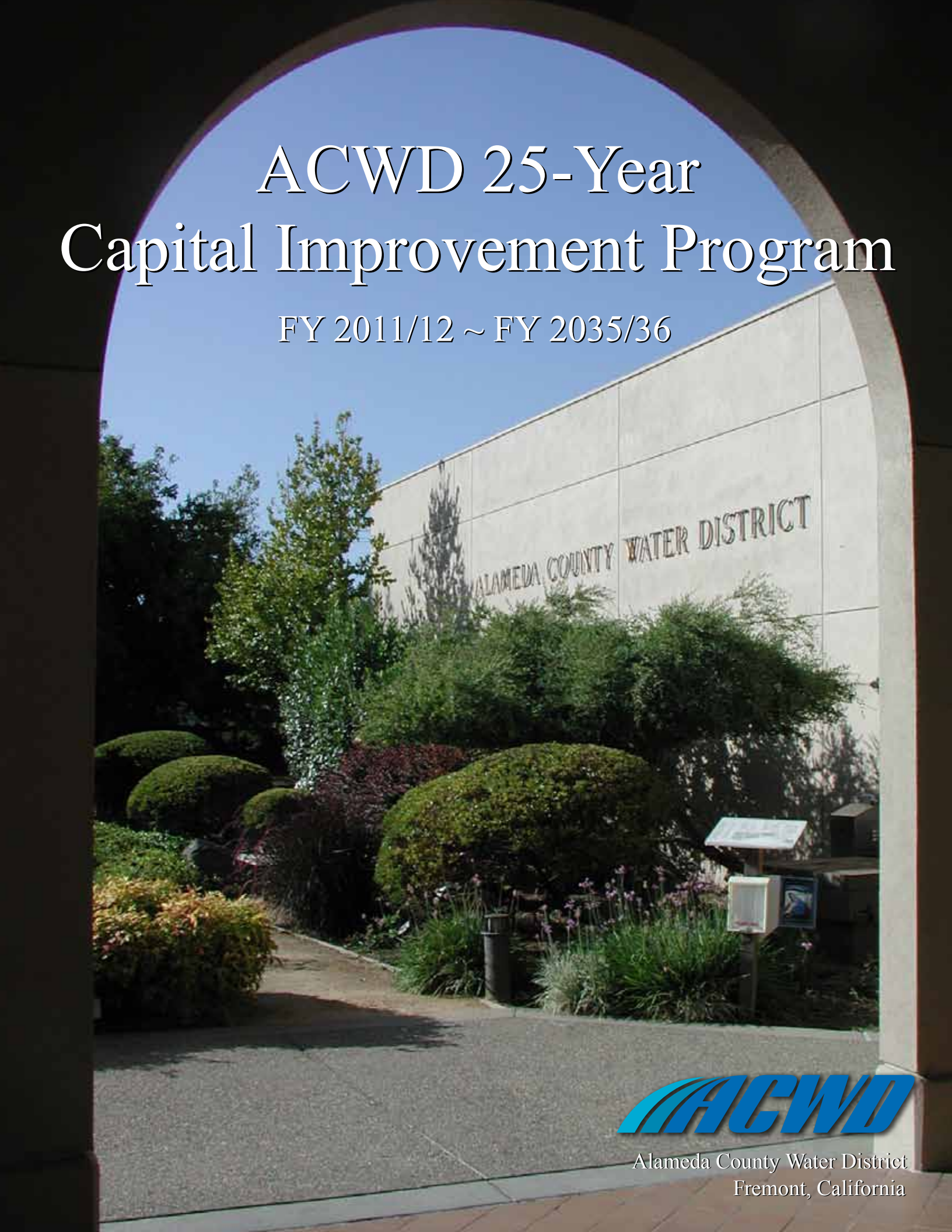
ACWD 25-Year Capital Improvement Program

FY 2011/12 ~ FY 2035/36



ACWD

Alameda County Water District
Fremont, California

Alameda County Water District

25-YEAR CAPITAL IMPROVEMENT PROGRAM

FY 2011/12 – FY 2035/36

Adopted June 9, 2011

Alameda County Water District

25-YEAR CAPITAL IMPROVEMENT PROGRAM

FY 2011/12 – FY 2035/36

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Section 1: Process Description

1.1 PROGRAM OBJECTIVES AND PHILOSOPHY

ACWD's mission is to provide a reliable supply of high quality water at a reasonable price to our customers. To continue meeting ACWD's mission, the following goals need to be consistently achieved when implementing Capital Improvement Program (CIP) Projects:

- CIP Projects are planned, identified, and executed in a manner that ensures overall project success.
- CIP Project implementation efficiency is maximized, both in terms of resources and expenditures.
- CIP Projects are consistently implemented, regardless of the lead department and/or individual(s) assigned to complete a particular project.
- ACWD stakeholders understand their respective roles and all collectively share responsibility, accountability, and credit for the successful completion of CIP Projects.
- Project status and financial reports are timely, accurate, and consistently formatted.

ACWD uses a Team Approach to complete CIP Projects. This means that projects are identified and executed in a manner which involves all stakeholders, both within ACWD (Board of Directors, General Manager's Office, Departments of Engineering, Finance, and Operations) and outside ACWD (other agencies and interested organizations, impacted businesses and residences, and ACWD ratepayers) as appropriate.

In order for the Team Approach to be successful, each ACWD Department needs to dedicate the appropriate resources to the CIP planning and project development processes. Additionally, individual stakeholders have an important responsibility to: 1) recognize ACWD's overall mission as the highest priority; and 2) keep other stakeholders apprised of interests and concerns in a timely manner.

For the purpose of this report, a CIP Project consists of a project that is tracked within ACWD's CIP Spreadsheet. The CIP Spreadsheet summarizes schedule and costs for all planned projects and is further described below. Although not all project-type activities are specifically tracked within the CIP Spreadsheet, the principles and guidelines outlined herein are applicable.

1.2 PLANNING PROCESS

In order to meet its mission, ACWD strives to ensure that the following goals and objectives are maintained over a 25-year planning horizon:

- Reliable Supply
  - *Water Supply Reliability*: Avoid chronic shortages, minimize risk from future uncertainty, and maximize local control.
  - *Production and Distribution Facility Reliability:* Maintain the infrastructure, improve employee and/or public safety, perform other work necessary to maintain or improve customer service, and address vulnerabilities from seismic and other possible events.

- High Quality: Consistently comply with existing and future water quality regulations. Provide uniform aesthetic quality to all customers.

- Reasonable Cost: Ensure that sound, responsible financial management practices are observed in the conduct of ACWD business.

- Environmental Protection: Plan, design, and operate ACWD facilities efficiently, effectively, and safely, bearing in mind our responsibility to be a good neighbor and a good steward of the environment by avoiding or mitigating negative environmental impacts, reliably complying with existing and future environmental regulations, and protecting groundwater resources.

The Water Resources Planning Group currently leads the long-range CIP planning effort; the Engineering Department is responsible for medium and short-range project planning.

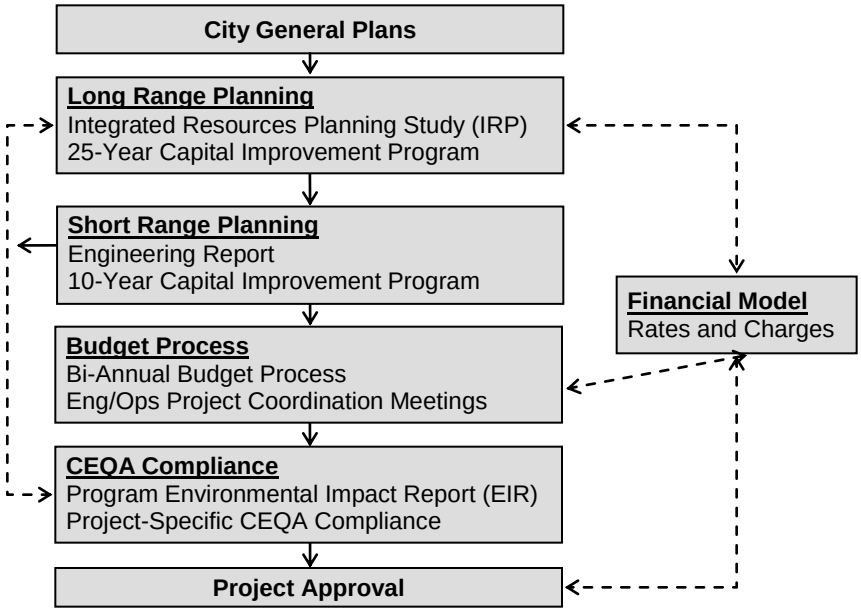

Figure 1 – ACWD Planning Process

Additionally, all ACWD departments participate in the planning process; an overview of which is shown on Figure 1 and further described below.

- Planning Objectives: ACWD's planning process has been developed to ensure that the following is well documented and understood by all stakeholders:
  - ACWD's overall planning objectives
  - Justification of planned CIP Projects
  - Relationship of individual projects
  - Refinement of project criteria as more information becomes known

- Long-Range Planning: ACWD's planning process begins with the general plans of the three cities that it serves. As such, ACWD's planning is intended to allow for the orderly expansion of urban development consistent with both the local land use and growth management plans and ACWD's mission. To accomplish this, ACWD's Water Resources Planning section periodically performs or updates an Integrated Resources Planning (IRP) Study (and a complimentary Urban Water Management Plan) to determine the size, type, and timing of water supply and production facilities needed to meet projected demands over a 25-year period. Key components of the planning process include accurately predicting future water demands and confirming existing and planned water supplies.

- Short-Range Planning: To implement the recommendations of the IRP Study, more detailed, short-range reports are needed. These "Engineering Reports" serve to ensure that appropriate project-specific decisions are made over a ten-year period. The Engineering Department is responsible for the preparation of ACWD's periodic Engineering Reports. Engineering Reports establish refined criteria for water production and groundwater, water quality (as related to CIP Projects), transmission mains, storage facilities and booster pump stations. Because of the relatively short planning horizon of the Engineering Report, additional project criteria refinement for projects identified in the IRP is appropriate.

ACWD's CIP includes all projects identified in both the IRP and Engineering Reports, as well as other projects and extraordinary expense items.

New projects not developed during the planning process, and thus not contained within the CIP Spreadsheet, may be added as needed. Depending on the cost and type of project, Board approval for funding may be required. Typically, new projects are identified either during annual budget updates or as a result of regularly held Engineering/Operations Project Coordination Meetings.

1.3 BUDGET PROCESS

ACWD employs a two-year budget cycle. Each fiscal year begins on July 1 and ends on June 30. The budget is an important tool in guiding the activities of ACWD each year. In order for the budget to be an effective tool, it must be based on accurate information and supporting documentation. To help achieve this goal, ACWD employs a process that is depicted in Figure 2.

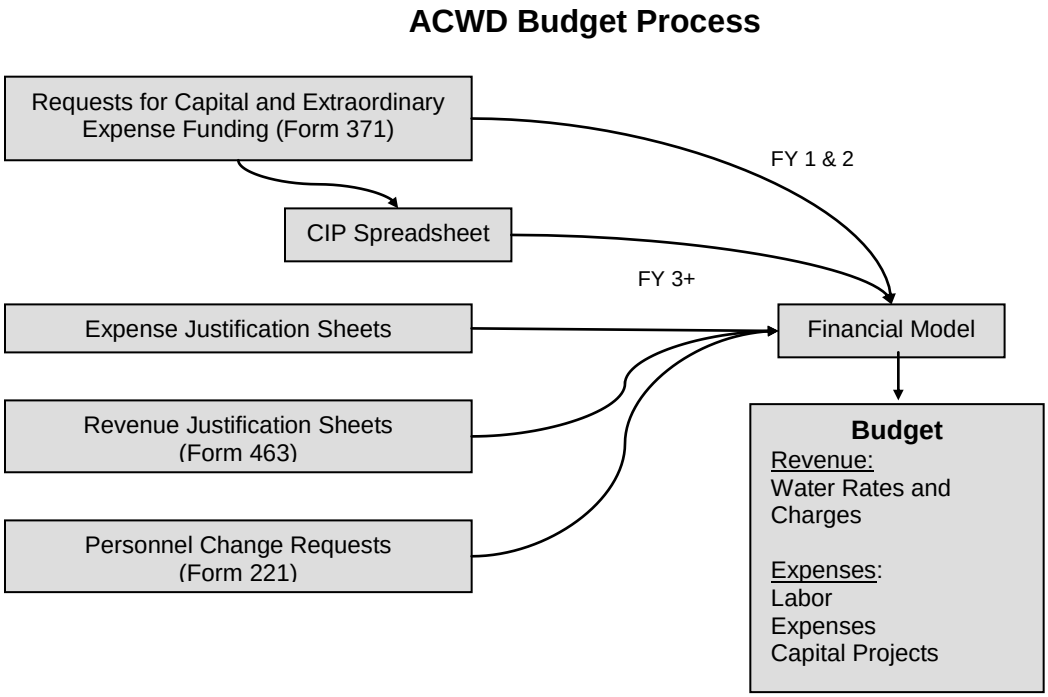

Figure 2 – ACWD Budget Process

The budget requires input from every organizational level within ACWD and also contains a number of accounts and projects that are shared by departments. As such, it is important that proper communication is maintained throughout the process to ensure that adequate resources are available and committed in the final version of the budget. It is also the responsibility of each department to ensure that shared budget items are reviewed and approved by the respective Department Manager, and that they are submitted with the responsible department's budget.

The budget process is iterative. Normally, several iterations are required to address the various alternatives to optimally prioritize and balance the completion of capital improvement projects and other ACWD expenses with revenues collected from ACWD's various rates and charges. The elements which comprise the input data for the financial model include the following:

- Request for Capital and Extraordinary Expense Funding Forms (ACWD Form No. 371): In order for specific projects to be funded in the budget, individual Project Managers must complete and submit *Request for Capital and Extraordinary Expense Funding* forms

(ACWD Form Nos. 371Y1 and 371Y2) for each fiscal year included in the bi-annual budget cycle to the Finance Department Manager.

- CIP Spreadsheet: The CIP Spreadsheet summarizes the schedule and costs for all planned capital improvement projects and forms one component of ACWD's basis of rates and charges. Although all departments may initiate a capital project, the Engineering Department is responsible for maintaining and updating the CIP Spreadsheet. Although not all project-type activities are specifically tracked within the CIP Spreadsheet, the principles and guidelines outlined herein are applicable and should be used.

- Expense Justification Sheets: ACWD has established expense account numbers for each category of (non-capital) expenses. For each account number, a supervisor is assigned to forecast and monitor expense activities. During the budget process, supervisors complete and submit Expense Justification Sheets that forecast expenses during the budget period.

- Revenue Justification Sheets: Similar to (non-capital) expenses, ACWD has established account numbers for each category of revenues and appropriate supervisors are responsible to submit Revenue Justification Sheets that forecast revenues during the budget period.

- Personnel Change Requests: Personnel change request sheets are compiled by the appropriate division head and used to forecast labor expenses associated with promotions, retirees, etc. during the budget period.

- Financial Model: ACWD uses a Financial Model to compare the various alternatives and to track projected long-term revenues and expenses. Budgeted costs for projects included in the CIP form one component of the financial model. Additionally, the Financial Model also considers operational and maintenance expenses and is used to establish a basis for rates and charges. Estimated project costs are adjusted in the CIP and the Financial Model to reflect more up-to-date project estimates and as they become known.

The Finance Department is responsible for maintaining and updating the Financial Model. As shown in Figure 1, the financial data for CIP Projects is obtained from either the current budget or the CIP Spreadsheet, as appropriate, and entered into the model.

1.4 CEQA COMPLIANCE

In accordance with the California Environmental Quality Act (CEQA) statutes and guidelines, ACWD integrates public participation into its planning process. Since CEQA discourages agencies from "segmenting" or "piecemealing" projects in order to avoid full disclosure of potential environmental impacts, ACWD uses its long and short-range planning documents as a basis for preparation of its Program Environmental Impact Report (EIR). This programmatic approach to environmental review allows potential environmental impacts to be mitigated as a result of its long-range planning policies and objectives, individual capital subprojects, and the cumulative CIP. Upon completion and certification of the Program EIR, ACWD's Board of Directors formally approves the subprojects contained within the Program EIR. Not all required projects are included in the Program EIR, as the IRP and Engineering Reports are periodically updated and projects may become necessary during the time interval between updates. In these cases, ACWD may prepare project-specific EIRs or Mitigated Negative Declarations, as appropriate, in order to ensure CEQA compliance. The Engineering Department typically is responsible for completing the CEQA process for all CIP Projects.

Section 2: Budget Workshop Presentation

The following presentation was given to the Board in the budget workshop May 31, 2011.

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CAPITAL PROJECTS
FY 2011/12

• **Total Cost of Year 1 Capital**	**$24,355,900**
Major Projects	
• Headquarters Renovations	$3,620,000
• Service Line & Meter Replacements	$2,884,000
• Warm Springs Prune to Brown Pipeline	$2,736,000
• Customer Jobs	$2,233,000
• Agency-Related Main Relocations	$2,209,000
• IT Projects	$2,139,000
• Fish Passage Projects	$1,918,000
• Seismic Projects	$1,122,000
• PT Wellfield Generator Project	$ 500,000
• SCADA Upgrades	$ 440,000
• Vehicle Replacements	$ 428,000

As shown in the Proposed Budget, the total cost of Year 1 capital projects is ~ $24M.

The purpose of this slide is to highlight the Major projects and groups of projects which account for over 80% of that total in order of descending cost. Many of these line items are combinations of a few individual projects.

The first thing to note on this list is that the total of $24M this year includes line items in addition to the TRADITIONAL CIP project types. We are now including Service Line & Meter Replacements, Customer Jobs, and IT projects in the Capital project category.

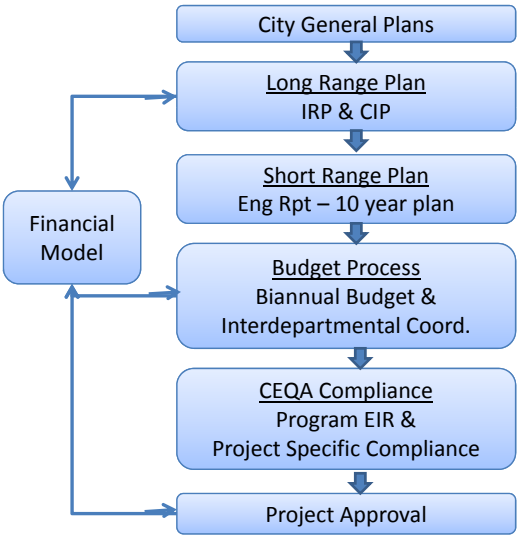
CAPITAL PROJECTS
FY 2012/13

• **Total Cost of Year 2 Capital**	**$16,058,400**
Major Projects	
• Service Line & Meter Replacements	$2,884,000
• Customer Jobs	$2,483,000
• WTP2 LOX Conversion	$2,200,000
• PT Wellfield Generator Project	$1,754,000
• IT Projects	$ 964,000
• Fish Passage Projects	$ 898,000
• PT Chemical Feed Upgrades	$ 500,000
• Vehicles	$ 430,000
• Seismic Projects	$ 430,000
• Main Replacements	$ 357,000
• SCADA Upgrades	$ 300,000

Again, in order of descending cost are the Major projects which account for over 80% of the total for Year 2. The Non-traditional CIP projects of Service Line & Meter Replacements and Customer Jobs are at the top of this list.

