





# Water Pollution Control Capital Program

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## 2009-2013 Adopted Capital Improvement Program

### Overview

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#### Introduction

The San José/Santa Clara Water Pollution Control Plant (Plant) is a regional wastewater treatment facility serving eight tributary sewage collection agencies (Agencies), including municipalities and sanitary sewer districts. The service area includes the following cities and adjacent, unincorporated County territory: San José, Santa Clara, Milpitas, Cupertino Sanitary District, West Valley Sanitary District (Campbell, Los Gatos, Monte Sereno and Saratoga), County Sanitation Districts 2-3, Sunol and Burbank Sanitary Districts. The Plant is jointly owned by the cities of San José and Santa Clara and is administered and operated by the City of San José's Environmental Services Department (ESD), which is also responsible for planning, designing and constructing new wastewater treatment and water reuse facilities.

Capital costs are estimated annually by ESD staff and are reviewed and recommended as a budget by the Treatment Plant Advisory Committee to the San José City Council for appropriation. The costs are allocated to each Agency based on its contracted-for capacity in the Plant. Each Agency is responsible for its allocated share of Plant costs, as well as its own sewage collection system maintenance, operation, and capital costs; debt service on bonds issued by the Agency for sewer purposes; and any other sewer service related costs. Each Agency is also responsible for establishing and collecting its respective sewer service and use charges, connection fees or other charges for sewer service.

A revenue program is prepared annually by each Agency to establish its sewer service and use charge rates. Rates are adopted by ordinance, or resolution, of the governing body of each Agency. The Agencies' revenue

programs, ordinances and resolutions are submitted to the City of San José, as the administering agency, for review to determine conformance with State Water Resources Control Board (SWRCB) revenue program guidelines and are then submitted by San José to the SWRCB for review and certification.

This program is part of the Environmental and Utility Services City Service Area (CSA) and supports the following outcomes: *Reliable Utility Infrastructure* and *Healthy Streams, Rivers, Marsh, and Bay*.

#### Program Priorities and Objectives

The Plant Capital Improvement Program (CIP) projects are evaluated using the following criteria established by ESD:

- Projects needed for health and safety.
- Projects needed to maintain the quality of effluent flow.
- Projects mandated by regulatory agencies.
- Projects that ensure adequate process reliability.
- Projects that enhance efficiency and effectiveness.

#### Sources of Funding

The 2009-2013 Adopted CIP provides funding of \$320.8 million, of which \$109.9 million is allocated in 2008-2009.

Revenues for the Five-Year CIP are derived from several sources: Transfers from the Sewer Service and Use Charge Fund (\$154.2 million); contributions from the City of Santa Clara and Other Agencies (\$69.5 million); Transfers from the Sewage Treatment Plant Connection Fee Fund (\$15.4 million); Interest

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#### Sources of Funding (Cont'd.)

Earnings (\$9.3 million); Calpine Metcalf Energy Center Facilities Repayments (\$1.9 million); and federal grants from the U.S. Bureau of Reclamation (\$500,000). In addition, \$70.0 million in available fund balance is programmed to support projects identified in this five-year program.

The Sewer Service and Use Charge Fund (SSAUC) is an operating fund that derives its revenues from fees imposed on San José's residential, commercial, and industrial users of the sanitary sewer system and represents the largest source of funding for this capital program. Transfers in the amount of \$154.2 million from the Sewer Service and Use Charge Fund to the Water Pollution Control Capital Improvement Program reflect a \$51.1 million (49.6%) increase compared to the 2008-2012 Adopted CIP. The overall funding level in this CIP assume 15% rate increases to SS&UC fees for 2008-2009 and 2009-2010, as notified to the public in May 2007. These increases will fund projects as described in the "Program Highlights" category below.

An annual transfer of \$3.08 million is anticipated from Sewage Treatment Plant Connection Fee Fund and is programmed as part of the 2009-2013 Adopted CIP.

Contributions from the City of Santa Clara and other agencies are determined by agreements with the participating agencies, financing plans, anticipated expenditures for the Plant and the amount and characteristics of flows to the treatment plant. These contributions reimburse the City for actual project expenditures. In this Adopted CIP, these contributions from the City of Santa Clara and the other agencies total \$69.5

million, which represents a \$2.1 million (3.3%) increase compared to the 2008-2012 Adopted CIP. This increase results from additional capital investments, including the Plant Electrical Reliability project, Digester Rehabilitation project, an increase in the Plant Infrastructure Improvements allocation, Equipment Replacement Program, and the Plant Master Plan project.

