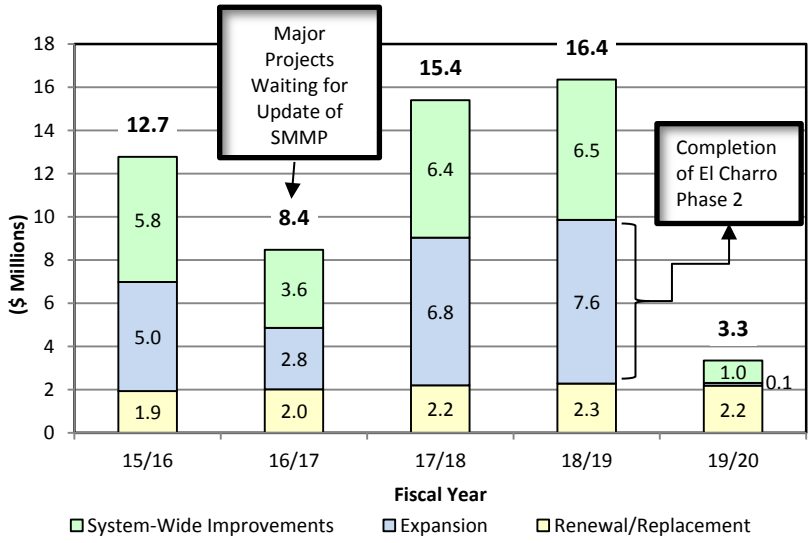
Strategy	Examples
Renewal/Replacement *(i.e., Operation & Maintenance)*	• Channel slope repair • Fencing/Gate installation and replacement • Landscaping and hydroseeding
System-Wide Improvements *(Existing user share of programs & projects)*	• Major flood enhancement projects (e.g., detention basin) • Major planning studies (e.g., SMMP update)
Expansion (Future user share of programs & projects)	•Major flood enhancement projects (e.g., detention basin) •Major planning studies (e.g., SMMP update)

Funding Need: $56.3 Million,
but less than 20% is Renewal/Replacement



Zone 7 projects $56.3 M in capital expenditures over the next five years. Over 80% of the projected expenditure is associated with major flood protection programs and projects, while less than 20% is associated with Renewal/Replacement type activities. The large allocation of funding to major flood protection programs and projects reflects ongoing projects previously identified in the SMMP, including major wetland/stormwater detention projects at the Chain of Lakes, upstream of Chabot Canal, and along the Arroyo Mocho.

Small Drop in Expenditures Expected in 16/17
as the SMMP Update is completed and additional funding secured

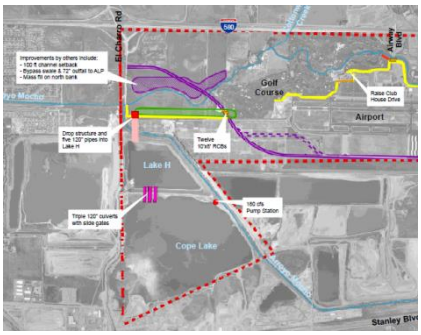


Major Programs/Projects Driving the Funding Need

Over 80% of the projected funding need is associated with operation and maintenance and 9 key projects; each is summarized below, while additional detail on each project, along with descriptions of other activities, is provided in the project summaries located at the end of this chapter.

El Charro Phase 2 (SMMP Project R.5-2 Chain of Lakes): $21.3M

The SMMP identified storage in the Chain of Lakes as one solution to existing and future flood flows to meet the goal of providing 100-year flood protection for the Livermore-Amador Valley. This project will construct the remaining elements not completed in Phase 1: conveyance from the southern floodplain channel into the Chain of Lakes for the detention of flood flows and a conduit, and pumping system for the transfer of these flow internally within the Chain of Lakes and subsequently, back into the Arroyo Mocho once peak storm flows pass.



reduce flooding downstream the Chain of Lakes

Renewal/Replacement Activities (protecting the existing system): $9.5M

Bank Repair

Road Repair

Operation and Maintenance of the 37-miles of existing engineered trapezoidal channels owned by Zone 7 is key to preserving regional flood protection. These activities include rehabilitating maintenance roads, removing excess sediment, installing and repairing fences, landscaping and hydroseeding of channel embankments, and fixing slope failures.

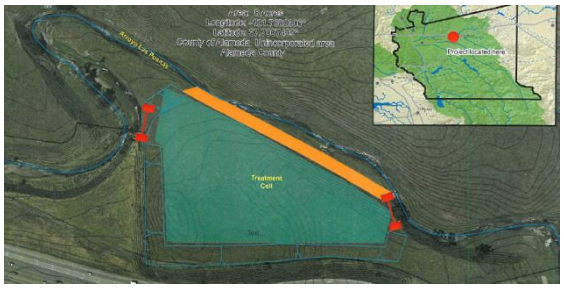
Arroyo Mocho Floodplain & Riparian Forest (SMMP Project R. 3-3): $6.6M

The purpose of this project is to create a natural floodplain along Arroyo Mocho, upstream of Holmes Street, which will provide regional flood detention, while also creating surplus capacity, allowing revegetation of downstream flood control channels. The natural floodplain will also enhance groundwater recharge, and provide benefits to the Livermore Valley Groundwater Basin and water supplies. The project will also help mitigate sedimentation issues along Holmes Street, while promoting a more natural hydrograph that mimics historical conditions.

Enhance and integrate existing floodplains

Arroyo Las Positas Treatment Wetland (SMMP Project R.1-6 & 5-2): $4.5M

The purpose of the Arroyo Las Positas (ALP) Treatment Wetland is to help create new floodplain area to help reduce flooding downstream, while creating new riparian habitat and additional sediment management opportunities.



Treatment wetlands help reduce flooding while also creating critical habitat

Chain of Lakes Facilities – Flood (care for existing Flood facilities): $1.9M

Recent slope repair at Cope Lake

The COLs are a series of gravel mining pits that will be dedicated to Zone 7 over the next 20 or more years for water management purposes. More specifically, Lakes H and Cope Lake will allow Zone 7 to enhance regional flood protection. This project will allow Zone 7 to design and implement the projects necessary for Zone 7 to use both Lake H and Cope Lake for water management after dedication. Some of the projects include fencing, access roads, and slope re-grading and landscaping.

Slope Stability Study (where to focus embankment repairs): $1.7M

One of Zone 7's largest maintenance challenges is protecting the stability of the banks along currently owned flood protection channels. The vast majority of the regional flood protection system consists of trapezoidal earthen-lined channels, which are typically made of soils, and therefore, subject to typical geomorphic processes. These channels can incise, degrade, and fail—this project will provide the comprehensive slope stability analysis necessary to properly protect Zone 7's existing earthen channels in a cost effective manner.

Stream Management Master Plan Update & Funding Analysis (innovative approach to flood protection): $1.5M

There are two key projects in progress that will help Zone 7 plan and fund flood protection activities for the next 30 years. The first is an update of the SMMP, while the second is an update of the existing development impact fee (DIF). An update of the SMMP is necessary to incorporate newly develop area-wide models and innovative flood protection techiques. An update of the DIF is necessary to reflect the more detailed analysis completed as part of updating the SMMP.

Living Arroyos Program (community involvement): $0.5M

The "Living Arroyos Program" seeks to improve the urban streams and streamside habitats of the Livermore-Amador valley and engage the local community. Under professional supervision, restoration apprentices (local college students) work with the community to plant and/or maintain native vegetation. The program increases opportunities for local residents to engage in hands-on stewardship and establish relationships to the streams in their own backyards, while contributing to long-term vegetation management strategies across the Valley. This program is sponsored in part by the City of Livermore and Urban Creeks Council, and is currently in its second year of the three year pilot. The funding included in the CIP anticipates that the program will be extended at the end of the three year pilot, which sunsets in July 2016.

Living Arroyos help promote a healthy stream while stabilizing existing flood protection channels

Flood Warning System Development & Implementation (early detection): $0.15M

The purpose of this project is to develop and implement an early flood warning system to enhance Zone 7's ability to protect the health and safety of the Livermore-Amador Valley during a 1% storm event. Key activities associated with this project include setup of the required stream and rain gages necessary to warn residents and businesses located within the areas identified as having flood potential.

Renewal/Replacement Projects

The table below presents the projected costs for Renewal and Replacement projects over the next five years.

Table 3-1 Flood Protection Renewal/Replacement Strategy Breakdown (Fund 200)

Program	Appropriation ($Millions) FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	Total
Buildings & Grounds						
Administrative & Engineering Building Lease (Flood Protection)	$0.14	$0.14	$0.15	$0.16	$0.10	$0.69
Administrative and Engineering Building - Sinking Fund (Flood Protection)	$0.10	$0.11	$0.12	$0.12	$0.02	$0.46
Subtotal	**$0.24**	**$0.25**	**$0.27**	**$0.28**	**$0.12**	**$1.14**
Flood Control Facilities						
Construction and Rehabilitation of Maintenance Roads	$0.21	$0.22	$0.23	$0.24	$0.21	$1.11
District-wide F. C. Channel Desilting Program	$0.10	$0.11	$0.11	$0.11	$0.14	$0.57
Fences & Gates Installation & Replacement	$0.05	$0.05	$0.05	$0.05	$0.05	$0.25
Landscaping & Hydroseeding Channel Embankments	$0.11	$0.11	$0.11	$0.12	$0.12	$0.57
Rehabilitation of F. C. Channel Embankments	$1.11	$1.15	$1.30	$1.35	$1.41	$6.32
System-wide Construction of Drain Structures	$0.12	$0.13	$0.13	$0.13	$0.14	$0.65
Subtotal	**$1.70**	**$1.77**	**$1.93**	**$2.00**	**$2.07**	**$9.47**
Program Management						
Capital Improvement Program Management	$0.001	$0.001	$0.002	$0.001	$0.002	$0.01
Subtotal	**$0.001**	**$0.001**	**$0.002**	**$0.001**	**$0.002**	**$0.01**
Total	**$1.94**	**$2.02**	**$2.20**	**$2.28**	**$2.19**	**$10.62**

System-Wide Improvement Projects

The table below presents the projected costs for System-Wide Improvement projects over the next five years.

