CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Office of the City Auditor

Report to the City Council
City of San José

ENVIRONMENTAL SERVICES: A DEPARTMENT AT A CRITICAL JUNCTURE

Report 12-06
August 2012

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Office of the City Auditor
Sharon W. Erickson, City Auditor

August 8, 2012

Honorable Mayor and Members
Of the City Council
200 East Santa Clara Street
San José, CA 95113

Environmental Services: A Department at a Critical Juncture

In June 2011, the City Council directed the City Auditor's Office to conduct a broad staffing and management audit of ESD, with a special focus on how ratepayer funds are used (i.e., sanitary sewer, storm sewer, Muni Water, and Recycle Plus). The Council also asked that the audit include a review of the San José/Santa Clara Water Pollution Control Plant (Plant) rehabilitation project for opportunities to reduce the cost of the project, expedite the project, and create savings for ratepayers.

Introduction and Background (page 1): On an annual basis, the City collects nearly $300 million in ratepayer funding through property tax assessments and monthly bills. Recent rate increases have been large, but rates are still mid-range compared to other local utilities. It has been widely noted that authorized staffing increased in ESD during a time that Citywide staffing fell almost 25 percent. Staffing growth has been concentrated in three areas: Plant planning and development, stormwater management, and the Fats, Oils, and Grease (FOG) Control program. Growth in authorized staffing has been driven in large part by regulatory requirements and Plant capital improvement planning.

In April 2011, the City Council accepted the Plant Master Plan, which includes $2.1 billion in long-term wastewater capital improvement projects, $1.1 billion of which is deemed driven by a need for rehabilitation and replacement of Plant assets. Other projects are driven by expected future regulations, potential economic or performance benefits, and other considerations. The Master Plan also proposes new uses for some Plant lands, including light industrial, retail, and other uses. However, development of the Plant lands will be dependent upon market demand for the various uses proposed as well as the cost of infrastructure improvements.

Finding I (page 21): ESD Is Confronting Troubling Staffing Trends and Vacancy Levels at the Water Pollution Control Plant

The Plant is a critical component of South Bay sewage infrastructure. A failure at the Plant could endanger public health and safety and the environment, and expose the City to substantial risk of violating its wastewater treatment National Pollutant Discharge Elimination System (NPDES) permit. Protecting public health and safety and complying with the permit is the responsibility of the Plant's operations and maintenance work sections.

Unfortunately, the Plant has experienced significant workforce losses in operations and maintenance. Employee separations, including retirements and resignations, have resulted in falling experience levels and increasing overtime hours at the Plant. The Administration has begun addressing the Plant's troubling staffing trends, and in our opinion should continue to deal with both the short- and long-term aspects of the staffing shortage by: 1) offering skill-specific, time-limited retention bonuses to retain staff in the near term; and 2) conducting formal salary surveys for all critical work sections to address perceived pay disparities that could prevent the Plant from attracting and retaining talent in the long term. If the City is unable to address staffing challenges, it will need to continue pursuing alternate means to keep the Plant operational, including (but not limited to) hiring temporary contract labor.

In addition to operations and maintenance staffing shortages, the Plant faces significant infrastructure staffing issues. Implementation of the Master Plan will significantly increase the annual budgeted Plant Capital Improvement Program (CIP). Due in part to staffing challenges in its CIP implementation team, ESD has not been successful in completing even its current annual CIP. To address this, ESD expects to rely on a multi-year commitment of Public Works and consultant staff to augment current staff and expertise. However, ESD may lack sufficient expertise to oversee the work unless it can retain its engineering staff. In our opinion, a formal salary survey also is needed to address critical Plant engineering needs.

Finding 2 (page 43): Successful Plant Master Plan Implementation Will Require Strong Oversight and Reporting Systems

Because of its expected reliance on consultants to help deliver Master Plan capital projects, ESD will need to utilize contracting best practices employed currently by Public Works and other jurisdictions to ensure successful project completion. These best practices include the potential use of outside consultants or legal assistance to develop contracts with clearly defined goals and performance expectations; ongoing audit work; employment of management controls such as independent cost estimators for any future design/build or design/build/operate contracts; and the development of systems to oversee and report on Master Plan progress. In addition, implementation will require coordination with and involvement of Plant operations and maintenance staff; ESD has begun to address perceived communication and coordination problems in this area.

Current sewer rates are expected to cover some, but by no means all, of the cost of currently planned Master Plan projects. ESD is considering bond financing for the projects not covered by current rates on a pay as you go basis; it has had preliminary discussions with the Finance Department about potential timing. ESD should evaluate and present to the City Council and the Treatment Plant Advisory Committee the potential rate impacts of the Master Plan once the Environmental Impact Report is complete. Furthermore, because projects included in the Master Plan are in the early "study or feasibility" stage, cost estimates are expected to change. As such, ESD will need to periodically reevaluate and reprioritize Master Plan projects in response to regulatory, technological, or economic changes; implementation and financing challenges; and ratepayer impacts.

Finding 3 (page 59): The City Raised Sewer Rates in Anticipation of Increased Spending That Did Not Materialize

San José's utility rates for sanitary sewer, storm sewer, garbage and recycling, and potable water services increased significantly from FY 2006-07 to FY 2011-12. These rates rose between 41 and 89 percent during a period when inflation rose only 15 percent. Increases in sanitary and storm sewer rates were driven mostly by capital improvement planning and anticipated regulatory requirements. Garbage rate increases were driven by residential waste hauler cost increases, and Muni Water increases by the cost of wholesale water.

Over the past few years, the City has accumulated large balances in ratepayer funds, totaling $280 million by the end of FY 2010-11. These large balances are especially concerning for sewer funds: the $220 million held in operating and capital funds for the sanitary sewer and Plant, almost entirely from sanitary sewer charges, represents nearly two years of annual sanitary sewer revenue collection. Slower than expected capital spending is the main factor. Other budget savings like staffing vacancies have also contributed to the accumulation of fund balances in excess of ESD's reserve goals. In addition to more realistically budgeting for capital expenditures, ESD can address these balances by developing capital reserve policies and freezing sewer and storm utility rates until the fund balances are reduced to reasonable reserve targets.

Finding 4 (page 75): Expanded Environmental Enforcement Programs Need a Greater Emphasis on Outcomes and the Efficient and Effective Use of Program Resources

One area that has seen growth in ESD's authorized staffing has been environmental enforcement. ESD increased its budgeted enforcement staff as the regulatory environment became stricter, adding 7 full-time equivalents (FTE) to the FOG source control program and 16 FTE to the stormwater protection program.

In our opinion, the City's FOG Control Program's focus on food service establishments should be reevaluated in light of data suggesting sanitary sewer overflows may be a greater problem in residential areas. In addition, ESD has begun streamlining its stormwater inspection program by pre-screening potential home businesses and reducing the frequency of food service establishment inspection. It has an opportunity to continue this program improvement by scaling back construction inspections that go beyond regulatory requirements, and re-examining opportunities to leverage the inspections performed by other departments and jurisdictions. Overall, we recommend that all environmental enforcement programs should be reevaluated using an outcome-based approach to ensure that the City's efforts are focused not only on permit compliance but also the most efficient and effective use of program resources.

Finding 5 (page 103): The City Has a Responsibility to Improve the Allocation and Efficiency of Rates and Costs

The California Constitution, as amended by California voters in 1996 when they passed Proposition 218, requires that no fee for property-related services charged by a city exceed the cost to provide the service to the property owner. In accordance with this requirement, the rates charged by ESD are meant to cover only the costs of providing storm water, sanitary sewer, garbage and recycling (Recycle Plus), and potable water services. As such, rates for property-related services provided by the City are generally reviewed and adjusted, as needed, on an annual basis by City staff and the City Council as ratepayer programs and their costs change. However, ESD relies on some assumptions made 30 years ago to set sanitary sewer rates—the City's single largest source of ratepayer revenue. These assumptions should be updated, and ESD should establish a policy to periodically evaluate assumptions that influence rates.

In addition, the City may be able to provide savings to ratepayers by 1) eliminating duplicative Recycle Plus billing and customer services; 2) exploring opportunities to increase revenues or reduce costs to achieve full cost recovery of South Bay Water Recycling operations; and 3) exempting certain ratepayer capital projects from the Public Art Program. Finally, it is the City's responsibility to ensure charges to ratepayers are fair and appropriate. As such, the City should adopt guiding principles for evaluating ratepayer costs and future rate increases for fairness and appropriateness, and for balancing priorities, such as safe and reliable services, cost efficiency, ratepayer impacts, and environmental outcomes.

This report includes a total of 22 recommendations. We will present this report at the August 16, 2012 meeting of the Public Safety, Finance, and Strategic Support Committee. We would like to thank the Environmental Services Department for their time and cooperation during the audit process. The Administration has reviewed the information in this report and their response is shown on the attached yellow pages.

Respectfully submitted,

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City Auditor

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Table of Contents

Table of Exhibits

Introduction

In accordance with the City Auditor's 2012-13 Work Plan, we have completed an audit of the Environmental Services Department's funding and staffing and the early implementation of the San José/Santa Clara Water Pollution Control Plant Master Plan. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We limited our work to those areas specified in the "Audit Objective, Scope and Methodology" section of this report.

The Office of the City Auditor thanks the management and staff from the Environmental Services Department; the Department of Public Works; the Department of Transportation; the Airport; the Department of Planning, Building, and Code Enforcement; the Office of Employee Relations; the Budget Office; and the City Attorney's Office for giving their time, information, insight, and cooperation during the audit process.

Background

The City of San José provides ratepayer-funded utility services to its residents and businesses. These services include garbage and recycling services (known as Recycle Plus) for more than 300,000 households, stormwater management, sanitary sewer services, wastewater management through regional services provided by the San José/Santa Clara Water Pollution Control Plant (Plant), and, for about 10 percent of residents and some commercial and industrial customers, potable water services through the San José Municipal Water System (Muni Water).

In June 2011, the City Council directed the City Auditor's Office to conduct a broad staffing and management audit of the Environmental Services Department (ESD), with a special focus on how ratepayer funds are used (i.e., sanitary sewer, storm sewer, Muni Water, and Recycle Plus). The Council also asked that the audit include a review of the Plant rehabilitation project for opportunities to reduce the cost of the project, expedite the project, and create savings for ratepayers.

The Environmental Services Department

ESD's mission is to "Work with our community to conserve natural resources and safeguard the environment for future generations." Its six core services are:

- Natural and Energy Resources Protection - Promote enhanced air quality, environmentally responsible land use, and conservation of water and energy resources
- Recycling and Garbage Services - Collect, process, and dispose of solid waste to maximize diversion from landfills and protect public health, safety and the environment
- Potable Water Delivery - Develop, operate, and maintain the City's municipal potable water system
- Stormwater Management - Protect the health of the South Bay watershed through regulatory programs that prevent pollution from entering the storm sewer system and waterways
- Recycled Water Management - Develop, operate, and maintain a recycled water system that reduces effluent to the Bay and provides a reliable and high quality alternative water supply
- Wastewater Management - Manage wastewater for suitable discharge into the south San Francisco Bay and for beneficial reuse to protect the environment and public health

ESD's eight divisions (in alphabetical order) perform the following:

- *Administrative Services*: provides support in fiscal and accounting, employee services, budget and fund management, and clerical services
- *Environmental Communications*: implements outreach to motivate positive environmental change
- *Integrated Waste Management*: develops and administers various programs to achieve Green Vision goals (see discussion below on the City's Green Vision), manages collection, processing and disposal contracts, and resolves escalated service issues from the City's Contact Center for Recycle Plus (see Finding 5)
- *Municipal Water*: delivers potable and recycled water to customers in the San José Muni Water service area (about 10 percent of the City's residents and some commercial and industrial customers), and leads water conservation efforts for the Muni Water service area
- *South Bay Water Recycling:* delivers recycled water to four water retailers in the South Bay Water Recycling service area, maintains portions of the recycled water system, and manages the recycled water partnership with the Santa Clara Valley Water District (see Finding 5)

- *Sustainability and Compliance*: brings together professional staff involved with establishing environmental policies and programs; implementing health, safety and compliance activities; advancing clean energy technology; and integrating green practices (the Green Vision) into City and community activities
- *Wastewater Management*: This is split into two divisions: 1) Plant Operations operates and maintains the San José/Santa Clara Water Pollution Control Plant discussed in greater detail below and 2) Plant Planning & Development implements and coordinates the capital improvement program (CIP); planning and research; and the Plant's management information system (see Findings 1 and 2)
- *Watershed Protection*: provides environmental enforcement, stormwater management, laboratory services, pollution prevention, and environmental engineering (See Finding 4)

Funding

The City collects funds through rates that are reviewed and adjusted, as needed, on an annual basis by ESD. Each year, the City Council reviews rates for utilities and services to determine whether adjustments are necessary to align revenue with expected program costs, and adopts resolutions setting forth the schedule of rates. City staff may recommend rate increases for a number of reasons. For example, City staff recommended and the City Council approved recommended rate increases for FY 2011-12—the most recent year each rate was revised—to recover contractual cost increases by Recycle Plus garbage haulers; restore previously depleted operating reserves to regular levels; offset wholesale water cost increases for Muni Water; replace outdated equipment; and support new and expanded programs to reduce pollutants discharged through the storm sewer system as mandated by the City's five-year National Pollutant Discharge Elimination System (NPDES) Stormwater permit (effective December 2009). These recommended rate increases totaled 9 percent for the Recycle Plus program, 3 percent for both sanitary and storm sewer service, and 5.9 percent for San José Municipal Water System potable water delivery. For FY 2012-13, ESD recommended increasing only the Muni Water rate – by 9.5 percent, for wholesale water costs. Additional information about rates can be found in Findings 3 and 5 of this report.

In June 2012, the City Council approved the Muni Water rate increase for FY 2012-13, but asked City staff to return to the Council with a report on the City's due diligence regarding escalating wholesale water costs, and to coordinate with the City Auditor to determine whether or not an audit of wholesale water costs increases was required.

Operating Funding

The City collects sanitary and storm sewer funds through property tax assessments, and Recycle Plus and Muni Water funds through bi-monthly or monthly bills. ESD receives minimal General Fund support. The $500,000 budgeted for FY 2011-12 makes up less than 0.25 percent of total planned expenditures. ESD's operating budget is mainly for non-personal/equipment costs ($142 million) but includes $62 million for salaries and benefits. ESD's FY 2011-12 adopted operating budget was 30 percent more than that for FY 2006-07, with growth driven by higher staffing and non-personal costs. Exhibit 1 shows the alignment of ESD's primary operating funding by core services.

Exhibit 1: ESD's General Sources and Uses for FY 2011-12 Adopted Operating Budget

Funding Sources		Uses	
Integrated Waste Management Fund	$98 million	Recycling and Garbage Services	$97 million
San José/Santa Clara Treatment Plant Operating Fund	$69 million	Wastewater Management	$61 million
Water Utility Fund	$23 million	Potable Water Delivery	$23 million
Storm Sewer Operating Fund	$13 million	Stormwater Management	$12 million
Sewer Services and Use Charges; Capital Funds; and the General Fund	$4 million	Natural and Energy Resources Protection; Recycling Water Management; and Strategic Support	$13 million
Total Funding Sources	**$207 million**	**Total Uses**	**$207 million**

Source: FY 2011-12 Adopted operating budget for the Environmental Services Department

Money from the listed special funds also supports the services provided by other City departments and overhead costs. For example, in FY 2011-12, the Department of Transportation (DOT) received $15 million from the Sewer Service and Use Charge Fund and $8 million from the Storm Sewer Operating Fund to maintain the wastewater (sanitary) sewer and the storm sewer systems, respectively. The Information Technology (IT) and Finance Departments also received funding for utility billing, collections, and customer service functions. See Exhibit 2 below for more detail.