#### Program Highlights

##### Digester Rehabilitation Project

This \$86.6 million project will include a multi-year construction schedule based on the condition and rehabilitation progress of the digesters. The project includes mechanical rehabilitation, replacement and upgrade for 16 concrete digesters to restore digester performance and facilitate the addition of a fats, oils and grease receiving station for digesting grease. It will also address cracks in existing concrete digestion tanks.

Currently, six out of the 16 concrete digesters are non-operational due to structural damage and the lack of adequate mixing capability. All six non-operational digesters are scheduled to be rehabilitated as part of the 2009-2013 Adopted CIP.

##### Plant Electrical Reliability Project

This \$80 million project will include a multi-phase construction schedule based on a master study completed in 2004. The project will replace and upgrade substations and switches, modify and upgrade power distribution buses and cabling, provide backup systems, and enhance the overall safety and reliability of the Plant electrical systems.

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#### **Program Highlights (Cont'd.)**

##### Plant Electrical Reliability Project (Cont'd.)

The current power distribution network has grown in a patched manner over the years, and many electrical system components have reached the end of their service life. This project will address safety needs, as well as provide for future reliability needs.

Several contracts will be placed to cover the entire scope of this project. The earliest start date for selecting a consultant to prepare the design-build specification is Summer 2008. Once the contract to design-build is awarded, it is estimated that the project will take several years to complete.

In the interim, several elements of this project are being implemented through various projects to address immediate safety needs and improvements to the reliability of the Plant electrical system. Since 2005-2006, \$9.7 million has been programmed for the design and construction of this work, which includes: 1) addition of current limiting reactors at substation one to reduce fault current; 2) retrofitting switchgear with higher rated breakers and buss structures; and 3) addition of new switchgear and new cables to make an interim ring buss distribution system operational. Financing options for the remainder of this project, and the Plant Master Plan Project identified below, are being evaluated in conjunction with ongoing sewer service and use charge modeling efforts.

##### Plant Master Plan Project

The Plant initiated a Plant Master Planning project in 2005. A steering committee developed a vision and goals for the planning process, including regulatory compliance,

worker and community safety, habitat protection and restoration, being a good neighbor, and providing for economic opportunities and cost-effective operation of the Plant.

The Planning process is based on several foundational documents, including an Opportunities and Constraints analysis for the Plant's lands and an infrastructure needs assessment.

In the 4<sup>th</sup> Quarter of 2007, staff selected a consultant to develop the Plant Master Plan that will be the blue print for the Plant's development over the next 30 years, covering expected flows to the Plant, rates, staffing, Plant infrastructure, use of the buffer lands, bio-solids processing, and many other items. In addition to the existing budget to develop the Master Plan, an additional \$4.2 million has been added to the Plant Master Plan budget for public outreach and the environmental clearance (i.e. EIR) process. The Master Plan is projected to be completed by 2011.

The Master Plan will coordinate the many complex projects required for the Plant due to aging infrastructure and future regulations, and serve as a tool to identify and prioritize CIP projects for upgrades and replacements. Public outreach and stakeholder involvement will be a major component of this process.

##### South Bay Action Plan

A South Bay Action Plan (SBAP) has been a requirement of the Plant's National Pollution Discharge Elimination System (NPDES) permit since 1991 and includes projects necessary to reduce average dry weather effluent flow from the Plant to below the 120 million gallons per day (mgd) flow trigger, or to levels that protect salt marsh habitat for

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#### Program Highlights (Cont'd.)

##### South Bay Action Plan (Cont'd.)

allows for adaptive management. In June 1997, both the San Francisco Bay Regional Water Quality Control Board (Regional Board) and the San José City Council approved the Revised South Bay Action Plan (RSBAP). The RSBAP was included as a provision of the 1998 NPDES permit and included the Expanded Water Recycling, Industrial Water Recycling/Reuse, Groundwater Inflow/Infiltration Reduction, and Environmental Enhancement Pilot projects. In February 1998, Council approved a financing plan that identified \$127 million in funding sources for the RSBAP, primarily through State Revolving Fund loans from the State Water Resources Control Board (SWRCB), and Treatment Plant Capital Fund reserves. Included in the \$127 million was \$100 million for water recycling projects.

On September 17, 2003 the Regional Board approved a new NPDES permit for the Plant and continued the requirement for a South Bay Action Plan to comply with the original 1991 Regional Board Resolution.