Table 3-2 Flood Protection System-Wide Improvements Strategy Breakdown (Fund 200)

Program	Appropriation ($Millions) FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	Total
Flood Control Facilities						
Arroyo Las Positas Treatment Wetland	$1.54	$0.38	$0.00	$0.00	$0.00	$1.92
Arroyo Mocho Floodplain and Riparian Forest Restoration	$0.18	$0.16	$1.40	$1.12	$0.00	$2.86
Chain of Lakes Facilties - Flood	$0.26	$0.43	$0.00	$0.00	$0.00	$0.70
Chain of Lakes Planning - Flood	$0.01	$0.07	$0.04	$0.01	$0.00	$0.13
Coordination Studies in Northern Alameda Creek Watershed	$0.07	$0.03	$0.00	$0.00	$0.00	$0.10
Coordination Studies in Southern Alameda Creek Watershed	$0.04	$0.02	$0.03	$0.01	$0.00	$0.10
El Charro Phase 2 (SMMP Project R.5-2 - Chain of Lakes)	$0.92	$0.58	$3.34	$4.29	$0.00	$9.12
Flood Control Hydrologic and Hydraulic Model Improvements and Upgrades	$0.17	$0.00	$0.00	$0.00	$0.00	$0.17
Flood Warning System Development and Implementation	$0.05	$0.04	$0.00	$0.00	$0.00	$0.09
Living Arroyos Program	$0.11	$0.07	$0.07	$0.07	$0.00	$0.31
Sediment Transport Study	$0.05	$0.05	$0.00	$0.00	$0.00	$0.09
Slope Stability Study	$0.22	$0.70	$0.34	$0.00	$0.00	$1.26
SMMP Financing Strategy and Implementation	$0.53	$0.17	$0.00	$0.00	$0.00	$0.69
South San Ramon Creek Iron Horse Trail Floodplain and Riparian Restoration	$0.00	$0.17	$0.35	$0.17	$0.00	$0.70
Stream Maintenance Program & Permitting	$0.90	$0.00	$0.00	$0.00	$0.00	$0.90
System-wide Asphalt Paving F.C. Facility Driveway	$0.10	$0.10	$0.10	$0.10	$0.29	$0.69
System-wide Concrete V-ditches Improvements	$0.09	$0.09	$0.09	$0.09	$0.10	$0.46
System-wide Vegetation Abatement	$0.56	$0.58	$0.60	$0.63	$0.65	$3.02
Total	**$5.79**	**$3.62**	**$6.36**	**$6.50**	**$1.04**	**$23.31**

Expansion Projects

The table below presents the projected costs for Expansion projects over the next five years.

Table 3-3 Flood Protection Expansion Strategy Breakdown (Fund 210)

	Appropriation ($Millions)					
Program	**FY 15/16**	**FY 16/17**	**FY 17/18**	**FY 18/19**	**FY 19/20**	**Total**
Buildings & Grounds						
Administrative & Engineering Building Lease (Flood Protection)	$0.14	$0.14	$0.15	$0.16	$0.10	$0.69
Administrative and Engineering Building - Sinking Fund (Flood Protection)	$0.10	$0.11	$0.12	$0.12	$0.02	$0.46
Subtotal	**$0.24**	**$0.25**	**$0.27**	**$0.28**	**$0.12**	**$1.14**
Flood Control Facilities						
Arroyo Las Positas Treatment Wetland	$2.05	$0.50	$0.00	$0.00	$0.00	$2.55
Arroyo Mocho Floodplain and Riparian Forest Restoration	$0.24	$0.21	$1.86	$1.48	$0.00	$3.78
Chain of Lakes Facilties - Flood	$0.35	$0.58	$0.00	$0.00	$0.00	$0.92
Chain of Lakes Planning - Flood	$0.01	$0.09	$0.06	$0.02	$0.00	$0.18
Coordination Studies in Northern Alameda Creek Watershed	$0.05	$0.02	$0.00	$0.00	$0.00	$0.07
Coordination Studies in Southern Alameda Creek Watershed	$0.03	$0.02	$0.02	$0.01	$0.00	$0.07
El Charro Phase 2 (SMMP Project R.5-2 - Chain of Lakes)	$1.21	$0.76	$4.42	$5.68	$0.00	$12.08
Flood Control Hydrologic and Hydraulic Model Improvements and Upgrades	$0.12	$0.00	$0.00	$0.00	$0.00	$0.12
Flood Warning System Development and Implementation	$0.04	$0.03	$0.00	$0.00	$0.00	$0.06
Living Arroyos Program	$0.07	$0.05	$0.05	$0.05	$0.00	$0.22
Sediment Transport Study	$0.03	$0.03	$0.00	$0.00	$0.00	$0.07
Slope Stability Study	$0.05	$0.14	$0.07	$0.00	$0.00	$0.26
SMMP Financing Strategy and Implementation	$0.37	$0.12	$0.00	$0.00	$0.00	$0.48
South San Ramon Creek Iron Horse Trail Floodplain and Riparian Restoratio	$0.00	$0.04	$0.07	$0.04	$0.00	$0.14
Steelhead and Related Studies	$0.02	$0.02	$0.02	$0.02	$0.00	$0.08
Stream Maintenance Program & Permitting	$0.18	$0.00	$0.00	$0.00	$0.00	$0.18
Subtotal	**$4.81**	**$2.59**	**$6.57**	**$7.30**	**$0.00**	**$21.27**
Program Management						
Capital Improvement Program Management	$0.004	$0.002	$0.005	$0.002	$0.005	$0.02
Subtotal	**$0.004**	**$0.002**	**$0.005**	**$0.002**	**$0.005**	**$0.018**
Total	**$5.05**	**$2.84**	**$6.84**	**$7.58**	**$0.12**	**$22.42**

FUNDING ANALYSIS

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 200, while revenue from development impact fees is placed in Fund 210; each is discussed in more detail below.

Fund 200 – Flood Protection General Fund

Alameda County provides Zone 7 with 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 200, and can be used to support both renewal/replacement activities and improvements. Zone 7 may sometimes supplement these revenues with state and federal grant funding. Table 3-4 and Figure 3-1 below present the projected funding for Fund 200 over the next five years.

Table 3-4 Fund 200 (Property Taxes) - NEAR-TERM FUNDING ($ Millions)

	Fiscal year (FY)	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20
2	**Beginning. Available Fund Balance**	**$12.73**	**$11.90**	**$13.38**	**$12.26**	**$11.15**
3	**Revenue**					
4	Property Tax Revenue	6.38	6.64	6.90	7.18	7.47
5	Other Revenue	0.51	0.48	0.54	0.49	0.45
6	Total Revenue	6.89	7.11	7.44	7.67	7.91
7	**Expenditures**					
8	Capital and O&M Expenditures	7.73	5.64	8.56	8.78	3.23
9	Total Expenditures	7.73	5.64	8.56	8.78	3.23
10	**Fund Balance**	11.9	13.4	12.3	11.2	15.8
11	**Reserve Balances**					
12	**Capital Projects**	6.98	9.40	6.71	5.38	12.72
13	**Operating Reserves**	3.86	2.82	4.28	4.39	1.61
14	**Sinking Fund**	1.049	1.154	1.264	1.384	1.509
15	Reserve Total	$ 11.90	$ 13.38	$ 12.26	$ 11.15	$ 15.84

Key Assumptions

Line 1 Beginning fund balance excludes prior year encumbrance carryovers.

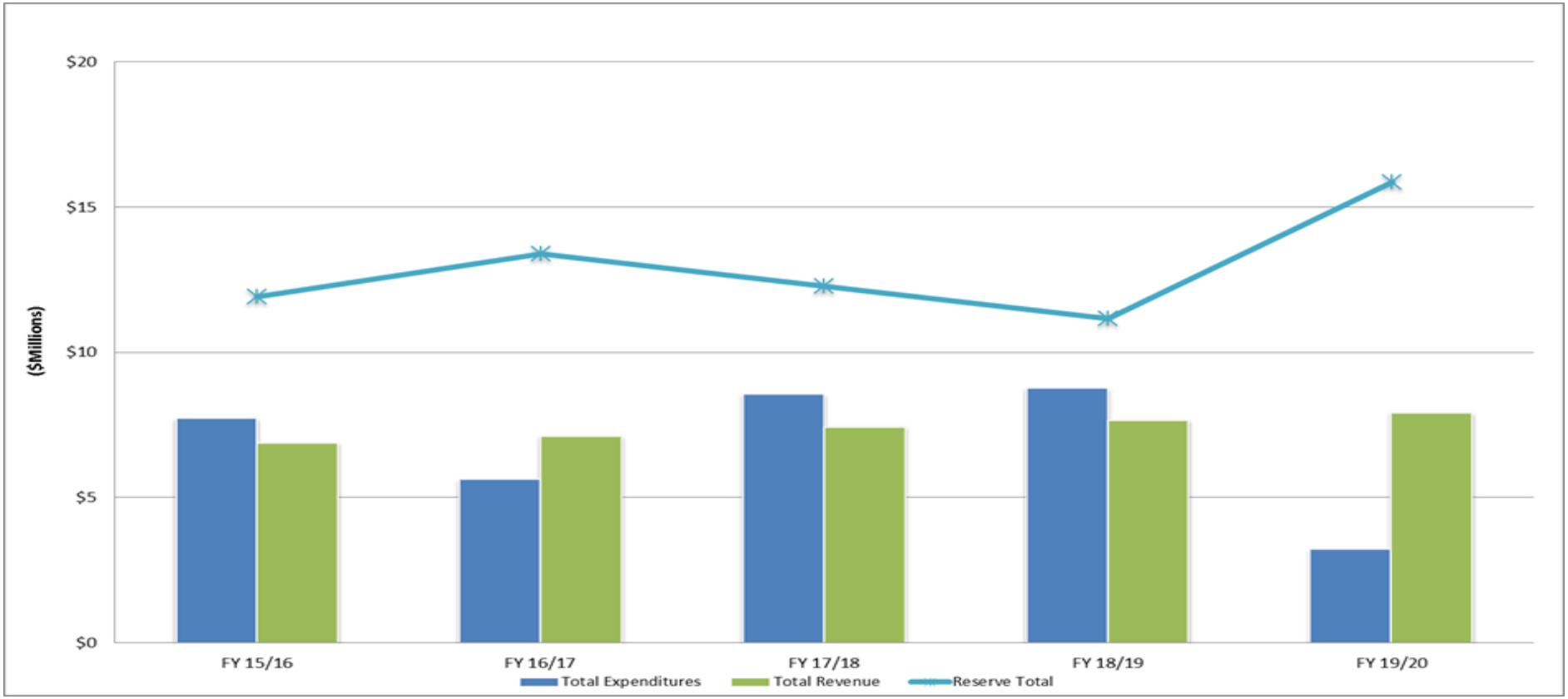
Line 4 Since taxes are based on the assessed property value, which fluctuates over time, Zone 7 has based the contribution on historic experience. A three percent annual increase is conservatively estimated to account for growth in assessed valuation.

Line5 Assumes 1% interest income earned on cash and sinking fund balances, increasing to 4% by FY 16/17.

Line 7 Expenditures are shown in actual dollars (current dollars adjusted by a 4% annual inflation factor) and include capital (System-wide Improvements) and O&M (Renewal/Replacement).

Line 13 Interim reserve policy recommends a reserve policy minimum of at least 50% of following year's operating expenses.