Playing Catch-Up for Infrastructure

Recent rate increases have been large, but long-term rate growth has been less dramatic. For example, from FY 1994-95 to FY 2003-04, sanitary sewer services for a single-family residence were priced at $18.96 per month. Growth in the City's ratepayer base appears to have enabled the City to collect enough revenue to meet its operating needs during that period. According to ESD, large rate increases for sanitary sewer service reflect the effort to begin addressing the significant infrastructure issues associated with the Plant and the sewage collection system.

Grants

ESD has also received grants in recent years from several sources for specific purposes, including:

- San José Area Water Reclamation & Reuse Program Phase 1A – US Department of Interior/Bureau of Reclamation - $1,600,000 as reimbursement for the infrastructure cost of building the South Bay Water Recycling system
- Recovery Act-EECBG – US Department of Energy/Office of Energy Efficiency and Renewable Energy - $8,840,600 for energy efficiency improvements for City facilities, programmable LED streetlights, and other energy-related projects
- Recovery Act-South Bay Water Recycling Phase 1C – US Department of Interior/Bureau of Reclamation - $6,310,000 for expansion of the South Bay Water Recycling (SBWR) system
- Recovery Act-Solar America Cities (Solar Market Transformation) – US Department of Energy/Golden Field Office - $1,301,636 to support solar energy initiatives in the City

Operating and Capital Funds and Reserves

The City has established separate funds to track ratepayer funds for the utilities and services the City offers. These accounts are known as Enterprise Funds because they track funding for operations that are financed and operated in a manner similar to a private business enterprise, where the intent is that costs and expenses (including depreciation) of providing services to the general public on a continuing basis be financed or recovered primarily through user charges. Appendix A diagrams the basic flow of ESD's funds, at a high level.

ESD's major cost drivers vary by program. Exhibit 2 charts major budgeted revenues and expenses for FY 2011-12 by ratepayer program and overall, and highlights major cost drivers.

Exhibit 2: Revenue and Expenses for Ratepayer Programs in FY 2011-12 Adopted Operating Budget (in millions)

Fund 515 – Water Utility (Muni Water)
Fund 541 – Sewer Service and Use Charge (sanitary sewer)
Fund 446 – Storm Sewer Operating
Fund 513 – San José/Santa Clara Treatment Plant Operating (Plant operating)
Fund 423 – Integrated Waste Management

	515	446	423 *	541	513	Total
Projected Beginning Fund Balance						
Unrestricted	$0.4	$5.9	$12.2	$18.7	$12.4	$49.6
Reserve for encumbrances	0.4	1.1	6.7	1.0	11.3	20.5
Reserve for operations and maintenance	4.4	5.9	0.6	4.0	9.7	24.6
Reserve for debt service				6.0		6.0
Reserve for rate stabilization	1.3			2.0		3.3
Other reserves	0.1	1.9	1.7	0.8	2.6	7.1
Projected Beginning Fund Balance (with encumbrances)	$6.5	$14.8	$21.2	$32.6	$36.0	$111.1
Revenue						
Recycle Plus charges			$106.3			$106.3
Residential sewer charges				$102.8		102.8
Storm sewer property tax assessments		$31.8				31.8
Potable water sales	$25.0					25.0
Commercial sewer charges				19.3		19.3
Tributary Agencies					16.8	16.8
City of Santa Clara					10.7	10.7
Lien-related charges			5.9			5.9
Recycled water sales	2.4				$2.7	5.1
Industrial sewer charges				4.7		4.7
AB 939 and franchise fees			3.3			3.3
Other			1.8	0.1	0.5	2.4
Transfer for Plant operations #					40.0	
Revenue	$27.4	$31.8	$117.3	$126.8	$70.7	$334.0
Expenses						
Residential garbage/recycling (SFD $48.4 and MFD $16.8)			$65.2			$65.2
ESD staff costs	$3.5	$5.9	6.7	$1.0	$43.3	60.2
non-personal costs (excluding wholesale water)	4.1	5.3	3.8	0.3	25.5	39.0
Yard trimming/street sweeping		1.7	21.7			23.4
Muni Water wholesale water	15.6					15.6
DOT staff costs		5.4	0.2	10.0		15.6
non-personal costs		2.8		4.7		7.5
City-wide overhead	0.8	2.2	1.5	3.5	6.4	14.4
Disposal contract		0.1	8.1	0.2		8.4
IT staff ($3.7) and non-personal ($0.6) costs	0.3	0.4	3.1	0.5		4.3
Public Works staff ($2.3) and non-personal ($0.4) costs		0.7		2.0	0.1	2.8
Finance staff ($2.4) and non-personal ($0.2) costs	0.2		1.6	0.5	0.3	2.6
Workers' Compensation claims		0.1	0.2	0.6	0.7	1.6
IBS commercial paper repayment	0.1		0.6			0.8
PBCE staff costs		0.3	0.2	0.1		0.7
City Attorney's Office staff costs				0.5	0.1	0.6
Other		0.3	13.0	1.4	0.7	15.4
Transfers						
for capital projects	3.3	6.0		58.8		68.1
for Plant operations #				40.0		
for City Hall debt service	0.1	0.4	0.8	0.5	0.9	2.7
for other purpose	0.2	0.1	0.7	0.1	0.2	1.2
Expenses and transfers	$28.4	$31.7	$127.4	$124.6	$78.2	$350.1
Projected Ending Fund Balance						
Unrestricted	$0.5	$4.6	$0.2	$17.8	$4.8	$27.9
Reserve for encumbrances	0.4	1.1	6.7	1.0	11.3	20.5
Reserve for operations and maintenance	3.2	5.3	4.2	4.2	9.7	26.5
Reserve for debt service				6.0		6.0
Reserve for rate stabilization	1.3			5.0		6.3
Other reserves	0.1	4.1	0.1	0.8	2.6	7.7
Projected Ending Fund Balance (with encumbrances)	$5.4	$15.0	$11.1	$34.8	$28.5	$94.9

Source: FY 2011-12 Adopted operating budget source and use statements
Note: Revenue and expenses may not sum because of rounding. Highlights indicate major cost drivers.
* Fund 423 fund balance was largely for Las Plumas household hazardous waste facility, which accounts for $11.6 of "Other" budgeted expenditures.
# We exclude the transfer for Plant operations from the total column to avoid double-counting.

It is a best practice to maintain adequate operating reserves. The City maintains reserves in the utility and service Enterprise Funds for contingency, operations and maintenance, rate stabilization, debt service (to ensure the City meets debt covenants requiring maintenance of a reserve of some multiple of annual debt payment), capital rehabilitation, and plant expansion. Funding expectations for these reserves varies from one to several months of operating expenditures depending on the reserve's expected use. As shown in Exhibit 2, utility and service operating accounts held about $110 million in fund balance at the beginning of FY 2011-12.

Capital accounts held about $170 million more in balance, including more than $90 million in the Plant capital fund, $65 million in the sanitary sewer capital fund, and $15 million in the storm sewer and Muni Water capital funds combined.

The City has borrowed from these funds, most recently from the Sewage Treatment Plant Connection Fee Fund to help pay the Redevelopment Agency's Supplemental Education Revenue Augmentation Fund (SERAF) payment to the state, but it cannot wholly repurpose ratepayer funds to support general government. The SERAF loan was subject to standard terms for interest and repayment, including the requirement for immediate repayment in the event these funds are necessary for the utility services.

Staffing

Exhibit 3 below shows how ESD staff and staff from other departments were allocated by fund in FY 2011-12. This includes 506 full time equivalents (FTE) in ESD, 147.59 FTE in the Department of Transportation (DOT), and a total of 86.07 FTE in other departments.

Exhibit 3: Full-Time Equivalents (FTE) by Ratepayer Program in FY 2011-12

Fund 515 – Muni Water
Fund 541 – Sanitary sewer
Fund 446 – Storm sewer operating
Fund 513 – Plant operating
Fund 423 – Integrated Waste Management
Fund 887 – Capital funds

Department	GF	887	515	446	423	541	513	Total
Environmental Services	1.58	21.00	30.32	45.08	49.01	7.81	351.20	506.00
Transportation				52.34	1.50	93.75		147.59
Information Technology			2.04	1.68	28.31	2.65		34.68
Finance			1.69	0.29	12.95	4.13	1.23	20.29
Public Works				4.00	0.15	12.30	0.50	16.95
Planning, Building, and Code Enforcement			0.16	2.15	1.65	1.02	0.32	5.31
City Attorney's Office					0.20	2.50	0.50	3.20
Human Resources			0.06	0.29	0.10	0.20	1.60	2.25
Parks, Recreation, and Neighborhood Services				1.50	0.50			2.00
City Managers Office			0.03		0.08	0.16	0.57	0.84
Office of Economic Development					0.30		0.25	0.55
Total	1.58	21.00	34.30	107.33	94.75	124.52	356.17	739.66

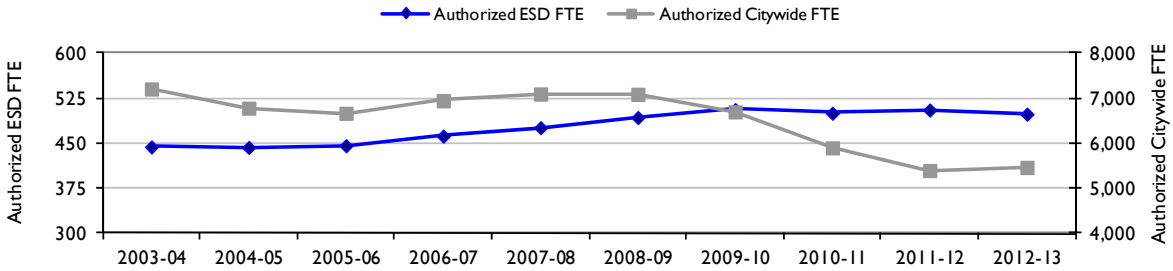
Source: Auditor's analysis of information from the City Manager's Budget Office
Note: GF and Fund 887 fund staff in other departments but the table includes only those in ESD

Exhibit 3 reflects the allocation of staffing within departments. For example, the 351.20 FTE from ESD who are charged to Fund 513 include the allocation of staff who oversee Plant operations, such as administrative staff, and are charged to it and other department functions on a cost allocation basis. It also includes the allocation of staffing for services provided by other divisions, such as Watershed Protection, that benefit the Plant and are charged to its operating fund.

ESD's Authorized Staffing Has Grown Over the Last 10 Years

ESD added 56.5 authorized positions through the budget process over the past decade, growing from 442.5 to 499.0 FTE, a 13 percent increase. By comparison, Citywide staffing fell almost 25 percent, from 7,213 to 5,470 budgeted FTE. Exhibit 4 tracks these opposing trends.

Exhibit 4: Authorized ESD and Citywide Staffing from FY 2003-04 to 2012-13



Source: ESD adopted operating budgets and Citywide budgets in brief for FY 2003-04 to 2012-13

Exhibit 5 shows the growth in ESD's authorized staffing by program. Staffing growth has been concentrated in three areas: 1) Plant planning and development (24 FTE), operations and maintenance (10 FTE), and support (3 FTE); 2) stormwater management (16 FTE); and 3) the FOG Control Program (7 FTE). Authorized staffing additions in these areas account for all overall growth because other additions were more than offset by various reductions, such as moving Customer Contact Center staff from ESD to the IT Department in FY 2007-08.

Exhibit 5: Changes in ESD Authorized Staffing by Year and Program

		Authorized staffing changes by program												
FY	Prior FTE	Source Control	FOG Control	P2	Storm-water	Lab	Plant Planning & Development	Plant O&M	Plant Support	SBWR	Muni Water*	IWM	Support/ Other	Total	Budgeted FTE
2003-04	442.5										2.0			2.0	444.5
2004-05	444.5												(1.0)	(1.0)	443.5
2005-06	443.5				1.0								2.0	3.0	446.5
2006-07	446.5	2.0	4.0	2.0	1.0		3.0					4.0		16.0	462.5
2007-08	462.5				3.0	2.0	13.0	6.0	1.0			(12.0)	1.0	14.0	476.5
2008-09	476.5	1.0	3.0				4.0	4.0	1.0			4.0		17.0	493.5
2009-10	493.5				10.0	1.0				1.0		1.0		13.0	506.5
2010-11	506.5										(1.0)		(5.0)	(6.0)	500.5
2011-12	500.5				1.0		3.0		2.0				(0.5)	5.5	506.0
2012-13	506.0			(1.0)			1.0		(1.0)	(3.0)		2.0	(5.0)	(7.0)	499.0
Total changes		3.0	7.0	1.0	16.0	3.0	24.0	10.0	3.0	(2.0)	1.0	(1.0)	(8.5)	56.5	

Sources: ESD adopted operating budgets (FOG: Fats, Oils, and Grease; P2: Pollution Prevention)
* Muni Water is governed by Municipal Code section 4.80.630(E), which reads: "Except as authorized by the city council, funding for municipal water system staffing shall not increase above historic ratios relative to system productivity, as measured by periodic audits."

ESD's Authorized Plant Staffing Appears Comparable to Benchmarked Jurisdictions

Nearly half of ESD's employees are dedicated to the Plant's planning, maintenance, and operations. Based on a review of other public utilities, it appears the Plant's authorized staffing levels are comparable to those in other public utilities. Exhibit 6 provides a comparison of Plant staffing, including administrative support, against other comparable and local wastewater treatment plants. The water and wastewater industries often analyze the efficiency of an operation by comparing staff levels normalized to actual water treatment and flow, using an FTE per million gallons of daily wastewater flow (MGD) metric.

Using this comparison, the Plant's operations and maintenance authorized staffing level is within the range of benchmarked plants in Northern California, and local plants in the peninsula and South Bay. Specifically, the Plant's 1.67 budgeted operations and maintenance FTE per MGD was the second most efficient (i.e., fewer employees) among the treatment facilities we benchmarked. When support staff are considered (excluding engineering and capital staff which are not normalized in MGD terms in industry surveys), ESD's authorized Plant staffing still appears to be one of the more efficiently staffed treatment facilities in the area in budget terms (2.99 FTE per MGD).

In addition, authorized Plant staffing levels compare well to national benchmarks and surveys of water/wastewater utilities. For instance, the 2007 Qualserve Performance Indicators for Water and Wastewater Utilities reported that the top quartile (25 percent) of wastewater operations had 2.78 total FTE per MGD, which is close to the Plant's 2.66 direct FTE per MGD and 2.99 total FTE (including administrative staff who support Plant activity) per MGD (excluding engineering and capital staff). In addition, the National Association of Clean Water Agencies conducted a "National Survey of Municipal Wastewater Management Financing and Trends" in 2007 that reported a median staffing of 3.3 employees per MGD. Further, the typical span of control at the Plant (i.e., number of staff per supervisor) appears comparable with that of the benchmarked facilities.

Moreover, ESD's source control (0.37 FTE per MGD) and overall in-house administrative support (10.10 percent of total staff) appeared in-line with benchmarked facilities.

In FY 2011-12, ESD had a relatively high percentage of communications staff (12 FTE out of a total of 506, or 2.38 percent) compared with benchmarked facilities (which ranged from 0.89 percent to 2.16 percent of staff). It is important to note, however, that ESD's communication staff provides support for four utilities, whereas the benchmarked facilities may provide support for fewer operations. The communications staff was reduced in the FY 2012-13 adopted operating budget to nine FTE (1.8 percent of total staff). Note that this reduction is not reflected in Exhibit 6.

