Central Contra Costa Sanitary District

# FY 2017-18 BUDGET

# Board of Directors

| David R. Williams | Tad J. Pilecki | Michael R. McGill | James A. Nejedly | Paul H. Causey |
|---|---|---|---|---|
| **Director** | **Director** | **Director** | **President Pro Tem** | **President** |

## DISTRICT MANAGEMENT

Roger S. Bailey _____ General Manager

Ann Sasaki _____ Deputy General Manager, Director of Operations

Philip Leiber _____ Director of Finance and Administration

Jean-Marc Petit _____ Director of Engineering and Technical Services

Elaine Boehme _____ Secretary of the District

Kent Alm _____ District Counsel

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# General Manager Budget Message

**Board of Directors:**
I am pleased to present the Central Contra Costa Sanitary District's FY 2017-18 combined budget. The Operations and Maintenance, Capital Improvement, Self-Insurance, and Debt Service budgets are all included in this document to provide an easy and transparent format for our customers.

## Acknowledging our Achievements

During the current fiscal year, we made a conscious effort to afford the Board more time, including more budget-related meetings and special workshops, to deliberate over critical policy issues. This included workshops on the long-term financial plan, as well as the Comprehensive Wastewater Master Plan. Additionally, the Board reviewed the Statement of Investment Policy and Travel Expense Reimbursement Policy and revised the Asset Management Policy this last fiscal year in preparation for the new budget. These policies are consistent with best practices adopted by most of the leading municipalities and public utilities across the country. The Board has continued to earmark an additional $2.5 million to mitigate the Unfunded Actuarial Accrued Liability (UAAL) and the liability associated with Other Post-Employment Benefits (OPEB). These actions, paired with the formation of the 115 Section Pension Trust Fund, further strengthen the District’s financial resilience. As the District prepares for large and needed infrastructure replacements and the potential for further exposure to the bond market, we feel this budget puts us in a strategic position.

The Budget reflects the Board's policies and provides the resources necessary to accomplish Central San’s mission to protect public health and the environment, and to achieve the following goals of our Strategic Plan:

1. Provide exceptional customer service
2. Strive to meet regulatory requirements
3. Be a fiscally sound and effective water sector utility
4. Develop and retain a highly trained and innovative workforce
5. Maintain a reliable infrastructure
6. Embrace technology, innovation and environmental sustainability

# General Manager Budget Message

The past fiscal year has been productive and successful for Central San. Our work is complex and not accomplished without highly trained and skilled staff. Our scientists, engineers, operators, and other operational and administrative staff are laser focused on achieving our Strategic Plan goals, while maintaining the best reliability record in the Bay Area. We are proud of the work we do. A few of our major accomplishments include:

### Provide exceptional customer service

- Successful completion of the second Central San Academy, a program which focuses on educating our customers on the mission of Central San and how it is fulfilled.
- Hosted a large-scale, award-winning 70th Anniversary Open House Event, an educational outreach opportunity that was attended by over 1,000 customers.
- Developed video public service announcements that televised important and timely Central San programming, operational support and pollution prevention messages reaching tens of thousands of viewers.
- Grew educational outreach through our publications and programs reaching more students with science, technology, engineering, and mathematics (STEM), pollution prevention information, and career development information.

### Strive to meet regulatory requirements

- 19 consecutive years of 100% compliance with our National Pollutant Discharge Elimination System permit.
- Increased collection at the Household Hazardous Waste (HHW) Collection Facility and pharmaceutical drop-off sites.

### Be a fiscally sound and effective water sector utility

- Continuing our legacy of award-winning service. Awards we received this year include: Achievement of Excellence in Procurement Award (6$^{th}$ consecutive year), CWEA - San Francisco Chapter Collection System of the Year, Plant of the Year, Public Outreach Program of the Year, Gimmick & Gadget Award and Safety Program of the Year, CAFR Award (16th consecutive year).
- Implementation of Machine Shop and Welding Shop reorganization to improve workflow and materials storage.
- Redesigned the standard Proposition 218 Rate Notice to customers, into a communication tool that increases customer awareness of Central San's work, needs, and future plans.

### Develop and retain a highly trained and innovative workforce

- Implementation of a new Mentorship Program for employees.
- Completion of a District-wide Classification Study and a Total Compensation Study.
- Completion of a Supervisory Academy for employees.
- Partnering with Earn & Learn East Bay to increase student exposure and engagement with STEM careers, awarding Central San the Youth Advocacy Award from the Workforce Development Board of Contra Costa County.

### Embrace technology, innovation and environmental sustainability

- Implementation of new software and hardware to improve operational efficiency, including CityWorks CMMS.
- Installation of solar panel projects at the HHW Collection Facility and the Collection System Operation facilities.
- Expansion of our Residential Recycled Water Fill Station, and commercial truck fill station.
- Recertification as a Green Business and awarded the Green Business of the Year from the San Ramon Chamber of Commerce.

# General Manager Budget Message

## Continuing Our Progress

The FY 2017-18 budget will enable us to build upon those and other achievements in the most optimal manner. We will continue our commitment to maximizing efficiency and productivity, and providing the highest quality services for our customers.

I want to thank the Board for providing the vision and resources necessary to achieve these goals and respond to future challenges.

Finally, I want to thank our staff for working so diligently to develop this Budget, which will ensure that we are well positioned financially to accomplish our goals.

We recognize that the communities within our District rely on us for a very critical service, and accordingly, the proposed Budget represents our commitment to excellence. By planning for the future, making sound financial decisions, implementing new technologies and processes, and maintaining a highly skilled and dedicated workforce, Central San will remain a world-class organization that provides our customers with exceptional service and value, now and well into the future.

**Roger S. Bailey**
General Manager

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# District Overview


## Introduction

The Central Contra Costa Sanitary District (Central San) was established in 1946 and is located about 30 miles east of San Francisco. Central San provides wastewater services for approximately 481,600 residents and more than 3,000 businesses within a 145-square mile area of central Contra Costa County. This area includes Alamo, Clyde, Danville, Lafayette, Martinez, Moraga, Orinda, Pacheco, Pleasant Hill, San Ramon, Walnut Creek, and unincorporated areas within central Contra Costa County. Central San also treats wastewater for residents of Concord and Clayton under a 1974 contract with the City of Concord.

**Central San serves 481,600 customers within its 145-square-mile service area.**

- Sewage collection and wastewater treatment; Household Hazardous Waste (HHW) disposal for 340,700 people
- Wastewater treatment & HHW disposal for 140,900 people in Concord & Clayton by contract
- HHW disposal only
- Central San headquarters, treatment plant, HHW Facility & Residential Recycled Water Fill Station
- Collection System Operations headquarters

Central San operates and maintains more than 1,500 miles of sewer pipelines, 19 pumping stations, and a wastewater treatment plant that cleans and disinfects an average of 34 million gallons of wastewater per day. Most of this treated effluent is discharged into Suisun Bay. Approximately 2.5 million gallons per day receives further treatment to produce recycled water that is ideal for non-potable purposes such as landscape irrigation and industrial processes.

Since inception, Central San's Residential Fill Station has distributed nearly 20 million gallons of recycled water to our residential customers.

In addition to its wastewater and recycled water responsibilities, Central San operates and maintains a Household Hazardous Waste Collection Facility that collects, recycles, or safely disposes of more than 2 million pounds of hazardous waste from approximately 24,000 residential and small business customers each year; and a Pharmaceutical Collection Program with 13 locations that collect and safely dispose of more than 12,500 pounds of unwanted drugs each year.

# VISION, MISSION, VALUES

## OUR VISION

To be a high-performance organization that provides exceptional customer service and regulatory compliance at responsible rates

## OUR MISSION

To protect public health and the environment

## OUR VALUES

### PEOPLE

- Value customers and employees
- Respect each other
- Work as a team
- Celebrate our successes and learn from our challenges

### COMMUNITY

- Value water sector partners
- Foster excellent community relationships
- Be open, transparent and accessible
- Understand service level expectations
- Build partnerships

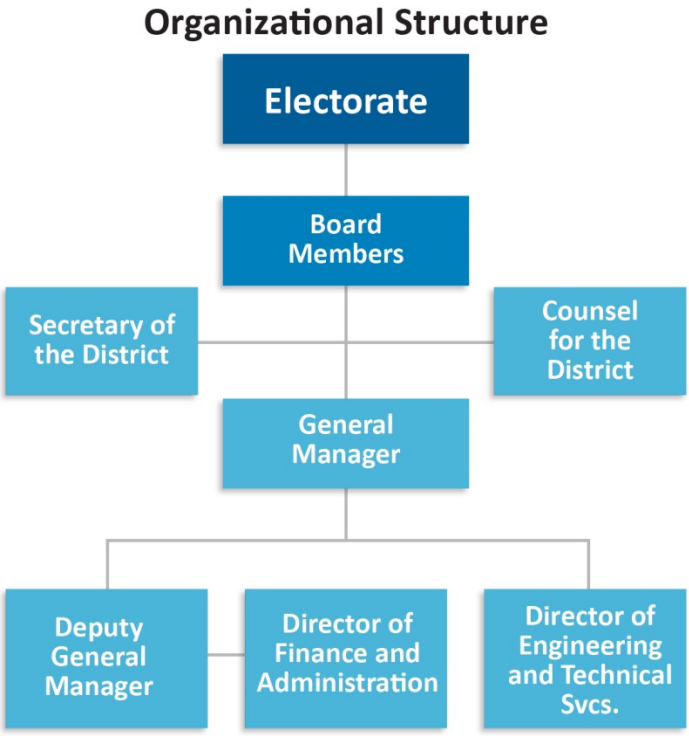
### PRINCIPLES

- Be truthful and honest
- Be fair, kind and friendly
- Take ownership and responsibility

### LEADERSHIP AND COMMITMENT

- Work effectively and efficiently
- Promote a passionate and empowered workforce
- Encourage continuous growth and development
- Inspire dedication and top-quality results

# Organizational Structure




Central San is governed by a Board of Directors whose five members are elected on a non-partisan basis and serve a four-year term. The Board appoints the General Manager, the Secretary of the District, and the Counsel for the District.

Central San is organized into three departments: Administration, Engineering and Technical Services, and Operations. Its current 290 budgeted, full-time employees are led by a General Manager, a Deputy General Manager, two Department Directors, and 12 Division Managers.

Central San's main headquarters, Board Room, and treatment plant are located at 5019 Imhoff Place in Martinez. Central San's collection system operations are headquartered at 1250 Springbrook Road in Walnut Creek.

# Strategic Plan Summary

For FY 2016-18, Central San implemented a two-year Strategic Plan that establishes policy direction that will enable Central San to increase efficiencies and continue in its role as a steward of the environment. The Strategic Plan outlines Central San's core commitments, focused initiatives, and key performance measurements.

The strategic goals reflect the challenges that many water sector agencies face as we strive to increase quality and minimize the cost of services to our customers. These challenges include:

- Enhanced customer expectations and public awareness
- Aging infrastructure
- Stringent regulatory requirements
- Financial constraints
- Expanded challenges associated with employee recruitment and retention
- Security and emergency response concerns
- Sustainable regional water supply concerns
- Increased focus on resource recovery

The strategic goals and initiatives were developed using the Effective Utility Management (EUM) framework as an overarching tool. The EUM was originally developed by the Environmental Protection Agency and water industry leaders in 2007. The framework is made up of 10 attributes that provide a succinct indication of where effectively managed utilities should focus and what they should strive to achieve.

# Effective Utility Management Attributes

### Product Quality
Produces "fit for purpose" water that meets or exceeds full compliance with regulatory and reliability requirements and is consistent with customer, public health, ecological, and economic needs.

### Customer Satisfaction
Provides reliable, responsive, and affordable services in line with explicit, customer-derived service levels.

### Employee and Leadership Development
Recruits and retains a workforce that is competent, motivated, adaptive, and safety focused.

### Operational Optimization
Ensures ongoing, timely, cost-effective, reliable, and sustainable performance improvements in all facets of its operations in service to public health and environmental protection.

### Financial Viability
Understands the full life-cycle cost of utility operations and the value of water resources.

### Infrastructure Strategy and Performance
Understands the condition of and costs associated with critical infrastructure assets.

### Enterprise Resiliency
Ensures utility leadership and staff work together internally, and with external partners, to anticipate, respond to, and avoid problems.

### Water Resource Sustainability
Ensures the availability and sustainable management of water for its community and watershed, including water resource recovery.

### Community Sustainability
Takes an active leadership role in promoting and organizing community sustainability improvements through collaboration with local partners.

### Stakeholder Understanding and Support
Engenders understanding and support from stakeholders (anyone who can affect or be affected by the utility), including customers, oversight bodies, community and watershed interests, and regulatory bodies for service levels, rate structures, operating budgets, capital improvement programs, and risk management decisions.

## Connecting Effective Utility Management with District Strategic Plan & Initiatives

A brief summary of the Strategic Plan's goals and strategies follows. For a complete copy of the Strategic Plan, including initiatives and key performance indicators, please visit centralsan.org

# FY 2016-18 Strategic Plan and Initiatives

| Goal 1- Provide Exceptional Customer Service | | | |
|---|---|---|---|
| **Strategy** | **Initiative** | **EUM Attribute** | **Value** |
| **Foster Customer Engagement and Awareness** | Provide high quality customer service. | Customer Satisfaction | Community |
| | Invest in business process changes and technologies to effectively increase access to District information and promote customer care, convenience and self-service. | Customer Satisfaction Operational Optimization | Leadership and Commitment |
| | Increase customer understanding and support for key issues facing t. | Stakeholder Understanding and Support | Community |
| | Build and maintain relationships with Federal, State and Local Elected Officials and key stakeholder groups | Stakeholder Understanding and Support | Community |
| **Improve Interdepartmental Collaboration** | Foster employees' understanding of District operations and their role in our success. | Customer Satisfaction | People |
| | Increase internal partnerships. | Employee and Leadership Development | People, Community |

| Goal 2- Strive to Meet Regulatory Requirements | | | |
|---|---|---|---|
| **Strategy** | **Initiative** | **EUM Attribute** | **Value** |
| **Strive to Achieve 100% Permit Compliance in Air, Water, Land and Other Regulations** | Renew treatment plant NPDES permit. | Product Quality | Principles |
| | Meeting existing regulations and plan for future regulations. | Product Quality | Principles |
| | Foster relationships with regulatory agencies. | Stakeholder Understanding and Support | Community |
| | Monitor and track proposed and pending legislation/regulatory change that may impact District Operations. | Stakeholder Understanding and Support | Community |
| | Actively manage greenhouse gas emissions in the most cost-effective and responsible manner. | Community Sustainability | Principles |
| **Strive to Minimize the Number of Sanitary Sewer Overflows** | Complete the collection system scheduled maintenance on time and optimize cleaning schedules to improve efficiencies. | Infrastructure Strategy and Performance | Leadership and Commitment |
| | Continue the pipeline condition assessment and cleaning quality assurance program using the system-wide CCTV program. | Infrastructure Strategy and Performance | Leadership and Commitment |

| Goal 3- Be a Fiscally Sound and Effective Water Sector Utility | | | |
|---|---|---|---|
| **Strategy** | **Initiative** | **EUM Attribute** | **Value** |
| **Conduct Long-Range Financial Planning** | Ensure rate structure is consistent with cost of service principles. | Financial Viability | Community Principles |
| | Improve the application and processing of capacity fees for consistency across user classes. | Financial Viability | Community Principles |
| | Develop a long-range debt management policy | Financial Viability | Principles |
| | Develop alternatives for new revenues and funding sources (i.e., interagency agreements, services, recycled water). | Financial Viability | Leadership and Commitment |
| **Manage Costs** | Perform targeted audits of critical/high-risk functions or processes. | Enterprise Resiliency | Principles |
| | Perform optimization studies of treatment plant and field operations to reduce costs. | Operational Optimization | Leadership and Commitment |
| | Evaluate and implement risk management practices to minimize loss. | Enterprise Resiliency | Principles |

| Goal 4- Develop and Retain a Highly Trained and Innovative Workforce | | | |
|---|---|---|---|
| **Strategy** | **Initiative** | **EUM Attribute** | **Value** |
| **Ensure Adequate Staffing and Training to Meet Current and Future Operational Needs** | Assess, develop, and implement District-wide training needs. | Employee and Leadership Development | People, Leadership and Commitment |
| | Develop and train our future leaders. | Employee and Leadership Development | People, Leadership and Commitment |
| **Enhance Relationships with Employees and Bargaining Units** | Cultivate a positive work culture and promote teamwork | Employee and Leadership Development | People, Leadership and Commitment |
| | Sustain and grow collaborative relationships with the labor bargaining units | Stakeholder Understanding and Support | People, Community |
| **Meet or Exceed Industry Safety Standards** | Achieve consistent improvement on State of California and Bay Area Industry Injury Rate | Employee and Leadership Development | People, Principles, Leadership and Commitment |
| | Enhance the safety culture through improved training and communications | Employee and Leadership Development | People, Principles |

| Goal 5- Maintain a Reliable Infrastructure | | | |
|---|---|---|---|
| **Strategy** | **Initiative** | **EUM Attribute** | **Value** |
| **Manage Assets Optimally Throughout Their Lifecycle** | Implement Board-approved recommendations from the Comprehensive Wastewater Master Plan and Condition Assessment. | Infrastructure Strategy and Performance | Principles, Community |
| | Update the Consequence of Failure Matrices. | Enterprise Resiliency | Principles, Leadership and Commitment |
| | Implement the reliability centered maintenance (RCM) program. | Infrastructure Strategy and Performance | Leadership and Commitment |
| | Manage and maintain current equipment and vehicle fleet to provide maximum value. | Infrastructure Strategy and Performance | Leadership and Commitment |
| **Facilitate Long-Term Capital Renewal and Replacement** | Integrate the data from the Asset Management Program into the analysis of long-term capital improvement needs. | Infrastructure Strategy and Performance | Leadership and Commitment |
| | Implement business case evaluations, including life-cycle cost, into proposals for new CIP projects to determine most cost-effective projects and solutions. | Infrastructure Strategy and Performance | Leadership and Commitment |
| **Protect District Personnel and Assets from Threats and Emergencies** | Enhance our capability to mitigate, prepare, respond, and recover from emergencies. | Enterprise Resiliency | Principles |
| | Evaluate and implement appropriate improvements to our Security Program to meet new or evolving threats. | Enterprise Resiliency | Principles |

| Goal 6- Embrace Technology, Innovation and Environmental Sustainability | | | |
|---|---|---|---|
| **Strategy** | **Initiative** | **EUM Attribute** | **Value** |
| **Augment the Region's Water Supply** | Explore partnering opportunities (e.g., CCWD and EBMUD). | Water Resource Sustainability | Community |
| | Develop a Satellite Water Recycled Facilities (SWRF) Program. | Water Resource Sustainability | Community, Leadership and Commitment |
| **Evaluate Business Processes and Optimize Business Processes** | Perform business process mapping and re-engineering. | Operational Optimization | Leadership and Commitment |
| **Reduce Reliance on Non-Renewable Energy** | Explore opportunities for self-generation, conservation and efficiency based on the Board-approved Comprehensive Wastewater Master Plan. | Community Sustainability | Leadership and Commitment |
| **Encourage the Review and Testing of Promising and Leading Technology** | Expand and improve the use of cost effective mobile computing and communication technologies. | Operational Optimization | Leadership and Commitment |
| | Continue developing and investing in cost-effective innovation, technology and applied research and development. | Operational Optimization | Leadership and Commitment |

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# Financial Planning Process

By law, Central San uses an enterprise fund to account for its operations. Central San currently has one enterprise fund which is comprised of four internal sub-funds:

- **Operations and Maintenance (O&M) Running Expense Fund** - This fund provides for the general operations, maintenance and administration of Central San. Sewer Service Charge (SSC) revenues are collected by the Contra Costa County Tax Assessor's Office and are remitted to Central San in two installments in April and December of each year. Central San provides several services, including wastewater treatment, to the City of Concord and is reimbursed annually for these services. In order for Central San to pay its ongoing expenses throughout the year, it reserves five months (41.7%) of gross operating expenditures at the start of each fiscal year.
- **Sewer Construction Fund (Capital Fund)** - This fund provides for treatment plant and collection system asset renewal and replacement expenditures, as well as office facilities renewal, vehicle and equipment replacement, information systems replacement and miscellaneous capital expansion needs. The City of Concord reimburses Central San for a flow proportional share of the expenses related to projects impacting the services the City has contracted with Central San to provide. Property Tax and SSC revenues, which comprise a significant portion of annual capital project revenues, are also collected by the Contra Costa County Tax Assessor's Office and are remitted to Central San in two installments in April and December of each year. In addition, connection fees received from permits are allocated to the capital fund. In order to meet the cash flow needs of the capital projects program, Central San reserves 50% of the annual capital projects budget at the start of each fiscal year.
- **Self-Insurance Fund** - This fund accounts for interest earnings on cash balances in this fund and cash allocations from other funds, as well as for costs of insurance premiums and claims not covered by Central San's insurance coverage. Central San has self-insured a portion of its liability and property risks since July 1, 1986, when the Board approved the establishment of the Self-Insurance Fund (SIF). Central San is self-insured for three events up to $500,000 per occurrence for its general and automobile liability program, for a total of $1.5 million. Maintaining a self-insured retention reduces Central San's insurance premium expense. In order to help mitigate the financial impacts and maintain uninterrupted service in the event of an emergency or catastrophic event, Central San maintains an Emergency Fund Reserve balance of $5 million in the SIF. Actuarial studies are performed every other year and are used to set the Governmental Accounting Standards Board (GASB) 10 liability amount.
- **Debt Service Fund** - This fund accounts for activity associated with the payment of Central San's long-term bonds and loans. Central San's total debt budget for FY 2017-18 is $3.8 million. A portion of Central San's Ad Valorem tax revenue is the primary funding source for the Debt Service Fund.

The revenue sources to support this budget include the following:

- Residential Sewer Service Charges
- Commercial Sewer Service Charges
- Sewer Connection Fees (Capacity Fee and Pumped Zone Fee)
- City of Concord (contract to treat wastewater)
- Ad Valorem Property Taxes
- Other Reimbursements (i.e., proceeds from the sale of recycled water and permit fees)

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# Financial Planning Policies

The significant policies that play a role in managing Central San's finances are summarized below:

## Reserve Policy

There is a strong emphasis placed on maintaining adequate reserves, and having a reserve policy ensures long-term financial stability. The Board has established a policy, Board Policy 017, setting targets for each of Central San's reserve funds. Fiscal reserves provide working capital for O&M activities; funding for long-term capital improvement requirements; fulfillment of legal, regulatory and contractual obligations; mitigation of risk and liability exposures; and cash flow emergencies. Table 10 shows projected reserve balances as of June 30, 2016 and June 30, 2017.

- For the O&M Fund -Working Capital Reserves, the Board has set a target of five months (41.7%) of gross operating expenses at the start of each fiscal year.
- For the Sewer Construction Fund (Capital Improvement) -Working Capital Reserves, the Board has set a target of 50% of the annual capital projects budget at the start of each fiscal year.
- For the Self-Insurance Fund Reserves - The Board has set a target of three times the annual retention, currently at $500,000. In addition, to help mitigate the financial impacts and maintain uninterrupted service in the event of an emergency or catastrophic event, Central San maintains an Emergency Fund Reserve balance of $5 million in the self-insurance fund.

## Debt Policy

One of Central San's FY 2016-17 strategic goals is to formalize a debt policy for Central San. Staff has developed, and expects to present by summer of 2017, a debt policy for Board adoption that will set the parameters for the responsible and prudent use of debt to fund a part of Central San's capital spending in the coming years. Previously, Central San has utilized a pay-as-you-go philosophy and used debt financing for large capital improvements brought about by regulatory changes or other unforeseen factors. Currently, Central San is repaying a State of California Water Reclamation Loan and 2009 Revenue Bonds. As of June 30, 2016, total outstanding debt for capital projects was $31.7 million.

Debt Restrictions currently include the following:

- Revenue Pledge and Covenant –Central San pledges Property Tax Revenue along with its ability to raise Sewer Service Charge (SSC) rates.
- Debt Service Coverage Ratios (DSCR) are adhered to.
- Central San's DSCRs are much higher than required. This favorable coverage ratio is a factor in Central San's very strong "AAA" credit ratings.

## Investment Policy

Central San's investment policy is based on state law and prudent money management. All investments are in accordance with Central San's investment policy and Sections 53646 and 53601 of the California Government Code. Central San has formal agreements with Contra Costa County allowing them to act as Central San's banker, and they invest all Central San funds. Securities are held in a custodial account separate from the County. The investment policy applies to all Central San funds and investment activities except for the GASB 45 Trust Investments.

Although not required by law, the investment policy is presented to the Board of Directors annually.

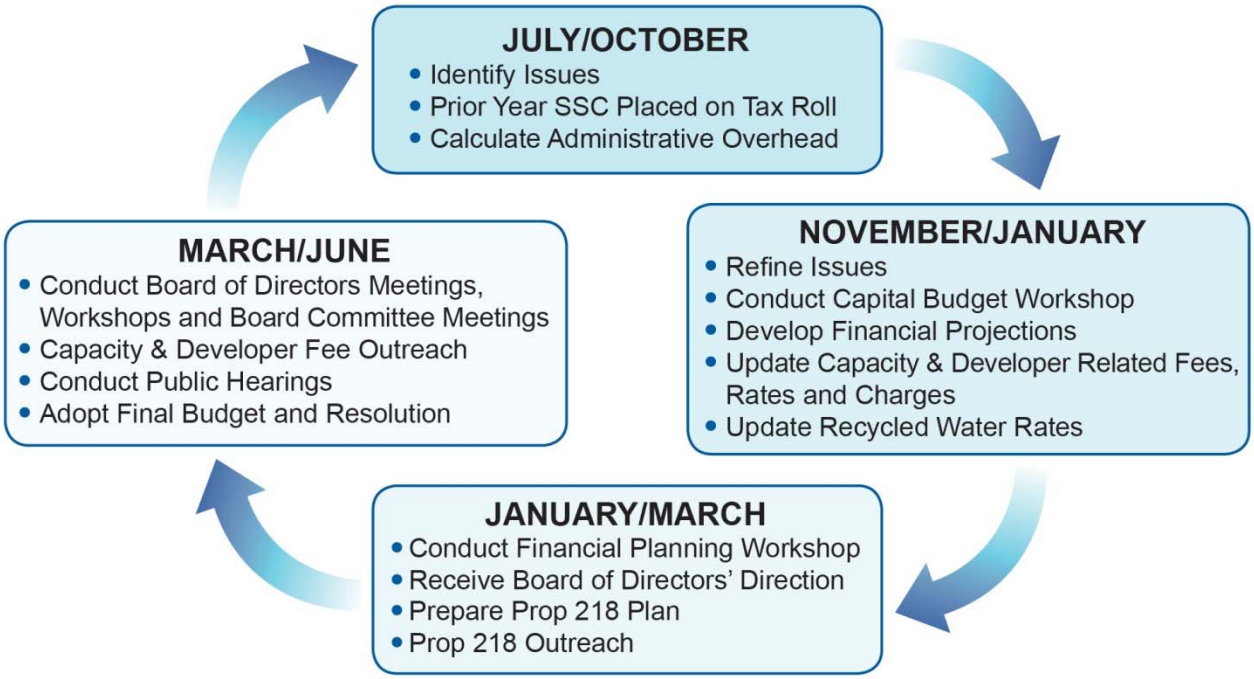
Central San's priorities are in the following order: safety, liquidity and yield. The policy addresses

issues such as permitted investments, banks and dealers, maturities, diversification, risk, delegation of authority, prudence, controls, reporting and performance evaluation.

The GASB 45 Trust Investment Guidelines are also presented to the Board of Directors annually. The GASB 45 Trust Investments are longer-term investments made to attain moderate earnings. U.S. Bank is the trustee of the trust, HighMark Capital is the Investment Manager, and Public Agency Retirement Services (PARS) is the Trust Administrator and Consultant.

During FY 2016-17, Central San has been working to establish a pension trust similar to the GASB 45 Trust. Funding a Section 115 pension trust, rather than a direct payment to the Contra Costa County Employees' Retirement Association (CCCERA), gives Central San greater retirement payment flexibility in the future, while still reducing its GASB 68 pension liability on the current financial statements.

## Budget Calendar



# Financial Summary

The FY 2017-18 Budget incorporates Central San's Strategic Goals and Initiatives and provides the resources necessary to advance the Strategic Plan and meet the challenges Central San faces as it strives to increase service quality and minimize cost to its customers. At the same time, the Budget allows Central San to accomplish its mission in the most cost-effective and financially sustainable manner to ensure the best value to our customers.

Central San's FY 2017-18 total budget is $137.2 million, an increase of $5.9 million or 4.5% over last year's budget of $131.4 million. As shown in Table 1, the main driver for the increase in the total Budget is an increase in Sewer Construction spending from $36.8 million in FY 2016-17 to $42.8 million in FY 2017-18, representing a 16.2% increase. The O&M Budget is $89.7 million or $0.1 million less than the current FY 2016-17 Budget of $89.8 million. Changes included within the flat overall budget include the following: salaries and wages increase from the 4.4% salary adjustment, consistent with bargaining unit Memorandum of Understanding, overset in part by reductions in benefit costs, so that total labor-related costs increase by $0.7 million. This is offset by a $0.8 million decrease in other cost for chemicals, outside services and funding of self-insurance. The Self-Insurance Fund is set at $936,500 to cover the costs of premiums and estimated losses based on historical trends.

### Table 1 - FY 2017-18 Total Budget

| Fund | Expenditures | | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|
| | FY 2016-17 Budget | FY 2017-18 Budget | | |
| **Operations and Maintenance** | $ 89,810,918 | $ 89,713,587 | $ (97,331) | -0.1% |
| **Sewer Construction** | $ 36,808,756 | $ 42,774,000 | $ 5,965,244 | 16.2% |
| **Debt Service** | $ 3,790,807 | $ 3,819,099 | $ 28,292 | 0.7% |
| **Self-Insurance** | $ 948,000 | $ 936,500 | $ (11,500) | -1.2% |
| **Total Budget** | **$ 131,358,481** | **$ 137,243,186** | **$ 5,884,705** | **4.5%** |

### Sources of Funds

The sources of funds (revenues) for FY 2017-18 are shown in Figure 1. The Sewer Service Charge is the largest source of revenue at $89.2 million, followed by revenue from the City of Concord and tax revenue.

### Uses of Funds

The uses of funds (expenditures) for FY 2017-18 are shown in Figure 2. Two expenditure categories, O&M and Sewer Construction, account for over 95% of the total budget.

**Figure 1- Where the Money Comes From**

Total Funding sources of: $ 138,532,599

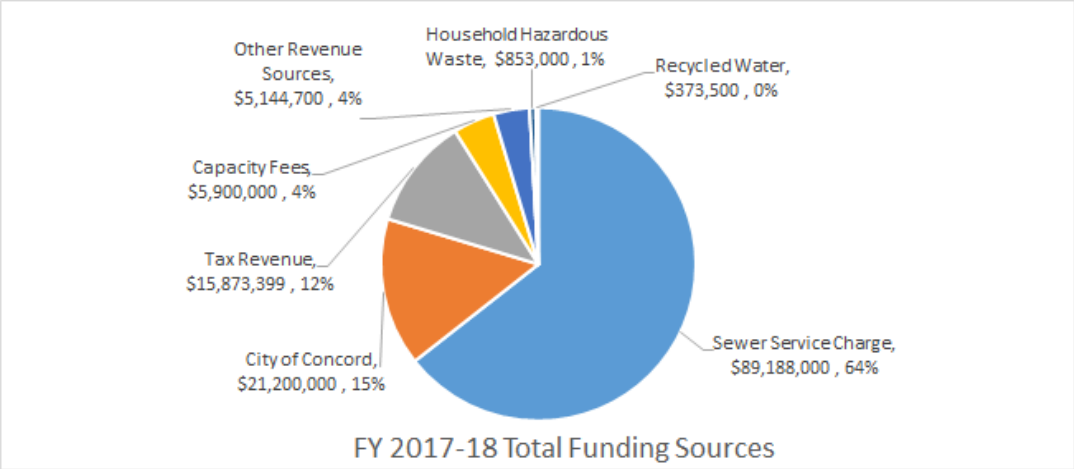
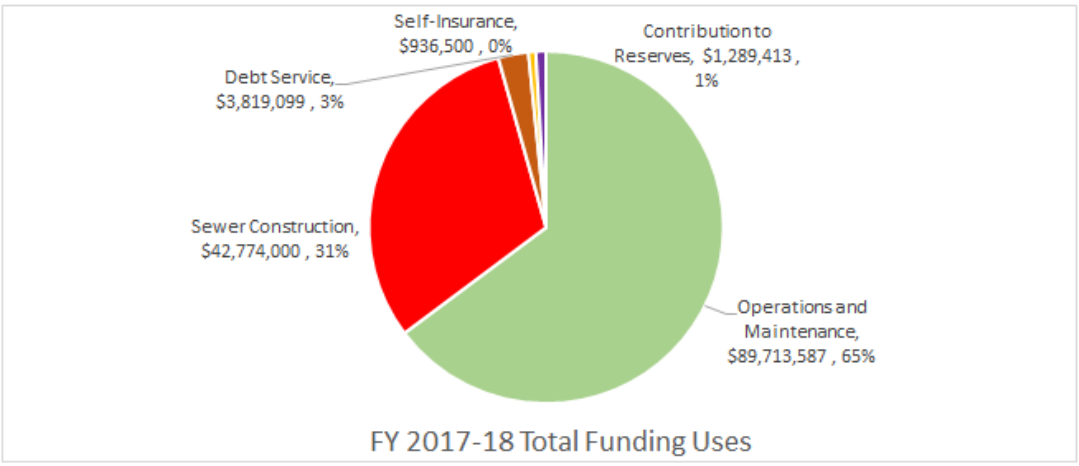


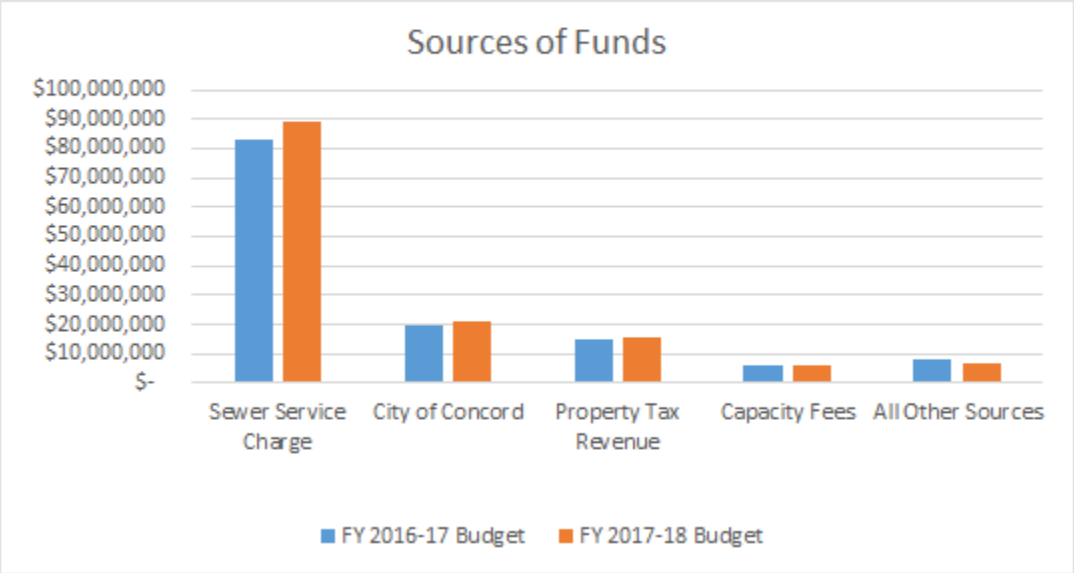

**Figure 2- Where the Money Goes**

Total Funding Uses of: $ 138,532,599




A comparison of funding sources from FY 2017-18 to FY 2016-17 follows.

**Figure 1a- Where the Money Comes From**
Comparing FY 2016-17 with FY 2017-18
$131,343,455 $138,532,599




## Sewer Service Charge (SSC)

Table 2 shows the Board-approved SSC for FY 2017-18 compared to the FY 2016-17 rates. The rates for FY 2017-18 have as a foundation the recent Cost of Service Study, reflective of updates to the financial plan and costs for FY 2017-18. The rates were approved by the Board of Directors in April 2017. Table 1c indicates the total collected SSC and which programs it is funding. Approximately 84.3% of the SSC revenue is allocated to the O&M Budget, and the remaining 15.7% is allocated to the Capital Improvement Budget (compared to 85.7% and 14.3% respectively in FY 2016-17).

### Table 1c - Approved Annual Sewer Service Charge

| | FY 2016-17 Budget | % | FY 2017-18 Budget | % | Change | % |
|---|---|---|---|---|---|---|
| To O&M | $71,100,000 | 85.7% | $75,220,700 | 84.3% | $4,120,700 | 6% |
| To Capital | $11,820,000 | 14.3% | $13,967,300 | 15.7% | $2,147,300 | 18% |
| **Total Collected** | **$82,920,000** | **100.0%** | **$89,188,000** | **100.0%** | **$6,268,000** | **8%** |

### Table 2 - Approved Annual Sewer Service Charge

| Account Description | FY 2015-16 | FY 2016-17 | FY 2017-18 |
|---|---|---|---|
| **Revenue:** | | | |
| **Single Family Residence** | $471 | $503 | $530 |
| **Multi-Family Residence** | $463 | $487 | $513 |
| **Effective Date** | 07/01/15 | 07/01/16 | 07/01/17 |

## O&M Budget Overview

The total O&M revenue for FY 2017-18 is projected to be $94.7 million. Compared to the FY 2016-17 budget amount of $89.8 million, revenue has increased by 5.4%, due to the following:

- While the SSC rates are increasing, the O&M allocation of SSC is decreasing from 85.8% to 84.3%, with the amount allocated to Capital Projects increasing from 14.2% to 15.7%. The net result of these changes is an increase in the total O&M SSC revenue of $4.1 million, or 5.8%.
- The City of Concord primarily shares a flow portion of treatment plant, environmental and regulatory compliance expenses and is charged administrative overhead and a finance charge. City of Concord revenue towards O&M costs is expected to be $15.2 million in FY 2017-18, a 2.8% change which is mainly due to an overall flat O&M Budget for FY 2017-18.

The total O&M expenses are projected to be $89.7 million in FY 2017-18, compared to $89.8 million in FY 2016-17. This reflects a minor decrease of $0.1 million or -0.1%. Central San has achieved a flat O&M budget that addresses critical needs and provides funding for key activities. Table 3 and Figure 3 show the FY 2017-18 O&M Budget by expense category.

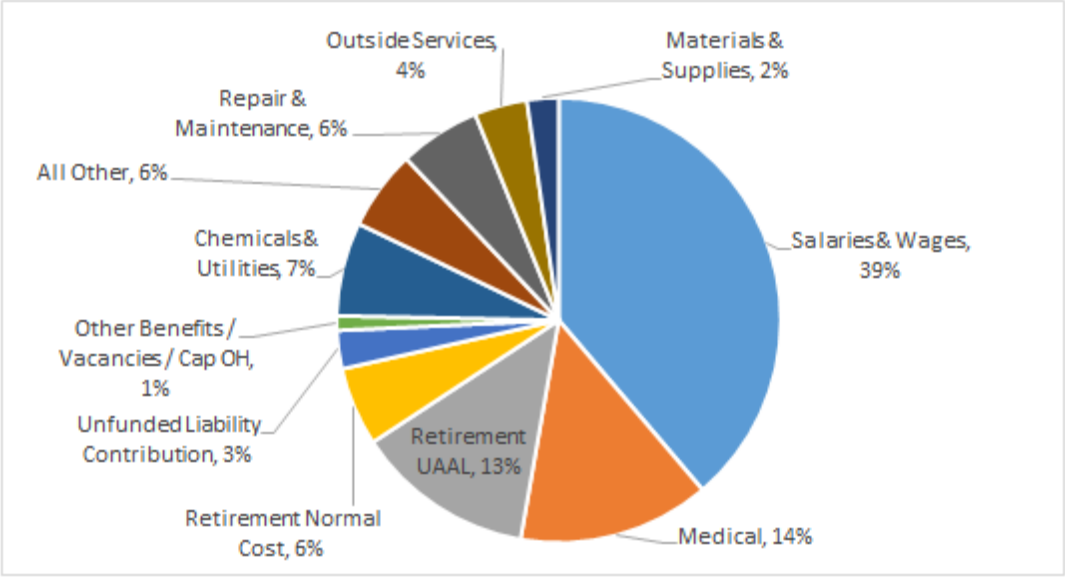
### Table 3 - FY 2017-18 Budgeted O&M Revenues and Expenditures

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|
| Revenue: | | | | | |
| Sewer Service Charge | 71,100,000 | 73,205,000 | 75,220,700 | 4,120,700 | 5.8% |
| Concord SSC | 14,790,000 | 14,950,000 | 15,200,000 | 410,000 | 2.8% |
| Permit & Inspection Fees | 1,430,000 | 1,715,000 | 1,724,000 | 294,000 | 20.6% |
| Lease Rental Income | 616,200 | 605,000 | 612,000 | (4,200) | -0.7% |
| HHW Reimbursement | 888,000 | 823,000 | 853,000 | (35,000) | -3.9% |
| Stormwater/Pollution Prevention | 310,000 | 350,000 | 340,000 | 30,000 | 9.7% |
| Interest Income | 233,000 | 75,000 | 78,000 | (155,000) | -66.5% |
| Recycled Water | 100,000 | 325,000 | 335,000 | 235,000 | 235.0% |
| Other | 350,000 | 358,754 | 296,000 | (54,000) | -15.4% |
| **Total Revenue** | **89,817,200** | **92,406,754** | **94,658,700** | **4,841,500** | **5.4%** |
| **Expenditures:** | | | | | |
| Salaries & Wages | 33,158,707 | 32,944,218 | 34,797,628 | 1,638,921 | 4.9% |
| Benefits & Cap O/H Credit | 14,163,311 | 14,922,371 | 12,655,155 | (1,508,156) | -10.6% |
| **Salary & Benefits (Active Employees)** | **47,322,018** | **47,866,589** | **47,452,783** | **130,765** | **0.3%** |
| **Benefits (Retirees)** | 5,362,300 | 5,083,978 | 5,946,000 | 583,700 | 10.9% |
| Retirement UAAL | 11,741,700 | 11,453,177 | 11,679,261 | (62,439) | -0.5% |
| Additional UAAL | 2,500,000 | 2,500,000 | 2,500,000 | - | 0.0% |
| **Total UAAL** | **14,241,700** | **13,953,177** | **14,179,261** | **(62,439)** | **-0.4%** |
| **Total Labor Related Costs** | **66,926,018** | **66,903,744** | **67,578,044** | **652,026** | **1.0%** |
| Chemicals | 1,920,000 | 1,461,300 | 1,482,000 | (438,000) | -22.8% |
| Utilities | 4,315,790 | 4,570,615 | 4,639,790 | 324,000 | 7.5% |
| Repair & Maintenance | 5,222,852 | 4,844,750 | 5,299,754 | 76,902 | 1.5% |
| Hauling & Disposal | 941,050 | 932,850 | 1,023,975 | 82,925 | 8.8% |
| Professional & Legal Fees | 630,750 | 603,470 | 807,600 | 176,850 | 28.0% |
| Outside Services | 3,980,175 | 3,507,902 | 3,452,717 | (527,458) | -13.3% |
| Self Insurance Fund | 920,000 | 920,000 | 585,000 | (335,000) | -36.4% |
| Materials & Supplies | 2,100,025 | 1,924,288 | 2,059,325 | (40,700) | -1.9% |
| Other Expenses | 2,854,258 | 2,385,104 | 2,785,382 | (68,876) | -2.4% |
| ****Total Other O&M** | **22,884,900** | **21,150,279** | **22,135,543** | **(749,357)** | **-3.3%** |
| **Total Expenditures** | **89,810,918** | **88,054,023** | **89,713,587** | **(97,331)** | **-0.1%** |
| **Contribution to Reserve** | **6,282** | **4,352,731** | **4,945,113** | **4,938,831** | **78618.8%** |

** Includes cost for the production and distribution of recycled water.

**Figure 3 - FY 2017-18 O&M Budget by Expense Category**

| Operations and Maintenance Expenses (in thousands) | FY 2016-17 Budget | FY 2017-18 Budget | Percent |
|---|---|---|---|
| Salaries & Wages | $33,159 | $34,798 | 39% |
| Medical | $11,762 | $12,536 | 14% |
| Retirement UAAL | $11,742 | $11,679 | 13% |
| Retirement Normal Cost | $5,925 | $5,121 | 6% |
| Unfunded Liability Contribution | $2,500 | $2,500 | 3% |
| Other Benefits / Vacancies / Cap OH | 1,839 | 945 | 1% |
| Chemicals & Utilities | $6,236 | $6,122 | 7% |
| All Other | $5,346 | $5,202 | 6% |
| Repair & Maintenance | $5,223 | $5,300 | 6% |
| Outside Services | $3,980 | $3,453 | 4% |
| Materials & Supplies | $2,100 | $2,059 | 2% |
| **Total** | **$89,811** | **$89,714** | **100%** |




## Salaries and Benefits

Total salaries and benefits for active employees are projected to be $56.5 million in FY 2017-18, including both the O&M Fund and the Sewer Construction Fund. Compared to $56.6 million total salaries and benefits in FY 2016-17, this is a $0.2 million or 0.3% decrease, as shown in Table 4. Benefits for retirees are projected to be $5.9 million in FY 2017-18, compared to $5.4 million in FY 2016-17, an increase of $0.6 million or 11%.

Table 5 shows the allocation of Central San salaries and benefits to the O&M Fund and the Sewer Construction Fund.