HOW THE CIP IS USED

- Long term planning for project scheduling and costs
- Used as input to the rate model
- Project schedules and costs are updated and presented to the Board annually

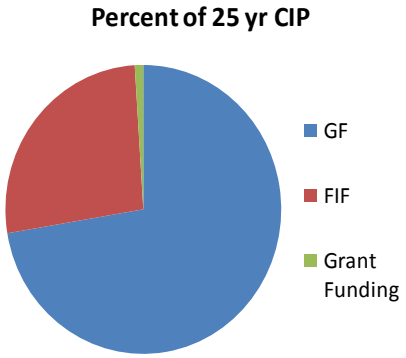


HOW PROJECTS ARE IDENTIFIED FOR THE CIP

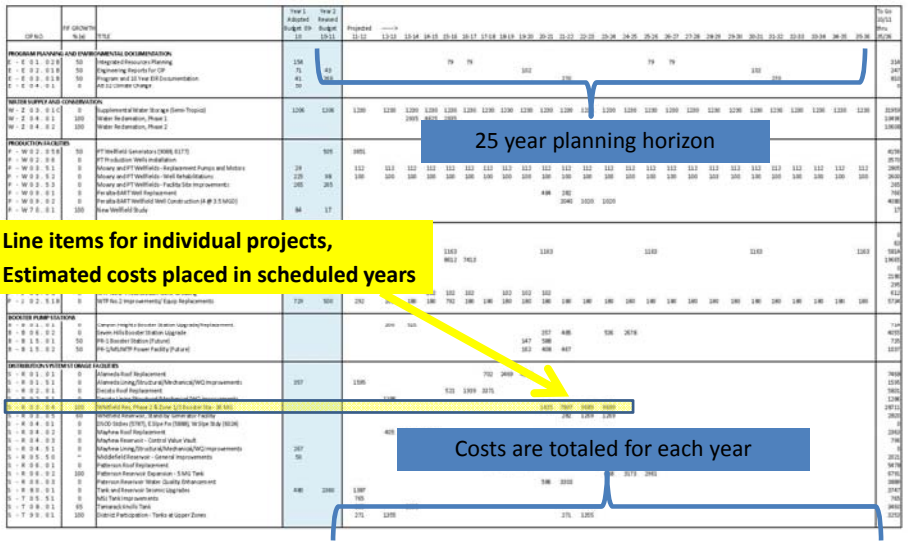
- Integrated Resources Plan (IRP)
- Engineering Report
- Regulatory Requirement
- Rehab/ Replace Lifecycle Maintenance
- Special Study
    - Seismic Reliability

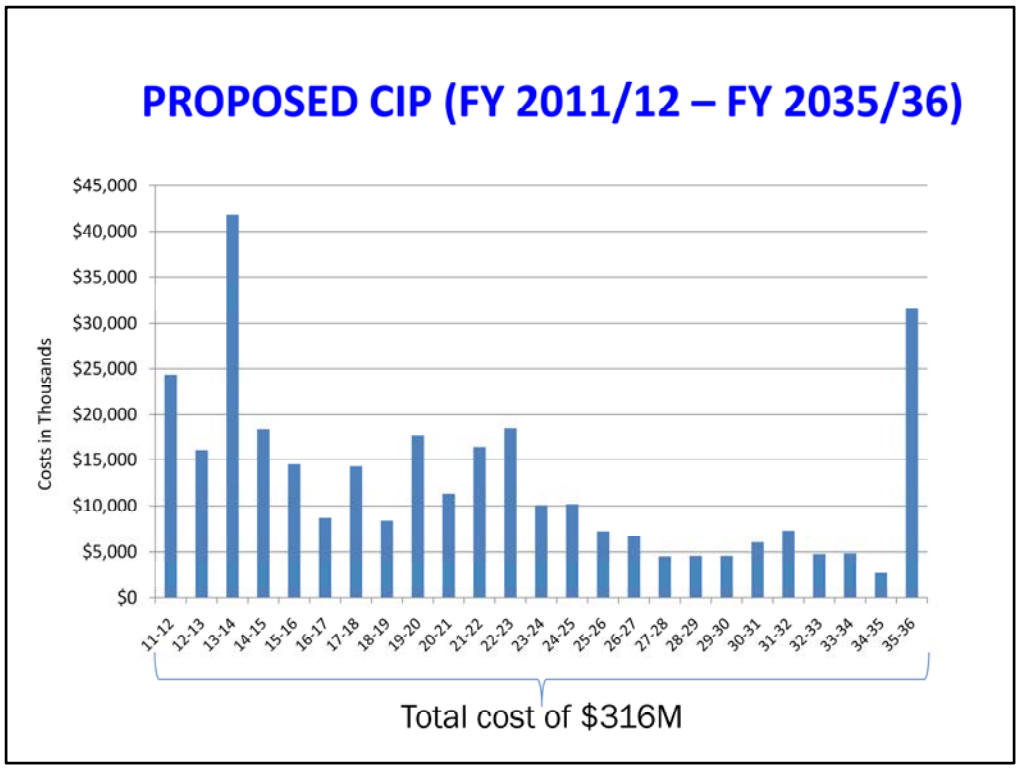
HOW PROJECTS ARE FUNDED

- General Fund
- Facilities Improvement Fund
- Grant Funding



CIP SPREADSHEET - FORMAT





FY 2013/14 Shows a cost of over $40M for capital projects. We are not expecting to need $40M for capital projects in one year; we will be spreading these project costs over more years. However, we are showing this spike now because over half of this cost is to cover fish passage and seismic projects' construction costs. The design costs for these projects are included in FY 2012/13 and at this moment we have some unresolved issues to address before construction can begin. It may be that some of the issues are resolved quickly and we will be able to start construction in FY 2012/13. If this is the case we'll be requesting authorization to accelerate funding from the Board. It may also be that some of the issues take more time to resolve. The CIP projection will be updated as more information becomes available.

FY 2035/36 shows a cost of over $30M. This is predominantly associated with recycled water projects. These projects are included in ACWD's long term forecast but according to our most recent UWMP, they may not be required prior to 2035. This will be evaluated and addressed in the next version of ACWD's Integrated Resources Plan (IRP).

The first 10 years of the CIP include the medium range planning costs for specific projects; the remaining years of the CIP have placeholder values for some major capital elements and are less accurate.

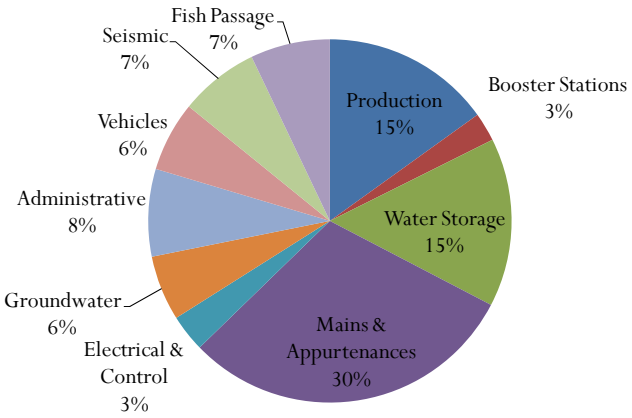
MAJOR PROJECTS REMOVED FROM THE 25 YEAR CIP

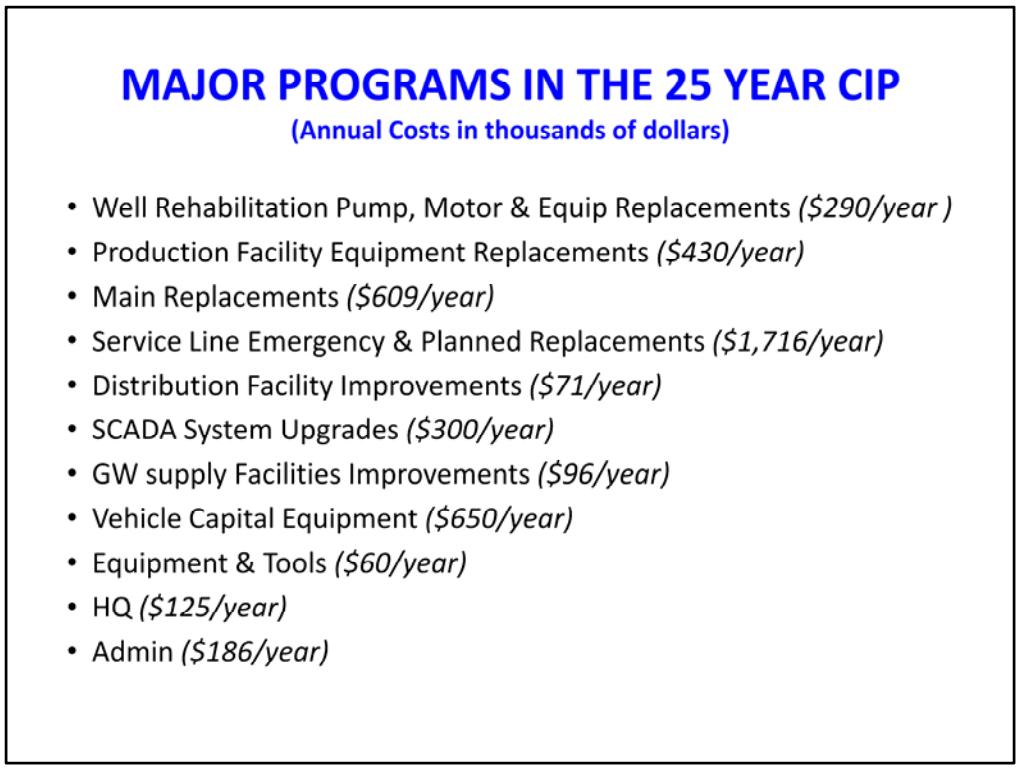
(Costs in thousands of dollars)

- Automall Pipeline ($2,127) FY 2020/23
- Grimmer/Stevenson/Blacow Pipelines ($7,277) FY 2012/17
- Whitfield Reservoir Expansion ($27,850) FY 2020/24
- Whitfield Reservoir Generator ($2,820) FY2021/24
- Patterson Reservoir Additional Tank ($6,791) FY2023/26

GF Total	$ 3,021
FIF Total	$43,874

BREAKDOWN OF 25 YEAR CIP COSTS





"Programs" are differentiated from "Projects" in that they are ongoing activities with annual costs and no end date.

MAJOR PROJECTS IN THE 25 YEAR CIP

(Costs in thousands of dollars)

• Peralta-Bart Wellfield & Pipeline	($6,334) FY 2031/34
• Membranes for Desal	($1,163) every 5 years
• MSJWTP	($4,789) FY 2014/15 ($1,000) FY 2019/20
• Seven Hills Booster Station	($4,055) FY 2020/25
• PR1 Booster Station & Power Facility	($1,773) FY 2022/25
• Whitfield Booster & Gallegos Pipeline	($2,266) FY 2022/23
• Alameda Reservoir Roof	($7,468) FY 2017/20
• Decoto Reservoir Roof & Liner	($7,081) FY 2015/18
• Mayhew Reservoir Roof	($2,363) FY 2012/15
• Middlefield Reservoir Roof	($2,021) FY 2014/15

MAJOR PROJECTS IN THE 25 YEAR CIP (con't)

(Costs in thousands of dollars)

• Patterson Reservoir Roof & WQ Enhance	($9,367) FY 2019/22
• Tamarack Knolls Tank	($4,113) FY 2015/18
• Zone 4 Interconnect Pipeline	($2,277) FY 2022/25
• Niles-Newark Intertie Pipeline	($12,094) FY 2021/23
• Kaiser Pit Rehabilitation	($2,281) FY 2021/23
• RD3 Fabric Replacement	($3,740) FY 2019/20
• HQ Photovoltaic project	($2,031) FY 2020/21
• IT Master Plan & CIS	($3,831) FY 2011/16
• Network & Server Upgrades	($1,613) FY 2011/16

Section 3: CIP Spreadsheet

3.1 CIP SPREADSHEET DESCRIPTION

The CIP Spreadsheet included in this report covers a 25-year time period from FY 2011/12 to FY 2035/36. The first two years shown in the spreadsheet (FY 2011/12 and FY 2012/13) represent the proposed capital expenditures for each project included in the proposed budget. The following 23 years represent the forecasted yearly spending amounts for each project or program included in ACWD's 25-year CIP. Projects shown comprise near term and major long term projects.

In addition to showing forecasted yearly expenditure amounts for each project, the spreadsheet identifies the percentage of estimated costs that are funded by the Facility Improvement Fund. As explained in Section 3.2, the two primary funding sources for the CIP are the Facility Improvement Fund (FIF) and the General Fund (GF). A project summary for each project or program identified in the CIP Spreadsheet included in this report is included in Section 4.

3.2 FORECAST SPENDING LEVELS AND FUNDING

The bar chart shown in Figure 3 shows the forecasted CIP spending levels by year between FY 2011/12 and FY 2012/13. The future dollar amounts shown beginning with FY 2013/14 reflect the forecasted CIP spending plan that was included within the financial model. The chart shows the two primary funding sources for the CIP. The two funding sources are the Facility Improvement Fund (FIF) shown in red, and the General Fund (GF) shown in blue. The FIF is a growth-related fund which is funded by developer connection fees. The GF is primarily funded by customer commodity rates and to a lesser extent, service charges and taxes. CIP projects are identified in the CIP Spreadsheet included in Section 3.4 and are further described in the project summaries contained in Section 4.

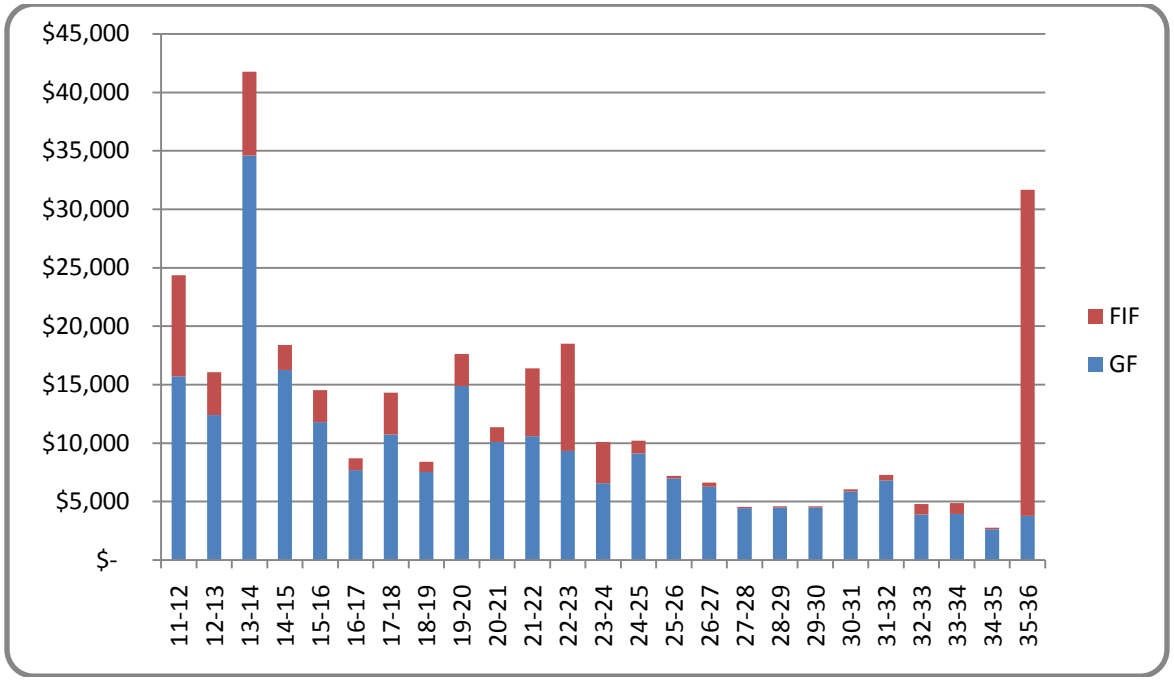


Figure 3

3.3 SUMMARY OF MAJOR CHANGES

As described in Section 1.2, the Capital Improvement Program (CIP) is ACWD's planning tool for implementing capital projects identified in ACWD's Integrated Resources Plan (IRP) and in Engineering Reports. Additionally, the CIP includes projects that are not identified in the IRP or in Engineering Reports, but are needed to meet changes to water quality regulations or ACWD operational criteria, as well as projects which are needed for facility reliability improvements and other upgrade purposes, such as seismic upgrades, safety and security improvements, and projects required to accommodate other agencies' projects. The CIP is also one of the major cost components included in the financial model and is used in the determination of water rates and charges for ACWD.

The previous Board review of the CIP was performed in June 2010, in conjunction with the mid-cycle budget review.

The major changes to the CIP since June 2010 include the following:

A decrease in the Total Cost of the 25-Year CIP
The total cost of the 25-year CIP in June 2010 was $394M; the total cost as of June 2011 is $316M resulting in a decrease of $78M.

Incorporation of 4% inflation adjustments to FY 2013/14 and later projects
The escalation rate of 4% was derived from a three year running average of the Construction Cost Index for San Francisco published by Engineering News Record (ENR) magazine.

Major Projects Eliminated from the CIP
Major projects totaling $46,865,000 were removed from the 25-year CIP. The Automall and Grimmer/Stevenson/Blacow pipelines were removed based on the distribution system analysis in the 2011 Engineering Report. The Whitfield reservoir expansion and generator and Patterson reservoir additional tank were removed based on the storage analysis in the 2011 Engineering Report combined with a review of projected demands which suggest that these expanded storage and associated facilities will not be required during the 25-year planning horizon.

- Automall pipeline (removed $2,127,000)
- Grimmer/Stevenson/Blacow pipelines (removed $7,277,000)
- Whitfield reservoir expansion (removed $27,850,000)
- Whitfield reservoir generator (removed $2,820,000)
- Patterson reservoir additional tank (removed $6,791,000)

Major Projects reclassified as Capital
As indicated in the Board Budget Workshop on May 31, 2011, the following projects are now being classified as "capital" projects in accordance with generally accepted accounting principles (GAAP).

- Customer jobs
- Service line emergency and planned replacements
- Water meter replacements

Major Capital Projects reclassified as Expense

As indicated in the Board Budget Workshop on May 31, 2011, the following project which was previously classified as "capital" is now classified as an "expense" project in accordance with GAAP.

- Supplemental water storage

Reduction in Planned Project Cost

The MSJWTP is currently limited to a production rate of 3.5 – 4 MGD to keep the fouling of the membranes at a manageable level. Additionally the plant must be shut down during the months when it receives Lake Del Valle water. Previously funds were included in the CIP to convert the plant back to conventional treatment. However, a pilot study is currently underway at the MSJWTP to test the effectiveness of alternate membranes.

The cost estimate which is now included in the CIP for this project is based on the assumption that the alternate membranes will be an effective solution for the plant. The cost includes the modifications assumed to be required for the initial membrane retrofit project and the first membrane replacement 5 years after the retrofit.

If, however, the pilot study returns unfavorable results, ACWD will have to reevaluate the conversion of the plant back to conventional treatment with horizontal sedimentation, conventional filtration, and ozone for disinfection.

- MSJWTP modifications (reduction of $16,720,000)

Rescheduled Projects

The following projects were deferred to later years in the CIP. Recycled water, although part of ACWD's long term water supply strategy, is not anticipated to be needed prior to 2035; this will be reevaluated in the next IRP. The Peralta-BART wellfield and pipeline will be a replacement wellfield for the Below Hayward Fault (BHF) Mowry wellfield and at this time it is anticipated that the replacement wellfield will not be required prior to 2031. Kaiser Pit slope stability will be evaluated in 2013; at this time it is anticipated that the associated construction work will need to occur in 2022. The headquarters facility roof was recently inspected and found to be in good condition. The project to replace the roof was subsequently deferred.

- Water reclamation phase 1 & 2 (deferred to FY 2035/36)
- Peralta-Bart wellfield & pipeline (deferred to FY 2031/32 – FY 2033/34)
- Kaiser Pit rehabilitation (deferred to FY 2022/23)
- Headquarters facility roof (deferred to FY 2020/21)

3.4 CIP SPREADSHEET

See following pages.