Exhibit 6: Wastewater Treatment Plant Staffing Comparison

	San José	CCCSD (Central Contra Costa Sanitary District)	EBMUD (East Bay Municipal Utilities District)	SFPUC (San Francisco Public Utilities Commission)	SRCSD (Sacramento Regional County Sanitation District)	Palo Alto	Sunnyvale
Monthly sewer charge (FY 2011-12)*	$33.83	$34.50	$45.25	$56.83	$41.85	$27.91	$30.84
Total department staff / district	505.0	278.0	2,031.5	2,151.0	454.0	214.1	113.0
Administration Total	51.0	47.0	475.5	342.0	123.0	#	#
Administration / total staff	10.10%	16.91%	23.41%	15.90%	27.09%	#	#
Plant characteristics							
Service area (million people)	1.40	0.45	0.65	0.80	1.30	0.22	0.23
Plant capacity (million gallons per day (MGD))	167	53.8	168	575	181	38	29.5
Annual flow (2010-11 million gallons)	40,369	14,819	25,915	35,478	56,940	8,184	5,037
Average daily annual flow (ADAF) in MGD	110.6	40.6	71.0	97.2	156.0	22.4	13.8
Authorized Plant staffing (FY 2011-12 budget)							
Plant operations management / admin	17.0	34.0	17.5	78.0	14.0	7.0	N/A
Operations	70.0	30.0	73.0	123.0	54.0	27.5	25.0
Maintenance	115.0	38.0	63.0	157.0	104.0	13.0	8.0
Laboratory	28.0	8.0	38.0	29.5	32.0	8.0	9.5
Process control/engineering/support	24.0	6.0	16.0	27.0	78.2	N/A	N/A
Engineering/capital projects (Direct Plant)	21.0	11.1	44.0	**	14.8	#	#
Source control	40.5	16.0	34.0	24.0	14.0	13.7	8.0
Total Plant direct staff	315.5	143.1	285.5	438.5	311.0	69.2	50.5
Total direct and indirect staff	351.2	172.2	352.3	508.2	426.6	69.2	50.5
Plant Staffing ratios							
Operations and maintenance FTE / MGD ##	1.67	1.67	1.92	2.88	1.01	1.81	2.39
Direct Plant FTE / MGD ***	2.66	3.25	3.40	4.51	1.90	3.09	3.66
Total direct and indirect staff / MGD ***	2.99	3.97	4.34	5.23	2.64	3.09	3.66
Source control FTE / MGD	0.37	0.39	0.48	0.25	0.09	0.61	0.58

Source: Budget and other documents

* For districts that charge for wastewater treatment only, the rate of the local sewer collection system is added for fair comparison.

Data not available; provided through central support.

** SFPUC capital staffing is much larger than others because it is further along with major rehabilitation efforts than the other benchmarked utilities with similar plans (see later discussion about Plant Master Plan). Additionally, the plant capacity listed is for several treatment facilities that also process stormwater collected through the SFPUC's combined sanitary-storm sewer system.

Does not include the Plant operations management and administration.

*** In keeping with industry standards, direct Plant staffing and total direct and indirect Plant staffing ratios exclude staff for engineering/capital projects.

Laws and Regulations

ESD utilities and services are governed by federal, state, and local laws and regulations, and it drafts a plethora of annual and ad hoc reports on its compliance with these rules. The Plant alone is subject to regulations pertaining to wastewater discharge, biosolids management, and air quality.

Federal

In 1972, Congress adopted the Federal Water Pollution Control Act. This Act, later known as the Clean Water Act (CWA), set in motion a nationwide effort to clean up the country's waterways. The federal law expanded upon previous requirements that had already been established by California's 1969 Porter-Cologne Water Quality Control Act (Porter-Cologne Act). These two laws established the system that regulates the Plant, the City's sewage collection system, and the City's storm drain system.

Under the CWA, the Environmental Protection Agency (EPA) or a delegated State agency regulates the discharge of pollutants to waterways from treatment plants and storm drain systems, and the operation of sewage collection systems through the issuance of NPDES permits. Under the U.S. Code and Code of Federal Regulations, the EPA can issue administrative orders to violators (e.g., in cases of Plant or sewer system discharge), and seek civil or criminal penalties.

State

In 1996, California voters approved Proposition 218, which restricted local governments' ability to impose assessments and property-related fees—and required elections to approve many local government revenue raising methods. In addition to requiring elections to impose assessments and property-related fees, Proposition 218 affected fee rate calculations: local governments must ensure that no property owner's fee is greater than the proportionate cost to provide the property-related service to his or her parcel. Also noteworthy, Proposition 218 shifted the burden of proof from a business or resident challenging the validity of an assessment or fee to local governments—local governments must prove any disputed fee is legal. According to California's Legislative Analyst's Office, the drafters of Proposition 218 indicated it was their intent to include most fees commonly collected on monthly bills to property owners, such as those for water delivery, garbage service, sewer service, and stormwater management fees.

One example of how Proposition 218 affects San José's services is in the way it can assist low-income, single-family garbage customers. Through the Low-Income Rate Assistance Program (LIRA), San José subsidizes garbage and recycling services costs for program participants. Because of the restrictions of Proposition 218, Recycle Plus ratepayer funds cannot be used to support a subsidy for low-income customers. Thus, LIRA was subsidized by the General

Fund, but when those resources were diminished, the City began using Recycle Plus late fee revenue, an unrestricted funding source, to offset the cost of this program. Late fee revenue available to offset LIRA costs for FY 2011-12 was limited to $395,000.

Other state laws and agencies regulate the City's efforts. For instance, the State Water Resources Control Board issues revenue program guidelines for wastewater utilities and reviews and certifies local agency revenue programs, ordinances, and resolutions for compliance. The City receives approval annually, most recently in January 2012 for its FY 2011-12 revenue program for the sanitary sewer system.

Also, the City's Plant and wastewater management system operate pursuant to an NPDES permit issued by the San Francisco Bay Regional Water Quality Control Board in Oakland. According to ESD staff, NPDES permits have become more prescriptive over time and now include specific programs.

The California Department of Public Health (CDPH) is granted primacy by the EPA when it comes to regulating water systems. Annually, CDPH conducts an inspection of Muni Water and reports its findings. In turn, Muni Water implements CDPH's recommendations.

Finally, the California Department of Resource Recycling and Recovery (CalRecycle) oversees ESD's use of "bottle bill" revenue for recycling programs.

Local

Title 15 of the San José Municipal Code governs ESD's implementation of utilities and services. Its sections cover many topics including Muni Water, sewers, storm sewers, and utility franchises. For City-operated utilities, the Municipal Code describes how the City will raise and use revenue, among other things. Title 9 also governs ESD's implementation of solid waste services, including customer billing for Recycle Plus.

The City is also guided by its Green Vision. In October 2007, the City Council adopted the Green Vision, a 15-year plan with 10 ambitious goals for economic growth, environmental sustainability and an enhanced quality of life for San José's residents and businesses. According to ESD, through the Green Vision, San José is modeling the way for others by fostering new industries, becoming more energy efficient, producing and using electricity from clean, renewable, sources, building green buildings, diverting waste from landfills, and expanding delivery of recycled water. The 10 Green Vision goals are:

Green Vision Goals

Goal 1:	Create 25,000 Clean Tech jobs as the World Center of Clean Tech Innovation
Goal 2:	Reduce per capita energy use by 50 percent
Goal 3:	Receive 100 percent of our electrical power from clean renewable sources
Goal 4:	Build or retrofit 50 million square feet of green buildings
Goal 5:	Divert 100 percent of the waste from our landfill and convert waste to energy
Goal 6:	Recycle or beneficially reuse 100 percent of our wastewater (100 million gallons per day)
Goal 7:	Adopt a General Plan with measurable standards for sustainable development
Goal 8:	Ensure that 100 percent of public fleet vehicles run on alternative fuels
Goal 9:	Plant 100,000 new trees and replace 100 percent of our streetlights with smart, zero-emission lighting
Goal 10:	Create 100 miles of interconnected trails

San José/Santa Clara Water Pollution Control Plant

The Plant is an advanced wastewater treatment facility located on 2,680 acres of land at the southern end of the San Francisco Bay in the Alviso area of North San José. The current site includes a 200-acre wastewater operations area, a 750-acre sludge drying area, and an 860-acre former salt production pond. The remaining acreage is primarily open land that buffers adjacent communities from odors and hazardous operations. The Plant (including the Plant lands) is jointly owned by San José and the City of Santa Clara through a Joint Powers Agreement (JPA) and San José operates the plant as the administering agency of the JPA.

The Plant was originally constructed in 1956 and was designed to treat organic waste from canneries. In 1959, the City of Santa Clara gained an ownership stake by helping fund upgrades. Later expansions included adding secondary treatment in 1964 to meet state regulations and accommodate a growing population; adding tertiary treatment in 1979 to meet CWA regulations; and constructing the South Bay Water Recycling facility in 1998. The plant has a dry weather capacity of 167 MGD and a wet weather hydraulic capacity of 271 MGD (in 1956, the original plant had a capacity of 36 MGD).

In addition to San José and Santa Clara, the Plant receives and treats wastewater from six tributary agencies and sanitary districts, including the City of Milpitas; the Santa Clara County Sanitation Districts No. 2 and No. 3; the West Valley Sanitation District (serving Campbell, Los Gatos, Saratoga, and Monte Sereno); and the Cupertino, Burbank and Sunol Sanitary Districts. The Plant serves 1.4 million residents and about 17,000 businesses. The Plant has an average annual flow of about 110 MGD. By comparison, the East Bay Municipal Utility District treatment plant in Oakland serves 650,000 residents and has an average annual flow of around 70 MGD.

The Plant's treatment process consists of screening and grit removal, primary sedimentation, secondary treatment (biological nutrient removal), secondary clarification, filtration, disinfection, and dechlorination. Most of the Plant's final

treated water is discharged through the Artesian Slough, a tributary to Coyote Creek, which flows to the South San Francisco Bay. Because of the shallowness of the receiving waters at the south end of the Bay, the Plant is only one of three in the Bay Area to provide an advanced level of treatment (Sunnyvale and Palo Alto are the others). About 10 percent of the Plant's treated water is recycled for other uses such as industrial processes or cooling towers.

The Plant Master Plan

In April 2011, the City Council accepted the Plant Master Plan preferred alternative, which includes $2.1 billion in long-term wastewater capital improvement projects and new economic, environmental, and recreational uses of the Plant lands. The purpose of the Master Plan is to provide a central planning document to guide improvements to the Plant's facilities, operations, and land use over the next 30 years. Council also directed staff to begin preparing an Environmental Impact Report (EIR) as required by the California Environmental Quality Act (CEQA). The EIR is the next step before finalizing the Master Plan; it is expected to be completed by June 2013.

Council acceptance of the preferred alternative was the culmination of a multi-year process consisting of two parallel planning efforts, a technical component to guide Plant capital improvements and a land use component to guide future development of the lands surrounding the Plant (which are owned by the Plant). The development of the Master Plan included a large community engagement process consisting of multiple workshops and public meetings allowing members of the public to provide input. ESD also sought comments and input from the tributary agencies and other stakeholders.

Two advisory groups, one technical and one community-based, were convened to provide input into the process. The technical advisory group was an eight-member panel of wastewater and energy experts who met on three separate occasions to comment upon and give input on the technical direction of the Master Plan. It included professors from UC-Davis, UC-Berkeley, and Humboldt State University; the Executive Officer of the San Francisco Bay Regional Water Quality Control Board; and industry experts.

The community-based group provided input mainly on the land use component of the Master Plan. The community advisory group consisted of 20 stakeholders representing various interests and communities and included both San José residents and residents served by the tributary agencies. This group met more than 20 times between September, 2009 and March, 2011.

The technical component was heavily influenced by a 2007 Infrastructure Condition Assessment, a high-level assessment of the condition of Plant assets commissioned by ESD because of long-term underinvestment in the infrastructure at the Plant and a need to determine exactly where the most important or critical

areas for investment were. The Infrastructure Condition Assessment identified a risk-ranked list of capital improvement projects required to maintain service levels under current regulations.

The recommended projects listed in the Master Plan occur throughout the Plant, from the headworks (where wastewater first enters the Plant) to the filtration and disinfection process (the final step before the water is sent to the Bay). The projects also include improvements to the support facilities at the Plant. Proposed projects include:[1]

- $519 million for 30 separate projects related to biosolids management (the process area with the highest total project costs in the Master Plan), including transitioning from the current open-air drying of biosolids to a mechanical dewatering and drying process and rehabilitation of the current anaerobic digesters
- $302 million for headworks and primary process area-related projects, the largest portion of which are for rehabilitation (but also includes $73 million in odor control projects)
- $240 million for projects in the secondary process area, primarily rehabilitation of the secondary tanks, but also some improvements for regulatory or performance benefits
- $201 million for filtration and disinfection projects, primarily driven by expected future regulations
- $166 million for energy generation

According to ESD staff, the recommended projects in the Master Plan are in the early conceptual stage of planning and provide a general roadmap of where they want to focus their CIP work. Individual projects identified will be evaluated as part of the normal CIP process (i.e., they are not pre-programmed as a result of the Master Plan).

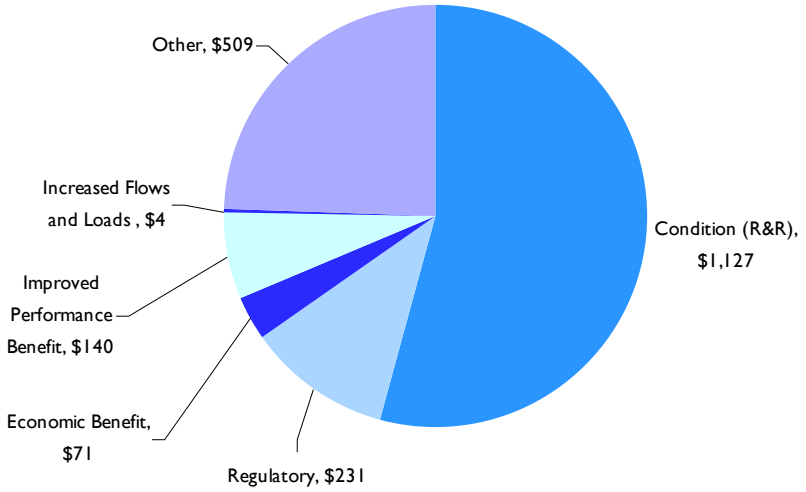
$1.1 Billion in Projects Categorized as Rehabilitation and Replacement and Driven by Asset Condition

The Master Plan breaks down wastewater capital projects by specific project triggers (i.e., the primary reason projects should be undertaken), including asset condition (rehabilitation or replacement projects), regulatory requirement, economic or improved performance benefit, increased flows or loads, and policy decisions based on other considerations (e.g., projects to control odors to mitigate impacts on surrounding communities fall within this category). The majority (54 percent) of projects are deemed driven by the condition of assets

[1] Not included in this list is a $416 million allocation for "remaining rehabilitation and repair" which represents the end of life-cycle replacement of assets between 2025 and 2040. It is not known now which assets need to be replaced; however, based on the expected depreciation of assets, the Master Plan includes an estimate of what annual rehabilitation costs will be in the later years of the plan.

(the Master Plan notes that much of the infrastructure at the Plant is more than 30 years old, well beyond its original design life)..[2] Exhibit 7 shows Master Plan project costs broken down by each trigger.

Exhibit 7: Master Plan Costs by Reason for Project ($millions)



Source: Auditor analysis of Plant Master Plan

Nearly all of the asset condition-related projects were originally identified in the Infrastructure Condition Assessment in its list of recommended projects. In some cases, more specific condition assessments or studies in the intervening years have changed individual projects' scope or size. The rehabilitation and repair projects are generally not included in the EIR as they would have occurred regardless of the Master Plan.