Figure 3-1 Fund 200 (Property Taxes) –
NEAR-TERM FUNDING ($ Millions)



Fund 210 – Flood Protection and Storm Water Drainage Development Impact Fee

Twenty-six million of the total flood protection projects are funded by Fund 210. Fund 210 - holds all fees collected from future development in support of Zone 7's flood protection and stormwater drainage activities.

The Zone 7 Board approved the Stream Management Master Plan (SMMP) in August 2006. Subsequently, Zone 7 adopted Ordinance 2009-01 to establish the new development impact fee (DIF) necessary to support SMMP projects within the Alameda Creek Watershed. This study recommended a fee of $1.423 per square-foot of impervious area created by new development. The calculation included $11,981,769 as the starting balance. After discussions with the cities and Zone 7 Board, this fee was subsequently capped at $1.10, and is currently $1.00. Over the next few years, Zone 7 will update the SMMP and DIF studies. These updates will reassess the projects and costs proposed in SMMP and also reevaluate the current fee structure.

The SMMP and DIF identified $222 million in flood protection projects to be funded by this fund. Incorporating the projected expenditures planned within this CIP, Zone 7 projects a fund balance of $34M million in FY 19/20 This fund balance, along with other funding sources (to be examined in the DIF and SMMP updates) will be used to fund future flood protection and stormwater drainage projects identified in the SMMP.

The near term funding outlook for Fund 210 is shown in Table 3-5 and Figure 3-2 below.

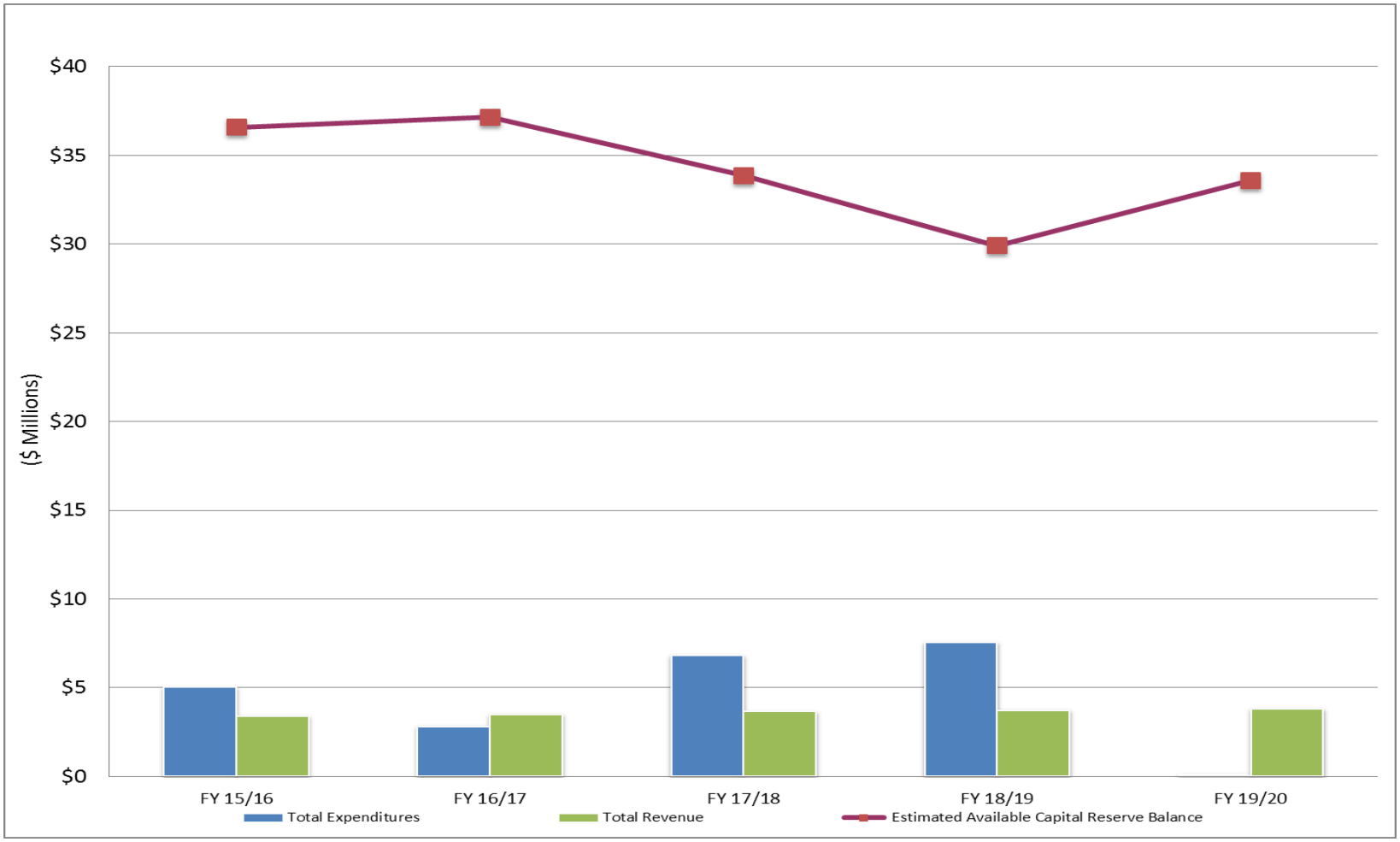
Table 3-5 Fund 210 (Development Impact Fees) - NEAR-TERM FUNDING ($ Millions)

	Fiscal year (FY)	15/16	16/17	17/18	18/19	19/20
1	**Beg. Available Capital Reserve Balance**	**$38.30**	**$36.57**	**$37.14**	**$33.85**	**$29.90**
2	**Revenue**					
3	Development Impact Fees	2.66	2.79	2.93	3.08	3.23
4	Other Revenue	0.77	0.73	0.74	0.68	0.60
5	Total Revenue	3.422	3.521	3.672	3.752	3.827
6	**Expenditures**					
7	Capital Expenditures	5.05	2.84	6.84	7.58	0.12
8	Total Expenditures	5.05	2.84	6.84	7.58	0.12
9	**Capital Reserve Balance**	**$36.67**	**$37.25**	**$33.97**	**$30.03**	**$33.61**
10	**Sinking Funds**					
11	Annual Building Sinking Fund Contribution	0.105	0.110	0.120	0.125	0.020
11	Building Sinking Fund Reserve Balance	1.05	1.16	1.28	1.41	1.43
12	**Estimated Available Capital Reserve Balance**	**$36.57**	**$37.14**	**$33.85**	**$29.90**	**$33.59**

Key Assumptions

Line 1 Beginning fund balance excludes prior year encumbrance carryovers.
Line 3 Development Impact Fee revenue based on a conservative growth projection.
Line 4 Assumes 1% interest income earned on cash and sinking fund balances, increasing to 4% by FY 16/17.
Line 6 Expenditures are shown in actual dollars (current dollars adjusted by a 4% annual inflation factor).
Line 12 Net available capital reserves after sinking fund contribution.

Figure 3-2 Fund 210 (Development Impact Fees)
Near-Term Funding Outlook ($ Millions)



PROJECT SUMMARIES

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

Capital Improvement Project Summary Report

Strategy Expansion
Renewal/Replacement

Program Buildings & Grounds

Project **Administrative & Engineering Building Lease (Flood Protection)**

Project ID SP17

Strategic Planning Priority 1.4

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, an annual contribution is made 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.

Origin: Capital Improvement Program

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 $2,512,000

Source of Funds

Fund 200	Flood Protection Operations	50%
Fund 210	Flood Protection Development Impact Fees	50%

($1,000)

Appropriation	Prior	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
Design	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$0	$0	$0	$0	$0	$0	$0	$0
Other	$1,142	$270	$280	$300	$320	$200	$0	$2,512
Total	**$1,142**	**$270**	**$280**	**$300**	**$320**	**$200**	**$0**	**$2,512**

Capital Improvement Project Summary Report

Strategy Expansion
Renewal/Replacement
Program Buildings & Grounds
Project **Administrative and Engineering Building - Sinking Fund (Flood Protection)**

Project ID SP16

Strategic Planning Priority 1.4

Project Description In addition to the scheduled lease payment for the new building, $696,000 plus interest per year will be contributedto 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.

Origin: Capital Improvement Program

Responsible Section ASD Administrative Services Division

Operating Impact None.

In Service Date **Month**: June **Year**: 2019

Total Project Cost $1,744,000

Source of Funds

Fund 200	Flood Protection Operations	50%
Fund 210	Flood Protection Development Impact Fees	50%

($1,000)

Appropriation	Prior	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
Design	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$0	$0	$0	$0	$0	$0	$0	$0
Other	$834	$200	$210	$230	$240	$30	$0	$1,744
Total	**$834**	**$200**	**$210**	**$230**	**$240**	**$30**	**$0**	**$1,744**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion
Program Flood Control Facilities
Project **Arroyo Las Positas Treatment Wetland**

Project ID SDA42

Strategic Planning Priority 2.7

Project Description The Arroyo Las Positas (ALP) Treatment Wetland #1 will be constructed along ALP, north of I-580 and in Livermore, to improve the water quality of urban stormwater runoff from the ALP, while also slowing the flow and removing sediment before the flow re-enters the channel downstream. The wetland will have gates or other control devices that would be open to receive flow during routine storm events, allowing it to treat urban stormwater runoff via filtration through planned vegetation, while also slowing velocities to promote sediment deposition. The project also includes planting strategic areas of riparian cover to help alleviate elevated water temperatures that, along with suspended sediment, are contributing to lower dissolved oxygen levels. During larger storm events, the water level would overtop the levees separating the wetland from the ALP channel. Any future maintenance within the wetland area can be facilitated by use of flow control structures that allow the wetland to be isolated from the ALP channel. The flow control structures also allow the water to be metered out of the wetland to act similarly to a hydromodification basin. As flow passes through the treatment wetland, the stormwater slows allowing more contact time with wetland vegetation, reducing water levels in downstream portions of the channel, and allowing sediment to drop helping to reduce some of the development-related sediment that has been deposited in the downstream portions of the ALP

Justification This project is part of Zone 7's 2006 Stream Management Master Plan (SMMP) and its associated Environmental Impact Report that was created to establish a long-term plan to accept and manage stormwater runoff.

Origin: 2006 Stream Management Master Plan and Draft 2008 StreamWISE Project Development and Prioritization

Responsible Section IP Integrated Planning

Operating Impact The project will require long-term maintenance.