ACWD CAPITAL IMPROVEMENT PROGRAM - June 2011

(Dollars in Thousands)

Item No.	CIP NO.	FIF GRO WTH % (a)	TITLE	Proposed Year 1 11-12	Proposed Year 2 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30	30-31	31-32	32-33	33-34	34-35	35-36	TOTAL 11/12 thru 35/36
	PROGRAM PLANNING AND ENVIRONMENTAL DOCUMENTATION																												
1	E-E01.02B	50	Integrated Resources Planning	50				79	79									79	79										364
2	E-E02.01B	50	Engineering Reports for CIP									102											102						204
3	E-E03.01B	50	Program and 10 Year EIR Documentation	357.3	68.2									270										270					966
	WATER SUPPLY AND CONSERVATION																												
4	W-Z04.01	100	Water Reclamation, Phase 1																									10495	10495
5	W-Z04.02	100	Water Reclamation, Phase 2																									17291	17291
	PRODUCTION FACILITIES																												
	Production Wells																												
6	P-W02.05C	20	PT Wellfield Generators (9088, 6177)	500	1754																								2254
7	P-W02.06	0	PT Production Wells Installation														1530	1020	1020										3570
8	P-W03.51	0	Mowry and PT Wellfields - Replacement Pumps and Motors	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	2805
9	P-W03.52	0	Mowry and PT Wellfields - Well Rehabilitations	28	28	244	100	100	100	100	100	100	100	100	100	100	100	100	100	100	103	100	100	100	100	100	100	100	2502
10	P-W03.53	0	Mowry and PT Wellfields - Facility Site Improvements	276.6																									277
11	P-W09.02	0	Peralta-BART Wellfield Well Construction (4 @ 3.5 MGD)																					2040	1020	1020			4080
12	P-W50.01	0	Wellfield Improvements/ Equip & Appurt Replacements	0	56	164	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	660
	GW Treatment Facilities																												
13	P-H01.07B	25	PT Blending Chem Feed Upgrades	163.3	500																								663
14	P-H01.51	0	PT Blending Facility Improv/ Equip Replacements	30	55	55					55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	1137
15	P-H02.51	0	Desalination Facility Improvements/ Equip Replacements	0	30	30	30	30	30	30	100	100	100	100	100	100	100	100	100	100	100	100	100	100					1580
16	P-H02.52	0	Membranes for Desal Facility					1163					1163					1163					1163					1163	5814
	Softening Plants																												
17	P-P02.01	0	Nursery Softening Plant Decommissioning				102																						102
	Surface Water Treatment Facilities																												
18	P-J01.06B	20	MSJWTP Process Upgrades and Post Upgrades				4789					1000																	5789
19	P-J01.09	0	MSJWTP- Access Road Improvements	209.2																									209
20	P-J01.51	0	MSJWTP Pre-Treatment Improv/ Equip Replacements		84	450	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	1194
21	P-J01.54	20	Property Improvements at MSJWTP	100																									100
22	P-J02.05	5	WTP No.2 - LOX Conversion & Process Upgrades	206	2200																								2406
23	P-J02.06B	35	WTP No.2- Power Facility Turbine Upgrade	334.4	123.2	1956																							2414
24	P-J02.07	0	WTP No.2- Solids Disposal Modifications			77																							77
25	P-J02.08	0	WTP No.2- Process Basin Conc. Grouting				102	102	102		102	102	102																612
26	P-J02.51B	0	WTP No.2 Improvements/ Equip Replacements	104	201	180	180	792	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	5046
	BOOSTER PUMP STATIONS																												
27	B-B01.01	0	Canyon Heights Booster Station Upgrade/Replacement					500																					500
28	B-B03.51	0	Paseo Padre Booster Improv/ Equip Replacements	116																									116
29	B-B06.02	0	Seven Hills Booster Station Upgrade										357	485		536	2678												4055
30	B-B06.51	0	Seven Hills Booster Improv/ Equip Replacements	56.8																									57
31	B-B08.51	0	Washington Booster Improv/ Equip Replacements		28	81																							109
32	B-B12.51	0	Scott Creek Booster Improv/ Equip Replacements	72		30																		51					153
33	B-B13.51	0	Avalon Heights Booster Improv/ Equip Replacements																		51								51
34	B-B15.01	50	PR-1 Booster Station (Future)												147	588													735
35	B-B15.02	50	PR-1/MSJWTP Power Facility (Future)												162	408	467												1037
36	B-B90.01	100	District Participation - Booster Pump Stations			334									334														668
	DISTRIBUTION SYSTEM STORAGE FACILITIES																												
	RESERVOIRS																												
	Alameda																												
37	S-R01.01	20	Roof Replacement							702	2469	4298																	7468
38	S-R01.51B	20	Lining/Structural/Mechanical/WQ Improvements		224	1371																							1595
	Decoto																												
39	S-R02.01	20	Roof Replacement					521	1939	3371																			5831
40	S-R02.51	20	Lining/Structural/Mechanical/WQ Improvements							1250																			1250

ACWD CAPITAL IMPROVEMENT PROGRAM - June 2011

(Dollars in Thousands)

Item No.	CIP NO.	FIF GRO WTH % (a)	TITLE	Proposed Year 1 11-12	Proposed Year 2 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30	30-31	31-32	32-33	33-34	34-35	35-36	TOTAL 11/12 thru 35/36
	Whitfield (Irvington)																												
41	S - R 0 3 . 0 4	100	Whitfield Res, Phase 2 & Zone 1/3 Booster Sta - 36 MG												895														895
42	S - R 0 3 . 0 6	20	Whitfield Reservoir, WQ Improvements		78.4	422																							500
	Mayhew																												
43	S - R 0 4 . 0 2	20	Roof Replacement		70	1088	1205																						2363
44	S - R 0 4 . 0 3	20	Mayhew Reservoir - Control Value Vault											796															796
	Middlefield																												
45	S - R 0 5 . 0 1	20	Roof Replacement and Seismic Upgrades															297	989										1286
46	S - R 0 5 . 5 0	~	Middlefield Reservoir - General Improvements				2021																						2021
47	S - R 0 5 . 5 1	0	Lining/Structural/Mechanical/WQ Improvements																				219	729					948
	Patterson																												
48	S - R 0 6 . 0 1	20	Roof Replacement									941	1361	3176															5478
49	S - R 0 6 . 0 3	75	Paterson Reservoir Water Quality Enhancement										586	3303															3889
50	S - R 0 6 . 5 1	0	Lining/Structural/Mechanical/WQ Improvements																					970					970
51	S - R 8 0 . 0 1 B	20	Tank and Reservoir Seismic Upgrades	693.7	119.7	3774																							4587
	Tanks																												
52	S - T 0 2 . 5 1	0	Canyon Heights Tank Improvements			250																							250
53	S - T 0 5 . 5 1	0	MSJ Tank Improvements			765																							765
54	S - T 0 8 . 0 1	65	Tamarack Knolls Tank					823		3290																			4113
55	S - T 9 0 . 0 1	100	District Participation - Tanks at Upper Zones					1356								1356													2712
	WATER MAINS AND APPURTENANCES																												
	Distribution and Transmission Pipelines																												
56	M - M 0 2 . 0 1	60	Prune to Brown - 5,300 ft x24"	2736																									2736
57	M - M 0 9 . 0 1	80	Peralta-BART Wellfield Pipeline - 2,600ft x 36"																					262	996	996			2253
58	M - M 1 1 . 0 2	80	Gallegos Ave-MSJWTP Zone 3 Intertie, Phase 2 - 18"(5709)												331	1040													1371
59	M - M 1 2 . 0 2	80	Zone 4 Interconn Pipeln, Ph 2 - 3,640 ft x 12"(Potential Reimb. By Others)												463	907	907												2277
60	M - M 1 7 . 0 3 B	75	Niles-Newark Intertie Pipeline, Fremont Phase											3040	9055														12094
61	M - M 4 0 . 0 2	20	Pipe Relocate- Warren Ave. (City of Fremont Redevelopment 21%)	1625.4																									1625
62	M - M 4 0 . 0 6 B	20	Main Relocation for SFPUC BDPL #3 & #4	300	154	1255																							1709
63	M - M 4 0 0 8	0	BART Warm Springs Extension - Pipeline Relocation	283.1																									283
64	M - M 8 0 . 0 1 B	20	Main Replacements	197.1	381.7	996	2382	609	609	609	609	609	609	609	609	609	609	609	609	609	609	609	609	609	609	609	609	609	16746
	Regulators																												
65	M - U 0 9 . 5 1	0	Seven Hills - Primary Improv/ Equip Replacements		56	144																							200
	Cathodic Protection Facilities																												
66	M - N 0 1 . 0 1	0	Cathodic Protection Improvements & Additions	31.2	98	300																							429
	Distribution System - Other Improvements or Appurtenances																												
67	M - D 0 1 . 0 1	0	Service Line Emergency Replacement Program	1657	1657	1657	1657	1657	1657	1657	1657	1657	1657	1657	1657	1657	1657	1657	1657	1657	1657	1657	1657						33140
68	M - D 0 1 . 0 2	0	Service Line Planned Replacement Program	226.7	226.7	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59						1515
69	M - D 0 1 . 0 3	0	Water Meter Upgrade Program	1000	1000	700																							2700
70	M - D 0 1 . 0 4 B	20	Distribution System Seismic Improvements	427.9	310.6	2868	1424	2929	2280	1289	1289	2867																	15685
71	M - D 0 1 . 0 9	100	Customer Generated Distribution System Improvements	2233.5	2483.2																								4717
72	M - D 5 0 . 0 1	0	Distribution System Facility Improvements	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	73	71	71	71	71	71	1786
	INTER-FACILITY ELECTRICAL AND CONTROL																												
73	Y - I 0 1 . 0 1	0	SCADA System Major Upgrades	400	260	300	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	6680
74	Y - I 0 2 . 0 1	0	Tank and Reservoir Isolation Valve Project	94.8	209.2																								304
75	Y - I 0 3 . 0 1	0	MSJWTP to WTP No.2 Elect & Control Intertie		56	195																							251
76	Y - I 5 0 . 0 1	0	SCADA System Minor Improvements	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	1000
77	Y - I 5 0 . 0 2	0	Facility Security Projects	260	270	250	250	240																					1270

ACWD CAPITAL IMPROVEMENT PROGRAM - June 2011

(Dollars in Thousands)

Item No.	CIP NO.	FIF GRO WTH % (a)	TITLE	Proposed Year 1 11-12	Proposed Year 2 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30	30-31	31-32	32-33	33-34	34-35	35-36	TOTAL 11/12 thru 35/36
	GROUNDWATER RECHARGE AND PROTECTION SYSTEM																												
	Aquifer Reclamation Wells																												
78	G - A 0 9 . 0 1	0	New ARP Well											262	558	587													1407
79	G - A 5 0 . 0 2	0	ARP Pump & Motor Replacements (Repl/ 8 Years)					105							105	15	15	15	15	15	15	15	15	15	15	15	15	15	409
80	G - A 5 0 . 0 3	0	Desal Production Well Rehabilitations	19.6	19.6	195	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	1950
81	G - A 5 0 . 0 5	0	Desal Produciton Well Equip Replacement			45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	1035
	Groundwater Management Facilities																												
82	G - G 0 2 . 0 8 B	20	Shinn Gravity Rediversion 2	77	250.3	498																							825
83	G - G 0 3 . 0 2	0	Kaiser Pit AHF Rehabilitation (4146)			100								410	1020														1530
84	G - G 0 3 . 0 3	30	Kaiser Pit BHF Rehabilitation												859														859
85	G - G 0 3 . 0 4	20	Shinn Pit Rehabilitation	49	51	446																							546
86	G - G 0 3 . 0 5	20	Pit T-2 Slope Rehabilitation	92	48		935																						1075
87	G - G 0 5 . 0 1	20	Vallecitos Channel Betterments	28.1	28.1	944																							1000
88	G - G 0 6 . 0 1 B	20	Monitoring Wells - Construction (Net Costs to District)		89.9																								90
89	G - G 1 1 . 0 1 B	20	Fishery Studies	150																									150
90	G - G 1 3 . 0 1 B	20	Shinn Pond Fish Screen (Potential 1.0M Reimb by Others)	287.9	82.3	3393																							3763
91	G - G 1 4 . 0 1 B	20	Kaiser Pond Fish Screen (Potential 0.8M Reimb by Others)	366	82.3	2220																							2668
92	G - G 4 1 . 0 1 B	20	Rubber Dam 1 - Fabric Replacement (13' High)	117.4	125.8	3281																							3524
93	G - G 4 1 . 0 2 B	20	Rubber Dam 1 - Seismic Upgrades (Incl. Kaiser Embankment)	100.9	95.5	1106																							1302
94	G - G 4 1 . 0 3 B	20	Rubber Dam 1 - Fish Ladder (0.5M Reimb NFWF Award)	700	125.3	4508																							5333
95	G - G 4 3 . 0 2 B	20	Rubber Dam 3 - Fabric Replacement									3740																	3740
96	G - G 4 3 . 0 3 B	20	Rubber Dam 3 - Fish Ladder (0.5M Reimb. NFWF Award)	118.3	136.3	2533																							2788
97	G - G 5 0 . 0 1	0	GW Supply Facilities Improv/ Equip Replacements	135	110	217	216	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	2690
98	G - G 5 0 . 0 2 B	20	Recharge Facilities Control Electrification	35	100	93																							228
99	G - G 5 0 . 0 3	0	GW Basin Reclamation and Protection Improvements	42	45																								87
	ADMINISTRATION																												
	Vehicles and Equipment																												
100	A - V 0 1 . 0 1	0	Vehicle Capital - Air Quality Reg'd Equip Upgrades							55			367																422
101	A - V 0 1 . 5 1	0	Vehicle Capital - Capital Equipment and Materials	428	430	687	838	733	535	610	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	15961
102	A - V 0 1 . 5 2	0	Equipment & Tools	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	1500
	Headquarters																												
103	A - Q 0 1 . 0 2	100	Headquarters Facility - Building Renovation Projects	3210																									3210
104	A - Q 0 1 . 0 5	0	Headquarters Facility - Landscaping	25		175																							200
105	A - Q 0 1 . 0 6	20	Headquarters Facility - Photovolt Proj (Potential 50% Reimb by Others)										2031																2031
106	A - Q 0 1 . 0 8	0	Headquarters Facility - Comm & Signal Recabling	410																									410
107	A - Q 0 1 . 5 1 B	0	Headquarters Facility Improv/ Equip Replacements	212.5		35	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125	2998
108	A - Q 0 1 . 5 2	0	Headquarters Facility - Reroof Building Office Complex & Garage										850																850
109	A - Q 0 1 . 5 3	0	Headquarters AS/400-PC Network UPS Replacement	160.6																									161
	Finance and Administration Department (incl. Office of the General Manager)																												
110	A - K 0 1 . 5 1	0	Fin and Admin Dept - Capital Equipment and Materials			46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	1059
111	A - K 0 1 . 5 2	0	Computer Network Upgrades	200	150	250	300	200	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	3100
112	A - K 0 1 . 5 3	0	Information System Master Plan	652	594	399	217	487																					2349
113	A - K 0 1 . 5 4	0	JD Edwards Server Replacements & Upgrades	666	50	24	114	759																					1613
114	A - K 0 1 . 5 6	0	Customer Info/ Utility Billing System Replacement	732.6	220	15	500	15																					1483
115	A - K 0 1 . 5 7	0	GIS (Previously M-D70.01)	60	100	135	35	160																					490
	Engineering Department																												
116	A - K 0 2 . 5 1	0	Engineering Department - Capital Equipment and Materials	10	10	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	958
	Operations Department																												
117	A - K 0 3 . 5 2	0	Water Quaility Lab & Equip. Replacement Program	218	50	115	21	100	8			50		125	50	123	66	100				50	8	125	50	115	21		1395

Section 4: CIP Project Summaries

This section summarizes the projects and programs identified in the CIP Spreadsheet. The project summaries are presented in the order as shown in the CIP Spreadsheet. Project summaries provide the CIP project number, job number, project title, project description, function and justification for the project, cost estimate, in-service date, and percent growth related (FIF funding).

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CIP PROJECT SUMMARY - 1

PROJECT NO.: E-E01.02B

JOB: Later

TITLE: Integrated Resources Planning

DESCRIPTION:

The Integrated Resources Planning Study (IRP) was completed in 1995 and a 10-year review of the IRP was completed in 2006. A key recommendation of the IRP was to update the document every ten years, or as conditions warrant. Several key factors have occurred since the 2006 IRP Review was completed in 2006. These factors include: 1) the downturn in the economy coupled with the recent drought have resulted in reduced demands; 2) the 2009 legislation requiring a 20% statewide reduction in per capita water use by the year 2020 (SBX7-7); 3) federal court rulings on the operations of the State Water Project (SWP) have reduced ACWD's SWP supplies from the Delta; and 4) a significant increase in the cost of San Francisco Public Utility Commission (SFPUC) water supplies. These factors will require that ACWD revisit the IRP planning assumptions, and update the IRP accordingly. This interim update of the IRP will be completed in 2012.

FUNCTION AND JUSTIFICATION:

The IRP serves as the long-term water supply strategy for ACWD. The updated IRP will be used to confirm and or modify assumptions for water supply programs and facilities.

COST ESTIMATE: $ 50,000 (FY 2011/12)
$158,000 (FY 2015-2017)
$158,000 (FY 2025-2027)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 50%

CIP PROJECT SUMMARY - 2

PROJECT NO.: E-E02.01B

JOB: Multiple

TITLE: Engineering Report for CIP

DESCRIPTION:

The Engineering Report (ER) is updated intermittently and incorporates the recommendations contained within the previous Integrated Resources Plan (IRP). The report includes Capital projects required to implement the IRP and others needed to meet ACWD's planning criteria for: 1) water production; 2) booster pump stations; 3) distribution system storage facilities; 4) transmission mains; and 5) groundwater recharge facilities. Other facilities are also evaluated either because they can result in costly capital projects or because of their potential impact on one or more of the main facility types.

FUNCTION AND JUSTIFICATION:

The ER provides ACWD with short-term direction for the Capital Improvement Program (CIP). Projects identified in the ER, and potentially the IRP, and other projects included in the CIP provide the basis for the preparation of the Program Environmental Impact Report (EIR). The estimated cost of projects included in ACWD's 25-year CIP provide one of the components included in the financial model used to establish ACWD's rates and charges.

COST ESTIMATE: $102,000 (FY 2019/20)
$102,000 (FY 2030/31)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 50%

CIP PROJECT SUMMARY - 3

PROJECT NO.: E-E03.01B

JOB: Multiple

TITLE: Program and 10-Year EIR Documentation

DESCRIPTION:

Program Environmental Impact Reports (EIRs) describe the environmental impacts of projects identified in the latest Engineering Report (ER). The EIR may also cover projects identified in the latest Integrated Resources Planning Study (IRP), and other projects included in the 25-year Capital Improvement Program (CIP). Mitigation measures are suggested in the EIR for reducing impacts to a less-than-significant level.

This project also includes funding in the current two-year budget to prepare ACWD's written procedure for CEQA compliance.

FUNCTION AND JUSTIFICATION:

The Program EIR describes projects identified in the CIP that are scheduled to occur during the ten year period covered by the latest ER. The Program EIR analyzes projects at either a program-level or project-level. Projects described at a project-level of detail should not require additional CEQA documentation provided there are no significant changes to the project or to the environmental impacts associated with the project.