## Table 4 - Salaries and Benefits

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|
| O&M Salaries | $33,158,707 | $32,944,218 | $34,797,628 | 1,638,921 | 4.9% |
| **O&M Salaries** | **$33,158,707** | **$32,944,218** | **$34,797,628** | **1,638,921** | **4.9%** |
| Benefits - Active Employees | | | | | |
| O&M Workers' Compensation | $402,948 | $374,075 | $415,320 | $12,372 | 3.1% |
| O&M Medical & Health | $6,845,900 | $6,469,371 | $7,094,079 | $248,179 | 3.6% |
| O&M Dental | $529,909 | $529,379 | $523,098 | ($6,811) | -1.3% |
| O&M Retirement - Normal cost | $5,925,249 | $5,613,098 | $5,121,070 | ($804,179) | -13.6% |
| O&M Deferred Comp/Medicare | $2,264,571 | $2,146,672 | $2,396,058 | $131,487 | 5.8% |
| O&M Other Benefits | $209,627 | $174,057 | $198,733 | ($10,894) | -5.2% |
| OPEB Contribution (future contribution only; does not include retiree healthcare premiums) | $2,528,700 | $2,807,022 | $1,578,000 | ($950,700) | -37.6% |
| O&M Accrued Compensated Absence | $360,000 | $425,000 | $450,000 | $90,000 | 25.0% |
| O&M Benefit Vacancy Factor | ($1,159,000) | $0 | ($1,149,000) | $10,000 | -0.9% |
| **O&M Benefits (Active Employees)** | **$ 17,907,904** | **$ 18,538,674** | **$ 16,627,358** | **(1,280,546)** | **-7.2%** |
| | | | | | |
| O&M Capitalized Administrative Overhead Credit | (3,744,593) | (3,616,303) | (3,972,203) | (227,610) | 6.1% |
| | | | | | |
| **O&M Benefits and Cap O/H Credit (Active)** | **14,163,311** | **14,922,371** | **12,655,155** | **(1,508,156)** | **-10.6%** |
| | | | | | |
| Capital Salary and Benefits** | 9,311,425 | 9,110,890 | 9,004,767 | (306,658) | -3.3% |
| **O&M and Capital Salaries and Benefits (Active)** | **56,633,443** | **56,977,479** | **56,457,550** | **(175,893)** | **-0.3%** |
| | | | | | |
| Benefits - Retiree | | | | | |
| Retiree Medical | $4,916,000 | $4,645,620 | $5,441,500 | $525,500 | 10.7% |
| Retiree Dental | $350,200 | $349,850 | $397,800 | $47,600 | 13.6% |
| Retiree Life | $96,100 | $88,508 | $106,700 | $10,600 | 11.0% |
| **Retiree Benefits** | **$ 5,362,300** | **$ 5,083,978** | **$ 5,946,000** | **583,700** | 10.9% |
| | | | | | |
| UAAL | | | | | |
| Retirement UAAL | $11,741,700 | $11,453,177 | $11,679,261 | ($62,439) | -0.5% |
| Additional UAAL | $2,500,000 | $2,500,000 | $2,500,000 | $0 | 0.0% |
| **Total UAAL** | **$ 14,241,700** | **$ 13,953,177** | **$ 14,179,261** | **(62,439)** | **-0.4%** |
| | | | | | |
| **Total O&M and Capital Salaries and Benefits (Active and Retiree)** | **$ 76,237,443** | **$ 76,014,634** | **$ 76,582,811** | **345,368** | **0.5%** |

** Comprised of capitalized salaries, benefits and administrative overhead charged to District Capital projects.

## Table 5 - Salaries and Benefits by O&M Budget and Sewer Construction Budget

| | Operations & Maintenance | | | Sewer Construction | | | Total District | | |
|---|---|---|---|---|---|---|---|---|---|
| | **FY 2016-17 Budget** | **FY 2017-18 Budget** | **Variance** | **FY 2016-17 Budget** | **FY 2017-18 Budget** | **Variance** | **FY 2016-17 Budget** | **FY 2017-18 Budget** | **Variance** |
| Salaries | $32,217,344 | $33,739,967 | $1,522,623 | 2,955,114 | 2,776,702 | ($178,412) | $35,172,458 | $36,516,669 | $1,344,211 |
| Salary Vacancy | ($440,000) | ($413,000) | $27,000 | ($36,000) | ($30,000) | $6,000 | ($476,000) | ($443,000) | $33,000 |
| Overtime | $1,059,363 | $1,095,661 | $36,298 | $125,273 | $106,145 | ($19,128) | $1,184,636 | $1,201,806 | $17,170 |
| Standby | $322,000 | $375,000 | $53,000 | $0 | $0 | $0 | $322,000 | $375,000 | $53,000 |
| **Total Salaries** | **$33,158,707** | **$34,797,628** | **$1,638,921** | **$3,044,387** | **$2,852,847** | **($191,540)** | **$36,203,094** | **$37,650,475** | **$1,447,381** |
| | | | | | | | | | |
| Current Employee Benefits | $19,066,904 | $17,776,358 | ($1,290,546) | $2,522,445 | $ 2,179,717 | ($342,728) | $21,589,349 | $19,956,075 | ($1,633,274) |
| Benefit Vacancy | ($1,159,000) | ($1,149,000) | $10,000 | $0 | $0 | $0 | ($1,159,000) | ($1,149,000) | $10,000 |
| **Total Benefits (Active Employees)** | **$17,907,904** | **$16,627,358** | **($1,280,546)** | **$2,522,445** | **$2,179,717** | **($342,728)** | **$20,430,349** | **$18,807,075** | **($1,623,274)** |
| | | | | | | | | | |
| **Total Salaries and Benefits (Active Employees)** | **$51,066,611** | **$51,424,986** | **$358,375** | **$5,566,832** | **$5,032,564** | **($534,268)** | **$56,633,443** | **$56,457,550** | **($175,893)** |
| | | | | | | | | | |
| Retiree Benefits | $ 5,362,300 | $ 5,946,000 | $583,700 | $0 | $0 | $0 | $5,362,300 | $5,946,000 | $583,700 |
| UAAL | $ 14,241,700 | $ 14,179,261 | ($62,439) | $0 | $0 | $0 | $14,241,700 | $14,179,261 | ($62,439) |
| **Total Benefits for Past Service** | **$19,604,000** | **$20,125,261** | **$521,261** | **$0** | **$0** | **$0** | **$19,604,000** | **$20,125,261** | **$521,261** |
| | | | | | | | | | |
| Capitalized Administrative O/H | ($3,744,593) | ($3,972,203) | ($227,610) | $3,744,593 | $3,972,203 | $227,610 | $0 | $0 | $0 |
| **Total Salaries & Benefits (Active and Retiree)** | **$66,926,018** | **$67,578,044** | **$652,026** | **$9,311,425** | **$9,004,767** | **($306,658)** | **$76,237,443** | **$76,582,811** | **$345,368** |

## Budgeted Full Time Equivalents

Table 6 shows budgeted full time equivalents.

### Table 6 - Budgeted Full Time Equivalents

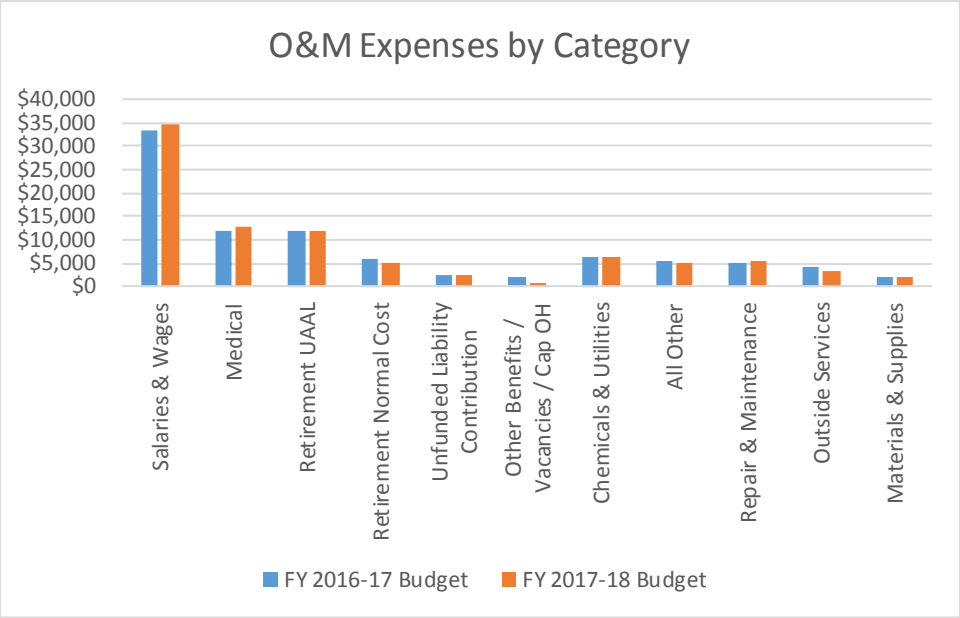
| | FY 2016-17 | FY 2017-18 |
|---|---|---|
| Regular Employees (excluding RW) | 290.0 | 290.0 |
| | | |
| Limited Duration Employees | | |
| Summer Students | 30.0 | 31.0 |
| Co-ops | 10.5 | 9.5 |

## Variances in the O&M Budget

### Overall changes in O&M Costs

O&M costs overall are essentially flat from FY 2016-17 to FY 2017-18. Salaries increase $1.6 million, offset by benefit cost decreases of $0.8 million and other cost reductions of $1.0 million, for a net decrease of $0.1 million. These changes are discussed further below the chart.

### Table 6a – O&M Cost Comparison by Year




## O&M Salaries

Central San salaries are $34.8 million in FY 2017-18, compared to a budget of $33.2 million in FY 2016-17. This is an increase of $1.6 million or 4.9%. The primary driver of this increase is a 4.0% salary adjustment effective May of 2017, comprising 3.3% inflation, plus 1% as specified by the existing labor Memorandums of Understanding; the variance of 0.3% is budgeted as a reduction of the assumed headcount vacancy factor.

The remaining amount of the 4.9% relates to costs from filling vacant positions, step increases for newer employees, and standby pay for the Information Technology staff. These additional costs are offset by the larger than average number of retirements in FY 2016-17, creating vacant positions that will be filled by lower paid employees.

### Central San Benefits

Central San benefits for the O&M budget are $36.7 million in FY 2017-18, compared to a budget of $37.5 million in FY 2016-17. This is a decrease of $0.8 million or 2.0%. The primary benefit rate assumptions include the following:

- Kaiser - Decrease of 4.0%.
- Health Net - Increase of 10.0%.
- CCCERA - Retirement rate decreasing 7.6% for legacy employees and 11.2% for PEPRA employees, offset by higher pensionable wages. An additional $2.5 million is to be paid towards the unfunded liability in retirement and/or Other Post-Employment Benefits (OPEB) Trust.
- Delta Dental - Decrease of 3.0%.
- Long-Term Disability - No rate increase.
- Employee Assistance Program - Increase of 3.0%.
- Workers' Compensation - Estimated 10% rate increase.
- Life Insurance - No rate increase.

### Capitalized Administrative Overhead

The Capitalized Administrative Overhead rate, a credit given for capital work to the O&M budget for non-work hours and overhead, increased from 118% to 123% for FY 2017-18. The Capitalized Administrative Overhead budget is -$4.0 million in FY 2017-18, compared to a budget of -$3.7 million in FY 2016-17. This is a decrease in the budget of $0.2 million or 6.1%.

### All Other O&M Expenses

The remaining O&M non-labor expenses total $22.1 million in FY 2017-18, compared to a budget of $22.9 million in FY 2016-17. This is a decrease of $0.7 million or 3.3%. Additional information is included in the individual Division budgets. The areas of most significant changes include:

- Chemicals - This expense was reduced 22.8% due to lower usage of chemicals in the Plant and Pumping Stations.
- Utilities - This expense increased 7.5% due to higher use of electricity from PG&E as the Cogeneration System meets the emissions limitations.
- Repairs & Maintenance - This expense increased 1.5% overall due to higher software license renewals fees and higher pump repair expenses.
- Hauling & Disposal - This expense increased 8.8% overall due to higher household hazardous waste disposal rates and for increases in janitorial services.
- Professional & Legal Fees - This expense increased 28% due to budgeting for internal audits and for the new contract for legal services.
- Outside Services - This expense was reduced 13.3% due to less need for temporary services as vacancies are filled, agenda software purchased in FY 2016-17 that is not in the FY 2017-18 budget, and BACWA-related expenses moving to Other Expenses.
- Self-Insurance Expense - This expense was reduced 36.4%, and funds the requirements for the payment of premiums and estimated losses based on historical trends.
- Materials & Supplies - This expense was reduced 1.9% due in part to fewer purchases of emergency equipment and supplies.

- Other Expenses - This expense was reduced by 23.6% due to the removal of one-time expenses in FY 2016-17 related to Comprehensive Wastewater Master Plan outreach, mailing of Proposition 218 notices, and the Fall 2016 Board Election. Offsetting these reductions was the transfer of BACWA-related expenses to this category.
- Conferences - This expense is included in the Other Expenses category. District wide conferences presented in the budget book in FY 2016-17 represented out-of-state conferences; FY 2017-18 will also include in-state conferences. The out-of-state and board conferences expense was reduced 10% from $116,000 in FY 2016-17 to $104,000 in FY 2017-18 due to a reduction in travel and the number of conferences, as shown in Table 7.

### Table 7 - Conferences

| | FY 2016-17 Budget | FY 2017-18 Budget | Variance | Percent Variance |
|---|---|---|---|---|
| Board Conferences | $50,000 | $45,000 | ($5,000) | -10% |
| District Wide Conferences, Out-of-State* | $66,350 | $59,450 | ($6,900) | -10% |
| District Wide Conferences, In-State | | $170,675 | n/a | n/a |
| **Total** | **$116,350** | **$275,125** | **n/a** | **n/a** |

## Operating Departments

Table 8 provides a summary of the budgets for the operating departments. Further details on the operating departments are included in the Operating Departments Section.

### Table 8 – O&M Budget by Department

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|
| **Administration** | | | | | |
| Communications Services and Intergovernmental Relations | $2,124,485 | $2,001,735 | $1,979,369 | ($145,116) | -7% |
| Finance | $2,507,401 | $2,356,274 | $2,570,983 | $63,582 | 3% |
| Human Resources | $12,104,264 | $11,983,254 | $12,579,787 | $475,523 | 4% |
| Information Technology | $3,700,951 | $3,628,293 | $3,938,582 | $237,631 | 6% |
| Purchasing and Material Services | $1,763,107 | $1,653,056 | $1,958,932 | $195,825 | 11% |
| Risk Management | $2,008,786 | $1,778,684 | $1,604,720 | ($404,066) | -20% |
| Office of the General Manager / Office of the Secretary of the District | $3,619,999 | $3,777,590 | $2,629,493 | ($990,506) | -27% |
| **Total** | **$27,828,993** | **$27,178,886** | **$27,261,866** | **($567,127)** | **-2%** |

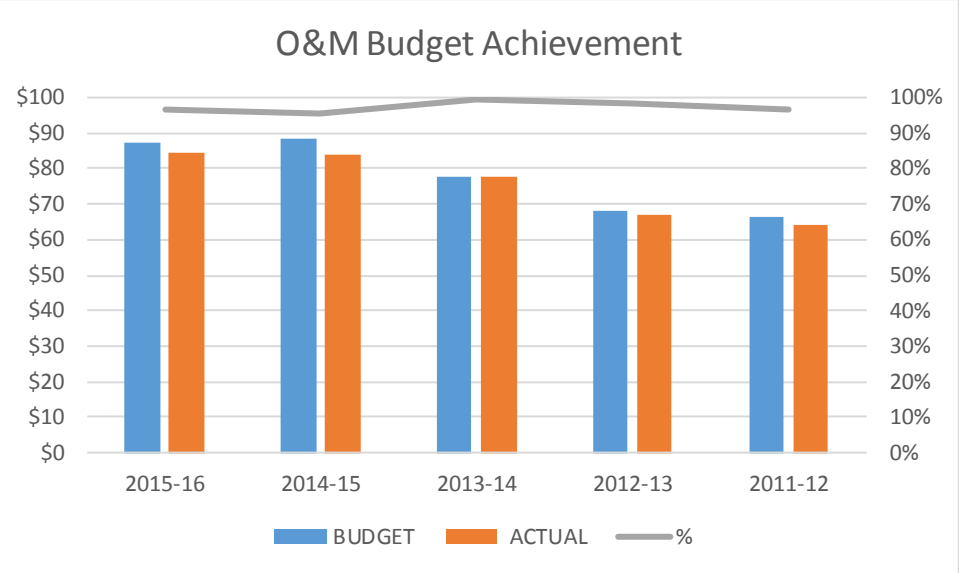
| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|
| **Engineering and Technical Services Department** | | | | | |
| Capital Projects Division | $1,199,904 | $1,106,868 | $766,422 | ($433,482) | -36% |
| Environmental and Regulatory Compliance Division | $8,243,342 | $8,306,851 | $8,451,520 | $208,178 | 3% |
| Planning and Development Services Division | $6,455,894 | $6,711,072 | $7,816,395 | $1,360,501 | 21% |
| **Total** | **$15,899,140** | **$16,124,791** | **$17,034,337** | **$1,135,197** | **7%** |

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|
| **Operations** | | | | | |
| Collection System Operations | $14,472,053 | $13,996,623 | $14,156,213 | ($315,840) | -2% |
| Plant Maintenance | $14,035,700 | $13,492,023 | $14,138,658 | $102,958 | 1% |
| Plant Operations | $14,859,845 | $15,101,915 | $14,886,976 | $27,131 | 0% |
| District Safety Program | $913,468 | $880,955 | $916,895 | $3,427 | 0% |
| Recycled Water Program | $1,801,719 | $1,278,830 | $1,318,642 | ($483,077) | -27% |
| **Total** | **$46,082,785** | **$44,750,346** | **$45,417,384** | **($665,401)** | **-1%** |
| **Total All Departments** | **$89,810,918** | **$88,054,023** | **$89,713,587** | **($97,331)** | **0%** |

## Historical Variances in O&M Spending

The table below shows historic O&M budgeted and actual amounts. As noted, there have been variances averaging 2.7% (spending was 97.3% of budget) over the last five completed years. In the development of the FY 2017-18 budget, additional attention was paid to reviewing the budget on a line-by-line basis, with the budgeted amount evidenced by detailed support and a comparison to FY 2016-17 projected spending.

**Table 8a – Historic O&M Budget vs. Actual Spending in millions (Five-Year Trend)**



## Capital Improvement Budget (CIB)

Sewer Construction Fund revenues are projected to increase $4.4 million, from $34.9 million in FY 2016-17 to $39.3 million in FY 2017-18. This increase is due primarily to an increase in sewer service charges of $2.1 million, resulting from additional revenue available from the 5.37% rate increase effective July 1, 2017. Capital expenditures for FY 2017-18 are $42.8 million, a $6 million increase over the FY 2016-17 budget of $36.8 million. Central San will draw approximately $3.4 million from capital reserves in FY 2017-18 with expenditures exceeding revenues by that amount. Funding the Sewer Construction Fund (Capital Improvement) - Working Capital Reserves is consistent with Board Policy (BP) 017, described subsequently. Table 9 below is a summary of the projected FY 2017-18 CIB revenues and expenditures. Further details are included in the Capital Improvement Program Section.

### Table 9 - Sewer Construction Fund Revenues and Expenditures

| | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget * | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|
| Revenue | | | | | |
| Capacity Fees | $6,060,000 | $5,700,000 | $5,900,000 | ($160,000) | -3% |
| Pumped Zone Fees | $400,000 | $498,000 | $513,000 | $113,000 | 28% |
| Interest Income | $225,000 | $375,000 | $386,000 | $161,000 | 72% |
| Ad Valorem Taxes | $11,080,000 | $11,900,000 | $12,100,000 | $1,020,000 | 9% |
| Sewer Service Charge | $11,820,000 | $12,050,000 | $13,967,300 | $2,147,300 | 18% |
| Reimbursements | | | | | |
| City of Concord | $4,550,000 | $4,300,000 | $6,000,000 | $1,450,000 | 32% |
| Recycled Water Sales | $300,000 | $37,500 | $38,500 | ($261,500) | -87% |
| Developer Fees & Charges | $470,400 | $426,850 | $423,000 | ($47,400) | -10% |
| **Total Revenue** | **$34,905,400** | **$35,287,350** | **$39,327,800** | **$4,422,400** | **13%** |
| | | | | | |
| Expenditures | | | | | |
| Collection System Program | $17,925,105 | $17,365,304 | $18,492,000 | $566,895 | 3% |
| Treatment Plant Program | $13,125,000 | $14,165,106 | $18,045,000 | $4,920,000 | 37% |
| General Improvements Program | $3,808,651 | $3,689,707 | $4,277,000 | $468,349 | 12% |
| Recycled Water Program | $500,000 | $484,385 | $460,000 | ($40,000) | -8% |
| Contingency | $1,450,000 | $0 | $1,500,000 | $50,000 | 3% |
| **Total Expenditures** | **$36,808,756** | **$35,704,502** | **$42,774,000** | **$5,965,244** | **16%** |
| | | | | | |
| Sewer Construction Funds Available | | | | | |
| Projected Revenue | | | $39,327,800 | | |
| Projected Expenditures | | | $42,774,000 | | |
| (Draw from Reserves) | | | ($3,446,200) | | |

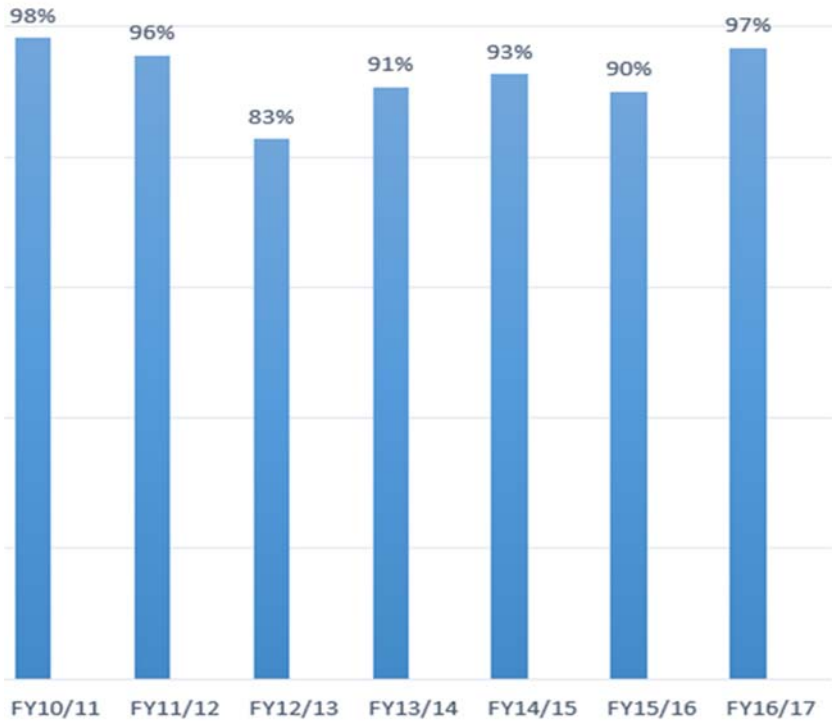
* The FY 2017-18 budget amount does not include any carryforward from past fiscal years; the Board will be notified of any carryforward amount after the close of the current fiscal year.

Table 9 shows that Recycled Water Revenue is allocated between O&M and capital. The allocation changes from the FY2016-17 budget to the FY2017-18 budget, but the overall amount remains relatively constant ($400,000 in FY2016-17 and $373,500 in FY2017-18).

## Historical Variances in Capital Spending

The table below shows historic Capital budgets and actual spending amounts. As noted, there have been variances, with overall spending averaging 91% of budget over the last five years, 94.2% over the last 6 years (excluding FY 2012-13) and 92.6% over the last seven years. Commencing with FY 2016-17 and the transition from the overall allocations by program approach to individual budgets by project, there is an expectation that spending will be closer to the budgeted level. The 97% achievement for FY2016-17 is the estimate of the Capital Projects Manager as of April 2017.

### Table 8b – Historic Capital Budget vs. Actual Spending (Five-Year Trend)



## Reserve Projections

Board Policy 017 set targets for each of Central San's reserve funds. Fiscal reserves provide working capital for O&M activities; funding for long-term capital improvement requirements; fulfillment of legal, regulatory and contractual obligations; mitigation of risk and liability exposures; and cash flow emergencies. These reserves are fully funded as of FY 2016-17 but are adjusted annually based on changes in the targeted balance calculation.

- For the O&M Fund - Working Capital Reserves, the Board has set a target of five months (41.7%) of gross operating expenses at the start of each fiscal year.
- For the Sewer Construction Fund (Capital Improvement) - Working Capital Reserves, the Board has set a target of 50% of the annual capital projects budget at the start of each fiscal year.
- For the Self-Insurance Fund Reserves, the Board has set a target of three times the annual deductible, which in this case is $1.5 million. In addition, to help mitigate financial impacts and maintain uninterrupted service in the event of an emergency or catastrophic event, Central San maintains an Emergency Fund Reserve balance of $5 million in the self-insurance fund.

Table 10 presents a summary of Central San's current reserve balance projections compared to the Board Policy targets.

### Table 10 - Reserve Projections

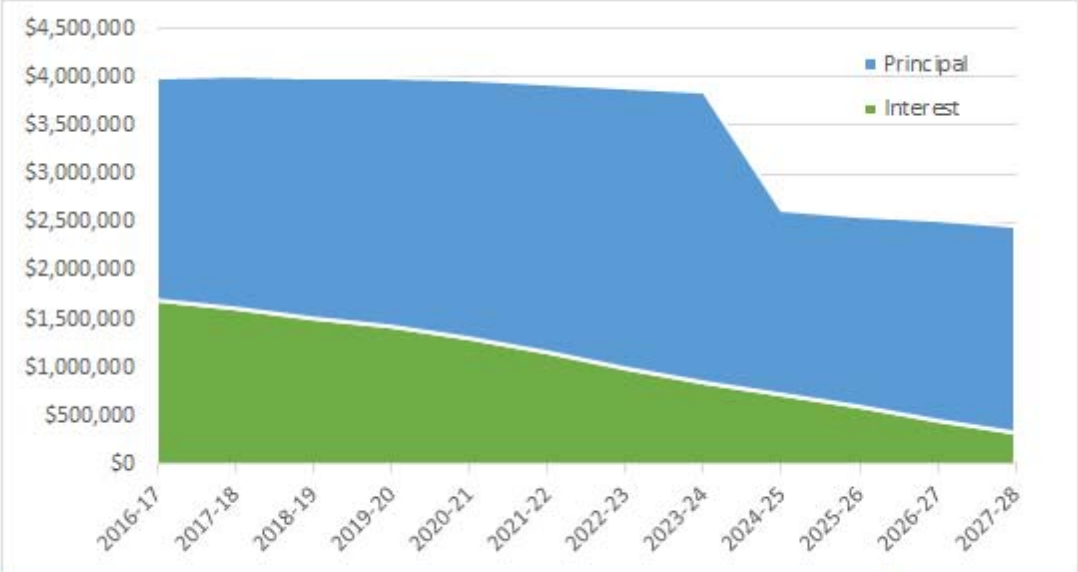
| | O&M Fund | Sewer Construction Fund (Capital) | Self Insurance Fund | Totals |
|---|---|---|---|---|
| **Projected Balance as of June 30, 2017** | $39,223,778 | $25,135,597 | $6,500,000 | $70,859,375 |
| **Change in Reserve** | $4,945,113 | ($3,446,200) | ($209,500) | $1,289,413 |
| ***Reference:*** | *Table 3* | *Table 9* | *Self Insurance Table 1* | *See Figure 2* |
| Transfers | ($3,990,644) | $3,990,644 | | $0 |
| **Projected Balance as of June 30, 2018** | $40,178,247 | $25,680,041 | $6,290,500 | $72,148,788 |
| **Reserve Policy Target end of June 30, 2017** | **$37,380,661** | **$21,387,060** | **$6,500,000** | **$65,267,721** |
| **Variance from Policy Target at June 30, 2017** | **$1,843,117** | **$3,748,537** | **$0** | **$5,591,654** |

* Capital target for June 30, 2018 will be reduced due to planned borrowing in FY2019.

## Debt Service

Current debt service expenditures include outstanding payments on a State of California Water Reclamation Loan and 2009 Revenue Bonds. Details on the Debt Service are included in the Debt Program Section. Figure 4 depicts all existing debt payments for Central San. Future planned debt issuances, contemplated every few years commencing in FY 2018-19, will add to this debt profile.

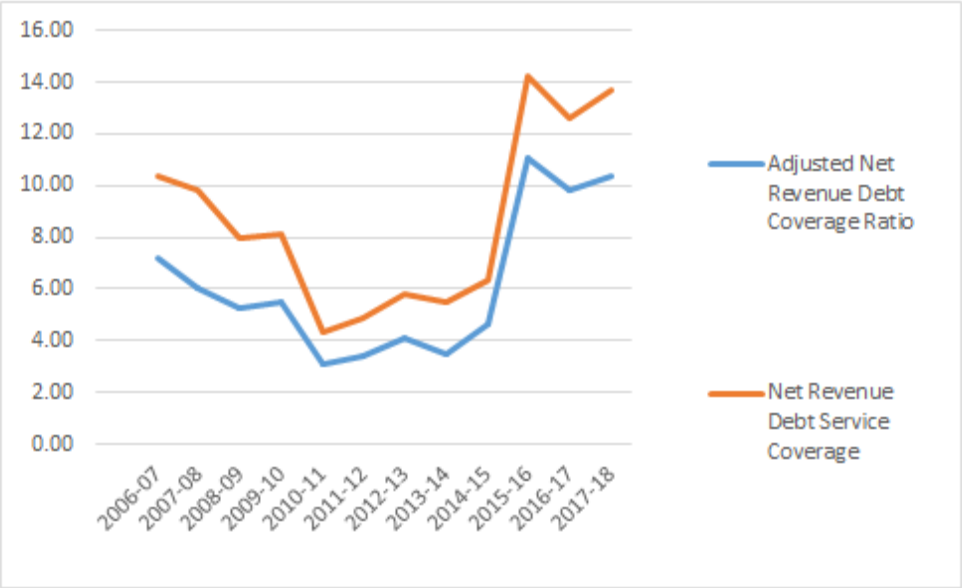
### Figure 4 - Debt Service Payment Schedule




| Figure 4 - Debt Service Payment Schedule-Existing Debt (in thousands) | Principal | Interest | Total (Excludes Subsidy Payment) |
|---|---|---|---|
| 2016-17 | $2,300,000 | $1,692,140 | $3,992,140 |
| 2017-18 | 2,405,000 | 1,615,015 | 4,020,015 |
| 2018-19 | 2,480,000 | 1,520,323 | 4,000,323 |
| 2019-20 | 2,580,000 | 1,417,790 | 3,997,790 |
| 2020-21 | 2,685,000 | 1,294,490 | 3,979,490 |
| 2021-22 | 2,785,000 | 1,152,226 | 3,937,226 |
| 2022-23 | 2,900,000 | 999,788 | 3,899,788 |
| 2023-24 | 3,015,000 | 839,343 | 3,854,343 |
| 2024-25 | 1,905,000 | 721,895 | 2,626,895 |
| 2025-26 | 1,975,000 | 595,995 | 2,570,995 |
| 2026-27 | 2,060,000 | 461,993 | 2,521,993 |
| 2027-28 | 2,145,000 | 322,424 | 2,467,424 |
| **Total** | **$29,235,000** | **$12,633,422** | **$41,868,422** |

An important financial performance metric is the Debt Service Coverage Ratio. The Board target coverage ratio is 2.0. As shown in Figure 5, Central San will meet the overall Debt Service Coverage Ratio of 2.0 as required.

## Figure 5 - Debt Service Coverage Ratio




Net Revenue: This ratio must be above 1.00 to meet the Debt Rate Covenant (Net Revenue / Total Debt Service). Adjusted Net Revenue = Net Revenue less Capital Improvement Fees (Connection Fees) and City of Concord Capital Charges. This ratio must be above 1.25 to meet the Debt Rate Covenant (Adjusted Net Revenue / Total Debt Service).

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# Operating Departments

On a day-to-day basis, the three Operating Departments carry out the mission of Central San to protect public health and the environment by providing exceptional customer service in the operation of our wastewater collection, treatment, recycled water, and household hazardous waste collection facilities. The departments are guided by Central San's Strategic Plan which provides direction and initiatives to help guide us in achieving our goals and objectives.

The following sections describe the responsibilities of each department and their operating budget needs. The total operating budget for Fiscal Year 2017-18 is $89.7 million.

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# Administration Department


The Administration Department consists of the Office of the General Manager, the Office of the Secretary of the District, General Counsel, Human Resources, and Administrative Services. The primary function of the Administration Department is to provide services that support the efficient operation of Central San, including administrative support to the General Manager; financial management; purchasing and materials management; information technology; risk management; and human resources. The Department is also responsible for advancing Central San's policy objectives with state and federal legislative bodies in addition to being responsible for interagency relations and public affairs.

**The Divisions that comprise this Department include:**

- Communication Services and Intergovernmental Relations
- Finance
- Human Resources
- Information Technology
- Purchasing and Materials Services
- Risk Management
- Office of the General Manager
- Office of the Secretary of the District

# Communication Services and Intergovernmental Relations

## OVERVIEW

This Division supports Central San's internal and external communication, government relations, community outreach, media relations, Central San publications, and student educational programming. It also oversees a contracted, full-service reprographics center which serves all Central San workgroups.

## Fiscal Year 2016-17 Accomplishments

### This Division had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 1 - Provide Exceptional Customer Service** | • Hosted a large-scale, award-winning 70th Anniversary outreach event that brought over 1,000 customers to Central San facilities to learn more about programs, services, operational work, and to take tours of the treatment plant and Household Hazardous Waste Collection Facility.<br>• Grew educational outreach through Central San's publications and programs reaching more students with Science Technology Engineering and Math Program, pollution prevention, and career development information.<br>• Developed video public service announcements that televised important and timely Central San customer messages and information reaching tens of thousands of service area viewers.<br>• Redesigned the standard Proposition 218 notice to customers, to a communication tool that increases customer awareness of Central San's work, needs, and future plans.<br>• Provided compelling outreach and engagement for the Comprehensive Wastewater Master Plan and its large infrastructure improvements.<br>• Successful completion of the second Central San Academy, a program which focuses on educating our customers on the mission of Central San and how it is fulfilled. |
| **Goal 3 - Be A Fiscally Sound and Effective Water Sector Utility** | • Negotiated $15,000 off the annual cost of Central San's newsletter to the public: *Pipeline.* |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | • Educational outreach conducted to staff on the environmental and cost saving benefits of printing in black and white and reducing paper printing.<br>• Created accounts for social media sites: Facebook, Twitter, YouTube and blog, rerouting resources to produce one *Pipeline* to reach different demographics.<br>• New logo to elucidate and modernize Central San's community presence. |

## Fiscal Years 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Number of students served by our education programs** | Greater than 2,200 per year |
| **Number of Central San employees attending annual customer service training** | At least 50% of all Central San staff |
| **Number of participants on treatment plant tours** | Greater than 150 participants per year |
| **Number of participants at speaker bureau presentations** | Greater than 400 participants per year |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of performance evaluations completed on time** | 100% |
| **Number of students attending Citizens Academy** | Greater than 30 participants per session |

## Fiscal Year 2017-18 Strategic Initiatives

### This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 - Provide Exceptional Customer Service** | Foster Customer Engagement and Awareness | Invest in business process changes, and technologies to effectively increase access to Central San information and promote customer care, convenience, and self-service | Customer Satisfaction |
| | | Increase customer understanding and support for key issues facing the Central San | Stakeholder Understanding and Support |
| | | Build and maintain relationships with federal, state and local elected officials and key stakeholder groups | Stakeholder Understanding and Support |
| | | Provide high quality customer service | Customer Satisfaction |
| | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success | Customer Satisfaction |
| | | Increase internal partnerships | Employee and Leadership Development |
| **Goal 4 - Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationships with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork | Employee and Leadership Development |

| | | | |
|---|---|---|---|
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering | Operational Optimization |

## Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $664,176 | $661,500 | $676,862 | $15,362 | 2% | $12,686 | 2% |
| Employee Benefits | $513,804 | $503,230 | $471,302 | ($31,928) | -6% | ($42,502) | -8% |
| Repairs & Maintenance | $1,000 | $1,000 | $1,000 | $0 | 0% | $0 | 0% |
| Professional & Legal Services | $2,600 | $2,600 | $2,600 | $0 | 0% | $0 | 0% |
| Outside Services | $409,000 | $340,500 | $399,000 | $58,500 | 17% | ($10,000) | -2% |
| Materials & Supplies | $61,675 | $61,675 | $61,675 | $0 | 0% | $0 | 0% |
| Other Expenses | $472,230 | $431,230 | $366,930 | ($64,300) | -15% | ($105,300) | -22% |
| Total | $2,124,485 | $2,001,735 | $1,979,369 | ($22,366) | -1% | ($145,116) | -7% |

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Communication Services and Intergovernmental Relations Manager** | 1.00 | 1.00 |
| **Community Affairs Representative** | 2.00 | 2.00 |
| **Graphics Technician** | 1.00 | 1.00 |
| **Media Production Technician** | 1.00 | 1.00 |
| **Public Information and Production Assistant** | 1.00 | 1.00 |
| **Total** | **6.00** | **6.00** |

| Limited Duration Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Graphic Design Summer Student** | 1.00 | 1.00 |
| **Total** | **1.00** | **1.00** |

## Significant Budget Adjustments

The Communication Services and Intergovernmental Relations Operating Budget for FY 2017-18 is $2.0 million, a $145,000 or 7% decrease over last year's budget. Outside of the overall changes in wages and benefits, discussed elsewhere, the main drivers for the change include renegotiation of the Pipeline customer newsletter contracts to reduce costs, further reduction of costs by changing the numbers of

issues for the publication from three to two newsletters per year, and the absence of a Proposition 218 Notice to customers in 2017, as typically the notice is only provided every two or more years.

# Finance

## OVERVIEW

This Division is responsible for maintaining internal controls over financial reporting of all Central San funds and accounts. The Division administers the transactions related to cash and investments, debt service, cash receipts, accounts payable, sewer service charges and all other revenues, payroll, pension, and capital assets. The Division is also responsible for the budget document preparation and coordinates the process with all other departments at Central San. Monthly financial statements are prepared, reviewed, and analyzed by the Division and submitted to the Board of Directors for their review. Central San is subject to an annual external audit which is also administered and coordinated by the Division. Subsequent to the audit, the Division assembles the Comprehensive Annual Financial Report which is submitted to the Board of Directors and the Government Finance Officers Association.

## Fiscal Year 2016-17 Accomplishments

### This Division had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 3 - Be a Fiscally Sound and Effective Water Sector Utility** | • Maintained a AAA credit rating with Standard & Poor's.<br>• Maintained a ratio of net operating revenue over debt service of at least 2:1.<br>• Implemented new rate structure and rate setting model.<br>• Maintained service affordability by keeping the sewer service charge below the median of other Bay Area agencies.<br>• Addressed the unfunded liabilities by fully funding the Other Post-Employment Benefits annual required contribution and paying an additional $2.5 million toward the unfunded liability.<br>• Implemented new IRS Section 115 Pension Trust in order to fund an additional $3.4 million in unfunded pension liabilities and have more control over market volatility.<br>• Received an unmodified (clean) audit opinion on the financial statements.<br>• 16th year of receiving the Government Finance Officers Association award for financial reporting excellence.<br>• Adopted updated Investment Policy for Central San.<br>• Developed and drafted Debt Management Policy in accordance with SB 1029 (pending Board review). |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | • Streamlined the budget development process by consolidating four budgets into one document.<br>• Implemented new tool to improve financial reporting (COGNOS). |

## Fiscal Year 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Standard and Poor's Credit Rating** | AAA |
| **Debt service coverage ratio** | Greater than 2.0 times |
| **Maintain service affordability** | Sewer Service Charge less than median of Bay Area agencies |
| **Actual reserves as a percentage of target** | 100% |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of performance evaluations completed on time** | 100% |

## Fiscal Year 2017-18 Strategic Initiatives

### This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 - Provide Exceptional Customer Service** | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success | Customer Satisfaction |
| | | Increase internal partnerships | Employee and Leadership Development |
| **Goal 3 - Be a Fiscally Sound and Effective Water Sector Utility** | Conduct Long Range Financial Planning | Ensure rate structure is consistent with cost of service principles | Financial Viability |
| | | Improve the application and processing of capacity fees for consistency across user classes | Financial Viability |
| | | Develop a long-range debt management policy | Financial Viability |
| | | Develop alternatives for new revenues and funding sources | Financial Viability |
| | Manage Costs | Perform targeted audits of critical/high risk functions | Enterprise Resiliency |
| **Goal 4 - Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork | Employee and Leadership Development |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering | Operational Optimization |

## Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $1,155,209 | $1,030,800 | $1,222,311 | $191,511 | 19% | $67,102 | 6% |
| Employee Benefits | $977,212 | $937,389 | $933,092 | ($4,297) | 0% | ($44,120) | -5% |
| Repairs & Maintenance | $1,000 | $500 | $1,000 | $500 | 100% | $0 | 0% |
| Professional & Legal Services | $113,750 | $130,250 | $225,750 | $95,500 | 73% | $112,000 | 98% |
| Outside Services | $223,500 | $234,305 | $145,900 | ($88,405) | -38% | ($77,600) | -35% |
| Materials & Supplies | $9,800 | $9,800 | $9,800 | $0 | 0% | $0 | 0% |
| Other Expenses | $26,930 | $13,230 | $33,130 | $19,900 | 150% | $6,200 | 23% |
| Total | $2,507,401 | $2,356,274 | $2,570,983 | $214,709 | 9% | $63,582 | 3% |

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Accountant** | 3.00 | 3.00 |
| **Accounting Technician III** | 3.00 | 3.00 |
| **Finance Administrator** | 2.00 | 2.00 |
| **Finance Manager** | 1.00 | 1.00 |
| **Payroll Analyst** | 1.00 | 1.00 |
| **Total** | **10.00** | **10.00** |

## Significant Budget Adjustments

The Finance Operating Budget for FY 2017-18 is $2.6 million, a $64,000 or 3% increase over last year. Outside of the overall changes in wages and benefits, discussed elsewhere, the main drivers of the change were due to additional funds added in Professional Services for internal audits, and Other Expenses for tuition reimbursement requests, offset by lower Outside Services for temporary help budgeted in FY 2017-18.

# Human Resources

## OVERVIEW

This Division manages all Human Resources services, including employee/labor relations; recruitment, testing and selection; classification and compensation; employee benefits administration; District-wide training; and organizational development.

## Fiscal Year 2016-17 Accomplishments

### This Division had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 4 - Develop and Retain a Highly Trained and Innovative Workforce** | • Filled 31 vacancies.<br>• Held various HR related topic “brown bags” open to all Central San employees.<br>• Scheduled 5 mandatory HR related trainings for all supervisors and managers.<br>• Developed and implemented Mentorship Program.<br>• Developed Ethics/Code of Conduct Training for all Central San staff.<br>• Conducted a Technical Writing Workshop for 30 Central San employees.<br>• Conducted a Project Management Boot Camp for 25 Central San employees.<br>• Implemented Management Academy for 25 Central San employees.<br>• Developed an Educator Externship in conjunction with the County Workforce Development Board.<br>• Implemented a streamlined Section 125 Flexible Spending Account plan which includes a debit card, mobile app, and third party administrator processing all claims.<br>• Implemented a mobile app (Ben IQ) which contains information on all Central San benefit plans.<br>• Conducted a Request For Proposal for Wellness provider, formalized the Wellness Committee by developing a Charter, created a Wellness Newsletter, and developed brand for all Wellness related communication.<br>• Joined CSAC-Excess Insurance Authority pool and Central San participated in their Dental and Employees Assistance Program plans which resulted in an annual cost savings of approximately $82,000.<br>• Implemented Hartford Supplemental Life Insurance.<br>• Completed a Total Compensation Study. |

## Fiscal Year 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Average time to fill vacancy (from request to hire)** | Less than 60 days |
| **Percentage turnover rate to remain at or below industry average** | Less than 3.4% |
| **Average annual training hours per employee** | Track in FY 2016-17, set target for FY 2017-18 |
| **Actual versus budgeted usage of tuition reimbursement** | Greater than 80% |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of performance evaluations completed on time** | 100% |

## Fiscal Year 2017-18 Strategic Initiatives

### This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 - Provide Exceptional Customer Service** | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success | Customer Satisfaction |
| | | Increase internal partnerships | Employee and Leadership Development |
| **Goal 4 - Develop and Retain a Highly Trained and Innovative Workforce** | Ensure Adequate Staffing and Training to Meet Current and Future Operational Levels | Develop and implement District-wide training needs | Employee and Leadership Development |
| | | Develop and train our future leaders | Employee and Leadership Development |
| | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork | Employee and Leadership Development |
| | | Sustain and grow collaborative relationships with the labor bargaining units | Stakeholder Understanding and Support |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering | Operational Optimization |

## Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $727,877 | $623,500 | $1,049,323 | $425,823 | 68% | $321,446 | 44% |
| Employee Benefits | $3,102,572 | $3,358,411 | $2,553,199 | ($805,212) | -24% | ($549,373) | -18% |
| Retiree Benefits | $5,362,300 | $5,083,978 | $5,946,000 | $862,022 | 17% | $583,700 | 11% |
| * Additional UAAL | $2,500,000 | $2,500,000 | $2,500,000 | $0 | 0% | $0 | 0% |
| Repairs & Maintenance | $0 | $0 | $7,500 | $7,500 | N/A | $7,500 | N/A |
| Professional & Legal Services | $126,100 | $83,500 | $166,450 | $82,950 | 99% | $40,350 | 32% |
| Outside Services | $249,300 | $302,300 | $319,200 | $16,900 | 6% | $69,900 | 28% |
| Materials & Supplies | $18,000 | $20,500 | $20,000 | ($500) | -2% | $2,000 | 11% |
| Other Expenses | $18,115 | $11,065 | $18,115 | $7,050 | 64% | $0 | 0% |
| Total | $12,104,264 | $11,983,254 | $12,579,787 | $596,533 | 5% | $475,523 | 4% |

* Certain costs relating to all Central San Employees or Retirees are centrally budgeted in HR:

- Salaries and wages for FY2017-18 includes $400,000 for Accrued Compensated Absences.
- Employee benefits includes $450,000 for Accrued Compensated Absences, $40,000 for Unemployment expenses, and $1,578,000 for OPEB contribution.
- Retiree benefits: all costs shown above are related to retirees including medical and health insurance, dental insurance, and life insurance.
- Additional UAAL: all costs shown above.

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Human Resources Analyst** | 4.00 | 3.00 |
| **Human Resource Manager** | 1.00 | 1.00 |
| **Senior Administrative Technician** | 1.00 | 1.00 |
| **Total** | **6.00** | **5.00** |

## Significant Budget Adjustments

The Human Resources Operating Budget for FY 2017-18 is $12.6 million, a $0.5 million or 4% increase over last year. This budget also includes funding for retiree benefits and the Other Post Employee Benefit (OPEB) contribution. The change in Salaries is related to the standard COLA increases and the moving of Accrued Compensated Absences and Unemployment Expenses to Human Resources, while offset by the transfer of a Training Coordinator (Human Resource Analyst) position to the Office of the General Manager for use as a Management Analyst position. The change in Employee Benefits is mainly due to a decrease in the required OPEB contribution, while the increase in Retiree Benefits is due to an increase in medical rates and new retirees. The increase in Professional & Legal Services is due to the Wellness program moving over from Risk Management, and the increase in Outside Services is due to labor negotiations and for a training consultant.

# Information Technology

## OVERVIEW

This Division supports all computer hardware, software, and telecommunications needs at Central San and assists with improvement and automation of Central San business processes.

## Fiscal Year 2016-17 Accomplishments

### This Division had many accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 1 - Provide Exceptional Customer Service** | • Centralized requests for IT support through a Helpdesk website portal and single phone extension to ensure timely replies and exceptional customer service.<br>• IT staff relocated to single office area for better communication and collaboration.<br>• Assumed control of mobile device program administration, transitioned from Purchasing & Materials Services. |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | • Installed new Wonderware SCADA servers for pumping stations.<br>• Rolled out more than 50 iPad tablets to staff for use with the new Cityworks CMMS system to improve efficiency and access to information in the field.<br>• Rolled out 8 Microsoft Surface tablets to Source Control staff to automate inspection process and provide current information in the field.<br>• Implemented conference room improvements including installation of 10 Smartboards.<br>• Implemented Microsoft Office 365 cloud tools including Office, Skype for Business, Microsoft Onedrive, Sharepoint and other tools.<br>• Provided staff training on tablet computers, smartboards, Office 365, Cognos reporting tools and more.<br>• Acquired rack space in City of Rocklin and installed remote storage equipment which is now being used to backup critical business systems remotely in real-time.<br>• Replaced and configured aging network switches in plant with new industrial switches.<br>• Improved Wi-Fi connectivity throughout our office buildings.<br>• Installed cell phone amplifiers in most work trucks at Collection System Operations to boost signals in remote areas.<br>• Installed and configured IT Pipes CCTV system in video trucks.<br>• Replaced old SunGard Reports with more than 20 new and improved business and financial reports.<br>• Implemented many security improvements. |

## Fiscal Year 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Information System uptime (excluding planned maintenance)** | 100% |
| **Data Backup and Recovery** | Zero Lost Data |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of performance evaluations completed on time** | 100% |

## Fiscal Year 2017-18 Strategic Initiatives

### This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 – Provide Exceptional Customer Service** | Foster Customer Engagement and Awareness | Invest in business process changes, and technologies to effectively increase access to Central San information and promote customer care, convenience, and self-service | Customer Satisfaction |
| | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success | Customer Satisfaction |
| | | Increase internal partnerships | Employee and Leadership Development |
| **Goal 4 – Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork | Employee and Leadership Development |
| **Goal 5 – Maintain a Reliable Infrastructure** | Protect Central San Personnel and Assets from Threats and Emergencies | Enhance our capability to mitigate, prepare, respond and recover from emergencies | Enterprise Resiliency |
| | | Evaluate and implement appropriate improvements to security program to meet new or evolving threats | Enterprise Resiliency |
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering | Operational Optimization |
| | Encourage the review and testing of promising and leading technology | Expand and improve the use of cost effective mobile computing and communication technologies | Operational Optimization |

## Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $1,393,793 | $1,431,700 | $1,508,704 | $77,004 | 5% | $114,911 | 8% |
| Employee Benefits | $1,195,703 | $1,147,368 | $1,219,553 | $72,185 | 6% | $23,850 | 2% |
| Utilities | $95,040 | $102,600 | $146,440 | $43,840 | 43% | $51,400 | 54% |
| Repairs & Maintenance | $767,650 | $765,650 | $886,750 | $121,100 | 16% | $119,100 | 16% |
| Outside Services | $196,000 | $125,000 | $125,000 | $0 | 0% | ($71,000) | -36% |
| Materials & Supplies | $10,200 | $18,200 | $6,200 | ($12,000) | -66% | ($4,000) | -39% |
| Other Expenses | $42,565 | $37,775 | $45,935 | $8,160 | 22% | $3,370 | 8% |
| Total | $3,700,951 | $3,628,293 | $3,938,582 | $310,289 | 9% | $237,631 | 6% |

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Information Technology Analyst** | 1.00 | 1.00 |
| **Information Technology Manager** | 1.00 | 1.00 |
| **Information Technology Supervisor** | 2.00 | 2.00 |
| **Programmer Analyst** | 1.00 | 1.00 |
| **Project Manager/Business Analyst** | 1.00 | 1.00 |
| **System Administrator** | 2.00 | 2.00 |
| **Technical Support Analyst** | 3.00 | 3.00 |
| **Total** | **11.00** | **11.00** |

| Limited Duration Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Computer Technician Summer Student** | 1.00 | 0.00 |
| **Total** | **1.00** | **0.00** |

## Significant Budget Adjustments

The Information Technology Operating Budget for FY 2017-18 is $3.9 million, a $0.2 million or 6% increase over last year. Outside of the changes in wages and benefits, discussed elsewhere, the main drivers for the change are increased costs for Information Technology backup, ESRI, Cityworks and other various software maintenance contracts, and the transfer of Information Technology maintenance services that were previously in the Engineering and Operations budget in Repairs & Maintenance, the addition IPads in Utilities offset by decrease cost in Outside Services for less need for consultants & temporary employees.