In Service Date **Month**: June **Year**: 2017

Total Project Cost $8,300,000

Source of Funds

Fund 200	Flood Protection Operations	43%
Fund 210	Flood Protection Development Impact Fees	57%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$500	$330	$90	$0	$0	$0	$0	$920
Design	$400	$210	$0	$0	$0	$0	$0	$610
Construction	$2,930	$3,050	$790	$0	$0	$0	$0	$6,770
Other	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$3,830**	**$3,590**	**$880**	**$0**	**$0**	**$0**	**$0**	**$8,300**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion

Program Flood Control Facilities

Project **Arroyo Mocho Floodplain and Riparian Forest Restoration**

Project ID SDA31

Strategic Planning Priority 2.4, 2.5, 2.7

Project Description Zone 7 staff will conduct confirmation modeling, and then complete predesign, design, and construction of a natural floodplain, riparian forest, and/or wetland along the reach of the Arroyo Mocho that starts at Arroyo Road and extends to Holmes Street. Per an existing agreement, the City of Livermore will dedicate the land to Zone 7 once requested; therefore, the costs do no include land acquisition.

Justification Zone 7 has previously identified flooding downstream of the project location, where the Arroyo Mocho crosses Murrieta Boulevard and again near Stanley Boulevard. The purpose of this project is to create a natural floodplain along Arroyo Mocho, upstream of Holmes Street, which will provide regional flood detention, while also creating surplus capacity, allowing revegetation of downstream flood control channels. The natural floodplain will also enhance groundwater recharge, and provide benefits to the Livermore Valley Groundwater Basin and water supplies. The project will also help mitigate sedimentation issues along Holmes Street, while promoting a more natural hydrograph that mimics historical conditions.

Origin: Stream Management Master Plan Program

Responsible Section IP Integrated Planning

Operating Impact The portion of the Arroyo Mocho will require long-term maintenance.

In Service Date **Month**: June **Year**: 2019

Total Project Cost $6,640,000

Source of Funds

Fund 200	Flood Protection Operations	43%
Fund 210	Flood Protection Development Impact Fees	57%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$0	$180	$120	$0	$0	$0	$0	$300
Design	$0	$240	$240	$0	$0	$0	$0	$480
Construction	$0	$0	$0	$3,260	$2,600	$0	$0	$5,860
Other	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$420**	**$360**	**$3,260**	**$2,600**	**$0**	**$0**	**$6,640**

Capital Improvement Project Summary Report

Strategy Expansion
Renewal/Replacement
Program Program Management
Project **Capital Improvement Program Management**

Project ID SP13

Strategic Planning Priority 2.7

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.

Origin: Capital Improvement Program

Responsible Section ASD Administrative Services Division
FE Facilities Engineering

Operating Impact None

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $4,750,000

Source of Funds

Fund 120	Improvement, Renewal & Replacement	20%
Fund 130	Expansion	75%
Fund 200	Flood Protection Operations	3%
Fund 210	Flood Protection Development Impact Fees	2%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$0	$6	$3	$6	$3	$7	$119	$168
Design	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$0	$0	$0	$0	$0	$0	$0	$0
Other	$70	$0	$0	$0	$0	$0	$0	$70
Total	**$70**	**$6**	**$3**	**$6**	**$3**	**$7**	**$119**	**$238**

Capital Improvement Project Summary Report

Strategy Expansion
System-Wide Improvements
Program Flood Control Facilities
Project **Chain of Lakes Facilties - Flood**

Project ID SDA41

Strategic Planning Priority 2.2

Project Description This project consists of the near-term and long-term program management and planning necessary to integrate the Chain of Lakes (COLs) into Zone 7's water supply and flood protection system, and into various general plans, specific plans, on-going construction, or other activities in the Livermore-Amador Valley. Program elements may include coordinating with the mining companies/quarry operators, developers, and government agencies (e.g., City of Pleasanton, East Bay Regional Parks District). Planning for the COLs will incorporate the recommendations from other Zone 7 planning efforts, including the Stream Management Master Plan and the Water System Master Plan update.

Justification The COLs is a series of gravel mining pits that will be dedicated to Zone 7 over the next 20 years or more for water management purposes. More specifically, the COLs will allow Zone 7 to reduce evaporative losses, implement mitigative measures for salt loading in the Livermore Valley Groundwater Basin, enhance artificial recharge, provide surface water storage, and support flood protection activities. All of these activites are necessary to prove a reliable supply of high-quality water and an effective flood control system to the Livermore-Amador Valley. This project will allow Zone 7 to design and implement the projects necessary for Zone 7 to use the COLs for water management after dedication.

Origin: 2006 Stream Management Master Plan and Draft 2008 StreamWISE Project Development and Prioritization

Responsible Section IP Integrated Planning

Operating Impact Increase of water supply reliability. Increased O&M costs.

In Service Date **Month**: December **Year**: 2018

Total Project Cost $1,620,000

Source of Funds

Fund 200	Flood Protection Operations	43%
Fund 210	Flood Protection Development Impact Fees	57%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$0	$60	$0	$0	$0	$0	$0	$60
Design	$0	$160	$70	$0	$0	$0	$0	$230
Construction	$0	$390	$940	$0	$0	$0	$0	$1,330
Other	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$610**	**$1,010**	**$0**	**$0**	**$0**	**$0**	**$1,620**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion

Program Flood Control Facilities

Project **Chain of Lakes Planning - Flood**

Project ID COL15

Strategic Planning Priority 2.2

Project Description This project consists of the near-term and long-term program management and planning necessary to integrate the Chain of Lakes (COLs) into Zone 7's water supply and flood protection system, and into various general plans, specific plans, on-going construction, or other activities in the Livermore-Amador Valley. Program elements may include coordinating with the mining companies/quarry operators, developers, and government agencies (e.g., City of Pleasanton, East Bay Regional Parks District). Planning for the COLs will incorporate the recommendations from other Zone 7 planning efforts, including the Stream Management Master Plan and the Water System Master Plan update.

Justification The COLs is a series of gravel mining pits that will be dedicated to Zone 7 over the next 20 years or more for water management purposes. More specifically, the COLs will allow Zone 7 to reduce evaporative losses, implement mitigative measures for salt loading in the Livermore Valley Groundwater Basin, enhance artificial recharge, provide surface water storage, and support flood protection activities. All of these activites are necessary to prove a reliable supply of high-quality water and an effective flood control system to the Livermore-Amador Valley. This project will allow Zone 7 to design and implement the projects necessary for Zone 7 to use the COLs for water management after dedication.

Origin: 2006 Stream Management Master Plan and Draft 2008 StreamWISE Project Development and Prioritization

Responsible Section IP Integrated Planning

Operating Impact Enhances Zone 7's ability to manage water.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $330,000

Source of Funds

Fund 200	Flood Protection Operations	43%
Fund 210	Flood Protection Development Impact Fees	57%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$20	$20	$120	$100	$30	$0	$0	$290
Design	$0	$0	$40	$0	$0	$0	$0	$40
Construction	$0	$0	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$20**	**$20**	**$160**	**$100**	**$30**	**$0**	**$0**	**$330**

Capital Improvement Project Summary Report

Strategy Renewal/Replacement
Program Flood Control Facilities
Project **Construction and Rehabilitation of Maintenance Roads**

Project ID FC9

Strategic Planning Priority 2.1

Project Description Construct new and rehabilitate existing gravel flood channel maintenance roads by replenishing and reconstructing the road base to ensure proper channel operation and to provide good structural integrity. Proper grading and compaction also ensure good drainage which promotes long road life.

Justification Construction of new and rehabilitation of existing gravel roads is needed along flood control channels. Heavy usage and previous storm damage have caused these maintenance roads to become 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 as well as to ensure the structural integrity of the flood control channels.

Origin: Capital Improvement Program

Responsible Section FC Flood Control

Operating Impact Increased maintenance efficiencies by providing safe access for staff to conduct facility inspection activities on a year-round basis.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $2,755,000

Source of Funds Fund 200 Flood Protection Operations 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$90	$30	$30	$30	$30	$30	$0	$240
Design	$130	$40	$40	$40	$40	$0	$0	$330
Construction	$1,285	$140	$150	$160	$170	$180	$0	$2,085
Other	$100	$0	$0	$0	$0	$0	$0	$100
Total	**$1,605**	**$210**	**$220**	**$230**	**$240**	**$210**	**$0**	**$2,755**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion

Program Flood Control Facilities

Project **Coordination Studies in Northern Alameda Creek Watershed**

Project ID SDA33

Strategic Planning Priority 2.1, 2.4, 2.5

Project Description This project includes staff time to coordinate with developers, private land owners, and stakeholders, updating or creating unsteady state HEC-RAS modeling, and conduct detailed project level analysis that is beyond the scope of the Stream Management Master Plan update.

Justification As the economy continues to improve, Zone 7 staff is being approached by the cities, developers, private land owners, and stakeholders that would like to coordinate with Zone 7 on new projects located in the northern portion of our service area (i.e., located upstream of Bernal Avenue). The purpose of this project is to allow Zone 7 staff to coordinate on several projects that could lead to future capital improvements, including projects located: within Camp Parks in Dublin; near the confluence with Arroyo Las Positas and Arroyo Seco; within Doolan Canyon; or along Altamont Creek.

Origin: Capital Improvement Program

Responsible Section IP Integrated Planning

Operating Impact No anticipated operating impacts.

In Service Date **Month**: June **Year**: 2017

Total Project Cost $340,000

Source of Funds

Fund 200	Flood Protection Operations	59%
Fund 210	Flood Protection Development Impact Fees	41%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$170	$120	$50	$0	$0	$0	$0	$340
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	**$170**	**$120**	**$50**	**$0**	**$0**	**$0**	**$0**	**$340**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion

Program Flood Control Facilities

Project **Coordination Studies in Southern Alameda Creek Watershed**

Project ID SDA34

Strategic Planning Priority 2.1, 2.4, 2.5

Project Description This project includes staff time to coordinate with developers, private land owners, and stakeholders, updating or creating unsteady state HEC-RAS modeling, and conduct detailed project level analysis that is beyond the scope of the Stream Management Master Plan update.

Justification The purpose of this project is to allow Zone 7 staff to coordinate on several projects in the southern part of the watershed (i.e., downstream of where Bernal Avenue crosses Arroyo de la Laguna) that could lead to future capital improvements. This would also include other arroyos besides the Arroyo de la Laguna. For example, it also includes Sinbad Creek, Stonybrook Creek, Vallecitos Creek, and Alameda Creek.

Most of the arroyos running through this area, however, are owned by either private landowers or other water agencies. Consequently, Zone 7 facilitated the creation of the ADLL Collaborative, a forum where ADLL stakeholders can discuss the status and future of the ADLL. The costs presented represent Zone 7's estimated share of joint studies and analysis.

Origin: Capital Improvement Program

Responsible Section IP Integrated Planning

Operating Impact No anticipated operating impacts.