COST ESTIMATE: $ 357,300 (FY 2011/12)
$ 68,200 (FY 2012/13)
$ 270,000 (FY 2021/22)
$ 270,000 (FY 2031/32)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 50%

CIP PROJECT SUMMARY - 4 & 5

PROJECT NO.: W-Z04.01 and W-Z04.02

JOB: Multiple

TITLE: Water Reclamation, Phase 1 & 2

DESCRIPTION:

The Integrated Resources Plan (IRP) identified a recycled water program as part of ACWD's long term water supply strategy. Under the proposed Phase 1 recycled water program, recycled water would be provided to large landscape and industrial customers for irrigation and other non-potable uses. The Phase 2 program would expand the Phase 1 program by approximately 1 MGD. The project would be implemented jointly with Union Sanitary District.

FUNCTION AND JUSTIFICATION:

The IRP identified a need for additional water supply reliability and production capacity. The recycled water program will help meet both goals by providing a new, firm source of supply that will off-set existing potable water demands.

COST ESTIMATE: $ 27,786,000 (FY 2035/36)

IN-SERVICE DATE: 2036

% GROWTH RELATED: 100%

CIP PROJECT SUMMARY - 6

PROJECT NO.: P-W02.05C

JOB: Later

TITLE: Peralta-Tyson Wellfield Generators

DESCRIPTION:

This project will provide for the installation of a diesel generator unit with a 5,000 gallon fuel tank storage capacity at the Peralta-Tyson (PT) Wellfield. The generator shall be sized to ensure the revised emergency water demand criteria recommended in the recently completed 2011 Engineering Report will be met.

FUNCTION AND JUSTIFICATION:

This project is required to help ensure availability of water during an extended regional electrical power outage. As identified in the 2008 Distribution System Seismic Vulnerability Assessment Study prepared by G&E Engineering Systems Inc., this project will also augment ACWD's emergency response capabilities after a major seismic event.

COST ESTIMATE: $ 500,000 (FY 2011/12)
$1,754,000 (FY 2012/13)

IN-SERVICE DATE: 2013

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 7

PROJECT NO.: P-W02.06

JOB: Later

TITLE: New PT Production Wells Installation

DESCRIPTION:

All of ACWD's Above Hayward Fault (AHF) Production Wells in the PT Wellfield were installed in the 1960's, with the exception of PT-8 which was installed in 1986. Most of the wells have exceeded the typical life span (approximately 20- 30 years) of a production well. Installation of replacement wells are needed to meet future demands. Based on a uniform and highly permeable local geology, the new wells could be installed in the open field between the Blending Facility and the old softening plant and would be as productive as the existing PT wells. It is anticipated that, pending additional studies, three large diameter (possibly 24-inch) deep (approximately 250 feet) wells will be installed in the remaining open field to meet future water demands.

FUNCTION AND JUSTIFICATION:

The aging PT wells will need to be gradually replaced with new wells to meet future water demands.

COST ESTIMATE: $1,530,000 (FY 2024/25)
$1,020,000 (FY 2025/26)
$1,020,000 (FY 2026/27)

IN-SERVICE DATE: 2027

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 8

PROJECT NO.: P-W03.51

JOB: 2110

TITLE: Mowry and PT Wellfield - Replacement Well Equipment

DESCRIPTION:

Project provides funding for the regular replacement of worn out well pumping equipment. Installation costs are included in annual operating expense budgets.

FUNCTION AND JUSTIFICATION:

The expected life of a submersible pump and motor is ten years or less. The expected life of a line shaft pump is fifteen years or less. There are 9 submersible pumps and 7 line shaft pumps in service at the two production wellfields which equates to approximately 1.4 pump and motor replacements per year. At an average cost of $73,000 per pump and motor combination, $102,000 is budgeted per year for replacements. It is also expected that column pipe or bushings will also need to be replaced so an additional $10,000 has been added. The composite annual cost is $112k per year.

COST ESTIMATE: $112,000 annually

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 9

PROJECT NO.: P-W03.52

JOB: Various

TITLE: Mowry and PT Wellfields – Well Rehabilitation

DESCRIPTION:

Production wells in the Mowry and PT Wellfields lose production efficiency over time and they need periodic rehabilitation. Two wells (Mowry 2 and 7) were rehabilitated in 1998-1999, two wells (Mowry 6 and 9) were rehabilitated in 2000-2001, three wells (PT-1, PT-3 and PT-5) were rehabilitated in 2001-2002, one well (Mowry 1) was rehabilitated in 2003-2004, three wells (Mowry 4, PT-4 and PT-6) were rehabilitated in 2005-2006, and one well (Mowry 3) was rehabilitated in 2010. It is anticipated that $100,000 per year will be needed for well rehabilitation work on an ongoing basis. This long-term program could involve a major rehabilitation of one well per year, or more moderate (less expensive) treatment of two to three wells per year, so that each well is serviced once every 5 – 10 years.

The current two year budget only includes funding for labor costs to analyze well data and to develop specifications for rehabilitation of identified wells. Funds to cover the actual rehabilitation work are included in FY 2013/14.

FUNCTION AND JUSTIFICATION:

Specific capacities of production wells in the Mowry and PT Wellfields significantly degraded over the years. An initial project to restore these wells to their original capacity was conducted. This project should be followed by an ongoing periodic rehabilitation program to prevent future losses in capacity.

COST ESTIMATE: $ 28,000 (FY 2011/12)
$ 28,000 (FY 2012/13)
$244,000 (FY 2013/14)
$100,000 annual costs thereafter

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 10

PROJECT NO.: P-W03.53

JOB: Later

TITLE: Mowry and PT Wellfields – Facility Site Improvements

DESCRIPTION:

The project is a continuation of an existing well conversion program. This project provides funds for the construction and installation of protective buildings for PT-2 and PT-7 as well as new pumping equipment so that the two wells can be converted to line shaft style wells. Additionally, a new concrete slab and pump pedestal shall be installed such that each site complies with CDPH well head regulations.

FUNCTION AND JUSTIFICATION:

The casings for PT-1 through PT-7 are not designed for to provide adequate water flow past submersible motors for cooling needed for operation of the wellfield under all groundwater level conditions. The low cooling water flow leads to premature failure of the motor. PT-2 and PT-7 are the last two wells requiring the change from submersible motor style to line shaft style.

COST ESTIMATE: $276,000 (FY 2011/12)

IN-SERVICE DATE: 2012

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 11

PROJECT NO.: P-W09.02

JOB: Later

TITLE: New Below Hayward Fault Production Wells Installation

DESCRIPTION:

ACWD's Below Hayward Fault (BHF) Production wells in the Mowry Wellfield were installed between 1947 and 1986 (Mowry 1 - 1947, Mowry 2- 1959, Mowry 3 - 1974, Mowry 6 -1986, Mowry 7- 1986, Mowry 8 - 1986, Mowry 9- 1986). Most of the wells have exceeded the typical life span (approximately 20-30 years) of a production well. Installation of replacement wells are needed to meet future demands and the new wells will have to be capable of producing water at similar rates as the existing wells. The new wells' location(s) will be determined based on future studies. It is anticipated that, pending additional studies, four large diameter (possibly 24-inch) deep (approximately 250-400 feet) wells will be installed to meet future demands.

FUNCTION AND JUSTIFICATION:

The aging Mowry wells will need to be gradually replaced with new wells to meet future water demands.

COST ESTIMATE: $4,080,000 (FY 2031-34)

IN-SERVICE DATE: 2034

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 12

PROJECT NO.: P-W50.01

JOB: Later

TITLE: Wellfield – General Improvements and Equipment Replacements

DESCRIPTION:

This project provides funds for miscellaneous general improvements/modifications to the production wellfields. Site improvements are periodically necessary to replace corroded or fatigued piping and appurtenances as well as structural and electrical components of the Blending Facility.

The major project for FY 2012/13 – FY 2013/14 is the design, removal, and replacement of the remaining power equipment in the PT Wellfield Complex B.

FUNCTION AND JUSTIFICATION:

This project provides funding for small, miscellaneous projects that improve or extend the life of the wellfields and are not covered by expense accounts.

Electrical testing of the facilities is covered by expense accounts.
Replacement of instrumentation is covered by expense accounts.
Replacement of well pumps and motors is covered by Project P-W03.51.

COST ESTIMATE: $ 56,000 (FY 2012/13)
$164,000 (FY 2013/14)
$100,000 annual costs thereafter

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 13

PROJECT NO.: P-H01.07B

JOB: 6261

TITLE: PT Blending Facility Chemical Feed Upgrades

DESCRIPTION:

This project incorporates operational improvements and major equipment replacements and includes the replacement of existing chemical feed pumps, PLC equipment and programming consolidation, and optimizing residual analyzer feedback loops. Also included is a flowmeter on the S3 line from the Blending Facility into the Distribution System.

FUNCTION AND JUSTIFICATION:

PLC upgrades reduce the risk of unscheduled blender shutdowns and the replacement of chemical feed pumps improves control of chemical metering. The flowmeter is required to monitor water flow out of and through the Blending Facility into the Distribution System.

COST ESTIMATE: $163,300 (FY 2011/12)
$500,000 (FY 2012/13)

IN-SERVICE DATE: 2013

% GROWTH RELATED: 25%

CIP PROJECT SUMMARY - 14

PROJECT NO.: P-H01.51

JOB: Later

TITLE: PT Blending Facility Improvements and Equipment Replacements

DESCRIPTION:

Facility improvements and equipment replacements needed to maintain adequate reliability and satisfactory operation of the PT Blending Facility. The scope of this program item in the CIP includes the periodic replacement of chemical feed piping, chemical storage tanks, linings for chemical storage tanks, carriage water pumps, chemical process control devices and instrumentation, and other needed appurtenances. Process control devices and instrumentation include chemical analyzers, chemical probes, flow meters, pulsation dampeners, pressure transmitters, and high pressure pump discharge limit switches. PLC and SCADA communication equipment are not included in this program item, but instead are included in Project No. Y-I01.01, SCADA System Major Improvements.

FUNCTION AND JUSTIFICATION:

Periodic equipment replacement is required over time due to equipment obsolescence and when equipment reaches the end of its service life. Site improvements are periodically necessary to replace corroded or fatigued piping and appurtenances as wells as structural and electrical components of the various buildings at the site that are in need of repair or replacement.

COST ESTIMATE: $30,000 (FY 2011/12)
$55,000 (FY 2012/13)
$55,000 (FY 2013/14)
$55,000 (FY 2018/19 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 15

PROJECT NO.: P-H02.51

JOB: Later

TITLE: Desalination Facility Improvements and Equipment Replacements

DESCRIPTION:

The Desalination Facility (Desal Facility) was completed in 2003 and a facility expansion completed in 2010. Facility improvements and equipment replacements are needed to maintain adequate reliability and satisfactory operation of the Desal Facility. The scope of this program item in the CIP includes the periodic replacement of chemical feed piping, chemical storage tanks, chemical feed pumps, chemical process control devices and instrumentation, RO feed pumps, RO membrane pressure vessels, blended product water pumps, de-carbonator blowers, variable frequency drives, electric valve actuators, and other needed appurtenances. The replacement of RO membranes is covered under Project No. P-H02.52.

FUNCTION AND JUSTIFICATION:

Periodic equipment replacement is required over time due to equipment obsolescence or when equipment reaches the end of its service life. Site improvements are periodically necessary to replace corroded or fatigued piping and appurtenances as wells as structural and electrical components of the Desal Facility building that are in need of repair or replacement.

COST ESTIMATE: $ 30,000 (FY 2012/13 through FY 2017/18)
$100,000 (FY 2018/19 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 16

PROJECT NO.: P-H02.52

JOB: Later

TITLE: Desalination Facility Membrane Replacement

DESCRIPTION:

The RO membranes are scheduled to be replaced every five years with the first replacement occurring in FY09/10. The first replacement funds will be used in conjunction with the Desal Facility Phase 2 project which was completed in 2010. Thereafter, the membranes will be replaced as a separate project.

FUNCTION AND JUSTIFICATION:

Periodic membrane replacement is required for water treatment using membrane technology

COST ESTIMATE: $1,163,000 (FY 2015/16 and every 5 years thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 17

PROJECT NO.: P-P02.01

JOB: Later

TITLE: Nursery Softening Plant Decommissioning

DESCRIPTION:

The project includes the removal of all remaining plant and equipment and clean-up of the site.

FUNCTION AND JUSTIFICATION:

The existing Nursery Softener is an obsolete facility, can no longer be used, and should be removed.

COST ESTIMATE: $102,000 (FY 2014/15)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 18

PROJECT NO.: P-J01.06B

JOB: Later

TITLE: MSJWTP Process Upgrades and Post Upgrades

DESCRIPTION:

This MSJWTP is currently limited to a production rate of 3.5 – 4 MGD to keep the fouling of the membranes at a manageable level. Additionally the plant must be shut down during the months when it receives Lake Del Valle water. A pilot study is currently underway at the MSJWTP to test the effectiveness of alternate membranes.

The cost estimate shown below and included in the CIP for this project is based on the assumption that the alternate membranes will be an effective solution for the plant. The cost includes the modifications assumed to be required for the initial membrane retrofit project and the first membrane replacement 5 years after the retrofit.

If however the pilot study returns unfavorable results, ACWD will have to reevaluate the conversion of the plant back to conventional treatment with horizontal sedimentation, conventional filtration, and ozone for disinfection.

FUNCTION AND JUSTIFICATION:

Process and facility upgrades are needed to increase the reliable production capacity to 8 MGD (or at the minimum, 6 MGD per the analysis of the Engineering Report).

COST ESTIMATE: $ 4,789,000 (FY 2014/15)
$ 1,000,000 (FY 2019/20)

IN-SERVICE DATE: 2015

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 19

PROJECT NO.: P-J01.09

JOB: Later

TITLE: MSJWTP Access Road Improvements

DESCRIPTION:

Construction of a retaining wall adjacent to the Vargas Creek channel at the base of the access road to Mission San Jose Water Treatment Plant No. 1 was completed in 2008. As part of the project RWQCB construction permit requirements, ACWD must conduct yearly photo inspection and monitoring and complete a fluvial geomorphologic study of the area by 2013. Possible failure analysis and mitigation work needed if area continues to show erosion (i.e., not stable).

FUNCTION AND JUSTIFICATION:

The road is the main means of access to the water treatment plant and several near-by residences. The road is used by ACWD staff, residents, and delivery and emergency vehicles. Rains from the past few seasons have resulted in undermining the embankment. Permanent repair was complete, however as required by the RWQCB permit, mitigation monitoring and fluvial geomorphological study are required over the next five years.

COST ESTIMATE: $ 209,200 (FY 2011/12)

IN-SERVICE DATE: 2012

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 20

PROJECT NO.: P-J01.51

JOB: Later

TITLE: MSJWTP Treatment Improvements and Equipment Replacements

DESCRIPTION:

MSJWTP was put online in 1975 and has had several major upgrades since that time. The last upgrade was in 2004 and it primarily addressed the chemical systems and filtration systems.

This project provides funding for yearly general improvements and modifications to MSJWTP. Types of projects include replacement diesel generator, RWW Basin repairs, chemical tank lining, chemical pump replacement, hydro-pneumatic tank repairs, and utility water pump replacement.

FUNCTION AND JUSTIFICATION:

Funds for FY 2012/13 and beyond are to cover the costs for annual general improvements and modifications, and equipment replacements.

COST ESTIMATE: $ 84,000 (FY 2012/13)
$450,000 (FY 2013/14)
$ 30,000 (FY 2014/15 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 21

PROJECT NO.: P-J01.54

JOB: Later

TITLE: Property Improvements at MSJWTP

DESCRIPTION:

The project is for the removal of existing residential buildings on ACWD owned property adjacent to the MSJWTP. As part of the original purchase agreement tenants will remain in one of the houses; however the rest of the property and buildings will be vacated as of June 30, 2011.

FUNCTION AND JUSTIFICATION:

These buildings are not habitable and for liability and safety reasons need to be demolished and removed. Funds for this project will be used to improve the property by removing these buildings

COST ESTIMATE: $ 100,000 (FY 2011/12)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 22

PROJECT NO.: P-J02.05

JOB: 6174, 6230

TITLE: WTP2 - LOX Conversion and Process Upgrades

DESCRIPTION:

The project consists of constructing a Liquid Oxygen (LOX) storage area, upgrading of the ozone generator power supply units, replacement of the ozone generator dielectrics and fuses, and removal of the ozone air preparation equipment.

FUNCTION AND JUSTIFICATION:

The existing ozone system uses air preparation equipment to condition the air before being run through the ozone generators. This equipment is maintenance intensive. Converting to LOX allows for the removal of the ozone system air preparation equipment which both reduces energy consumption and maintenance.

COST ESTIMATE: $ 206,000 (FY 2011/12)
$2,200,000 (FY 2012/13)

IN-SERVICE DATE: 2013

% GROWTH RELATED: 5%

CIP PROJECT SUMMARY - 23

PROJECT NO.: P-J02.06B

JOB: Later

TITLE: WTP2 - Power Facility Turbine Upgrade

DESCRIPTION:

This project includes an engineering study of the WTP2 power facility to: 1) clearly and concisely identify maintenance, operation and longevity issues of the existing hydroelectric generators; 2) evaluate alternative facility modifications; 3) identify possible alternatives in operation of the facility to enhance its overall performance; 4) develop replacement equipment performance requirements and technical specifications; 5) design required facility modifications and prepare construction documents; and 6) construct facility upgrades.

FUNCTION AND JUSTIFICATION:

The power facility and its associated hydroelectric generators are critical in the implementation of ACWD's power utilization strategy for the two surface water treatment plants. The turbines were installed to serve two distinct functions: 1) to lower the hydraulic head of the raw water entering the treatment process to acceptable levels, and 2) generate electricity to offset the need to purchase the power required to operate the plant from the local electric utility. The avoided cost of the power produced by the hydroelectric generators in the power facility is in excess of $500,000 per year.

COST ESTIMATE: $ 334,400 (FY 2011/12)
$ 123,200 (FY 2012/13)
$1,956,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 35%

CIP PROJECT SUMMARY - 24

PROJECT NO.: P-J02.07

JOB: Later

TITLE: WTP2 - Solids Disposal Modifications

DESCRIPTION:

This project includes studying the existing solids handling system; piloting different treatment alternatives and polymers; developing recommendations on process modifications and treatment alternatives; developing a long range plan for filter press operational and maintenance issues; and implementing the recommended alternatives. Actual filter press replacement is covered under CIP Project Summary – 26 (P-J02.51B).

FUNCTION AND JUSTIFICATION:

The existing solids handling system is aging and was not sized to efficiently meet processing requirements. The existing system was designed to use aluminum sulfate as the primary plant coagulant. The plant is currently using ferric chloride. Optimization of the solids handling system would allow for increased solids processing and reduced chemical and solids disposal costs.

COST ESTIMATE: $ 77,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 25

PROJECT NO.: P-J02.08

JOB: Later

TITLE: WTP2 – Process Basin Concrete Grouting

DESCRIPTION:

The project includes the resurfacing of the concrete in the sedimentation, flocculation and filter basins and channels.

FUNCTION AND JUSTIFICATION:

WTP2 was placed into service in 1993. The concrete surfaces of the sedimentation, flocculation and filter basins are exhibiting slight deterioration. The concrete was tested in 2010 and is currently in good condition. Concrete core samples will be tested on a regular basis and the resurfacing will be scheduled when appropriate to protect the rebar structural integrity.

COST ESTIMATE: $ 102,000 (FY 2014/15)
$ 102,000 (FY 2015/16)
$ 102,000 (FY 2016/17)
$ 102,000 (FY 2018/19)
$ 102,000 (FY 2019/20)
$ 102,000 (FY 2020/21)

IN-SERVICE DATE: 2021 Complete

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 26

PROJECT NO.: P-J02.51B

JOB: Later

TITLE: WTP2 – Improvements /Equipment Replacement

DESCRIPTION:

Improvements/modifications to WTP2, including (but not limited to) improved analytical instrumentation, process piping and mechanical equipment, etc. The cost in FY 2015/16 includes filter press installation.