The Regional Board NPDES permit requirement states that the Plant will continue to implement its water conservation, industrial recycling and reuse, and recycling programs. The 2007 Clean Bay Strategy will continue to address the NPDES permit elements, including the following:

- Water Efficiency Programs – Continue to promote industrial recycling/reuse and indoor water conservation.

- South Bay Water Recycling System – Completion of the Zone 3 recycled water reservoir facility and the Santa Clara Looping projects including SC 5- Santa Clara San José Connector in Santa Clara, SJ13 Coleman Avenue Extension, and the Coleman Overpass Recycled Water Line in San José. In addition, the collaborative effort with the Santa Clara Valley Water District for future expansion, operation and maintenance of the system will continue.
- Salt Marsh Vegetative Assessment – Perform marsh assessments in 2008-2009 to identify salt marsh conversion in the study area. The City has performed marsh assessments on an annual basis since 2003.

##### Plant Infrastructure Needs Improvements

The Plant initiated a study in 2006, to assess the condition of existing infrastructure at the Plant and to identify capital improvements required to maintain adequate wastewater service for existing customers under current regulations and operating permits. Approximately \$249 million in capital improvement projects were identified as high-priority projects that should be implemented over the next five years. These projects were prioritized using a risk management and minimization approach. Risk is measured as a function of the likelihood of a failure, triggers that may require replacement of assets (inadequate capacity, over utilization, obsolescence, excessive maintenance requirements), and the consequences of failure.

The Plant Master Plan project, will further integrate the projected needs for repair and

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#### Program Highlights (Cont'd.)

##### Plant Infrastructure Needs Improvements (Cont'd.)

replacement of aging infrastructure with other high-priority and long-term facility needs in order to effectively manage risk and utilize available resources and funding. The Master Plan, however, will take several years to develop and implement. In the interim, there are immediate needs that must be addressed to maintain acceptable wastewater service. To aid in interim capital improvement planning, some of the high priority projects that can be implemented over the next five years have been included in this Adopted CIP. These include the Plant Electrical Reliability project (\$57 million), Digester Rehabilitation (\$46.6 million), and Digester Gas Line Replacement project (\$10.1 million). All of these projects are being closely coordinated with the Plant Master Plan project.

##### Other Projects

The 2009-2013 Adopted Capital Improvement Program includes other major projects that will require an investment of capital funds. The following list of priority projects are required to meet regulatory mandates, ensure process reliability, provide for a safe work environment, or provide process efficiencies or cost savings:

- WPCP Reliability Improvement Phase II – \$5 million in this CIP, \$35 million total project costs;
- Secondary and Nitrification Clarifier Rehabilitation – \$12 million in this CIP, \$32 million total project costs;

- Digester Gas Line Replacement – \$9 million in this CIP;
- Filtration Action Plan – Valve Replacement - \$8.6 million in this CIP;
- Environmental Services Building Repair – \$6 million in this CIP;
- South Bay Water Recycling (SBWR) Reservoir Facility – \$6 million in this CIP;
- Dissolved Air Flotation Pressure Retention Tank and Valves Replacement – \$1.1 million in this CIP, \$2.4 million total project costs;
- Fire Line Replacement – \$800,000 in this CIP;
- Warehousing Facility Additions – \$600,000 in this CIP;

##### Reserve for Equipment Replacement

As in prior CIP's, the 2009-2013 Adopted CIP includes a minimum \$5.0 million reserve for equipment replacement. This reserve minimum was established to satisfy three contractual requirements:

- The State Water Resources Control Board's (SWRCB) Policy for implementing the State Revolving Fund for Construction of Wastewater Treatment requires that annual revenue requirements include funds for the replacement of major equipment for maintaining the capacity and performance of the treatment plant over its useful life. Compliance with the SWRCB's policy is a requirement of State Revolving

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**Program Highlights (Cont'd.)**

Reserve for Equipment Replacement (Cont'd.)

Fund Loan Agreements. Equipment replacement of \$13.2 million and a reserve of \$5.0 million are included in the 2009-2013 Adopted CIP to satisfy this requirement.

- The Clean Water Financing Authority (CWFA) Bond Covenants require that a reserve be maintained at a minimum level of \$5.0 million to help pay the costs of extraordinary repairs and for renewal and replacement of the treatment plant when insurance and other funds budgeted for such purposes are exhausted, or are insufficient to meet the need.
- The Master Agreements for Wastewater Treatment between City of San José, City of Santa Clara, and Tributary Agencies established a replacement fund to deposit annual contributions for the replacement of major treatment plant equipment. The Master Agreements also require that each agency pay its proportionate share of the annual replacement contribution.