$446 million Driven by Potential Future Regulations, Economic or Performance Benefits, or Increased Flows and Loads

Projects driven by the expectation of future regulations ($231 million) and economic or performance benefits ($211 million) account for about one quarter of all Master Plan projects. The largest categories of projects include those triggered by future regulations and are located in the secondary treatment or filtration/disinfection processes. Only $4 million in projects are triggered by future increased flows and loads.

[2] Other jurisdictions, including Sunnyvale and San Francisco, have treatment plants of a similar age and are similarly preparing for major rehabilitation work related to their plants.

$509 Million in Projects Driven by Other Considerations

Projects deemed driven by policy decisions based on other considerations than those noted above account for $509 million of Master Plan projects. Among the projects are the following:

- $343 million to transition to a new biosolids process that will result in moving from the current process of open air drying to mechanical de-watering and drying. Removal of the current drying beds will allow for the future development of the Plant lands (see Land Use Component below).
- $73 million in odor control projects to reduce odor impacts on surrounding communities
- $45 million for the future demolition of old facilities to make available space in congested parts of the Plant
- $5 million for public art, calculated based on 1 percent of the cost of selected capital projects in accord with the City's Public Art Ordinance

Land Use Component of Plant Master Plan

The Master Plan also proposes new uses for the Plant lands, including light industrial, retail, and office/R&D space; recreational opportunities; an educational center; and habitat and flood protection (including a new system of levees to address potential sea level rise). Ownership of improvements would depend on the investor(s) involved, and the terms of the ground lease with the City of San José and the City of Santa Clara. These land uses are subject to the development of the EIR, which is expected to be completed in June 2013. See Appendix B for maps of the current and future planned uses of the Plant lands.

The Master Plan provides projections showing that the planned development could create 17,000 permanent jobs as well as 800 temporary construction jobs. It also projects that at build out, the positive fiscal impact would be $1.1 million in additional net taxes to the City as well as additional property taxes to Santa Clara County and school districts. In addition, annual ground lease revenue at build out is projected in the Master Plan to be $10.5 million (which could offset future O&M costs).

Development of the Plant lands will be dependent upon market demand for light industrial, retail, office/R&D, and other uses proposed as well as the cost of infrastructure improvements. For example, the Master Plan recommends roadway improvements to accommodate future development including a new collector street that connects Zanker Road to Nortech Parkway and roadway access between Dixon Landing and Zanker road. Improvements to the existing Zanker Road/Highway 237 interchange may also be required. Costs associated with those improvements were not included in the Master Plan.

Uncertainties surround many elements of the land use framework, specifically the ability of the City or a private enterprise to develop the lands and pay for the potentially significant infrastructure improvements noted above. The Master Plan notes that all of the potential land uses will require their own funding sources and that economic subsidies or "innovative funding mechanisms" may be required for light industrial development as well as for the recreation and educational uses. The recreational uses would also require ongoing expenditures to maintain.

ESD staff has noted that the land use element only provides a framework for future development of Plant lands for economic benefits and recreational uses. Actual development decisions would be up to future Councils to determine the timing and funding of the various components of the land use plan.

Audit Objective, Scope, and Methodology

The objectives of our audit were to review 1) ESD's funding and staffing with an emphasis on how ESD's ratepayer funds are used (i.e., sanitary sewer, storm sewer, Muni Water, and Recycle Plus) and 2) the Plant rehabilitation project for opportunities to reduce the cost of the project, expedite the project, and create savings for ratepayers. We sought to understand the operations of ESD and its partners in delivering ratepayer-funded services as well as the Plant rehabilitation project through various interviews and reviews of documentation, including:

- Reviews of applicable federal, state, and local laws and regulations, including California law, specifically Proposition 218 which governs the use of property-related fees in California, and sections of the City's Municipal Code.
- Interviews with ESD management and staff across all of its divisions and select work groups, including job shadowing operations and maintenance staff at the Water Pollution Control Plant and staff in environmental inspection programs.
- Interviews with Department of Transportation and Department of Public Works management and staff, ESD's partner departments in delivering ratepayer-funded services. Audit staff conducted more specific interviews with staff from the Airport; Finance Department; Department of Planning, Building, and Code Enforcement; Office of Employee Relations; Office of Cultural Affairs; the Budget Office; and the City Attorney's Office.
- Research and interviews of staff from other jurisdictions' wastewater treatment plants regarding staffing and compensation, master planning efforts, contracting best practices, and environmental inspection programs. Benchmarked jurisdictions include the San Francisco Public Utilities Commission, East Bay Municipal Utilities District, Central Contra Costa Utilities District, Sacramento Regional County Sanitation District, Union Sanitary District, Palo Alto, Sunnyvale, and others.

- Reviews of documents related to ESD operations and capital planning, including the City's Master Agreement with Santa Clara and tributary agencies for the Plant's operation, maintenance, and capital improvement; current and historical Operating and Capital Budgets; Council memoranda; Plant Master Plan documents; National Pollutant Discharge Elimination System permits; and other program reports and documents.
- Reviews of ESD organization charts, policies, and other internal documentation of ESD operational and capital planning procedures such as rate models and Standard Operating Procedures for implementing capital projects.
- Reviews of spending and encumbrance data from the City's Financial System and staffing data from the City's PeopleSoft payroll system.
- Research of best practices in operating and capital budgeting, capital planning, and government contracting.

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Finding 1 ESD Is Confronting Troubling Staffing Trends and Vacancy Levels at the Water Pollution Control Plant

Summary

The San José/Santa Clara Water Pollution Control Plant (Plant) is a critical component of South Bay sewage infrastructure. In FY 2010-11 alone, the Plant treated 40.4 billion gallons of wastewater, or nearly 111 million gallons per day. A failure at the Plant could endanger public health and safety and the environment, and expose the City to substantial risk of violating its wastewater treatment National Pollutant Discharge Elimination System (NPDES) permit.

Protecting public health and safety and complying with the permit is the responsibility of the Plant's Operations and Maintenance work sections. Unfortunately, the Plant has experienced significant workforce losses in operations and maintenance. Employee separations, including retirements and resignations, have resulted in falling experience levels and increasing overtime hours at the Plant. In other words, fewer people with less experience are now working more hours to operate and maintain the Plant. Plant staff point to compensation as the major catalyst in the decision to leave City employment, and the City found Plant operators to be paid 10 percent below market.

The Administration has begun addressing the Plant's troubling staffing trends, and in our opinion should continue pursuing ways (subject to meet and confer with bargaining units, if applicable) to address both the short- and long-term aspects of the staffing shortage, such as offering skill-specific, time-limited retention bonuses to retain staff in the near term, and conducting formal salary surveys for critical work sections to address perceived pay disparities that could prevent the Plant from attracting and retaining talent in the long term. If the City is unable to address staffing challenges, it will need to continue pursuing alternate means to keep the Plant operational, including (but not limited to) hiring temporary contract labor.

In addition to operations and maintenance staffing shortages, the Plant faces significant infrastructure staffing issues. In April 2011, the City Council accepted the Plant Master Plan preferred alternative, a 30-year $2.1 billion capital improvement program. Implementation of the Master Plan will be challenging as it will significantly increase the annual budgeted Plant CIP. Due in part to staffing challenges in its CIP implementation team, ESD has not been successful in completing even its current annual CIP. To address this, ESD has developed an implementation plan which will rely on a multi-year commitment of Department

of Public Works and consultant staff to augment current staff and expertise, but ESD may lack sufficient expertise to oversee the work unless it can retain its engineering staff.

The San José/Santa Clara Water Pollution Control Plant Is a Critical Component of South Bay Sewage Infrastructure

The Plant runs 24 hours per day, 7 days per week, and 52 weeks per year and treats and cleans wastewater for over 1.4 million residents and businesses in San José and adjacent cities over a 300 square-mile service area. Wastewater from sinks, toilets, and drains inside homes, businesses and schools travels through the underground sanitary sewer system before arriving for treatment at the Plant. According to ESD, that journey can take up to 10 hours. About 18 hours later, 99 percent of the impurities have been removed through a treatment process that simulates the way nature purifies water, but at a greatly accelerated rate. The Plant, which sits at the southern tip of the San Francisco Bay, discharges treated effluent (i.e. the flow out of the Plant) to the Artesian Slough, which flows into the Bay. Exhibit 8 shows an aerial view of the treatment plant (Zanker Road in the foreground).

Exhibit 8: Aerial View of the Plant

Source: ESD website, http://www.rebuildtheplant.org/go/doctype/1823/30075

Plant Failure Would be Dangerous and Costly

A Plant shutdown or failure would imperil public health and safety. Raw sewage could either flow untreated and unimpeded to the Bay and/or back-up through the wastewater collection system (sanitary sewer network) and eventually overflow into streets and streams.[3] Either case would threaten public health and local wildlife and watersheds.

Further, the Plant's operations are governed by a National Pollutant Discharge Elimination System (NPDES) permit. The permit outlines requirements for the Plant's operation, including its permitted dry weather capacity (maximum daily influent volume) and flow limitation (maximum daily effluent to the Bay), and effluent limits for chemicals and pollutants (such as the density of chlorine residual from wastewater treatment, or of cyanide, that may flow to the Bay). The permit explains several of San José's duties as follows:

> Duty to Comply
>
> *1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the CWC and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 122.41(a).)*
>
> *2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)*
>
> Duty to Mitigate
>
> *The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)*
>
> Proper Operation and Maintenance
>
> *The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This*

[3] Santa Clara and tributary agencies own, operate, and maintain their own collection systems.

> *provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order (40 C.F.R. § 122.41(e)).*

Noncompliance with the permit can carry significant financial and operational consequences for the City. For instance, under the U.S. Code and Code of Federal Regulations, the EPA can issue administrative orders against violators, and seek civil or criminal penalties when necessary:

- For a first offense of criminal negligence, the minimum fine is $2,500, with a maximum of $25,000 fine per day of violation. On a second offense, a maximum fine of $50,000 per day may be issued. The first offense may result in imprisonment up to 1 year and the second offense may result in imprisonment up to 2 years.
- For a knowing endangerment violation (i.e., placing another person in imminent danger of death or serious bodily injury), a fine may be issued up to $250,000 and/or imprisonment up to 15 years for an individual, or up to $1,000,000 for an organization.

Moreover, noncompliance can result in more stringent regulatory oversight. Complying with this enhanced regulation, such as more frequent sampling of in-process or treated wastewater or more frequent and detailed reporting, could add millions of dollars in operating and capital costs.

The City of Los Angeles provides a cautionary tale about the costs that can arise from poorly managed sewage and treatment programs. In a July 2011 memorandum to the Los Angeles City Council, the City Administrative Officer wrote:

> *Insufficient investment in wastewater infrastructure increases the risk of emergency failures which is detrimental to public health and safety. It also results in significantly higher costs for repair than through regular upgrades and maintenance due to costs to mobilize emergency contract work and liability claims on damaged private property. In the past two years, the Bureau [of Sanitation] has deferred projects worth over $100 million that addressed the least risky conditions. Although this has helped reduce costs in the short term, continued deferral of these projects can lead to additional failures and costly repairs. The City fell behind on sewer upgrades in the 1990s, leading to regular spills of raw sewage onto private property, streets and beaches. In one instance, a sewer failure in the northeast area incurred a cost of $17 million. Comparatively, the cost of a rehabilitation project that might have prevented that failure was estimated at $2 million.*

In response, Los Angeles was required to fund over 300 infrastructure projects at a cost of approximately $1 billion.

The Plant Has Experienced Significant Workforce Losses in Operations and Maintenance

ESD management has been sounding the alarm about staffing shortages in critical Plant work sections. The trends in Plant staffing levels are the result of both expected retirements and unforeseen resignations. In particular, plant management anticipated that they would be able to fill retirement vacancies with incoming hires; however an increase in resignations has made it difficult to sustain staffing levels. Troubling staffing trends include not only an increased rate of separations and a decrease in overall tenure, but also a high-level of sustained vacancies and an increase in overtime hours logged. Essentially, fewer employees with less experience now work more hours to operate and maintain the Plant, which poses a risk for the Plant's ability to effectively and safely operate.

Critical Work Sections Ensure the Plant's Successful Operation

Protecting public health and safety and complying with the NPDES permit is critically important. These responsibilities fall on the Plant's Operations and Maintenance work sections. According to ESD, work sections critical to the Plant's success include Operations, Maintenance, Electrical, Instrumentation, and Power and Air within the Operations and Maintenance (O&M) division. These work sections fulfill the following roles:

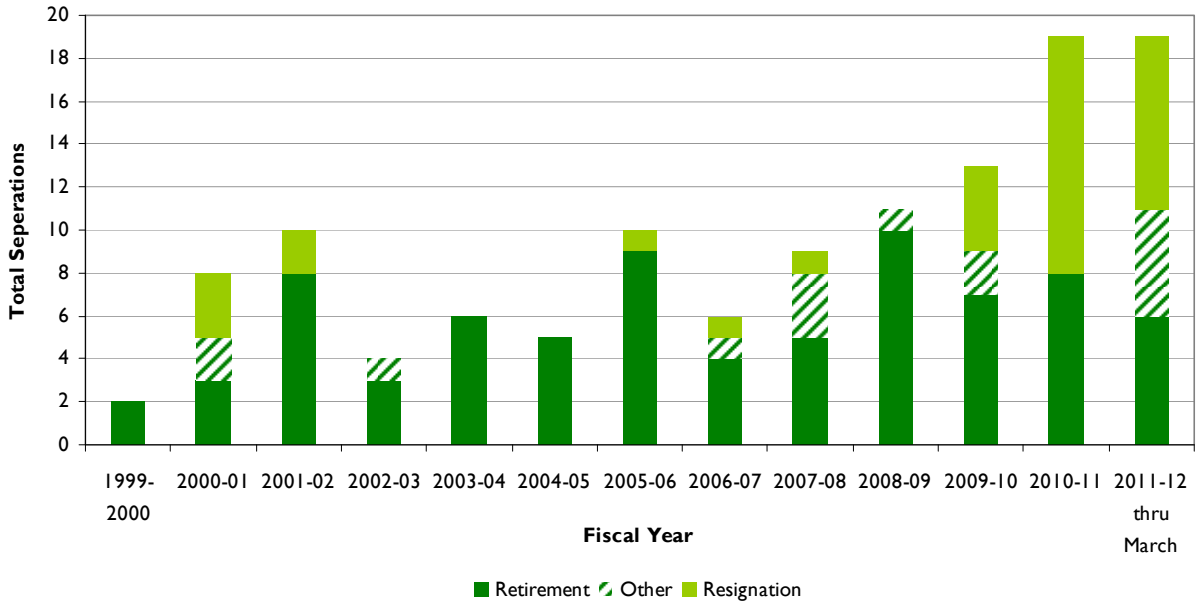
- *Plant operations*: responsible for the daily functioning and control of the Plant. Staff is present 24/7, with a minimum of 8 personnel on site at all times. All Plant operators at the Plant are licensed Wastewater Treatment Plant Operators by the State of California.
- *Mechanical maintenance*: responsible for the maintenance of mechanical systems, coatings protection, and facilities maintenance.
- *Electrical*: responsible for working with high-voltage electrical equipment to keep power flowing through the Plant's many systems and processes.
- *Instrumentation*: responsible for maintenance of the Plant's network of process control instrumentation.
- *Power and air*: responsible for operating and maintaining engine generators, engine blowers, and gas compressors to support 24/7 operation of the Plant by providing 75 percent of its energy needs.

An inability to effectively operate the Plant could endanger public health and safety and expose the City and its residents to significant fines and costs, respectively. The City's first lines of defense against these risks are its Plant O&M staff. However, the ability of these staff to maintain operational excellence may be impaired by troubling staffing trends, described below.