FUNCTION AND JUSTIFICATION:

WTP2 was placed into service in 1993. To stay current with changing regulations and an ACWD philosophy of continuing improvement, plant components should be periodically upgraded or replaced.

COST ESTIMATE: $ 104,000 (FY 2011/12)
$ 201,000 (FY 2012/13)
$ 180,000 (FY 2013/14)
$ 180,000 (FY 2014/15)
$ 792,000 (FY 2015/16)
$ 180,000 (FY 2016/17 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 27

PROJECT NO.: B-B01.01

JOB: Later

TITLE: Canyon Heights Booster Station Upgrade/Replacement

DESCRIPTION:

The pump station serves the Canyon Heights service zone. This project includes an electrical conditions assessment and potential electrical upgrade as recommended in the 2011 Engineering Report. The project could include upgrade of the motor control centers (MCC) and the supervisory control and data acquisition (SCADA) system.

FUNCTION AND JUSTIFICATION:

The project helps maintain distribution system reliability by improving the electrical reliability of the pump station.

COST ESTIMATE: $500,000 (FY 2015/16)

IN-SERVICE DATE: 2016

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 28

PROJECT NO.: B-B03.51

JOB: Later

TITLE: Paseo Padre Booster Station Improvements

DESCRIPTION:

Pump efficiency testing conducted in 2004 showed that the pumps do not operate efficiently when more than one pump is running and experience suction problems when multiple pumps are operating simultaneously. Additionally, the regulators are not operating efficiently in conjunction with the pumps.

FUNCTION AND JUSTIFICATION:

Proper pump design, sizing, and control methodology will realize substantial energy savings, higher capacity, and increased reliability. The current pump operation needs to be investigated and alternatives developed (e.g. VFD drives) to correct the problems. Previous corrosion problems on the pump casings have been corrected.

COST ESTIMATE: $116,000 (FY 2011/12)

IN-SERVICE DATE: 2012

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 29

PROJECT NO.: B-B06.02

JOB: Later

TITLE: Seven Hills Booster Station Upgrade

DESCRIPTION:

The project includes a study and hydraulic modeling of the existing booster station and a complete redesign of the station to incorporate separate pumping for Appian Tank and the new Tamarack Tank. The design will also include multiple flow meters, relocation of existing regulators and additional electrical equipment.

FUNCTION AND JUSTIFICATION:

Seven Hills Booster Station consists of two very high head booster pumps that are the sole source of supply to the area it serves: Appian, Seven Hills, Upper Decoto, and Tamarack Knolls. During the summer months, both pumps are required to meet demands. Thus, a pump or motor failure is critical and requires the use of two portable booster pumps to make the high head lift to Appian tank. When in use, the two diesel driven portable booster pumps require constant operational attention due to operational and security issues. The existing 3600 rpm booster pump/motors have proven unreliable and require frequent maintenance.

COST ESTIMATE: $ 357,000 (FY 2020/21)
$ 485,000 (FY 2021/22)
$ 536,000 (FY 2023/24)
$2,678,000 (FY 2024/25)

IN-SERVICE DATE: 2025

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 30

PROJECT NO.: B-B06.51

JOB: 6475/ 6476

TITLE: Seven Hills Booster Station Improvements - Equipment Replacements

DESCRIPTION:

This program item provides funding for general improvements and regular equipment replacements. An additional pump at the Seven Hills Booster Station is required to meet the summer day and the maximum day demand criteria outlined in the 2011-2020 Engineering Report.

The Seven Hills Booster Station 2011 Improvement Project includes the installation of a vertical turbine pump including associated piping and appurtenances, and modifications to existing electrical equipment.

FUNCTION AND JUSTIFICATION:

Seven Hills Booster Station is the sole booster station that pumps water from Zone 1 to Appian Tank, which requires an approximate 500-foot lift. Water is then regulated down to the Seven Hills, Tamarack Knolls and Upper Decoto service areas. This station currently has two installed pumps (2-100 hp pumps). During maximum day demand periods, both pumps need to operate simultaneously. Having a third 100 hp pump permanently installed provides for a more reliable station should one pump fail and allow for a pump to be taken off-line for maintenance purposes while maintaining the required pumping capacity of the station.

COST ESTIMATE: $ 56,800 (FY 2011/12)

IN-SERVICE DATE: 2012

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 31

PROJECT NO.: B-B08.51

JOB: Later

TITLE: Washington Booster Improvements

DESCRIPTION:

Currently there are both vertical turbine and horizontal pumps installed at this facility. All the pumps in the station have been in service for several years and need to be replaced. The first phase of this project includes a study to insure that the proper types and sizes of new pumps are specified.

FUNCTION AND JUSTIFICATION:

Proper pump design, sizing, and control methodology will realize substantial energy savings, higher capacity, and increased reliability.

COST ESTIMATE: $ 28,000 (FY 2012/13)
$ 81,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 32

PROJECT NO.: B-B08.51

JOB: Later

TITLE: Scott Creek Booster Improvements/Equipment Replacements

DESCRIPTION:

This project provides funds for regular equipment replacements and improvements including relocation of the regulators in a vault outside the station and excavation, inspection and repair of the surge tanks.

FUNCTION AND JUSTIFICATION:

The Scott Creek Booster Station was designed with stacked piping which does not allow for ladder access to valves and regulators and should therefore be redesigned.

The station was also designed with buried surge tanks. During FY 2008/09 the surge tanks at Avalon Heights Booster were excavated to repair a leaking pipe. Repair of those tanks required that they be excavated, repainted, new cathodic protection installed, and the bladders removed and inspected. Due to the problems at Avalon Booster, it is recommended that the surge tanks at Scott Creek Booster be excavated, inspected and repaired.

COST ESTIMATE: $ 72,000 (FY 2011/12)
$ 30,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 33

PROJECT NO.: B-B13.51

JOB: Later

TITLE: Avalon Heights Booster Improvements/Equipment Replacements

DESCRIPTION:

This project provides funds for regular equipment replacements and improvements at the Avalon Heights booster station.

FUNCTION AND JUSTIFICATION:

The station was also designed with buried surge tanks. During FY 2008/09 the surge tanks at Avalon Heights Booster were excavated in order to repair a leaking pipe. Repair of those tanks required that they be excavated, repainted, new cathodic protection installed, and that their bladders removed and inspected. The tanks should be excavated and re-inspected every 20 years.

COST ESTIMATE: $ 51,000 (FY 2028/29)

IN-SERVICE DATE: 2028

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 34

PROJECT NO.: B-B15.01

JOB: Later

TITLE: PR-1 Booster Station

DESCRIPTION:

This project includes construction of a booster station at or near PR-1 to boost water to Zone 4 (Ohlone Tank and Vineyard Heights Tank) and regulate water from Zone 4 to MSJWTP treated water tank. Power generated from a turbine generator would offset the electrical cost to pump water from downstream of PR-1 (Zone 1) to Zones 3 and 4.

FUNCTION AND JUSTIFICATION:

This facility will help maintain distribution system reliability by meeting required booster pump station capacity to Zone 4. PR-1 Booster Pump Station would become the primary pump station, and Vineyard Heights Booster Station would become the backup station. This project was recommended in the 1996 Engineering Report.

COST ESTIMATE: $147,000 (FY 2022/23)
$588,000 (FY 2023/24)

IN-SERVICE DATE: 2024

% GROWTH RELATED: 50%

CIP PROJECT SUMMARY - 35

PROJECT NO.: B-B15.02

JOB: Later

TITLE: PR-1/MSJWTP Power Facility

DESCRIPTION:

Construct a hydropower station to replace PR-1.

FUNCTION AND JUSTIFICATION:

The hydropower station will generate additional electrical power which can be used at WTP2, MSJWTP, or the PR-1 pump station.

COST ESTIMATE: $ 162,000 (FY 2022/23)
$ 408,000 (FY 2023/24)
$ 467,000 (FY 2024/25)

IN-SERVICE DATE: 2025

% GROWTH RELATED: 50%

CIP PROJECT SUMMARY - 36

PROJECT NO.: B-B90.01

JOB: Later

TITLE: ACWD Participation in Booster Pump Stations

DESCRIPTION:

ACWD participation in cost of developer installed booster stations which would be installed to service existing or future water storage. See also Project Data Sheet for Project No. S-T90.01.

FUNCTION AND JUSTIFICATION:

The 1984, 1987, 1995 and 2011 CIP Engineering Reports all identified increased upper zone booster capacity as a high priority item. The 1987 Engineering Report stated that the needed additional upper zones booster capacity can be most cost effectively obtained by ACWD participation in projects required to serve new upper zone development. This participation should occur at the time of suitable development project(s). City hillside ordinances have limited potential development projects requiring boosting capacity. However, development potential in upper zones remains (e.g. Masonic Flatlands, Canyon Heights area, Ohlone area, etc.).

COST ESTIMATE: $ 334,000 (FY 2013/14)
$ 334,000 (FY 2022/23)

IN-SERVICE DATE: 2023

% GROWTH RELATED: 100%

CIP PROJECT SUMMARY - 37 & 38

PROJECT NO.: S-R01.01 & S-R01.51B

JOB: Later

TITLE: Alameda Reservoir Roof Replacement and Lining Replacement

DESCRIPTION:

This project includes replacement of the metal roof decking, seismic upgrades to the roof framing, and replacement of the reservoir liner and inlet/outlet slide gate.

FUNCTION AND JUSTIFICATION:

The project will replace the existing roof system and liner as deemed necessary from maintenance inspections. Roof life is expected to be 25 years, liner life is estimated at 30 years.

COST ESTIMATE:
$ 224,000 (FY 2012/13) Liner
$1,371,000 (FY 2013/14) Liner
$ 702,000 (FY 2017/18) Roof
$2,469,000 (FY 2018/19) Roof
$4,298,000 (FY 2019/20) Roof

IN-SERVICE DATE:
2014 Liner
2020 Roof

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 39 & 40

PROJECT NO.: S-R02.01 & S-R02.51B

JOB: Later

TITLE: Decoto Reservoir Roof Replacement and Lining Replacement

DESCRIPTION:

This project includes replacement of the metal roof decking, seismic upgrades to the roof framing, and replacement of the reservoir liner and inlet/outlet slide gate.

FUNCTION AND JUSTIFICATION:

The project will replace the existing roof system and liner as deemed necessary from maintenance inspections. Roof life is expected to be 25 years, liner life is estimated at 30 years.

COST ESTIMATE: $ 521,000 (FY 2015/16)
$1,939,000 (FY 2016/17)
$3,371,000 (FY 2017/18)
$1,250,000 (FY 2017/18)

IN-SERVICE DATE: 2018

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 41

PROJECT NO.: S-R03.04

JOB: Later

TITLE: Whitfield Reservoir Zone 1/3 Booster Station

DESCRIPTION:

This project includes the design and installation of additional booster pumping capacity from Whitfield Reservoir to Zone 3.

FUNCTION AND JUSTIFICATION:

The project was originally planned in connection to the Whitfield Reservoir Expansion Project. The 2011 Engineering Report indicated that the reservoir expansion will not be required within the report timeframe. However, the Booster Station addition may be required if the MSJWTP cannot be modified to produce a reliable 6 MGD.

COST ESTIMATE: $ 895,000 (FY 2022/23)

IN-SERVICE DATE: 2023

% GROWTH RELATED: 100%

CIP PROJECT SUMMARY - 42

PROJECT NO.: S-R03.06

JOB: Later

TITLE: Whitfield Water Quality Improvements

DESCRIPTION:

The project includes a study and modifications to Whitfield Reservoir to improve mixing and eliminate short circuiting of the flow from WTP2 to the Zone 1 Booster Pumps. The project includes an evaluation of the best alternatives and the implementation of the solution if justified by the study. Baffles, a new intake pipe, and the construction of an internal flow distribution channel should be considered.

FUNCTION AND JUSTIFICATION:

Tracer studies performed in 1994 and 1996 found the T10/T to be approximately 0.1. This indicated a significant amount of short circuiting through the reservoir. In 1996, the original intake piping was found to be damaged. The pipe was removed and replaced with an alternative diffusion set-up. In April, 2002, another tracer study was performed on the reservoir. The 2002 tracer test resulted in a T10/T of 0.11 which is almost identical to the tests conducted in 1994 and 1996. From the data, the previous improvements have not reduced the amount of short circuiting.

Nitrification problems in Whitfield affect the other downstream reservoirs Alameda, Middlefield , Hidden Valley and Mayhew. Improving mixing in Whitfield will reduce the amount of chlorine needed to treat nitrification outbreaks in the distribution system. The improvement will also increase the T10/T value used in determining the contact time use in meeting the disinfection requirements of the Surface Water Treatment Rule.

COST ESTIMATE: $ 78,400 (FY 2012/13)
$ 422,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 43

PROJECT NO.: S-R04.02

JOB: Later

TITLE: Mayhew Reservoir Roof Replacement

DESCRIPTION:

This project includes replacing the existing built-up roof and seismic upgrades to the roof framing.

FUNCTION AND JUSTIFICATION:

The project will replace the existing roof system as deemed necessary from maintenance inspections. Roof life is expected to be 25 years.

COST ESTIMATE: $ 70,000 (FY 2012/13)
$1,088,000 (FY 2013/14)
$1,205,000 (FY 2014/15)

IN-SERVICE DATE: 2015

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 44

PROJECT NO.: S-R04.03

JOB: Later

TITLE: Mayhew Reservoir Control Valve Vault

DESCRIPTION:

This project includes the design and construction of a new valve vault structure, including the installation of new valves, control elements and instrumentation.

FUNCTION AND JUSTIFICATION:

The existing valve vaults consist of a cluster of three manholes located in the center of an ACWD access road to the reservoir. These vaults are considered as some of ACWD's most dangerous confined spaces because of location and small size. The valves in these vaults are over forty years old and are beyond the end of their service life.

COST ESTIMATE: $ 796,000 (FY 2021/22)

IN-SERVICE DATE: 2022

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 45

PROJECT NO.: S-R05.01

JOB: Later

TITLE: Middlefield Reservoir Roof Replacement

DESCRIPTION:

This project includes replacing the existing galvanized steel roof deck panel system.

FUNCTION AND JUSTIFICATION:

The project will replace the existing roof system as deemed necessary from maintenance inspections. Roof life is expected to be 25 years.

COST ESTIMATE: $ 297,000 (FY 2025/26)
$ 989,000 (FY 2026/27)

IN-SERVICE DATE: 2027

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 46

PROJECT NO.: S-R05.50

JOB: Later

TITLE: Middlefield Reservoir General Improvements

DESCRIPTION:

This project includes general improvements to the reservoir and appurtenances as required by maintenance inspections. The project includes recoating of the existing steel roof beams.

FUNCTION AND JUSTIFICATION:

The coating of the existing steel roof beams has been deteriorating and the beams will corrode if left unrepaired. The coating should be repaired before there is substantial metal loss.

COST ESTIMATE: $ 2,021,000 (FY 2014/15)

IN-SERVICE DATE: 2015

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 47

PROJECT NO.: S-R05.51

JOB: Later

TITLE: Middlefield Reservoir Liner Replacement

DESCRIPTION:

This project includes replacing the existing polyurethane lining system when deemed necessary from maintenance inspections. Lining life is assumed to be 25-30 years. The project also includes resurfacing of the precast columns with shotcrete cement mortar to maintain structural integrity.

FUNCTION AND JUSTIFICATION:

Middlefield Reservoir was constructed in 1957. A polyurea lining system was installed over the existing asphalt panel lining in 2002. Minor deterioration of the precast concrete column surfaces has occurred exposing air holes and small aggregate in the concrete. The 53 precast columns originally had 14-inch square cross section. After an inspection in October 2000, the average cross section of the columns inspected was 13½ inches. While the cause of the deterioration is not known for certain, it was likely caused by aggressive water with a low pH. Present pH adjustment practices at ACWD production facilities should slow the rate of deterioration. Based upon WQ changes, the columns should remain at an average cross section of 13½ inches at least until 2020, at which time they should be re-examined.

COST ESTIMATE: $ 219,000 (FY 2030/31)
$ 729,000 (FY 2031/32)

IN-SERVICE DATE: 2032

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 48

PROJECT NO.: S-R06.01

JOB: Later

TITLE: Patterson Reservoir Roof Replacement

DESCRIPTION:

This project includes replacement of the metal roof decking and seismic upgrades to the roof framing.

FUNCTION AND JUSTIFICATION:

The project will replace the existing roof system as deemed necessary from maintenance inspections. Roof life is expected to be 25 years.

COST ESTIMATE: $ 941,000 (FY 2019/20)
$1,361,000 (FY 2020/21)
$3,176,000 (FY 2021/22)

IN-SERVICE DATE: 2022

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 49

PROJECT NO.: S-R06.03

JOB: Later

TITLE: Patterson Reservoir Water Quality Enhancements

DESCRIPTION:

Enhance water quality by boosting and maintaining chlorine residual in Patterson Reservoir by the use of mechanical mixing equipment and chemical addition. Also includes seismic upgrade of reservoir inlet/outlet piping.

FUNCTION AND JUSTIFICATION:

Patterson Reservoir has historically been plagued with low chlorine residual and nitrification episodes during the summer and fall months. Large reservoirs with common inlet/outlet piping, such as Patterson, generally have poor mixing and tend to have low chlorine residual due to long detention time in the reservoir. Conceptually, when a reservoir has poor mixing due to a common inlet/outlet the fresh water that fills the reservoir is the first water to be drawn out, leaving older water in the reservoir. The completion of Desal Facility Phase 2 project in 2010 is expected to exacerbate the problem by increasing the hydraulic grade in the vicinity of Patterson Reservoir. Chemical addition and mechanical mixing will improve water quality throughout the reservoir by maintaining chlorine residual. Test of an onsite chlorine production and ammonia feed system at Alameda Reservoir was performed and this was successful in maintaining the chlorine residual throughout the reservoir. Permanent installation of that system is expected to be completed and operational in 2009. Upgrade of the inlet/outlet line is needed to increase the reliability of water supply from Patterson Reservoir after a seismic event.

COST ESTIMATE: $ 586,000 (FY 2020/21)
$3,303,000 (FY 2021/22)

IN-SERVICE DATE: 2022

% GROWTH RELATED: 75%

CIP PROJECT SUMMARY - 50

PROJECT NO.: S-R06.03

JOB: Later

TITLE: Patterson Reservoir Lining Replacement

DESCRIPTION:

This project includes replacing the existing polyurethane lining system when deemed necessary from maintenance inspections. Lining life is assumed to be 25-30 years.

FUNCTION AND JUSTIFICATION:

Lining life is assumed to be 25-30 years.

COST ESTIMATE: $ 970,000 (FY 2031/32)

IN-SERVICE DATE: 2032

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 51

PROJECT NO.: S-R80.01B

JOB: Multiple

TITLE: Tank and Reservoir Seismic Upgrades

DESCRIPTION:

The recommended modifications are identified in Carollo Engineers' Tanks/Reservoir Seismic Vulnerability Study (1996), Job 5930. This project provides funds to seismically upgrade Appian Tank. Seismic upgrades for other storage facilities discussed in the Carollo study have been completed at: Canyon Heights Tank (Project S-T02.01), Ohlone Tank (Project S-T06.01), Middlefield Reservoir Roof (S-R05.01), the treated water tank associated with the MSJWTP Process (Project P-J01.06), and Vineyard Heights Tank.

FUNCTION AND JUSTIFICATION:

The seismic upgrades reduce the risk of not having adequate storage of potable water after a major earthquake for fire protection and other customer needs.

COST ESTIMATE: $ 693,000 (FY 2011/12)
$ 119,000 (FY 2012/13)
$3,774,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 52

PROJECT NO.: S-T02.51

JOB: Later

TITLE: Canyon Heights Tank Improvements

DESCRIPTION:

The project includes removing the existing interior roof coating, cleaning and preparation of the interior roof surface, and recoating the interior roof surface.