**Major Changes from the 2008-2012 Adopted CIP**

Major changes from the 2008-2012 Adopted CIP include the following:

- This Adopted CIP assumed rate increases of 15% for the next two years and contributions from other

agencies in order to fund projects over the five-year term.

- Additional transfers in the amount of \$51.1 million from the Sewer Service and Use Charge Fund for the City of San José costs for CIP projects.
- Allocation of additional \$40 million to Digester Rehabilitation.
- A decrease in funding in the amount of \$7.0 million for Plant Infrastructure Improvements.
- Additional funding in the amount of \$9.8 million for Plant Infrastructure Improvements.
- Allocation of additional \$8 million for Secondary and Nitrification Clarifier Rehabilitation.
- Allocation of additional \$6.5 million to Revised South Bay Action Plan – SBWR Extension.
- Allocation of additional funding for new projects for Environmental Services Building Repair (\$6 million) and WPCP Reliability Improvements Phase II (\$5 million).
- Allocation of additional \$5 million for Reserve for Plant Master Plan Improvements.

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**Major Changes from the 2008-2012 Adopted CIP (Cont'd.)**

- Eliminate revenue anticipated for the 1MW Fuel Cell project (\$4.5 million) and the corresponding expenditure (\$6.8 million). This project was eliminated due to a disagreement between the contractor and the City regarding future maintenance that would have committed the City to a long-term maintenance agreement with the contractor. The Plant is currently exploring other options for Fuel Cell such as a power purchasing agreement.
- Additional funding in the amount of \$2.1 million as contributions from the City of Santa Clara and Other Agencies for their proportionate costs for CIP projects.
- Allocation of an additional \$2 million for Equipment Replacement.
- Allocation of additional \$1.7 million for Plant Master Plan.
- Allocation of additional \$1.3 million for Public Art.
- Allocation of additional \$500,000 for Dissolved Air Flotation Pressure Retention Tank & Valves Replacement.

**Operating Budget Impact**

Although the Alternative Disinfection project has no funding in the 2009-2013 Adopted CIP, it is anticipated that the project will continue into 2009-2010 with encumbered 2007-2008 funding and be completed during 2009-2010. This will have an impact on the operating budget in 2009-2010, which is supported by the San José-Santa Clara Treatment Plant Operating Fund. This project switches the disinfection method used at the Plant from a chlorine gas and sulfur dioxide system to a safer, alternative liquid sodium hypochlorite and sodium bisulfite system, which reduces the risk of a massive chlorine gas incident. The following table shows the increase in chemical costs as a result of the project. All projects anticipated to be operational in 2008-2009 have been addressed in the 2008-2009 Adopted Operating Budget.

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**Operating Budget Impact (Cont'd.)**

**Net Operating Budget Impact Summary**

	2009-2010	2010-2011	2011-2012	2012-2013
Alternative Disinfection	<u>\$2,000,000</u>	<u>\$2,075,000</u>	<u>\$2,152,000</u>	<u>\$2,233,000</u>
<b>Total</b>	<b>\$2,000,000</b>	<b>\$2,075,000</b>	<b>\$2,152,000</b>	<b>\$2,233,000</b>

Note: The estimated operating costs have been provided by the Environmental Services Department and have not yet been fully analyzed by the Budget Office. That analysis may well result in different costs when the actual budget for the year in question is formulated.

**Council Approved Revisions to the Proposed Capital Improvement Program**

During the June budget hearings, the Council approved the rebudgeting of \$16,382,000 for eight projects: Disgester Rehabilitation (\$6,600,000), Plant Infrastructure

Improvements (\$2,839,000), Equipment Replacement (\$2,230,000), Plant Electrical Reliability (\$2,134,000), Digester Gas Line Replacement (\$1,100,000), Alternative Disinfection (\$800,000), WPCP Reliability Improvements (\$577,000) and Public Art (\$102,000).