# Purchasing and Material Services

## OVERVIEW

This Division provides the necessary materials, supplies, equipment, services and information to support Central San operations. The Division is responsible for contracting and procurement for all Central San departments (except construction contracts), ensuring compliance with applicable federal, state and local regulations. Central San's warehouse inventories, receives, and distributes supplies, materials and equipment to all departments in addition to inventory control analysis and surplus disposition.

## Fiscal Year 2016-17 Accomplishments

### This Division had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 3 - Be a Fiscally Sound and Effective Water Sector Utility** | • Completed Enterprise Resource Program system optimization session with SunGard, completed select improvements and identified limitations.<br>• Pursuing alternative contract management software solutions where limitations in existing system were present.<br>• Promoted open competition and equal opportunity for qualified suppliers and service providers by successfully soliciting and awarding high-level service and commodity-based contracts.<br>• Progressed on potential implementation of California Uniform Construction Cost Accounting streamlined bidding procedures with completion of consultant's study. Pending further steps in light of California court case allowing unlimited force account work instead of this streamlined approach.<br>• Streamlined purchase requisition approval process by reducing the number of approval levels and assigning approval levels by position where possible.<br>• Continued inventory cycle count program and maintained a 97 percent accuracy rate.<br>• Trained and transitioned mobile device program to IT.<br>• Provided procurement card refresher training to all users. |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | • Earned the Achievement of Excellence in Procurement Award for innovation, professionalism, productivity, e-procurement, and leadership attributes of the procurement organization for the sixth consecutive year.<br>• Pilot tested a transmittal memo with Capital Projects Division for eventual rollout District-wide. This memo consolidates the information needed to process a consultant agreement so it can be captured in one place. |

## Fiscal Years 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of performance evaluations completed on time** | 100% |

# Fiscal Year 2017-18 Strategic Initiatives

## This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 - Provide Exceptional Customer Service** | Foster Customer Engagement and Awareness | Invest in business process changes and technologies to effectively increase access to Central San information and promote customer care, convenience, and self-service | Customer Satisfaction |
| | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success | Customer Satisfaction |
| | | Increase internal partnerships | Employee and Leadership Development |
| **Goal 4 - Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork | Employee and Leadership Development |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering | Operational Optimization |

# Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $857,600 | $846,500 | $1,001,079 | $154,579 | 18% | $143,479 | 17% |
| Employee Benefits | $782,607 | $750,456 | $834,953 | $84,497 | 11% | $52,346 | 7% |
| Repairs & Maintenance | $23,000 | $15,000 | $23,000 | $8,000 | 53% | $0 | 0% |
| Professional & Legal Services | $35,000 | $5,000 | $35,000 | $30,000 | 600% | $0 | 0% |
| Outside Services | $29,000 | $9,200 | $29,000 | $19,800 | 215% | $0 | 0% |
| Materials & Supplies | $14,000 | $14,000 | $14,000 | $0 | 0% | $0 | 0% |
| Other Expenses | $21,900 | $12,900 | $21,900 | $9,000 | 70% | $0 | 0% |
| Total | $1,763,107 | $1,653,056 | $1,958,932 | $305,876 | 19% | $195,825 | 11% |

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Materials Coordinator** | 2.00 | 1.00 |
| **Materials Services Supervisor** | 1.00 | 1.00 |
| **Purchasing and Materials Manager** | 1.00 | 1.00 |
| **Senior Buyer** | 3.00 | 3.00 |
| **Senior Materials Coordinator** | 1.00 | 2.00 |
| **Total** | **8.00** | **8.00** |

| Limited Duration Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Warehouse Summer Student** | 1.00 | 1.00 |
| **Total** | **1.00** | **1.00** |

## Significant Budget Adjustments

The Purchasing and Materials Services Operating Budget for FY 2017-18 is $2.0 million, a $0.2 million or 11% increase over last year. Wages and benefits increased related to the cost of living adjustments agency-wide, and an upcoming recruitment which will provide an overlap with the incumbent to ensure optimal transition for succession planning.

# Risk Management

## OVERVIEW

This Division protects Central San from loss or damage to its personnel and assets. It manages Workers Compensation, liability claims, security programs, insurance procurement, self-insurance funding, contract and insurance review, litigation support, and Central San's Emergency Preparedness and Response Programs.

## Fiscal Year 2016-17 Accomplishments

### This Division had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 3 – Be a Fiscally Sound and Effective Water Sector Utility** | • Prepared and presented Risk Management Annual Report.<br>• Reduced the average cost of overflow claims to under $5,000 (to 3/31/17).<br>• Reduced the average cost of other liability claims to under $2,500 (to 3/31/17).<br>• Provided Temporary Modified Duty to 93% of employees with occupational injuries.<br>• Initiated Public Assistance application process through California Office of Emergency Services for January 2017 Winter Storms. |
| **Goal 5 – Maintain a Reliable Infrastructure** | • Initiated work on the Security Assessment Master Plan.<br>• Conducted physical security assessments of all Central San facilities.<br>• Updated the Emergency Operations Plan.<br>• Continued development of Continuity Plan.<br>• Prepared and presented Emergency Management Annual Report. |

## Fiscal Years 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Workers Compensation experience modifier** | Less than 1.0 |
| **Return to Work** | Provide modified duty for greater than 80% of occupational injuries |
| **Self-insurance reserves as a percentage of target** | 100% |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of performance evaluations completed on time** | 100% |

# Fiscal Year 2017-18 Strategic Initiatives

## This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **GOAL 1 – Provide Exceptional Customer Service** | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success | Customer Satisfaction |
| | | Increase internal partnerships | Employee and Leadership Development |
| **Goal 3 – Be a Fiscally Sound and Effective Water Sector Utility** | Manage Costs | Evaluate and implement risk management practices to minimize loss | Enterprise Resiliency |
| **Goal 4 – Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork | Employee and Leadership Development |
| **Goal 5 – Maintain a Reliable Infrastructure** | Manage Assets Optimally Throughout Their Lifecycle | Update the Consequence of Failure Matrices | Enterprise Resiliency |
| | Protect Central San Personnel and Assets from Threats and Emergencies | Enhance our capability to mitigate, prepare, respond and recover from emergencies | Enterprise Resiliency |
| | | Evaluate and implement appropriate improvements to security program to meet new or evolving threats | Enterprise Resiliency |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering | Operational Optimization |

## Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $238,944 | $206,600 | $240,149 | $33,549 | 16% | $1,205 | 1% |
| Employee Benefits | $228,392 | $218,914 | $196,621 | ($22,293) | -10% | ($31,771) | -14% |
| Repairs & Maintenance | $35,000 | $16,000 | $57,500 | $41,500 | 259% | $22,500 | 64% |
| Professional & Legal Services | $61,800 | $38,120 | $28,800 | ($9,320) | -24% | ($33,000) | -53% |
| Outside Services | $408,000 | $350,000 | $423,000 | $73,000 | 21% | $15,000 | 4% |
| Self-Insurance Expense | $920,000 | $920,000 | $585,000 | ($335,000) | -36% | ($335,000) | -36% |
| Materials & Supplies | $103,000 | $18,000 | $59,000 | $41,000 | 228% | ($44,000) | -43% |
| Other Expenses | $13,650 | $11,050 | $14,650 | $3,600 | 33% | $1,000 | 7% |
| Total | $2,008,786 | $1,778,684 | $1,604,720 | ($173,964) | -10% | ($404,066) | -20% |

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Risk Management Administrator** | 1.00 | 1.00 |
| **Risk Management Analyst** | 0.00 | 1.00 |
| **Risk Management Technician** | 1.00 | 0.00 |
| **Total** | **2.00** | **2.00** |

| Limited Duration Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Clerical Summer Student** | 1.00 | 0.00 |
| **Total** | **1.00** | **0.00** |

## Significant Budget Adjustments

The Risk Management Operating Budget for FY 2017-18 is $1.6 million, a $0.4 million or 20% decrease from the FY 2016-17 budget. Outside of the overall changes in wages and benefits, discussed elsewhere, the main drivers for change are a reduction in the self-insurance expense and employee benefits due to the turnover of an employee with anticipated replacement of an employee with a lower cost benefit package. The increases to the Repairs and Maintenance and the Materials and Supplies lines items reflect anticipated purchases and maintenance of non-capital security devices. The Professional and Legal Services decrease is due to the Wellness Program being moved to Human Resources budget in FY 2017-18.

# Office of the General Manager and Office of the Secretary of the District

## Office of the General Manager - Overview

The primary mission of the Office of the General Manager is to work with the Board of Directors to establish policies and procedures and the overall goals and Strategic Plan of Central San. The General Manager reports directly to the Board of Directors and provides general oversight to all Central San operations, interagency relations, legislative activities, communications, and the Strategic Plan.

## Office of the General Manager - Fiscal Year 2016-17 Accomplishments and Fiscal Year 2017-18 Strategic Initiatives

The General Manager oversees all operations of Central San. This office provides direction, support and resources to the Departments to effectively and efficiently accomplish the Mission, Vision and Goals of Central San. The accomplishments and Fiscal Year 2017-18 Strategic Initiatives for Central San are embodied in each of the individual Divisions and Programs. Highlights of Central San's accomplishments are included in the General Manager's message at the beginning of the Budget Book. Central San also documented major efficiency and operational improvements in a report entitled "Optimizations and Opportunities,", and documented over 200 standard operating procedures District-wide.

## Office of the Secretary of the District - Overview

The Office of the Secretary of the District provides administrative support to the five elected Board of Directors and manages the Board of Directors and Committee meeting process, including the preparation and distribution of agendas and minutes, and the publication of notices of public hearings. It coordinates compliance with Fair Political Practices Commission regulations and the Brown Act, receives legal claims against Central San, and coordinates ethics training and Brown Act training for the Board of Directors and staff. It also manages Central San's Records Management Program and responds to Public Records Act requests.

# Office of the Secretary of the District

## Fiscal Year 2016-17 Accomplishments

### The Office of the Secretary of the District had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 1 – Provide Exceptional Customer Service** | • Coordinated meetings for Board of Directors liaisons with representative cities and agencies.<br>• Updated "Guide to the Board Meeting Process" for use by staff.<br>• Adopted Board Code of Ethics/Conduct Policy and coordinated Board Self-Assessment Workshop.<br>• Installed monitor in lobby for customer information and standardized clock for bid openings.<br>• Addition of single-camera video recording equipment for videotaping Board Meetings for better transparency with the public.<br>• Board Room upgrades to provide staff and Board with USB ports for charging tablets.<br>• Facilitated Electronic Document Management Advisory Group, comprised of employees District-wide to develop and modify procedures standardizing the organization, input and management of electronic documents. |
| **Goal 3 – Be a Fiscally Sound and Effective Water Sector Utility** | • Reduced publication costs for legal notices to contractors. |
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | • Piloted NovusAgenda management software for Board and Committee agendas.<br>• Incorporated use of Smart Board technology in Board Workshops and Board Committee meetings.<br>• Updated 2016 Board Member Handbook.<br>• Conducted employee workshop on use of Laserfiche electronic document management software. |

## Fiscal Year 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Number of students attending Citizens Academy** | Greater than 30 participants per session |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of performance evaluations completed on time** | 100% |

# Fiscal Year 2017-18 Strategic Initiatives

## This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 – Provide Exceptional Customer Service** | Foster Customer Engagement and Awareness | Invest in business process changes and technologies to effectively increase access to Central San information and promote customer care, convenience, and self-service | Customer Satisfaction |
| | | Increase customer understanding and support for key issues facing Central San | Stakeholder Understanding and Support |
| | | Provide high quality customer service | Customer Satisfaction |
| | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success | Customer Satisfaction |
| | | Increase internal partnerships | Employee and Leadership Development |
| **Goal 4 – Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork | Employee and Leadership Development |
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering | Operational Optimization |

# Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $1,502,326 | $1,596,800 | $1,366,016 | ($230,784) | -14% | ($136,310) | -9% |
| Employee Benefits | $967,263 | $1,411,980 | $619,571 | ($792,409) | -56% | ($347,692) | -36% |
| Director Fees & Expenses | $168,555 | $152,055 | $168,631 | $16,576 | 11% | $76 | 0% |
| Repairs & Maintenance | $10,800 | $5,400 | $10,800 | $5,400 | 100% | $0 | 0% |
| Professional & Legal Services | $145,000 | $150,000 | $150,000 | $0 | 0% | $5,000 | 3% |
| Outside Services | $246,000 | $117,300 | $146,000 | $28,700 | 24% | ($100,000) | -41% |
| Materials & Supplies | $20,150 | $20,150 | $20,150 | $0 | 0% | $0 | 0% |
| Other Expenses | $559,905 | $323,905 | $148,325 | ($175,580) | -54% | ($411,580) | -74% |
| Total | $3,619,999 | $3,777,590 | $2,629,493 | ($1,148,097) | -30% | ($990,506) | -27% |

# Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Administrative Services Supervisor** | 1.00 | 1.00 |
| **Assistant to the Secretary of the District** | 1.00 | 1.00 |
| **Director of Finance & Administration** | 1.00 | 1.00 |
| **Executive Assistant** | 1.00 | 1.00 |
| **General Manager** | 1.00 | 1.00 |
| **Secretary of the District** | 1.00 | 1.00 |
| **Senior Administrative Technician** | 3.00 | 3.00 |
| **Senior Administrative Assistant** | 1.00 | 1.00 |
| **Management Analyst** | 0.00 | 1.00 |
| **Total** | **10.00** | **11.00** |

| Limited Duration Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Clerical Summer Student** | 1.00 | 1.00 |
| **Total** | **1.00** | **1.00** |

# Significant Budget Adjustments

The Office of the General Manager/Office of the Secretary of the District's Operating Budget for FY 2017-18 is $2.6 million, a $1.0 million or 27% decrease over FY 2016-17. The changes in Salaries and Benefits are related to the standard COLA increases and the moving of Accrued Compensated Absences

and Unemployment Expenses to Human Resources, while offset by the transfer of a Training Coordinator (Human Resources Analyst) position to the Office of the General Manager for use as a Management Analyst position. Other drivers for change are the transfer of the NovusAgenda Software and support to IT and no Board election expenses for FY 2017-18.

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# Engineering and Technical Services Department

The Engineering and Technical Services Department consists of three Divisions that report to the Director of Engineering and Technical Services. The primary functions of the Engineering and Technical Services Department are the planning, design, and construction or rehabilitation of treatment plant, collection system, and recycled water infrastructure; development services, including right of way, property management, development inspection, mainline plan review, and program management in resource recovery; environmental compliance monitoring of industrial businesses; regulatory compliance and permit monitoring; laboratory analysis and management of the Household Hazardous Collection Waste Facility.

**The Divisions that comprise this Department include:**

- Capital Projects
- Environmental and Regulatory Compliance
- Planning and Development Services

# Capital Projects Division

## OVERVIEW

This Division conducts and manages the design, public bidding, and construction of projects to improve or rehabilitate our wastewater treatment plant, pumping stations, collection system pipelines, general facilities modifications, safety improvements, and recycled water infrastructure projects. In addition, this Division oversees the computer aided design (CAD) and survey groups and works as one of the primary engineering resources at Central San.

## Fiscal Year 2016-17 Accomplishments

### This Division had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 1 – Provide Exceptional Customer Service** | • Received 100% average customer satisfactory feedback on the Lafayette Sewer Renovations – Phase 10 Construction Project.<br>• Received 94% average customer satisfactory feedback on the North Orinda Sewer Renovations – Phase 6 Construction Project. |
| **Goal 5 – Maintain a Reliable Infrastructure** | • Construction progress of the Pleasant Hill Grayson Creek Trunk Sewer Project (total project cost of $13.7 million). This project will help relieve the capacity limited sewers in Pleasant Hill and allow for future renovations and coordination with the anticipated paving program in Pleasant Hill, specifically Pleasant Hill Road. As of April 2017, 70% of the 10,000 feet of sewers have been installed.<br>• Replaced approximately 3.0 miles of various sewer mains (primarily 6-inch vitrified clay sewers) with 8-inch sewers in Lafayette, Orinda, and Walnut Creek.<br>• Designed, bid, and awarded three collection system sewer replacement projects, totaling up to 5 miles of new sewers, for Walnut Creek, Lafayette, and Martinez.<br>• Completed construction of three treatment plant projects (Safety Enhancements - Phase 4, Laboratory Chiller Replacement, and the Sub 16 Switchgear electrical project).<br>• Started construction of two critical treatment plant projects (Headworks Screening Upgrades and the Pump and Blower Building Seismic).<br>• Initiated the design of the Solids Handling Facilities Improvements – Phase 1 project, which will replace the aging wet scrubber on the incinerators and other critical equipment replacement in the Solids Conditioning Building at the treatment plant, such as the centrifuges. |
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | • Design and bid two treatment plant projects (Fire Protection System Phase 2 and Piping Renovations Phase 9).<br>• Design, bid, and awarded the Cogen Energy Optimization Project to increase energy efficiency and reduce emissions for the treatment plant.<br>• Built a pilot-scale facility and began testing on a newer air pollution control technology.<br>• Issued a request for interest in innovative BioEnergy projects, such as gasification and other thermal solids energy production projects. |

## Fiscal Years 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Miles of pipeline replaced** | Greater than 1% of assets |
| **Capital expenditures as a percentage of capital budgeted cash flow** | Greater than 90% |
| **Average customer satisfaction rating** | Greater than 95% |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of evaluations completed on time** | 100% |

## Fiscal Year 2017-18 Strategic Initiatives

### This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 - Provide Exceptional Customer Service** | Foster Customer Engagement and Awareness | Provide high quality customer service by conducting public meetings and private home owner meetings on collection system renovation projects, including full time inspection on easement construction activities | Customer Satisfaction |
| | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success | Customer Satisfaction |
| | | Increase internal partnerships | Employee and Leadership Development |
| **Goal 4 - Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork and training | Employee and Leadership Development |
| **Goal 5 - Maintain a Reliable Infrastructure** | Manage Assets Optimally Throughout Their Lifecycle | Implement Board approved capital projects and design new projects based on the condition assessments provided under the Comprehensive Wastewater Master Plan (CWMP) Evaluations | Infrastructure Strategy and Performance |
| | Facilitate Long-Term Capital Renewal and Replacement | Integrate the data from the Asset Management Program into the analysis of long term Capital Improvement needs | Infrastructure Strategy and Performance |
| | | Implement business case evaluations, including life-cycle cost, into proposals for new CIP projects that were not identified in the CWMP to determine most effective projects and solutions | Infrastructure Strategy and Performance |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and develop program management procedures | Operational Optimization |

## Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $1,879,280 | $1,898,780 | $1,887,522 | ($11,258) | -1% | $8,242 | 0% |
| Employee Benefits | ($887,526) | ($929,855) | ($1,279,905) | ($350,050) | 38% | ($392,379) | 44% |
| Utilities | $24,000 | $17,043 | $21,600 | $4,557 | 27% | ($2,400) | -10% |
| Repairs & Maintenance | $19,500 | $3,050 | $3,500 | $450 | 15% | ($16,000) | -82% |
| Professional & Legal Services | $0 | $0 | $0 | $0 | N/A | $0 | N/A |
| Outside Services | $73,225 | $47,950 | $44,725 | ($3,225) | -7% | ($28,500) | -39% |
| Materials & Supplies | $32,300 | $31,700 | $30,700 | ($1,000) | -3% | ($1,600) | -5% |
| Other Expenses | $59,125 | $38,200 | $58,280 | $20,080 | 53% | ($845) | -1% |
| Total | $1,199,904 | $1,106,868 | $766,422 | ($340,446) | -31% | ($433,482) | -36% |

*The staff in this Division is budgeted with the Capital Improvements Program. As a result, 85% of their salary and benefit expenses are paid for by the projects identified in the Capital Improvements Budget.

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Administrative Services Supervisor** | 1.00 | 0.00 |
| **Administrative Assistant** | 1.00 | 2.00 |
| **Assistant Engineer** | 8.00 | 8.00 |
| **Assistant Land Surveyor** | 2.00 | 2.00 |
| **Associate Engineer** | 7.00 | 7.00 |
| **Capital Projects Division Manager** | 1.00 | 1.00 |
| **Engineering Assistant III** | 1.00 | 1.00 |
| **Engineering Technician I/II** | 1.00 | 0.00 |
| **Engineering Technician III** | 3.00 | 3.00 |
| **Land Surveyor** | 1.00 | 1.00 |
| **Senior Engineer** | 2.00 | 2.00 |
| **Senior Engineering Assistant** | 1.00 | 1.00 |
| **Total** | **29.00** | **28.00** |

| Limited Duration Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Engineering Assistant Summer Student** | 3.00 | 4.00 |
| **Co-op** | 3.00 | 3.00 |
| **Total** | **6.00** | **7.00** |

## Significant Budget Adjustments

The Capital Projects Budget for FY 2017-18 is $766,000, a $0.4 million or 36% decrease over last year. Outside of the overall changes in wages and benefits, discussed elsewhere, the decrease in costs were mainly due to the transfer of repairs and maintenance of software to the Information Technology Division and the reduced outside services expenses for the Survey group. The Administration Services Supervisor O&M cost was transferred from Capital Projects Division to the Planning and Development Division O&M cost.

# Environmental and Regulatory Compliance Division

## OVERVIEW

This Division oversees and ensures that Central San activities and operations are in compliance with applicable federal, state, and local environmental laws, regulations, and policies. The Division ensures Central San's permitted businesses and industrial customers comply with all applicable requirements to protect the environment as well as Central San's assets; manages the Household Hazardous Waste Collection Program and Residential Recycled Water Fill Station; receives and interprets laboratory data and applies results to regulatory requirements, ensuring the treatment plant's effluent meets all water quality standards; evaluates treatment plant operations to ensure compliance with all air pollution control standards; evaluates the effectiveness of regulatory compliance programs; develops and implements new programs as mandated by legislation and/or policy; monitors and analyzes legislation and new regulations that impact regulatory compliance; and represents Central San before boards, political bodies, committees, and the general public.

## Fiscal Year 2016-17 Accomplishments

### This Division had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 2 - Meet All Regulatory Requirements** | • Prepared all NPDES required reports to the Regional Water Quality Control Board (individual NPDES Permit, Nutrient Watershed Permit).<br>• Prepared NPDES Report of Waste Discharge for the Regional Water Quality Control Board.<br>• Prepared all required reports to satisfy Title V Permit requirements.<br>• Prepared the 2016 greenhouse gas inventory to the California Air Resource Board.<br>• Developed and implemented a permit matrix of all regulatory permits within Central San.<br>• Created new standard operating procedures for workflows related to preventing and responding to potential violations.<br>• Completed all required monitoring and analyses. |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | • 24,000 visits to the Household Hazardous Waste Collection Facility by residents, small businesses, reuse customers, and retail partners (through March 2017). |

## Fiscal Years 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **NPDES Compliance** | Zero violations |
| **Title V Compliance** | Zero violations |
| **Recycled Water Title 22 Compliance** | Zero violations |
| **Annual source controls inspections completed on time** | 100% |
| **Operating expenditures as percentage of operating budget** | Greater than 90% |
| **Percentage of evaluations completed on time** | 100% |

# Fiscal Year 2017-18 Strategic Initiatives

## This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 - Provide Exceptional Customer Service** | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success | Customer Satisfaction |
| | | Increase internal partnerships | Employee and Leadership Development |
| **Goal 2 - Strive to Meet Regulatory Requirements** | Strive to Achieve 100% Permit Compliance in Air, Water, Land and Other Regulations | Implement new Treatment Plant NPDES Permit | Product Quality |
| | | Meet existing regulations and plan for future regulations | Product Quality |
| | | Foster relationships with regulatory agencies | Stakeholder Understanding and Support |
| | | Monitor and track proposed and pending legislation/regulatory changes that may impact Central San operations | Stakeholder Understanding and Support |
| | | Actively manage GHG emissions in the most cost effective and responsible manner | Community Sustainability |
| **Goal 4 - Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork | Employee and Leadership Development |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering | Operational Optimization |

## Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $3,412,647 | $3,541,347 | $3,542,344 | $997 | 0% | $129,697 | 4% |
| Employee Benefits | $2,672,956 | $2,719,694 | $2,670,133 | ($49,561) | -2% | ($2,823) | 0% |
| Utilities | $32,700 | $13,822 | $24,300 | $10,478 | 76% | ($8,400) | -26% |
| Repairs & Maintenance | $106,500 | $83,300 | $110,000 | $26,700 | 32% | $3,500 | 3% |
| Hauling & Disposal | $423,000 | $431,600 | $474,925 | $43,325 | 10% | $51,925 | 12% |
| Professional & Legal Services | $6,000 | $5,000 | $6,000 | $1,000 | 20% | $0 | 0% |
| Outside Services | $859,200 | $796,301 | $570,500 | ($225,801) | -28% | ($288,700) | -34% |
| Materials & Supplies | $286,700 | $293,200 | $300,200 | $7,000 | 2% | $13,500 | 5% |
| Other Expenses | $133,639 | $422,587 | $147,302 | ($275,285) | -65% | $13,663 | 10% |
| Other Expenses-BACWA | $310,000 | $0 | $605,816 | $605,816 | N/A | $295,816 | 95% |
| Total | $8,243,342 | $8,306,851 | $8,451,520 | $144,669 | 2% | $208,178 | 3% |

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Administrative Assistant** | 1.00 | 1.00 |
| **Assistant Engineer** | 1.00 | 2.00 |
| **Associate Engineer** | 2.00 | 1.00 |
| **Chemist I/II** | 5.00 | 5.00 |
| **Chemist III** | 1.00 | 1.00 |
| **Environmental and Regulatory Compliance Division Manager** | 1.00 | 1.00 |
| **Environmental Compliance Inspector I/II** | 6.00 | 6.00 |
| **Environmental Compliance Superintendent** | 1.00 | 1.00 |
| **Household Hazardous Waste Supervisor** | 1.00 | 1.00 |
| **Household Hazardous Waste Technician I/II** | 3.00 | 3.00 |
| **Laboratory Superintendent** | 1.00 | 1.00 |
| **Senior Chemist** | 1.00 | 1.00 |
| **Senior Engineer** | 1.00 | 1.00 |
| **Senior Environmental Compliance Inspector** | 2.00 | 2.00 |
| **Senior Household Hazardous Waste Technician** | 2.00 | 2.00 |
| **Total** | **29.00** | **29.00** |

| Limited Duration Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Laboratory Assistant Summer Student** | 1.00 | 2.00 |
| **Co-op** | 2.50 | 1.50 |
| **Total** | **3.50** | **3.50** |

## Significant Budget Adjustments

The Environmental and Regulatory Compliance Operating Budget for FY 2017-18 is $8.5 million, a $0.2 million or 3% increase over last year. Outside of the overall changes in wages and benefits, discussed elsewhere, the main drivers for the change is the decrease in utilities and outside services, and the increase in regulatory fees. Also, changed the position of Associate Engineer to Assistant Engineer.

# Planning and Development Services Division

## OVERVIEW

This Division provides planning and applied research for Central San's collection system, treatment plant, and recycled water facilities and programs; oversees asset management, geographic information systems (GIS) and computerized maintenance management systems (CMMS); financial planning for rates, connection fees, permits and sewer service charges; and development services, including right of way, property management, development inspection, permit counter operations, and mainline plan review.

## Fiscal Year 2016-17 Accomplishments

### This Division had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 5 - Maintain a Reliable Infrastructure** | • Completed the Comprehensive Wastewater Master Plan for the collection system and the treatment plant and incorporated its recommendations into the Capital Improvement Plan.<br>• Completed implementation of a new CMMS platform called Cityworks®. CSO and Plant Maintenance are now on the same platform.<br>• Completed asset register for Pumping Stations and Treatment Plant assets.<br>• Completed implementation of Infoworks® hydrodynamic model and flow calibration. The output was included in the Comprehensive Wastewater Master Plan and training on its use will continue.<br>• Completed implementation of InfoMaster software, used to prioritize and schedule pipe rehabilitation in FY2017-18 CIP.<br>• Commenced studies to optimize treatment plant secondary and solids processes. The goals include reduced future capital projects work and increased operating efficiencies. |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | • Awarded a $1.2 million grant from the Department of Energy for a multi-agency coalition to plan and design a 3-5 dry ton per day innovative hydrothermal bioenergy pilot project.<br>• Pursuing public-private partner interest in a Bioenergy Facility that will produce renewable energy and process a portion of Central San's solids.<br>• Pursuing private-partner interest in leasing treatment plant property for solar farm development. |

## Fiscal Years 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Average customer satisfaction rating on permit counter interactions** | Greater than 95% |
| **Complete implementation of the InfoMaster®** | By the First Quarter of 2017 |
| **kWh of solar power produced at CSO and HHW** | Greater than 200 kWh per year (reported as a rolling average) |
| **Pilot Test new and promising technology** | Greater than 3 pilot tests or reviews per year |
| **Present research papers and finding** | Greater than 3 papers per year |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of performance evaluations completed on time** | 100% |

# Fiscal Year 2017-18 Strategic Initiatives

## This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 - Provide Exceptional Customer Service** | Foster Customer Engagement and Awareness | Invest in business process changes and technologies to effectively increase access to Central San information and promote customer care, convenience and self-service | Customer Satisfaction |
| | | Provide high quality customer service | Customer Satisfaction |
| | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success | Customer Satisfaction |
| | | Increase internal partnerships | Employee and Leadership Development |
| **Goal 3 - Be a Fiscally Sound and Effective Water Sector Utility** | Conduct Long Range Financial Planning | Ensure rate structure is consistent with cost of service principles | Financial Viability |
| | | Improve the application and processing of capacity fees for consistency across user classes | Financial Viability |
| | | Develop alternatives for new revenues and funding sources | Financial Viability |
| **Goal 4 - Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork | Employee and Leadership Development |
| **Goal 5 - Maintain a Reliable Infrastructure** | Facilitate Long-Term Capital Renewal and Replacement | Integrate the data from the Asset Management Program into the analysis of long term Capital Improvement needs | Infrastructure Strategy and Performance |
| | | Implement business case evaluations, including life-cycle cost, into proposals for new CIP projects to determine most effective projects and solutions | Infrastructure Strategy and Performance |
| **Goal 6 - Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering | Operational Optimization |
| | Reduce reliance on Non-Renewable Energy | Explore opportunities for self-generation, conservation and efficiency based on the approved Comprehensive Wastewater Master Plan | Community Sustainability |

## Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $3,685,044 | $3,929,544 | $4,464,830 | $535,286 | 14% | $779,786 | 21% |
| Employee Benefits | $1,770,926 | $1,868,458 | $2,278,748 | $410,290 | 22% | $507,822 | 29% |
| Utilities | $120,400 | $136,500 | $137,300 | $800 | 1% | $16,900 | 14% |
| Repairs & Maintenance | $59,400 | $30,850 | $59,400 | $28,550 | 93% | $0 | 0% |
| Professional & Legal Services | $115,000 | $161,000 | $165,000 | $4,000 | 2% | $50,000 | 43% |
| Outside Services | $579,100 | $472,350 | $569,542 | $97,192 | 21% | ($9,558) | -2% |
| Materials & Supplies | $37,550 | $37,550 | $47,550 | $10,000 | 27% | $10,000 | 27% |
| Other Expenses | $88,474 | $74,820 | $94,025 | $19,205 | 26% | $5,551 | 6% |
| Total | $6,455,894 | $6,711,072 | $7,816,395 | $1,105,323 | 16% | $1,360,501 | 21% |

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Administrative Assistant** | 1.00 | 1.00 |
| **Administrative Services Supervisor** | 0.00 | 1.00 |
| **Assistant Engineer** | 2.00 | 2.00 |
| **Associate Engineer** | 4.00 | 4.00 |
| **Construction Inspector** | 4.00 | 4.00 |
| **Development Services Supervisor** | 2.00 | 2.00 |
| **Director of Engineering and Technical Services** | 1.00 | 1.00 |
| **Engineering Assistant III** | 5.00 | 5.00 |
| **Engineering Assistant I/II** | 3.00 | 2.00 |
| **Engineering Technician I/II** | 1.00 | 1.00 |
| **GIS Analyst** | 2.00 | 2.00 |
| **GIS/CMMS Administrator** | 1.00 | 1.00 |
| **Maintenance Planner** | 1.00 | 1.00 |
| **Management Analyst** | 0.00 | 1.00 |
| **Planning and Development Services Division Manager** | 1.00 | 1.00 |
| **Program Manager** | 1.00 | 1.00 |
| **Senior Engineer** | 4.00 | 4.00 |
| **Senior Right-of-Way Agent** | 2.00 | 2.00 |
| **Total** | **35.00** | **36.00** |

| Limited Duration Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Engineering Assistant Summer Student** | 6.00 | 8.00 |
| **Co-op** | 4.00 | 4.00 |
| **Total** | **10.00** | **12.00** |

## Significant Budget Adjustments

The Planning and Development Services Operating Budget for FY 2017-18 is $7.8 million, a $1.4 million or 21% increase over last year. Outside of the overall changes in wages and benefits discussed elsewhere, the increase is substantially due to the move in accounting of capitalized labor, benefits, and administrative overhead from Capital Projects Development Sewerage to Operations & Maintenance mid-year in FY 2016-17 and FY 2017-18. The Administration Services Supervisor O&M cost was transferred from Capital Projects Division to the Planning and Development Division O&M cost. A Management Analyst position was created after eliminating an Engineering Assistant I/II. This change combined with the cost saving attributed from changing the position of Associate Engineer to Assistant Engineer in the Environmental and Regulatory Compliance Division did not increase the overall O&M cost for labor by creating this new position.

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# Operations Department


The Operations Department consists of three Divisions, Central San's Safety Program, and the Recycled Water Program who report to the Deputy General Manager. The primary function of the Operations Department is to collect, treat, and dispose of wastewater in compliance with regulatory requirements and to divert a portion of the wastewater to produce Title 22 recycled water. This includes operations and maintenance of pipelines, pumping stations and treatment facilities; oversight of power generation operations; fleet maintenance; and managing computerized control equipment and systems.

**The Divisions that comprise this Department include:**

- Collection System Operations
- Plant Maintenance
- Plant Operations
- Central San Safety Program
- Recycled Water Program

# Collection System Operations Division

## OVERVIEW

This Division is responsible for cleaning, maintaining and repairing of over 1,500 miles of collection sewers, trunk sewers and force mains in Central San's vast collection system, as well as maintaining the recycled water distribution system. The Division is also responsible for the maintenance of all Central San vehicles.

## Fiscal Year 2016-17 Accomplishments

### This Division had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 1 – Provide Exceptional Customer Service** | • Responded to 281 customer service phone calls.<br>• Achieved an average customer service satisfaction rating of 3.94 out of 4.0.<br>• Average response to all emergency service calls was 37 minutes. |
| **Goal 2 – Strive to Meet All Regulatory Requirements** | • Sanitary sewer overflows were 2.83 per 100 miles and there were no capacity related overflows.<br>• Cleaned 819 miles of sanitary sewers.<br>• Televised 180 miles of sanitary sewers. |
| **Goal 5 – Maintain a Reliable Infrastructure** | • Completed over 901 services on Central San vehicles and equipment; on schedule 100% of time.<br>• Completed over 21,200 cleaning schedules and work orders; completed on schedule 99% of the time.<br>• Consolidated CCTV databases and replaced software with a more user friendly, remotely accessible software.<br>• Installed vaults in Clyde force main with removable sections of pipe to better TV and clean the force main. |

## Fiscal Years 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Average onsite response time for collection system emergency calls, during working hours** | Less than 20 minutes |
| **Average onsite response time for collection system emergency calls, after hours** | Less than 30 minutes |
| **Average customer service rating for emergency calls** | At least 3.8 out of 4.0 |
| **Sanitary sewer overflows** | Less than 3.0 spills per 100 miles of pipeline |
| **Spills to public water** | Less than 3 |
| **Percent of spills less than 500 gallons** | Greater than 95% |
| **Pipeline cleaning schedule changes completed on time** | Greater than 95% |
| **Pipeline cleaning quality assurance/quality control (QA/QC)** | At least 3% of pipelines cleaned on an annual basis |
| **Pipeline cleaning QA/QC passing rate** | Greater than 98% |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of performance evaluations completed on time** | 100% |

# Fiscal Year 2017-18 Strategic Initiatives

## This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 – Provide Exceptional Customer Service** | Foster Customer Engagement and Awareness | Provide high quality customer service. | Customer Satisfaction |
| | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success. | Customer Satisfaction |
| | | Increase internal partnerships. | Employee and Leadership Development |
| **Goal 2 – Strive to Meet Regulatory Requirements** | Strive to Minimize the Number of SSOs | Complete the collection system scheduled maintenance on time and optimize cleaning schedules to improve efficiencies. | Infrastructure Strategy and Performance |
| | | Continue the pipeline condition assessment and cleaning quality assurance program using the system-wide CCTV program. | Infrastructure Strategy and Performance |
| **Goal 3 – Be a Fiscally Sound and Effective Water Sector Utility** | Manage Costs | Perform optimization studies of treatment plant and field operations to reduce costs. | Operational Optimization |
| **Goal 4 – Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork. | Employee and Leadership Development |
| **Goal 5 – Maintain a Reliable Infrastructure** | Manage Assets Optimally Throughout Their Lifecycle | Manage and maintain current equipment and vehicle fleet to provide maximum value. | Infrastructure Strategy and Performance |
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering. | Operational Optimization |

## Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $6,107,988 | $5,922,400 | $6,164,374 | $241,974 | 4% | $56,386 | 1% |
| Employee Benefits | $5,433,375 | $5,410,598 | $5,087,527 | ($323,071) | -6% | ($345,848) | -6% |
| Utilities | $139,400 | $141,400 | $142,400 | $1,000 | 1% | $3,000 | 2% |
| Repairs & Maintenance | $1,631,502 | $1,447,500 | $1,624,304 | $176,804 | 12% | ($7,198) | 0% |
| Hauling & Disposal | $131,000 | $122,200 | $131,000 | $8,800 | 7% | $0 | 0% |
| Professional & Legal Services | $5,000 | $7,500 | $7,500 | $0 | 0% | $2,500 | 50% |
| Outside Services | $106,700 | $152,546 | $110,600 | ($41,946) | -27% | $3,900 | 4% |
| Materials & Supplies | $774,150 | $670,313 | $749,550 | $79,237 | 12% | ($24,600) | -3% |
| Other Expenses | $142,938 | $122,166 | $138,958 | $16,792 | 14% | ($3,980) | -3% |
| Total | $14,472,053 | $13,996,623 | $14,156,213 | $159,590 | 1% | ($315,840) | -2% |

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Administrative Assistant** | 1.00 | 1.00 |
| **Senior Administrative Assistant** | 0.00 | 1.00 |
| **Administrative Services Supervisor** | 1.00 | 0.00 |
| **Administrative Technician** | 2.00 | 2.00 |
| **Collection System Maintenance Scheduler** | 1.00 | 1.00 |
| **Collection System Operations Division Manager** | 1.00 | 1.00 |
| **Construction Equipment Operator** | 2.00 | 2.00 |
| **Field Operations Superintendent** | 1.00 | 1.00 |
| **Maintenance Crew Leader** | 18.00 | 18.00 |
| **Maintenance Crew Member I/II** | 18.00 | 18.00 |
| **Maintenance Supervisor** | 4.00 | 4.00 |
| **Senior Engineer** | 1.00 | 1.00 |
| **Utility Worker** | 2.00 | 2.00 |
| **Vehicle and Equipment Mechanic** | 3.00 | 3.00 |
| **Vehicle Maintenance and Equipment Maintenance Supervisor** | 1.00 | 1.00 |
| **Total** | **56.00** | **56.00** |

| Limited Duration Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Laborer Summer Student** | 3.00 | 3.00 |
| **Clerical Summer Student** | 1.00 | 1.00 |
| **Total** | **4.00** | **4.00** |

## Significant Budget Adjustments

The Collection System Operations Operating Budget for FY 2017-18 is $14.2 million, a $316,000 or 2% decrease over the prior year. Outside of the overall changes in wages and benefits, discussed elsewhere, the other main contributor to adjustments for this year's budget is the cost of bypass pumping at the Miner Road sinkhole. This increase in cost is offset by reductions of outside services for a recycled water tanker to mitigate drought restrictions and the completion of rodder truck rebuilds in FY 2016-17. Central San has contracted with Rain for Rent to rent pumps and perform off hours bypass pumping.

# Plant Maintenance Division

## OVERVIEW

This Division is responsible for maintaining all mechanical, electrical, and instrumentation equipment and systems for the treatment plant, laboratory and 19 pumping stations as well as all buildings and grounds at the Martinez campus. The Division also consists of a Reliability Engineering Workgroup which provides technical support for maintenance planning and manages the Preventative Maintenance Program, and the Pumping Station Workgroup which operates and maintains the 19 pumping stations.

## Fiscal Year 2016-17 Accomplishments

### This Division had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 2 – Strive to Meet Regulatory Requirements** | • Maintained all equipment and systems to achieve the National Association of Clean Water Agencies (NACWA) Peak Performance Platinum Award for the 19th consecutive year. |
| **Goal 5 – Maintain a Reliable Infrastructure** | • Implemented new Cityworks Maintenance Management System for the treatment plant and pumping stations. The Computerized Maintenance Management System (CMMS) includes updated and enhanced asset register; asset hierarchy; and reporting and visibility into asset and work order information.<br>• Completed training on Reliability Centered Maintenance (RCM) and analysis of two systems. This effort established a framework for Central San to improve maintenance efficiency and functional reliability of assets. This included a systematic approach to developing a comprehensive maintenance program based on asset criticality and consequence of failure. It also establishes a repeatable program with documented processes and procedures.<br>• Developed a training book for the Mechanical Shop that contains information on Shop-specific skills required for all positions.<br>• Pumping Station staff cross trained on north and west routes.<br>• Expanded use of condition-based and predictive technologies to identify potential problems. Some examples include:<br>  ◦ Digital Low Resistance Ohmmeter (DLRO) meter use on electrical equipment.<br>  ◦ Use of Dissolved Gas Analysis (DGA) testing on transformers.<br>  ◦ Use of stray current detection.<br>  ◦ Ultrasonic probe tester to be used in conjunction with the thermal image preventative maintenance. |
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | • Installed motor quick disconnects on key pumping station motors, auxiliary boiler blower motors and waste heat boiler rotary air lock motors.<br>• Installed shaft grounding rings on certain motors to help minimize premature motor bearing failure from Variable Frequency Drive stray current.<br>• Fabricated bar screen lifting device to simplify process of replacing worn out bar screen grinder in the Treatment Plant Headworks.<br>• Designed variations of control handles to custom fit each rodder truck operator.<br>• Designed and fabricated three-legged sling with hooks to save time and manpower for rodder truck operators to load 1,400 feet of coiled rod.<br>• Created cone-type diverters to protect gearbox seals, reducing the amount of times the gearboxes must be rebuilt. |

| | |
|---|---|
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | • **Fabricated bracing and fiberglass platforms for emergency bypass vaults to allow for connection by only one person.**<br>• **Designed and fabricated a piping system, water separator and waste chute for the grit washers which makes their maintenance less time consuming and safer.** |

## Fiscal Year 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Safety work orders completed on time** | 100% |
| **Regulatory Title V work orders completed on time** | 100% |
| **Planned treatment plant preventative maintenance completed on time** | Greater than 95% |
| **kWh of electricity produced** | Greater than 18 million kWh per year (reported as a rolling average) |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of performance evaluations completed on time** | 100% |

## Fiscal Year 2017-18 Strategic Initiatives

### This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 – Provide Exceptional Customer Service** | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success. | Customer Satisfaction |
| | | Increase internal partnerships. | Employee and Leadership Development |
| **Goal 2 – Strive to Meet Regulatory Requirements** | Strive to Achieve 100% Permit Compliance in Air, Water, Land and Other Regulations | Actively manage greenhouse gas emissions in the most cost effective and responsible manner. | Community Sustainability |
| **Goal 3 – Be a Fiscally Sound and Effective Water Sector Utility** | Manage Costs | Perform optimization studies of treatment plant and field operations to reduce costs. | Operational Optimization |
| **Goal 4 – Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork. | Employee and Leadership Development |
| **Goal 5 – Maintain a Reliable Infrastructure** | Manage Assets Optimally Throughout Their Lifecycle | Implement Board approved recommendations of the Wastewater Master Plan and Condition Assessment. | Infrastructure Strategy and Performance |
| | | Implement the Reliability Centered Maintenance Program. | Infrastructure Strategy and Performance |
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering. | Operational Optimization |

## Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget (Reallocated w/ Plant Operations)* | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $5,259,306 | $4,992,000 | $5,501,480 | $509,480 | 10% | $242,174 | 5% |
| Employee Benefits | $4,355,893 | $4,196,522 | $4,304,142 | $107,620 | 3% | ($51,751) | -1% |
| Chemicals | $430,000 | $341,300 | $300,000 | ($41,300) | -12% | ($130,000) | -30% |
| Utilities | $518,550 | $505,250 | $508,150 | $2,900 | 1% | ($10,400) | -2% |
| Repairs & Maintenance | $2,416,300 | $2,346,300 | $2,408,300 | $62,000 | 3% | ($8,000) | 0% |
| Hauling & Disposal | $138,800 | $158,800 | $158,800 | $0 | 0% | $20,000 | 14% |
| Professional & Legal Services | $0 | $0 | $0 | $0 | N/A | $0 | N/A |
| Outside Services | $237,650 | $254,650 | $257,750 | $3,100 | 1% | $20,100 | 8% |
| Materials & Supplies | $539,200 | $559,200 | $559,200 | $0 | 0% | $20,000 | 4% |
| Other Expenses | $140,001 | $138,001 | $140,836 | $2,835 | 2% | $835 | 1% |
| Total | $14,035,700 | $13,492,023 | $14,138,658 | $646,635 | 5% | $102,958 | 1% |

* Reallocated

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Assistant Engineer** | 1.00 | 1.00 |
| **Buildings and Grounds Supervisor** | 1.00 | 1.00 |
| **Electrical Shop Supervisor** | 1.00 | 1.00 |
| **Electrical Technician** | 4.00 | 4.00 |
| **Instrument Shop Supervisor** | 1.00 | 1.00 |
| **Instrument Technician** | 3.00 | 3.00 |
| **Machinist** | 2.00 | 2.00 |
| **Maintenance Crew Leader** | 1.00 | 1.00 |
| **Maintenance Planner** | 3.00 | 3.00 |
| **Maintenance Technician I/II** | 2.00 | 2.00 |
| **Maintenance Technician III** | 7.00 | 7.00 |
| **Mechanical Supervisor** | 2.00 | 2.00 |
| **Painter** | 1.00 | 1.00 |
| **Plant Maintenance Division Manager** | 1.00 | 1.00 |
| **Plant Maintenance Superintendent** | 1.00 | 1.00 |
| **Pumping Stations Operator I/II** | 4.00 | 4.00 |
| **Pumping Stations Operator III** | 2.00 | 2.00 |
| **Pumping Stations Supervisor** | 1.00 | 1.00 |
| **Senior Engineer** | 1.00 | 1.00 |
| **Utility Worker** | 7.00 | 7.00 |
| **Total** | **46.00** | **46.00** |

| Limited Duration Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Laborer Summer Student** | 10.00 | 10.00 |
| **Engineering Assistant Summer Student** | 1.00 | 0.00 |
| **Co-op** | 1.00 | 1.00 |
| **Total** | **12.00** | **11.00** |

## Significant Budget Adjustments

The Plant Maintenance Operating Budget for FY 2017-18 is $14.1 million, a $103,000 or 1% increase over the prior year. Outside of the overall changes in wages and benefits, only minor adjustments to other expense categories were made.

# Plant Operations Division

## OVERVIEW

This Division operates and maintains Central San's main treatment plant in Martinez. The treatment plant has a permitted capacity of 53.8 million gallons per day (MGD) and treats an average of 34.8 MGD. The treatment plant also produces 2.5 MGD of recycled water. This Division's budget also includes the administrative services for the Plant Operations and Plant Maintenance Divisions.