FUNCTION AND JUSTIFICATION:

Canyon Heights Tank was replaced in 2000. The existing interior coating of the tank has signs of significant failure above the water line and corrosion is evident. In order to preserve and protect the integrity of the tank, the tank's interior coating needs to be removed, the surfaces cleaned, and recoated.

COST ESTIMATE: $ 250,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 53

PROJECT NO.: S-T05.51

JOB: Later

TITLE: Mission San Jose Tank Improvements

DESCRIPTION:

The project includes site improvements, recoating of internal and external tank surfaces, and the replacement of structural elements and internal piping needed to maintain adequate reliability and satisfactory operation of the MSJ storage tank. Replacements of altitude valves, valve actuators and storage tank re-disinfection systems (e.g., chlorination and chloramination systems), are not included in this program item, but instead are included in Project No. M-D50.01, Distribution System Facility Improvements. The initial installation or the replacement of an existing cathodic protection system would be included in the scope of work for recoating the storage tank only if the work is performed concurrently; otherwise the replacement of a cathodic protection system would be included in Project M-N01.01, Cathodic Protection Improvements and Additions.

FUNCTION AND JUSTIFICATION:

Site improvements, the recoating of tank surfaces, and the replacement of structural elements and internal piping are periodically necessary when repairs are needed (e.g., tank components are corroded), and to extend the service life of the storage tank. The service life for tank coatings is assumed to be 25 years.

COST ESTIMATE: $ 765,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 54

PROJECT NO.: S-T08.01

JOB: Later

TITLE: Tamarack Knolls Tank

DESCRIPTION:

This project consists of a new 1.0 million gallon (MG) steel water storage tank to serve the Tamarack Knolls (2TK) and Upper Decoto (2UD) pressure zones.

FUNCTION AND JUSTIFICATION:

Currently, the Tamarack Knolls and Upper Decoto pressure zones are served from Appian Tank in the Seven Hills water system. A water storage tank located within the Tamarack Knolls zone would improve service reliability by meeting upper zone treated water storage area criteria. This project is recommended in the 2011 Engineering Report.

COST ESTIMATE: $ 823,000 (FY 2015/16)
$ 3,290,000 (FY 2017/18)

IN-SERVICE DATE: 2018

% GROWTH RELATED: 65%

CIP PROJECT SUMMARY - 55

PROJECT NO.: S-T90.01

JOB: Later

TITLE: ACWD Participation in Tanks at Upper Zones

DESCRIPTION:

The 2011 Engineering Report indentifies a storage deficiency in upper zones totaling 4.1 MG. A 1.2 MG tank in 2TK (reference S-T08.01) leaves 2.9 MG in required additional storage to be provided at sites not presently identified. Needed additional storage capacity may be most cost effectively obtained by ACWD participation in new upper zone development or intensification (may be associated with improvements to existing storage facilities). ACWD participation is assumed to be 1.16 MG (40% of total per prior projects).

FUNCTION AND JUSTIFICATION:

Maintain distribution system reliability by meeting upper zone treated water storage criteria. Obtain additional storage at incremental cost. The need for this storage is documented in the 1984, 1995, and 2011 CIP Engineering Reports

COST ESTIMATE: $ 1,355,500 (FY 2015/16)
$ 1,355,500 (FY 2023/24)

IN-SERVICE DATE: 2024

% GROWTH RELATED: 100%

CIP PROJECT SUMMARY - 56

PROJECT NO.: M-M02.01

JOB: Later

TITLE: Prune to Brown Transmission Main

DESCRIPTION:

This project includes the design and construction of a 24-inch diameter transmission main along Warm Springs Blvd. from Prune to Brown Road in the City of Fremont. The Warm Springs Main Extension Prune to Brown Project consists of the installation of approximately 5,100 linear feet of 24-inch diameter welded steel pipe and is required to improve the transmission of water to the southern portion of the distribution system. The pipeline is also needed to provide water service to the planned Bay Area Rapid Transit District (BART) Warm Springs Station and to accommodate the San Francisco Public Utilities Commission (SFPUC) Bay Division Pipelines No. 3 and 4 Seismic Upgrades Project.

In order to meet the schedule requirements of the SFPUC Seismic Upgrade Project, the planned construction of the pipeline has been accelerated in advance of the BART Warm Springs Station Project.

FUNCTION AND JUSTIFICATION:

This project will increase distribution system capacity and reliability. A portion of the cost of this project will be reimbursed by BART.

COST ESTIMATE: $2,736,000 (FY 2011/12)

IN-SERVICE DATE: 2012

% GROWTH RELATED: 60%

CIP PROJECT SUMMARY - 57

PROJECT NO.: M-M09.01

JOB: Later

TITLE: Pipeline From New Below Hayward Fault Production Wells to Blending Facility

DESCRIPTION:

The project includes the design and installation of a 36-inch or larger pipeline from the Blending facility at the PT Wellfield to a future Below Hayward Fault (BHF) wellfield location that will be determined based on future studies. This pipeline will be required to move water produced from the new wells to the Blending facility.

FUNCTION AND JUSTIFICATION:

This pipeline is required to move water from the new BHF production wells to the Blending facility. A new wellfield would increase the reliability of BHF production well capabilities in the event that future production at the Mowry Wellfield is reduced or lost completely due to a catastrophic event such as a major earthquake.

COST ESTIMATE: $ 262,000 (FY 2031/32)
$ 996,000 (FY 2032/33)
$ 996,000 (FY 2033/34)

IN-SERVICE DATE: 2034

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 58

PROJECT NO.: M-M11.02

JOB: Later

TITLE: Gallegos Avenue – MSJWTP Zone 3 Intertie, Phase 2

DESCRIPTION:

The project includes the design and construction of a approximately 2300 LF of 18-inch pipeline to tie the Washington Booster Station into the existing 18-inch pipeline on Olive Ave. and connect the pipeline on Montevideo to Mission Blvd.

FUNCTION AND JUSTIFICATION:

If the MSJWTP remains at 3-4 MGD, additional boosting capacity will be required in approximately 2019. This project will provide additional capacity to Mission Boulevard if the Washington Booster Station is replaced with a new Whitfield Zone 1 to 3 booster station. This project is dependent on the new booster station and is not necessary until the new booster station is built.

COST ESTIMATE: $ 331,000 (FY 2022/23)
$ 1,040,000 (FY 2023/24)

IN-SERVICE DATE: 2024

% GROWTH RELATED: 80%

CIP PROJECT SUMMARY - 59

PROJECT NO.: M-M11.02

JOB: Later

TITLE: Zone 4 Interconnection Pipeline – Phase 2

DESCRIPTION:

The project includes the design and construction of approximately 3,700 LF of 12-inch transmission main connecting Zone 4 with the MSJWTP treated water tank. Connection with MSJWTP would be near PR-1.

FUNCTION AND JUSTIFICATION:

This pipeline would allow PR-1 Booster Station (BB15.01) to boost water from PR-1 to Zone 4. This connection would provide a second booster station to Zone 4. If MSJWTP is upgraded to provide a 6 MGD capacity, this pipeline is needed to meet upper zone transmission capacity.

COST ESTIMATE: $ 463,000 (FY 2022/23)
$ 907,000 (FY 2023/24)
$ 907,000 (FY 2024/25)

IN-SERVICE DATE: 2025

% GROWTH RELATED: 80%

CIP PROJECT SUMMARY - 60

PROJECT NO.: M-M17.03B

JOB: 6082, 6192, 6226

TITLE: Niles-Newark Intertie Pipeline, Fremont Phase

DESCRIPTION:

This phase of the Intertie pipeline consists of the installation of approximately 15,190 feet of pipeline from the intersection of Cedar and Baine in Newark to the PT Wellfield in Fremont. This project includes the construction of approximately 14,590 feet of 22-inch to 34-inch diameter HDPE pipe, and 1,500 feet of 24-inch and 36-inch diameter steel pipe. Pipeline installation methods include slip-lining, trenching, horizontal directional drilling, and jack and bore.

FUNCTION AND JUSTIFICATION:

The Niles-Newark Intertie Pipeline will deliver PT/Mowry Wellfield water to the Desal Facility to help ACWD meet its water quality goals for hardness. A second benefit of the pipeline project is the increased groundwater production flexibility it provides by connecting other well sites to either the Desal Facility or to the PT Wellfield Blending Facility. Reliability of ACWD's distribution system is also improved.

COST ESTIMATE: $3,040,000 (FY 2021/22)
$9,055,000 (FY 2022/23)

IN-SERVICE DATE: 2023

% GROWTH RELATED: 75%

CIP PROJECT SUMMARY - 61, 62 & 63

PROJECT NO.: M-M40.02 - 08

JOB: Multiple

TITLE: Agency Related Pipeline Relocations

DESCRIPTION:

This program includes design and pipeline relocations to accommodate several major projects by other agencies in the service area. Current projects include the Warm Springs Extension (BART), Warren Avenue and Kato Road Grade Separations (VTA), street improvements in Niles (City of Fremont) and construction of the Bay Division Pipeline No. 5 and Seismic Improvements to Bay Division Pipelines Nos. 3 and 4 (SFPUC).

FUNCTION AND JUSTIFICATION:

The pipeline relocations are necessary as these other agency funded projects impact ACWD pipelines and will affect customers if not relocated.

COST ESTIMATE: $ 2,208,500 (FY 2011/12)
$ 154,000 (FY 2012/13)
$ 1,255,000 (FY 2013/14)
Actual net ACWD cost will reflect reimbursements from other funding sources including the Fremont Redevelopment Agency, BART, and VTA.

IN-SERVICE DATE: Various – depending on Agency construction schedule.

% GROWTH RELATED: Various

CIP PROJECT SUMMARY - 64

PROJECT NO.: M-M80.01B

JOB: Multiple

TITLE: Distribution System – Main Replacement Program

DESCRIPTION:

This program includes developing and implementing an annual program for proactively replacing water mains throughout the distribution system, including replacement of AC pipe and installation of seismically resistant "backbone" pipe in liquefaction zones. Criteria for replacement may include leak history, sub-standard sizing, shallow cover and/or age in conjunction with street improvements. This project does not include seismic upgrades of fault crossings (M-D01.04) and pipeline relocations necessitated by other Agency projects (M-M40.XX). The full costs for this program have not yet been included in the CIP.

FUNCTION AND JUSTIFICATION:

The purpose of the project is to develop a strategic, economically prudent and risk based method for prioritizing and replacing water mains as these pipelines reach the end of their useful service life.

COST ESTIMATE:
$ 197,100 (FY 2011/12)
$ 381,700 (FY 2012/13)
$ 996,000 (FY 2013/14)
$ 2,382,000 (FY 2014/15)
$ 609,000 (FY 2015/16 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 65

PROJECT NO.: M-U09.51

JOB: Later

TITLE: Seven Hills Primary Improvement/Equipment Replacement

DESCRIPTION:

This project includes the replacement of regulators, piping, and associated instrumentation. The project scope assumes that the existing vault and hatch are satisfactory and need no improvements.

FUNCTION AND JUSTIFICATION:

Over time regulator station equipment reaches the end of its useful life and needs to be replaced to keep operating reliably. The piping in this station (Seven Hills Primary) was surveyed by engineering staff in 2008 and was found to be corroded on both the inside and outside regulator vault. The engineering technical memorandum recommended that all regulator equipment and piping inside and outside of the vault be replaced. All instrumentation would also be replaced as a part of this project.

COST ESTIMATE: $ 56,100 (FY 2012/13)
$ 144,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 66

PROJECT NO.: M-N01.01

JOB: Multiple

TITLE: Cathodic Protection Improvements & Additions

DESCRIPTION:

This project includes the installation and upgrade of various components of cathodic protection systems for distribution system tanks and piping. The first phase will include a review of the current status of the existing systems, and identification and prioritization of improvements and additions including remote monitoring devices, system monitoring, and database improvements. The subsequent phase will include implementation of the needed improvements identified in the first phase.

FUNCTION AND JUSTIFICATION:

Cathodic protection is used as a method to control corrosion of ACWD's metallic infrastructure. The use of cathodic protection extends the useful life of ACWD's steel tanks and piping and copper service lines. System monitoring is an essential element of a successful corrosion control program.

COST ESTIMATE: $ 31,200 (FY 2011/12)
$ 98,000 (FY 2012/13)
$ 300,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 67

PROJECT NO.: M-D01.01

JOB: 2398

TITLE: Service Line Emergency Replacement Program

DESCRIPTION:

This project includes the replacement of failed polybutylene service laterals on an emergency basis.

FUNCTION AND JUSTIFICATION:

Service laterals provide the customer connections to our water distribution system. Without fully functioning service laterals, customers would be unable to obtain adequate water service. During the past few years the number of emergency failures has leveled to approximately 200 annually. Estimates of future leaks are at a rate of 200 emergency repairs per year until completed. Revisions will occur as more data are collected.

COST ESTIMATE: $ 1,657,000 (annually)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 68

PROJECT NO.: M-D01.02

JOB: 2399

TITLE: Service Line Planned Replacement Program

DESCRIPTION:

This project includes the replacement of polybutylene service laterals on a planned basis.

FUNCTION AND JUSTIFICATION:

Service laterals provide the customer connections to our water distribution system. Without fully functioning service laterals, customers would be unable to obtain adequate water service. The planned replacement program anticipates areas where polybutylene service laterals may fail and replace them at a lesser cost. For FY 2001/02 and beyond, the program goal was to replace 750 per year. However, city paving expanded paving requirements that increased planned replacement costs making planned replacement less cost effective thus diminishing the number of service laterals replaced to approximately 100 annually. Planned replacements will be limited to incidental replacement or when planned replacement is needed prior to city paving projects.

COST ESTIMATE: $ 226,700 (FY 2011/12)
$ 226,700 (FY 2012/13)
$ 59,000 (FY 2013/14 and annually thereafter through 2031)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 69

PROJECT NO.: M-D01.03

JOB: Later

TITLE: Water Meter Upgrade Program

DESCRIPTION:

This project includes the replacement of small, medium and large water meters.

FUNCTION AND JUSTIFICATION:

Small meters need replacement either because of failure or meter inaccuracy, due to the small size it is more cost effective to replace than repair. Medium size meters need replacement because of failure, meter inaccuracy, or lack of a test outlet or the ability to repair in the field. ACWD is moving toward medium sized meters that can be tested and calibrated in the field preventing the need to replace the entire meter. Large meters require replacement because they are obsolete and can no longer be repaired/ calibrated, are sub-standard installations with no bypass for testing or are in locations difficult to access. Industry standard is to test large meters at least annually because a small amount of inaccuracy can cause substantial under-reading of water used.

COST ESTIMATE: $ 1,000,000 (FY 2011/12)
$ 1,000,000 (FY 2012/13)
$ 700,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 70

PROJECT NO.: M-D01.04

JOB: Multiple

TITLE: Distribution System Seismic Improvement Program Phase 1

DESCRIPTION:

The Distribution System Seismic Study was completed in November 2008. The study focused on seismic improvements to ACWD's water distribution system and production wellfields after assessing their vulnerability in event of a major earthquake.

Implementation of the program is planned for 2 phases. Phase 1 contains activities to improve emergency response and strengthen critical large diameter pipe crossing the Hayward Fault. Phase 2 contains improvements to distribution system piping in liquefaction susceptible areas and will be incorporated with the Main Replacement Program (M-M80.01).

FUNCTION AND JUSTIFICATION:

Increase the reliability of the distribution system to withstand severe ground motion as a result of a major earthquake along the Hayward fault and to minimize the time required to restore water service.

COST ESTIMATE:

$ 427,900	(FY2011/12)
$ 310,600	(FY2012/13)
$ 2,868,000	(FY2013/14)
$ 1,424,000	(FY2014/15)
$ 2,929,000	(FY2015/16)
$ 2,280,000	(FY2016/17)
$ 1,289,000	(FY2017/18)
$ 1,289,000	(FY2018/19)
$ 2,867,000	(FY2019/20)

IN-SERVICE DATE: 2020

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 71

PROJECT NO.: M-D01.09

JOB: Multiple

TITLE: Customer Generated Distribution System Improvements

DESCRIPTION:

This capital line item groups together individual customer requested installations, relocations or replacements of distribution system piping.

FUNCTION AND JUSTIFICATION:

Historically there has been an ongoing program for customer requested installations, relocations or replacements of distribution system piping, primarily new water service installations, and work that involves the relocation of water mains. The customers are primarily developers, public agencies, or individual property owners and these jobs are classified as actual cost or "Customer Jobs." The customer pays prior to the work being performed based on a cost estimate. After the work is performed, the customer is reimbursed payment overage or is required to pay additional costs depending upon the actual cost of the work performed.

COST ESTIMATE: $ 2,233,500 (FY 2011/12)
$ 2,483,200 (FY 2012/13)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 100%

CIP PROJECT SUMMARY - 72

PROJECT NO.: M-D50.01

JOB: Later

TITLE: Distribution Facility and WQ Field Instrument Improvements and Replacements

DESCRIPTION:

This is an annual program for the replacement and upgrade of water distribution system appurtenances, (e.g., inlet/outlet storage facility isolation valves, transmission isolation valves, seismic isolation valves, altitude valves, and valve actuators), storage tank and reservoir re-disinfection systems (e.g., tablet chlorination equipment and chloramination systems), water audit appurtenances, and water quality instruments for satellite labs at water treatment facilities, (e.g., turbidity, conductivity, pH, fluoride, chlorine, dissolved oxygen, and multiple analytes analyzers).

FUNCTION AND JUSTIFICATION:

When distribution system appurtenances and water quality instruments reach the end of their economic life, they should be replaced to prevent problems with flow, pressure and water quality in the distribution system.

COST ESTIMATE: $ 71,000 (FY 2011/12 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 73

PROJECT NO.: Y-I01.01

JOB: Later

TITLE: SCADA System Major Upgrades

DESCRIPTION:

This project provides funds for major annual upgrades to the SCADA systems. Major upgrades include replacement of outdated PLC hardware, replacement every five years of SCADA servers, development of a SCADA System Master Plan, and replacement of the SCADA radio system.

FUNCTION AND JUSTIFICATION:

This project replaces outdated equipment on a programmatic basis by allowing ACWD to migrate to newer PLC systems in a phased approach.

COST ESTIMATE: $ 400,000 (FY 2011/12)
$ 260,000 (FY 2012/13)
$ 300,000 (FY 2013/14)
$ 260,000 (FY 2014/15 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 74

PROJECT NO.: Y-I02.01

JOB: 6184/ 6416

TITLE: Tank and Reservoir Isolation Valve Project

DESCRIPTION:

This project will assess the isolation capability of ACWD storage facilities. Selected tanks and reservoirs will have new actuators installed and/or modification of existing hydraulic/pneumatic actuators. The actuators will be operable through SCADA and are intended to include a backup energy source. More than half of the storage facilities have already been equipped with these actuators as part of seismic upgrade projects. The project will include purchase of actuator and UPS for each selected facility, and related electrical work, PLC programming, SCADA screen modifications and control/monitoring logic modifications. It is recommended that a number of the remaining facilities be outfitted with isolation valves as part of their seismic upgrade projects.

FUNCTION AND JUSTIFICATION:

Improvements are needed to reduce response time to isolate storage facilities, which may be required after a major earthquake, security breach or water quality incident.

COST ESTIMATE: $ 94,800 (FY 2011/12)
$ 209,200 (FY 2012/13)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 75

PROJECT NO.: Y-I03.01

JOB: Later

TITLE: MSJWTP to WTP2 Electrical and Control Intertie

DESCRIPTION:

This project will replace the existing electrical power cables between MSJWTP and WTP2. Electrical power for MSJWTP is delivered through three #2 AWG, shielded 15 KV service cables. The cables originate at WTP2 and are each approximately 4500 feet long. The cables were installed in 1998.