In Service Date **Month**: June **Year**: 2017

Total Project Cost $170,000

Source of Funds

Fund 200	Flood Protection Operations	59%
Fund 210	Flood Protection Development Impact Fees	41%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$0	$60	$40	$50	$20	$0	$0	$170
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	**$0**	**$60**	**$40**	**$50**	**$20**	**$0**	**$0**	**$170**

Capital Improvement Project Summary Report

Strategy Renewal/Replacement
Program Flood Control Facilities
Project **District-wide F. C. Channel Desilting Program**

Project ID FC5

Strategic Planning Priority 2.1

Project Description This district-wide desilting program is designed to systematically plan, design and remove over 300,000 cubic yards of sediment which has accumulated in various flood control channels over the years.

Justification Silt sedimentation decreases channel carrying and conveyance capability which compromises the level of flood protection. Excessive sedimentation also increases loading on channel banks which leads to increases in the amount and severity of bank slides. This program is required to restore the flood control channel facilities to their original hydraulic design capacity in order to provide the designed level of flood protection.

Origin: Capital Improvement Program

Responsible Section FC Flood Control

Operating Impact Increased flood control channel efficiency and prolong service life.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $4,735,000

Source of Funds Fund 200 Flood Protection Operations 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$535	$0	$0	$0	$0	$10	$0	$545
Design	$460	$10	$10	$10	$10	$10	$0	$510
Construction	$3,170	$90	$100	$100	$100	$110	$0	$3,670
Other	$0	$0	$0	$0	$0	$10	$0	$10
Total	**$4,165**	**$100**	**$110**	**$110**	**$110**	**$140**	**$0**	**$4,735**

Capital Improvement Project Summary Report

Strategy Expansion
System-Wide Improvements
Program Flood Control Facilities
Project **El Charro Phase 2 (SMMP Project R.5-2 - Chain of Lakes)**

Project ID SDA30

Strategic Planning Priority 2.2, 2.4, 2.7

Project Description The SMMP identified specific flood protection improvements under Project R.5-2 and R.5-3 that were not addressed as part of the first phase of the El Charro Specific Plan Agreement (ECSPA) improvements. This project will construct these missing elements. Elements not addressed in the ECSPA include conveyance from the southern floodplain channel into the Chain of Lakes for the detention of flood flows and a conduit and pumping system for the transfer of these flow internally within the Chain of Lakes and subsequently, back into the Arroyo Mocho once peak storm flows pass..

Justification The SMMP identified storage in the Chain of Lakes as one solution to existing and future flood flows to meet the goal of providing 100-year flood protection for the Livermore-Amador Valley.

Origin: 2006 Stream Management Master Plan and Draft 2008 StreamWISE Project Development and Prioritization

Responsible Section IP Integrated Planning

Operating Impact Helps to assist Zone 7 in achieving the goals of the SMMP and assists in meeting regulatory requirements for long-term sediment management through improved sediment transport capacity.

In Service Date **Month**: June **Year**: 2020

Total Project Cost $21,280,000

Source of Funds

Fund 200	Flood Protection Operations	43%
Fund 210	Flood Protection Development Impact Fees	57%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$80	$20	$250	$2,940	$240	$0	$0	$3,530
Design	$0	$0	$610	$260	$0	$0	$0	$870
Construction	$0	$2,110	$480	$4,560	$9,730	$0	$0	$16,880
Other	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$80**	**$2,130**	**$1,340**	**$7,760**	**$9,970**	**$0**	**$0**	**$21,280**

Capital Improvement Project Summary Report

Strategy Renewal/Replacement
Program Flood Control Facilities
Project **Fences & Gates Installation & Replacement**

Project ID FC7

Strategic Planning Priority 2.1

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 37 miles of channels. From time to time, fences and gates are damaged or destroyed by vandalism, traffic accidents, or adjacent property owners' activities. When 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 to provide for public safety and liability purposes.

Origin: Capital Improvement Program

Responsible Section FC Flood Control

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 $730,000

Source of Funds Fund 200 Flood Protection Operations 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$95	$20	$20	$20	$20	$20	$0	$195
Design	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$360	$30	$30	$30	$30	$30	$0	$510
Other	$25	$0	$0	$0	$0	$0	$0	$25
Total	**$480**	**$50**	**$50**	**$50**	**$50**	**$50**	**$0**	**$730**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion

Program Flood Control Facilities

Project **Flood Control Hydrologic and Hydraulic Model Improvements and Upgrades**

Project ID SDA40

Strategic Planning Priority 2.2, 2.3, 2.4, 2.5

Project Description This is an on-going project, developing and refining valley wide hydrology and hydraulics. This includes updating hydrology based on available data and developing steady and unsteady state hydraulics to fine tune flows in channels against storage in flood plains and other storage devices. Areas of storage will be defined and utilized in the development of design storm containment

Justification The Development Impact Fee (DIF) was enacted in 2008 to replace the Special Drainage Area 7-1 (SDA 7-1) Fee structure and to bring the program in line with the Stream Management Master Plan. As a part of the adoption of the new ordinance and fee, Zone 7 agreed to reassess the amount of the fee in 2012. In anticipation of the update and reassessment, Zone 7 has initiated, and continues to develop, a Valley-wide hydrologic and hydraulic model and is using this model to look at the SMMP projects at a planning level to assess their need and cost estimates.

Origin: 2009 Development Impact Fee Program

Responsible Section IP Integrated Planning

Operating Impact The result of this evaluation may modify the existing DIF fee structure and amount

In Service Date **Month**: November **Year**: 2015

Total Project Cost $840,000

Source of Funds

Fund 200	Flood Protection Operations	59%
Fund 210	Flood Protection Development Impact Fees	41%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$550	$290	$0	$0	$0	$0	$0	$840
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	**$550**	**$290**	**$0**	**$0**	**$0**	**$0**	**$0**	**$840**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion
Program Flood Control Facilities
Project **Flood Warning System Development and Implementation**

Project ID SDA39

Strategic Planning Priority 2.1, 2.4

Project Description This project will use the analysis completed as part of the Stream Management Master Plan update to identify the potential use of existing stream gages or locations for new stream gages as part of an early flood warning system. This project also includes budget to retrofit 4 existing stream gages to include SCADA, install three new stream gages, and 3 new rain gages.

Justification The purpose of this project is to develop and implement an early flood warning system to enhance Zone 7's ability to protect the health and safety during the 1% storm event. As part of the Stream Management Master Plan (SMMP) update, Zone 7 staff will identify areas that are within existing and future floodplains in the Livermore-Amador Valley during a 1% storm event. This project is necessary to setup the required stream and rain gages necessary to warn people and businesses located within the areas identified as having flood potential if rainfall and water level stage within the creeks and arroyos indicate imminent potential of flooding.

Origin: Capital Improvement Program

Responsible Section FC Flood Control

Operating Impact No anticipated operating impacts.

In Service Date **Month**: June **Year**: 2017

Total Project Cost $410,000

Source of Funds

Fund 200	Flood Protection Operations	59%
Fund 210	Flood Protection Development Impact Fees	41%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$260	$90	$40	$0	$0	$0	$0	$390
Design	$0	$0	$20	$0	$0	$0	$0	$20
Construction	$0	$0	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$260**	**$90**	**$60**	**$0**	**$0**	**$0**	**$0**	**$410**

Capital Improvement Project Summary Report

Strategy Renewal/Replacement
Program Flood Control Facilities
Project **Landscaping & Hydroseeding Channel Embankments**

Project ID FC8

Strategic Planning Priority 2.1

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 Provides erosion control measures and promotes natural habitat for wildlife.

Origin: Capital Improvement Program

Responsible Section FC Flood Control

Operating Impact Increased maintenance.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $1,410,000

Source of Funds Fund 200 Flood Protection Operations 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$70	$10	$10	$10	$10	$10	$0	$120
Design	$40	$10	$10	$10	$10	$10	$0	$90
Construction	$700	$90	$90	$90	$100	$100	$0	$1,170
Other	$30	$0	$0	$0	$0	$0	$0	$30
Total	**$840**	**$110**	**$110**	**$110**	**$120**	**$120**	**$0**	**$1,410**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion
Program Flood Control Facilities
Project **Living Arroyos Program**

Project ID SDA35

Strategic Planning Priority 2.1, 2.4, 2.5, 2.6, 2.7, 2.8

Project Description The Living Arroyos Program will explore long-term vegetation management strategies across the Valley that increases opportunities for local residents to engage in hands-on stewardship and establish relationships to the streams in their backyards. The program will engage local college students as intern 'apprentices' who will be instructed on stream management techniques and then allowed to interact with and guide the volunteers. This program is governed by a Multi-Party Master Agreement between Zone 7, Urban Creeks Council, and the City of Livermore.

Justification The program will increase opportunities to collaborate with cities and landowners on flood protection improvements, while also allowing Zone 7 to cooperate with various state and federal agencies in environmental enhancement efforts. The program also helps Zone 7 maintain flood protection capacity in existing channels and arroyos.

Origin: July 2013 Board Agenda Item 11; Multi-party Master Agreement with City of Livermore and Urban Creeks Council for "Living Arroyos Program"

Responsible Section IP Integrated Planning

Operating Impact No anticipated operating impacts.

In Service Date **Month**: June **Year**: 2019

Total Project Cost $550,000

Source of Funds

Fund 200	Flood Protection Operations	59%
Fund 210	Flood Protection Development Impact Fees	41%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$20	$180	$110	$120	$120	$0	$0	$550
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	**$20**	**$180**	**$110**	**$120**	**$120**	**$0**	**$0**	**$550**

Capital Improvement Project Summary Report

Strategy Renewal/Replacement
Program Flood Control Facilities
Project **Rehabilitation of F. C. Channel Embankments**

Project ID FC3

Strategic Planning Priority 2.1

Project Description Rehabilitation and rebuilding of damaged flood control channel facilities.

Justification Previous storm damage has deteriorated and degraded the structural integrity of these existing facilities causing severe erosion and channel bank slides. 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. Restoration of channel facilities also provides the required structural integrity to protect adjacent property owners from loss or damage of property during storm events.

Origin: Capital Improvement Program

Responsible Section FC Flood Control

Operating Impact Increase flood control channel efficiency and prolong service life.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $13,090,000

Source of Funds Fund 200 Flood Protection Operations 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$660	$90	$90	$90	$90	$100	$0	$1,120
Design	$310	$30	$30	$30	$30	$30	$0	$460
Construction	$5,550	$990	$1,030	$1,180	$1,230	$1,280	$0	$11,260
Other	$250	$0	$0	$0	$0	$0	$0	$250
Total	**$6,770**	**$1,110**	**$1,150**	**$1,300**	**$1,350**	**$1,410**	**$0**	**$13,090**

Capital Improvement Project Summary Report

Strategy Expansion
System-Wide Improvements
Program Flood Control Facilities
Project **Sediment Transport Study**

Project ID SDA26

Strategic Planning Priority 2.1, 2.4, 2.5, 2.8

Project Description To develop a District-wide sediment transport analysis program and augment the existing stream gaging program for the streams in the Zone 7 service area.