## Fiscal Year 2016-17 Accomplishments

### This Division had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 2 – Strive to Meet Regulatory Requirements** | • The treatment plant was recognized by the National Association of Clean Water Agencies (NACWA) for Peak Performance and was awarded the Platinum Award for the 19th consecutive year for full compliance with all federal, state and regional water quality standards.<br>• The treatment plant met all Clean Air Act requirements.<br>• The treatment plant met all Recycled Water Title 22 Regulations.<br>• Assisted with preparations and testing for 129 Sewage Sludge Incinerator Regulations.<br>• Collaborated with Regulatory Workgroup to reduce furnace bypass events from 15 in FY 2015-16 to 1 in FY 2016-17. |
| **Goal 3 – Be a Fiscally Sound and Effective Water Sector Utility** | • Implemented Cogeneration British Thermal Unit (BTU) control to save energy and simplify operation.<br>• Collaborated with Capital Projects Division to reduce wasted aeration air by replacing and tuning the air wasting valve. |
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | • Installed redundant fiber optic network lines and new control system network switches to increase the reliability of the treatment plant's control system network.<br>• Targeted sludge retention time (SRT) control using laboratory data and calculated sludge wasting rates to achieve consistent SRT and sludge volume index.<br>• Created a button in supervisory control and data acquisition (SCADA) system to streamline switch from normal operation to wet weather, reducing opportunity for errors.<br>• Updated wet weather manual to be more comprehensive and capture lessons from past events.<br>• Used three filters instead of four to reduce the number of backwashes in the Filter Plant, decreasing the amount of time between filters, thereby reducing labor and energy costs.<br>• Implemented cogeneration control mode that automatically limits cogeneration based on fuel usage, minimizing excess Pacific Gas and Electric import power usage and natural gas usage. |

## Fiscal Year 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **NPDES Compliance** | Zero Violations |
| **Title V Compliance** | Zero Violations |
| **Recycled Water Title 22 Compliance** | Zero Violations |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of performance evaluations completed on time** | 100% |

# Fiscal Year 2017-18 Strategic Initiatives

## This Division will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 – Provide Exceptional Customer Service** | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San operations and their role in our success. | Customer Satisfaction |
| | | Increase internal partnerships. | Employee and Leadership Development |
| **Goal 2 – Strive to Meet Regulatory Requirements** | Strive to Achieve 100% Permit Compliance in Air, Water, Land and Other Regulations | Renew treatment plant NPDES Permit. | Product Quality |
| | | Meet existing and known foreseeable future requirements for regulatory compliance. | Product Quality |
| | | Actively manage greenhouse gas emissions in the most cost effective and responsible manner. | Community Sustainability |
| **Goal 3 – Be a Fiscally Sound and Effective Water Sector Utility** | Manage Costs | Perform optimization studies of treatment plant and field operations to reduce costs. | Operational Optimization |
| **Goal 4 – Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork. | Employee and Leadership Development |
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering. | Operational Optimization |

## Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget (Reallocated w/ Plant Maintenance)* | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $5,161,486 | $5,371,200 | $5,391,494 | $20,294 | 0% | $230,008 | 4% |
| Employee Benefits | $4,001,927 | $4,234,644 | $3,793,932 | ($440,712) | -10% | ($207,995) | -5% |
| Chemicals | $1,406,000 | $1,045,000 | $1,098,000 | $53,000 | 5% | ($308,000) | -22% |
| Utilities | $3,210,700 | $3,479,000 | $3,484,600 | $5,600 | 0% | $273,900 | 9% |
| Repairs & Maintenance | $50,200 | $53,200 | $4,200 | ($49,000) | -92% | ($46,000) | -92% |
| Hauling & Disposal | $238,000 | $210,000 | $249,000 | $39,000 | 19% | $11,000 | 5% |
| Professional & Legal Services | $4,000 | $4,000 | $4,000 | $0 | 0% | $0 | 0% |
| Outside Services | $74,000 | $64,000 | $42,000 | ($22,000) | -34% | ($32,000) | -43% |
| Materials & Supplies | $152,900 | $138,900 | $147,900 | $9,000 | 6% | ($5,000) | -3% |
| Other Expenses | $560,632 | $501,971 | $671,850 | $169,879 | 34% | $111,218 | 20% |
| Total | $14,859,845 | $15,101,915 | $14,886,976 | ($214,939) | -1% | $27,131 | 0% |

* Reallocated

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Administrative Assistant** | 2.00 | 2.00 |
| **Administrative Services Supervisor** | 1.00 | 1.00 |
| **Associate Control Systems Engineer** | 2.00 | 0.00 |
| **Control Systems Engineer** | 0.00 | 2.00 |
| **Control Systems Technician** | 1.00 | 1.00 |
| **Deputy General Manager** | 1.00 | 1.00 |
| **Plant Operations Division Manager** | 1.00 | 1.00 |
| **Plant Operations Superintendent** | 1.00 | 1.00 |
| **Plant Operations Training Coordinator** | 1.00 | 1.00 |
| **Plant Operator I/II** | 2.00 | 2.00 |
| **Plant Operator III** | 5.00 | 5.00 |
| **Senior Engineer** | 1.00 | 1.00 |
| **Senior Plant Operator** | 14.00 | 14.00 |
| **Shift Supervisor** | 7.00 | 7.00 |
| **Total** | **39.00** | **39.00** |

| Limited Duration Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| **Clerical Summer Student** | 1.00 | 0.00 |
| **Total** | **1.00** | **0.00** |

## Significant Budget Adjustments

The Plant Operations Operating Budget for FY 2017-18 is $14.9 million, a $27,000 or less than a 1% increase over the prior year. Outside of the overall changes in wages and benefits, discussed elsewhere, there are two significant contributors for adjustments to this year's budget. Overall chemical costs have been reduced and Public Agency Fees have increased with the addition of $150,000 for the Bay Area Air Quality Management District's Health Risk Assessment and Risk Reduction Plan.

# Safety Program

## OVERVIEW

The Safety Workgroup oversees and administers the Safety Program. The primary objective of the Safety Program is to reduce injuries, accidents, and environmental impact while ensuring compliance. The Safety Workgroup achieves this by providing high quality training; comprehensive workplace evaluation; incident response; hazardous materials management from acquisition to disposal; and managing regulatory information.

## Fiscal Year 2016-17 Accomplishments

### This Program had several accomplishments related to the following Central San goals:

| Goal | Accomplishment |
|---|---|
| **Goal 4 – Develop and Retain a Highly Trained and Innovative Workforce** | • Conducted 120 hours of classroom training on 33 safety subjects and completed 323 Safety Tailgates.<br>• Recipient of the 2016 California Water Environment Association's Safety: Plant of the Year Award. |
| **Goal 5 – Maintain a Reliable Infrastructure** | • Worked closely with Capital Projects Division to provide design reviews, submittal reviews, contractor orientations, and construction safety oversight.<br>• Implemented Voice over Internet Protocol emergency paging. |
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | • Removed over 19.1 tons of hazardous waste.<br>• Conducted District-wide evacuation drill as part of the Great California Shake-Out. |

## Fiscal Years 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Employee injury and illness lost time incident rate** | Less than BLS California Sewage Treatment Facilities Rate |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |
| **Percentage of performance evaluations completed on time** | 100% |

# Fiscal Year 2017-18 Strategic Initiatives

## This Program will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 – Provide Exceptional Customer Service** | Improve Interdepartmental Collaboration | Foster employees' understanding of Central San's operations and their role in our success. | Customer Satisfaction |
| | | Increase internal partnerships. | Employee and Leadership Development |
| **Goal 4 – Develop and Retain a Highly Trained and Innovative Workforce** | Enhance Relationship with Employees and Bargaining Units | Cultivate a positive work culture and promote teamwork. | Employee and Leadership Development |
| | Meet or Exceed Industry Safety Standards | Achieve consistent improvement on State of California and Bay Area Industry Injury Rate. | Employee and Leadership Development |
| | | Enhance the Safety Culture through improved training and communications. | Employee and Leadership Development |
| **Goal 5 – Maintain a Reliable Infrastructure** | Protect Central San Personnel and Assets from Threats and Emergencies | Enhance our capability to mitigate, prepare, respond and recover from emergencies. | Enterprise Resiliency |
| | | Evaluate and implement appropriate improvements to security program to meet new or evolving threats. | Enterprise Resiliency |
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | Evaluate Business Processes and Optimize Business Operations | Perform business process mapping and re-engineering. | Operational Optimization |

## Budget Overview by Expense Category

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $349,884 | $363,700 | $364,050 | $350 | 0% | $14,166 | 4% |
| Employee Benefits | $312,759 | $321,380 | $317,020 | ($4,360) | -1% | $4,261 | 1% |
| Chemicals | $0 | $0 | $0 | $0 | N/A | $0 | N/A |
| Utilities | $0 | $0 | $0 | $0 | N/A | $0 | N/A |
| Repairs & Maintenance | $71,000 | $71,000 | $73,500 | $2,500 | 4% | $2,500 | 4% |
| Hauling & Disposal | $10,250 | $10,250 | $10,250 | $0 | 0% | $0 | 0% |
| Professional & Legal Services | $2,500 | $2,500 | $2,500 | $0 | 0% | $0 | 0% |
| Outside Services | $87,000 | $39,500 | $68,000 | $28,500 | 72% | ($19,000) | -22% |
| Materials & Supplies | $34,500 | $28,500 | $27,500 | ($1,000) | -4% | ($7,000) | -20% |
| Other Expenses | $45,575 | $44,125 | $54,075 | $9,950 | 23% | $8,500 | 19% |
| Total | $913,468 | $880,955 | $916,895 | $35,940 | 4% | $3,427 | 0% |

## Personnel Requirements

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| Operations Safety Specialist | 2.00 | 2.00 |
| Safety Officer | 1.00 | 1.00 |
| **Total** | **3.00** | **3.00** |

## Significant Budget Adjustments

The Safety Program Operating Budget for FY 2017-18 is $0.9 million, a $3,000 or less than a 1% increase over the prior year. Outside of the overall changes in wages and benefits, only minor adjustments to other expense categories were made.

# Recycled Water Program

## OVERVIEW

This Program draws resources from several Divisions to provide support for the production and distribution of recycled water to Zone 1 commercial and municipal customers, construction contractors, and residential customers through the Residential Fill Station. This Program also includes the planning and regulatory support for the existing system and planned expansions, including the Satellite Recycled Water Facility program.

## Fiscal Year 2016-17 Accomplishments

### This Program had several accomplishments related to the following Central San goal:

| Goal | Accomplishment |
|---|---|
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | • Implemented the automated Commercial Recycled Water Fill Station and integrated it into the overall Truck Fill Program.<br>• Served over 17,600 customers and delivered 4 million gallons of recycled water at our Residential Fill Station (as of April 2017).<br>• Connected three new businesses to the recycled water distribution system for landscape irrigation, including the Concord Hilton.<br>• Completed a Planning Agreement with Diablo Country Club for a 0.4 MGD Satellite Water Recycling Facility (SWRF) and initiated the environmental review process for the project.<br>• Pursued follow-up conversations on the long-term opportunities identified in Central San's 2016 Wholesale Recycled Water Opportunities Study.<br>• Continued pursuit of grant funding for existing and planned projects. |

## Fiscal Years 2017-18 Key Metrics

| Metric | Target |
|---|---|
| **Recycled Water Title 22 Compliance** | Zero Violations |
| **Total gallons of recycled water distributed to external customers** | Greater than 240 million gallons per year |
| **Maximum residential fill station customer wait time** | 15 minutes |
| **Gallons of recycled water distributed at the residential fill station** | Greater than 14 million gallons per year |
| **Gallons of recycled water distributed at the truck fill program** | Greater than 4 million gallons per year |
| **Operating expenditures as a percentage of operating budget** | Greater than 90% |

# Fiscal Year 2017-18 Strategic Initiatives

## This Program will support the following Central San Goals and Strategies:

| Goal | Strategy | Initiative | EUM Attribute |
|---|---|---|---|
| **Goal 1 – Provide Exceptional Customer Service** | Foster Customer Engagement and Awareness | Provide high quality customer service. | Customer Satisfaction |
| **Goal 2 – Strive to Meet Regulatory Requirements** | Strive to Achieve 100% Permit Compliance in Air, Water, Land and Other Regulations | Meet existing regulations and plan for future regulations. | Product Quality |
| | | Foster relationships with regulatory agencies. | Stakeholder Understanding and Support |
| **Goal 6 – Embrace Technology, Innovation and Environmental Sustainability** | Augment the Region's Water Supply | Explore partnering opportunities (e.g. CCWD and EBMUD). | Stakeholder Understanding and Support |
| | | Develop a Satellite Recycled Water Facilities Program. | Water Resource Sustainability |

# Budget Overview by Expense Category

## Treatment

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $274,733 | $178,700 | $228,440 | $49,740 | 28% | ($46,293) | -17% |
| Employee Benefits | $200,402 | $176,500 | $231,580 | $55,080 | 31% | $31,178 | 16% |
| Chemicals | $84,000 | $75,000 | $84,000 | $9,000 | 12% | $0 | 0% |
| Utilities | $175,000 | $175,000 | $175,000 | $0 | 0% | $0 | 0% |
| Repairs & Maintenance | $6,300 | $4,000 | $6,000 | $2,000 | 50% | ($300) | -5% |
| Hauling & Disposal | $0 | $0 | $0 | $0 | N/A | $0 | N/A |
| Professional & Legal Services | $0 | $0 | $0 | $0 | N/A | $0 | N/A |
| Outside Services | $0 | $0 | $500 | $500 | N/A | $500 | N/A |
| Materials & Supplies | $1,003 | $700 | $1,000 | $300 | 43% | ($3) | 0% |
| Other Expenses | $0 | $0 | $6,600 | $6,600 | N/A | $6,600 | N/A |
| Total | $741,438 | $609,900 | $733,120 | $123,220 | 20% | ($8,318) | -1% |

## Distribution (including Distribution, Residential Fill, SWRF)

| Account Description | FY 2016-17 Budget | FY 2016-17 Projected | FY 2017-18 Budget | Budget to Projected Variance | Percent Variance | Budget to Budget Variance | Percent Variance |
|---|---|---|---|---|---|---|---|
| Salaries & Wages | $488,414 | $349,147 | $188,650 | ($160,497) | -46% | ($299,764) | -61% |
| Employee Benefits | $276,746 | $49,859 | $102,948 | $53,089 | 106% | ($173,798) | -63% |
| Chemicals | $0 | $0 | $0 | $0 | N/A | $0 | N/A |
| Utilities | $0 | $0 | $0 | $0 | N/A | $0 | N/A |
| Repairs & Maintenance | $23,700 | $2,000 | $23,000 | $21,000 | 1050% | ($700) | -3% |
| Hauling & Disposal | | $0 | $0 | $0 | N/A | $0 | N/A |
| Professional & Legal Services | $14,000 | $14,000 | $14,000 | $0 | 0% | $0 | 0% |
| Outside Services | $202,500 | $202,000 | $202,000 | $0 | 0% | ($500) | 0% |
| Materials & Supplies | $4,897 | $1,900 | $4,900 | $3,000 | 158% | $3 | 0% |
| Other Expenses | $50,024 | $50,024 | $50,024 | $0 | 0% | $0 | 0% |
| Total | $1,060,281 | $668,930 | $585,522 | ($83,408) | -12% | ($474,759) | -45% |
| | | | | | | | |
| Total Rec Water | $1,801,719 | $1,278,830 | $1,318,642 | $39,812 | 3% | ($483,077) | -27% |

## Personnel Requirements

Several Divisions support the Recycled Water Program. Personnel for the Recycled Water Program are shown in their respective Divisions, and total 2.35 full time equivalents. A portion of their labor costs, as appropriate to their time spent on the Program, are included in the Recycled Water Budget. In addition, the Budget includes funding for eight temporary staff to manage the residential fill station.

| Regular Status Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| Program Manager | 0.50 | 0.50 |
| Engineering and Technical Services Department Staff | 2.00 | 0.70 |
| Operations Department Staff | 1.00 | 1.15 |
| **Total** | **3.50** | **2.35** |

| Limited Duration Employees | FY 2016-17 | FY 2017-18 |
|---|---|---|
| Fill Station Temporary | 8.00 | 8.00 |
| **Total** | **8.00** | **8.00** |

## Significant Budget Adjustments

The Recycled Water Program Operating Budget for FY 2017-18 is $1.3 million, a $483,000 or 46% decrease over the prior year. The reduction in cost is related to reduced labor expenses for Distribution, Residential Fill and SWRF. These reductions are a result of less staff time than anticipated working on recycled water in FY 2016-17, due both to vacancies for a portion of the fiscal year and reduced,

drought-related, demand for recycled water. In FY 2017-18, the Recycled Water Program will be fully staffed.

## Financial Summary for Recycled Water Program

| Recyled Water Expense Summary | FY 2017-18 Budget |
|---|---|
| Treatment Plant O&M | $733,120 |
| Treatment Plant Capital | $330,000 |
| Distribution O&M | $585,522 |
| Distribution Capital | $130,000 |
| **Total Combined Expense** | **$1,778,642** |

| Recyled Water Revenue Summary | FY 2017-18 Budget |
|---|---|
| Treatment Plant (Value not charged) | $463,411 |
| Zone 1 Revenue | $373,500 |
| Residential Fill (Value not charged) | $83,779 |
| Satellite Reimbursement | $141,900 |
| City of Concord Reimbursement | $404,237 |
| **Total Combined Revenue** | **$1,466,828** |

Regarding the Revenue figures noted above, the $373,500 Zone 1 Revenue consists of $335,000 for O&M (See Table 3) and $38,500 for Sewer Construction (see Table 9). The $404,237 City of Concord Reimbursement is contained within the $15,200,000 for O&M (See Table 3) and $6,000,000 for Capital (see Table 9). The $141,900 Satellite Reimbursement is contained within the $296,000 Other Revenues item in Table 3.

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# Self-Insurance Program

Central San has self-insured a portion of its liability and property risks since July 1, 1986, when the Board approved the establishment of the Self Insurance Fund (SIF). Central San currently self-insures general and auto liability risks up to $500,000 per occurrence and purchases a $15 million excess liability insurance policy above that retention.

At this time, Central San does not purchase insurance coverage for earthquake or flood losses because insurance programs currently available in California are very expensive for the scope and limits of coverage provided. As a result, Central San self-insures these risks.

## Fund Allocation

In 1994, the Government Accounting Standards Board issued statement No. 10 (GASB-10) which established requirements on how public agencies must fund their self-insured risks. To assure compliance with GASB-10, Central San restructured the SIF into three sub-funds. Each of the three sub-funds was established to pay for specific losses and expenses.

Table 1 presents a recent financial history and projection of the SIF and shows the FY 2017-18 SIF budget. The SIF revenue for FY 2017-18 is projected to be $727,000, and expenses are projected to be $936,500, resulting in net SIF reserves of $6,504,879. The budgeted revenues include the allocation of $585,000 from the FY 2017-18 O&M Budget to the SIF.

## Sub-Fund A: Actuarially-Based Risks

Sub-Fund A is used to pay claims and expenses within Central San's self-insured liability retention. Claims in excess of this retention are covered by the excess insurance policy that renews annually on July 1.

Under the requirements of GASB-10, risks that can be actuarially studied must be funded based on an actuarial study performed at least every two years. General liability and automobile liability risks are readily studied throughout the insurance and self-insurance industry to project funding levels for future losses. Central San obtained an actuarial review of its self-insured general liability and automobile liability risks in October 2016. The next actuarial report will be performed in August 2018 using loss data through June 30, 2018.

The Board established a policy to maintain the Sub-Fund A reserve at three times the amount of Central San's self-insured retention. The current $500,000 retention requires a $1.5 million reserve. This reserve is used to pay claims and expenses throughout the year and is replenished the following fiscal year.

Table 2 shows budgeted revenue for FY 2017-18 of $15,462 with expenses of $345,000 for a reduction of $329,538. This amount will be transferred from Sub-Fund C in order to maintain the minimum reserve at $1.5 million.

## Sub-Fund B: Non-Actuarially-Based Risks

Sub-Fund B has been retired and all reserves for these risks were transferred to Sub-Fund C in FY 2015-16.

## Sub-Fund C: Non-GASB 10 Risks

This Sub-Fund C has historically covered Risk Management program expenses including insurance premiums, self-insured property losses, potential losses from uninsurable risks, and the costs of initiating claims and lawsuits against others. As noted above, this fund now includes reserves for non-GASB 10 risks and catastrophic losses.

The Board established a policy to maintain this reserve at $5 million. This reserve is used to pay claims and expenses throughout the year and is replenished the following fiscal year. This fund also receives the annual O&M contribution and then re-allocates funds needed to maintain the required reserve in Sub-Fund A.

Table 3 shows budgeted revenue for FY 2017-18 of $711,538 which includes a transfer from the O&M Fund.

# Tables and Figures

## Table 1 - Self Insurance Fund (SIF) July 1, 2012 - June 30, 2018

| Account Description | FY 2012-13 Actual | FY 2013-14 Actual | FY 2014-15 Actual | FY 2015-16 Actual | FY 2016-17 Projected | FY 2017-18 Budget |
|---|---|---|---|---|---|---|
| Revenues: | | | | | | |
| SIF Allocation from O&M Fund | $850,000 | $600,000 | $650,000 | $1,500,000 | $920,000 | $585,000 |
| Insurance Allocation from HHW | $21,183 | $21,236 | $21,187 | $21,945 | $72,000 | $75,000 |
| Subrogation Recovery | $1,349,322 | $23,212 | $165,950 | $6,186 | $1,500 | $0 |
| Interest Income | $15,259 | $10,180 | $10,834 | $28,412 | $44,469 | $67,000 |
| **Total Revenue** | **$2,235,764** | **$654,628** | **$847,971** | **$1,556,543** | **$1,037,969** | **$727,000** |
| | | | | | | |
| Expenditures: | | | | | | |
| Claims Adjusting | $1,218,301 | $766 | $219,377 | $0 | $0 | $0 |
| Insurance Consulting | $5,000 | $0 | $5,000 | $0 | $0 | $0 |
| Loss Payments | $440,991 | $115,501 | $280,619 | $888,745 | $60,000 | $265,000 |
| Legal Services | $266,900 | $200,591 | $148,500 | $69,798 | $2,500 | $21,500 |
| Technical Services | $24,856 | $42,167 | $207,793 | $112,190 | $15,000 | $75,000 |
| Insurance Premiums | $424,419 | $499,713 | $472,230 | $529,884 | $545,000 | $575,000 |
| **Total Expenses** | **$2,380,467** | **$858,738** | **$1,333,519** | **$1,600,616** | **$622,500** | **$936,500** |
| | | | | | | |
| **Revenue Over Expense** | **($144,703)** | **($204,110)** | **($485,548)** | **($44,073)** | **$415,469** | **($209,500)** |
| | | | | | | |
| Reserves: | | | | | | |
| Beginning of Year | $4,827,335 | $4,682,642 | $4,478,532 | $3,992,984 | $6,298,911 | $6,714,380 |
| Reserve Policy Transfer | $0 | $0 | $0 | $2,350,000 | $0 | $0 |
| Revenue over Expense | ($144,693) | ($204,110) | ($485,548) | ($44,073) | $415,469 | ($209,500) |
| **End of Year Reserves** | **$4,682,642** | **$4,478,532** | **$3,992,984** | **$6,298,911** | **$6,714,380** | **$6,504,880** |
| | | | | | | |
| Uncommitted Reserves: | | | | | | |
| Actuarial Reserves-GASB 10 (Fund A) | $1,000,000 | $1,000,000 | $1,000,000 | $1,500,000 | $1,500,000 | $1,500,000 |
| Non-Actuarial Reserves-GASB 10 (Fund B) | $2,400,000 | $2,400,000 | $2,400,000 | $0 | $0 | $0 |
| Non-Actuarial Reserves-GASB 10 (Fund C) | $1,282,642 | $1,078,532 | $592,984 | $4,798,910 | $5,214,379 | $5,004,879 |
| **Total Reserves** | **$4,682,642** | **$4,478,532** | **$3,992,984** | **$6,298,910** | **$6,714,379** | **$6,504,879** |
| | | | | | | |
| **Change in Reserves** | **($144,703)** | **($204,110)** | **($485,548)** | **$2,305,926** | **$415,469** | **($209,500)** |

## Table 2 - SIF - Sub-Fund A-Actual FY 2015-16, Projected FY 2016-17 and Budgeted FY 2017-18

| Account Description | FY 2015-16 Actual | FY 2016-17 Projected | FY 2017-18 Budget |
|---|---|---|---|
| Actuarial Reserves- GASB 10 -Beginning of Year | $1,000,000 | $1,500,000 | $1,500,000 |
| | | | |
| Revenues: | | | |
| O&M | $0 | $0 | $0 |
| Subrogation Recovery | $6,186 | $1,500 | $0 |
| Interest | $6,544 | $10,682 | $15,462 |
| **Total Revenue** | **$12,730** | **$12,182** | **$15,462** |
| | | | |
| Expenses: | | | |
| Losses | $888,745 | $45,000 | $250,000 |
| Legal Services | $59,025 | $1,000 | $20,000 |
| Technical | $112,190 | $15,000 | $75,000 |
| **Total Expenses** | **$1,059,960** | **$61,000** | **$345,000** |
| | | | |
| **Revenue Over Expense** | **($1,047,231)** | **($48,818)** | **($329,538)** |
| | | | |
| Reserves: | | | |
| Transfer (to)/from Sub-Fund C | $1,047,231 | $48,818 | $329,538 |
| Reserve increase transfer from Fund C | $500,000 | - | - |
| | | | |
| Total Reserves Projected End of Year | **$1,500,000** | **$1,500,000** | **$1,500,000** |

Note: Sub Fund A was increased from $1.0M to $1.5M in FY2015-16 as part of the Reserve Policy adopted by the Board (BP 017). Reserve is for three occurrences.

## Table 3 - SIF - Sub-Fund C-Actual FY2015-16, Projected FY2016-17 and Budgeted FY 2017-18

| Account Description | FY 2015-16 Actual | FY 2016-17 Projected | FY 2017-18 Budget |
|---|---|---|---|
| Beginning Reserves | $592,984 | $4,798,910 | $5,214,379 |
| | | | |
| Revenues: | | | |
| O&M | $1,500,000 | $920,000 | $585,000 |
| Subrogation Recovery | $0 | $0 | $0 |
| Insurance Recovery from HHW Partners | $21,945 | $72,000 | $75,000 |
| Interest | $21,869 | $33,787 | $51,538 |
| **Total Revenue** | **$1,543,814** | **$1,025,787** | **$711,538** |
| | | | |
| Expenses: | | | |
| Losses | $0 | $15,000 | $15,000 |
| Legal | $10,773 | $1,500 | $1,500 |
| Technical | $0 | $0 | $0 |
| Insurance Premiums | $529,884 | $545,000 | $575,000 |
| Insurance Consulting Services | $0 | $0 | $0 |
| Claims Adjustment | $0 | $0 | $0 |
| **Total Expenses** | **$540,657** | **$561,500** | **$591,500** |
| | | | |
| **Revenue Over Expense** | **$1,003,157** | **$464,287** | **$120,038** |
| | | | |
| Reserves: | | | |
| Transfer (to)/from Sub-Fund A | ($1,047,231) | ($48,818) | ($329,538) |
| Transfer (to)/from Sub-Fund B | $2,400,000 | $0 | $0 |
| Reserve Increase to Sub-Fund A | ($500,000) | $0 | $0 |
| Reserve Policy Transfers | $2,350,000 | $0 | $0 |
| | | | |
| **Total Reserves Projected End of Year** | **$4,798,910** | **$5,214,379** | **$5,004,879** |

Note: Sub Fund C was increased to $5.0M in FY2015-16 as part of the Reserve Policy adopted by the Board (BP 017).

**Figure 1 - History of Revenue, Expense and Reserve Balance**

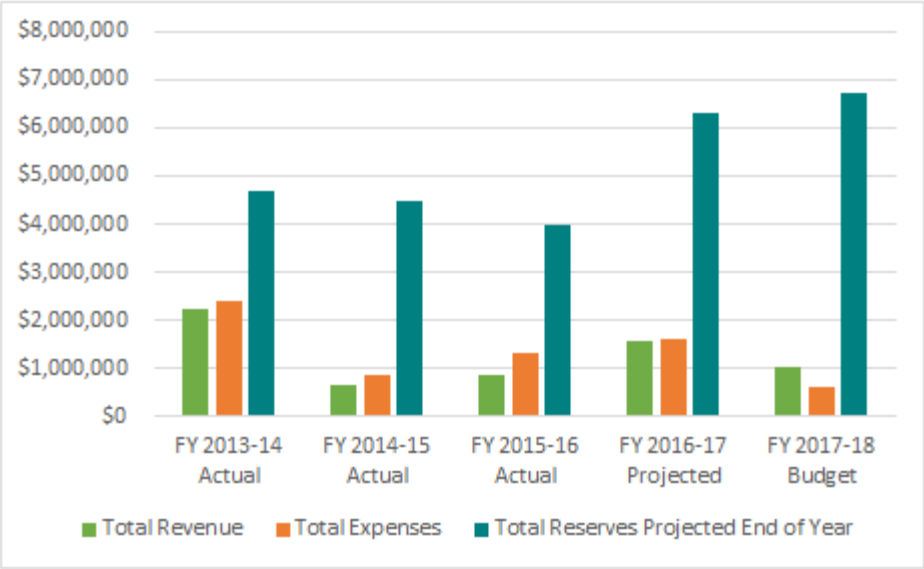



**Figure 2 - History of Loss Payment & Insurance Premiums**

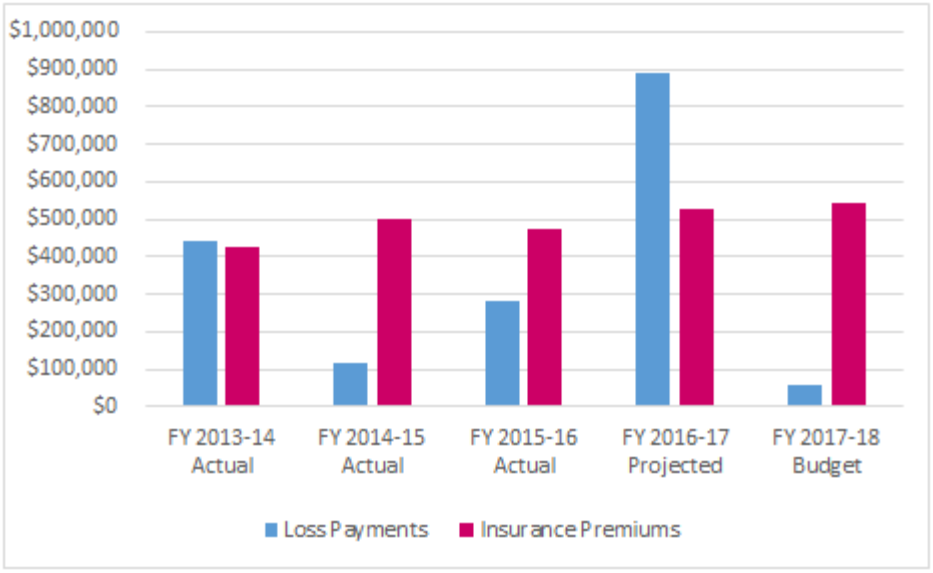


**Figure 3 - Reserves by Sub-Fund**

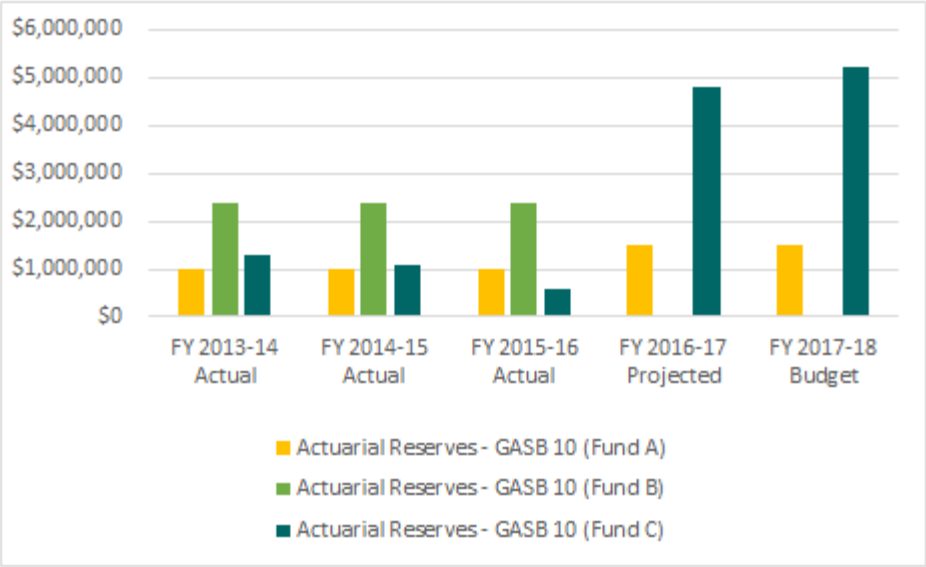
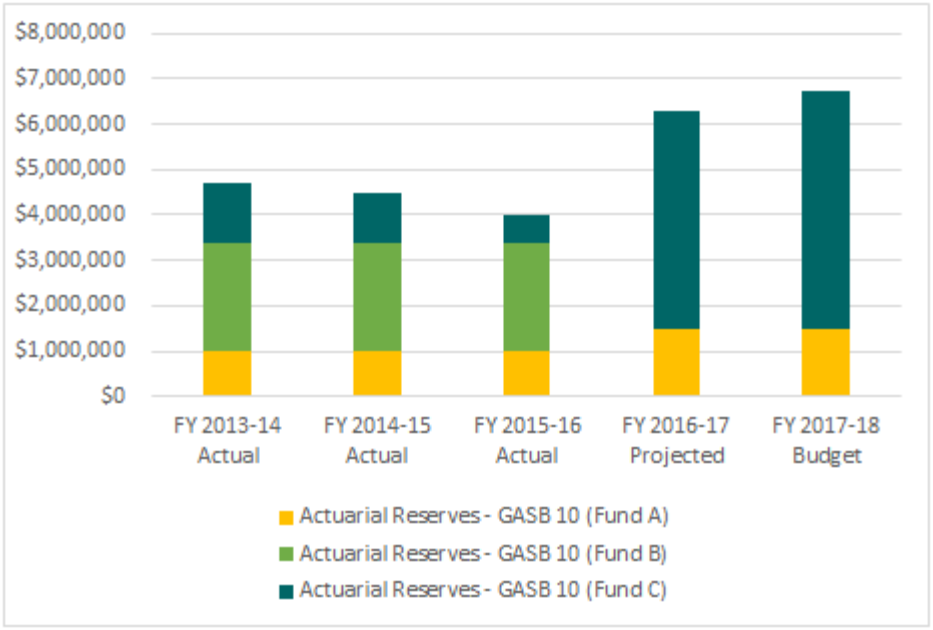



**Figure 4 - History of Reserves**



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# Capital Improvement Program

## Summary

Central San funds an extensive Capital Improvement Program designed to preserve, maintain, and enhance Central San's assets, meet regulatory requirements, accommodate the community's needs, and protect public health and the environment. Capital improvements are construction or renovation activities that add value to Central San's fixed assets (pipelines, buildings, facilities, and equipment) or significantly extend their useful life.

The Capital Improvement Budget (CIB) provides a detailed presentation of the project cost estimates proposed for the first year of the 10-year Capital Improvement Plan (CIP) beginning July 1, 2017 and ending June 30, 2018. All project expenditures in the CIB are paid from the Sewer Construction Fund. These expenditures are for planning, design, and construction of capital projects within the following four CIB programs: 1) Collection System; 2) Treatment Plant; 3) General Improvements; and 4) Recycled Water.

The total budget to fund ongoing projects and new projects identified in FY 2017-18 CIB is approximately $42.8 million. The CIB for following fiscal year, FY 2018-19, is estimated at $40.8 million. The estimated total budget needed to complete these projects in future fiscal years is estimated at $268.8 million. The ten-year CIP is projected to be $872.7 million, with $352.4 million estimated over the next five years as shown by program in Table 1:

**CIB Table 1: FY 2017-18 Capital Improvements Budget per Program**

| Program | FY 2017-18 (1) | FY 2018-19 (2) | Future FYs to Complete CIB Projects (3) | Total Estimated Budget Required in next 5 FYs (1)+(2)+(3) | Total Ten Year CIP |
|---|---|---|---|---|---|
| **Collection System** | $18,492,000 | $17,180,000 | $105,096,000 | $140,768,000 | $353,249,000 |
| **Treatment Plant** | $18,045,000 | $18,707,000 | $136,758,000 | $173,510,000 | $446,521,000 |
| **General Improvements** | $4,277,000 | $2,912,000 | $8,398,206 | $15,587,206 | $29,024,000 |
| **Recycled Water** | $460,000 | $540,000 | $12,527,000 | $13,527,000 | $24,873,000 |
| **Contingency** | $1,500,000 | $1,500,000 | $6,000,000 | $9,000,000 | $19,000,000 |
| **Totals:** | **$42,774,000*** | **$40,839,000*** | **$268,779,206** | **$352,392,206** | **$872,667,000** |

* Approval of FY 2017-18 projects may commit approximately $27.4 million in FY 2018-19.

By adopting the CIB, the Board of Directors authorizes staff to pursue work on specifically identified projects in the Treatment Plant, Collection System, General Improvements, and Recycled Water Programs. The Board has authorized firm individual project budgets and delegated authority to implement the projects as adopted under Resolution 2016-046. The CIP provides the basis for project scheduling, staffing, and long-range financial planning. The CIP also serves as the framework for rate decisions. In addition, any previously approved budget may carry forward to the next fiscal year. Staff will report the final CIB expenditures and amended budgets after the end of each fiscal year.

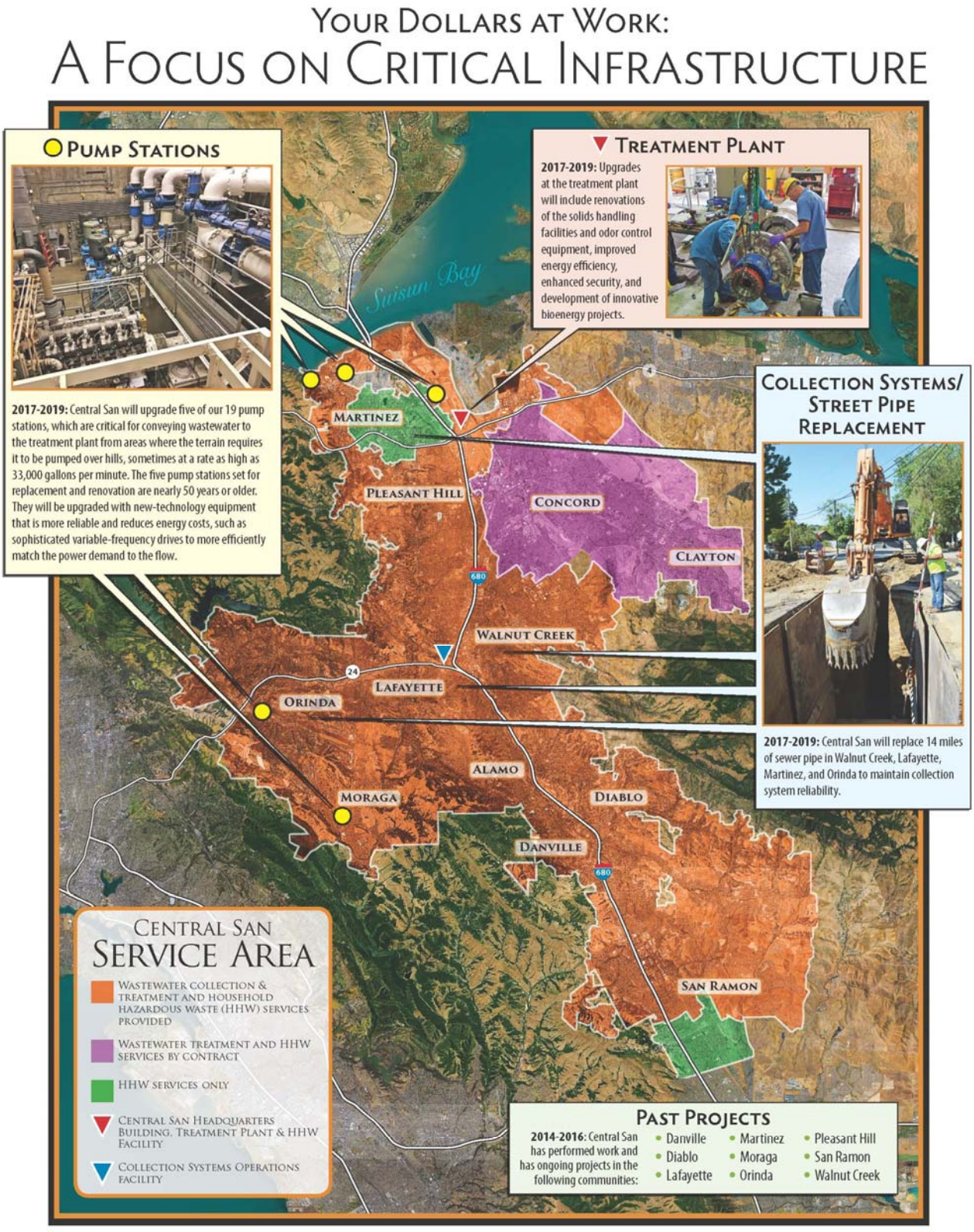
## Acronyms and Abbreviations in the CIB/CIP

| Acronyms and Abbreviations in the CIB/CIP | |
|---|---|
| **A/N** | Aeration and Nitrification |
| **AB** | Assembly Bill |
| **ADA** | Americans with Disabilities Act |
| **ADWF** | Average Dry Weather Flow |
| **AFY** | Acre-Feet per Year |
| **ARB** | Air Resources Board |
| **ArcSNAP** | Old Sewer Network Analysis Program |
| **ASB** | Auxiliary Steam Boiler |
| **ATS** | Automatic Transfer Switch |
| **AWWA** | American Water Works Association |
| **AWWF** | Average Wet Weather Flow |
| **B&G** | Buildings and Grounds |
| **BAAQMD** | Bay Area Air Quality Management District |
| **BACWA** | Bay Area Clean Water Agencies |
| **CAA** | Clean Air Act |
| **CAD** | Contractual Assessment District or Computer Aided Design |
| **CAFR** | Comprehensive Annual Financial Report |
| **CalOSHA** | California Occupational Health and Safety Administration |
| **CARB** | California Air Resources Board |
| **CASA** | California Association of Sanitation Agencies |
| **CBC** | California Building Code |
| **CCCERA** | Contra Costa County Employees Retirement Association |
| **CCCSD** | Central Contra Costa Sanitary District |
| **CCTV** | Closed Circuit TV |
| **CCWD** | Contra Costa Water District |
| **CEC** | California Energy Commission |
| **CECs** | Constituents of Emerging Concern |
| **CIB** | Capital Improvement Budget |
| **CIP** | Capital Improvement Plan – covers 10 years |
| **CIPP** | Cured-in-Place Pipe |
| **CMMS** | Computerized Maintenance Management Program |
| **CNWS** | Concord Naval Weapons Station |
| **CO2** | Carbon Dioxide |
| **Co-Gen** | Cogeneration |
| **COP** | Certificates of Participation |
| **CS** | Collection System |
| **CSO** | Collection System Operations |
| **CSOD** | Collection System Operations Division |
| **CWMP** | Comprehensive Wastewater Master Plan |
| **DAF** | Dissolved Air Flotation |
| **DI** | De-Ionized or Discrete Input |

| Acronyms and Abbreviations in the CIB/CIP | |
|---|---|
| **District** | Central Contra Costa Sanitary District |
| **DP** | District Project |
| **D/T** | Dilution to Threshold |
| **DTSC** | Department of Toxic Substances |
| **DWR** | Department of Water Resources |
| **EIR** | Environmental Impact Report |
| **Elec** | Electrical |
| **EOC** | Emergency Operations Center |
| **EPA** | Environmental Protection Agency |
| **ERP** | Enterprise Resource Planning |
| **FCD** | Contra Costa County Flood Control and Water Conservation District |
| **FOG** | Fats, Oils, and Grease |
| **Fund** | Sewer Construction Fund |
| **FY** | Fiscal Year – July 1 through June 30 |
| **GDI** | Geographic Data Integration |
| **GHG** | Greenhouse Gas |
| **GI** | General Improvements Program |
| **GIS** | Geographic Information Systems |
| **GPS** | Global Positioning System |
| **HOB** | Headquarters Office Building |
| **HTE** | SunGard Program |
| **HVAC** | Heating, Ventilating, and Air Conditioning |
| **I/O** | Input and Output |
| **IEEE** | Institute of Electrical and Electronics Engineers |
| **IFCO** | Industrial Furnace Company |
| **InfoWorks** | New Sewer System Hydrodynamic Model |
| **IT** | Information Technology |
| **LED** | Light-emitting diode |
| **LT** | Long Term |
| **M1** | Manhole 1 |
| **MCC** | Motor Control Center |
| **MGD** | Million Gallons per Day |
| **MHF** | Multiple Hearth Furnace |
| **NACWA** | National Association of Clean Water Agencies (formerly AMSA) |
| **NFPA** | National Fire Protection Agency |
| **NPDES** | National Pollutant Discharge Elimination System |
| **O&M** | Operations & Maintenance |
| **OCU** | Odor Control Unit |
| **PE** | Primary Effluent |
| **PG&E** | Pacific Gas & Electric Company |
| **Ph** | Phase |
| **PLC** | Programmable Logic Controller |

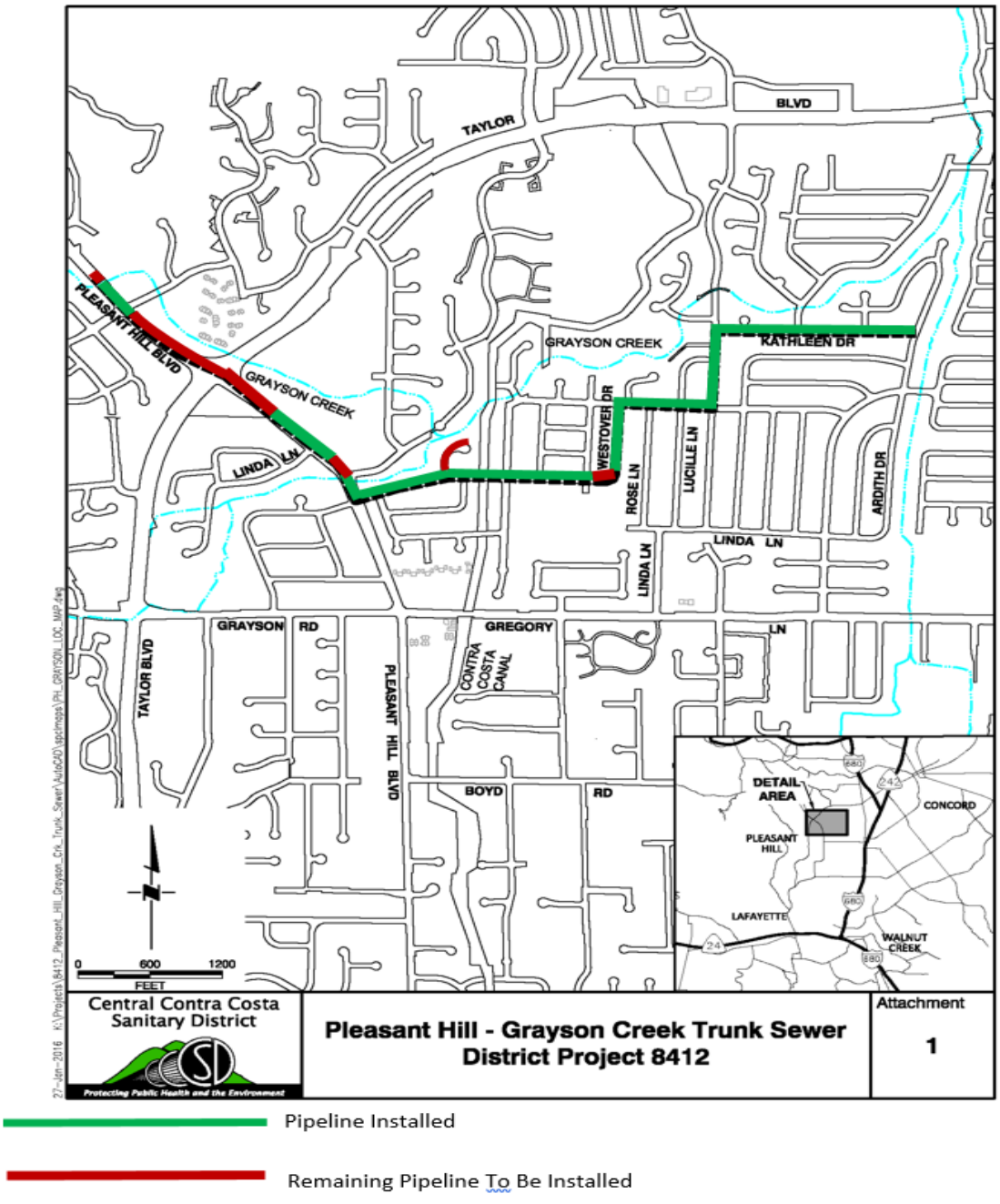
| Acronyms and Abbreviations in the CIB/CIP | |
|---|---|
| **PMIS** | Program Management Information System |
| **POB** | Plant Operations Building |
| **POD** | Plant Operation Division |
| **PPE** | Personal Protective Equipment |
| **PS** | Pumping Station |
| **PTW** | Power Tools for Windows (software program) |
| **RFP** | Request for Proposal |
| **RUE** | Residential Unit Equivalent |
| **RW or ReW** | Recycled Water |
| **RWQCB** | Regional Water Quality Control Board |
| **SCADA** | Supervisory Control and Data Acquisition |
| **SCB** | Solids Conditioning Building |
| **SCF** | Sewer Construction Fund |
| **SSC** | Sewer Service Charge |
| **SSMP** | Sewer System Master Plan |
| **SSO** | Sanitary Sewer Overflow |
| **TP** | Treatment Plant |
| **USACE** | United States Army Corps of Engineers |
| **USEPA** | United States Environmental Protection Agency |
| **UV** | Ultraviolet |
| **v** | Volt |
| **3WLP** | 3 Water Low Pressure (Process Water) |
| **3WHP** | 3 Water High Pressure (Process Water) |

# CIB/ CIP Location Map



# CIP Accomplishments

- **Construction Progress on the Pleasant Hill Grayson Creek Trunk Sewer Project**: The total estimated project budget is $13.7 million. This project, started construction activities in June 2016, and will install approximately 10,000 feet of 18-to 24-inch diameter sewers and abandon several sewers along Grayson Creek. The new sewers will provide a backbone system enabling future replacement of the 60-plus-year-old residential sewers in the Gregory Gardens neighborhoods. Most residential construction on Westover Drive and Kathleen Drive has been completed. Over 70% of the pipeline has been installed.