Over 16 Percent of O&M Staff Left in Each of the Last 2 Years

Across all five critical work sections in O&M, the number of annual separations has increased over the past six years. In fiscal years 2010-11 and 2011-12, there were 19 separations each year, or over 16 percent of the O&M workforce in each of the last two years. By comparison, annual O&M separations from 2005-2009 ranged from 5 to 9 percent of the workforce. ESD department-wide separations totaled 15 percent of the total workforce this past fiscal year (2011-12), and have ranged from 7 to 11 percent between 2005 thru 2009. The proportion of separations among O&M staff due to resignation has also increased over recent years (Exhibit 9).

Exhibit 9: Annual Separations by Reason (Plant Operations and Maintenance)



Source: Auditor analysis of data from PeopleSoft
Note: Other includes staff not retained after their probationary period or other reasons for separation

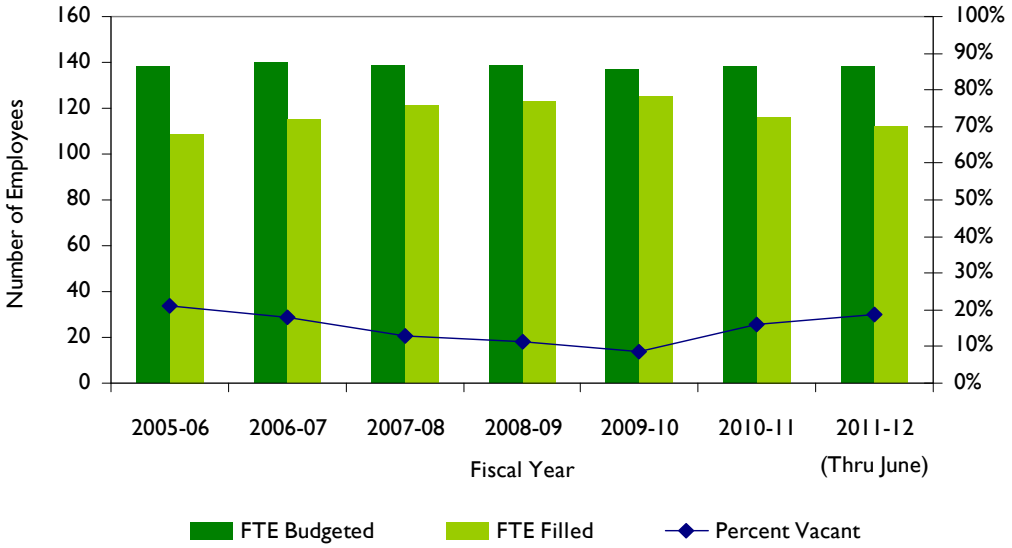
According to Plant staff, ESD anticipated hiring new operators to backfill separations due to retirement. For example, as early as 2008, ESD recognized the need to plan for staff succession. Since then the number of resignations increased.

Twenty Percent of Critical O&M Positions Were Vacant in June 2012

Across all five critical work sections in O&M, the percentage of positions which were vacant fluctuated between a high of 21 percent and a low of 9 percent between fiscal years 2007-08 and 2011-12. By comparison, a recent Union Sanitary District staffing survey of 26 treatment plants showed vacancy levels varied from 0 to 30 percent, with only 2 of the 26 agencies reporting vacancy levels higher than San José's. All respondents reporting 0 percent vacancy were special districts.

Exhibit 10 below shows vacancies as a percentage of total workforce for all five O&M work sections each year. As Exhibit 10 shows, annual vacancies steadily declined from FY 2005-06 to 2009-10 before rising sharply the last two years.

Exhibit 10: Staffing Levels and Vacancies in Plant Operations and Maintenance

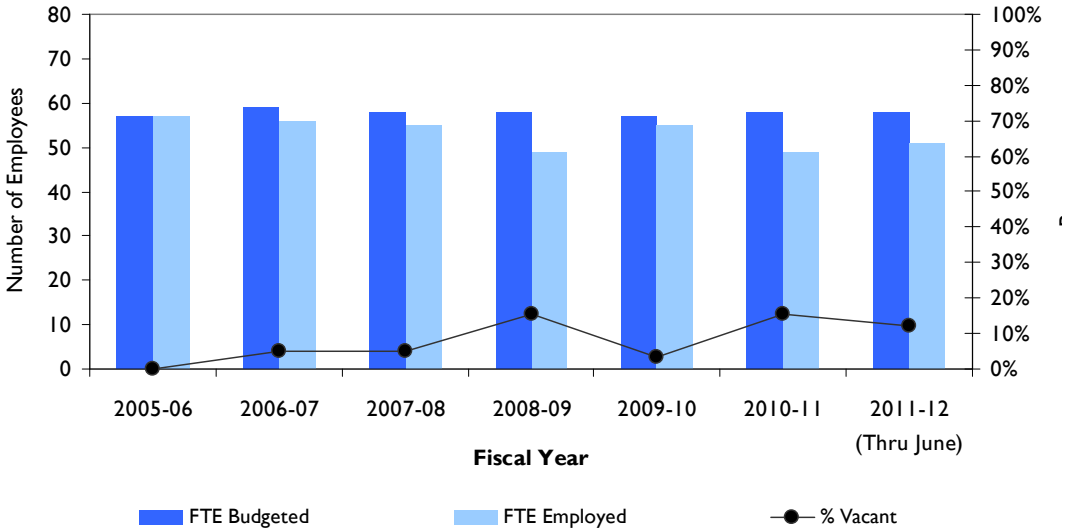


Source: Auditor analysis of data from PeopleSoft and ESD provided FTE budgeted numbers

Plant Operator Staffing Levels and Vacancies

According to ESD, the operations work section has had ongoing trouble hiring and retaining qualified staff. Exhibit 11 illustrates the vacancy trend occurring among Plant operators. Plant operators are required to have a minimum level of state certification which limits the pool of job applicants and places them in high demand.

Exhibit 11: Plant Operator Staffing Levels and Vacancies



Source: Auditor analysis of data from PeopleSoft and ESD provided FTE budgeted numbers

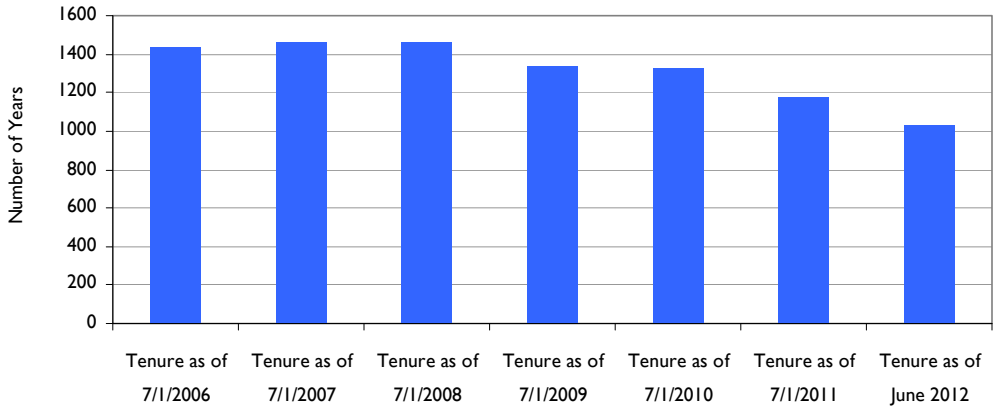
Considered separately, the sustained vacancy levels in operations do not necessarily indicate a crisis; however, when added to the high rate of turnover each year, the situation appears a bit different. According to Plant staff and ESD management, the consistent number of vacant positions produces a constant state of hiring and training which adversely impacts ESD's ability to carry out ongoing plant operations and maintenance.

During FY 2011-2012, five of the 51 plant operators were classified as operators in training. These trainees reduced the number of vacancies by adding to the staffing levels; however, because of their experience level, they are accompanied by a more experienced employee thus diminishing the effective gain in plant operators.

Plant Operations and Maintenance Workforce Experience Is Declining

Across all five critical work sections sampled, the cumulative and average years of experience among staff have steadily deteriorated over the past six years, illustrating a significant decline of tenured employees.[4] Exhibit 12 details the loss of overall experience since 2006 for all operations and maintenance work sections.

Exhibit 12: Cumulative Years of Employee Experience (Plant Operations and Maintenance)



Source: Auditor analysis of data from PeopleSoft

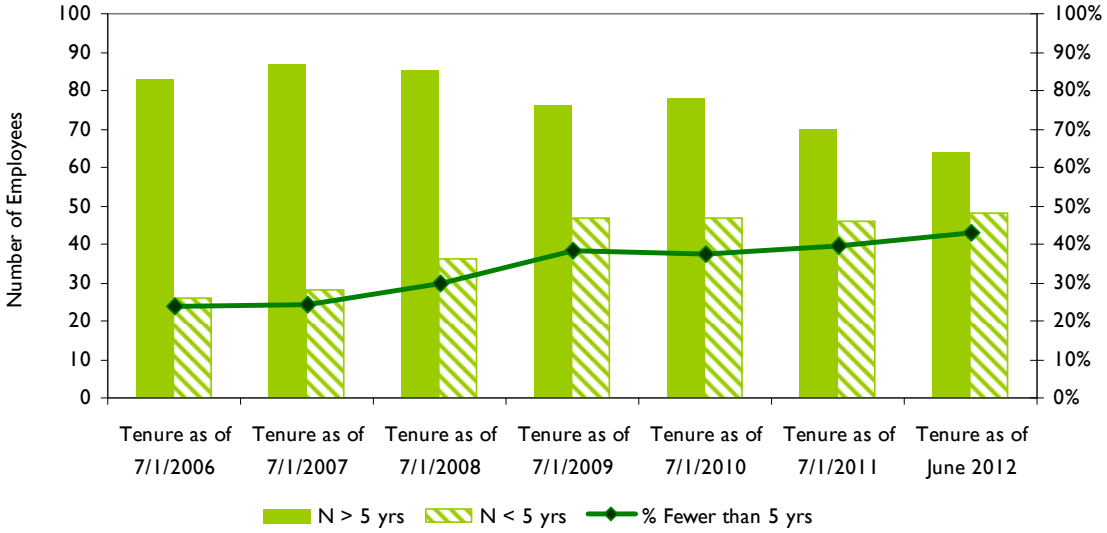
The Proportion of Inexperienced Staff Is Growing

ESD staff makes a distinction between employees with fewer than five years of experience at the Plant (inexperienced) and those employees with tenure greater than five years (experienced). This distinction is based on the average years of experience ESD believes is needed to perform duties effectively and without

[4] Tenure calculations do not include prior comparable work experience for other treatment plants that employees may have.

additional oversight. As shown below in Exhibit 13, the ratio of inexperienced to experienced employees has grown as a percentage of the total workforce. Since 2006, the ratio of experienced to inexperienced employees has dwindled from 3:1 to nearly 1:1, and according to ESD, has increased the strain on experienced staff. Stated differently, the drain on talent may have serious repercussions for staff's ability to balance the workload between adequately training new hires and maintaining plant operations.

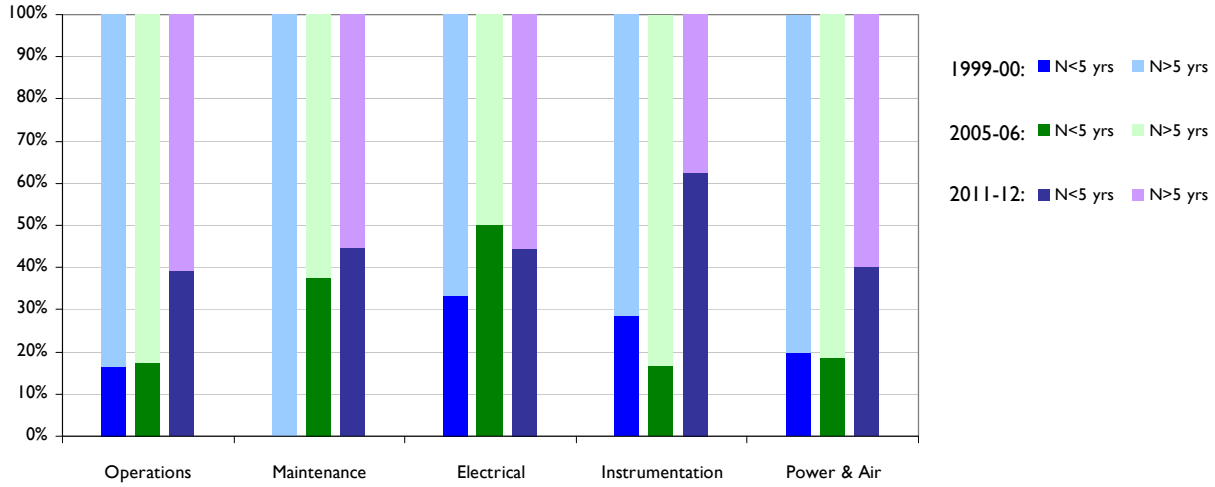
Exhibit 13: Comparison of Inexperienced to Experienced Employees in O&M



Source: Auditor analysis of data from PeopleSoft
Note: N is the number of employees within each experience group

Exhibit 14 further details this phenomenon as a snapshot in time for each of the five critical work sections in operations and maintenance, and shows the breakdown of experienced and inexperienced staff in each work section for the fiscal years 1999-2000, 2005-06, and 2011-12.

Exhibit 14: Distribution of Experienced and Inexperienced Employees in Critical Work Sections

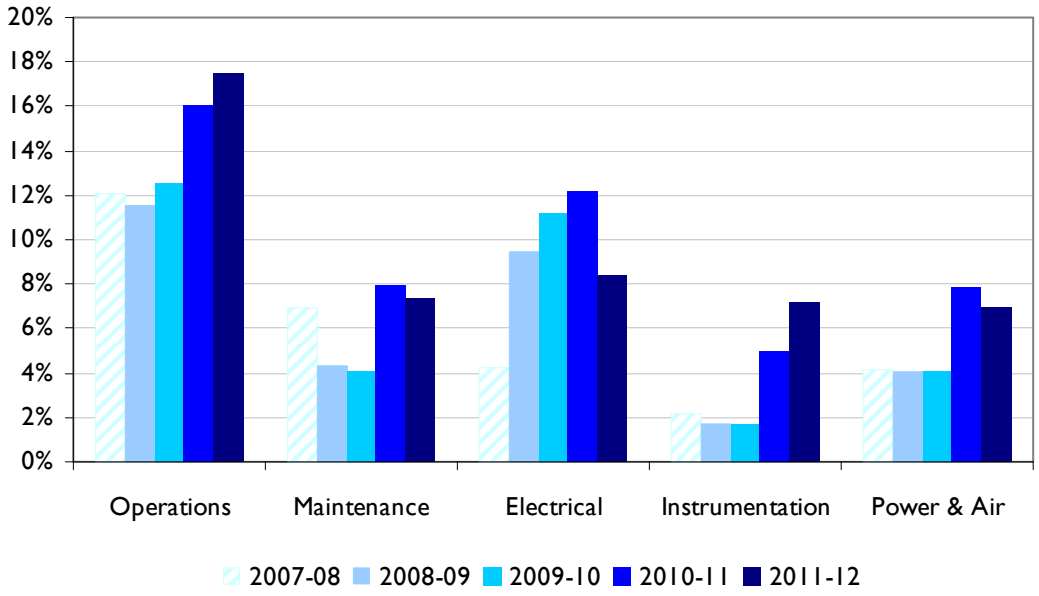


Source: Auditor analysis of data from PeopleSoft
Note: N is the number of employees within each experience group

Overtime Hours Are on the Rise as Workforce Shrinks for Operations and Maintenance

On average, the ratio of overtime to regular time for all O&M increased from about 8 percent per week in fiscal year 2007-08 to just under 12 percent in 2011-12. In other words, employee's average weekly hours worked rose from 43.4 per week in fiscal years 2007-08 to 44.8 hours in 2011-12. The total number of employees decreased during this past fiscal year, leaving remaining staff to take on more duties and accumulate more overtime. This increase in overtime equates to roughly 1.4 additional hours per employee per week across all O&M departments. However, there is significant variability between work sections, with the Plant operators accumulating by far the most overtime. The variability in overtime hours per work section is illustrated in Exhibit 15 below.