FUNCTION AND JUSTIFICATION:

Subsequent to the installation of the original cable, industry research showed that this cable type is prone to early failure. The life span is dependent upon the environment in which the cable has been installed. But, in any case, the maximum recommended life span for XLP insulated cable is about 15 years.

MSJWTP depends upon these service cables for continued operation. If there is no electric service connection to WTP2 than the plant cannot run.

COST ESTIMATE: $ 56,000 (FY 2012/13)
$ 195,000 (FY 2013/14)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 76

PROJECT NO.: Y-I50.01

JOB: 6298

TITLE: SCADA System Minor Improvements

DESCRIPTION:

This project provides funds for yearly minor improvements to the SCADA systems for consultant services, computer hardware, and software.

FUNCTION AND JUSTIFICATION:

Every year minor modifications are required to the hardware and software used for the SCADA systems due to minor modifications to facilities, minor new facilities, regulatory changes, and staff requested additional functionality. Purchases of new software and hardware for testing and evaluation are also included in this item.

Funds are also included in this project for water quality related SCADA and database modifications. Approximately $20,000 in database changes has been spent each year for the last couple of years on unanticipated regulatory changes. Specific database modifications required because of specific capital projects are listed in the Schedule below. The costs for water quality database changes are included in this program item, but are typically managed by the Water Quality Division.

Funds needed for software maintenance agreements are not included in this budget item, but are included in expense budget Job 2120. Funds needed for outside services for general SCADA fixes (non improvements) are included in expense budget Job 2120.

COST ESTIMATE: $ 40,000 (FY 2011/12 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 77

PROJECT NO.: Y-I50.02

JOB: Later

TITLE: Facility Security Projects

DESCRIPTION:

The vulnerability assessment completed in 2003 evaluated each ACWD facility for existing security vulnerabilities as well as associated risks and consequences relating to intentional malevolent acts. The assessment identified a prioritized list of facilities and associated critical assets appropriately suited for physical security improvements. To mitigate the identified security risks for each critical facility, a range of security improvement approaches has now been developed. These improvements include security hardware/software upgrades and other physical security enhancements at many ACWD facilities. Specific facilities include the headquarters facility, treatment and production facilities, production wellfields, distribution storage facilities, and other key distribution system operation facilities. Specific security improvements may include, but are not limited to, enhanced perimeter intrusion structures, intrusion detection equipment, video equipment for intrusion alarm assessment, new building keys and locksets, access control and management equipment, and other security-based equipment. Based on the level of identified risk for each facility/asset, the security improvements will be undertaken in a phased, priority-based approach.

FUNCTION AND JUSTIFICATION:

Security upgrades at ACWD facilities will decrease risk and overall vulnerability to ACWD facilities from terrorist attack or intentional malevolent acts. Crime deterrence and prevention will be enhanced. ACWD's confidence in the ability to meet our mission during an era of heightened water security awareness will be strengthened.

COST ESTIMATE: $ 260,000 (FY 2011/12)
$ 270,000 (FY 2012/13)
$ 250,000 (FY 2013/14)
$ 250,000 (FY 2014/15)
$ 240,000 (FY 2015/16)

IN-SERVICE DATE: 2015

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 78

PROJECT NO.: G-A09.01

JOB: Later

TITLE: New Aquifer Reclamation Program (ARP) Well

DESCRIPTION:

This project includes well site selection, acquisition of property, design, and construction of an Aquifer Reclamation Program (ARP) Well in the Below-Hayward-Fault (BHF) sub-basin. There are presently 9 ARP wells in service within the BHF sub-basin that are screened in three aquifers (Newark, Centerville-Fremont, and Deep). These wells, pumped at various times, retard and reverse the movement of brackish water within the sub-basin and protect the Mowry Wellfield.

FUNCTION AND JUSTIFICATION:

Several areas within the BHF sub-basin have been affected by saltwater intrusion due to past over pumping of the Niles Cone. The area of most concern is in the vicinity of Hastings Street near Capitol Avenue in Fremont. The installation of an ARP well within the Centerville-Fremont aquifer system will be critical in maintaining the long term viability of the Mowry Wellfield and maintaining the integrity of the groundwater sub-basin as a viable water source.

COST ESTIMATE: $ 262,000 (FY 2021/22)
$ 558,000 (FY 2022/23)
$ 587,000 (FY 2023/24)

IN-SERVICE DATE: 2023

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 79

PROJECT NO.: G-A09.01

JOB: Later

TITLE: ARP Well Equipment Replacements

DESCRIPTION:

Replacement of well equipment, electrical switchgear and associated instrumentation for the various ARP well sites. Once the expansion of the Desal Facility to a nominal 10 MGD is completed in 2010, there will only be two active ARP well sites remaining that will not be considered as production wells for the Desal Facility. These two ARP well sites are Lowry and Willowood wells. This program item in the CIP covers the equipment replacements at Lowry and Willowood ARP well sites only.

FUNCTION AND JUSTIFICATION:

The useful life expectancy of these two well pumps subjected to brackish water, but having limited hours of operation annually, is estimated at 14 years. High sodium levels in the water may cause pump bowls, impellers, column pipe, shafting, spiders and cutlass bearings to fail prematurely, depending on the materials selected. Funding is needed to allow for well pump and motor replacement on an ongoing basis.

COST ESTIMATE: $ 105,000 (FY 2015/16)
$ 105,000 (FY 2022/23)
$ 15,000 (FY 2023/24 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 80

PROJECT NO.: G-A50.03

JOB: Multiple

TITLE: Desal Facility Production Aquifer Reclamation Program Well Rehabilitations

DESCRIPTION:

Aquifer Reclamation Program (ARP) wells lose production efficiency over time and need periodic rehabilitation. Two wells (Cedar 1 and Cedar 2) were rehabilitated in 1998-1999, one well (Bellflower) was rehabilitated in 1999-2000, two wells (Darvon 1 and Darvon 2) were rehabilitated in 2000-2001, one well (Farwell) was rehabilitated in 2001-2002, one well (Site A) was rehabilitated in 2004-2005, one well (Cedar 1) was rehabilitated in 2005-2006, two wells (Bellflower and Farwell) were rehabilitated in 2008, and one well (Cedar 2) was rehabilitated in 2010. This long term program could involve a major rehabilitation of one well per year, or more moderate (less expensive) treatment of two to three wells per year (so that each well is serviced once every 5-10 years.)

The current two year budget only includes funding for labor costs to analyze well data and to develop specifications for rehabilitation of identified wells. Funds to cover the actual rehabilitation work are included in FY 2013/14.

FUNCTION AND JUSTIFICATION:

Specific capacities of ARP wells significantly degrade with time. Some of the ARP wells are now being used as production wells for the Desal Facility. An initial project to restore these wells to their original capacity was conducted. This project should be followed by an ongoing periodic rehabilitation program to prevent future losses in capacity.

COST ESTIMATE: $ 19,600 (FY 2011/12)
$ 19,600 (FY 2012/13)
$ 195,000 (FY 2013/14)
$ 78,000 (FY 2014/15 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 81

PROJECT NO.: G-A50.05

JOB: Later

TITLE: Desal Facility Production Well Equipment Replacements

DESCRIPTION:

Replacement of Desal Facility production well equipment, electrical switchgear and associated instrumentation and controls. Desal Facility production wells consist of the following six wells: Cedar 1 and 2, Darvon 1 and 2, Bellflower, and Farwell.

FUNCTION AND JUSTIFICATION:

The useful life expectancy of the well pumps subjected to brackish water is estimated at 10 years. High sodium levels in the water may cause pump bowls, impellers, column pipe, shafting, spiders and cutlass bearings to fail prematurely, depending on the materials selected. Funding is needed to allow for well pump and motor replacement on an ongoing basis.

COST ESTIMATE: $ 45,000 (FY 2013/14 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 82

PROJECT NO.: G-G02.08B

JOB: Later

TITLE: Shinn Gravity Rediversion 2

DESCRIPTION:

The scope of this project includes planning, design, permitting, and construction of a new 48-inch diversion pipeline from Shinn Pond to the Quarry Lakes recharge ponds.

FUNCTION AND JUSTIFICATION:

A new pipeline and appurtenances, similar in design and function to the existing Shinn Gravity Diversion, is needed to divert high flows of local runoff water from the Alameda Creek Flood Control Channel through Shinn Pond to the recharge ponds in Quarry Lakes.

COST ESTIMATE: $ 77,000 (FY 2011/12)
$ 250,300 (FY 2012/13)
$ 498,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 83 & 84

PROJECT NO.: G-G03.02 and G-G03.03

JOB: Later

TITLE: Kaiser Pit AHF Rehabilitation and Kaiser Pit BHF Rehabilitation

DESCRIPTION:

The scope of this project includes slope stabilization of the Kaiser Above Hayward Fault (AHF) and Below Hayward Fault (BHF) south slope.

Funds in FY 2013/14 are intended for an evaluation of rehabilitation needs for both Kaiser AHF & BHF. Remaining funds for construction are being postponed to FY 2021/22 and beyond.

FUNCTION AND JUSTIFICATION:

The south slope will need to be stabilized to avoid damage to Union Pacific RR during an earthquake. Sloughing of overburden onto the gravel slopes will reduce percolation and there will be a decline in percolation rate if not corrected. Additionally, slope stabilization will provide access for future maintenance/scarifying work along the south bank.

COST ESTIMATE:

$ 100,000	(FY 2013/14)	
$ 410,000	(FY 2021/22)	For AHF
$ 1,020,000	(FY 2022/23)	For AHF
$ 859,000	(FY 2022/23)	For BHF

IN-SERVICE DATE: 2023

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 85

PROJECT NO.: G-G03.04

JOB: Later

TITLE: Shinn Pond Rehabilitation

DESCRIPTION:

The scope of this project includes slope stabilization of the Shinn Pond along the Union Pacific Railroad right-of-way.

FUNCTION AND JUSTIFICATION:

Many years of soil erosion and sloughing of the Shinn Pond bank has moved the top of the bank near to encroaching on the Union Pacific Railroad right-of-way. Also, since the Hayward E.Q. Fault is located within ½ mile of the pond, there is concern for seismic stability of the bank. Surface and subsurface soil investigation of a site is needed.

COST ESTIMATE: $ 49,000 (FY 2011/12)
$ 51,000 (FY 2012/13)
$ 446,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 86

PROJECT NO.: G-G03.05

JOB: Later

TITLE: Pit T-2 Slope Rehabilitation

DESCRIPTION:

Monitor slope stability of south and west banks of Pit T-2. Obtain geotechnical assistance, design and mitigate any stability issues on these banks.

FUNCTION AND JUSTIFICATION:

The banks of Pit T-2 are steep and have been subject to sloughing over the years. Periodic monitoring is required to determine when slope stabilization will be required to protect adjacent property and the type of mitigation required.

COST ESTIMATE: $ 92,000 (FY 2011/12)
$ 48,000 (FY 2012/13)
$ 935,000 (FY 2014/15)

IN-SERVICE DATE: 2015

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 87

PROJECT NO.: G-G05.01

JOB: Later

TITLE: Vallecitos Channel Betterments & Repairs

DESCRIPTION:

Construct channel bank and overspill protection at Drop Structures 1 through 7. Resurface gravel service road along one side of channel right-of-way and repair section with extensive bank erosion. Repair erosion damage along entire length of channel, per the Wilsey Ham 2007 report.

FUNCTION AND JUSTIFICATION:

Vallecitos channel is used to convey Vallecitos Creek stormwater runoff as well as ACWD South Bay aqueduct water released at the SBA Vallecitos turnout through the Vallecitos valley to Alameda Creek. The three miles of sloped channel is stepped at 13 drop structures. In prior years, storm water and/or DWR emergency release of SBA water has overspilled these structures causing damaging erosion. Drop structures 8 through 13 have adequate overspill protection from previous work, but the entire channel and a portion of the road are in need of significant erosion repairs as noted in the Wilsey Ham evaluation report of 2007.

COST ESTIMATE: $ 28,100 (FY 2011/12)
$ 28,100 (FY 2012/13)
$ 944,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 88

PROJECT NO.: G-G06.01

JOB: Multiple

TITLE: Monitoring Wells - Construction

DESCRIPTION:

This project includes the design and construction of monitoring wells in the Below-the-Hayward-Fault (BHF) sub-basin. The project was initiated during FY 1994/95 and since then, 81 wells have been installed. During the most recent phases of construction, 27 monitoring wells have been installed as a result of three Department of Water Resources grants of $250,000 each. The most recent grant was used to install 11 monitoring wells in the central portion of the basin. A review of the monitoring well network revealed that geologic and groundwater data gaps remain in certain portions of the basin.

FUNCTION AND JUSTIFICATION:

Because of age, location (access), and development, many privately owned water wells ACWD has utilized in the past for monitoring basin water levels and saltwater intrusion have been destroyed. Because these wells are critical for the management of the groundwater basin, new monitoring wells are required.

COST ESTIMATE: $ 89,880 (FY 2012/13)

IN-SERVICE DATE: 2013

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 89

PROJECT NO.: G-G11.01B

JOB: 4294

TITLE: Fishery Studies

DESCRIPTION:

On August 18, 1997, National Marine Fisheries Service (NMFS) published a final rule listing the Central California Coast steelhead fish Environmentally Significant Units (ESUs) as threatened under the ESA (62 FR 43937). Under section 4(d) of the Endangered Species Act (ESA), the Secretary of Commerce is required to adopt such regulations for the conservation of species listed as threatened. The 4(d) regulations will require that ACWD install fish screens and fish ladders on the diversions within Alameda Creek Flood Control Channel. Additional restoration actions and/or further investigations include: flow studies, revised operation of water supply activities, and development of revised operational guidelines to manage ACWD's Upper and Middle Inflatable Dams.

FUNCTION AND JUSTIFICATION:

A report, prepared by Applied Marine Sciences for the Alameda Creek Fisheries Restoration Workgroup, titled "An Assessment of the Potential for Restoring a Viable Steelhead Trout Population in the Alameda Creek Watershed," dated February 7, 2000, includes recommendations for both additional restoration actions and further investigations, including the determination of fishery flow requirements. ACWD has entered into an MOU with other stakeholders in the Alameda Creek watershed to conduct the fisheries studies to determine the range of flows needed to support a restored steelhead fishery. The workgroup has retained a consultant to conduct these studies, with cost sharing provided by ACWD, Alameda County Flood Control and Water Conservation District, Zone 7 Water Agency, PG&E and SFPUC.

COST ESTIMATE: $ 150,000 (FY 2011/12)

IN-SERVICE DATE: 2012 (Complete Study)

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 90 & 91

PROJECT NO.: G-G13.01B and G-G14.01B

JOB: Multiple

TITLE: Fish Screens on Shinn Pond and Kaiser Pond Pipeline Diversions

DESCRIPTION:

The scope of these projects includes planning, design, permitting, and installation of fish screens on the Shinn Pond and Kaiser Pond pipeline diversions within the Alameda Creek Flood Control Channel.

FUNCTION AND JUSTIFICATION:

Facilities are needed to pass anadromous fish around barriers (such as the rubber dams) located in the Alameda Creek Flood Control Channel and to exclude diversion and entrainment of juvenile fish listed as endangered species while retaining needed water diversion capability. Under section 4(d) of the Endangered Species Act (ESA), the Secretary of Commerce is required to adopt such regulations as deemed necessary and advisable for the conservation of species listed as threatened. On August 18, 1997, National Marine Fisheries Service (NMFS) published a final rule listing the Central California Coast steelhead fish Environmentally Significant Units (ESUs) as threatened under the ESA (62 FR 43937).

COST ESTIMATE:

Shinn Pond		*Kaiser Pond*
$ 287,900	(FY2011/12)	$ 366,000
$ 82,300	(FY2012/13)	$ 82,300
$ 3,393,000	(FY2013/14)	$ 2,220,000

* Total Cost – Actual net ACWD cost will reflect any grant funding received.

IN-SERVICE DATE: 2014 (Shinn and Kaiser Pond Fish Screens)

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 92

PROJECT NO.: G-G41.01B

JOB: Later

TITLE: Rubber Dam 1 – Fabric Replacement

DESCRIPTION:

Replace inflatable fiber reinforced rubber material and the power and control system.

FUNCTION AND JUSTIFICATION:

The current Rubber Dam 1 has been in service since 1979. The dam is located within a 25-foot deep trapezoidal section of the Alameda Creek Flood Control Channel near C.O.E. sta.521+28 at el. 42.8 feet. When fully inflated, it is about 13 feet high x 278 feet long and it can impound water in a 5,000 feet reach of the channel. This dam is needed to capture both local runoff from the Alameda Creek Watershed and imported water released from the South Bay Aqueduct for percolation into and recharge of the Niles Cone Groundwater Basin. The inflatable rubber material is fastened to a reinforced concrete foundation. The dam can be deflated to allow flood flows to pass unobstructed. The estimated useful life of the rubber material is 25-30 years.

COST ESTIMATE: $ 117,400 (FY 2011/12)
$ 125,800 (FY 2012/13)
$ 3,281,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 93 & 94

PROJECT NO.: G-G41.02B and G-G41.03B

JOB: Multiple

TITLE: Rubber Dam 1 Seismic Upgrade and Fish Ladder

DESCRIPTION:

The scope of these projects include planning, design, permitting, seismic upgrade of the reinforced concrete dam foundation, and installation of a fish ladder at Rubber Dam No. 1 (RD1) and the BART Weir located within the Alameda Creek Flood Control Channel. The fish ladder is a joint project with the Alameda County Flood Control District. The project also includes development of CEQA documentation and a biological assessment for permitting.

FUNCTION AND JUSTIFICATION:

The current RD1 was constructed in 1979 to impound both local runoff water from the Alameda Creek Watershed and import water released from the South Bay Aqueduct for percolation into and recharge of the Niles Cone Groundwater Basin. The inflatable rubber material is fastened to a reinforced concrete structure which will be evaluated to address Division of Safety of Dams inspection comments. A fish ladder at RD1 is also required to facilitate fish passage.

Facilities are needed to pass anadromous fish around barriers (such as the rubber dams) located in the Alameda Creek Flood Control Channel and to exclude diversion and entrainment of juvenile fish listed as endangered species while retaining needed water diversion capability. Under section 4(d) of the Endangered Species Act (ESA), the Secretary of Commerce is required to adopt such regulations as deemed necessary and advisable for the conservation of species listed as threatened. On August 18, 1997, National Marine Fisheries Service (NMFS) published a final rule listing the Central California Coast steelhead fish Environmentally Significant Units (ESUs) as threatened under the ESA (62 FR 43937).

COST ESTIMATE:

Seismic Upgrade		*Fish Ladder*
$ 100,900	(FY 2011/12)	$ 700,000
$ 95,500	(FY 2012/13)	$ 125,300
$ 1,106,000	(FY 2013/14)	$ 4,508,000

IN-SERVICE DATE: 2014

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 95

PROJECT NO.: G-G43.02B

JOB: Later

TITLE: Rubber Dam No. 3 – Fabric Replacement

DESCRIPTION:

Replace inflatable fiber reinforced rubber material and the power and control system.

FUNCTION AND JUSTIFICATION:

The existing rubber inflatable bag was installed in 1989 and is nearing the end of its useful life. The estimated useful life of the rubber material is 25 - 30 years.

COST ESTIMATE: $ 3,740,000 (FY 2019/20)

IN-SERVICE DATE: 2020

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 96

PROJECT NO.: G-G43.03B

JOB: Multiple

TITLE: Rubber Dam No. 3 – Fish Ladder

DESCRIPTION:

The scope of this project includes planning, design, permitting, and construction of a fishway at Rubber Dam No. 3, located within the Alameda Creek Flood Control Channel. The project also includes development of CEQA documentation and a biological assessment for permitting.