Justification As a part of the Stream Management Master Plan (SMMP) and Development Impact Fee Program updates, staff will be revising and creating technical studies/modeling in the areas of hydrology, hydraulic, geomorphology, sediment transport, and an environmental assessment. Several flood control channel sections owned and maintained by Zone 7 have experienced sediment accumulation and reduced capacity in past years, as was identified in the SMMP. To address future maintenance needs and assist in the acquisition of regulatory permits on these reaches, Zone 7 staff plans to continue to conduct a sediment transport study to better understand the magnitude, movement, and accumulation of sediment in local streams.

Origin: 2006 Stream Management Master Plan and Draft 2008 StreamWISE Project Development and Prioritization

Responsible Section FC Flood Control

Operating Impact Issues identified from the sediment study would have current and long term fiscal implications to flood control's capital improvement program.

In Service Date **Month**: June **Year**: 2017

Total Project Cost $393,000

Source of Funds

Fund 200	Flood Protection Operations	59%
Fund 210	Flood Protection Development Impact Fees	41%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$233	$80	$80	$0	$0	$0	$0	$393
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	**$233**	**$80**	**$80**	**$0**	**$0**	**$0**	**$0**	**$393**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion
Program Flood Control Facilities
Project **Slope Stability Study**

Project ID SDA36

Strategic Planning Priority 2.1, 2.4, 2.7

Project Description This project will complete a slope stability analysis to assess the status of the banks along flood control channels currently owned by Zone 7. The main objectives of the slope stability analysis will be to understand the sensitivity of the system to various triggering mechanisms (i.e., high flow versus low flow, over watering in surrounding areas) investigate known problematic areas, identify potential future failures, and then design optimal slope protection measures that account for safety, longevity, and economics.

Justification One of Zone 7's largest maintenance challenges is protecting the stability of the banks along currently owned flood control channels. The vast majority of the regional flood protection system consists of trapezoidal earthened channels, which are typically made of compacted soils, and therefore, subject to typical geomorphic processes. These channels can incise, agrade, and fail—this project will provide the comprehensive slope stability analysis necessary to properly protect Zone 7's existing earthened channels in a cost effective manner.

Origin: 2006 Stream Management Master Plan and Draft 2008 StreamWISE Project Development and Prioritization

Responsible Section FC Flood Control

Operating Impact No anticipated operating impacts.

In Service Date **Month**: September **Year**: 2018

Total Project Cost $1,680,000

Source of Funds

Fund 200	Flood Protection Operations	83%
Fund 210	Flood Protection Development Impact Fees	17%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$160	$270	$840	$410	$0	$0	$0	$1,680
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	**$160**	**$270**	**$840**	**$410**	**$0**	**$0**	**$0**	**$1,680**

Capital Improvement Project Summary Report

Strategy Expansion
System-Wide Improvements
Program Flood Control Facilities
Project **SMMP Financing Strategy and Implementation**

Project ID SDA29

Strategic Planning Priority 2.2, 2.6

Project Description The Development Impact Fee (DIF) was enacted in 2008 to replace the Special Drainage Area 7-1 (SDA 7-1) Fee structure and to bring the program in line with the Stream Management Master Plan. As a part of the adoption of the new ordinance and fee, Zone 7 agreed to reassess the amount of the fee in 2012. In anticipation of this update and reassessment, Zone 7 has initiated a Valley-wide hydrology and hydraulic model and will be using this model to look at the SMMP projects on a planning level to assess their need and cost estimates. The DIF will also examine the changing mitigation requirements for new projects and seeks to better address these costs

Justification Zone 7 agreed to reassess the DIF in 2012 as a part of our adoptions of a new ordinance in fee structure in 2008. This project anticipates the reassessment of the DIF projects and fee

Origin: 2009 Development Impact Fee Program

Responsible Section IP Integrated Planning

Operating Impact The result of this evaluation may modify the existing fee structure and amount.

In Service Date **Month**: December **Year**: 2016

Total Project Cost $1,550,000

Source of Funds

Fund 200	Flood Protection Operations	59%
Fund 210	Flood Protection Development Impact Fees	41%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$380	$80	$0	$0	$0	$0	$0	$460
Design	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$0	$0	$0	$0	$0	$0	$0	$0
Other	$0	$810	$280	$0	$0	$0	$0	$1,090
Total	**$380**	**$890**	**$280**	**$0**	**$0**	**$0**	**$0**	**$1,550**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion

Program Flood Control Facilities

Project **South San Ramon Creek Iron Horse Trail Floodplain and Riparian Restoration**

Project ID SDA37

Strategic Planning Priority 2.1, 2.4, 2.5, 2.7

Project Description Zone 7 staff will conduct confirmation modeling, and then complete predesign, design, and construction of a natural floodplain, riparian forest, wetland, and fish friendly grade control structures along the reach of the South San Ramon Creek that starts just south of Alcosta Boulevard and extends to the confluence with Alamo Canal. This project will coordinate with the City of Dublin and integrate new plans for an Iron Horse Trail Park located adjacent to and parallel with this stretch of the South San Ramon Creek.

Justification The portion of the South San Ramon Creek that starts just south of Alcosta Boulevard and extends to the confluence with Alamo Canal is going through geomorphic changes that include incision (i.e., down cutting) that has changed the slopes of some of the banks so that they are steeper than 2 to 1; thereby, creating slope stability issues. Furthermore, the City of Dublin is in the process of purchasing land adjacent to and parallel with Zone 7's property for construction of a new park.

This project provides a unique opportunity to correct the geomorphic changes that may be reducing the capacity and reliability of the flood control channel in a way that integrates the City of Dublin's new park, while also attenuating future flood waves and enhancing local habitats.

Origin: 2006 Stream Management Master Plan and Draft 2008 StreamWISE Project Development and Prioritization

Responsible Section IP Integrated Planning

Operating Impact No anticipated operating impacts.

In Service Date **Month**: June **Year**: 2019

Total Project Cost $840,000

Source of Funds

Fund 200	Flood Protection Operations	83%
Fund 210	Flood Protection Development Impact Fees	17%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$0	$0	$210	$220	$0	$0	$0	$430
Design	$0	$0	$0	$200	$210	$0	$0	$410
Construction	$0	$0	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$210**	**$420**	**$210**	**$0**	**$0**	**$840**

Capital Improvement Project Summary Report

Strategy Expansion
Program Flood Control Facilities
Project **Steelhead and Related Studies**

Project ID FC11

Strategic Planning Priority 2.5

Project Description This work includes several related planning efforts related to Steelhead Recovery in Alameda Creek Watershed.

A Memorandum of Understanding (MOU) was approved by the 17 members of the Alameda Creek Fisheries Restoration Workgroup (Workgroup), and signed by Zone 7, in 2006. The MOU and related amendments provide a framework for pursuing jointly-funded collaborative studies focusing on water flows and habitat restoration in the Alameda Creek watershed that would support steelhead. The recommendations from the Workgroup's efforts will provide the participants with a common basis for determining appropriate impact mitigation for projects such as our future SMMP projects, and also could spur opportunities for partnering on mitigation or restoration projects.

The cost shown here is Fund 210's share only.

Justification The primary benefit of this collaborative fisheries restoration framework for participating agencies is regulatory assurance and protection from potentially violating provisions of the Endangered Species Act in the course of operations and maintenance in the watershed.

Origin: Capital Improvement Program

Responsible Section IP Integrated Planning

Operating Impact None

In Service Date **Month**: June **Year**: 2019

Total Project Cost $180,000

Source of Funds Fund 210 Flood Protection Development Impact Fees 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$100	$20	$20	$20	$20	$0	$0	$180
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	**$100**	**$20**	**$20**	**$20**	**$20**	**$0**	**$0**	**$180**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Expansion
Program Flood Control Facilities
Project **Stream Maintenance Program & Permitting**

Project ID SDA38

Strategic Planning Priority 2.1, 2.4, 2.5, 2.8

Project Description This project includes the development of a long-term maintenance plan that will help guide Zone 7's annual maintenance program, which currently includes repairing banks, removing sediment and garbage, and conducting biological surveys. This long-term maintenance plan will also evaluate and plan future maintenance activities (e.g., managing creekside plants, riparian canopies, and natural and artificial floodplains and wetlands) envisioned as part of the Stream Management Master Plan.

Justification In 2006, Zone 7 adopted the Stream Management Master Plan (SMMP), a forwarding looking vision of regional flood protection that integrated flood control, water supply, and recreation in an environmentally sensitive manner. Zone 7 staff is currently updating the SMMP, and many of the new innovative approaches to flood protection include natural elements such as riparian forest for bank protection, managed natural floodplains for floodwave attenuation, and fish passage friendly rock structures for grade control.

Many of the new elements of the SMMP (e.g., shrubs, trees, and floodplains) require annual maintenance such as pruning, grubbing, replanting, and mowing. Properly maintaining these elements support the vision of the SMMP, and ensure the system will function during a 1% storm while also providing and protecting sensitive habitat throughout the Livermore-Amador Valley in a cost-effective manner.

Origin: 2006 Stream Management Master Plan and Draft 2008 StreamWISE Project Development and Prioritization

Responsible Section IP Integrated Planning

Operating Impact No anticipated operating impacts.

In Service Date **Month**: June **Year**: 2016

Total Project Cost $1,600,000

Source of Funds

Fund 200	Flood Protection Operations	83%
Fund 210	Flood Protection Development Impact Fees	17%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$520	$1,080	$0	$0	$0	$0	$0	$1,600
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	**$520**	**$1,080**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,600**

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

Strategic Planning Priority 2.1

Project Description Improve existing gravel flood control facility driveway entrances by placement of asphalt pavements.

Justification Gravel driveway entrances deteriorate over time 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 entrance capabilityand reduce potential claims against Zone 7.

Origin: Capital Improvement Program

Responsible Section FC Flood Control

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 $1,430,000

Source of Funds Fund 200 Flood Protection Operations 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$115	$20	$20	$20	$20	$200	$0	$395
Design	$70	$10	$10	$10	$10	$10	$0	$120
Construction	$480	$70	$70	$70	$70	$80	$0	$840
Other	$75	$0	$0	$0	$0	$0	$0	$75
Total	**$740**	**$100**	**$100**	**$100**	**$100**	**$290**	**$0**	**$1,430**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Program Flood Control Facilities
Project **System-wide Concrete V-ditches Improvements**

Project ID FC4

Strategic Planning Priority 2.1

Project Description Convert existing earthen V-ditches to concrete V-ditches along the top of flood control channels and maintenance roads

Justification The effectiveness of earthen V-ditches are often altered by erosion, siltation, soil settlement and vehicle usage which reduces the flow and can lead to larger problems such as channel bank failures. They require a high degree of maintenance activity to ensure proper function (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.