Pleasant Hill Grayson Creek Project Map

- **Continuing Collection System Sewer Replacement by Completing the Lafayette Phase 10 and North Orinda Phase 6 Sewer Renovation Projects:** These projects have replaced or rehabilitated a total of 17,580 of sewers, of which most were old 6-inch vitrified clay pipes. Construction comprised of sewer replacement, new manholes, and other infrastructure improvements on public right-of-way and easements in Lafayette and Orinda. Trenchless technology was utilized where possible for cost effectiveness and to minimize construction impacts.

- **Completed Construction of the Substation 16 Switchgear Replacement Project to Maintain Reliable Infrastructure at the Treatment Plant:** The existing electrical switchgear that powers the Headworks Facility and influent pumps at the treatment plant required immediate replacement. Central San pre-purchased the electrical equipment and had all systems in place and commissioned prior to December of 2016.

New electrical switchgear for the Treatment Plant Substation 16 project

- **Started Construction of the Headworks Screening Upgrade Project to Remove Screening Materials and Improve the Liquid Process at the Treatment Plant:** The Headworks project will remove the screenings and plastics from the influent wastewater. Removal and disposal of screenings will protect downstream facilities, extend equipment life, and reduce maintenance of process water equipment.

- **Started Construction of the Blower Building Seismic Project to Improve the Sustainability of the Treatment Plant:** The Seismic project will bring the Pump and Blower Building in line with current structural and building code standards. This building contains several critical electrical and mechanical systems required to operate the treatment plant.

# ClB Project Prioritization

The projects included in the FY 2017-18 CIB have been prioritized to ensure the best use of available and approved funds. Each project was evaluated using a prioritization scoring system that includes input from stakeholders within the Operations and Engineering Departments. The prioritization scoring system uses existing Central San prioritization strategies, including guidelines developed by the Water Environment Research Foundation (now referred to as the Water Environment & Reuse Foundation, WE&RF), and prioritization procedures like other NACWA member agencies.

Each project is assigned a priority ranking of **Critical, Very High, High,** or **Medium** based on the project's score. The criteria used to develop the scores take into consideration the "triple bottom line plus," or social, environmental, financial, and technical benefits, of the project and their applicability to Central San's Vision, Mission, and Values. New projects that were identified as part of the Comprehensive Wastewater Master Plan were prioritized through discussions and workshops with Central San staff. The new projects were then scheduled into the Capital Improvement Plan (CIP) based on their relative priorities as follows:

- New projects in the CIB (FY 2017-18 through FY 2018-19) were "**Critical**" priority.
- New projects in the 3 to 5-year timeframe (FY 2019-20 through FY 2021-22) were considered "**Very High**" or "**High**" priority.
- New projects in the 6 to 10-year timeframe (FY 2022-23 through FY 2026-27) were considered "**High**" or "**Medium**" priority.

Criteria were categorized into three categories: 1) Essential Commitments, 2) Project Benefits, and 3) Operational Reliability, as summarized below:

| Criteria Category: Essential Commitments |
|---|
| Complies with Regulatory Requirements and Mandates |
| Meets Commitment with Outside Agency or Existing Contract |
| Reduces Potential Health or Safety Hazards |
| Implements Board of Directors' Policy/Priority |
| Increases Capacity to Meet Projected Build-out |

| Criteria Category: Project Benefits |
|---|
| Impacts Phasing or Implementation Schedule for Other Projects |
| Optimizes Capital Expenditures |
| Reduces Operations and Maintenance Costs |
| Reduces Social Impacts |
| Increases Sustainable Use of Natural or Existing Resources |
| Reduces Environmental Impacts |
| Supports Timely Adoption of Technology Improvements |

| Criteria Category: Operational Reliability |
|---|
| Consistent with Asset Management Program |
| Improves Reliability and System Performance |
| Improves Facility-Wide Resiliency |

# CIB Major Project Emphasis

Although the CIB is comprised of budgets for many individual projects, each year there are several major projects that together account for most of the total capital budget. In FY 2017-18, the emphasis will be on 13 large projects (those projects over $750,000), which together account for $27,246,000 or 64% of the total CIB budget for the year. Each major project is summarized, including the FY 2017-18 budget as follows:

| 1. Headworks Screening Upgrades | | |
|---|---|---|
| FY 2017-18 Budget: $5,720,000 | Estimated total project cost:<br>Estimated completion date: | $8,220,000<br>Dec-18 |
| This project will replace the existing climber screens with multi-rake fine screens and construct a new screenings removal system and other mechanical and electrical improvements at the treatment plant Headworks facility. | | |

| 2. Pump & Blower Building Seismic Upgrade | | |
|---|---|---|
| FY 2017-18 Budget: $2,358,000 | Estimated total project cost:<br>Estimated completion date: | $6,782,000<br>May-18 |
| This project is part of Central San's seismic improvement plan based on the Treatment Plant Vulnerability Assessment. The project will retrofit the Pump and Blower Building to meet current seismic design standards. | | |

| 3. Solids Handling Facility Improvements – Phase 1 | | |
|---|---|---|
| FY 2017-18 Budget: $2,625,000 | Estimated total project cost:<br>Estimated completion date: | $66,439,000<br>Dec-24 |
| This project will improve the solids handling facilities at the treatment plant by replacing the old centrifuges, improve sludge blending, and most importantly replace the vintage wet scrubber on the incinerators. Other improvements are being evaluated and considered under this project, such as ash handling and facility improvements. | | |

| 4. Piping Renovation – Phase 9 | | |
|---|---|---|
| FY 2017-18 Budget: $1,075,000 | Estimated total project cost:<br>Estimated completion date: | $1,500,000<br>Oct-18 |
| This phase of the Treatment Plant Piping Renovations Project will include replacement of various old piping and other mechanical and associated controls equipment throughout the entire treatment plant. | | |

| 5. Pleasant Hill – Grayson Creek Trunk Sewer | | |
|---|---|---|
| FY 2017-18 Budget: $800,000 | Estimated total project cost:<br>Estimated completion date: | $13,700,000<br>Sept-17 |
| This project is currently under construction and will install approximately 10,000 feet of 18 to 24-inch sewers in the City of Pleasant Hill and the City of Martinez. In addition, the project will redirect the wastewater flow from Grayson Creek to the newly installed system and abandon several deficient sewers by the creek. | | |

## 6. Walnut Creek Sewer Renovations – Phase 11

| | | |
|---|---|---|
| FY 2017-18 Budget: $2,181,000 | Estimated total project cost: | $3,934,000 |
| | Estimated completion date: | Jan-18 |

This project will replace or rehabilitate up to 9,100 feet of small diameter sewer mains located in the public right-of-way and easements within unincorporated and City limits of Walnut Creek.

## 7. Pump Station Upgrades (New Project)

| | | |
|---|---|---|
| FY 2017-18 Budget: $850,000 | Estimated total project cost: | $33,435,000 |
| | Estimated completion date: | Jun-22 |

This project will make several structural, mechanical, electrical, and instrumentation improvements at the Martinez, Maltby, Fairview, Moraga, Flushkleen, and Orinda Crossroads pump stations as found under recent condition assessments. Replacement includes generators, piping, diesel engines, transfer switches, electrical equipment and other critical items found to be deficient or nearing the end of its useful life.

## 8. Lafayette Sewer Renovations – Phase 11

| | | |
|---|---|---|
| FY 2017-18 Budget: $3,717,000 | Estimated total project cost: | $4,367,000 |
| | Estimated completion date: | Feb-18 |

This project will replace or rehabilitate up to 8,400 feet of small diameter sewer mains located in the public right-of-way and easements within the City of Lafayette.

## 9. South Orinda Sewer Renovations – Phase 6

| | | |
|---|---|---|
| FY 2017-18 Budget: $1,500,000 | Estimated total project cost: | $3,752,238 |
| | Estimated completion date: | Jun-19 |

This project will replace or rehabilitate small diameter sewer mains located in the public right-of-way and easements within the City of Orinda. Nearby sites in the Town of Moraga or City of Orinda may be added to this project.

## 10. Walnut Creek Sewer Renovations – Phase 12 (New Project for FY17-18)

| | | |
|---|---|---|
| FY 2017-18 Budget: $1,000,000 | Estimated total project cost: | $4,100,000 |
| | Estimated completion date: | Jun-19 |

This project will replace or rehabilitate small diameter sewer mains located in the public right-of-way and easements within the City of Walnut Creek. Nearby sites in the Alamo, Rossmoor, or Danville may be added to this project.

## 11. Martinez Sewer Renovations – Phase 5

| | | |
|---|---|---|
| FY 2017-18 Budget: $3,470,000 | Estimated total project cost: | $4,095,000 |
| | Estimated completion date: | Jun-18 |

This project will replace or rehabilitate small diameter sewer mains located in the public right-of-way and easements within the unincorporated or City limits of Martinez.

## 12. Server Room Relocation

| | | |
|---|---|---|
| FY 2017-18 Budget: $1,000,000 | Estimated total project cost: | $1,735,430 |
| | Estimated completion date: | Jun-18 |

This project will relocate the main Central San data center and IT infrastructure from the plant operations building basement to a secure and centralized location. The server room is used for all Central San IT operations, excluding the treatment plant.

## 13. Asset Management

| | | |
|---|---|---|
| FY 2017-18 Budget: $950,000 | Estimated total project cost: | $3,439,185 |
| | Estimated completion date: | Jun-19 |

This project will develop a comprehensive asset management program that optimizes the lifecycle of Central San's assets and delivers high quality, reliable services in a sustainable manner for customers with an acceptable level or risk. This year, the new CityWorks® CMMS will continue to be improved, consolidate the CCTV databases, continue coordination and update of standard operating procedures, O&M manuals, shop drawings, and other reports. In addition, develop and start the implementation of a program management software (PMIS) system to deliver the projects included in the Capital Improvements Program on time and on budget.

# CEQA COMPLIANCE

The CIB is exempt from the California Environmental Quality Act (CEQA) because it is a planning study (Central San CEQA Guidelines Section 15262). Some projects included in this CIB are designated as exempt under CEQA. If appropriate, a Notice of Exemption may be filed for such projects following a future action of the Board of Directors, such as an award of a construction contract. Other projects in the CIB are designated as needing a "Negative Declaration" or "Environmental Impact Report" to comply with CEQA. Non-exempt CEQA projects will be considered for Board approval on a case by case basis after preparation and certification of the appropriate CEQA documentation.

The table below presents the CEQA compliance status of projects for which staff is requesting an authorization of sewer construction funds. The types of CEQA documentation anticipated being required for each project are listed below:

- *Exemption:* Staff will recommend an Exemption finding, if still appropriate, when each project receives approval consideration at a future Board of Directors meeting.

- *Negative Declaration:* Staff will prepare a Negative Declaration for the project. Board of Directors' consideration of approval of the project would follow its approval of the Negative Declaration.

- *Environmental Impact Report (EIR):* Staff will direct preparation of an EIR. Board of Directors' consideration of approval of the project would follow certification of the EIR.

- *CEQA Documents Completed:* For these projects, CEQA compliance has already been achieved through documents previously prepared and approved.

# CEQA Compliance Summary for Fiscal Year 2017-18

| Program/Project | | Exemption | CEQA Document Required for Completed |
|---|---|---|---|
| **COLLECTION SYSTEM PROGRAM** | | | |
| 5991 | Pleasant Hill Sewer Renovations - Phase 2 | X | |
| 6602 | South Jackson Contractual Assessment District (CAD) | X | |
| 6603 | North Jackson Contractual Assessment District (CAD) | X | |
| 8412 | Pleasant Hill - Grayson Creek Trunk Sewer | X | |
| 8417 | Survey Monument Install | X | |
| 8418 | Collection System Modeling Support | X | |
| 8419 | Collection System Planning | X | |
| 8420 | Development Sewerage | X | |
| 8422 | Walnut Creek Sewer Renovation - Phase 11 | X | |
| 8430 | Lafayette Sewer Renovation - Phase 11 | X | |
| 8433 | S. Orinda Sewer Renovation - Phase 6 | X | |
| 8434 | Collection System Urgent Repairs | X | |
| 8435 | Walnut Creek Sewer Renovation - Phase 12 | X | |
| 8436 | Pump Station Upgrades | X | |
| 8437 | Martinez Sewer Renovation - Phase 5 | X | |
| 8440 | Pipe Burst Blanket Contract | X | |
| 8441 | CIPP Blanket Contract | X | |
| 8442 | Pump Station Equipment & Piping Replacement - Phase 2 | X | |
| 8443 | Large Diameter Pipeline Inspection Program | X | |
| 8444 | Force Main Inspection Program | X | |
| 8445 | North Orinda Sewer Renovation - Phase 7 | X | |
| 8446 | Lafayette Sewer Renovation - Phase 12 | X | |
| 8447 | Pump Station Security Improvements | X | |
| 8448 | Manhole Modification Project | X | |
| TBD | Collection System Sewer Renovation | X | |
| **TREATMENT PLANT PROGRAM** | | | |
| 7291 | Pump & Blower Building Seismic Upgrade | X | |
| 7292 | Switchgear Refurbishment - Phase 2 | X | |
| 7301 | Treatment Plant Planning | X | |
| 7304 | PLC System Upgrades | X | |
| 7314 | Treatment Plant Urgent Repairs | X | |
| 7315 | Applied Research & Innovations | X | |
| 7317 | Plant Control System Network Upgrades | X | |
| 7319 | Lab Upgrades and Repair | X | |
| 7320 | Plant Energy Optimization (CoGen) | X | Alternative energy sources may require a Negative Declaration or EIR. |
| 7322 | Fire Protection System - Phase 2 | X | |
| 7326 | Equipment Replacement | X | |

| Program/Project | | Exemption | CEQA Document Required for Completed |
|---|---|---|---|
| 7327 | Headworks Screenings Update | X | |
| 7328 | Influent Pump Electrical Improvements | X | |
| 7329 | Furnace Burner Upgrades | X | |
| 7330 | Piping Renovation - Phase 9 | X | |
| 7339 | Plant Control System I/O Replacement | X | |
| 7341 | Walnut Creek/Grayson Creek Levee Rehab | | Contra Costa County Flood Control and Water Conservation District will be the Lead Agency, so will determine the appropriate CEQA documentation. |
| 7348 | Solids Handling Facility Improvements - Phase 1 | X | |
| 7349 | Aeration and Energy Upgrades | X | |
| 7351 | Mechanical and Concrete Renovations | X | |
| 7352 | UV Disinfection Upgrades | X | |
| 7353 | Outfall Improvements - Phase 7 | X | |
| 7354 | Treatment Plant Security Improvements | X | |
| 7355 | Odor Control Upgrades - Phase 1 | X | |
| 7356 | Land Acquisition | X | Land acquisition for capacity-related facilities may require a Negative Declaration or EIR. |
| 7357 | Plant-Wide Instrumentation Upgrades | X | |
| 7358 | Innovative Bioenergy Demonstration | X | Planning is exempt; more information is needed on future aspects of this project to determine the appropriate CEQA documentation. |
| 7359 | Solids Conditioning Building Roof Replacement | X | |
| 7360 | Existing Plant Facilities As-Is Drawings | X | |
| TBD | Treatment Plant Safety Enhancement - Phase 5 | X | |
| TBD | Plant Operations Building (POB) Seismic Upgrades | X | |
| **GENERAL IMPROVEMENTS PROGRAM** | | | |
| 8207 | General Security and Access | X | |
| 8227 | Geographic Data Integration (GDI) Treatment Plant | X | |
| 8230 | Capital Legal Services | X | |
| 8236 | District Easement Acquisition | X | |
| 8238 | Asset Management Program Development | X | |
| 8240 | Information Technology (IT) Development | X | |
| 8243 | Server Room Relocation | X | |
| 8247 | Property and Building Improvements | X | |
| 8516 | Equipment Acquisition | X | |
| 8517 | Vehicle Replacement Program | X | |
| TBD | Cyber Security | X | |

| RECYCLED WATER PROGRAM | | | |
|---|---|---|---|
| 7306 | Zone 1 Recycled Water | X | |
| 7346 | Recycled Water Distribution System Surge Analysis | X | |
| 7361 | Filter Plant Improvements | X | |

# CIB - Collection System Program

The major points of emphasis for the Collection System Program in FY 2017-18 are:

- Renovate sewers as they reach the end of their useful lives to avoid structural failure, reduce dry-weather overflows, and control maintenance costs;
- Upgrade the sewer system for future renovations;
- Improve the reliability and operations of the pumping stations;
- Help reduce sanitary sewer overflows (SSOs) by replacing deteriorated and high maintenance sewers; and
- Riverwatch settlement agreement.

The process for project identification, prioritization, and scheduling includes seven major components:

- Reduce impacts to customers/residents and the communities;
- Results from Central San's InfoMaster model, which is an advanced GIS integrated risk-based analytical asset management and capital planning tool;
- Results from Central San's TV inspection program that identify lines in need of rehabilitation or replacement;
- CSO maintenance records including overflows and stoppages;
- The Pumping Station Inventory Update, which identified necessary reliability improvements;
- Collection System Master Plan, which identified capacity limitations in the collection system; and
- Coordination with capital improvement programs for paving and pipeline projects of other agencies/utilities.

This process allows staff to establish priorities and schedules for the individual elements of the system that are incorporated into the capital budget and plan. Assessment tools, such as InfoMaster and CCTV inspection, are utilized to confirm the need for projects. After priorities and schedules are set, projects proceed to design and construction. At each step of the process, the level of accuracy in project scope, schedule, and cost improves. The Collection System Program is comprised of the following projects, and planned expenditures.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

**Example of project driver(s)**Each project is described on the following pages. Each project summary includes project name, description, prioritization, purpose, location, budgetary information and drivers (i.e.; what is the main impetus for a project). The main driver(s) for each project is (are) identified by highlighting in orange background color and **bold** text. Driver(s) that are not as significant or not relevant are displayed in gray.

All projects in this program are summarized, including planned expenditures, in the following table 2:

## CIB Table 2 – FY 2017-18 Collection System Program Budget/Project Summary:

| Project Number | Project | Budget-to-Date | FY 2017-18 | FY 2018-19 | Future FYs | Total Project Cost |
|---|---|---|---|---|---|---|
| 5991 | Pleasant Hill Sewer Renovation - Phase 2 | $300,000 | $160,000 | $160,000 | $1,883,000 | $2,503,000 |
| 6602 | South Jackson Contractual Assessment District (CAD) | $333,867 | $0 | $0 | $0 | $333,867 |
| 6603 * | North Jackson Contractual Assessment District (CAD) | $0 | $400,000 | $0 | $0 | $400,000 |
| 8412 | Pleasant Hill - Grayson Creek Trunk Sewer | $12,900,000 | $800,000 | $0 | $0 | $13,700,000 |
| 8418 * | Collection System Modeling Support | $0 | $100,000 | $100,000 | $300,000 | $500,000 |
| 8419 | Collection System Planning | $670,000 | $200,000 | $200,000 | $600,000 | $1,670,000 |
| TBD * | Development Sewerage Support | $0 | $400,000 | $400,000 | $1,350,000 | $2,150,000 |
| 8422 | Walnut Creek Sewer Renovation - Phase 11 | $1,753,000 | $2,181,000 | $0 | $0 | $3,934,000 |
| 8430 | Lafayette Sewer Renovation - Phase 11 | $650,000 | $3,717,000 | $0 | $0 | $4,367,000 |
| 8433 | S. Orinda Sewer Renovation - Phase 6 | $102,238 | $1,500,000 | $2,150,000 | $0 | $3,752,238 |
| 8434 | Collection System Urgent Repairs | $316,000 | $100,000 | $300,000 | $0 | $716,000 |
| 8435 * | Walnut Creek Sewer Renovation - Phase 12 | $0 | $1,000,000 | $3,100,000 | $0 | $4,100,000 |
| 8436 | Pump Station Upgrades | $450,000 | $850,000 | $1,746,000 | $30,389,000 | $33,435,000 |
| 8437 | Martinez Sewer Renovation - Phase 5 | $625,000 | $3,470,000 | $0 | $0 | $4,095,000 |
| 8440 * | Pipe Bursting Contract 2017-2020 | $0 | $700,000 | $250,000 | $250,000 | $1,200,000 |
| 8441 * | CIPP Contract 2017-2020 | $0 | $300,000 | $100,000 | $100,000 | $500,000 |
| 8442 * | Pump Station Equipment & Piping Replacement - Phase 2 | $0 | $36,000 | $100,000 | $400,000 | $536,000 |
| 8443 * | Large Diameter Pipeline Inspection Program | $0 | $200,000 | $200,000 | $600,000 | $1,000,000 |
| 8444 * | Force Main Inspection Program | $0 | $75,000 | $75,000 | $225,000 | $375,000 |
| 8445 * | North Orinda Sewer Renovation - Phase 7 | $0 | $636,000 | $3,425,000 | $0 | $4,061,000 |
| 8446 * | Lafayette Sewer Renovation - Phase 12 | $0 | $636,000 | $3,475,000 | $0 | $4,111,000 |
| 8447 * | Pump Station Security Improvements | $0 | $131,000 | $249,000 | $2,240,000 | $2,620,000 |
| 8448 * | Manhole Modifications | $0 | $400,000 | $400,000 | $1,200,000 | $2,000,000 |
| TBD * | Collection System Sewer Renovation Phase 1 | $0 | $500,000 | $750,000 | $65,559,000 | $66,809,000 |
| | **Total Program** | **$18,100,105** | **$18,492,000** | **$17,180,000** | **$105,096,000** | **$158,868,105** |

* New Project included in FY 2017-18

# Pleasant Hill Sewer Renovation - Phase 2

| Project Name | Pleasant Hill Sewer Renovation - Phase 2 | Project No. | 5991 |
|---|---|---|---|
| Program: | Collection System | Phase | D |
| Project Manager: | Nancy Molina | Priority Rank | Very High |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 60 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

To replace and renovate small-diameter sewers within the City of Pleasant Hill.

## Drivers:

Central San's 1,500+ mile collection system has pipe segments that range in age from new to more than 100 years old. Some of the pipe segments are at or near the end of their useful life as evidenced by their need for frequent maintenance, high rate of infiltration, and/or threat of structural collapse.


More than 300 miles of the small-diameter sewers in the collection system were constructed prior to 1956. The methods and materials of construction used at that time do not currently perform well, and they are the source of over 90% of the dry-weather sewer system overflows (SSOs).

Central San implemented a sewer renovation program in 1991 to replace small-diameter sewers to control future maintenance requirements and costs, to minimize the number of overflows, to limit the quantity of rainfall entering the collection system, and to improve the level of service provided to customers.

## Description:

The Pleasant Hill Sewer Renovations - Phase 2 Project will replace or rehabilitate up to approximately 9,000 feet small diameter sewers located in both public right-of-way and easements within the City of Pleasant Hill.

**Location(s):** City of Pleasant Hill

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $183,000 | $0 | $0 | $0 | **$183,000** |
| **Design:** | $117,000 | $160,000 | $160,000 | $0 | **$437,000** |
| **Construction:** | $0 | $0 | $0 | $1,883,000 | **$1,883,000** |
| **FY Total:** | $300,000 | $160,000 | $160,000 | $1,883,000 | **$2,503,000** |

# South Jackson Contractual Assessment District (CAD)

| Project Name | South Jackson CAD | Project No. | 6602 |
|---|---|---|---|
| Program: | Collection System | Phase | C |
| Project Manager: | Russell Leavitt | Priority Rank | N/A |
| Department/Division: | Engineering/Planning & Development | Ranking Score | N/A |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | **Capacity** |
| Regulatory | Sustainability |

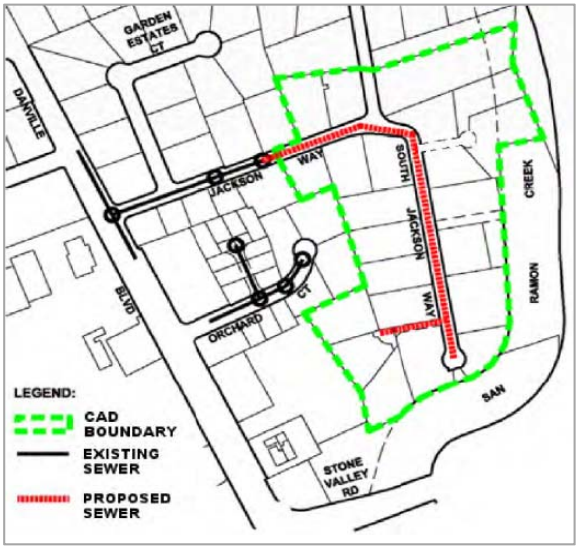
## Purpose:

To provide a financing mechanism for the extension of public sewers into areas that are currently served by septic tanks, referred to as Contractual Assessment Districts (CADs).

## Drivers:

In certain instances, the cost to extend public sewers into an area serviced by septic tanks can be an extreme financial burden for one owner or even a small group of owners.

Central San developed the CAD Program to address this financial burden. The CAD process provides a means to finance the cost of sewer improvements over time at a fixed interest rate. The CAD assessments are placed on the customers' property tax bills each year until the entire amount is reimbursed to Central San.




## Description:

The South Jackson Way CAD in Alamo will install approximately 1,200 feet of 8-inch sewer and infrastructure to serve 22 properties. This is a cost neutral project offset by property owners.

## Location(s): Alamo

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $333,867 | $0 | $0 | $0 | **$333,867** |
| **FY Total:** | $333,867 | $0 | $0 | $0 | **$333,867** |

# North Jackson Contractual Assessment District (CAD)

| Project Name | North Jackson CAD | Project No. | 6603 |
|---|---|---|---|
| Program: | Collection System | Phase | C |
| Project Manager: | Russell Leavitt | Priority Rank | N/A |
| Department/Division: | Engineering/Planning & Development | Ranking Score | N/A |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | **Capacity** |
| Regulatory | Sustainability |

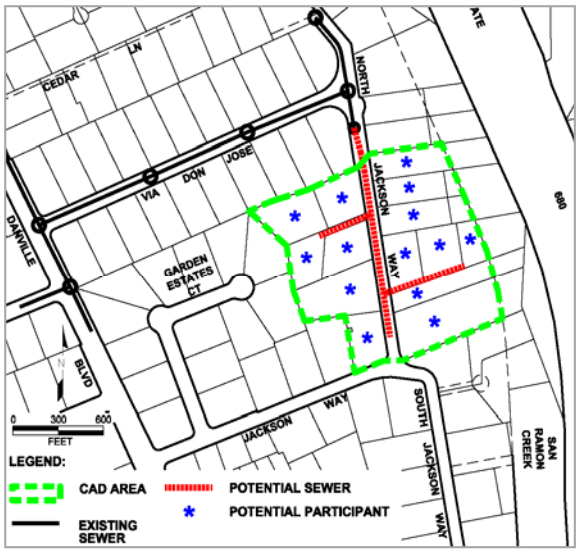
## Purpose:

To provide a financing mechanism for the extension of public sewers into areas that are currently served by septic tanks, referred to as Contractual Assessment Districts (CADs).

## Drivers:

In certain instances, the cost to extend public sewers into an area serviced by septic tanks can be an extreme financial burden for one owner or even a small group of owners.

Central San developed the CAD Program to address this financial burden. The CAD process provides a means to finance the cost of sewer improvements over time at a fixed interest rate. The CAD assessments are placed on the customers' property tax bills each year until the entire amount is reimbursed to the District.




## Description:

The North Jackson Way CAD in Alamo will install up to 1,150 feet of 8-inch sewer and infrastructure to serve up to 14 properties. This is a cost neutral project offset by property owners.

## Location(s): Unincorporated Alamo

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $400,000 | $0 | $0 | **$400,000** |
| **FY Total:** | $0 | $400,000 | $0 | $0 | **$400,000** |

# Pleasant Hill - Grayson Creek Trunk Sewer

| Project Name | Pleasant Hill -Grayson Creek Trunk Sewer | Project No. | 8412 |
|---|---|---|---|
| Program: | Collection System | Phase | C |
| Project Manager: | Nancy Molina | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | **Capacity** |
| **Regulatory** | Sustainability |

## Purpose:

Reduce potential SSOs and replace old 6-inch sewer mains.

## Drivers:

A sewer relief project was identified in the 2010 Collection System Master Plan to address modeled wet weather capacity deficiencies in Pleasant Hill. Central San staff recently re-evaluated and confirmed the need for the project based on actual flow data and condition assessments of the trunk sewers along Grayson Creek.

The new relief trunk sewer will divert flows to reduce the risk of SSOs and will provide an opportunity to replace and renovate old 6-inch sewer mains in nearby Pleasant Hill areas.

Some of the additional sewer replacement work planned under the Pleasant Hill Corridor Project, scheduled to start in 2017, was included in this project to avoid significant paving reconstruction on Pleasant Hill Road.

## Description:

The following are major elements included in the project:

- Install sewers ranging from 8-inches to 24-inches in diameter to divert wastewater flows from existing capacity-deficient sewers, and connect to the existing 36-inch interceptor on Ardith Drive
- Abandon existing sewers near Grayson Creek and re-direct wastewater flows to new trunk sewer
- Renovate and replace small diameter sewers in the nearby Pleasant Hill Road area
- Coordinate improvements with City of Pleasant Hill paving projects

**Location(s):** Cities of Pleasant Hill and Martinez

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $1,400,000 | $0 | $0 | $0 | **$1,400,000** |
| **Construction:** | $11,500,000 | $800,000 | $0 | $0 | **$12,300,000** |
| **FY Total:** | $12,900,000 | $800,000 | $0 | $0 | **$13,700,000** |

# Collection System Modeling Support

| Project Name | Collection System Modeling Support | Project No. | 8418 |
|---|---|---|---|
| Program: | Collection System | Phase | C |
| Project Manager: | Justin Waples | Priority Rank | Critical |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 65 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | **Capacity** |
| **Regulatory** | **Sustainability** |

## Purpose:

To maintain and update the InfoWorks® hydrodynamic collection system model.

## Drivers:

A new InfoWorks® ICM hydrodynamic collection system model was configured and calibrated for 190 miles of the trunk sewer system. The new model replaced an old steady-state static model that was no longer supported by vendors and did not offer the same level of accuracy or useful output information that is available with new vendor-supported state-of-the-art hydrodynamic models.

The new model is used for several critical Central San operations such as evaluating sewer capacities, identifying capacity deficiencies, developing sewer sizing criteria, evaluating impacts from increased flows due to development (paid by permit or plan review fees) and special discharges, evaluating re-routing options, and providing hydraulic grade line information that could be helpful during emergencies or for sewer renovation work.

## Description:

The following are major elements included in the project:

- Complete migration from the previous steady state static model to the new InfoWorks® ICM model
- Complete expansion of the trunk sewer model into high priority development areas where anticipated sewer capacity evaluations will be required
- Identify critical areas with model predicted surcharge conditions and install level monitors or smart manhole covers

**Location(s):** Collection System

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $100,000 | $100,000 | $300,000 | **$500,000** |
| **FY Total:** | $0 | $100,000 | $100,000 | $300,000 | **$500,000** |

# Collection System Planning

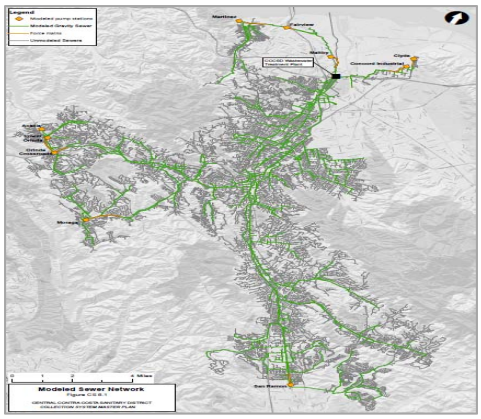
| Project Name | Collection System Planning | Project No. | 8419 |
|---|---|---|---|
| Program: | Collection System | Phase | P |
| Project Manager: | Michael Penny | Priority Rank | Critical |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 70 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | **Capacity** |
| **Regulatory** | **Sustainability** |

## Purpose:

To complete technical evaluations to address regulatory drivers, assess collection system replacement needs, evaluate sewer capacities, and investigate optimization opportunities.

## Drivers:




There are several important collection system and pump stations planning efforts. Regulatory planning efforts include updates to the Sewer System Management Plan (SSMP), required by the San Francisco Regional Water Quality Control Board. Sewer capacity is an important consideration for new development and special discharge requests to ensure that major capacity limitations and potential improvements triggered from new flows are identified. The InfoWorks® collection system dynamic model is used to assess the capacity of gravity sewers and to provide design information for sewer renovation capital projects. Occasional flow and level monitoring are used for model calibration and to verify sewer hydraulic conditions. An InfoMaster® sewer replacement risk model is maintained by staff and used to update the long-term strategy for sewer replacement and to confirm long-term capital improvement plan project costs and timing.

## Description:

The following are major elements included in the project:

- Updates to the SSMP
- Perform capacity evaluations for proposed developments and special discharge requests
- Update InfoMaster sewer replacement risk model and long-term sewer replacement strategy
- Evaluate new technologies and pilots applicable to collection system/pump station operations and maintenance to reduce operations and maintenance costs.

**Location(s):** Collection System and Pump Stations

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $670,000 | $200,000 | $200,000 | $600,000 | **$1,670,000** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $0 | $0 | $0 | **$0** |
| **FY Total:** | $670,000 | $200,000 | $200,000 | $600,000 | **$1,670,000** |

# Development Sewerage Support

| Project Name | Development Sewerage Support | Project No. | TBD |
|---|---|---|---|
| Program: | Collection System | Phase | C |
| Project Manager: | Tom Godsey | Priority Rank | N/A |
| Department/Division: | Engineering/Capital Projects | Ranking Score | N/A |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | **Capacity** |
| Regulatory | **Sustainability** |

## Purpose:

To provide for appropriate capitalization of Central San force account labor and other expenses for planning, design, and construction of developer installed sewer facilities.

## Drivers:


Central San requires property owners to pay for main sewer extensions needed to serve their property. Where sewers are designed, and installed by developers or other private parties, Central San planning, plan review, right-of-way, inspection and record drawing/mapping efforts are required to ensure that contributed sewers meet the Central San's Standard Specifications for Design and Construction. These activities are capitalized under this project.

A portion of the revenue collected for plan review and inspection is credited to the Sewer Construction Fund and offsets some of the expenditures made under this capital project.

## Description:

This is a cost-neutral project offset by development fees. The costs for the sewer infrastructure will be ultimately paid by the developers. This project will be used to fund right-of -way, survey, and consultant costs for developer installed sewer facilities.

**Location(s):** Miscellaneous locations throughout the Collection System

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $400,000 | $400,000 | $1,350,000 | **$2,150,000** |
| **FY Total:** | $0 | $400,000 | $400,000 | $1,350,000 | **$2,150,000** |

# Walnut Creek Sewer Renovation - Phase 11

| Project Name | Walnut Creek Sewer Renovation-Phase 11 | Project No. | 8422 |
|---|---|---|---|
| Program: | Collection System | Phase | C |
| Project Manager: | Mark Wenslawski | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

To replace and renovate small-diameter sewers within the City of Walnut Creek.

## Drivers:

Central San's 1,500+ mile collection system has pipe segments that range in age from new to more than 100 years old. Some of the pipe segments are at or near the end of their useful life as evidenced by their need for frequent maintenance, high rate of infiltration, and/or threat of structural collapse.

More than 300 miles of the small-diameter sewers in the collection system were constructed prior to 1956. The methods and materials of construction used at that time do not currently perform well, and they are the source of over 90% of the dry-weather SSOs.

Central San implemented a sewer renovation program in 1991 to replace small-diameter sewers to control future maintenance requirements and costs, to minimize the number of overflows, to limit the quantity of rainfall entering the collection system, and to improve the level of service provided to customers.

## Description:

The Walnut Creek Sewer Renovation - Phase 11 Project will replace or rehabilitate approximately 9,100 feet of small diameter sewers located in both public right-of-way and easements within the City of Walnut Creek.

**Location(s):** City of Walnut Creek

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $150,000 | $0 | $0 | $0 | **$150,000** |
| **Design:** | $391,000 | $0 | $0 | $0 | **$391,000** |
| **Construction:** | $1,212,000 | $2,181,000 | $0 | $0 | **$3,393,000** |
| **FY Total:** | $1,753,000 | $2,181,000 | $0 | $0 | **$3,934,000** |

# Lafayette Sewer Renovation - Phase 11

| Project Name | Lafayette Sewer Renovation - Phase 11 | Project No. | 8430 |
|---|---|---|---|
| Program: | Collection System | Phase | C |
| Project Manager: | Amanda Schmidt | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

To replace and renovate small-diameter sewers within the City of Lafayette.

## Drivers:

Central San's 1,500+ mile collection system has pipe segments that range in age from new to more than 100 years old. Some of the pipe segments are at or near the end of their useful life as evidenced by their need for frequent maintenance, high rate of infiltration, and/or threat of structural collapse.

More than 300 miles of the small-diameter sewers in the collection system were constructed prior to 1956. The methods and materials of construction used at that time do not currently perform well, and they are the source of over 90% of the dry-weather SSOs.

Central San implemented a sewer renovation program in 1991 to replace small-diameter sewers to control future maintenance requirements and costs, to minimize the number of overflows, to limit the quantity of rainfall entering the collection system, and to improve the level of service provided to customers.

## Description:

The Lafayette Sewer Renovation - Phase 11 Project will replace or rehabilitate approximately 8,400 feet of small-diameter sewers located in both public right-of-way and easements within the City of Lafayette.

**Location(s):** City of Lafayette

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $150,000 | $0 | $0 | $0 | **$150,000** |
| **Design:** | $400,000 | $0 | $0 | $0 | **$400,000** |
| **Construction:** | $100,000 | $3,717,000 | $0 | $0 | **$3,817,000** |
| **FY Total:** | $650,000 | $3,717,000 | $0 | $0 | **$4,367,000** |

# South Orinda Sewer Renovation - Phase 6

| Project Name | South Orinda Sewer Renovation - Phase 6 | Project No. | 8433 |
|---|---|---|---|
| Program: | Collection System | Phase | D/C |
| Project Manager: | Mark Wenslawski | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

To replace and renovate small-diameter sewers within the southern portion of the City of Orinda.

### Drivers:

Central San's 1,500+ mile collection system has pipe segments that range in age from new to more than 100 years old. Some of the pipe segments are at or near the end of their useful life as evidenced by their need for frequent maintenance, high rate of infiltration, and/or threat of structural collapse.

More than 300 miles of the small-diameter sewers in the collection system were constructed prior to 1956. The methods and materials of construction used at that time do not currently perform well, and they are the source of over 90% of the dry-weather SSOs.

Central San implemented a sewer renovation program in 1991 to replace small-diameter sewers to control future maintenance requirements and costs, to minimize the number of overflows, to limit the quantity of rainfall entering the collection system, and to improve the level of service provided to customers.

## Description:

The South Orinda Sewer Renovation - Phase 6 Project will replace or rehabilitate approximately 8,500 feet of small-diameter sewers located in both public right-of-way and easements within the southern portion of the City of Orinda, south of Highway 24.

**Location(s):** City of Orinda

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $102,238 | $47,762 | $0 | $0 | **$150,000** |
| **Design:** | $0 | $500,000 | $0 | $0 | **$500,000** |
| **Construction:** | $0 | $952,238 | $2,150,000 | $0 | **$3,102,238** |
| **FY Total:** | $102,238 | $1,500,000 | $2,150,000 | $0 | **$3,752,238** |

# Collection System Urgent Repairs

| Project Name | Collection System Urgent Repairs | Project No. | 8434 |
|---|---|---|---|
| Program: | Collection System | Phase | C |
| Project Manager: | Amanda Schmidt | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 75 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

## Purpose:

To restore and protect sewers that are discovered in the field to be damaged or near failure.

## Drivers:

During severe wet weather events, sewers at various locations may be discovered to be damaged or near failure. In some cases, landslides or soil erosion may undermine the sewers because of excessive precipitation and flooding. Additionally, seismic events or other unexpected hazards may trigger a sewer failure or cause significant damage. Repair and restoration of these sewers is typically time sensitive.

Central San performs CCTV inspections of over 200 miles of sewers per year and cleans almost 900 miles of sewers per year. During these extensive maintenance practices, field staff or contractors may discover damaged sewers that require immediate attention. Many of these sewer improvements cannot wait for incorporation into a capital improvement project and some of them are beyond the repair capabilities of the Collection System Operations crews.

This project will include bidding and executing a blanket contract that will allow Central San to use a contractor for urgent sewer repair work.

## Description:

Urgent projects may be triggered by the any of the following:

- Damaged or failed sewers identified during routine cleaning and CCTV operations
- Damaged or failed sewers caused by unexpected hazards, seismic events, flooding, wet weather events, soil erosion, and/or landslides
- Safety hazards and site conditions that pose a serious threat to collection system infrastructure

**Location(s):** Miscellaneous locations throughout the Collection System

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $50,000 | $0 | $0 | $0 | **$50,000** |
| **Design:** | $200,000 | $0 | $0 | $0 | **$200,000** |
| **Construction:** | $66,000 | $100,000 | $300,000 | $0 | **$466,000** |
| **FY Total:** | $316,000 | $100,000 | $300,000 | $0 | **$716,000** |

# Walnut Creek Sewer Renovation - Phase 12

| Project Name | Walnut Creek Sewer Renovation - Ph. 12 | Project No. | 8435 |
|---|---|---|---|
| Program: | Collection System | Phase | D/C |
| Project Manager: | Nancy Molina | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

To replace and renovate small-diameter sewers within the City of Walnut Creek.

## Drivers:

Central San's 1,500+ mile collection system has pipe segments that range in age from new to more than 100 years old. Some of the pipe segments are at or near the end of their useful life as evidenced by their need for frequent maintenance, high rate of infiltration, and/or threat of structural collapse.

More than 300 miles of the small-diameter sewers in the collection system were constructed prior to 1956. The methods and materials of construction used at that time do not currently perform well, and they are the source of over 90% of the dry-weather SSOs.

Central San implemented a sewer renovation program in 1991 to replace small-diameter sewers to control future maintenance requirements and costs, to minimize the number of overflows, to limit the quantity of rainfall entering the collection system, and to improve the level of service provided to customers.

## Description:

The Walnut Creek Sewer Renovation - Phase 12 Project will replace or rehabilitate up to approximately 9,000 feet of small diameter sewers located in both public right-of-way and easements within the City of Walnut Creek.

**Location(s):** City of Walnut Creek

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $150,000 | $0 | $0 | **$150,000** |
| **Design:** | $0 | $450,000 | $0 | $0 | **$450,000** |
| **Construction:** | $0 | $400,000 | $3,100,000 | $0 | **$3,500,000** |
| **FY Total:** | $0 | $1,000,000 | $3,100,000 | $0 | **$4,100,000** |

# Pump Station Upgrades

| Project Name | Pump Station Upgrades | Project No. | 8436 |
|---|---|---|---|
| Program: | Collection System | Phase | D |
| Project Manager: | Amanda Schmidt | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 70 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To address aging infrastructure needs at the Martinez, Fairview, Maltby, Moraga, Flushkleen, and Orinda Crossroads Pump Stations.

## Drivers:

As part of the CWMP, there has been a comprehensive condition assessment of the pump stations that has identified several structural, mechanical, electrical, and instrumentation improvements needed at the Martinez, Fairview, Maltby, Moraga, and Orinda Crossroads pump stations. Also, an Arc Flash Study identified several improvements required at these pump stations. This project, previously referred to as the Moraga/Crossroads Pump Station Project (8436), was combined with Fairview/Maltby Project (8429).


## Description:

The following are major elements included in this project:

- Potentially add grinder(s) at Moraga Pump Station
- Rehabilitate or replace corroded steel dry pits at the Fairview & Maltby Pump Stations
- Replace backup generators and ATS improvements
- Increase capacity of diesel engine day tank at Orinda Crossroads Pump Station
- Construct surge tank canopy at Orinda Crossroads Pump Station
- Replace wet weather diesel engines at Moraga and Orinda Crossroads Pump Stations
- Rehabilitate or replace flow meters at Martinez, Fairview, and Maltby Pump Stations
- Recondition or replace pumps, valves, and gates, and repair/recoat piping and concrete
- Major electrical/ controls replacement, including Arc Flash Study recommendations
- Replace worn control panels and seismically brace control panels and electrical cabinets
- Improve safety devices such as replacement of gas detection systems and eye wash stations

**Location(s):** Martinez, Fairview, Maltby, Moraga, Flushkleen, and Orinda Crossroads Stations

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $450,000 | $0 | $0 | $0 | **$450,000** |
| **Design:** | $0 | $850,000 | $1,746,000 | $0 | **$2,596,000** |
| **Construction:** | $0 | $0 | $0 | $30,389,000 | **$30,389,000** |
| **FY Total:** | $450,000 | $850,000 | $1,746,000 | $30,389,000 | **$33,435,000** |

# Martinez Sewer Renovation - Phase 5

| Project Name | Martinez Sewer Renovation - Phase 5 | Project No. | 8437 |
|---|---|---|---|
| Program: | Collection System | Phase | C |
| Project Manager: | Mark Wenslawski | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

To replace and renovate small-diameter sewers within the City of Martinez.

## Drivers:

Central San's 1,500+ mile collection system has pipe segments that range in age from new to more than 100 years old. Some of the pipe segments are at or near the end of their useful life as evidenced by their need for frequent maintenance, high rate of infiltration, and/or threat of structural collapse.

More than 300 miles of the small-diameter sewers in the collection system were constructed prior to 1956. The methods and materials of construction used at that time do not currently perform well, and they are the source of over 90% of the dry-weather SSOs.

Central San implemented a sewer renovation program in 1991 to replace small-diameter sewers to control future maintenance requirements and costs, to minimize the number of overflows, to limit the quantity of rainfall entering the collection system, and to improve the level of service provided to customers.

## Description:

The Martinez Sewer Renovation - Phase 5 Project will replace or rehabilitate approximately 8,700 feet of small diameter sewers located in both public right-of-way and easements within the City of Martinez, north of Highway 4 and near the downtown area.

**Location(s):** City of Martinez

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $150,000 | $0 | $0 | $0 | **$150,000** |
| **Design:** | $475,000 | $0 | $0 | $0 | **$475,000** |
| **Construction:** | $0 | $3,470,000 | $0 | $0 | **$3,470,000** |
| **FY Total:** | $625,000 | $3,470,000 | $0 | $0 | **$4,095,000** |

# Pipe Burst Blanket Contract 2017-2020

| Project Name | Pipe Burst Blanket Contract 2017-2020 | Project No. | 8440 |
|---|---|---|---|
| Program: | Collection System | Phase | D/C |
| Project Manager: | Jason DeGroot | Priority Rank | Critical |
| Department/Division: | Operations/Collection System Operations | Ranking Score | 75 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

Use pipe bursting to repair any urgent pipelines which require immediate action.