Exhibit 15: Ratio of Weekly Overtime as a Percent of Regular Time in Plant Operations and Maintenance Work Sections



Source: Auditor analysis of data from PeopleSoft (FY 2011-12 figures through May)

Overtime in Plant Operations Is the Equivalent of 9 FTE

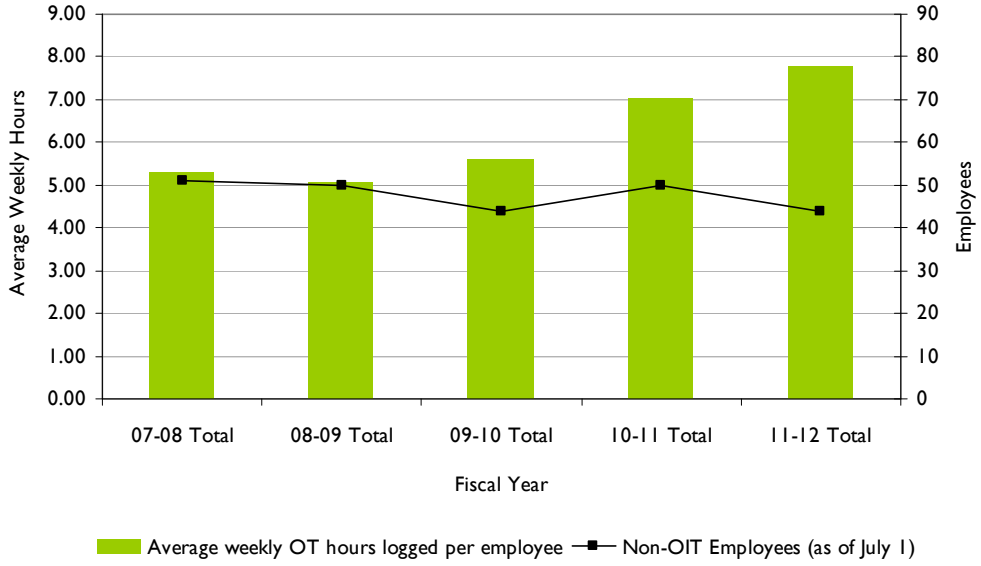
Exhibit 16 shows average weekly overtime hours for Plant operators rose by about 2.5 hours per operator per week between fiscal year 2007-08 and 2011-12.[5] The ratio of overtime to regular hours worked rose from 12 to 17 percent. For fiscal year 2011-12, total overtime logged in operations can be equated to hiring nine additional full time employees.

The overtime logged by Plant operators is greater in San José than in other jurisdictions. The Union Sanitary District staffing survey of treatment plants showed average overtime pay was just under 6 percent of budgeted payroll in other jurisdictions.[6] Comparing Union Sanitary District's overtime benchmarking to San José's overtime hours, San José ranked higher than the 20 jurisdictions that responded with overtime data.

[5] Overtime calculations for Plant operators do not include Operators in Training (OIT).

[6] The treatment plants in Union Sanitary District's survey processed less wastewater and had fewer staff than the Plant.

Exhibit 16: Average Weekly Overtime Logged by Plant Operators



Source: Auditor analysis of data from PeopleSoft (FY 2011-12 through May)

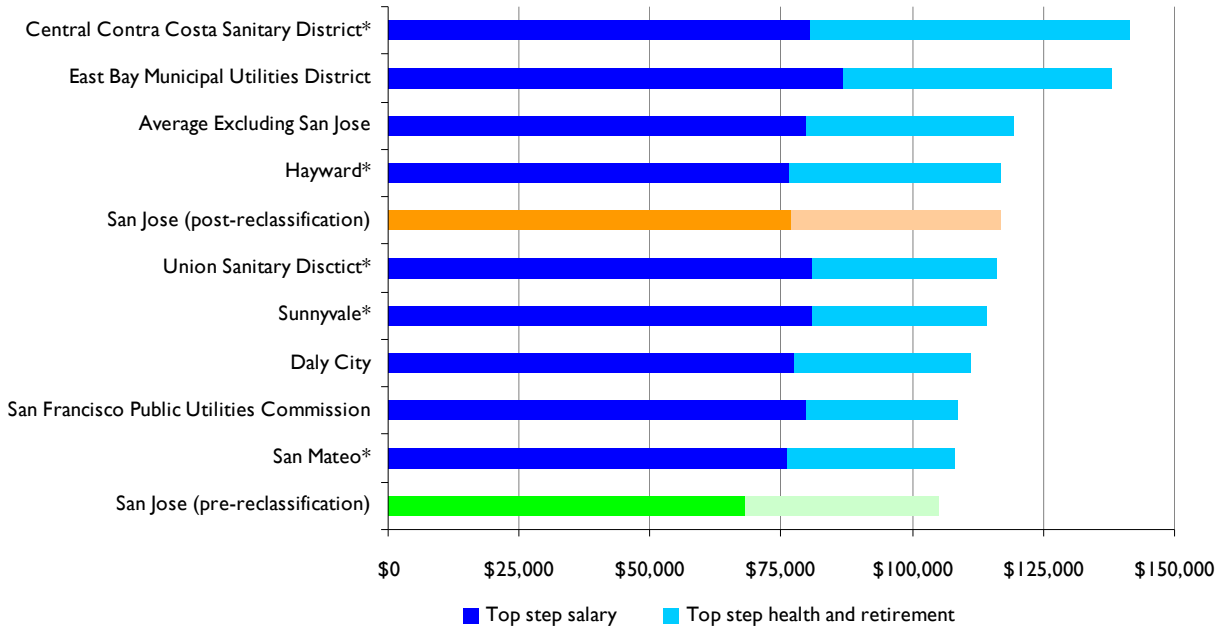
Salaries for Plant Operators Were Lower Than Those of Other Treatment Plants

In conversations with audit staff, Plant operators pointed out—and we verified—that they could potentially take a trainee position elsewhere and receive a higher salary. Specifically, at the time, the top-step salary for City Plant operators was $68,000 per year while the top-step salary for a trainee at the East Bay Municipal Utilities District (EBMUD) was $71,000.

Because of these concerns, ESD requested that the Office of Employee Relations (OER) conduct a formal salary survey. Exhibit 17 presents the results of that survey and shows that City Plant operators received the lowest top-step salary and total compensation (salary plus the employer's cost for providing health and retirement benefits) compared to other jurisdictions. The figures do not account for any changes to total compensation which may result from the recently passed Pension Modification Ballot Measure.

As a result of this survey and the subsequent reclassification of the Plant operator series of positions (described in more detail below), San José moved from the bottom to the middle of the compensation scale.

Exhibit 17: Results of City's Salary Survey for Plant Operators



Sources: Fall 2011 Office of Employee Relations salary survey with auditor additions
* Jurisdiction pays all, or a portion, of an employee's retirement contribution.

As the chart notes, several of the treatment plants in this comparison pay all, or a portion, of an employee's retirement contribution. This results in a higher take-home pay than in jurisdictions (like San José) that do not pay the employee's share. ESD management noted that staff told them that the City's take-home pay was not competitive with other jurisdictions.

The Administration Has Begun Taking Steps to Address the Troubling Operations and Maintenance Staffing Trends

As noted earlier, ESD recognized in 2008 that a large proportion of employees, especially at the Plant, would become retirement eligible over the subsequent five years. As a result, it began a workforce planning process with the intention of establishing or updating standard operating procedures and other training documents that would help transfer knowledge to newer, less experienced employees. Although it began planning early, the rate of employee separations was greater than expected and ESD began taking other steps to ensure sufficient staffing and knowledge to operate the Plant safely.

One step ESD recently took was to "reclassify" Plant operator positions in February 2012, which is to say it amended the titles and salaries for Plant operator positions. As shown in Exhibit 17 above, this action raised the top-step salary for Plant operators to $77,000, the average top-step salary for the other jurisdictions surveyed. The Administration's memorandum to the City Council explained this action as follows:

> *This proposal splits each class in the current Plant Operator series into a set of flexibly staffed classes. The purpose is to recognize increasing job expertise as demonstrated by level of certification and knowledge and experience in specific operational process areas. The expansion of the series provides additional promotional opportunities as a retention incentive for the most difficult to recruit for positions within the Plant operations. This proposal also increases the City's competiveness to recruit personnel with the required certifications from the limited pool of candidates available in the state. Plant operations will benefit by having cross-trained staff who can be assigned to best meet workload demands. This will increase plant reliability and help stabilize the work force through improving management flexibility in making assignments. These measures are required to ensure the reliable operation of this critical facility to ensure the public health and safety.*

It is too soon to tell what effect the Plant operator reclassification has had on retention. ESD management noted that many operators were studying for the advanced state certifications necessary to promote into new positions, but also acknowledged that operators were still leaving the City.

Additionally, in June 2012, ESD reduced the minimum qualifications for Plant operators, to accept a lesser grade of state certification than it had previously, in an attempt to attract a larger pool of job applicants. Lastly, at the end of June 2012, ESD issued a Request for Qualifications to provide possible cost terms for temporary operations, maintenance, instrumentation, and industrial electrician labor at the Plant. As of July 2012, ESD was evaluating proposals received.

Management Turnover Compounds Staffing Challenges

It is important to note that ESD's ability to address the troubling operations and maintenance staffing situations is likely hampered by even greater turnover among its management ranks. Specifically, five of six Plant division managers and deputy directors left City employment during FY 2011-12, as well as five of seven total ESD staff at the deputy director level and above. ESD indicated these departures were for greater compensation. This management discontinuity compounds staffing problems by further eroding the department's knowledge base.

Short- and Long-Term Approaches to Address the Staffing Problem

The staffing trends in Plant operations and maintenance over the last five years are troubling at best, and if continued into the future, could expose the City to substantial risk of violating its wastewater treatment NPDES permit. Unlike some City services, the City's wastewater collection and treatment is a function for which shutting down simply is not an option; it must operate to not only comply with permits, but also protect public health and safety. Thus, the continued

operation of the Plant is a priority and critical to the communities in the region. In order for this to occur, the City must address the issues that prevent the Plant from retaining and attracting qualified staff.

ESD management expressed concern not only about long-term consequences of the staffing trends (e.g., lacking experienced staff to operate and maintain the Plant in the future because of ESD's inability to backfill vacancies from retirements and resignations), but also about retaining enough staff to keep the Plant afloat in the short term. Faced with short- and long-term challenges, ESD's approach should include both short- and long-term elements.

Short-Term Approaches to the Staffing Problem

Given its concern with retaining staff in the near term, we recommend the City consider providing skill-specific, time-limited retention bonuses to critical O&M staff. Retention bonuses are common in the private sector, for example following mergers and acquisitions when top management could leave if not incented to remain for the transition period. Human resources literature suggests that these bonuses can be an effective tool though the efficacy is dependent on how management uses the tool. Literature also cautioned that retention bonuses must be 1) part of a broader retention strategy; 2) skill-specific; 3) short-term; and 4) infrequently used.

An example of a retention bonus in government is the federal Department of Transportation's allowance of continuing bonuses of up to 25 percent of base pay for an individual or 10 percent of base pay for a group or category of employees to help retain key employees, including those likely to retire, for as long as the conditions that prompted the original determination to pay the bonus still exist.

A key advantage of retention bonuses is that they are a short-term, time-limited solution. That is to say, if in one or two years ESD finds that staffing challenges have subsided, it can end the program. Similarly, they are a one-off solution for critical personnel, rather than a blanket change. A time-limited retention bonus could be structured to pay out only after an employee has fulfilled an agreed-upon length of service, and voided if that term of service is not met, and could be structured to terminate once staffing and/or pay levels have stabilized. It should be noted that in order to offer a retention incentive in the form of compensation, the Administration may need to meet and confer with appropriate bargaining units.[7]

[7] In addition, providing the retention bonus may trigger "me-too" clauses in certain labor agreements that will necessitate conversation with some bargaining units, even if their members are not involved in Plant operations and maintenance.

Long-Term Approaches to the Staffing Problem

We believe ESD cannot address its staffing problems via short-term bonuses alone, however. These bonuses would be a bridge, or a stop-gap measure, to allow the Administration time to conduct a broader analysis of compensation for critical Plant personnel. As noted earlier, ESD already requested a formal salary survey for Plant operators and the Administration already reclassified the Plant operator series. The Administration is currently further amending the classifications for Plant operators as well as for electricians at the Plant (to recognize work with high-voltage equipment).

In the long run, to be able to recruit and retain qualified Plant staff, ESD must address perceived pay disparities. One step in this process would be obtaining formal salary surveys for all critical Plant work sections and classifications. The market information can inform ESD and the Administration on the changes necessary to retain and attract qualified personnel to the Plant, and can be used to propose further position reclassifications as necessary.

If ESD is unable to address the apparent compensation problems driving high turnover and vacancy, it will need to continue pursuing alternate means to keep the Plant operational, including (but not limited to) hiring temporary contract labor.

Recommendation #1: The Administration should continue pursuing ways to retain high-performing, critical Plant staff, such as skill-specific, time-limited retention incentives/bonuses, requesting the Department of Human Resources/Office of Employee Relations conduct formal salary surveys for critical Plant work sections, and working with the Office of Employee Relations on potential meet-and-confer issues that such changes would present.

Launching the Plant Master Plan Will Require a Multi-Year Commitment of Public Works and Consultant Staff and Evaluation of Plant Engineering Needs

Given the staffing challenges described above, it is even more challenging to consider that ESD is embarking on a substantial capital improvement project at the Plant – the Plant Master Plan as described earlier in the Background section of this report. ESD has developed a preliminary Master Plan implementation strategy which breaks the $2.1 billion in recommended projects into three packages.

- **Package 1**—$450 million in rehabilitation and repair projects through 2021. These projects are deemed "critical" by ESD and include projects in the various process areas, such as the re-building of the headworks; rehabilitating and seismically upgrading the primary and secondary tanks;

upgrading corroding metallic components and machinery on the heating, cooling, and ventilation systems; and upgrading the electrical distribution systems.

- **Package 2**—$416 million of projects through 2021 utilizing new technologies which are deemed independent of the Plant (i.e., they would be less disruptive to Plant operations than Package 1 projects). These projects include the transition to the new biosolids process, odor control projects, energy generation, and filtration improvements.
- **Package 3**—$1.1 billion in projects beyond 2021 and running through 2040 (averaging about $60 million annually), including estimated end of life replacement of existing infrastructure and projects required as a result of potential new regulations or increased wastewater flows and loads.