Origin: Capital Improvement Program

Responsible Section FC Flood Control

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 $1,090,000

Source of Funds Fund 200 Flood Protection Operations 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$100	$10	$10	$10	$10	$10	$0	$150
Design	$75	$20	$20	$20	$20	$20	$0	$175
Construction	$425	$60	$60	$60	$60	$70	$0	$735
Other	$30	$0	$0	$0	$0	$0	$0	$30
Total	**$630**	**$90**	**$90**	**$90**	**$90**	**$100**	**$0**	**$1,090**

Capital Improvement Project Summary Report

Strategy Renewal/Replacement
Program Flood Control Facilities
Project **System-wide Drain Structures Improvements**

Project ID FC6

Strategic Planning Priority 2.1

Project Description Improve drainage along the top of embankment and along channel slopes 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 overbank sheet flowoverflow. At these locations, new drain structures must be constructed in order to resolve the drainage problem and protect the structural integrity of the channel banks.improve the embankment stability.

Origin: Capital Improvement Program

Responsible Section FC Flood Control

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 $1,620,000

Source of Funds Fund 200 Flood Protection Operations 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$150	$20	$20	$20	$20	$20	$0	$250
Design	$65	$10	$10	$10	$10	$10	$0	$115
Construction	$535	$90	$100	$100	$100	$110	$0	$1,035
Other	$220	$0	$0	$0	$0	$0	$0	$220
Total	**$970**	**$120**	**$130**	**$130**	**$130**	**$140**	**$0**	**$1,620**

Capital Improvement Project Summary Report

Strategy System-Wide Improvements
Program Flood Control Facilities
Project **System-wide Vegetation Abatement**

Project ID FC10

Strategic Planning Priority 2.1

Project Description Provide chemical and mechanical vegetation abatement on 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.

Origin: Capital Improvement Program

Responsible Section FC Flood Control

Operating Impact Increase operation and maintenance efficiencies.

In Service Date **Month**: **Year**: Ongoing

Total Project Cost $6,315,000

Source of Funds Fund 200 Flood Protection Operations 100%

($1,000)

Appropriation	Prior	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	Future	Total
Planning	$110	$10	$10	$10	$10	$10	$0	$160
Design	$15	$10	$10	$10	$10	$10	$0	$65
Construction	$3,120	$540	$560	$580	$610	$630	$0	$6,040
Other	$50	$0	$0	$0	$0	$0	$0	$50
Total	**$3,295**	**$560**	**$580**	**$600**	**$630**	**$650**	**$0**	**$6,315**

Appendix A

ZONE 7 BOARD POLICY/PLANNING 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 13-4230

INTRODUCED BY DIRECTOR QUIGLEY
SECONDED BY DIRECTOR STEVENS

Water Supply Reliability Policy

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 Zone 7's water supply system to meet projected water demands; and

WHEREAS, the Board on August 18, 2004 adopted Resolution No. 04-2662 setting forth its Reliability Policy for Municipal & Industrial Water Supplies; and

WHEREAS, the Board desires to revise the Reliability Policy to reflect recent data, analysis, and studies.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby rescinds Resolution No. 04-2662 adopting the August 18, 2004 Reliability Policy for Municipal & Industrial Water Supplies; and

BE IT FURTHER RESOLVED that the Board hereby adopts the following level of service goals to guide the management of Zone 7's M&I water supplies as well as its Capital Improvement Program (CIP):

Goal 1.Zone 7 will meet 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 as specified in Zone 7's most recent Urban Water Management Plan (UWMP), during normal, average, and drought conditions, as follows:

- At least 85% of M&I water demands 99% of the time
- 100% of M&I water demands 90% of the time

Goal 2:Provide sufficient treated water production capacity and infrastructure to meet at least 80% of the maximum month M&I contractual demands should any one of Zone 7's major supply, production, or transmission facilities experience an extended unplanned outage of at least one week.

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 will be, or are being, achieved.

If the General Manager finds that the goals cannot be met during the first five years of the Urban Water Management Plan, then the Board will hold a public hearing within two months of the General Manager's finding to consider remedial actions that will bring Zone 7 into substantial compliance with the stated level of service 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 level of service 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 supplies to Zone 7 at the beginning of the calendar year;
(3) A comparison of current water demand with the available water supplies; and
(4) A discussion of water conservation requirements and other long-term supply programs needed to meet Zone 7 M&I water demands for single-dry and multiple-dry year conditions, as specified in the Zone 7's UWMP.

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

Definitions

Level of Service for Annual Water Supply Needs—the level of service is the percent of existing or projected water demand that Zone 7's water supply system can meet during two key conditions: (1) during various hydrologic conditions and (2) during unplanned outages of major facilities. *Capital Improvement Program (CIP)*—the CIP is Zone7'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.

Normal conditions—conditions that most closely represent median runoff or allocation from all normally contracted or available water supplies from the historic record.

Average conditions—conditions that most closely represent the average runoff or allocation from all normally contracted or legally available water supplies from the historic record.

Drought conditions—conditions that most closely represent reduced runoff or allocation level from the historic record from all normally contracted or legally available water supplies, including both single-dry and multiple-dry year conditions.

Single-dry year condition—a condition that most closely represents the lowest yield over a one-year period from the historic record from all normally contracted or legally available supplies.

Multiple-dry year condition—a condition that most closely represents three or more consecutive dry years from the historic record that represent the lowest yields from all normally contracted or legally available supplies.

Available water supplies—consist solely of (1) water supplies that 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.

Maximum Month—the largest monthly average water use.

ADOPTED BY THE FOLLOWING VOTE:

AYES: DIRECTORS FIGUERS, GRECI, MACHAEVICH, PALMER, QUIGLEY, RAMIREZ HOLMES STEVENS

NOES: NONE

ABSENT: NONE

ABSTAIN: NONE

I certify that the foregoing is a correct copy of a Resolution adopted by the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District on October 17, 2012.

By _____
President, Board of Directors

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

RESOLUTION NO 14-4365

INTRODUCED BY DIRECTOR PALMER
SECONDED BY DIRECTOR GRECI

Revised 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) Municipal and Industrial (M&I) Contractors that meet all public health regulatory requirements; and

WHEREAS, the Board endeavors to, in a manner that is fiscally responsible, proactive, and environmentally sensitive, deliver potable water that is aesthetically acceptable to its M&I Contractors; and

WHEREAS, the Board endeavors to provide potable water of an approximately equal quality within its operational capabilities to each M&I Contractor without diminishing existing water quality at any Contractors' turnouts; and

WHEREAS, the Board endeavors to provide non-potable water of an appropriate quality for its untreated water users from current surface and ground water supplies, and as a blended source of untreated and recycled water, when available; and

WHEREAS, the Board on April 16, 2003 adopted Resolution No. 03-2494 setting forth its Water Quality Policy for Potable and Non-potable Water after extensive discussion with stakeholders, and with the support of its M&I Contractors and untreated water users; and

WHEREAS, the adopted Water Quality Policy called for an Implementation Plan to be prepared as part of the Water Quality Management Program which shall be reviewed and updated every two years, or sooner if required, to reflect any emerging water quality issues and other regulatory and/or technology developments; and

WHEREAS, the Implementation Plan was completed in April 2003 which established internal water quality targets for guiding operations and capital improvements and recommended several capital projects for meeting the water quality targets; and

WHEREAS, the Board on August 17, 2005 adopted Resolution No. 06-2783 setting forth its Joint Water Quality Resolution with two of its M&I Contractors, City of Pleasanton and Dublin San Ramon Services District, for a work plan to update the Implementation Plan which included schedules and several policy principles to be evaluated; and

WHEREAS, the Implementation Plan was updated in December 2006 per the 2005 Joint Water Quality Resolution and every two years after; and

WHEREAS, Zone 7 has incorporated the internal water quality targets into various operations plans, planning documents, and design criteria as appropriate; and

WHEREAS, the capital projects recommended by the 2003 Implementation Plan and its updates have been implemented, completed, or incorporated into Zone 7's ongoing Capital Improvement Program (CIP); and

WHEREAS, the Board desires to revise the 2003 Water Quality Policy and the 2005 Joint Water Quality Resolution to reflect current condition of water quality and project status as well as the expectations of its M&I Contractors and untreated water users.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby rescinds Resolution No. 03-2494 adopting the 2003 Water Quality Policy and Resolution No. 06-2783 adopting the 2005 Joint Water Quality Resolution; and

BE IT FURTHER 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 CIP:

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 addition, Zone 7 shall deliver potable water of a quality that is as close as technically feasible and fiscally responsible to the Public Health Goals[2] (PHGs) and/or Maximum Contaminant Level Goals[3] (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 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[4] 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 untreated water turnouts, from a variety of sources, water of a quality that meets the irrigation needs 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 and Nutrient 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.

GOAL 5 – Zone 7 will partner with M&I Contractors to assist them in taking similar steps as those outlined in this policy to maintain or improve the quality of water delivered to the M&I Contractor's retail customers.

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:

- Maintain a regular dialog with the M&I Contractors and untreated water users as appropriate and provide opportunities for meaningful and timely input;

- Conduct a workshop with the M&I Contractors to develop a Water Quality Management Program Report every two years. The workshop will review emerging water quality issues and relevant regulatory and/or technology developments, review status of key parameters of concern in relation to their water quality targets, review water quality policy and need for updates, and review status of relevant water quality improvement projects/activities. The Report shall include any recommended revisions to the water quality targets and/or recommended projects/activities to assist in meeting the water quality targets. Optimization of system operations will be recommended, where possible, prior to the identification of the need for capital improvements. The Report recommended capital improvements shall be incorporated into Zone 7's biennial update of the Ten-Year Water System CIP.

- Work with the M&I Contractors to develop joint educational and notification materials for the public regarding Valley's water supplies, emphasizing all the actions taken and to be taken to improve water quality, including how those actions affect each Contactor.

- Establish and facilitate a joint operations workgroup consisting of operations staff from Zone 7 and the M&I Contractors to coordinate data collection and analysis and to coordinate operating practices to improve and minimize variations in delivered water quality.

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[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 primary 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.

[4] An event is defined as when three or more similar complaints are received in a 7-day period.

ADOPTED BY THE FOLLOWING VOTE:

AYES: DIRECTORS GRECI, FIGUERS, PALMER, RAMIREZ HOLMES, STEVENS

NOES: NONE

ABSENT: DIRECTOR MACHAEVICH, QUIGLEY

ABSTAIN: NONE

I certify that the foregoing is a correct copy of a Resolution adopted by the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District on April 16, 2014.