## Drivers:

Urgent pipeline projects which require immediate repairs may arise anytime during a fiscal year. Some of these repairs cannot be completed by Central San's Collection System Operations Division, and there is typically not enough time to wait for incorporation into a sewer renovation project.

## Description:

This project will include bidding and executing a blanket contract that will allow Central San to use a contractor to perform urgent pipe bursting work.

Pipe burst repairs may be triggered by one of the following situations:

- Structural failure of a pipe
- Imminent threat of pipe break or collapse
- Potential for a SSO

**Location(s):** Miscellaneous locations throughout the Collection System

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $50,000 | $0 | $0 | **$50,000** |
| **Design:** | $0 | $150,000 | $0 | $0 | **$150,000** |
| **Construction:** | $0 | $500,000 | $250,000 | $250,000 | **$1,000,000** |
| **FY Total:** | $0 | $700,000 | $250,000 | $250,000 | **$1,200,000** |

# Cured-In-Place Pipe (CIPP) Contract 2017-2020

| Project Name | CIPP Contract 2017-2020 | Project No. | 8441 |
|---|---|---|---|
| Program: | Collection System | Phase | D/C |
| Project Manager: | Jason DeGroot | Priority Rank | Critical |
| Department/Division: | Operations/Collection System Operations | Ranking Score | 75 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

Use cured-in-place pipe (CIPP) technology to repair any urgent pipelines which require immediate action.

## Drivers:

Urgent pipeline projects which require immediate repairs may arise anytime during a fiscal year. Some of these repairs cannot be completed by Central San's Collection System Operations crews and there is typically not enough time to wait for incorporation into a sewer renovation project.

## Description:

This project will include bidding and executing a blanket contract that will allow Central San to use a contractor to perform urgent CIPP work.

CIPP repair work may be triggered by one of the following situations:

- Structural failure of a pipe
- Imminent threat of pipe break or collapse
- Potential for a SSO

**Location(s):** Miscellaneous locations throughout the Collection System

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $100,000 | $0 | $0 | **$100,000** |
| **Construction:** | $0 | $200,000 | $100,000 | $100,000 | **$400,000** |
| **FY Total:** | $0 | $300,000 | $100,000 | $100,000 | **$500,000** |

# Pump Station Equipment & Piping Replacement - Phase 2

| Project Name | PS Equipment & Piping Replacement | Project No. | 8442 |
|---|---|---|---|
| Program: | Collection System | Phase | C |
| Project Manager: | Clint Shima | Priority Rank | Very High |
| Department/Division: | Operations/Plant Maintenance | Ranking Score | 60 |
| | | Concord % | 0% |

## Purpose:

To replace or recondition failed and obsolete pumps, piping, valves, and other pump station equipment; to provide proper emergency response equipment and critical spare parts at pump stations.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Drivers:

This project has been an ongoing replacement of aging equipment and piping in poor condition at the pumping stations.

Additionally, emergency response equipment and critical spare parts are identified to improve resiliency and reliable operations during emergency conditions, power failures, and severe wet weather conditions.

Selection of equipment is completed by Operations, Maintenance, and Engineering staff, and in coordination with the ongoing Asset Management Program.

## Description:

The following are major elements included in the project:

- Install control and isolation valves for shutdown and pump station protection
- Revise control strategies and equipment response times
- Flood protection measures and critical equipment
- Emergency bypass pumping equipment and piping
- Recondition major equipment to meet original factory specifications
- Purchase critical spare parts for major pump station equipment

**Location(s):** Miscellaneous Pump Stations

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $36,000 | $100,000 | $400,000 | **$536,000** |
| **FY Total:** | $0 | $36,000 | $100,000 | $400,000 | **$536,000** |

# Large Diameter Pipeline Inspection Program

| Project Name | Large Diameter Pipeline Inspection | Project No. | 8443 |
|---|---|---|---|
| Program: | Collection System | Phase | P |
| Project Manager: | Justin Waples | Priority Rank | Critical |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 70 |
| | | Concord % | 0% |

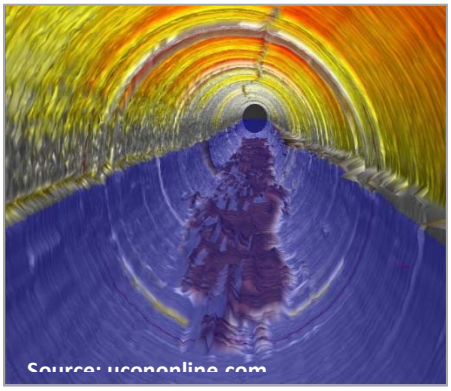
| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

### Purpose:

To assess the condition of large-diameter trunks and interceptors and confirm the timing for replacement needs.

### Drivers:

Central San owns 76 miles of wastewater trunks and interceptors ranging from 24 to 102 inches in diameter. The typical lifespan of large diameter sewer pipes ranges from 50 and 150 years depending on pipe material, hydraulic and operating conditions, and environmental conditions. Nearly half of Central San's large-diameter pipes are over 50 years old and may be approaching their useful life.




Although Central San performs CCTV inspection of large-diameter pipelines; CCTV inspection is not always practical and does not always provide an accurate condition assessment. For example, CCTV cannot detect external corrosion and cannot assess the condition of the pipe invert when sediment is present. A combination of CCTV inspection, enhanced CCTV with laser profiling, sonar, and visual walk-over surveys are recommended to assess the condition of large-diameter pipelines. Inspection information can be used to ensure that Central San is replacing large diameter pipelines prior to failure and avoid premature replacement of old pipelines that may be in good condition.

### Description:

A phased large diameter inspection program was developed and prioritized based on pipeline age and consequence of failure:

- Inspect nine force mains of high-risk large diameter pipelines every five years;
- Inspect six miles per year of medium risk large diameter pipelines for the first three years; followed by three miles per year after the first three years (7-year inspection frequency)
- Inspect eight miles per year of low-risk large diameter pipeline (7-year inspection frequency)

**Location(s):** Miscellaneous locations throughout the Collection System

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $200,000 | $200,000 | $600,000 | **$1,000,000** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $0 | $0 | $0 | **$0** |
| **FY Total:** | $0 | $200,000 | $200,000 | $600,000 | **$1,000,000** |

# Force Main Inspection Program

| Project Name | Force Main Inspection Program | Project No. | 8444 |
|---|---|---|---|
| Program: | Collection System | Phase | P |
| Project Manager: | Justin Waples | Priority Rank | Critical |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 65 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

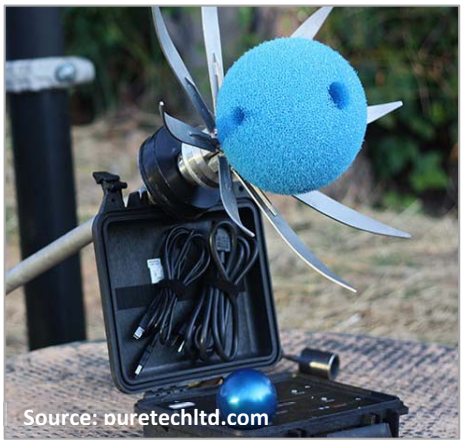
## Purpose:

To assess the condition of force mains and confirm the timing for replacement needs.

## Drivers:

Central San maintains 31 force mains with a combined length of approximately 23 miles. More than 65% of the force mains are made of metallic materials which are prone to corrosion. The typical service life for force mains ranges from 50 to 100 years. Over half of the existing force mains were installed 40 or more years ago. The remaining service lives of individual force mains are difficult to estimate without inspection-based condition assessment results.

Force main failure methods include internal corrosion, external corrosion, mechanical failures due to high pressure and surge events or due to external loads and stresses, and force main material or installation defects. Recommended force main inspection methods include CCTV inspection, pressure transient monitoring, acoustic leak detection, and electromagnetic inspection.




## Description:

A phased force main inspection program was developed and prioritized based on force main age and consequence of failure:

- From FY 2017-18 through FY 2019-20, inspect force mains at Moraga, Orinda Crossroads, Lower Orinda, Bates Blvd, and Wagner Ranch Pump Stations
- From FY 2020-21 through FY 2026-27, inspect force mains at San Ramon, Martinez, Fairview, Maltby, Clyde, Concord Industrial, and Acacia Pump Stations
- Other pump stations have a lower risk and will be inspected in a later phase

**Location(s):** Miscellaneous locations throughout the Collection System

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $75,000 | $75,000 | $225,000 | **$375,000** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $0 | $0 | $0 | **$0** |
| **FY Total:** | $0 | $75,000 | $75,000 | $225,000 | **$375,000** |

# North Orinda Sewer Renovation - Phase 7

| Project Name | North Orinda Sewer Renovation - Phase 7 | Project No. | 8445 |
|---|---|---|---|
| Program: | Collection System | Phase | P/D |
| Project Manager: | Mark Wenslawski | Priority Rank | Very High |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 60 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

To replace and renovate small-diameter sewers within the northern portion of the City of Orinda.

### Drivers:

Central San's 1,500+ mile collection system has pipe segments that range in age from new to more than 100 years old. Some of the pipe segments are at or near the end of their useful life as evidenced by their need for frequent maintenance, high rate of infiltration, and/or threat of structural collapse.

More than 300 miles of the small-diameter sewers in the collection system were constructed prior to 1956. The methods and materials of construction used at that time do not currently perform well, and they are the source of over 90% of the dry-weather SSOs.

Central San implemented a sewer renovation program in 1991 to replace small-diameter sewers to control future maintenance requirements and costs, to minimize the number of overflows, to limit the quantity of rainfall entering the collection system, and to improve the level of service provided to customers.

## Description:

The North Orinda Sewer Renovation - Phase 7 Project will replace or rehabilitate up to approximately 9,000 feet of small-diameter sewers located in both public right-of-way and easements within the northern portion of the City of Orinda, north of Highway 24.

**Location(s):** City of Orinda

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $203,050 | $0 | $0 | **$203,050** |
| **Design:** | $0 | $432,950 | $0 | $0 | **$432,950** |
| **Construction:** | $0 | $0 | $3,425,000 | $0 | **$3,425,000** |
| **FY Total:** | $0 | $636,000 | $3,425,000 | $0 | **$4,061,000** |

# Lafayette Sewer Renovation - Phase 12

| Project Name | Lafayette Sewer Renovation - Phase 12 | Project No. | 8446 |
|---|---|---|---|
| Program: | Collection System | Phase | P/D |
| Project Manager: | Amanda Schmidt | Priority Rank | Very High |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 60 |
| | | Concord % | 0% |

## Purpose:

To replace and renovate small-diameter sewers within the City of Lafayette.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

## Drivers:

Central San's 1,500+ mile collection system has pipe segments that range in age from new to more than 100 years old. Some of the pipe segments are at or near the end of their useful life as evidenced by their need for frequent maintenance, high rate of infiltration, and/or threat of structural collapse.

More than 300 miles of the small-diameter sewers in the collection system were constructed prior to 1956. The methods and materials of construction used at that time do not currently perform well, and they are the source of over 90% of the dry-weather SSOs.

Central San implemented a sewer renovation program in 1991 to replace small-diameter sewers to control future maintenance requirements and costs, to minimize the number of overflows, to limit the quantity of rainfall entering the collection system, and to improve the level of service provided to customers.

## Description:

The Lafayette Sewer Renovation - Phase 12 Project will replace or rehabilitate up to approximately 9,000 feet of small-diameter sewers located in both public right-of-way and easements within the City of Lafayette.

## Location(s): City of Lafayette

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $205,550 | $0 | $0 | **$205,550** |
| **Design:** | $0 | $430,450 | $0 | $0 | **$430,450** |
| **Construction:** | $0 | $0 | $3,475,000 | $0 | **$3,475,000** |
| **FY Total:** | $0 | $636,000 | $3,475,000 | $0 | **$4,111,000** |

# Pump Station Security Improvements

| Project Name | Pump Station Security Improvements | Project No. | 8447 |
|---|---|---|---|
| Program: | Collection System | Phase | D |
| Project Manager: | Sasha Mestetsky | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To improve physical security at the pump stations and to protect existing critical assets.

## Drivers:

In addition to worker safety, there are many critical assets that require physical security improvements to minimize the risk.

In FY 2016-17, a comprehensive security study was completed for major Central San facilities that utilized the principles of American Water Works Association J100 Risk Analysis and Management for Critical Asset Protection methodology (RAMCAP® J100). J100 is a comprehensive approach that enables the estimation of relative risks across multiple assets while considering both malevolent and natural hazards. The RAMCAP method is a 7-step process including: 1) Asset Characterization; 2) Threat Characterization; 3) Consequence Analysis; 4) Vulnerability Analysis; 5) Threat Analysis; 6) Risk/Resilience Analysis; and 7) Risk/Resilience Management.

## Description:

Findings from this study related to the pump stations will be implemented under this Project. Some improvements may be implemented in collaboration with the treatment plant and general security improvement projects that were also identified under the same study. In general, recommendations included:

- Increased surveillance and intrusion detection
- Access control improvements
- Perimeter fencing repair
- Increased signage
- Other miscellaneous security improvements

**Location(s):** Miscellaneous Pump Stations throughout Central San's Service Area

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $131,000 | $249,000 | $0 | **$380,000** |
| **Construction:** | $0 | $0 | $0 | $2,240,000 | **$2,240,000** |
| **FY Total:** | $0 | $131,000 | $249,000 | $2,240,000 | **$2,620,000** |

# Manhole Modifications

| Project Name | Pump Station Security Improvements | Project No. | 8448 |
|---|---|---|---|
| Program: | Collection System | Phase | C |
| Project Manager: | Jason DeGroot | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| Regulatory | Sustainability |

## Purpose:

To replace, repair or raise manhole covers and top blocks to match roadway elevations in coordination with pavement restoration plans with agencies or existing conditions.

## Drivers:

Central San's collection system includes over 37,000 manholes. Many of these manholes are in paved roadways, public right-of-way and private roadways, throughout the entire service area. Continual replacement of manhole covers or repairing top blocks are needed on a yearly basis as the system ages or the roadways are rebuilt.

## Description:

This project will fund the replacement or raising of manhole covers and repairing top blocks either through construction projects or reimbursements through other agency contractors or agreements.

**Location(s):** Entire Service Area

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $400,000 | $400,000 | $1,200,000 | **$2,000,000** |
| **FY Total:** | $0 | $400,000 | $400,000 | $1,200,000 | **$2,000,000** |

# Collection System Sewer Renovation – Phase 1

| Project Name | Collection System Sewer Renovation Ph. 1 | Project No. | TBD |
|---|---|---|---|
| Program: | Collection System | Phase | P |
| Project Manager: | Sasha Mestetsky | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 0% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

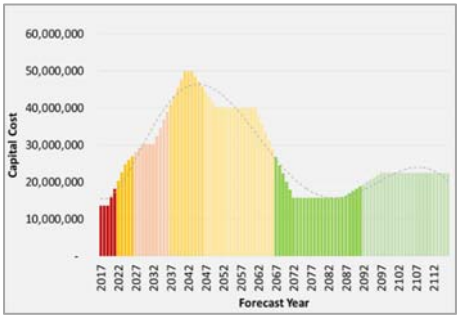
## Purpose:

To plan and initiate design for additional sewer replacement projects for collection system sewers that are near the end of their useful life.

## Drivers:

Central San's collection system includes 1,500+ miles of gravity sewers and over 37,000 manholes. Pipeline sizes range from 4 to 102 inches in diameter, and pipe materials vary throughout the system.

The InfoMaster® sewer replacement risk model was used to project the timing for the renewal of each of the gravity sewers for the next 100 years. Nearly all of Central San's sewers will reach the end of their service life within the next 100 years. The bulk of the replacement is recommended beyond the 10-year CIP.




Continual replacement will provide the best possible protection against SSOs. The InfoMaster® sewer replacement risk model was developed to prioritize the timing for sewer replacement and to develop a risk-based sewer replacement program. To meet increased replacement rates in 20-50 years, this program ramps up the replacement rate. In the first five years, we will replace an average of 7.6 miles per year followed by approximately 8.6 miles per year for the next five years. Replacement for years 10 through 20 in the CIP increases to 18.4 miles per year. The first phase of the collection system sewer renovation will span the next five FY.

## Description:

This project is for pipeline selection planning and some preliminary design work for new sewer replacement projects. Additional sewer replacement projects will be developed and may be split into individual projects for final design and construction.

**Location(s):** Miscellaneous locations throughout the Collection System

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $500,000 | $0 | $600,000 | **$1,100,000** |
| **Design:** | $0 | $0 | $750,000 | $9,000,000 | **$9,750,000** |
| **Construction:** | $0 | $0 | $0 | $55,959,000 | **$55,959,000** |
| **FY Total:** | $0 | $500,000 | $750,000 | $65,559,000 | **$66,809,000** |

# CIB - Treatment Plant Program

The major points of emphasis for the Treatment Plant Program in FY 2017-18 are:

- Replace equipment as they reach the end of their useful lives to avoid structural and mechanical failures, reduce downtime, and control maintenance costs;
- Upgrade District facilities to seismic building codes and standards;
- Respond to regulatory requirements related to air emissions pending regulations.
- Sustainability and energy related projects, including BioEnergy alternatives.

**Asset Rehabilitation and Replacement Projects:** Projects in this subprogram are targeted at asset preservation, rehabilitation, and replacement. The main projects in this program are the Piping Renovations Project-Phase 9, which will improve the process reliability of the treatment plant by renovating and/or replacing various piping, instrumentation, and equipment. Other projects include Plant Energy Optimization focused on the cogeneration equipment, Urgent Repairs, UV Disinfection Equipment Upgrades, and Plant Electrical and Instrumentation Upgrades. The construction of the Headwork's Screenings Upgrade projects will continue from the previous year. Continue and complete the design of the Solids Handling Facility Improvements Phase 1 project which includes, sludge blend tanks, solids dewatering equipment replacement (feed pumps, centrifuges, cake pumps), wet and dry scrubber, and ash handling improvements.

**Regulatory Compliance/Planning/Safety Projects:** This subprogram includes projects that emphasize preparing for future regulations and treatment plant planning, which includes pilot testing various new technologies. This includes completing the construction of the Seismic Upgrades for the Pump and Blower Building to retrofit the building to current design standards. Work will be implemented to comply with pending new air permitting requirements and install incinerator emissions improvements. Safety and security improvements will continue under this subprogram. Solids Handling Building and multiple hearth furnaces seismic improvements evaluation and design will continue under the Solids Handling Facility Improvement Project Phase 1. The Plant Operations Division (POD) office building seismic improvement project will also be started. An odor control project will also be started.

**Expansion Projects:** There are no projects in the Expansion program in FY 2017-18.

**Sustainability/ Resiliency /Energy Projects:** Under this subprogram, Aeration and Energy related projects, and the development of innovative BioEnergy project based on a public private partnership (P3) approach will be initiated next Fiscal year.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

**Example of project driver(s):** Each project is described on the following pages. Each project summary includes project name, description, prioritization, purpose, location, budgetary information and drivers (i.e.; what is the main impetus for a project). The main driver(s) for each project is (are) identified by highlighting in orange background color and **bold** text. Driver(s) that are not as significant or not relevant are displayed in gray.

All projects in this program are summarized, including planned expenditures, in the following table 3:

## CIB Table 3 – FY 2017-18 Treatment Plant Program Budget/Project Summary

| Project Number | Project | Budget-to-Date | FY 2017-18 | FY 2018-19 | Future FYs | Total Project Cost |
|---|---|---|---|---|---|---|
| 7291 | Pump & Blower Building Seismic Upgrade | $4,424,000 | $2,358,000 | $0 | $0 | $6,782,000 |
| 7292 | Switchgear Refurbishment - Phase 2 | $420,000 | $350,000 | $200,000 | $220,000 | $1,190,000 |
| 7301 | Treatment Plant Planning | $0 | $450,000 | $450,000 | $1,500,000 | $2,400,000 |
| 7304 | PLC Systems Upgrades | $435,000 | $140,000 | $110,000 | $330,000 | $1,015,000 |
| 7314 | Treatment Plant Urgent Repairs | $115,000 | $250,000 | $200,000 | $450,000 | $1,015,000 |
| 7315 | Applied Research & Innovations | $257,274 | $300,000 | $400,000 | $1,500,000 | $2,457,274 |
| 7317 | Plant Control System Network Upgrades | $260,000 | $70,000 | $100,000 | $0 | $430,000 |
| 7320 | Plant Energy Optimization (Co Gen) | $718,000 | $376,000 | $0 | $0 | $1,094,000 |
| 7322 | Fire Protection System - Phase 2 | $840,000 | $360,000 | $0 | $0 | $1,200,000 |
| 7326 | Equipment Replacement | $866,000 | $300,000 | $250,000 | $0 | $1,416,000 |
| 7327 | Headworks Screenings Upgrade | $2,500,000 | $5,644,000 | $76,000 | $0 | $8,220,000 |
| 7328* | Influent Pump Electrical Improvements | $0 | $100,000 | $650,000 | $3,860,000 | $4,610,000 |
| 7329 | Furnace Burner Upgrades | $370,000 | $400,000 | $0 | $0 | $770,000 |
| 7330 | Piping Renovation - Phase 9 | $241,000 | $1,075,000 | $184,000 | $0 | $1,500,000 |
| 7339 | Plant Control System I/O Replacement | $320,000 | $150,000 | $550,000 | $3,300,000 | $4,320,000 |
| 7341 | Walnut Creek/Grayson Creek Levee Rehab | $0 | $100,000 | $500,000 | $500,000 | $1,100,000 |
| 7348 | Solids Handling Facility Improvements - Phase 1 | $2,350,000 | $2,625,000 | $8,200,000 | $53,264,000 | $66,439,000 |
| 7349* | Aeration and Energy Upgrades | $0 | $300,000 | $1,000,000 | $57,217,000 | $58,517,000 |
| 7351* | Mechanical and Concrete Renovations | $0 | $560,000 | $1,040,000 | $5,306,000 | $6,906,000 |
| 7352* | UV Disinfection Upgrades | $0 | $400,000 | $100,000 | $0 | $500,000 |
| 7353* | Outfall Improvements - Phase 7 | $0 | $100,000 | $350,000 | $3,873,000 | $4,323,000 |
| 7354* | Treatment Plant Security Improvements | $0 | $87,000 | $170,000 | $1,530,000 | $1,787,000 |
| 7355* | Odor Control Upgrades - Phase 1 | $0 | $150,000 | $1,687,000 | $2,048,000 | $3,885,000 |
| 7357* | Plant-Wide Instrumentation Upgrades | $0 | $100,000 | $190,000 | $1,710,000 | $2,000,000 |
| 7358* | Innovative Bioenergy Demonstration | $0 | $200,000 | $200,000 | $0 | $400,000 |
| 7359* | Solids Conditioning Building Roof Replacement | $0 | $500,000 | $600,000 | $0 | $1,100,000 |
| 7360* | Existing Plant Facilities As-Is Drawings | $0 | $100,000 | $100,000 | $150,000 | $350,000 |
| TBD* | Treatment Plant Safety Enhancement - Phase 5 | $0 | $100,000 | $100,000 | $0 | $200,000 |
| TBD* | Plant Operations Building (POB) Seismic Upgrades | $0 | $400,000 | $1,300,000 | $0 | $1,700,000 |
| | **Total Program** | **$14,116,274** | **$18,045,000** | **$18,707,000** | **$136,758,000** | **$187,626,274** |

*New Project included in FY 2017-18

# Pump and Blower Building Seismic Upgrade

| Project Name | Pump and Blower Building Seismic Upgrade | Project No. | 7291 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Craig Mizutani | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To improve the seismic safety of the Pump and Blower Building.

## Drivers:

In January 2008, the State of California adopted the 2007 California Building Code (2007 CBC). Among the updates in the 2007 CBC were significant changes to seismic design. In 2009, a seismic evaluation was completed for the treatment plant facilities (Martinez Wastewater Treatment Plant Seismic Vulnerability Assessment of Selected Facilities, December 2009). Included in the evaluation were recommendations to bring the Pump and Blower Building up to date with current seismic design standards.

The Pump and Blower Building houses several critical Central San equipment necessary for plant operation including the aeration turbines, primary effluent pumps, standby effluent pumps, final effluent pump, plant air system, 3W pumps, and critical electrical rooms.

## Description:

Construct seismic improvements to the Pump and Blower Building as recommended by the 2009 Vulnerability Assessment to improve seismic safety. Major components include concrete shearwalls, structural steel bracings, modifying columns and beams, and other specialty seismic design upgrades to Life Safety Plus standards.

**Location(s):** Pump and Blower Building

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $715,000 | $0 | $0 | $0 | **$715,000** |
| **Construction:** | $3,709,000 | $2,358,000 | $0 | $0 | **$6,067,000** |
| **FY Total:** | $4,424,000 | $2,358,000 | $0 | $0 | **$6,782,000** |

# Switchgear Refurbishment - Phase 2

| Project Name | Switchgear Refurbishment – Phase 2 | Project No. | 7292 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Mark Cavallero | Priority Rank | Critical |
| Department/Division: | Operations/Plant Maintenance | Ranking Score | 70 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To refurbish electrical switchgears to maintain the reliability of critical electrical infrastructure at the treatment plant.

## Drivers:

The electrical switchgear throughout the treatment plant was installed in the 1970s and has been well maintained using preventive techniques, such as thermographic imaging, to identify potential problems and correct them prior to failure.

Inspections in 2003 and 2004 showed that several trip units on the circuit breakers required replacement. Circuit breakers have been sent out for Class 1 reconditioning and trip unit replacement on an as-needed basis.


## Description:

This project is a multi-year program to repair and replace plant electrical equipment, including:

- Refurbish approximately 66 480V circuit breakers over a 5-year period
- Replace 2400V circuit breakers and air breakers at key substations (e.g. Substations 52 and 82)
- Replace protective relays for various switchgear throughout the treatment plant

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $420,000 | $350,000 | $200,000 | $220,000 | **$1,190,000** |
| **FY Total:** | $420,000 | $350,000 | $200,000 | $220,000 | **$1,190,000** |

# Treatment Plant Planning

| Project Name | Treatment Plant Planning | Project No. | TBD |
|---|---|---|---|
| Program: | Treatment Plant | Phase | P |
| Project Manager: | Nitin Goel | Priority Rank | Critical |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 85 |
| | | Concord % | 100% |

## Purpose:

To complete technical evaluations to address regulatory drivers, assess aging infrastructure needs, evaluate capacity needs, and investigate opportunities to optimize operation of existing facilities.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | **Capacity** |
| **Regulatory** | **Sustainability** |

## Drivers:

As wastewater regulations develop and new treatment technologies become available, process modifications may be needed. This project includes technical evaluations to address regulatory initiatives and maintain permit compliance (e.g. Suisun Bay nutrient modeling work and NPDES required studies and reports).

As flows and contaminant loads and concentrations change over time, capacity evaluations are needed to confirm capacity ratings of existing facilities and identify any potential capacity improvements required to manage dry weather and wet weather flows and loads. Technical evaluations are completed to support plant operations by evaluating optimization opportunities to improve the reliability and performance of existing treatment plant processes and facilities.

## Description:

The following are major elements included in the project:

- Investigate and optimize performance of existing secondary treatment facilities
- Support and evaluate BACWA Nutrient Watershed Permit technical evaluations
- Evaluate renewable energy opportunities for the treatment plant to reduce imported fuels and greenhouse gas emissions.

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $450,000 | $450,000 | $1,500,000 | **$2,400,000** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $0 | $0 | $0 | **$0** |
| **FY Total:** | $0 | $450,000 | $450,000 | $1,500,000 | **$2,400,000** |

# PLC System Upgrades

| Project Name | PLC System Upgrades | Project No. | 7304 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Chuck Burnash | Priority Rank | Very High |
| Department/Division: | Operations/Plant Operations | Ranking Score | 50 |
| | | Concord % | 100% |

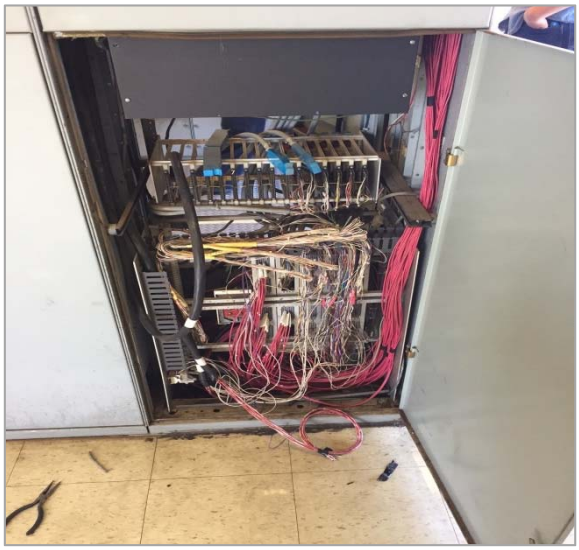
| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To upgrade Programmable Logic Controller (PLC) system to current technology for increased performance and improved compatibility to develop and maintain programming standards.

## Drivers:

The first PLCs were installed at the treatment plant in the mid-1980s. The number of PLCs has increased from the original two PLCs to more than 30 PLCs. Programming software for the newer PLCs no longer runs efficiently on the older programming units.



## Description:

The following are major elements included in the project:

- Upgrade hardware and software necessary to maintain new PLC applications
- Replace older computers with newer computers capable of running current software
- Upgrade older PLC models to maintain compatibility with new equipment, instrumentation, and controls
- Develop and document programming standards for PLC and SCADA

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $96,700 | $0 | $0 | $0 | **$96,700** |
| **Construction:** | $338,300 | $140,000 | $110,000 | $330,000 | **$918,300** |
| **FY Total:** | $435,000 | $140,000 | $110,000 | $330,000 | **$1,015,000** |

# Treatment Plant Urgent Repairs

| Project Name | Treatment Plant Urgent Repairs | Project No. | 7314 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Craig Mizutani | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 80 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

## Purpose:

To perform immediate electrical, mechanical, and other miscellaneous urgent repairs within the Treatment Plant.

## Drivers:

Urgent treatment plant projects which require immediate repairs or replacement may arise anytime during the current fiscal year. Due to the significance and/or timing of unexpected failures, some of these repairs or replacements cannot be completed by Central San's Plant Maintenance staff and cannot wait for incorporation into a capital improvement project.

This project will include bidding and executing a blanket contract that will allow Central San to use a contractor for urgent treatment plant construction work.

## Description:

Urgent projects may be triggered by the any of the following:

- Equipment or process piping failure
- Compliance with regulatory or code issues
- Safety hazards
- Unexpected damage due to excessive flooding, seismic events, or other unexpected hazards.

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $50,000 | $0 | $0 | $0 | **$50,000** |
| **Design:** | $65,000 | $35,000 | $0 | $0 | **$100,000** |
| **Construction:** | $0 | $215,000 | $200,000 | $450,000 | **$865,000** |
| **FY Total:** | $115,000 | $250,000 | $200,000 | $450,000 | **$1,015,000** |

# Applied Research & Innovations

| Project Name | Applied Research & Innovations | Project No. | 7315 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | P |
| Project Manager: | Nitin Goel | Priority Rank | Very High |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 50 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| **Regulatory** | **Sustainability** |

## Purpose:

To implement applied research projects that evaluates promising technologies, processes, and innovations.

## Drivers:

One of Central San's goals is to embrace innovation and to be a leader in the wastewater industry. There are several emerging and innovative nutrient removal and solids handling technologies in the wastewater industry that may offer significant capital cost or operations and maintenance savings and reduced footprint requirements when compared to conventional technologies. In addition, there are frequently innovations in equipment and instrumentation that may be beneficial to pilot.

Prior to implementing any major renovations for nutrient removal or converting solids handling technologies, staff will evaluate the feasibility of emerging technologies and implement applied research pilots. These pilots will help verify the compatibility with wastewater and facilities, increase understanding of the technology, and help determine whether to consider that technology in lieu of proven, conventional technologies.

## Description:

Examples of some applied research opportunities being considered include:

- Nutrient removal technologies such as membrane aerated bioreactors or aerobic granular sludge
- Solids handling technologies such as hydrothermal liquefaction or supercritical water oxidation

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $257,274 | $300,000 | $400,000 | $1,500,000 | **$2,457,274** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $0 | $0 | $0 | **$0** |
| **FY Total:** | $257,274 | $300,000 | $400,000 | $1,500,000 | **$2,457,274** |

# Plant Control System Network Upgrades

| Project Name | Plant Control System Network Upgrades | Project No. | 7317 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Nate Morales | Priority Rank | Very High |
| Department/Division: | Operations/Plant Operations | Ranking Score | 50 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To upgrade the Plant Control System Ethernet Network to Industrial Ethernet standards.

## Drivers:

In 2006, Central San's treatment plant installed a new Ethernet based Supervisory Control and Data Acquisition (SCADA) system. At the time the SCADA system was installed, Ethernet was limited to the servers only and was redundant. Over time, the Ethernet system expanded to the entire treatment plant, but the redundancy was not maintained. Currently, the primary path for treatment plant data traffic runs over the Ethernet system that is neither redundant nor sufficiently reliable to meet control system standards.

## Description:

The following are major elements included in the project to meet industry standard redundancy and reliability standards:

- Install and configure industrial type Ethernet switches
- Install fiber optic lines for the Treatment Plant Control System
- Install industrial wireless network
- Install software to allow for remote programming and maintenance

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $260,000 | $70,000 | $100,000 | $0 | **$430,000** |
| **FY Total:** | $260,000 | $70,000 | $100,000 | $0 | **$430,000** |

# Plant Energy Optimization – Co Generation

| Project Name | Plant Energy Optimization | Project No. | 7320 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Craig Mizutani | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 70 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | **Sustainability** |

## Purpose:

To increase energy efficiency, on-site energy production, and decrease greenhouse gas emissions for the treatment plant.

## Drivers:

The purpose of this project is to increase energy efficiency, reduce utility costs, and decrease carbon monoxide (CO) emissions at the treatment plant. There has been a significant increase in PG&E costs due to CO emission limits imposed by the BAAQMD on the cogeneration system (Cogen). Based on current utility bills, the yearly import increase is approximately $300,000. This Project will reduce CO emissions by installing an oxidation catalyst, and increase energy efficiency for operation during hot weather operations by installing an evaporative cooling system. These improvements will help ensure regulatory compliance and reduce the added electrical costs.

Design drawings and specifications were prepared for the Project in FY 16-17. The construction will begin this FY to include replacement of the obsolete and problematic reverse osmosis system that supplies purified water to the cogen and needed for the evaporative cooler. This Project was advertised in March 2017 and awarded in May 2017.

## Description:

The following energy efficiency measure are being included:

- Add a CO catalyst;
- Add an evaporative cooler system on the intake of the Cogen;
- Replace the Reverse Osmosis (RO) water system to the Cogen; and
- Modify the Cogen controls system for project elements.

**Location(s):** Solids Conditioning Building

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $80,000 | $0 | $0 | $0 | **$80,000** |
| **Design:** | $320,000 | $0 | $0 | $0 | **$320,000** |
| **Construction:** | $318,000 | $376,000 | $0 | $0 | **$694,000** |
| **FY Total:** | $718,000 | $376,000 | $0 | $0 | **$1,094,000** |

# Fire Protection System - Phase 2

| Project Name | Fire Protection System - Phase 2 | Project No. | 7322 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Jay Lin | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 100% |

## Purpose:

To upgrade or replace treatment plant fire alarm systems.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

## Drivers:

Much of the fire alarm system was built in the late 1970s, and the fire alarm control panel was upgraded in the early 2000s. There are seven existing fire systems (alarm, monitoring, and suppression types) at the treatment plant. The existing fire systems are the primary notification to the control room operators and occupied buildings in the event of a fire. Wiring and devices on the fire alarm system continue to be problematic and are in frequent need of repair. Repairs to the fire alarm system have become extremely complex and difficult; therefore, long-term reliable improvements to the fire alarm system are needed.


## Description:

Staff anticipates the recommended improvements will be implemented over a multi-year fire improvement program:

- Phase 1 of the project, completed in 2013, replaced the outdated Headquarters Office Building fire system and corrected limited treatment plant deficiencies
- Phase 2 includes a comprehensive evaluation and implementation of recommended improvements for life safety of occupied (public and staff) areas of all staffed and critical process areas in the treatment plant

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $40,000 | $0 | $0 | $0 | **$40,000** |
| **Design:** | $200,000 | $0 | $0 | $0 | **$200,000** |
| **Construction:** | $600,000 | $360,000 | $0 | $0 | **$960,000** |
| **FY Total:** | $840,000 | $360,000 | $0 | $0 | **$1,200,000** |

# Equipment Replacement

| Project Name | Equipment Replacement | Project No. | 7326 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Craig Mizutani | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 80 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To replace pumping systems, mechanical equipment, and minor process support facilities throughout the treatment plant.

## Drivers:

Several major pieces of equipment are reaching the end of their service life and require replacement/upgrading or reconditioning. This project will be coordinated with the Asset Management Program to reduce maintenance costs, increase reliability, and improve operations through replacement or reconditioning of technologically obsolete, worn out, maintenance intensive equipment, or equipment that is no longer serviceable or supported by its manufacturer.

## Description:

This project is a multi-year program to repair and replace equipment, such as:

- Pumps and impellers
- Miscellaneous steam system components, traps, and accessories
- Miscellaneous air conditioning systems for motor control center rooms
- Various small pumping systems and generators
- Miscellaneous support equipment such as cranes, elevators, etc.
- Other equipment in need of immediate repair as identified through the Asset Management Program, maintenance, and operations groups

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $866,000 | $300,000 | $250,000 | $0 | **$1,416,000** |
| **FY Total:** | $866,000 | $300,000 | $250,000 | $0 | **$1,416,000** |

# Headworks Screenings Upgrade

| Project Name | Headworks Screenings Upgrade | Project No. | 7327 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Craig Mizutani | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 75 |
| | | Concord % | 100% |

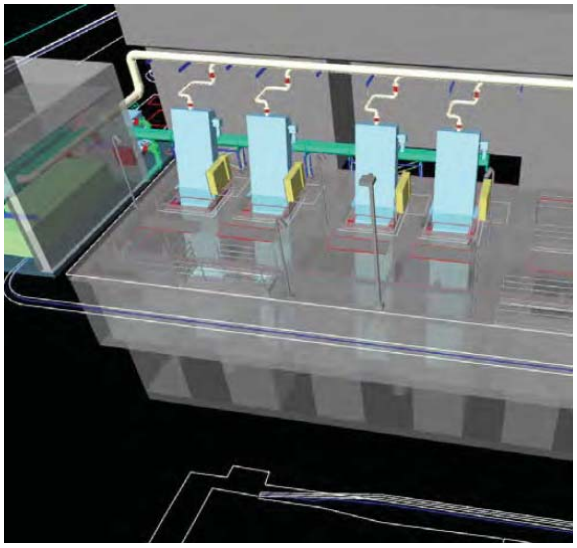
## Purpose:

To separate and remove screenings and plastics from the influent wastewater.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Drivers:

The current screenings operation utilizes coarse bar screens installed approximately 25 years ago at the Headworks to separate screenings. The screenings are then processed by grinders and reintroduced immediately downstream of the screens. This operation does not remove any of the plastics in the wastewater which contribute to fouling of numerous liquid and solids stream processes and equipment, and may contribute to furnace acid gas emission impacting future regulations. Screenings removal will optimize operations, protect downstream treatment plant facilities, extend downstream equipment life, minimize screenings downtime due to grinder hopper overload, and reduce equipment maintenance.



## Description:

The project investigated the current headworks screening operation and recommended the most strategic and cost-effective screenings removal improvements. This project includes the following major elements:

- Replace four existing ¾-inch barscreens with four new multi-rake ¼-inch barscreens
- Install new screenings washer/compactors, sluiceway, and screenings handling facility
- Replace two existing 4-inch bar racks with two re-purposed existing ¾-inch barscreens, hoppers and grinders

**Location(s):** Headworks

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $200,000 | $0 | $0 | $0 | **$200,000** |
| **Design:** | $750,000 | $0 | $0 | $0 | **$750,000** |
| **Construction:** | $1,550,000 | $5,644,000 | $76,000 | $0 | **$7,270,000** |
| **FY Total:** | $2,500,000 | $5,644,000 | $76,000 | $0 | **$8,220,000** |

# Influent Pump Electrical Improvements

| Project Name | Influent Pump Electrical Improvements | Project No. | 7328 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | P |
| Project Manager: | Jay Lin | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | **Capacity** |
| **Regulatory** | **Sustainability** |

## Purpose:

To address aging electrical components of the influent pumps and improve reliability.

## Drivers:

The influent pump facility is critical to operations. During wet weather, some of the pumps convey wastewater to the holding basins. Without the pumps, wastewater cannot be treated or stored in the basins.

The influent pump motors are in a dry pit room below grade that is susceptible to flooding. A leak in the piping or flooding of the connected tunnels would potentially submerge the motors and the entire Plant would experience a catastrophic shutdown. Electrical improvements are recommended to improve reliability and resiliency.

The influent pumps PLCs and variable frequency drives VFDs are outdated technology installed over 20 years ago and are becoming increasingly difficult to maintain. The VFDs are essential to managing flows, particularly during wet weather storm events. Also, the rooftop Chiller is beyond its useful life and severely corroded.

## Description:

Several major improvements in the influent pumping process area are included:

- Replace Influent Pumps VFDs and upgrade Influent Pumps PLCs
- Replace or elevate Influent Pumps motor(s) with immersible motor(s) to withstand flooding
- Replace Headworks Rooftop Chiller and related piping
- Add Influent Pump No. 6 for reliability and redundancy during peak wet weather events

**Location(s):** Influent Pump Station, Headworks

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $100,000 | $0 | $0 | **$100,000** |
| **Design:** | $0 | $0 | $650,000 | $0 | **$650,000** |
| **Construction:** | $0 | $0 | $0 | $3,860,000 | **$3,860,000** |
| **FY Total:** | $0 | $100,000 | $650,000 | $3,860,000 | **$4,610,000** |

# Furnace Burner Upgrades

| Project Name | Furnace Burner Upgrades | Project No. | 7329 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Craig Mizutani | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 100% |

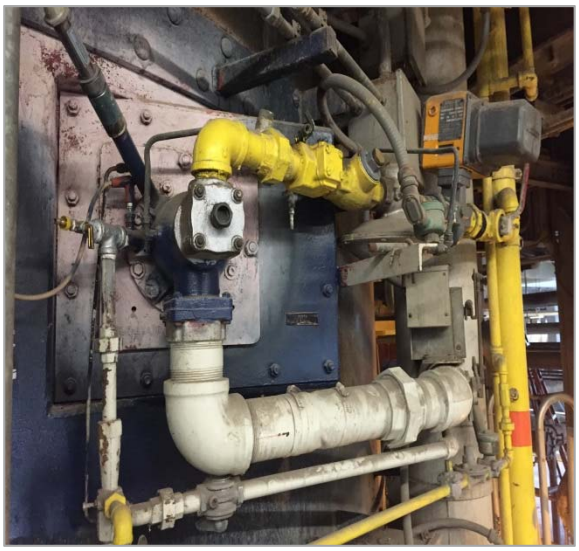
## Purpose:

To improve the operational flexibility of the existing multiple hearth furnaces to comply with emission requirements and reduce supplemental fuel energy consumption.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | **Sustainability** |

## Drivers:

The furnaces were constructed during the early 1970s and became fully operational in 1985. They were originally designed to incinerate commingled solid waste and sludge; however, they have historically only incinerated wastewater solids. As a result, some of the burners are not optimally sized for the actual furnace loading or for current landfill gas usage, which results in increased difficulty for consistently maintaining proper temperatures in the furnace. In addition, some of the burners, mounts, piping, and associated equipment are reaching the end of their useful lives and need to be replaced. The fuel gas piping to the burners has also developed leaks that require continued attention to meet Bay Area Air Quality Management District leak guidelines.



## Description:

The following elements are included in the project:

- Replace original gas fuel system piping using welded joints
- Evaluate diesel fuel as an additional furnace fuel source for emergency use
- Replace fuel system components for two to four of the Afterburners (top hearth) and decrease burner output to low NOx/high mix burners for improved temperature control

**Location(s):** Solids Conditioning Building

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $30,000 | $0 | $0 | $0 | **$30,000** |
| **Design:** | $150,000 | $0 | $0 | $0 | **$150,000** |
| **Construction:** | $190,000 | $400,000 | $0 | $0 | **$590,000** |
| **FY Total:** | $370,000 | $400,000 | $0 | $0 | **$770,000** |

# Piping Renovation - Phase 9

| Project Name | Piping Renovation - Phase 9 | Project No. | 7330 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | D/C |
| Project Manager: | Craig Mizutani | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To inspect, rehabilitate and replace above-grade and below-grade piping and related systems at the treatment plant.

## Drivers:

During the main treatment plant improvements project in the 1970s (Stage 5A project), numerous above-grade and below-grade piping systems were installed throughout the treatment plant. These pipes convey wastewater, sludge, steam, air, and other utility services between various process areas. Many of these piping systems have been in operation for over 40 years without any major rehabilitation or replacement. Some piping systems are leaking due to corrosion and the condition of some systems is unknown because they have not been visually inspected.

## Description:

The following are some of the elements included in the project:

- Replace miscellaneous chemical systems piping
- Replace diesel piping, valves, and pumps
- Replace boiler feedwater valves and steam flow transmitters
- Replace miscellaneous sludge piping and valves, floor drains, and water piping

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $241,000 | $0 | $0 | $0 | **$241,000** |
| **Construction:** | $0 | $1,075,000 | $184,000 | $0 | **$1,259,000** |
| **FY Total:** | $241,000 | $1,075,000 | $184,000 | $0 | **$1,500,000** |

# Plant Control System I/O Replacement

| Project Name | Plant Control System I/O Replacement | Project No. | 7339 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | P/D |
| Project Manager: | Nate Morales | Priority Rank | Very High |
| Department/Division: | Operations/Plant Operations | Ranking Score | 55 |
| | | Concord % | 100% |

## Purpose:

To upgrade obsolete Programmable Logic Controller (PLC) Input and Output (I/O) cards and associated hardware with current technology to maintain reliable operation and vendor support.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

## Drivers:

PLC I/O cards are critical for equipment and instrumentation communication to the treatment plant control system for process control and monitoring. The first Treatment Plant PLC I/O card was installed in the mid-1980s. The number of I/O cards in use has increased from only a few to nearly 1,800 cards. Approximately 1,100 of these I/O cards are currently obsolete. Replacement units cannot be purchased from the manufacturer, nor are they fully supported. Central San maintains an inventory of over 100 spare I/O cards to reactively replace units as they fail.

## Description:

The following are major elements included in the project:

- Replace and update obsolete I/O cards
- Replace I/O card mounting racks
- Replace communication modules
- Replace power supplies with modern, vendor-supported products.

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $200,000 | $0 | $0 | $0 | **$200,000** |
| **Design:** | $120,000 | $150,000 | $80,000 | $0 | **$350,000** |
| **Construction:** | $0 | $0 | $470,000 | $3,300,000 | **$3,770,000** |
| **FY Total:** | $320,000 | $150,000 | $550,000 | $3,300,000 | **$4,320,000** |

# Walnut Creek/Grayson Creek Levee Rehab

| Project Name | Walnut/Grayson Creek Levee Rehab | Project No. | 7341 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | D |
| Project Manager: | Dan Frost | Priority Rank | High |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 40 |
| | | Concord % | 100% |

## Purpose:

To reduce the risk of flood damage to the treatment plant by raising levees through a project led by the Contra Costa County Flood Control and Water Conservation District (FCD).

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| **Regulatory** | **Sustainability** |

## Drivers:

The treatment plant site is bordered by Walnut and Grayson Creeks with levees that were built by the FCD and US Army Corps of Engineers, and currently owned and maintained by the FCD. Overtopping of the levees could catastrophically disable plant operations, result in significant facility damage, negatively impact the environment due to discharge of untreated sewage, and impair the local economy. In 2007, the FCD implemented an interim flood control measure to desilt lower Walnut Creek channel and raise the western levees of Walnut and Grayson Creeks. Based on recent modeling, the levees currently provide protection from a 30-year storm. The current flood protection standard by the California Department of Water Resources is to provide protection against at least a 200-year storm with three feet of freeboard, consider the potential for sea level rise, and climate change.

## Description:

Due to the critical nature of the plant facilities, the levees will be raised to provide a protection level of a 200 to 500-year storm with adequate freeboard. The FCD will be the lead agency, and Central San will provide support for design review and construction coordination. Both agencies have agreed to equally share the estimated project cost of $2.2 million. Central San anticipates accepting and storing soil on buffer property that can be used as levee material to provide in-kind contributions of up to $500,000. Staff will continue to evaluate in-kind financial contributions.