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**Source of Funds**

<b>SOURCE OF FUNDS</b>	<b>Estimated 2007-2008</b>	<b>2008-2009</b>	<b>2009-2010</b>	<b>2010-2011</b>	<b>2011-2012</b>	<b>2012-2013</b>	<b>5-Year Total</b>
<b>San José-Santa Clara Treatment Plant Capital Fund</b>							
<b>Beginning Fund Balance</b>	65,822,775	70,027,920	27,052,920	1,004,920	1,003,920	7,819,920	70,027,920 *
<b>Revenue from Other Agencies:</b>							
<u>Federal Government</u>							
- U.S. Bureau of Reclamation Grant (SBWRP)	500,000	500,000					500,000
<u>Water Pollution Control Plant User Agencies</u>							
- 2005 Bond Debt Service Repayment	1,382,000	1,385,000	1,386,000	1,385,000	1,381,000	1,379,000	6,916,000
- Equipment Replacement	591,000	591,000	591,000	591,000	591,000	591,000	2,955,000
- SRF Loan Repayment	1,384,000	1,384,000	1,384,000	1,384,000	1,384,000	1,384,000	6,920,000
- WPCP Projects	12,020,000	8,775,000	20,350,000	5,060,000	7,110,000	11,370,000	52,665,000
<b>Contributions, Loans and Transfers from:</b>							
<u>Special Funds</u>							
- Transfer from Sewage Treatment Plant Connection Fee Fund (539)	3,080,000	3,080,000	3,080,000	3,080,000	3,080,000	3,080,000	15,400,000
- Transfer from Sewer Service and Use Charge Fund (541)	24,697,000	19,638,000	25,643,000	30,640,000	37,623,000	40,616,000	154,160,000
<b>Interest Income</b>	2,800,000	4,126,000	1,316,000	1,479,000	1,201,000	1,207,000	9,329,000
<b>Miscellaneous Revenue</b>							
- Calpine Metcalf Energy Center Facilities Repayment	389,000	389,000	389,000	389,000	389,000	389,000	1,945,000
- Miscellaneous Revenue	367,000						

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**Source of Funds**

<b>SOURCE OF FUNDS (CONT'D.)</b>	<b>Estimated 2007-2008</b>	<b>2008-2009</b>	<b>2009-2010</b>	<b>2010-2011</b>	<b>2011-2012</b>	<b>2012-2013</b>	<b>5-Year Total</b>
<b><u>San José-Santa Clara Treatment Plant Capital Fund</u></b>							
Reserve for Encumbrances	20,930,145						
<b>Total San José-Santa Clara Treatment Plant Capital Fund</b>	<b>133,962,920</b>	<b>109,895,920</b>	<b>81,191,920</b>	<b>45,012,920</b>	<b>53,762,920</b>	<b>67,835,920</b>	<b>320,817,920 *</b>
<b>TOTAL SOURCE OF FUNDS</b>	<b>133,962,920</b>	<b>109,895,920</b>	<b>81,191,920</b>	<b>45,012,920</b>	<b>53,762,920</b>	<b>67,835,920</b>	<b>320,817,920 *</b>

\* The 2009-2010 through 2012-2013 Beginning Balances are excluded from the FIVE-YEAR TOTAL SOURCE OF FUNDS to avoid multiple counting of the same funds.



















































# Water Pollution Control Capital Program

## 2009-2013 Adopted Capital Improvement Program

### Explanation of Funds

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Revenues and expenditures for the operation and maintenance of the San José-Santa Clara Water Pollution Control Plant are accounted for by the City of San José, as administering agency, through the San José-Santa Clara Water Pollution Control Plant Operating Fund (Operating Fund) and the San José-Santa Clara Treatment Plant Capital Fund (Capital Fund), established by Ordinance 7214 in July, 1959.

Revenues from Tributary Agencies of the San José-Santa Clara Water Pollution Control Plant are recorded directly into the Treatment Plant Operating and Capital Funds respectively. The Tributary Agencies include the City of Milpitas, City of Cupertino, Burbank and Sunol Sanitary Districts, County Sanitation District No. 2-3, and West Valley Sanitation District.

Tributary Agencies are assessed for their share of annual operation, maintenance, equipment, and facilities replacement and capital costs, based on their respective flow and strength of sewage conveyed to the Plant.

The San José Sewer Service and Use Charge Fund was established by the San José City

Council by Ordinance Number 7308, adopted in August, 1959. This fund is the depository of revenues from Sewer Service and Use Charges received from residential, commercial, and industrial users of the sanitary sewer system. A portion of these moneys are transferred to the Treatment Plant Operating and Capital Funds to pay for the City of San José's share of operating and capital costs of the Water Pollution Control Plant.

The Santa Clara Sewer Revenue Fund was established by Resolution Number 916 of the City Council of Santa Clara in October, 1960. Like the City of San José, revenues from this fund are transferred directly to the Treatment Plant Operating and Capital Funds.

The Treatment Plant Capital Fund provides all moneys used for capital projects. Included in this fund is the Treatment Plant Renewal and Replacement Fund. This fund was established to satisfy the Water Pollution Control Plant's federal and state grant agreements as well as to comply with bond covenants.