By _____
President, Board of Directors

Appendix B

2011 ASSET MANAGEMENT PROGRAM UPDATE

BOARD RESOLUTION

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

RESOLUTION NO 11-4092

INTRODUCED BY DIRECTOR MACHAEVICH
SECONDED BY DIRECTOR QUIGLEY

Resolution for Acceptance of Asset Management Plan Update

WHEREAS, the Asset Management Program was originally developed in 2004 and those efforts were summarized in the October 2004 Asset Management Program Summary Report; and

WHEREAS, Zone 7 has recently updated the Asset Management Program through the Asset Management Program Update Project, which included an update of Zone 7's asset inventory, a revised asset renewal methodology, formalized decision processes, an asset condition assessment and pipeline risk assessment, modified asset classes and corresponding useful life estimates, and a recommendation of an annual funding level to adequately fund this program; and

WHEREAS, Zone 7 has summarized its efforts in updating this program in the 2011 Asset Management Plan Update Report.

NOW, BE IT RESOLVED that the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District does hereby accept the Asset Management Plan Update Report with the revised funding recommendations incorporated; and

BE IT FURTHER RESOLVED that the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District does hereby adopt the recommended funding transfer targets from the Water Enterprise Fund (Fund 52) into the Renewal\Replacement and System-wide Improvements Fund (Fund 72) for the future as follows:

$6,600,000 in Fiscal Year 2012/2013;
$8,500,000 in Fiscal Year 2013/2014;
$9,500,000 in Fiscal Year 2014/2015;
$10,500,000 in Fiscal Year 2015/2016; and

the total annual funding requirement beginning in Fiscal Year 2016/2017 and beyond, is $11,400,000 in 2011 dollars, which will be adjusted for other sources of revenue (e.g., actual interest income and Dougherty Valley Service Area facility use fees), increased for inflation based upon the ENR San Francisco Construction Cost Index and adjusted based on future AMP Updates.

ADOPTED BY THE FOLLOWING VOTE:

AYES: DIRECTORS GRECI, FIGUERS, MACHAEVICH, PALMER, QUIGLEY, STEVENS

NOES: NONE

ABSENT: DIRECTOR MOORE

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

June 15, 2011

By _____
President, Board of Directors

Appendix C

WATER SYSTEM PROJECT PRIORITIZATION CRITERIA

Exhibit B - Water System CIP Prioritization Criteria

The following criteria was used to evaluate Water System CIP Projects:

Strategic Planning Priority/Criteria Item	Description
Reliability/Capacity	
1.1 Provide safe, adequate, reliable, cost effective drinking water to the retailers for their customers and Zone 7's constituency. 1.3 Ensure long-term water supply reliability for the valley.	Project is required to meet Goals 1 and 2 of the Zone 7's Reliability Policy. Examples of projects that address reliability and capacity include those that: eliminate current or potential facility failures; increase lifespan of a facility; replace a facility that is beyond its useful life; increase redundancy in the system; address seasonal criticality issues; increase capacity of the facility; or provide additional capacity to meet future demand.
Regulatory Compliance	
1.2 Comply with all water quality regulatory requirements.	Project is required by law, regulation or mandate. Examples of projects that address regulatory compliance include those that: eliminate endangerment to life (i.e., health and safety); ensure that compliance is maintained or increase ability to comply with regulations; minimize risk of fines; or implement treatment upgrades to meet drinking water standards.
Asset Management	
1.4 Operate and maintain, and upgrade and/or replace when appropriate, existing treatment plants, transmission facilities and other infrastructure.	Project is critical to save, maintain or repair structural integrity or improve operations of existing facility. Project is identified in the Asset Management Program.
Water Quality/Customer Service/Public Support	
1.13 Balance improving water quality with fiscal constraints. 1.16 Manage the watershed to maintain and improve source water quality to protect public health and safety.	Projects supports goals of the Zone 7 Water Quality Policy (Resolution No. 03-2494). Projects addresses aesthetic water quality: improves the ability to meet secondary drinking water standards such as taste and odor (not regulation driven); reduces hardness levels; maintains or improve the water quality in the groundwater basin; or improves water quality delivered to nonpotable customers.
Value Statement #2 - Customer Service: Our commitment to the community requires prompt, respectful and courteous relations with our customers, both internal and external, as well as pursuing community partnerships and collaboration with other area public agencies when beneficial to the public.	Our customers (retailers and residents) have expressed a strong desire for the project.
Cost Savings/Availability of Funding/Time Critical	
4.3 Continue to participate in regional and other efforts to obtain state and federal grant funds to offset the cost of new facilities and programs. 4.4 Review procurement, contracting and other practices to see where more cost savings can be obtained.	Project results in a positive return on investment and projected cost savings supports project expenses. Funding is readily available (i.e. grants, developer reimbursement). Project allows Zone 7 to take advantage of favorable conditions (i.e. purchase of land or material at favorable prices).
Energy/Greenhouse Emissions	
4.4 Review procurement, contracting and other practices to see where more cost savings can be obtained.	Project will result in a reduction in energy consumption and greenhouse gas emissions.
Flood/Watershed/Groundwater Protection	
1.5 Protect and properly manage groundwater supplies. 1.15 Develop long-term balanced management of watersheds.	Project supports the goals of the Groundwater Management Plan (Resolution No. 06-2796). For example, protects and enhances groundwater quality, offsets salt loading, provides more comparable delivered water quality to Retailers.
2.1 Continue the stream maintenance program to maintain the effectiveness of flood protection facilities. 2.7 Incorporate any implementation of the SMMP into the CIP.	Project maintains and improves existing flood protection channels. Protects people and property from destruction and damage from flood waters.
Safety/Security/Emergency Preparedness	
3.9 Assure adequate security and emergency preparedness are in place.	Project is needed to alleviate a security concern or an existing safety hazard.

Appendix D

ZONE 7 WATER AGENCY STRATEGIC PLANNING PRIORITIES

Zone 7 Water Agency

Strategic Planning Priorities

August 22, 2012

Introduction

This document is intended to be a quick reference to Zone 7 Water Agency's *Strategic Planning Priorities* identified by the Board of Directors with input from members of the staff.

Establishing *Strategic Planning Priorities* enables Zone 7 to focus on its most immediate needs in an efficient and cost-effective manner. Participation of employees and the retailers not only improves the process and ultimate work product but it also helps secure their support for what the Agency needs to accomplish to effectively serve the public and comply with its mission statement. Ranking the strategic priorities helps Zone 7 staff know where to focus its attention in a sea of too many priorities to possibly address at the same time. The first review by the Board of Directors and Executive Staff of the strategic planning priorities and projected completion dates of deliverables will occur at the July 2010 board meeting and will help ensure that tasks are finished, continue to be pursued, or adjusted as circumstances may require.

Table of Contents

Strategic Planning Priorities

Zone 7 Water Agency's Strategic Planning Priorities are in support of its mission statement that was developed during a Board of Directors workshop several years ago and is considered still very relevant.

> *Zone 7 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 responsible way.*

The five general priorities headings under which more specific strategic planning priorities are listed are not placed in any particular order of importance. The strategic planning priorities under each general heading, however, are listed in importance as identified by the Board of Directors and the Executive Staff as constituted at the time. Some priorities that were not scored by the Board and Executive Staff as being "given" (meaning they are obviously a priority), have been moved to a higher position on the list. See Appendix B – Background Information for more details about the ranking process.

Provide customers with a reliable, cost-effective and safe water supply.

1.1 Provide safe, adequate, reliable, cost effective drinking water to the retailers for their customers and Zone 7's constituency.

1.2 Comply with all water quality regulatory requirements.

1.3 Ensure long-term water supply reliability for the valley.

1.4 Operate and maintain, and upgrade and/or replace when appropriate, existing treatment plants, transmission facilities and other infrastructure.

1.5 Protect and properly manage groundwater supplies.

1.6 Continue implementation and development of planning for the Chain of Lakes.

1.7 Continue to work with other South Bay Aqueduct contractors to explore possible advantages of increased opportunities for local water storage or partnership in regional water supply projects.

1.8 Work with retailers to develop more local water supplies, including the use of more recycled water.

1.9 Participate in Delta discussions to protect the Agency's contractual water supply from the State Water Project.

1.10 Fulfill contractual water supply obligations.

1.11 Review water reliability policy.

1.12 Plan, design and construct additional water treatment plants and transmission facilities as they become necessary.

1.13 Balance improving water quality with fiscal constraints.

1.14 Update long-term water supply planning.

2 Provide Eastern Alameda County with an effective system of flood protection.

2.1 Continue the stream maintenance program to maintain the effectiveness of flood protection facilities.

2.2 Continue implementation and development of planning for the Chain of Lakes.

2.3 Revisit the SMMP and StreamWISE in light of current and long-term fiscal constraints.

2.4 Collaborate with cities and landowners on flood protection improvements.

2.5 Cooperate and collaborate where necessary and beneficial with various state and federal agencies in fisheries restoration and related environmental enhancement efforts.

2.6 Consider alternative funding sources for the SMMP.

2.7 Incorporate any implementation of the SMMP into the CIP.

2.8 Obtain multi-year programmatic permit and engineering report for stream maintenance.

3 Provide the Agency with effective organization, administration and governance.

3.1 Evaluate staff organization in light of changing work functions and demands.

3.2 Continue to evaluate and, if beneficial, separate some functions from the County.

3.3 Develop a succession plan to ensure continued effective management and operations of the Agency upon retirements or other departure of key staff, while being mindful of reorganization opportunities that might be created by attrition.

3.4 Improve internal communications.

3.5 Reevaluate the functions of the Board, committee structure and possibility of greater political activity.

3.6 Work with community colleges and water agency associations in efforts to ensure sufficient operator staff to offset anticipated retirements. (need to rewrite)

3.7 Increase staff productivity and effectiveness with greater use of modern technology, software, etc.

3.8 Develop a digital-based, integrated, secure and remotely accessible database of engineering plans and drawings, project management data linked to cost factors, and other correspondence and information.

3.9 Assure adequate security and emergency preparedness are in place.

4 Operate the Agency in a fiscally-responsible manner.

4.1 Complete an Agency Financial Plan.

4.2 Evaluate the cost/benefits of functions traditionally performed by the Zone's consultants and contractors.

4.3 Continue to participate in regional and other efforts to obtain state and federal grant funds to offset the cost of new facilities and programs.

4.4 Review procurement, contracting and other practices to see where more cost savings can be obtained.

5 Increase public understanding of the Agency and its functions.

5.1 Continue other public outreach efforts and increase collaborative efforts with retailers.

5.2 Continue water conservation emphasis in the Agency's public information efforts.

5.3 Improve the effectiveness of the Agency's website in communicating Zone's messages to the public.

5.4 Maintain and improve the Agency's media relations program.

5.5 Maintain an effective schools program, placing more responsibility on the retailers for educating their own customers.

5.6 Evaluate the use of other Internet-based and other technology to convey the Agency's messages