**Location(s):** Along the Walnut and Grayson Creek Levees, Kiewit Buffer Property

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $100,000 | $0 | $0 | **$100,000** |
| **Construction:** | $0 | $0 | $500,000 | $500,000 | **$1,000,000** |
| **FY Total:** | $0 | $100,000 | $500,000 | $500,000 | **$1,100,000** |

# Solids Handling Facility Improvements - Phase 1

| Project Name | Solids Handling Facility Improvements | Project No. | 7348 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | D |
| Project Manager: | Nathan Hodges | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 75 |
| | | Concord % | 100% |

## Purpose:

To rehabilitate and replace the sludge dewatering, sludge handling, sludge blending, ash handling, furnace air pollution control equipment, and structural upgrades to the building housing this equipment.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | **Capacity** |
| **Regulatory** | **Sustainability** |

## Drivers:

The existing furnaces have significant remaining useful life; however, other solids equipment requires improvements. The centrifuges and cake pumps have been in service for over 25 years, are costly to maintain, and spare parts are difficult to obtain. Mixing improvements are recommended for the sludge blending/storage tanks for reliable dewatering. Ash handling equipment is in poor condition and upgrades are recommended to reliably meet ash regulatory requirements. A more efficient wet scrubber and other air pollution control improvements will be needed to reliably comply with current and future air regulations. Lime reduction testing is recommended to reduce solids furnace loading to delay potential future capacity limitations. The Solids Conditioning Building that houses the furnaces, cogeneration unit, and other critical equipment does not meet current seismic standards.


## Description:

The following are major elements included in the project:

- Replace wet scrubber with a new venturi scrubber capable of waste heat boiler bypass
- Replace centrifuges, cake pumps, and sludge blending, storage, and mixing systems
- Ash handling improvements to reduce fugitive ash emissions and improve reliability
- Seismic improvements for the furnaces and Solids Conditioning Building

**Location(s):** Solids Conditioning Building and Emergency Sludge Loading Building

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $2,350,000 | $2,625,000 | $1,000,000 | $0 | **$5,975,000** |
| **Construction:** | $0 | $0 | $7,200,000 | $53,264,000 | **$60,464,000** |
| **FY Total:** | $2,350,000 | $2,625,000 | $8,200,000 | $53,264,000 | **$66,439,000** |

# Aeration and Energy Upgrades

| Project Name | Aeration and Energy Upgrades | Project No. | 7349 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | P |
| Project Manager: | Craig Mizutani | Priority Rank | Very High |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 60 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To improve the secondary treatment aeration systems, and modify the waste heat recovery system to produce power.

## Drivers:

The existing energy recovery system uses waste heat from the incinerator and cogeneration turbine to produce steam primarily for steam-driven aeration blowers. The existing aeration system is from the 1970s. It is outdated, inefficient, experiences significant air leaks, and has limited turndown capabilities. The existing steam piping and valves are corroding and require replacement. Although it is advantageous to recover waste heat for generating steam for secondary aeration, it also creates a complicated interconnection. Disruptions in solids handling and steam systems can impact the reliability of the secondary process. Similarly, disruptions in blower operation can impact the operation of the boiler and steam system impacting solids emission controls. Separating this interconnection improves operational resiliency.

## Description:

Several major aeration and energy related improvements are included:

- Replace the steam-driven aeration turbine blowers with new electric blowers and Variable Frequency Drives
- Install dedicated electric blowers for pre-aeration air demands
- Replace the plenum and stone diffusers with high efficiency diffusers and aeration piping
- Replace existing anaerobic selector mixers and construct foam control improvements
- Replace the waste heat boilers with heat exchangers and an Organic Rankine Cycle turbine

**Location(s):** Pump & Blower Building, Primary/ Secondary Facilities, and Other Areas

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $300,000 | $1,000,000 | $1,926,000 | **$3,226,000** |
| **Design:** | $0 | $0 | $0 | $5,559,000 | **$5,559,000** |
| **Construction:** | $0 | $0 | $0 | $49,732,000 | **$49,732,000** |
| **FY Total:** | $0 | $300,000 | $1,000,000 | $57,217,000 | **$58,517,000** |

# Mechanical & Concrete Renovations

| Project Name | Mechanical & Concrete Renovations | Project No. | 7351 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | D/C |
| Project Manager: | Craig Mizutani | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 70 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To rehabilitate or replace gates and other mechanical equipment, and to rehabilitate existing concrete structures with cracked or spalling concrete.

## Drivers:

The gates, concrete and other miscellaneous equipment and surfaces within the Headworks, Pre-Aeration, and Primary Treatment areas are exposed to corrosive environments. Slide gates throughout these areas are essential for being able to stop and re-direct flows as required for preventive maintenance of facilities and for emergency and wet weather scenarios. Many of the slide gates have unreliable actuators, show signs of corrosion, have deteriorating seals and wedges, and in some cases, have been inoperable. Additionally, there are some structures and concrete surfaces that have spalling concrete, corroded reinforcing bars, and show signs of significant cracking. Some concrete areas require coating to prevent further corrosion. This project is to address these aging infrastructure needs and improve the safety and reliability of existing equipment and structures.

## Description:

Several major elements are included in this project:

- Repair concrete for the West Gallery, Structure D, Primary Effluent Channel, Influent Structure, and Influent Structures 1 and 1A
- Replace or rehabilitate influent structure gates, influent structure 1 and 1A gates, pre-aeration gates, primary influent gates, and primary effluent channel stop plate
- Replace or rehabilitate existing primary collector chain and flights, embedded rails, grit pumps, and primary scum piping and grinders

**Location(s):** Headworks, Pre-Aeration, and Primary Treatment Areas

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $100,000 | **$100,000** |
| **Design:** | $0 | $450,000 | $0 | $500,000 | **$950,000** |
| **Construction:** | $0 | $110,000 | $1,040,000 | $4,706,000 | **$5,856,000** |
| **FY Total:** | $0 | $560,000 | $1,040,000 | $5,306,000 | **$6,906,000** |

# UV Disinfection Upgrades

| Project Name | UV Disinfection Upgrades | Project No. | 7352 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Clint Shima | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To rehabilitate components of the ultraviolet (UV) disinfection system and improve reliability.

## Drivers:

The UV system was constructed in the mid1990s. The old denitrification tanks were re-purposed for constructing the UV channels and some piping modifications were completed to route secondary effluent to the UV system. The existing UV technology is old, inefficient, and does not have the same controls capabilities and automated cleaning capabilities as newer UV technology. The existing system requires significant cleaning and maintenance. The existing electrical connections are worn and in some cases, have failed. Until the existing UV system can be replaced, there are several improvements needed to improve the reliability of the existing disinfection system. A new system is planning to be installed in the next several years.

## Description:

Several major elements are included in this project:

- Replace some of the conduits between the ballasts and UV banks to improve reliability of the disinfection system
- Repair and replace components of the existing UV chemical cleaning system to improve reliability and safety of chemical cleaning system
- Rehabilitate or replace the UV inlet gates actuators, stems, and seals to address leaking that occurs during UV basin shutdown

**Location(s):** UV Disinfection

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $400,000 | $100,000 | $0 | **$500,000** |
| **FY Total:** | $0 | $400,000 | $100,000 | $0 | **$500,000** |

# Outfall Improvements - Phase 7

| Project Name | Outfall Improvements - Phase 7 | Project No. | 7353 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | P |
| Project Manager: | Nathan Hodges | Priority Rank | Very High |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 55 |
| | | Concord % | 100% |

## Purpose:

To inspect the land and submarine portions of the Outfall pipeline to address repairs required to maintain the pipeline and meet regulatory requirements.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| **Regulatory** | Sustainability |

## Drivers:

The District's National Pollutant Discharge Elimination System (NPDES) permit requires proper operation and maintenance of the Outfall pipeline that discharges treated final effluent to Suisun Bay. Every 5 to 10 years, the 3.5 mile, 72-inch reinforced concrete Outfall pipeline built in 1958 is drained and inspected to verify pipeline alignment and condition of the pipeline and seals. As part of the last Outfall Improvements Project in 2012, over 1,500 pipe joints were inspected, and 368 joints were repaired with new seals. Of the 1,500 joints, approximately 950 have been replaced to date.

During the inspection and improvements, final effluent is routed to the Wet Weather Holding Basins and temporarily discharged for approximately 12 weeks through the overflow weir structure to Walnut Creek in accordance with permit requirements.

## Description:

It's been five years since the last Outfall inspection, and it is time to re-evaluate the Outfall condition as stated in the existing NPDES permit. This project will include similar elements as past Outfall Improvements projects:

- Coordinate Outfall inspection and temporary bypass approval with the San Francisco Regional Water Quality Control Board (RWQCB), and obtain all other necessary permits
- Test the land portion of the Outfall and install new Weco seals as required like past inspections
- Ballast the submarine portion of the Outfall and perform remote operated vehicle (ROV) inspection, and improve protection from boat anchors in Suisun Bay as required
- Update Outfall pipeline survey data, inspect inclinometers, and repair vertical survey markers

**Location(s):** Outfall, Martinez, Suisun Bay

**Project Budget**

| Phase: | Budget-to-Date | FY 2017-18 | FY 2018-19 | Future FYs | Total |
|---|---|---|---|---|---|
| **Planning:** | $0 | $100,000 | $116,000 | $0 | **$216,000** |
| **Design:** | $0 | $0 | $234,000 | $177,000 | **$411,000** |
| **Construction:** | $0 | $0 | $0 | $3,696,000 | **$3,696,000** |
| **FY Total:** | $0 | $100,000 | $350,000 | $3,873,000 | **$4,323,000** |

# Treatment Plant Security Improvements

| Project Name | Treatment Plant Security Improvements | Project No. | 7354 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | D |
| Project Manager: | Jay Lin | Priority Rank | Very High |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 60 |
| | | Concord % | 100% |

## Purpose:

To improve physical security at the treatment plant and to protect existing critical assets.

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| Regulatory | **Sustainability** |

## Drivers:

In addition to worker safety, there are many critical assets that require physical security improvements to minimize the risk.

In 2016-2017, a comprehensive security study was completed for major District facilities that utilized the principles of AWWA J100 Risk Analysis and Management for Critical Asset Protection methodology (RAMCAP® J100). J100 is a comprehensive approach that enables the estimation of relative risks across multiple assets while considering both malevolent and natural hazards. The RAMCAP method is a 7-step process including: 1) Asset Characterization; 2) Threat Characterization; 3) Consequence Analysis; 4) Vulnerability Analysis; 5) Threat Analysis; 6) Risk/Resilience Analysis; and 7) Risk/Resilience Management.

## Description:

Findings from this study related to the Treatment Plant will be implemented under this project. Some improvements may be implemented in collaboration with the pump station and general security improvement projects that were also identified under the same study. In general, recommendations included:

- Increased surveillance and intrusion detection
- Access control improvements
- Perimeter fencing repair
- Increased signage
- Other miscellaneous security improvements

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $87,000 | $170,000 | $0 | **$257,000** |
| **Construction:** | $0 | $0 | $0 | $1,530,000 | **$1,530,000** |
| **FY Total:** | $0 | $87,000 | $170,000 | $1,530,000 | **$1,787,000** |

# Odor Control Upgrades - Phase 1

| Project Name | Odor Control Upgrades - Phase 1 | Project No. | 7355 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | P |
| Project Manager: | Craig Mizutani | Priority Rank | Very High |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 60 |
| | | Concord % | 100% |

## Purpose:

To replace existing odor control systems for the Headworks, Pre-Aeration tanks, and primary effluent channel.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

## Drivers:

Central San's Odor Control Facilities Plan was last updated in 2006. The update was based on an established odor threshold of 20 dilutions to threshold. To meet this threshold goal at the treatment plant and to address aging equipment, upgrades are recommended to the Headworks and Pre-Aeration Odor Control Units. The existing odor control systems use outdated technology with corrosive sodium hypochlorite systems. The odor control towers, ductwork, and fans are experiencing significant wear and require replacement. In addition, nearby surfaces such as building roofs are experiencing significant corrosion. Alternative odor control technologies will be considered that do not use sodium hypochlorite and that will minimize visible misting.

## Description:

Several major elements are included in this project:

- Update the Odor Control Facilities Plan and confirm odor control threshold requirements for design
- Replace the Pre-Aeration Odor Control Unit
- Replace the Headworks Odor Control Unit

**Location(s):** Headworks, Pre-Aeration, Primary Effluent Channel

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $150,000 | $0 | $0 | **$150,000** |
| **Design:** | $0 | $0 | $369,000 | $0 | **$369,000** |
| **Construction:** | $0 | $0 | $1,318,000 | $2,048,000 | **$3,366,000** |
| **FY Total:** | $0 | $150,000 | $1,687,000 | $2,048,000 | **$3,885,000** |

# Plant-Wide Instrumentation Upgrades

| Project Name | Plant-Wide Instrumentation Upgrades | Project No. | 7357 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | P |
| Project Manager: | Jay Lin | Priority Rank | Very High |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 60 |
| | | Concord % | 100% |

## Purpose:

To install new instrumentation for improved monitoring, control, and optimization of Central San facilities.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Drivers:

Collection and leveraging of data is becoming increasingly useful for wastewater operations, design, and optimization. As Central San considers future equipment upgrades, potential nutrient removal technologies, and solids handling technologies, it's important to collect data that will be useful for the evaluation and design of those facilities. There are also return streams that Central San has limited data for but could be helpful when evaluating future improvements. In the meantime, there are opportunities to optimize existing processes and possibly reduce operations and maintenance costs; however, key instruments are required to evaluate these opportunities.

Energy management and energy efficiency measures are crucial elements for striving towards net zero energy. Power meters installed at the Motor Control Centers and key equipment can be useful for identifying optimization opportunities. The concept of "Big Data" is becoming increasingly popular and is aimed to leveraging data to analyze trends to predict how a given process will perform in the future and proactively make process adjustments.

## Description:

The following elements are included in the project:

- Develop instrumentation upgrades strategy and phasing plan
- Install flow meters for improved monitoring of return streams
- Install power meters for Motor Control Centers and key equipment
- Install air flow meters for tracking channel aeration demands
- Install other miscellaneous instruments for improved process monitoring, control, and optimization

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $100,000 | $0 | $0 | **$100,000** |
| **Design:** | $0 | $0 | $190,000 | $0 | **$190,000** |
| **Construction:** | $0 | $0 | $0 | $1,710,000 | **$1,710,000** |
| **FY Total:** | $0 | $100,000 | $190,000 | $1,710,000 | **$2,000,000** |

# Innovative Bioenergy Facility

| Project Name | Innovative Bioenergy Facility | Project No. | 7358 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | P |
| Project Manager: | Melody LaBella | Priority Rank | Critical |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 65 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | **Capacity** |
| Regulatory | **Sustainability** |

## Purpose:

To implement a bioenergy project that will both produce renewable energy and process a portion of Central San's wastewater solids.

## Drivers:

Assembly Bill (AB) 32, California's landmark greenhouse (GHG) reduction legislation, imposed a 25,000-metric ton $CO_2$-eq trigger for participation in the GHG Cap and Trade Program. Thus, Central San has modified its operation in some years to maintain treatment plant anthropogenic (fossil-fuel derived) GHG emissions under that trigger. In some years, this has required shutdown of the Cogeneration Facility (Cogen), resulting in increased purchase of grid power, higher PG&E demand charges, and loss of resiliency provided by onsite power.


A bioenergy project, sized to meet Central San's base electrical demand (~2.8 megawatts), could allow shut down of the cogeneration unit, reduce purchases and import of natural gas, reduce emission of regulated GHGs, and enable Central San to achieve its goal of achieving net zero energy. Such a project could also benefit Central San by processing a portion of dewatered wastewater solids. Diverting some of the dewatered solids away from the exiting incinerators would help relieve limited incinerator capacity and diversify solids handling.

## Description:

This project will provide the planning phase funds to complete an evaluation of how a bioenergy project would interconnect with existing treatment plant operation and how the treatment plant's energy management system would need to be reconfigured. For example, since the cogeneration unit currently supplies more than 40% of the treatment plant's steam demand, either the treatment plant needs to move away from its steam reliance or that steam supply must be made up from the innovative bioenergy facility or from additional Auxiliary Boiler capacity.

**Location(s):** Solids Conditioning Building and Nearby Areas

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $200,000 | $200,000 | $0 | **$400,000** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $0 | $0 | $0 | **$0** |
| **FY Total:** | $0 | $200,000 | $200,000 | $0 | **$400,000** |

# Solids Conditioning Building Roof Replacement

| Project Name | SCB Roof Replacement | Project No. | 7359 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | D/C |
| Project Manager: | Craig Mizutani | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 70 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

## Purpose:

To replace the roof for the Solids Conditioning Building.

## Drivers:

In January 2017, Central San experienced significant rainfall. During these wet weather conditions, several roof leaks were identified at the Solids Conditioning Building. Some of the leakage is over critical electrical equipment. Failure of this equipment could result in significant disruptions to operations as well as create safety hazards. There are also several other critical assets in this building, including one of the two plant control rooms.

Over the last 10 years, several repairs have been made to the roof to extend its useful life and repair significant leaks; however, the entire roof is old, in poor condition, and requires replacement. Temporary measures have been implemented to protect the electrical equipment from water damage; however, a roof replacement is recommended as the long-term solution.

## Description:

Replace the roof for the Solids Conditioning Building.

**Location(s):** Solids Conditioning Building

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $150,000 | $0 | $0 | **$150,000** |
| **Construction:** | $0 | $350,000 | $600,000 | $0 | **$950,000** |
| **FY Total:** | $0 | $500,000 | $600,000 | $0 | **$1,100,000** |

# Existing Facilities As-Is Drawings

| Project Name | Existing Facilities As-Is Drawings | Project No. | 7360 |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Craig Mizutani | Priority Rank | N/A |
| Department/Division: | Engineering/Capital Projects | Ranking Score | N/A |
| | | Concord % | 100% |

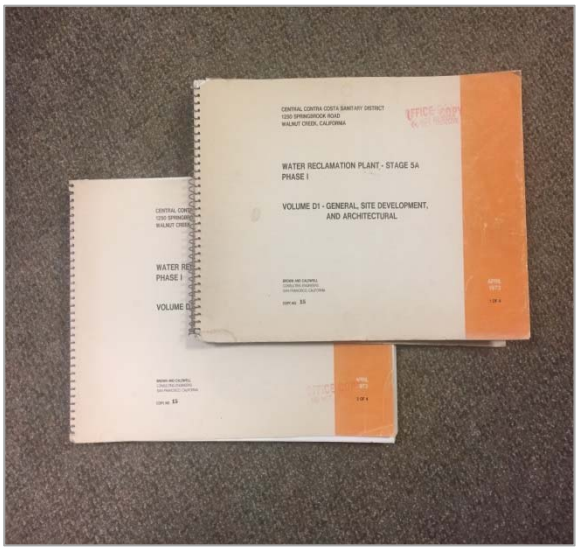
| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To develop as-is drawings in electronic computer-aided design (CAD) format for existing facilities.

## Drivers:

Central San has limited as-built drawings for existing facilities, particularly for facilities that were constructed over 40 years ago. Additionally, there are some facilities that Central San has hard copy as-built drawings for but does not have them in CAD format.




Most of Central San's facilities are over 40 years old. As these existing facilities require rehabilitation or replacement, it will be important to have as-is CAD drawings for implementation of capital improvement projects. Additionally, it is important from an operations and resiliency standpoint to have as-is conditions documented and readily available for addressing potential urgent improvements as they arise.

## Description:

Compile available past project information, perform field investigations as required, and develop as-is CAD drawings for existing facilities. Currently, the focus for as-is drawings will be electrical facilities and treatment plant process areas where improvements are anticipated within the next five years.

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $100,000 | $100,000 | $150,000 | **$350,000** |
| **FY Total:** | $0 | $100,000 | $100,000 | $150,000 | **$350,000** |

# Treatment Plant Safety Enhancements - Phase 5

| Project Name | TP Safety Enhancements - Phase 5 | Project No. | TBD |
|---|---|---|---|
| Program: | Treatment Plant | Phase | C |
| Project Manager: | Craig Mizutani | Priority Rank | Very High |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 60 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

To enhance treatment plant safety through identification of safety concerns, repairs, and capital improvements.

## Drivers:

Central San and the treatment plant have very proactive safety programs that are administered by separate committees. These committees are responsible for addressing safety concerns at the treatment plant as identified by the craftsmen or to respond to the ever-changing regulatory requirements. Often this response will require construction of a capital project.

The first three phases of this program addressed various safety repairs and improvements.

## Description:

The project will include treatment plant facility improvements for safety, including a second emergency exit stairway for the control room in the Solids Conditioning Building.

In addition, the project will be coordinated with safety improvements identified in the General Improvements program and the costs will be assigned to their respective program.

**Location(s):** Miscellaneous areas around the treatment plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $100,000 | $100,000 | $0 | **$200,000** |
| **FY Total:** | $0 | $100,000 | $100,000 | $0 | **$200,000** |

# Plant Operations Building (POB) Seismic Upgrades

| Project Name | POB Seismic Upgrades | Project No. | TBD |
|---|---|---|---|
| Program: | Treatment Plant | Phase | D |
| Project Manager: | Nathan Hodges | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 75 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

Improve the seismic safety of the Plant Operations Building (POB).

## Drivers:

In January 2008, the State of California adopted the 2007 California Building Code (2007 CBC). Among the updates in the 2007 CBC were significant changes to seismic design. In 2009, a seismic evaluation was completed for the treatment plant facilities (Martinez Wastewater Treatment Plant Seismic Vulnerability Assessment of Selected Facilities, December 2009). Included in the evaluation were recommendations to bring the POB up to date with current seismic design standards.


The POB houses staff for the Plant Operations and Maintenance Divisions, the main Control Room, Control System servers, Board Room, and the Multipurpose Room (MPR) which also serves as Central San's Emergency Operations Center. The MPR is located within POB and is frequently used by the public. Central San has plans to construct security improvements to the MPR. This would involve reconfiguring the space and modifying the existing restrooms to improve public access and meet Americans with Disabilities Act of 1990 requirements. The remaining POB needs seismic improvements. Due to the construction, some of the works spaces may require some modifications. In addition, some of the existing Operations work spaces may be repurposed to accommodate the work force. Any floorplan modifications will be done in a cost-effective manner.

## Description:

Construct seismic improvements to the POB to Life Safety Plus standards. Scope may include:

- POB building need column strengthening at the main floor and basement levels. Likely carbon fiber wrapping columns and braces.
- The welding shop/break room buildings need strengthening of steel members.
- Board Room area requires strengthening at the roof level.

**Location(s):** Plant Operations Building

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $400,000 | $0 | $0 | **$400,000** |
| **Construction:** | $0 | $0 | $1,300,000 | $0 | **$1,300,000** |
| **FY Total:** | $0 | $400,000 | $1,300,000 | $0 | **$1,700,000** |

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# CIB - General Improvements Program

The General Improvements Program is primarily concerned with property, administrative buildings, management information systems including information technologies (IT), asset management, as well as new equipment and vehicle needs of Central San.

## Vehicle Replacement Program

The CIB includes a yearly allowance for the vehicles replacement budget. Specific vehicles are replaced each year as approved through the annual budget process.

## Equipment Acquisition

The Equipment subprogram comprises the items budgeted and purchased under the annual District Equipment Budget, which is included in this document. The CIB includes an allowance for the equipment budget. Specific equipment items are approved through the annual budget process.

## Management Information Systems

The Management Information Systems subprogram reflects the importance of IT in the daily operation of Central San. Central San has developed an IT Master Plan that envisions implementing specific improvements and extends several years into the future. An allowance to meet anticipated future information technology needs has been included in the ten-year Capital Improvement Plan. Funding for upgrades of Central San's Geographic Data Integration systems and Enterprise Resource Planning software platform are included in the CIB.

## General Projects

This subprogram includes improvements to the Headquarters Office Building, Collection System Operations building and other properties, CIB legal expenses, easement and right-of-way acquisition, and projects related to District property improvements.

## Asset Management

Central San has invested significant resources in its assets, and the purpose of the Asset Management Program, which includes Treatment Plant, Collection System, General Improvements, and Recycled Water assets, is to optimize the lifecycle of these assets to deliver high quality and reliable services in a sustainable manner for customers with an acceptable level of risk.

*Example of project driver(s)*

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

Each project is described on the following pages. Each project summary includes project name, description, prioritization, purpose, location, budgetary information and drivers (i.e.; what is the main impetus for a project). The main driver(s) for each project is (are) identified by highlighting in orange background color and **bold** text. Driver(s) that are not as significant or not relevant are displayed in gray.

All projects in the General Improvements Program are summarized; including all past, current, planned budgets required to complete each project as shown on the following table 4:

## CIB Table 4 – FY 2017-18 General Improvements Program Budget/Project Summary

| Project Number | Project | Budget-to-Date | FY 2017-18 | FY 2018-19 | Future FYs | Total |
|---|---|---|---|---|---|---|
| 8207 | General Security and Access | $47,616 | $67,000 | $82,000 | $442,000 | $638,616 |
| 8227 | Geographic Data Integration (GDI) Treatment Plant | $265,000 | $160,000 | $0 | $0 | $425,000 |
| 8230 | Capital Legal Services | $138,665 | $20,000 | $20,000 | $60,000 | $238,665 |
| 8236 | District Easement Acquisition | $143,047 | $50,000 | $50,000 | $150,000 | $393,047 |
| 8238 | Asset Management Program Development | $1,989,185 | $950,000 | $500,000 | $0 | $3,439,185 |
| 8240 | Information Technology (IT) Development | $2,418,794 | $730,000 | $830,000 | $3,196,206 | $7,175,000 |
| 8243 | Server Room Relocation | $455,430 | $1,000,000 | $280,000 | $0 | $1,735,430 |
| 8247* | Property and Building Improvements | $0 | $400,000 | $250,000 | $1,250,000 | $1,900,000 |
| 8516 | Equipment Acquisition | $526,000 | $150,000 | $150,000 | $600,000 | $1,426,000 |
| 8517 | Vehicle Replacement Program | $524,000 | $675,000 | $650,000 | $2,400,000 | $4,249,000 |
| TBD* | Cyber Security | $0 | $75,000 | $100,000 | $300,000 | $475,000 |
| | **Total Program** | **$6,507,737** | **$4,277,000** | **$2,912,000** | **$8,398,206** | **$22,094,943** |

* New Project included in FY 2017-18.

# General Security and Access

| Project Name | General Security and Access | Project No. | 8207 |
|---|---|---|---|
| Program: | General Improvements | Phase | C |
| Project Manager: | Craig Mizutani | Priority Rank | Very High |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 60 |
| | | Concord % | TBD |

## Purpose:

To improve safety for employees and the public, meet safety standards, reduce Central San's exposure to liability, reduce property loss, and reduce operations and maintenance expenses.

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| **Regulatory** | **Sustainability** |

## Drivers:

Central San has experienced property losses in the past. Security system improvements are routinely identified and refined. It is possible that additional security measures for essential public service facilities may be required. Additionally, in 2016-2017, a comprehensive security study was completed for major District facilities that utilized the principles of AWWA J100 Risk Analysis and Management for Critical Asset Protection methodology (RAMCAP® J100). J100 is a comprehensive approach that enables the estimation of relative risks across multiple assets while considering both malevolent and natural hazards.

## Description:

Findings from this study that are applicable to non-treatment plant and properties will be implemented under this Project. Some improvements may be implemented in collaboration with the projects that were also identified under the same study. Improvements include:

- Installing security upgrades to the HOB Lobby to secure the area and clearly identify the public use of the building. The restrooms previously used by the public will no longer be accessible after the security work is complete. Modifications to the lobby are needed to provide a public restroom and provide for customer and business accommodations. Additional cameras for surveillance, alarm system upgrades for intrusion, and associated systems will be provided.
- Access control improvements and additional card readers, perimeter fencing repair and gates.
- Increased signage, improved lighting, and other miscellaneous security system improvements.

**Location(s):** District-wide

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $47,616 | $67,000 | $82,000 | $442,000 | **$638,616** |
| **FY Total:** | $47,616 | $67,000 | $82,000 | $442,000 | **$638,616** |

# Geographic Data Integration (GDI) Treatment Plant

| Project Name | GDI Treatment Plant | Project No. | 8227 |
|---|---|---|---|
| Program: | General Improvements | Phase | P |
| Project Manager: | Carolyn Knight | Priority Rank | Critical |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 65 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

## Purpose:

To support the asset management program by providing an effective means of accessing treatment plant asset data through an interactive map linked to multiple datasets.

## Drivers:

After successful implementation of the collection system GDI, it was determined that a similar web interface for the Treatment Plant would provide efficient access to asset drawings and data.

A pilot Treatment Plant GDI was developed and is currently used by staff.

## Description:

The following major tasks are included in this project:

- Implement a geographically based asset management tool for the treatment plant
- Work with staff to optimize interface and functionality for accessing asset data
- Organize and gather asset data and link to Treatment Plant GDI

**Location(s):** Treatment Plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $265,000 | $160,000 | $0 | $0 | **$425,000** |
| **FY Total:** | $265,000 | $160,000 | $0 | $0 | **$425,000** |

# Capital Legal Services

| Project Name | Capital Legal Services | Project No. | 8230 |
|---|---|---|---|
| Program: | General Improvements | Phase | P |
| Project Manager: | Russell Leavitt | Priority Rank | N/A |
| Department/Division: | Engineering/Planning & Development | Ranking Score | N/A |
| | | Concord % | 50% |

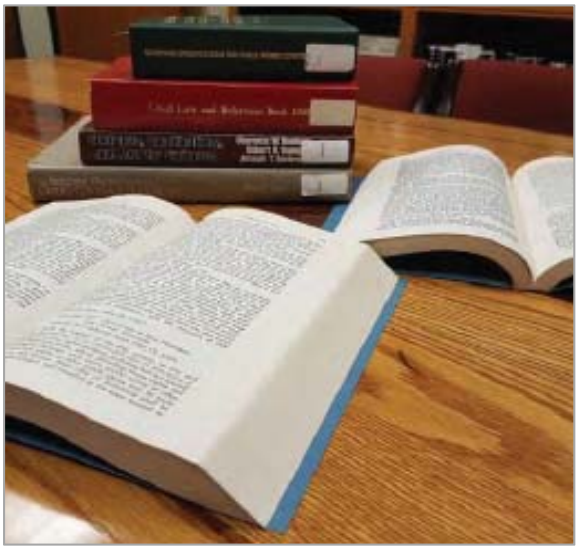
| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

To streamline the processing of legal bills.

## Drivers:

In the past, legal expenses were charged to individual capital projects. This process required extra staff time each month to review legal bills and get approvals from several different project managers.



## Description:

Capital legal service expenses are no longer charged to individual capital projects. Instead, the processing of legal bills is streamlined by charging legal expenses to one capital account with four charge numbers for the four programs. This reduces the amount of time all parties must spend processing the legal bill.

**Location(s):** District-wide

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $138,665 | $20,000 | $20,000 | $60,000 | **$238,665** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $0 | $0 | $0 | **$0** |
| **FY Total:** | $138,665 | $20,000 | $20,000 | $60,000 | **$238,665** |

# District Easement Acquisition

| Project Name | District Easement Acquisition | Project No. | 8236 |
|---|---|---|---|
| Program: | General Improvements | Phase | P |
| Project Manager: | Tom Godsey | Priority Rank | Critical |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 65 |
| | | Concord % | TBD |

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

To improve or acquire new property land rights for existing or new sanitary sewers that are located on private properties and are not associated with a current capital project for sewer renovation work.

## Drivers:

As capital projects are designed, sanitary sewer easements may have to be acquired for those specific projects. This project provides funds for the acquisition of easements for projects where specific funds are not identified within the sewer renovation capital improvement projects in the Capital Improvement Budget (CIB). The District is currently evaluating and updating the status of the existing capitalized easement, perfecting easements, and right of ways.

## Description:

Examples of easements that may be acquired through this project include:

- Easements for existing sewers where no easements currently exist
- Easements for sewers relocated through other public agency projects
- Upgraded easements or access rights for existing sewers
- Upgraded easements for Central San's Outfall pipeline
- Easements for recycled water distribution pipelines

**Location(s):** District-wide

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $143,047 | $50,000 | $50,000 | $150,000 | **$393,047** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $0 | $0 | $0 | **$0** |
| **FY Total:** | $143,047 | $50,000 | $50,000 | $150,000 | **$393,047** |

# Asset Management Program Development

| Project Name | Asset Management Program Development | Project No. | 8238 |
|---|---|---|---|
| Program: | General Improvements | Phase | C |
| Project Manager: | Dana Lawson | Priority Rank | Critical |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 70 |
| | | Concord % | 50% |

## Purpose:

To develop a comprehensive asset management program that optimizes the lifecycle of Central San assets and delivers high quality and reliable services in a sustainable manner for customers with an acceptable level of risk.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

## Drivers:

In FY 2014-15, a consultant was contracted to develop an asset management implementation plan and Board Policy 15 was adopted regarding asset management.

The Asset Management Implementation Plan Summary Report was published in March 2015. The elements identified were assigned by staff to existing projects where applicable, included in maintenance efforts as continuous improvement tasks, and the remaining elements are being completed under this project.


## Description:

Implementation will require Central San staff time over the next two years to accomplish tasks such as the following:

- Complete implementation of new CityWorks CMMS and improve functionality during roll-out
- Continued coordination and update of standard operating procedures, O&M manuals, shop, drawings, and other reports
- Drafting to consolidate treatment plant as-built drawings and information
- Consolidate CCTV databases
- Update Asset Management Plan
- Utility locating and condition assessments of critical treatment plant piping
- Develop program management standards, and implement a Program Management Information System (PMIS).

**Location(s):** District-wide

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $1,189,185 | $0 | $0 | $0 | **$1,189,185** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $800,000 | $950,000 | $500,000 | $0 | **$2,250,000** |
| **FY Total:** | $1,989,185 | $950,000 | $500,000 | $0 | **$3,439,185** |

# Information Technology (IT) Development

| Project Name | Information Technology (IT) Development | Project No. | 8240 |
|---|---|---|---|
| Program: | General Improvements | Phase | C |
| Project Manager: | John Huie | Priority Rank | Critical |
| Department/Division: | Administration/Information Technology (IT) | Ranking Score | 70 |
| | | Concord % | 50% |

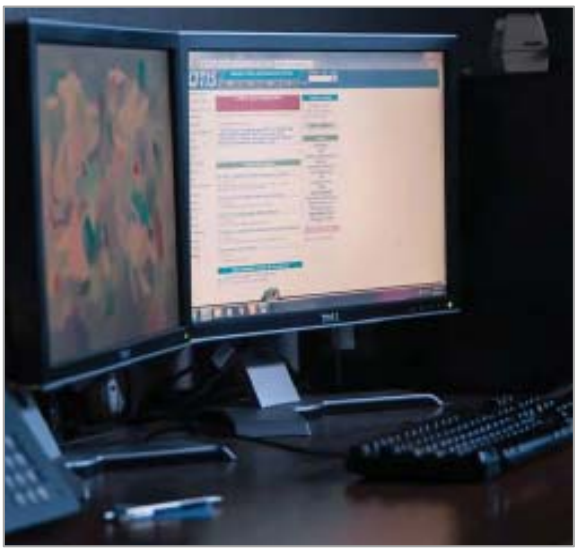
| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| **Regulatory** | Sustainability |

## Purpose:

To replace and upgrade information technology (IT) infrastructure and software as needed.

## Drivers:

An Information Technology Development Plan was developed to centralize efforts and funding in the development of computer and telecommunication technology within Central San. Central San budgets IT on an annual basis.



The IT Master Plan was approved in 2015 and its implementation is within the Capital Improvement Budget (CIB) and the 10-year Capital Improvement Plan (CIP).

## Description:

This project is the implementation of the IT Master Plan which includes the following major elements:

- Security improvements
- Network infrastructure upgrades
- Disaster Recovery / Business Continuity
- Cloud based technology improvements
- Business application suite improvements
- Increasing mobile presence
- Desktop technology refreshment
- Web redesign and enhancement

**Location(s):** District-wide

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $2,418,794 | $730,000 | $830,000 | $3,196,206 | **$7,175,000** |
| **FY Total:** | $2,418,794 | $730,000 | $830,000 | $3,196,206 | **$7,175,000** |

# Server Room Relocation

| Project Name | Server Room Relocation | Project No. | 8243 |
|---|---|---|---|
| Program: | General Improvements | Phase | D/C |
| Project Manager: | Jay Lin and Nathan Hodges | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | 50% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| **Regulatory** | **Sustainability** |

## Purpose:

To relocate all servers, network, and other related computer equipment from its current location in the Plant Operations Building (POB) basement to more suitable location.

## Drivers:

The server and equipment in the POB basement is critical for day-to-day Central San operations, customer service, communication, and information management.

This project was initiated after a major IT server failure at the main network facility in the POB basement. The existing server room is a decommissioned laboratory room which is vulnerable to failures of nearby water and wastewater process pipelines. Several alternatives for relocation of the server room to a more reliable and resilient location were evaluated, and a new server room attached to the existing POB is planned to be constructed next FY.

## Description:

The following are major elements included in the project:

- Relocation of server, network, and related computer equipment to a new Central San server room that will be integrated with the POB facility.
- Re-routing of communication cabling and conduits to the new facility.

**Location(s):** Treatment Plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $85,000 | $0 | $0 | $0 | **$85,000** |
| **Design:** | $250,000 | $0 | $0 | $0 | **$250,000** |
| **Construction:** | $120,430 | $1,000,000 | $280,000 | $0 | **$1,400,430** |
| **FY Total:** | $455,430 | $1,000,000 | $280,000 | $0 | **$1,735,430** |

# Property and Building Improvements

| Project Name | Property and Building Improvements | Project No. | 8247 |
|---|---|---|---|
| Program: | General Improvements | Phase | D/C |
| Project Manager: | Tom Godsey | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 65 |
| | | Concord % | TBD |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

Protect and enhance Central San's property through needed building improvements and replacement work.

## Drivers:

Central San owns various properties surrounding the treatment plant that require occasional additions, improvements, and replacements, including the Imhoff Triangle, the Kiewit parcel, 4849 Imhoff, 4737 Imhoff, and others. The Kiewit parcel has served as a buffer zone for the treatment plant. The Imhoff properties also serve as a buffer between the treatment plant and nearby neighborhoods, and are used as rental property and to house some Central San work groups and equipment. Central San also owns several buildings on its Treatment Plant site in addition to the Collection System Operations Building and Vehicle Maintenance Shop that house additional staff and equipment.

## Description:

This project will fund needed improvements to Central San’s buildings, buffer properties, rental properties, and the surrounding parking lots and grounds. The project may be combined with other security and similar work in other capital projects. A near term improvement project includes 4737 Imhoff Place which is a commercial building partially used by Central San with the remaining space rented to businesses. The building requires a comprehensive evaluation to determine the best alternatives to meet Central San’s operational needs and to meet the Contra Costa County’s ADA requirements.

**Location(s):** District-wide

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $50,000 | $0 | $0 | **$50,000** |
| **Design:** | $0 | $150,000 | $0 | $0 | **$150,000** |
| **Construction:** | $0 | $200,000 | $250,000 | $1,250,000 | **$1,700,000** |
| **FY Total:** | $0 | $400,000 | $250,000 | $1,250,000 | **$1,900,000** |

# Equipment Acquisition

| Project Name | Equipment Acquisition | Project No. | 8516 |
|---|---|---|---|
| Program: | General Improvements | Phase | C |
| Project Manager: | Amal Lyon | Priority Rank | Very High |
| Department/Division: | Administration/Finance | Ranking Score | 55 |
| | | Concord % | TBD |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

## Purpose:

To provide new, safe, and cost-effective equipment for operations and maintenance of Central San facilities.

## Drivers:

A project is developed on a yearly basis to procure new equipment required for operations and maintenance of assets throughout Central San.


## Description:

The following new equipment is scheduled to be purchased in FY 2017-18:

- High Current Primary Injection Test System (Electrical Shop)
- All-Test PRO 5 Motor Circuit Analyzer (Electrical Shop)
- Emerson 475 Field Communicator (Instrument Shop)
- Cushman Titan 36 Volt Flatbed Cart (Mechanical Maintenance Shop)
- Scotchman 50514-EC Ironworker (Mechanical Shop)
- Portable Mobile Generator (Pumping Stations)

**Location(s):** District-wide

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $143,047 | $50,000 | $50,000 | $150,000 | **$393,047** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $0 | $0 | $0 | **$0** |
| **FY Total:** | $143,047 | $50,000 | $50,000 | $150,000 | **$393,047** |

# Vehicle Replacement Program

| Project Name | Vehicle Replacement Program | Project No. | 8517 |
|---|---|---|---|
| Program: | General Improvements | Phase | C |
| Project Manager: | Amal Lyon | Priority Rank | Very High |
| Department/Division: | Administration/Finance | Ranking Score | 55 |
| | | Concord % | TBD |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

## Purpose:

Provide safe and cost-effective vehicle replacement.

## Drivers:

Central San will budget and acquire vehicles under this project and use asset management principles and historic replacement costs to provide an effective vehicle replacement strategy. Staff, comprised of engineering and operations, has forecasted approximately $7.4 million in vehicle replacement from FY 2016 - 2026. A yearly budget (avg. costs in FY 2016- 2026 plan) will be used to fund the project. Underspending in a year will result in a carryforward to future years. This approach will also recognize that due to long lead times, especially on specialized vehicles such as vac and rodding trucks, the budget for this program can carry forward to the next fiscal year when delivery may take place.

## Description:

The following vehicles are scheduled to be purchased in FY 2017-18:

- Three Quarter-Ton 4x2 Van
- Small Sport Utility, 4 Seater
- Three Quarter-Ton 4x2 Truck w/Lift Gate
- Three Quarter-Ton 4x4 Truck w/Lift Gate
- Half-Ton 4x4 Truck (2 Qty.)
- Construction Crew Truck (War-Wagon)
- Boom Truck

**Location(s):** District-wide

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $524,000 | $675,000 | $650,000 | $2,400,000 | **$4,249,000** |
| **FY Total:** | $524,000 | $675,000 | $650,000 | $2,400,000 | **$4,249,000** |

# Cyber Security

| Project Name | Plant Cyber Security | Project No. | TBD |
|---|---|---|---|
| Program: | General Improvements | Phase | C |
| Project Manager: | John Huie | Priority Rank | Critical |
| Department/Division: | Administration/Information Technology (IT) | Ranking Score | 65 |
| | | Concord % | 50% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To assess cyber security threats and make annual improvements to cyber security controls.

## Drivers:

Cyber security is the top threat facing business and critical infrastructure in the United States, according to reports and testimony from the Director of National Intelligence, the Federal Bureau of Investigation and the Department of Homeland Security (Source: American Water Works Association). Within the last two decades, cyber security threats including cyber terrorism have grown to a problem of concern. It is important that Central San maintains a robust cyber security system to prevent against cyber terrorism.


Cyber security improvements will be required to enhance the security and resilience of critical information technology infrastructure, protect Central San data and critical systems by deploying and maintaining appropriate security controls, and to promote security awareness among Central San employees.

## Description:

This is an annual program that will assess cyber security threats and implement improvements to cyber security as necessary.

## Location(s): District-wide

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $0 | $0 | $0 | **$0** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $75,000 | $100,000 | $300,000 | **$475,000** |
| **FY Total:** | $0 | $75,000 | $100,000 | $300,000 | **$475,000** |

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# CIB - Recycled Water Program

Central San currently produces over 600 million gallons per year of recycled water use at the treatment plant site, for irrigation customers, and for a range of commercial uses. Over 200 million gallons per year of recycled water is provided to a variety of customers in Pleasant Hill, Concord, and near Central San's treatment plant in Martinez. Recycled water is used for landscape irrigation at schools, parks, private businesses, golf courses, street medians, and for commercial applications such as truck washing, concrete manufacturing, dust control, and toilet and urinal flushing. Central San uses over 300 million gallons per year at the treatment plant for process water and landscape irrigation for Central San properties. Central San continues to pursue several projects as described in the following pages.

The major emphasis of the Recycled Water Program for the next fiscal year will be to begin planning and preliminary design for improvements to Central San's existing recycled water treatment facilities and related support facilities, to address aging infrastructure needs and maintain reliable recycled water service to customers and for use at Central San's treatment plant. Central San will also continue efforts to add new cost effective customers in Central San's Zone 1 service area, pursue outside funding assistance (such as federal and state grants for all District recycled water projects), and work with water supply agencies to develop recycled water supply alternatives.

### Example of project driver(s)

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | Sustainability |

Each project is described on the following pages. Each project summary includes project name, description, prioritization, purpose, location, budgetary information and drivers (i.e.; what is the main impetus for a project). The main driver(s) for each project is (are) identified by highlighting in orange background color and **bold** text. Driver(s) that are not as significant or not relevant are displayed in gray.

### CIB Table 5 - FY 2017-18 Recycled Water Program Budget/Project Summary

| Project Number | Project | Budget-to-Date | FY 2017-18 | FY 2018-19 | Future FYs | Total |
|---|---|---|---|---|---|---|
| 7306 | Zone 1 Recycled Water | $467,894 | $30,000 | $40,000 | $150,000 | $687,894 |
| 7346 | ReW Distribution Surge Analysis | $55,000 | $100,000 | $0 | $0 | $155,000 |
| 7361 | Filter Plant Improvements | $0 | $330,000 | $500,000 | $12,377,000 | $13,207,000 |
| | **Total Program** | **$522,894** | **$460,000** | **$540,000** | **$12,527,000** | **$14,049,894** |

* New Project for FY 2017-18.

# Zone 1 Recycled Water

| Project Name | Zone 1 Recycled Water | Project No. | 7306 |
|---|---|---|---|
| Program: | Recycled Water | Phase | C |
| Project Manager: | Justin Waples | Priority Rank | Very High |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 50 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| Aging Infrastructure | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To provide recycled water for landscape irrigation and other identified users within in the Zone 1 Project area, which includes Pleasant Hill and portions of Concord and Martinez.

## Drivers:

In 2001, Central San completed the Zone 1 Implementation Plan that provided estimated connection costs and revenues for customers identified in the Zone 1 Project Agreement with Contra Costa Water District. Depending on the extent of use, demand for recycled water in Zone 1 for landscape irrigation and commercial uses could be up to 400 million gallons per year.

Central San staff evaluates potential new recycled water landscape irrigation sites near the existing recycled water distribution pipelines. New customers will continue to be added to the recycled water distribution system where technically and economically feasible.

## Description:

This project provides funds for the planning, design, and construction of recycled water facilities for landscape irrigation customers and other identified uses in the Zone 1 Project area, which includes Pleasant Hill and portions of Concord and Martinez.

**Location(s):** Zone 1 Recycled Water Distribution System - Pleasant Hill, Concord, Martinez

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $117,000 | $0 | $0 | $0 | **$117,000** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $350,894 | $30,000 | $40,000 | $150,000 | **$570,894** |
| **FY Total:** | $467,894 | $30,000 | $40,000 | $150,000 | **$687,894** |

# Recycled Water Distribution System Surge Analysis

| Project Name | Recycled Water Surge Analysis | Project No. | 7346 |
|---|---|---|---|
| Program: | Recycled Water | Phase | P |
| Project Manager: | Justin Waples | Priority Rank | Critical |
| Department/Division: | Engineering/Planning & Development | Ranking Score | 65 |
| | | Concord % | 100% |

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Purpose:

To conduct a pressure transient and surge analysis of the recycled water distribution system.

## Drivers:

The recycled water distribution system has experienced several pipeline breaks over the last few years. An analysis of pressures within the recycled water distribution system during different operating conditions is recommended to confirm whether or not the existing recycled water surge tank is adequately sized given current recycled water demands and operations, and to optimize pumping operations and controls if required.