FUNCTION AND JUSTIFICATION:

Facilities are needed to pass anadromous fish around barriers (such as the rubber dams when inflated) located in the Alameda Creek Flood Control Channel and to exclude diversion and entrainment of juvenile fish listed as endangered species while retaining needed water diversion capability. Under section 4(d) of the Endangered Species Act (ESA), the Secretary of Commerce is required to adopt such regulations as deemed necessary and advisable for the conservation of species listed as threatened. On August 18, 1997, National Marine Fisheries Service (NMFS) published a final rule listing the Central California Coast steelhead fish Environmentally Significant Units (ESUs) as threatened under the ESA (62 FR 43937).

COST ESTIMATE: $ 118,300 (FY 2011/12)
$ 136,300 (FY 2012/13)
$ 2,533,000* (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 20%

* Total Cost – Actual net ACWD cost will reflect any grant funding received.

CIP PROJECT SUMMARY - 97

PROJECT NO.: G-G50.01

JOB: Multiple

TITLE: Groundwater Supply Facilities – Other Improvements

DESCRIPTION:

Upgrades, improvements, replacements, environmental & regulatory requirements for the groundwater recharge facilities. Such as: supervisory control and data acquisition (SCADA) for watershed and creek facilities, monitoring of watershed rainfall and flows, development of a database for creek and watershed operational data and regulatory reporting, automation of water flow valves, replacement of aging slide gates & valves, safety ladders & fall restraint systems, planning and environmental permitting for maintenance activities.

FUNCTION AND JUSTIFICATION:

To assure efficient and effective diversion/percolation of local and import water supplies within the context of good environmental stewardship, safe work practices, and meeting regulatory requirements.

COST ESTIMATE:

$	135,000	(FY 2011/12)
$	110,000	(FY 2012/13)
$	217,000	(FY 2013/14)
$	216,000	(FY 2014/15)
$	96,000	(FY 2015/16 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 98

PROJECT NO.: G-G50.02B

JOB: Multiple

TITLE: Groundwater Recharge Facilities – Control Electrification

DESCRIPTION:

Electrical services, motor operators, and control equipment to gates, valves, and water meters used for groundwater recharge operations. Automated flow and rainfall monitoring devices for recharge operations. Services and equipment need to be compatible with supervisory control and data acquisition (SCADA) standards.

FUNCTION AND JUSTIFICATION:

Reliability, safety, greater efficiency and possibly remote control in improved operation of the recharge facilities. Electric motor operated slide gates and valves will open and close much faster than with manual operation. Some planned groundwater recharge facilities may have valves too large for effective manual operation. Response times and water capture will be optimized with earlier warnings of flow and rainfall events. Integration with SCADA is necessary to ensure compliance with future fisheries flow requirements.

COST ESTIMATE: $ 35,000 (FY 2011/12)
$ 100,000 (FY 2012/13)
$ 93,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 99

PROJECT NO.: G-G50.03

JOB: Multiple

TITLE: Groundwater Basin Reclamation and Protection Improvements

DESCRIPTION:

This line item consists of groundwater related equipment and projects that do not fit neatly into a groundwater related line item in the CIP. The current budget is entirely for telemetry equipment at the AHF and BHF Indicator Wells.

FUNCTION AND JUSTIFICATION:

The telemetry equipment will provide daily and automatic measurement and relay of water level data.

COST ESTIMATE: $ 42,000 (FY 2011/12)
$ 45,000 (FY 2012/13)

IN-SERVICE DATE: 2013

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 100

PROJECT NO.: A-V01.01

JOB: Multiple

TITLE: Equipment Replacement to Comply with Air Quality Regulations

DESCRIPTION:

Compliance with California Air Resources Board (CARB) regulations requires ACWD to replace certain portable pumps and generators by 2020.

FUNCTION AND JUSTIFICATION:

Retrofit and replacement of the required pieces of equipment will keep ACWD in compliance with applicable air regulations and will also facilitate the reduction of particulate matter throughout the State of California.

COST ESTIMATE: $ 55,000 (FY 2017/18)
$ 367,000 (FY 2020/21)

IN-SERVICE DATE: 2021

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 101

PROJECT NO.: A-V01.51

JOB: Later

TITLE: Vehicles and Equipment

DESCRIPTION:

This program includes vehicular and construction equipment used to carry out the mission of ACWD. Vehicles are scheduled for replacement on an estimated ten (10) year 100,000 mile interval. They are further evaluated on performance/condition criteria as the replacement time approaches.

FUNCTION AND JUSTIFICATION:

Various services, tasks, and activities that ACWD performs require vehicles and equipment to be effectively and efficiently carried out.

COST ESTIMATE: Various costs averaging $609,000 annually through FY2017/18
$650,000 FY 2018/19 and annually thereafter

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 102

PROJECT NO.: A-V01.52

JOB: Later

TITLE: Equipment and Tools

DESCRIPTION:

Various pieces of equipment that support maintenance work in the Distribution Maintenance Division and Fleet Services. Example list of items for DMD is listed below and has been averaged out for the expected life of the equipment which comes to approximately $51,000 per year.

1 Vacuum Ditch Witch FX60 500 gal. w/surge brakes
2 Portable Flagging System (2ea)
3 Concrete Saw 48 hp
4 Soil Density Gauge
5 Compaction Wheel Attachment
6 Arrow Board, Solar Powered
7 Mueller CL-12 Tapping Machines with various cutter heads
8 Boring Tool (3 ea)
9 Tapping Motor (2 ea)
10 Grinding Wheel Attachment
11 Light Tower, portable

FUNCTION AND JUSTIFICATION:

These items are critical to ACWD's ability to meet its mission. They all have different life expectancies and it is hard to predict their actual failure.

COST ESTIMATE: $60,000 annually

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 103

PROJECT NO.: A-Q01.02

JOB: 6113

TITLE: Headquarters Facility – Building Renovation Projects

DESCRIPTION:

The HQ building expansion and renovation project is programmed to be accomplished in two phases: Phase 1 included lobby renovation and construction of a new water quality laboratory (completed in 2005); and Phase 2, which includes renovation of the old water quality laboratory, crew room, emergency operations center, human resources area, and ADA upgrades.

FUNCTION AND JUSTIFICATION:

Since 1985, when construction of the HQ building was completed, there have been changes in the type and quantity of work that takes place at this facility. Examples include new and expanded job tasks and responsibilities associated with water quality monitoring and testing, safety and security, and communications and information systems (IS). These new and expanded job tasks and responsibilities have created the need to expand and upgrade the building to accommodate the increased number of people working at HQ as well as employees responsible for new job tasks.

COST ESTIMATE: $ 3,210,000 (FY 2011/12)

IN-SERVICE DATE: 2012

% GROWTH RELATED: 100%

CIP PROJECT SUMMARY - 104

PROJECT NO.: A-Q01.05

JOB: Later

TITLE: Headquarters Facility – Landscaping

DESCRIPTION:

Replacement of the existing landscape around the perimeter of the headquarters facility, including the frontage and demonstration garden as needed. In FY 2011/12, the budget estimate of $25,000 would provide for upgrade design review of the demonstration garden and other areas around headquarters. In FY 2013/14, the budget estimate of $175,000 would provide for the installation of the proposed landscape.

FUNCTION AND JUSTIFICATION:

The existing landscape has been in place since the building was built in 1985. Certain areas are showing signs of age/wear. Over time these materials should be completely changed out to keep maintenance cost down. All plants should be replaced with low maintenance and drought tolerant landscaping.

COST ESTIMATE: $ 25,000 (FY 2011/12)
$ 175,000 (FY 2013/14)

IN-SERVICE DATE: 2014

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 105

PROJECT NO.: A-Q01.06

JOB: Later

TITLE: Headquarters Facility – Photovoltaic Roof Shelter Project

DESCRIPTION:

Design and construction of material, vehicle, and equipment shelter with photovoltaic cells installed as part of the roofing material. The project was planned for construction in phases, beginning with a demonstration project over the materials bins and adjacent parking area in the headquarters maintenance yard. Subsequent phases would cover additional maintenance yard parking and portions of the employee lot.

This project funding could also be used for any other sustainable energy project which makes good business sense.

FUNCTION AND JUSTIFICATION:

The current peak demand at the ACWD headquarters facility is 342 kW. Operations had identified the need for additional warehouse space, and vehicle, material, and equipment shelter. It is projected that covering the maintenance yard, material storage bins, and adjacent parking, and portions of the employee parking lot with solar canopies, sufficient power may be generated to meet the current peak demand

COST ESTIMATE: $ 2,031,000 (FY 2020/21)

IN-SERVICE DATE: 2021

% GROWTH RELATED: 20%

CIP PROJECT SUMMARY - 106

PROJECT NO.: A-Q01.08

JOB: 6453

TITLE: Headquarters Facility – Communication and Signal Re-cabling

DESCRIPTION:

The Headquarters building has been in use for over 20 years. When modifications have been made to the computer and phone network, unneeded cabling has been abandoned in place, and fire walls have been breached and not resealed. Additionally, cables have been laid upon ceiling tiles and lighting fixtures and some of the computer server racks and the computer system UPS are not seismically anchored. This project would correct these deficiencies.

FUNCTION AND JUSTIFICATION:

In order to move ahead with plans for headquarters building renovation, meet current codes, and allow for future upgrades to the building wiring (e.g. computer cabling), a multi-year project is needed to clearly identify the wiring and anchorage problems, develop a plan for fixing the problems and implementing the plan. The services of a consultant would be used to inspect the building, develop a sequence of work, and design the required changes. The 2010 Information Technology Master Plan identified a need to upgrade the existing data cabling system to allow for future performance enhancements to the system.

COST ESTIMATE: $ 410,000 (FY 2011/12)

IN-SERVICE DATE: 2012

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 107

PROJECT NO.: A-Q01.51B

JOB: Later

TITLE: Headquarters Facility – Improvements and Equipment Replacement

DESCRIPTION:

ACWD's headquarters facility requires periodic upgrades of the interior space to better facilitate the work flow and to improve the overall work environment. There are various appurtenances and equipment that require upgrades and replacement over time.

FUNCTION AND JUSTIFICATION:

Almost all ACWD staff report to the headquarters office, shop, and warehouse facility. This centralization permits the effective direction and control of ACWD services.

COST ESTIMATE: $ 212,500 (FY 2011/12)
$ 35,000 (FY 2013/14)
$ 125,000 (FY 2014/15 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 108

PROJECT NO.: A-Q01.52

JOB: Later

TITLE: Headquarters Facility – Reroof Building Office Complex & Garage

DESCRIPTION:

The headquarters complex and garage have approximately 85,000 square feet of roof surface. The roof over the warehouse and mudroom was done in 1995 with cap sheet. The main building was done in 1996 using the Tremco cold process roof. Annual maintenance and inspections indicate that it is currently in good condition. It is recommended that ACWD continue to perform annual maintenance and inspections and monitor the condition of the roof(s). Funds are included for replacement in 10 years.

FUNCTION AND JUSTIFICATION:

Provides a safe comfortable work environment for ACWD employees and customers. Also provides for more efficient use of energy to heat and cool the building. Protects the various equipment, computers and other furnishings.

COST ESTIMATE: $ 850,000 (FY 2020/21)

IN-SERVICE DATE: 2021

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 109

PROJECT NO.: A-Q01.53

JOB: Later

TITLE: Headquarters AS400 PC Network UPS Replacement

DESCRIPTION:

Replace the existing UPS with a new unit to meet current and future service loads.

FUNCTION AND JUSTIFICATION:

The existing UPS at the Headquarters Building is 20 years old and has reached the end of its useful life. Its obsolete technology coupled with its lack of seismic rating, expensive repair parts, and age warrants replacement of the unit.

COST ESTIMATE: $ 160,000 (FY 2011/12)

IN-SERVICE DATE: 2012

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 110

PROJECT NO.: A-K01.51

JOB: Later

TITLE: Finance and Admin – Capital Equipment and Materials

DESCRIPTION:

Replacement and new furnishings and office equipment for use by administration and finance department staff in performing their duties.

FUNCTION AND JUSTIFICATION:

Staff productivity is maintained and improved when appropriate work areas and equipment are provided.

COST ESTIMATE: $ 46,000 (FY 2013/14 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 111

PROJECT NO.: A-K01.52

JOB: Later

TITLE: Computer Network Upgrades

DESCRIPTION:

Program to fund needed general improvements to ACWD's network, PC Servers, printers, and software. (Software includes both server and desktop software.)

FUNCTION AND JUSTIFICATION:

In order to maintain an adequate level of service to ACWD staff and customers, and have the infrastructure needed to utilize improved technology and applications; periodic upgrades need to be made to ACWD's network servers, infrastructure (switches, routers, firewalls, cabling, hubs and network cards, etc.) desktop software and operating systems. This line item includes individual small projects and items that total the approximated amount each year. (Individual exceptions are noted in sub-project sheets). For year FY 2011/12 funds are needed to replace switches because of HQ re-cabling, Windows server software upgrades, upgrade file servers, additions to the new storage environment, new monitoring tools, and replace printers.

COST ESTIMATE:
$ 200,000 (FY 2011/12)
$ 150,000 (FY 2012/13)
$ 250,000 (FY 2013/14)
$ 300,000 (FY 2014/15)
$ 200,000 (FY 2015/16)
$ 100,000 (FY 2016/17 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 112

PROJECT NO.: A-K01.53

JOB: Later

TITLE: Information Technology Master Plan

DESCRIPTION:

The 2010 IT Master Plan identified a number of projects for upgrading and improving ACWD's existing technology platforms. These include a Business Continuity and Disaster Recovery project, a Computerized Maintenance Management System (CMMS) project, and development of enterprise data mart and several custom applications.

FUNCTION AND JUSTIFICATION:

The 2010 IT Master Plan report indicated that ACWD's Information Technology environment is aging, and in some cases, significantly lags behind typical market standards. The recommendations identified in the IT Master Plan will fill existing technology gaps, bring ACWD up to par with typical IT market standards, meet ACWD's IT security and business continuity needs, provide improved asset information for better maintenance decisions and emergency response, and will help achieve operational and business efficiencies.

COST ESTIMATE:
$ 652,000 (FY 2011/12)
$ 594,000 (FY 2012/13)
$ 399,000 (FY 2013/14)
$ 217,000 (FY 2014/15)
$ 487,000 (FY 2015/16)

IN-SERVICE DATE: 2016

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 113

PROJECT NO.: A-K01.54

JOB: Later

TITLE: JD Edwards Server Replacement and Upgrades

DESCRIPTION:

Upgrade JD Edwards and implement a new ERP.

FUNCTION AND JUSTIFICATION:

The 2010 IT Master Plan Recommendation No. 2 calls for upgrade of the existing JD Edwards system that is seven (7) years old and will no longer be enhanced by Oracle as of 2012. As part of the upgrade requirements gathering process, it is possible that a new ERP system may be a better option for ACWD as JD Edwards has been purchased by Oracle.

COST ESTIMATE:

$ 666,000	(FY 2011/12)
$ 50,000	(FY 2012/13)
$ 24,000	(FY 2013/14)
$ 114,000	(FY 2014/15)
$ 759,000	(FY 2015/16)

IN-SERVICE DATE: 2016

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 114

PROJECT NO.: A-K01.56

JOB: Later

TITLE: Customer Information/Utility Bill System Replacement

DESCRIPTION:

Replace the current in-house written CIS/Utility billing system with an industry standard package system.

FUNCTION AND JUSTIFICATION:

The current CIS/Utility Billing system was written more that 15 years ago. While it has served ACWD very well it has reached the point where it needs to be replaced. The database needs to be redesigned to meet modern standards and the system itself is not easy to modify to meet changing customer and regulatory requirements. A system from a vendor that supports many customers will keep up with this rapidly changing environment. Industry standard systems include integration with GIS and wireless technology for direct access for field personnel as well as web access for customers.

COST ESTIMATE:

$	732,600	(FY 2011/12)
$	220,000	(FY 2012/13)
$	15,000	(FY 2013/14)
$	500,000	(FY 2014/15)
$	15,000	(FY 2015/16)

IN-SERVICE DATE: 2016

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 115

PROJECT NO.: A-K01.57

JOB: Later

TITLE: Geographic Information System (GIS)

DESCRIPTION:

Develop GIS applications and enhance functionality of in-house GIS.

FUNCTION AND JUSTIFICATION:

The 2010 IT Master Plan Recommendation No. 4A calls for advancement of the GIS capabilities by enhancement of GIS portal and development of targeted GIS applications.

COST ESTIMATE:

$	60,000	(FY 2011/12)
$	100,000	(FY 2012/13)
$	135,000	(FY 2013/14)
$	35,000	(FY 2014/15)
$	160,000	(FY 2015/16)

IN-SERVICE DATE: 2016

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 116

PROJECT NO.: A-K02.51

JOB: Later

TITLE: Engineering Department – Capital Equipment and Materials

DESCRIPTION:

This item covers various capital equipment and material expenditures related to Engineering Department operation including equipment related to the Document Management System (DMS). Engineering capital equipment includes plotters, large format copier, large format scanning equipment, survey equipment and CAD equipment, software and materials, microfilm and audio/visual equipment.

FUNCTION AND JUSTIFICATION:

DMS related scanning equipment is required for implementation and maintenance of the program. Existing capital equipment must be replaced periodically to avoid excessive maintenance costs and maintain Engineering Department operations. Existing large format copier is over 12 years old.

COST ESTIMATE: $ 10,000 (FY 2011/12)
$ 10,000 (FY 2012/13)
$ 41,000 (FY 2013/14 and annually thereafter)

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%

CIP PROJECT SUMMARY - 117

PROJECT NO.: A-K03.52

JOB: Later

TITLE: Water Quality Lab – Equipment Replacement Program

DESCRIPTION:

This program outlines the order by which laboratory equipment and other improvement projects for enhancement of laboratory operations are funded.

FUNCTION AND JUSTIFICATION:

This CIP project covers both laboratory instrumentation and other capital projects that enhancement laboratory operations. Laboratory instrumentation is required to perform many analyses for compliance and operational monitoring programs. The purchases of new instruments are driven by new client needs (regulatory and operational) and the necessity to advance along timely with advances in analytical technology. Equipment replacements are made in the event that equipment fail due to age, are no longer supported by the vendor for replacement parts and software, or become obsolete.

COST ESTIMATE:

AK0352 Water Quality Laboratory Capital Improvement Projects			
FY	**Equipment**	**Cost or Cost Estimate**	**New? Replacement?**
2011/12	ICP/MS ($125K), Explosion-proof refrigerator/freezer ($6K)	$ 131,000	ICP/MS (new), R/F (repl)
2012/13	LIMS Server ($25K), IC #1 ($50K)	$ 75,000	Replacement
2013/14	TOC ($35K), AAS ($80K)	$ 115,000	Replacements
2014/15	Balances ($6K, $15K)	$ 21,000	Replacements
2015/16	GC/MS	$ 125,000	Replacement
2016/17	LIMS Server ($25K), Copier/Scanner ($8K)	$ 33,000	Replacements
2017/18	~	~	~
2018/19	~	~	~
2019/20	IC #2	$ 50,000	Replacement
2020/21	~	~	~
2021/22	LIMS Server	$ 25,000	Replacement
2022/23	ICP/MS ($125K), IC #1 ($55K)	$ 180,000	Replacements
2023/24	TOC ($35K), AAS ($80K), Copier/Scanner ($8K)	$ 128,000	Replacements
2024/25	Autoclave ($45K), Balances ($6K, $15K)	$ 66,000	Replacements
2025/26	GC/MS	$ 125,000	Replacement
2026/27	Explosion-proof refrigerator/freezer	$ 6,000	Replacement

AK0352 Water Quality Laboratory Capital Improvement Projects (cont.)			
2027/28	~	~	~
2028/29	LIMS Server	$ 25,000	Replacement
2029/30	IC #2	$ 55,000	Replacement
2030/31	Copier/Scanner	$ 8,000	Replacement

IN-SERVICE DATE: N/A

% GROWTH RELATED: 0%