The Master Plan Will Increase Annual Capital Spending Dramatically

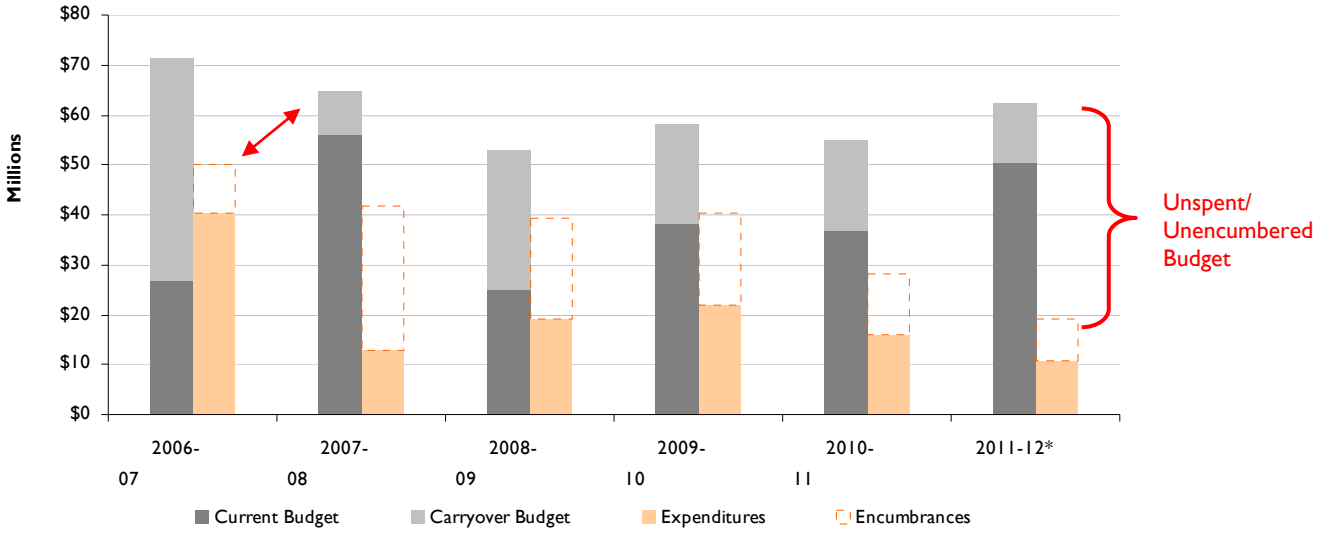
Implementation of the Master Plan represents a significant challenge for ESD as Master Plan-related projects are expected to increase the annual Plant capital budget significantly, from about $50 million budgeted in FY 2011-12 to about $100 million annually through 2021.

ESD Has Not Been Successful Spending Even Its Current Budget for its Plant-related Capital Projects

In FY 2010-11, ESD spent or committed about half of its annual project budgets (including carryover budgets). Spending has been higher in previous years, but is projected to be even less for FY 2011-12. Actual spending averaged only $22 million per year from FY 2006-07 through FY 2010-11. Exhibit 18 shows budgeted versus actual spending on Plant-related capital projects, including carryover amounts from the prior year and year-end encumbrances (money set aside to be spent).[8] The difference between the total budgeted and spent amounts represents the amount of planned activity for which funds have not been encumbered through the execution of contracts.

[8] This does not include non-capital budgeted items such as debt service or expenditures related to development of the Master Plan. It also does not include expenditures related to South Bay Water Recycling capital projects.

Exhibit 18: Budgeted Versus Actual Spending on Plant-related Capital Projects



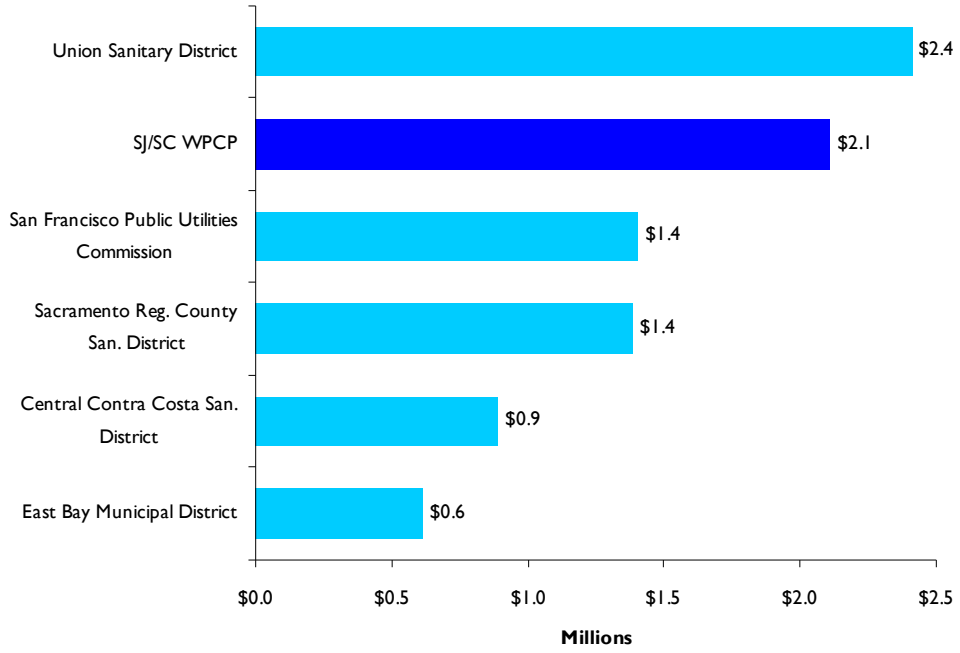
Source: Auditor analysis of Capital Budgets and FMS expenditures
* Spending through June, 2012; however, it may not include any year-end adjustments
** Year-end encumbrances are carried over to the next year as represented by the arrow above.

CIP Implementation Team Staffing Concerns

According to ESD, part of the challenge is that its CIP implementation team is not as large as other treatment plants' teams relative to the size of their capital budgets. Although comparisons are difficult across jurisdictions because scopes of work vary, this appears to be the case as is shown in Exhibit 19.[9]

[9] Although the use of contractors for design services is common, the extent to which contractors are used for such services varies across jurisdictions. Also, the size of the CIP varies across jurisdictions. With the exception of the San Francisco Public Utilities Commission, each of the other jurisdictions' annual CIP was less than $30 million (in one case, Central Contra Costa County Sanitary District, it was under $10 million), whereas the Plant's CIP was around $50 million. On the other hand, the San Francisco Public Utility Commission's annual CIP was much larger, totaling more than $350 million as it contained both treatment plant and sanitary sewer projects (it also reflected increased spending related to the beginning of a multi-year, major sewer infrastructure rehabilitation/upgrade plan similar to the Master Plan).

Exhibit 19: Annual Capital Improvement Program Managed per Staff, FY 2011-12



Source: Auditor analysis of capital budgets and data provided by staff from each jurisdiction

ESD budgeted for four overstrength engineering positions for FY 2011-12 to address the above and in consideration of the potential ramp up of expenditures related to Master Plan implementation.[10] However, these positions were not filled; according to ESD, they could not attract qualified candidates because of the level of pay and the temporary nature of the positions.

Vacancy Trends Among Engineering Team Members

Another staffing challenge facing ESD is that as of July 2012, nearly a quarter of the positions within the engineering services workgroup stood vacant. This does not include the Division Manager position, which had been vacant for more than a year before being filled in late July. Not included in this, but equally important, are the previously discussed vacancies in the positions of Deputy Director of Plant Planning and Development, who oversees the capital program, and the Deputy Director of Plant Operations.

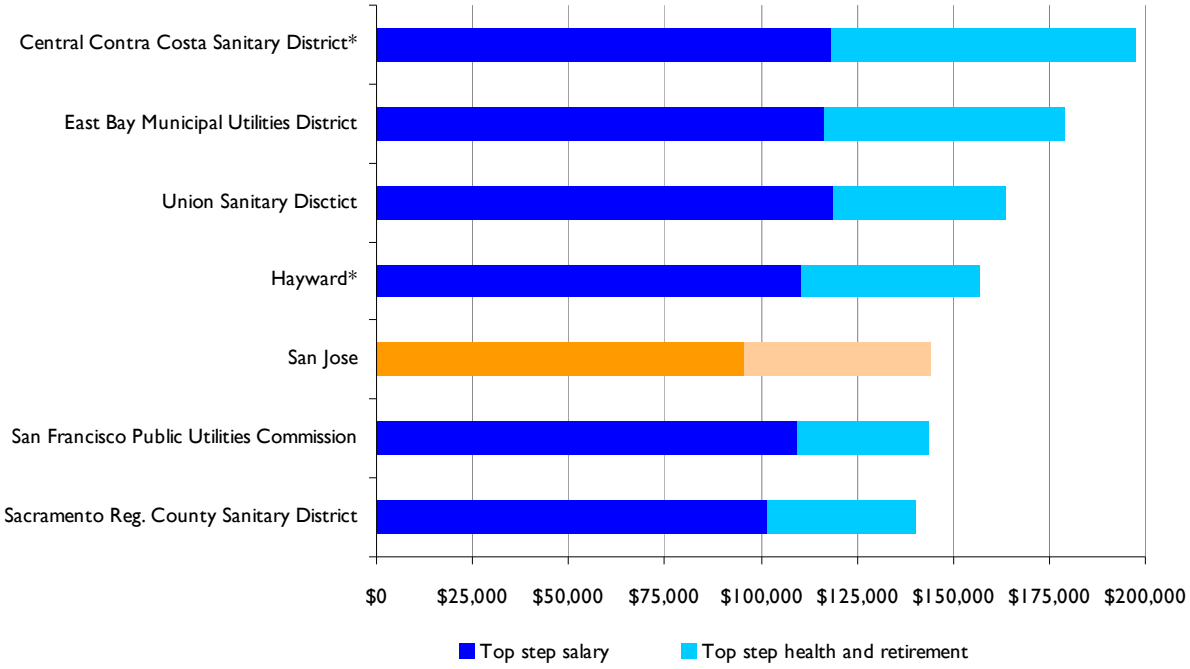
Compensation Issues

According to ESD, the primary reason for high number of vacancies in this work group is compensation. Exhibit 20 shows the results of an informal salary survey for associate engineers. It shows that among the surveyed treatment plants, the

[10] ESD also sought other overstrength positions to support CIP implementation, including a chemist, a laboratory technician, and an instrument control technician.

City has the lowest top step salary. However, when factoring in health and retirement benefits, the City pays higher than both the Sacramento Regional County Sanitation District and the San Francisco Public Utilities Commission but still lags behind other jurisdictions. These figures do not account for any changes to total compensation which may result from the recently passed Pension Modification Ballot Measure.

Exhibit 20: Informal Salary Survey for Associate Engineers at WPCP and Other Treatment Plants



Source: Auditor analysis of job classifications, health benefits, and retirement contributions at the subject treatment plants
* Jurisdiction pays all, or a portion, of an employee's retirement contribution

ESD Plans to Augment Its Current Staff and Expertise with Public Works Staff and Consultants, but May Lack Sufficient Expertise to Oversee the Work

Because of the scope and complexity of Master Plan implementation, ESD is considering augmenting its current staff and expertise with staff from Public Works and consultants in order to complete the Master Plan projects effectively and in a timely manner.

According to ESD, Package I projects rehabilitate existing processes and are therefore highly disruptive of Plant operations. They will require significant planning, coordination, and oversight to ensure Plant operations are not interrupted and that there is not a spill or any violation of the Plant's NPDES

permit. ESD plans to procure an overall program management consultant to provide oversight and quality assurance/quality control over the consultant design of Package 1 projects.

Public Works is expected to take the lead on Package 2 projects. They are considering utilizing an alternative to the traditional design/bid/build approach to project delivery. Under the design/bid/build approach, Plant staff or consultants design projects, and then separately contracts for construction with a separate firm. The options being explored include:

- Design/Build—One contractor for both design and construction of a project
- Design/Build/Operate—One contractor to design, construct, and operate the project

One of the perceived benefits of the design/build and design/build/operate delivery methods is it can reduce risk to the City. For example, because the same firm both designs and constructs a project, they bear the risk of any constructability issues that may arise when moving from design to construction.

Reliance on Public Works and consultants can help deliver Master Plan projects in the short term; however, it does not eliminate the need for qualified engineering staff at the Plant. Contracts will still need to be managed and staff who are knowledgeable of the Plant processes and operations may be best suited for that task. Also, the Master Plan is a planning document which has multiple decision points in the future related to technology assessments, acceptance of design drawings, and others. In the long term, ESD will need to be able to attract and retain quality engineering staff with specialized sanitary sewer knowledge to ensure future capital projects are completed successfully.

Recommendation #2: The Department of Human Resources/Office of Employee Relations should conduct a formal salary survey for consideration in an evaluation for retaining critical Plant engineering staff.

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Finding 2 Successful Plant Master Plan Implementation Will Require Strong Oversight and Reporting Systems

Summary

ESD has prepared a preliminary implementation strategy for Master Plan projects, which, because of staffing concerns, relies heavily on consultants. The City will need to utilize contracting best practices employed currently by Public Works or by other jurisdictions to ensure successful project completion. These best practices include the potential use of outside legal assistance to develop contracts with clearly defined goals and performance expectations; ongoing audit work; employment of management controls such as independent cost estimators for any future design/build or design/build/operate contracts; and the development systems to oversee and report on Master Plan progress. In addition, implementation will require coordination with and involvement of operations and maintenance staff; ESD has begun to address perceived problems in this area.

Current sewer rates are expected to cover some, but by no means all, of the cost of currently planned Master Plan projects on a pay as you go basis. ESD is considering bond financing for the projects that cannot be paid for on a pay as you go basis from current rates; it has had preliminary discussions with the Finance Department about potential timing. ESD should evaluate and present to the City Council and the Treatment Plant Advisory Committee the potential rate impacts of such financing.

Because projects included in the Master Plan are in the early "study or feasibility" stage, cost estimates are expected to fluctuate. ESD should also periodically reevaluate and reprioritize Master Plan projects in response to regulatory, technological, or economic changes; implementation and financing challenges; and ratepayer impacts.

Success Depends Upon the City's Ability to Develop and Manage Contracts

Because of the scope of the proposed projects, ESD may need to rely on consultants to help implement Master Plan projects. For example, as noted in Finding 1, ESD expects to hire a consultant to provide program management services for Package 1 projects totaling $450 million. ESD is also considering utilizing an alternative delivery approach (i.e., a design/build or design/build/operate contract) for Package 2 projects totaling $416 million.[11] In

[11] See Finding 1 for more description of Packages 1 and 2. Note, the Master Plan is not yet final (i.e., the EIR process is expected to be completed in June 2013), and further refinement of the projects within Packages 1 and 2 is to be expected.

addition, ESD expects to rely on Public Works to take the lead on Package 2 projects – projects that ESD identified as posing the greatest challenge given ESD's internal staffing constraints.

The City's ability to develop and manage these contracts is a key to achieving desired results. This includes keeping projects on schedule and on budget. Package 1 includes projects ESD has identified as critical rehabilitation; delays could mean increased risk to Plant operations. Also, because of the scale of Packages 1 and 2 (currently estimated at $866 million), even a 2 percent increase in costs would result in an additional $17 million in costs to ratepayers.

The use of contractors is common in the wastewater industry and covers activities related to both capital programs and operations. For example, treatment plants often contract with outside engineering firms for construction as well as pre-construction activities, such as special studies and design services. The latter are often for large, complex projects for which in-house expertise is lacking or where special expertise is needed. Currently, ESD has master agreements with five engineering firms to assist with condition and environmental impact assessments, pre-design studies, detailed design, and engineering support during project construction.

Some plants have contracted out operations of specific processes, such as biosolids management. At least two large cities, Milwaukee and New Orleans, currently contract out all treatment plant operations and maintenance activities. This is also the case for some small California cities such as Burlingame.[12]

Contracts Should Have Clearly Defined Goals and Performance Expectations

Literature on best practices in government contracting states that success is dependent upon having clear expectations and performance standards in contract documents. The lack of such agreed upon expectations was cited by the Georgia Public Policy Foundation as a reason for the 2003 cancellation of a water utility operations contract by the City of Atlanta. The city cancelled the contract after just four years, citing multiple performance issues and asserting the contractor was not compliant with the terms of the contract. At the same time, the contractor was seeking $80 million in additional reimbursements for services performed outside the scope of the contract.