## Description:

Several elements are included in this project:

- Monitor and evaluate pressure in the recycled water distribution system
- Evaluate the size and optimization of recycled water surge tank and pumps
- Evaluate opportunities to manage pressure transients

**Location(s):** Recycled Water Pumping, Zone 1 Recycled Water Distribution System

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $55,000 | $100,000 | $0 | $0 | **$155,000** |
| **Design:** | $0 | $0 | $0 | $0 | **$0** |
| **Construction:** | $0 | $0 | $0 | $0 | **$0** |
| **FY Total:** | $55,000 | $100,000 | $0 | $0 | **$155,000** |

# Filter Plant Improvements

| Project Name | Filter Plant Improvements | Project No. | 7361 |
|---|---|---|---|
| Program: | Recycled Water | Phase | P |
| Project Manager: | Dan Frost | Priority Rank | Critical |
| Department/Division: | Engineering/Capital Projects | Ranking Score | 70 |
| | | Concord % | 100% |

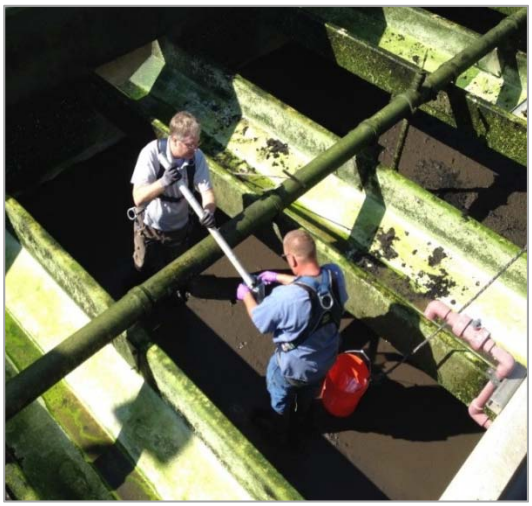
## Purpose:

To rehabilitate and replace components of the existing filter plant recycled water facilities.

| Project Drivers | |
|---|---|
| **Aging Infrastructure** | Capacity |
| Regulatory | **Sustainability** |

## Drivers:

The recycled water facilities produce disinfected tertiary effluent that meets Title 22 recycled water requirements and is used on-site for utility water and is pumped offsite for various residential and commercial recycled water uses. The filter plant and related facilities were constructed in the mid-1970s and some components have been replaced over time under subsequent projects. The existing filter plant media has been partially replaced on a routine basis over the years. The last partial media replacement effort was 15 years ago. The electrical and instrumentation infrastructure is mostly original, are showing signs of significant wear, and require replacement to ensure reliable utility water/recycled water production. Opportunities to minimize energy demands and reduce chemical dosing requirements will be included in the rehabilitation project in addition to replacing chemical piping, valves, and pumps that are in poor condition.



## Description:

Several major elements are included in this project:

- Rehabilitate and replace various electrical equipment (MCCs, switchgear, substation), PLCs, and instrumentation at the filter plant
- Replace filter media and backwash system
- Inspect and repair or replace filter underdrain system as required
- Replace or rehabilitate coagulant flash mixing, backwash gates, applied water valves, applied water pumps, and other miscellaneous equipment and valves
- Replace sodium hypochlorite piping and pumps used for Title 22 disinfection compliance
- Replace filter plant alum coagulant feed pumps, piping, and storage tank

## Location(s): Filter Plant

| Project Budget | | | | | |
|---|---|---|---|---|---|
| **Phase:** | **Budget-to-Date** | **FY 2017-18** | **FY 2018-19** | **Future FYs** | **Total** |
| **Planning:** | $0 | $330,000 | $330,000 | $0 | **$660,000** |
| **Design:** | $0 | $0 | $170,000 | $1,085,000 | **$1,255,000** |
| **Construction:** | $0 | $0 | $0 | $11,292,000 | **$11,292,000** |
| **FY Total:** | $0 | $330,000 | $500,000 | $12,377,000 | **$13,207,000** |

# Ten-Year Capital Improvement Plan

Central San has developed a Ten-year Capital Improvement Plan (CIP) for Central San's capital facilities and financing needs which has been updated based on the Comprehensive Wastewater Master Plan. The CIP is updated every year. Specifically, the plan identifies and prioritizes capital projects needed to accomplish Central San's Vision, Mission, and Values. It also includes planning-level cost estimates for proposed project work and projections for the various sources of revenue needed to meet the cash flow requirements of the CIP. The principal purpose of the CIP is to provide Central San's Board of Directors with the information needed to formulate long-range policy regarding:

- Priority and Schedule - Identify, prioritize, and schedule the projects necessary to accomplish Central San's Vision, Mission, and Values.
- Financing - Plan for sufficient financial resources to complete the projects proposed in the CIP.

The following Ten-Year Capital Improvement Plan section provides a general description of the plan and a discussion of potential, unbudgeted future capital projects. As projects develop and are prioritized, they are grouped into the four programs as shown in the CIB:

1) Treatment Plant Program;
2) Collection System Program;
3) General Improvements Program; and
4) Recycled Water Program.

A brief description of each program and a list of major projects for the ten-year CIP are provided in the Capital Improvement Plan sections for each of the four programs.

## CIP Budget Process

This CIP assumes that funds will be available to support the plan. These funds come from all revenue sources as discussed in the *Financial Planning Process* section. The only two discretionary sources of revenue are the sale of bonds or adjustment of the capital component of the SSC. This section is for planning purposes only. The Board of Directors has not yet voted to issue bonds to fund this planned program. The plan is currently funded on a year-by-year basis when the CIB for the upcoming fiscal year is formally authorized and adopted by the Board. Changes in capital revenue forecasts or changes in recommended expenditures may result in changes to this Ten-Year CIP.

# Ten-Year CIP Drivers

Projects included in the CIP address one of more of the four major drivers for implementing capital improvement projects: 1) Aging Infrastructure, 2) Regulatory, 3) Capacity, and 4) Sustainability. Most project scopes include several project elements that address a range of drivers but from a capital improvement perspective due to location, timing, or type of work, make sense to group into a single capital project. Below is a description for each of the four major drivers:

## 1. Aging Infrastructure

This project driver describes projects required to maintain the performance and reliability of existing assets to ensure reliable conveyance and treatment of wastewater. Central San operates and maintains several billion dollars of assets, and several projects in each program have been initiated or are in progress to meet the replacement or rehabilitation needs for Central San's infrastructure.

## 2. Regulatory

This project driver describes projects required to reliably comply with regulatory requirements that are designed to protect human health and the environment, and includes planning needed to anticipate potential future regulatory requirements. Regulatory drivers that may trigger capital improvement projects include potential changes in future state and/or federal water, air, and solids regulations. Potential regulatory drivers include: changes to existing final effluent limits to address nutrients, selenium, contaminants of emerging concern, and others; changes to California/National Toxics Rules, 303 (d) listed pollutants and micropollutants, and new virus-based disinfection criterion; reductions in greenhouse gas emission cap and trade program thresholds; compliance with Federal 129 sewage sludge incineration rules, changes to air emission limits, and solids handling/management and disposal regulations; recycled water, including potential coordinated projects with water agencies on Title 22, indirect, and even indirect or direct potable reuse opportunities; and collection system regulatory requirements such as the reduction of sewer system overflows (SSOs). Occasionally, improvements are also required to improve the reliability of existing facilities to ensure 100 percent compliance with regulatory permits and to ensure protection of human health and the environment.

## 3. Capacity

This project driver describes projects required to increase capacity of existing facilities to. Capacity drivers that may trigger capital improvement projects include potential upgrades required to accommodate hydraulic bottlenecks and increase capacity of existing facilities to accommodate wastewater flows and loads. Projects that would be required to accommodate planned growth are not included in the CIP.

## 4. Sustainability/Energy/Optimization

This project driver describes projects to minimize life-cycle costs, maximize benefits, and achieve economic stability through optimization, resiliency, resource recovery, and energy projects. Sustainability drivers that may trigger capital improvement projects include upgrades to strive towards net zero energy, recycled water projects to ensure the reliable supply of recycled water for use at Central San and for use by Central San's customers, and upgrades to improve the resiliency of Central San facilities. Improvements to strive towards net zero energy, or energy self-sufficiency, include energy efficiency measures such as installing more energy efficient equipment or treatment processes, and renewable energy projects such as solar or wind.

# Comprehensive Wastewater Master Plan

Central San started working on a Comprehensive Wastewater Master Plan (CWMP) project in June 2016. This CWMP helped determine the future capital improvement needs, and priorities for Central San's collection system, wastewater treatment plant, and recycled water facilities. This project was completed in June 2017.

Most of Central San's existing treatment plant facilities were constructed in the late 1970s and early 1980s following the passing of the Clean Water Act and some of the collection system facilities and piping were constructed as early as the 1940s and 1950s. Central San recognizes the need to address aging infrastructure and, thus, is developing an Asset Management Plan. Due to potential changes in future State and/or Federal water, air, and solids regulations, there was a need to develop a CWMP that coordinates regulatory-driven changes with aging infrastructure needs and other capacity-related and optimization improvements. Potential regulatory changes include:

- Changes to existing final effluent limits to address nutrients, selenium, contaminants of emerging concern, and others;
- Changes to California/National Toxics Rules, 303 (d) listed pollutants and micropollutants, and new virus-based disinfection criterion;
- Reductions in greenhouse gas emission cap and trade program thresholds;
- Compliance with Federal 129 sewage sludge incineration rules, changes to air emission limits, and solids handling/management and disposal regulations;
- Recycled water, including potential coordinated projects with water agencies on indirect and even direct potable reuse requirements; and
- Collection system regulatory requirements.

A key deliverable of the CWMP is an updated Capital Improvement Plan (CIP) for the next 20-year planning horizon. The recommended CIP includes descriptions, rationales, and estimated costs for collection system and wastewater treatment plant capital improvement projects and on-going programs to address aging infrastructure, meet existing and anticipated regulatory requirements, accommodate planned growth, optimize energy use, and implement Central San's vision for a "plant of the future" that is consistent with Central San's Strategic Plan. For example, the CWMP is a critical tool used by Central San to implement the following strategies from Central San's Strategic Plan (FY2016-2018):

- **Meet Regulatory Requirements for the Good of the Community and Environment** by striving to achieve 100% permit compliance in air, water, land and other regulations and by striving to reduce the number of sanitary sewer overflows by continuing Best Management Practices.
- **Be a Leader in the Wastewater Industry** by using sustainable practices that minimize waste, maximize resources, protect the ratepayer, improve the community, and embrace innovation.
- **Maintain Reliable Wastewater Infrastructure** by updating the CIP through prioritization, risk analysis, while focusing on the sustainability of customer service, environmental needs, and economic demands.

The CWMP is also a *critical* tool for maintaining a high level of service, establishing long-term fiscally responsible policies for our customers, and providing a clear direction for Central San. To accomplish this, the CWMP:

1. Confirmed CIP projects, costs, and site layouts for future facilities.
2. Identified linkages among the major capital improvement projects and repair and replacement strategies such that the projects can be re-sorted and re-scheduled as changes in planning assumptions and needs occur.
3. Identified triggers for implementing applied research (if applicable), preliminary design, design, and construction of the recommended capital improvement projects to determine efficient "just-in-time" project implementation.
4. Identified new or updated policies, programs, and guidelines for the Board considerations to address overall program implementation including project prioritizations, implementation costs, project delivery methods, potential funding sources, and an estimated schedule for implementing plan elements.
5. Confirmed and incorporate operations, maintenance, and energy management strategies.
6. Accelerated and coordinated condition assessments with implementation of the asset management plan and confirm long-term repair and replacement strategies.

Some of these potential future projects are not all currently included in Central San's CIP. Central San's CIP will be updated annually as projects are clarified and coordinated with Central San's CWMP.

## Projects Identified in CWMP but Not Included in the CIP*

- Nutrient Removal BACWA Levels 2/3: Possibly beyond 20 years ***
- Refinery Recycled Water Projects - 20 MGD **
- Potable Reuse Projects - Additional ~10 MGD **
- Advanced Treatment/Contaminants of Emerging Concern Removal ***
- Renewable Energy Projects (triggered by increased power demands from nutrient removal *** or wholesale recycled water projects**)
- Concord Community Reuse Project (CCRP) Recycled Water Facilities Improvements **
- CCRP Collection System Improvements **
- CCRP Recycled Water Distribution System (Central San current plan is to wholesale recycled water so distribution system was not evaluated or included in CIP) **

* These future projects are not included in the CIP and amount to about $920M, of which approximately $510M may be within the next 20 years.
** Projects expected to be cost neutral to Central San.
*** Projects identified but not currently required by regulations.

# CIP-Treatment Plant Program

The Treatment Plant Program includes projects that will address aging infrastructure needs, meet regulatory requirements, address any hydraulic or process capacity deficiencies, and improve sustainability or help meet sustainability related goals. The emphasis of the Treatment Plant Program for the Ten-Year CIP will be on the repair and replacement of aging treatment plant infrastructure, improving existing facilities to ensure reliable compliance with increasingly stringent regulatory requirements, improving the resiliency of existing facilities against security threats and natural hazards such as seismic and flooding events, and improving overall energy efficiency.

Central San staff will continue to evaluate treatment alternatives and applied research projects and pilots to address potential nutrient removal regulations, to confirm the optimal long-term solids handling strategy, and to strive closer to net zero energy in support of Board Policy 027 – Energy.

The following tables identify major projects in the 10-year CIP Treatment Plant Program. The projects have been grouped into one of three project categories: 1) Liquid Treatment Process, 2) Solids Handling Process, or 3) General Treatment Plant and Safety Improvements.

### Ten-Year Capital Improvement Plan Treatment Plant Program Projects: Liquid Treatment Process

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Wet Weather Flow Management** | 2022 to 2026 | Headworks, Wet Weather Holding Basins | Implement improvements for wet weather flow management and holding basin operation such as raw wastewater diversion pipeline, drain back pumping, sixth influent pump, and improved basin grading and drainage. |
| **Primary Expansion** | 2023 to 2027 | Pre-aeration, Primaries | Construct up to two additional primary sedimentation tanks and corresponding new pre-aeration (grit removal) tank, improve wet weather grit handling, and replace primary sludge pumps. |
| **Nutrient Removal Optimizations (BACWA Level 1)** | 2020 to 2024 | Primary Sedimentation Tanks, A/N Tanks | If required by regulations, construct chemically enhanced primary treatment (CEPT) and modify A/N tanks and secondary treatment process to operate in split treatment mode with one half performing nitrification. |

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Secondary Treatment Hydraulic Improvements** | 2024 to 2028 | Secondary Clarifiers, UV Channel, Final Effluent Channel | Increase secondary treatment wet weather capacity to accommodate 20-year wet weather storage event. This includes a mixed liquor flow split structure for the secondary clarifiers, up to two additional secondary clarifiers, and mixed liquor channel improvements such as new gates. |
| **UV Hydraulic Improvements** | 2019 to 2021 | UV Channel, Final Effluent Channel | Increase wet weather capacity through UV Disinfection and Final Effluent Channel to accommodate 20-year wet weather storage event. This includes low lift pumps to alleviate UV channel hydraulic bottlenecks and installing a new parallel final effluent pipe. |
| **UV Disinfection Replacement** | 2019 to 2024 | UV Channel | Replace the aging existing UV Disinfection process with a new, more energy efficient UV Disinfection process. |
| **Condition Assessment of Buried Pipelines** | 2019 to 2021 | Treatment Plant | Inspect the condition of several large-diameter, critical pipelines on the treatment plant site such as primary effluent, mixed liquor, secondary effluent, final effluent pipelines, and wet weather bypass pipelines. These inspections will require complicated shutdowns and temporary bypass pumping and piping. |

## Ten-Year Capital Improvement Plan Treatment Plant Program Projects: Solids Handling Process

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Solids Handling Facility Improvements – Phase 2** | 2021 to 2028 | Solids Conditioning Building | If a Bioenergy project such as gasification has not been proven as a long-term solution, then Central San could initiate potential upgrades to the existing Solids Handling Facilities such as installation of two anaerobic digesters and high strength waste receiving facility. In addition, rehabilitation of aging critical electrical infrastructure, replacement of the cogeneration turbine will be required, and other miscellaneous solids handling facility equipment will require upgrades. |

## Ten-Year Capital Improvement Plan Treatment Plant Program Projects: General Treatment Plant and Safety Improvements

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **PLC Systems Upgrades** | Present through 2027 | Treatment Plant | Continued hardware and software replacement and upgrades to maintain programmable logic controllers (PLCs). |
| **Treatment Plant Planning** | Present through 2027 | Treatment Plant | Continued planning to identify potential capital improvement projects required to address aging infrastructure needs, regulatory drivers, capacity deficiencies, and sustainability and optimization opportunities. |
| **Treatment Plant Urgent Repairs** | Present through 2027 | Treatment Plant | Complete immediate electrical, mechanical, and other miscellaneous urgent repairs within the treatment plant. |
| **Applied Research & Innovations** | Present through 2027 | Treatment Plant | Implement applied research projects that evaluate promising and innovative technologies and processes. |
| **Surcharge Soil Pile Relocation** | 2020 to 2023 | Surcharge Pile, Basin A South | Excavate and re-locate Surcharge Pile soils to Basin A South and replace soil cap. |
| **Treatment Plant SCADA Improvements** | 2019 to 2023 | Treatment Plant | Complete an evaluation and implementation plan for upgrade and replacement of the supervisory control and data acquisition (SCADA) system, PLCs, and communications networks, and determine workforce planning needs. |
| **Treatment Plant Network Resiliency Evaluation** | 2023 to 2027 | Treatment Plant | Complete resiliency evaluation of network system and evaluate needs for redundancy in communications, information systems, and process control systems. |
| **Fire Protection System – Phases 3 through 6** | 2019 to 2022 | Treatment Plant | Continue phased upgrades and replacement of the fire alarm systems throughout the treatment plant. |

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Warehouse Seismic Upgrades** | 2022 to 2025 | Warehouse | Implement upgrades to the Warehouse Building to meet current seismic design standards and improve overall seismic safety. |
| **Laboratory Seismic Upgrades** | 2022 to 2025 | Laboratory Building | Implement upgrades to the Laboratory Building to meet current seismic design standards and improve overall seismic safety. |
| **Miscellaneous Seismic Upgrades** | 2022 to 2025 | Filter Plant, UV, Headworks, Fuel Oil, Hypo Tanks, Substations | Implement seismic upgrades to miscellaneous structures and process equipment around the treatment plant. |
| **Treatment Plant Safety Enhancements Phases 5 through 11** | 2019 to 2027 | Treatment Plant | Continue to implement safety-related enhancements around the treatment plant to proactively address safety concerns. |
| **Aging Infrastructure Replacement Program** | 2019 to 2027 | Treatment Plant | This program will fund aging infrastructure projects around the treatment plant. Aging infrastructure needs will continue to be packaged together and implemented as spinoff capital projects from this program (for example, piping replacement projects, equipment replacement, and electrical/instrumentation/control systems rehabilitation). |
| **Plant Operations & Lab Data Improvements** | 2019 to 2021 | Treatment Plant | Install user-friendly human machine interface (HMI) that integrates control system data and laboratory data for improved process analysis, trending, and optimizations. |

# CIP - Collection System Program

The Collection System Program includes projects that will address aging and deteriorating infrastructure needs, meet regulatory requirements, address any capacity deficiencies, and improve sustainability or help meet sustainability related goals. The emphasis of the Collection System Program for the Ten-Year CIP will be on rehabilitating and replacing deteriorating sewers, new development and sewer expansion by developers within Central San's service area, upgrading aging pump stations, and implementing large-diameter and force main inspection programs. The inspection programs will help to update the condition of existing infrastructure and to confirm the timing and cost of rehabilitation or replacement of large diameter sewers and force mains. Overall, these projects are targeted at reducing the risk of sewer system overflows (SSOs) in Central San's collection system.

Central San staff will continue to update the new collection system hydrodynamic model (*InfoWorks*®) to confirm the need and timing for future projects required to alleviate capacity deficiencies. Additionally, Central San staff will continue to update the sewer replacement strategy and update collection system capital improvement aging and deteriorating infrastructure needs using the recently implemented *InfoMaster*® sewer replacement and degradation model and through updated information obtained through inspection programs, including Central San's annual closed-circuit television (CCTV) program, annual cleaning efforts and data, and input from Collection System Operations staff.

The *InfoMaster*® program uses CCTV inspection scoring results, sewer cleaning frequency data, pipe age, and other information to assign a likelihood of failure score to each pipe segment in the collection system. The consequence of failure for each pipe segment was determined using factors such as pipeline size, flow conditions, proximity to waterways, hospitals, schools, and roads. The overall risk of each segment based on the likelihood of failure and consequence of failure scores, and a decision matrix developed through workshops with staff were used to prioritize the replacement of each pipe segment. The *InfoMaster*® then helps to develop a long-term sewer replacement strategy or program based on the timing/prioritization, and cost for sewer replacement needs. Staff will then work to group sewers of concern geographically and bid as capital projects.

The following tables identify major projects in the 10-year CIP Collection System Program. The projects have been grouped into one of five project categories: 1) Collection System Rehabilitation and Replacement (R&R), 2) Pump Stations, 3) Regulatory Compliance, 4) Collection System Expansion, and 5) Contractual Assessment Districts (CADS) and Development Sewerage.

## Ten-Year Capital Improvement Plan Collection System Program Projects: Collection System R&R

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Collection System Urgent Repairs** | Present through 2027 | Collection System | Completed immediate repairs to restore and protect sewers and address safety hazards as issues are identified by field crews.<br>Improvements include repairing damaged or failed sewers identified during routine cleaning operations, CCTV operations, and during wet weather events. |
| **Manhole Modification Project** | Present through 2027 | Collection System | This program will fund manhole modifications and replacement throughout the collection system. |
| **Pipe Bursting Contract** | Present through 2027 | Collection System | Implement pipe bursting repair projects to address pipelines that require immediate action. |
| **CIPP Contract** | Present through 2027 | Collection System | Implement cured-in-place (CIPP) repair projects to address pipelines that require immediate action. |
| **Collection System Sewer Renovation** | Present through 2027 | Collection System | This program will fund rehabilitation and replacement of aging sewers throughout the collection system. Aging infrastructure needs will continue to be identified, prioritized by risk, and packaged into capital projects by geographical areas throughout the collection system. |

## Ten-Year Capital Improvement Plan Collection System Program Projects: Pump Stations

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Pump Station Equipment & Piping Replacement – Phase 2** | Present through 2027 | Miscellaneous Pump Stations | Rehabilitation and replacement of miscellaneous pumps, piping, valves, and other equipment identified in the field. Acquire necessary pump station emergency response equipment and critical spare parts. |
| **Pump Station PLC Upgrades** | 2021 to 2023 | Miscellaneous Pump Stations | Upgrade outdated PLC software language for all 16 pump stations. |
| **Pump Station Improvements** | 2020 to 2023 | Flush Kleen, Buchanan North & South, Concord Industrial, and Other Pump Stations | Implement major pump station upgrades to address structural, mechanical, electrical, instrumentation, and other improvements. |

## Ten-Year Capital Improvement Plan Collection System Program Projects: Regulatory Compliance

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Collection System Planning** | Present through 2027 | Collection System | Continued planning to identify potential capital improvement projects required to address aging infrastructure needs, regulatory drivers, capacity deficiencies, and sustainability and optimization opportunities. |
| **Collection System Modeling Support** | Present through 2027 | Collection System | Continued build-out of the collection system modeled network to include areas of planned development, and other major upgrades and updates to the hydraulic model. |
| **Large Diameter Pipeline Inspection Program** | Present through 2027 | Collection System | Phased inspection program for large-diameter trunks and interceptors to update condition and prioritize rehabilitation and replacement needs. |
| **Force Main Inspection Program** | Present through 2027 | Collection System | Phased inspection program for force mains to update condition and prioritize rehabilitation and replacement needs. |
| **Wet Weather Capacity Improvements** | 2020 to 2027 | Collection System | Implement miscellaneous relief projects for sewers identified by the collection system hydraulic model as having wet weather hydraulic capacity deficiencies. |

## Ten-Year Capital Improvement Plan Collection System Program Projects: CADS and Development Sewerage

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Development Sewerage Support** | Present through 2027 | District-Wide | Capitalized staff labor and expenses for the survey, right-of-way for construction of developer installed sewer facilities. |

# CIP - General Improvements Program

The General Improvement Program includes projects that will address aging infrastructure needs, meet regulatory requirements, and improve sustainability or help meet sustainability related goals. This includes implementing property and building improvements, addressing equipment needs, acquiring new properties if required, covering capital project legal expenses, completing development of the Asset Management Program, information management system and data management system upgrades, general security improvements, and cyber security. Many of Central San's building are over 25 or more years of age and are starting to require general building upgrades for the interior and exterior of the buildings such as painting, replacing ceiling tiles, upgrading fixtures, replacing roofs, replacing worn furniture and other equipment, and upgrading buildings to meet current seismic standards. The emphasis of the General Improvement Program for the Ten-Year CIP will be on upgrading many of those aging buildings. In addition, Central San will continue to require routine acquisition of new equipment, vehicle replacement, security improvements, and information technology improvements, and improved cyber security.

The following tables identify major projects in the 10-year CIP General Improvements Program. The projects have been grouped into one of five project categories: 1) Vehicles and Equipment Acquisition, 2) Buildings and District Property, 3) Asset Management Program Development, and 4) Information Technology Development.

### Ten-Year Capital Improvement Plan General Improvements Program Projects: Vehicles and Equipment Acquisition

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Equipment Acquisition** | Present through 2027 | District-Wide | Acquisition of new equipment for operation and maintenance of District assets. |
| **Vehicle Replacement Program** | Present through 2027 | District-Wide | Continued replacement and acquisition of new District vehicles. |

## Ten-Year Capital Improvement Plan General Improvements Program Projects: Buildings and District Property

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Property and Building Improvements** | Present through 2027 | District-Wide | Improvements to Central San's buildings, buffer properties, rental properties, and the surrounding parking lots and grounds. |
| **District Easement Acquisition** | Present through 2027 | District-Wide | Improve or acquire new property land rights for existing or new sanitary sewers that are located on private properties. |
| **General Security and Access** | Present through 2027 | District-Wide | Continued implementation of general security improvements for District buildings and properties. |

## Ten-Year Capital Improvement Plan General Improvements Program Projects: Asset Management Program Development

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Program Management Information System** | Present Though 2027 | District-Wide | Implementation of a Program Management Information System to implement the CIP and coordination with the Asset Management Program. |

## Ten-Year Capital Improvement Plan General Improvements Program Projects: Information Technology Development

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Information Technology Development** | Present through 2027 | District-Wide | Continued implementation of District-wide information technology (IT) improvements. |
| **Cyber Security** | Present through 2027 | District-Wide | Improvements to enhance cyber security and resilience of critical information technology infrastructure. |

# CIP - Recycled Water Program

The Recycled Water Program includes projects that will address aging infrastructure needs, meet regulatory requirements, address any capacity deficiencies, and improve sustainability or help meet sustainability related goals. The emphasis of the Recycled Water Program for the Ten Year CIP will be on continued expansion of the Zone 1 Recycled Water Program in support of Board Policy 019 - Recycled Water, implementing improvements to the existing recycled water filter plant and related support facilities to address aging infrastructure to ensure reliable supply of recycled water, replacing and installing new clear well liner and covers, and initiating ongoing rehabilitation and replacement of recycled water distribution system assets.

Central San staff will continue to explore and plan for other potential recycled water projects and related improvements and expansions that may be required. These other projects will likely involve the wholesale of recycled water to a water purveyor. The following table identifies major projects in the 10-year CIP Recycled Water Program.

### Ten-Year Capital Improvement Plan Recycled Water Program Projects:

| Project Title | Year(s) | Location | Description |
|---|---|---|---|
| **Zone 1 Recycled Water** | Present to 2027 | Zone 1 Area within Concord, Martinez, and Pleasant Hill | Continue to expand Zone 1 Recycled Water Program, where cost-effective, for landscape irrigation at schools, parks, private businesses, golf courses, street medians, and for commercial applications such as truck washing, concrete manufacturing, dust control, and toilet and urinal flushing. |
| **Clearwell Improvements** | 2023 to 2025 | Recycled Water Facilities | Improve the existing Clearwell and provide redundancy for recycled water storage. This project includes replacing the existing East Clearwell liner and cover and installing a cover on the West Clearwell, which will allow for preventive maintenance of an offline Clearwell. |
| **Recycled Water Distribution System Renovations** | 2020 to 2027 | Zone 1 Area within Concord, Martinez, and Pleasant Hill | Implement a recurring rehabilitation and replacement program for recycled water distribution system assets such as the recycled water surge tank, distribution piping, valves, and flow meters. |

# Ten-Year CIP Expenditures

The Ten-Year CIP provides a basis for policy decisions concerning Central San's long-range Capital Improvement Program and management of the Sewer Construction Fund. The Ten-Year CIP also serves as the capital improvement expenditure basis for performing the fee analysis.

This plan includes projected expenditures totaling $872.7 million (in 2017 Dollars) over the 10-year period from FY 2017-18 through FY 2026-27.

A summary of the planned expenditures by program, without inflation, for the Ten-Year CIP is included in the Table 1 on the next page.

*Illustration of a potential Central San Plant of the Future*

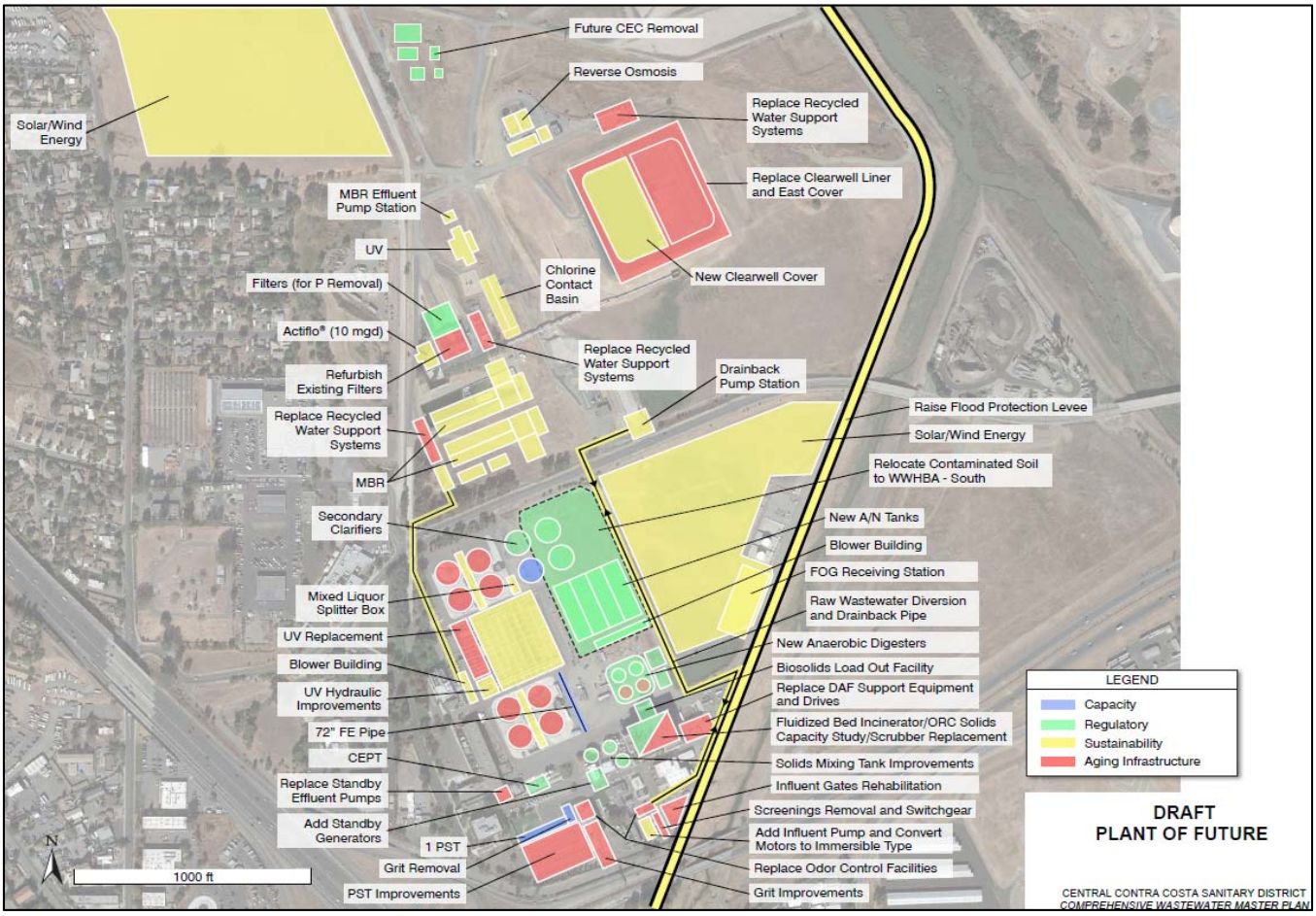


**Table 1 - Ten Year Program Estimated Expenditure (2017-2027) - Summary by Program (in 2017 Dollars)**

| Programs | FY 2017-18 | FY 2018-19 | FY 2019-20 | FY 2020-21 | FY 2021-22 | FY 2022-23 | FY 2023-24 | FY 2024-25 | FY 2025-26 | FY 2026-27 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Unescalated |
| **Liquid Treatment Process** | $ 6,870,000 | $ 4,363,000 | $ 13,701,060 | $ 10,142,940 | $ 24,603,000 | $ 29,130,000 | $ 31,154,000 | $ 11,058,000 | $ 20,456,000 | $ 22,011,000 | $ 173,489,000 |
| **Solids Handling Process Treatment** | $ 3,225,000 | $ 8,400,000 | $ 19,494,000 | $ 24,538,000 | $ 9,581,000 | $ 10,615,000 | $ 5,342,000 | $ 24,038,000 | $ 24,038,000 | $ 24,038,000 | $ 153,309,000 |
| **General Treatment Plant Improvements and Safety** | $ 7,950,000 | $ 5,944,000 | $ 17,310,000 | $ 13,933,000 | $ 12,000,000 | $ 16,784,000 | $ 15,143,000 | $ 8,473,000 | $ 10,649,000 | $ 11,537,000 | $ 119,723,000 |
| **Total 10-Year CIP for Treatment Plant Program** | **$ 18,045,000** | **$ 18,707,000** | **$ 50,505,060** | **$ 48,613,940** | **$ 46,184,000** | **$ 56,529,000** | **$ 51,639,000** | **$ 43,569,000** | **$ 55,143,000** | **$ 57,586,000** | **$ 446,521,000** |
| **Collection System Replacement and Rehabilitation (R&R)** | $ 16,050,000 | $ 14,050,000 | $ 22,859,000 | $ 23,823,000 | $ 28,187,000 | $ 33,148,000 | $ 36,604,000 | $ 40,049,000 | $ 40,295,000 | $ 43,262,000 | $ 298,327,000 |
| **Pump Stations** | $ 1,017,000 | $ 2,095,000 | $ 11,108,000 | $ 12,588,000 | $ 9,538,000 | $ 1,896,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 38,642,000 |
| **Regulatory Compliance** | $ 625,000 | $ 635,000 | $ 1,090,000 | $ 990,000 | $ 1,115,000 | $ 1,115,000 | $ 990,000 | $ 990,000 | $ 990,000 | $ 1,740,000 | $ 10,280,000 |
| **Contractual Assessment Districts (CADs) - Development Sewerage** | $ 800,000 | $ 400,000 | $ 600,000 | $ 600,000 | $ 600,000 | $ 600,000 | $ 600,000 | $ 600,000 | $ 600,000 | $ 600,000 | $ 6,000,000 |
| **Total 10-Year CIP for Collection System Program** | **$ 18,492,000** | **$ 17,180,000** | **$ 35,657,000** | **$ 38,001,000** | **$ 39,440,000** | **$ 36,759,000** | **$ 38,294,000** | **$ 41,739,000** | **$ 41,985,000** | **$ 45,702,000** | **$ 353,249,000** |
| **Future Recycled Water Development Planning** | $ - | $ - | $ 75,000 | $ 75,000 | $ 75,000 | $ 75,000 | $ 75,000 | $ 75,000 | $ 75,000 | $ 75,000 | $ 600,000 |
| **Existing Zone -1** | $ 30,000 | $ 40,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 470,000 |
| **Existing Recycled Water Treatment Facilities R&R** | $ 430,000 | $ 500,000 | $ 1,085,000 | $ 5,646,000 | $ 5,646,000 | $ - | $ 1,522,000 | $ 8,974,000 | $ - | $ - | $ 23,803,000 |
| **Total 10-Year CIP for Recycled Water Program** | **$ 460,000** | **$ 540,000** | **$ 1,210,000** | **$ 5,771,000** | **$ 5,771,000** | **$ 125,000** | **$ 1,647,000** | **$ 9,099,000** | **$ 125,000** | **$ 125,000** | **$ 24,873,000** |
| **Vehicles Replacement** | $ 675,000 | $ 650,000 | $ 800,000 | $ 800,000 | $ 800,000 | $ 800,000 | $ 800,000 | $ 800,000 | $ 800,000 | $ 800,000 | $ 7,725,000 |
| **Equipment Replacement** | $ 150,000 | $ 150,000 | $ 200,000 | $ 200,000 | $ 200,000 | $ 200,000 | $ 200,000 | $ 200,000 | $ 200,000 | $ 200,000 | $ 1,900,000 |
| **Buildings and District Property** | $ 1,517,000 | $ 662,000 | $ 996,000 | $ 496,000 | $ 350,000 | $ 350,000 | $ 350,000 | $ 350,000 | $ 350,000 | $ 350,000 | $ 5,771,000 |
| **Capital Legal Services** | $ 20,000 | $ 20,000 | $ 20,000 | $ 20,000 | $ 20,000 | $ 20,000 | $ 20,000 | $ 20,000 | $ 20,000 | $ 20,000 | $ 200,000 |
| **Asset Management Program Development** | $ 1,110,000 | $ 500,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 2,410,000 |
| **Information Technology Development** | $ 805,000 | $ 930,000 | $ 1,340,000 | $ 328,000 | $ 1,828,000 | $ 2,703,000 | $ 328,000 | $ 1,328,000 | $ 328,000 | $ 1,100,000 | $ 11,018,000 |
| **Total 10-Year CIP for General Improvements Program** | **$ 4,277,000** | **$ 2,912,000** | **$ 3,456,000** | **$ 1,944,000** | **$ 3,298,000** | **$ 4,173,000** | **$ 1,798,000** | **$ 2,798,000** | **$ 1,798,000** | **$ 2,570,000** | **$ 29,024,000** |
| **Program Contingency** | $ 1,500,000 | $ 1,500,000 | $ 2,000,000 | $ 2,000,000 | $ 2,000,000 | $ 2,000,000 | $ 2,000,000 | $ 2,000,000 | $ 2,000,000 | $ 2,000,000 | $ 19,000,000 |
| **Total 10-Year CIP for General Improvements Program** | **$ 42,774,000** | **$ 40,839,000** | **$ 92,828,060** | **$ 96,329,940** | **$ 96,693,000** | **$ 99,586,000** | **$ 95,378,000** | **$ 99,205,000** | **$ 101,051,000** | **$ 107,983,000** | **$ 872,667,000** |

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# Debt Program

Central San has utilized a pay-as-you-go philosophy and uses debt financing for large capital improvements brought about by regulatory changes or other unforeseen factors. Currently, Central San is repaying a State of California Water Reclamation Loan and 2009 Revenue Bonds. Central San may issue new bonds in the future based on the results of the Comprehensive Wastewater Master Plan that is currently in process. Central San's Debt Service is presently funded by ad valorem tax and interest income. Debt service is projected at $3.8 million, unchanged from Fiscal Year 2016-17. Table 1 summarizes the Debt Service Fund Budget.

**Table 1 - Debt Service Fund Budget Summary**

| Debt Service Fund FY 2017-18 | |
|---|---|
| Debt Service Revenue: | |
| Reserve Account Bond Interest Income | $45,700 |
| Ad Valorem Tax (portion allocated to Debt Service) | $3,773,399 |
| **Total Revenue** | **$3,819,099** |
| | |
| Debt Service Expense: | |
| 2009 Bond Interest Payment and Amortized Costs, Less Subsidy on BABs | $1,198,221 |
| 6.8% reduction of tax subsidy due to congressional sequestration | $28,759 |
| Recycled Water Loan Interest Payment | $4,742 |
| **Total Interest Payment and Amortization Costs** | **$1,231,722** |
| | |
| 2009 Bond Principal Payment | $2,405,000 |
| Recycled Water Principal Payment | $182,377 |
| **Total Principal Payments** | **$2,587,377** |
| | |
| **Total Debt Service Interest, Amortized Cost and Principal Payments** | **$3,819,099** |
| | |
| Reserves: | |
| Fund Balance-Beginning of Year | $ - |
| Revenue over Expense | $ - |
| Transfer to/from O&M or Capital | $ - |
| **Fund Balance-End of Year** | **$ -** |

## Revenue Bonds

The 2009 Wastewater Revenue Certificates of Participation, Series A and Series B (Bonds) were issued for $19.6 million and $34.5 million, respectively, on November 12, 2009 and December 3, 2009. The Series A Bonds are federally taxable "Build America Bonds" which have a rate subsidy from the

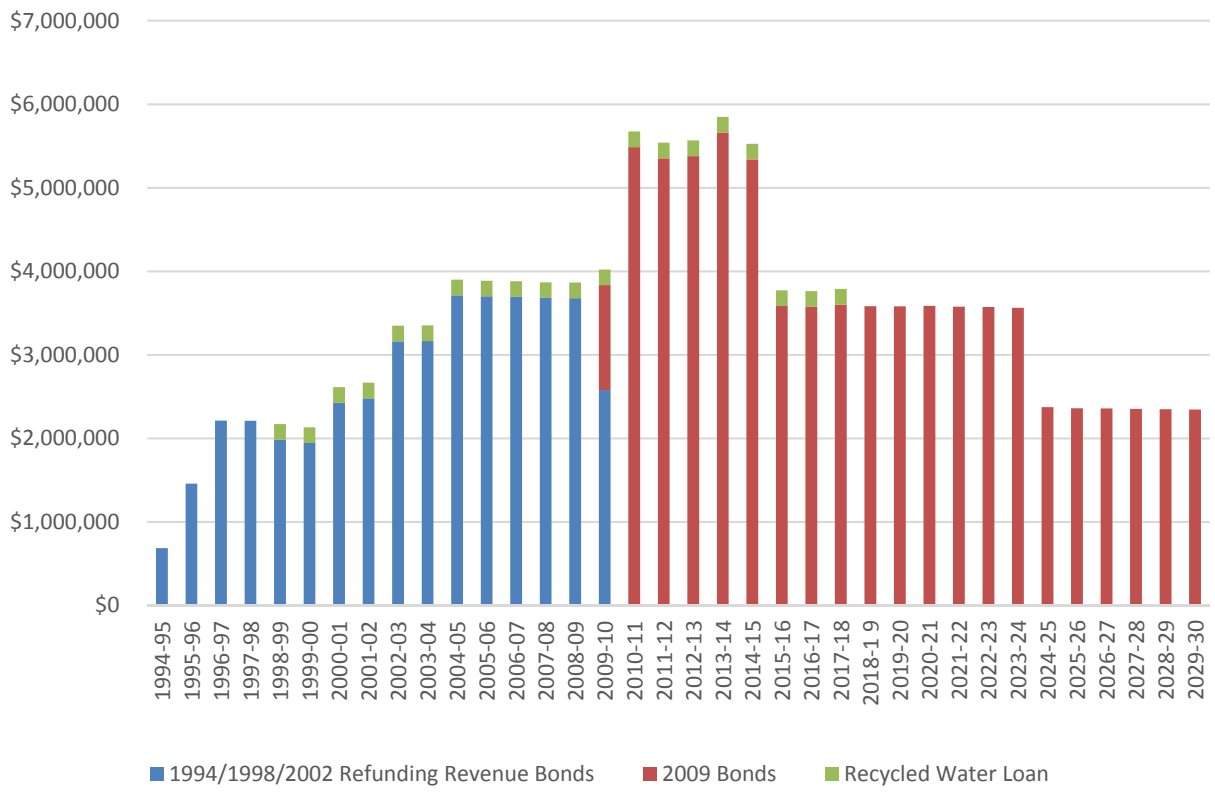
Federal Government. Yields on this series range from 3.45% to 3.78% net of the subsidy. The Series B Bonds are tax exempt bonds that were used to refund the 1998 and 2002 bond issues and raise an additional $30.0 million in new proceeds with yields ranging from .40% to 3.79%.

The two bonds total $54.1 million, and are secured by a pledge of tax and net (revenues of the) wastewater system. Both bonds will be fully amortized September l, 2029.

## Reclamation Loan

Central San entered into a contract with the State of California State Water Resources Control Board (Board), which advanced Central San $2.9 for design and construction costs for projects related to recycled water treatment programs. Central San must repay advances from the Board over a 20-year period ending in Fiscal Year 2017-18. Figure 1 and Table 2 summarize Central San's debt service obligations. Figure 1 shows debt service on currently outstanding debt; debt service costs for future debt would be additive.

### Figure 1 - Debt Service by Type



## Table 2 - Debt Summary

| | 1994/1998/2002 Refunding Revenue Bonds | | | 2009 Bonds | | | Recycled Water Loan | | |
|---|---|---|---|---|---|---|---|---|---|
| Fiscal Year | Principal | Amortization & Interest | Total Debt Service | Principal | Amortization & Interest | Total Debt Service | Principal | Interest | Total Debt Service |
| 1994-95 | | $688,127 | $688,127 | | | | | | |
| 1995-96 | | $1,458,830 | $1,458,830 | | | | | | |
| 1996-97 | $755,000 | $1,459,741 | $2,214,741 | | | | | | |
| 1997-98 | $790,000 | $1,421,245 | $2,211,245 | | | | | | |
| 1998-99 | $835,000 | $1, 150,177 | $1,985,177 | | | | $139,194 | $47,925 | $187,119 |
| 1999-00 | $725,000 | $1,221,898 | $1,946,898 | | | | $114,900 | $72,219 | $187,119 |
| 2000-01 | $1,245,000 | $1,181,356 | $2,426,356 | | | | $117,887 | $69,232 | $187,119 |
| 2001-02 | $1,285,000 | $1,195,057 | $2,480,057 | | | | $120,952 | $66,167 | $187,119 |
| 2002-03 | $1,330,000 | $1,832,680 | $3,162,680 | | | | $124,097 | $63,022 | $187,119 |
| 2003-04 | $1,375,000 | $1,790,547 | $3,165,547 | | | | $127,323 | $59,796 | $187,119 |
| 2004-05 | $1,995,000 | $1,719,372 | $3,714,372 | | | | $130,634 | $56,486 | $187,119 |
| 2005-06 | $2,060,000 | $1,641,214 | $3,701,214 | | | | $134,030 | $53,089 | $187,119 |
| 2006-07 | $2,135,000 | $1,559,500 | $3,694,500 | | | | $137,515 | $49,604 | $187,119 |
| 2007-08 | $2,210,000 | $1,472,113 | $3,682,113 | | | | $141,090 | $46,029 | $187,119 |
| 2008-09 | $2,300,000 | $1,379,326 | $3,679,326 | | | | $144,759 | $42,360 | $187,119 |
| 2009-10 | $2,390,000 | $190,068 | $2,580,068 | | $1,255,607 | $1,255,607 | $148,522 | $38,597 | $187,119 |
| 2010-11 | | | | $3,460,000 | $2,027, 168 | $5,487,168 | $152,384 | $34,735 | $187,119 |
| 2011-12 | | | | $3,465,000 | $1,888,601 | $5,353,601 | $156,346 | $30,773 | $187,119 |
| 2012-13 | | | | $3,605,000 | $1,775,376 | $5,380,376 | $160,411 | $26,708 | $187,119 |
| 2013-14 | | | | $3,720,000 | $1,941,016 | $5,661,016 | $164,582 | $22,538 | $187,119 |
| 2014-15 | | | | $3,865,000 | $1,474,513 | $5,339,513 | $168,861 | $18,258 | $187,119 |
| 2015-16 | | | | $2,210,000 | $1,375,080 | $3,585,080 | $173,251 | $13,868 | $187,119 |
| 2016-17 | | | | $2,300,000 | $1,275,346 | $3,575,346 | $177,756 | $9,363 | $187,119 |
| 2017-18 | | | | $2,405,000 | $1,198,221 | $3,603,221 | $182,377 | $4,742 | $187,119 |
| 2018-1 9 | | | | $2,480,000 | $1,103,530 | $3,583,530 | | | |
| 2019-20 | | | | $2,580,000 | $1,000,996 | $3,580,996 | | | |
| 2020-21 | | | | $2,685,000 | $902,873 | $3,587,873 | | | |
| 2021-22 | | | | $2,785,000 | $792,406 | $3,577,406 | | | |
| 2022-23 | | | | $2,900,000 | $673,794 | $3,573,794 | | | |
| 2023-24 | | | | $3,015,000 | $549,015 | $3,564,015 | | | |
| 2024-25 | | | | $1,905,000 | $469,232 | $2,374,232 | | | |
| 2025-26 | | | | $1,975,000 | $387,397 | $2,362,397 | | | |
| 2026-27 | | | | $2,060,000 | $300,296 | $2,360,296 | | | |
| 2027-28 | | | | $2,145,000 | $209,576 | $2,354,576 | | | |
| 2028-29 | | | | $2,235,000 | $115,059 | $2,350,059 | | | |
| 2029-30 | | | | $2,330,000 | $16,533 | $2,346,533 | | | |

Final Payment made from Reserve Fu nd

Note: 2009 Bond debt service reflects the original repayment schedule amounts. Changes to GASB rules and sequestration of Build America Bond refunds have changed actual total debt service in some years. Actual debt service amounts are in the CAFR and audited financial statements.