[12] In at least one instance, a large city (Indianapolis) completely divested itself of its wastewater utility by selling the assets to a nonprofit agency (which in turn contracted with a different firm under an operations and maintenance contract).

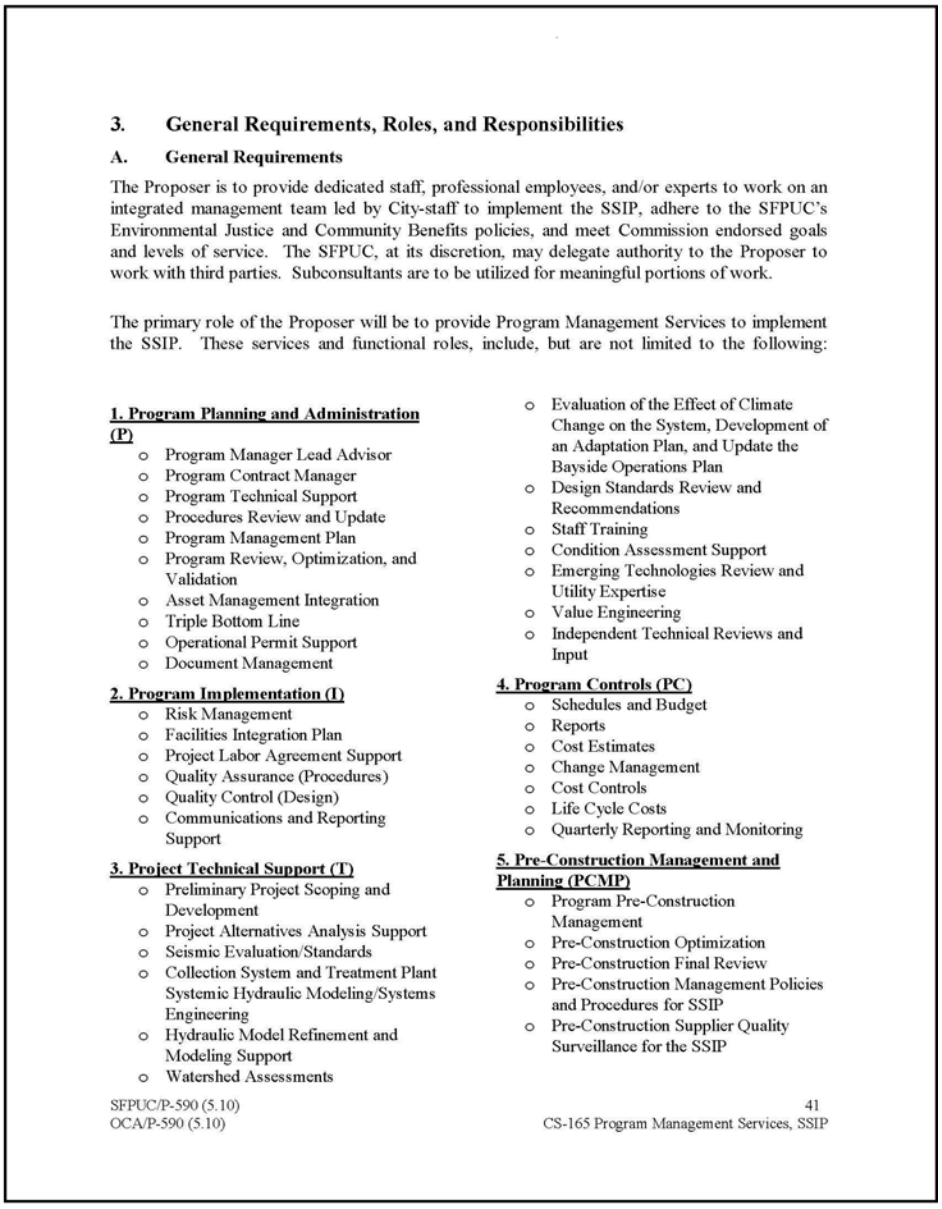
Other Jurisdictions Have Utilized Broad Program Management Service Contracts

Similar to ESD's plans for Package 1 implementation, other treatment plants have contracted for broad program management services in instances where the plant's CIP was being ramped up to accomplish major rebuilding or enhanced levels of treatment. These contracts have been (or are) generally multi-year contracts and can total tens or even hundreds of millions of dollars. Although the scopes of work may vary, some common features include such tasks as setting up a project controls group, the review or update of design standards, project feasibility analyses, and quality assurance/quality control.

One example is the San Francisco Public Utilities Commission (SFPUC). The SFPUC has contracted for broad program management services for both its Water System Improvement Program (WSIP) and its Sewer System Improvement Program (SSIP). According to staff from the SFPUC, one of the lessons they learned during the WSIP was that you "need to know what you want to buy" when you are writing or negotiating the scope in such a contract.

Exhibit 21 contains a section from a SFPUC program management services RFP describing the general performance requirements. This section in the RFP was followed by more detailed descriptions of each of the responsibilities, including specific deliverables and numbers of hours expected for each task.

Exhibit 21: Scope of Services from SFPUC Program Management Services RFP for its Sewer System Improvement Program (SSIP)



3. General Requirements, Roles, and Responsibilities

A. General Requirements

The Proposer is to provide dedicated staff, professional employees, and/or experts to work on an integrated management team led by City-staff to implement the SSIP, adhere to the SFPUC's Environmental Justice and Community Benefits policies, and meet Commission endorsed goals and levels of service. The SFPUC, at its discretion, may delegate authority to the Proposer to work with third parties. Subconsultants are to be utilized for meaningful portions of work.

The primary role of the Proposer will be to provide Program Management Services to implement the SSIP. These services and functional roles, include, but are not limited to the following:

1. Program Planning and Administration (P)
- Program Manager Lead Advisor
- Program Contract Manager
- Program Technical Support
- Procedures Review and Update
- Program Management Plan
- Program Review, Optimization, and Validation
- Asset Management Integration
- Triple Bottom Line
- Operational Permit Support
- Document Management

2. Program Implementation (I)
- Risk Management
- Facilities Integration Plan
- Project Labor Agreement Support
- Quality Assurance (Procedures)
- Quality Control (Design)
- Communications and Reporting Support

3. Project Technical Support (T)
- Preliminary Project Scoping and Development
- Project Alternatives Analysis Support
- Seismic Evaluation/Standards
- Collection System and Treatment Plant Systemic Hydraulic Modeling/Systems Engineering
- Hydraulic Model Refinement and Modeling Support
- Watershed Assessments
- Evaluation of the Effect of Climate Change on the System, Development of an Adaptation Plan, and Update the Bayside Operations Plan
- Design Standards Review and Recommendations
- Staff Training
- Condition Assessment Support
- Emerging Technologies Review and Utility Expertise
- Value Engineering
- Independent Technical Reviews and Input

4. Program Controls (PC)
- Schedules and Budget
- Reports
- Cost Estimates
- Change Management
- Cost Controls
- Life Cycle Costs
- Quarterly Reporting and Monitoring

5. Pre-Construction Management and Planning (PCMP)
- Program Pre-Construction Management
- Pre-Construction Optimization
- Pre-Construction Final Review
- Pre-Construction Management Policies and Procedures for SSIP
- Pre-Construction Supplier Quality Surveillance for the SSIP

SFPUC/P-590 (5.10)
OCA/P-590 (5.10)

41
CS-165 Program Management Services, SSIP

Source: San Francisco Public Utilities Commission

Examples of Design/Build and Design/Build/Operate Contracts

Design/build and design/build/operate contracts are alternatives to the traditional design/bid/build approach to capital project delivery. The primary feature is that one contractor is used for both design and construction (and operations in the case of design/build/operate) rather than separate contractors for design and construction services.

The Sacramento Regional County Sanitation District utilized a design/build/own/operate contract for a biosolids recycling facility which came online in 2005.[13] According to district staff, their contract detailed the general performance expected by the contractor (e.g., number of tons processed, quality of output) as well as provided limits on the allowable technologies.

The City has experience with design/build contracts; one was utilized for the Airport's $1.3 billion Terminal Area Improvement Program and another is being utilized for the current Convention Center expansion. According to Airport and Public Works staff, the use of these contracts has generally been positive.

Utilizing Outside Consultant and/or Legal Assistance to Negotiate or Draft Complex Contracts

ESD has extensive experience utilizing consultants for pre-construction engineering services as well as construction activities at the Plant. However, the scope, scale and complexity of the program management services contract planned for Package 1 projects are greater than contracts utilized in the past. Also, as noted in Finding 1, there are currently vacancies in positions (i.e., Plant management staff) that would otherwise likely help develop the scope of services of such contracts.

In addition, although Public Works has experience with design/build contracts from its work with the Airport on the Terminal Area Improvement Program and the Convention Center, the use of design/build contracts for Plant-related capital projects is new and may present a different challenge.

The National League of Cities has noted that seeking private contractors to provide municipal services can be complicated and recommends that jurisdictions hire an outside expert to negotiate a sound contract. Defining performance expectations may require outside expertise of other professionals. The Sacramento Regional County Sanitation District used an outside consultant when it developed its RFP for its biosolids facility design/build/own/operate contract. Similarly, the City Attorney's Office retained outside counsel to assist with the negotiation and drafting of the design/build contract for the Airport's Terminal Area Improvement Program because the City Attorney determined that use of outside counsel was warranted at the time.

According to Public Works, they have begun discussions with the City Attorney's Office about seeking outside legal assistance for potential Package 2 design/build contracts.

[13] A design/build/own/operate is a variation of design/build/operate. In this case, the contractor financed and owns the facility over the life of the contract. At the end of the contract, ownership will revert to the district.

Ongoing Audit Work

Other wastewater facilities have required ongoing audit work related to their major rehabilitation or expansion projects. In 2002, the Orange County Sanitation District contracted for broad program and construction management support services in relation to a 10-year, $2.8 billion CIP (according to district staff, the amount spent for these services totaled about $150 million over the life of the contract). Over those ten years, the district board used an outside accounting firm to conduct a series of audits on such topics as permitting, design, and RFP processes; design scheduling and documentation; and progress payments.

The Airport also contracted with an outside firm to conduct audit work on the Terminal Area Improvement Program contract. The audit work was conducted on a semi-annual basis per task orders issued by the Airport. Audits included reviewing contract terms and conditions and the payment application process, determining if costs invoiced were based upon costs incurred, validating whether costs were allowable, and reviewing contract procedures.

ESD/Public Works Should Utilize Additional Controls for Design/Build or Design/Build/Operate Contracts

The Airport contracted with an outside firm to provide cost estimating services separately from its design/build contractor for the Terminal Area Improvement Program. Airport and Public Works staff stated the consultant was generally considered as the first opinion when establishing budgets and that the external cost estimating firm was a key in keeping the project on budget. The Airport also engaged a separate contractor to set up a controls group to manage costs and schedules to keep the various Terminal Area Improvement Program activities on track.

According to Public Works, they routinely seek help from outside consultants to implement controls or for other purposes during major capital programs. We believe this is a good practice to be continued due to the scope and complexity of Master Plan implementation, as well as the staffing challenges noted in Finding 1.

Recommendation #3: To ensure that contract deliverables, goals and performance standards are clearly defined, the Environmental Services Department and the Department of Public Works should consider utilizing outside consultants to help solicit and draft agreements for program management services and future Design/Build or Design/Build/Operate contracts related to the Water Pollution Control Plant's capital projects. The City Attorney's Office should determine whether retaining counsel to assist with the negotiation and drafting of these contracts is warranted.

Recommendation #4: During implementation of Plant Master Plan projects, the Environmental Services Department should provide for ongoing construction audit or other audit work.

Recommendation #5: The City should consider using an external firm(s) to provide independent cost estimating services or additional cost/scheduling controls for projects utilizing Design/Build or Design/Build/Operate contracts related to Water Pollution Control Plant capital projects.

Oversight and Reporting Systems Are Critical to Ensure Successful Master Plan Completion

Currently, the Treatment Plant Advisory Committee (TPAC) provides executive level oversight over all Plant-related issues, including operations and capital programs. TPAC is comprised of nine members: three members from the San José City Council, two from the Santa Clara City Council, one from Milpitas City Council, one from the West Valley Sanitation District, one from Cupertino Sanitary District, and the San José City Manager or designee. ESD and tributary agency staff also meet monthly as a technical advisory committee to review TPAC agendas and discuss Plant-related issues prior to the TPAC meetings.

Both the TPAC and the technical advisory committee provide oversight over all Plant-related topics – not just capital projects. Although discussions of individual capital projects may be among the topics discussed at the various meetings, neither TPAC nor the technical advisory committee is tasked with monitoring progress on individual projects or ensuring that the CIP is kept on track and on budget (i.e., it is not the role of these bodies to manage the capital program but to provide broad oversight).

Management Oversight of Capital Improvement Projects

During the City's decade of investment, because of the scope of projects across departments, the City created a CIP Action Team in the City Manager's Office to assist with project challenges and remove barriers to project delivery; monitor all CIP projects to ensure the City is meeting its quality and on time, on budget goals; and provide a one-stop information resource for the Mayor, Council, City staff, and public. According to one member of the CIP Action Team, another function was to step in to actively manage or push projects when they saw that a project was not advancing.

Interdepartmental Coordination Is Underway

ESD and Public Works management have formed a steering committee which has been meeting on a regular basis to serve a similar function for Master Plan implementation.[14] Discussion topics have included potential financing, current project issues, project delivery strategy, and others. We believe this is a good practice and should be maintained over the course of Package 1 and 2 implementation.

Best Practices for Effective Capital Project Monitoring and Reporting

The Government Finance Officers Association (GFOA) recommends that governmental entities should establish policies and procedures to support effective capital project monitoring and reporting to mitigate risks. Among the steps GFOA advises officials to take are to:

- Plan and design systems to collect, store, and analyze project data and to report results
- Regularly monitor capital projects' financial and project activity information (e.g., compare results to established performance measures)
- Report on project status and activities

GFOA also recommends that periodic reports should be issued routinely on all ongoing capital projects. The reports should compare actual expenditures to the original budget, identify the level of completion of the project, and enumerate any changes in the scope of the project, and alert management to any concerns with completion of the project on time or on schedule. Examples of capital project reporting include:

- During the City's decade of investment, the CIP Action Team prepared regular status reports containing targets and goals for the entire CIP, as well as multiple performance measures.
- The Orange County Sanitation District required regular reporting by its program management consultant on the status of individual projects, as well as key performance indicators.
- The Airport issues annual status reports on implementation of its Master Plan. During the Terminal Area Improvement Program, it also issued quarterly status reports. The Airport posted these reports on its website.

[14] This includes former members of the CIP Action Team.

Need for Supplemental Reporting

The City reports on its CIP in a couple of different documents; however, these reports are not focused on Master Plan projects and in some cases the information on specific projects is limited. One such document, the annual Citywide CIP Status Report prepared by Public Works, does not appear to have been provided to TPAC or TAC for review.

The difficulty tracking Master Plan projects using existing reporting mechanisms is illustrated by the recent history of one project at the Plant related to its headworks facilities. In 2009, a consultant analysis indicated that it would be cost effective to expand the new headworks to be the Plant's future sole headworks facility rather than investing significant resources overhauling the old headworks. Following is a short history of this project as reported by ESD in the City's Adopted Capital Improvement Programs.

- 2011-2015 CIP – The project is initially included in the annual CIP with a total estimated cost of $133 million, $4 million of which is included in the 5-year CIP (scheduled to begin in FY 2014-15).
- 2012-2016 CIP – The project is combined with a previously separate headworks enhancement project. The revised project cost estimate was $91.6 million, $39 million of which was included in the 5-year CIP. The explanation for the reduction was a change in scope of the combined project.
- 2013-2017 CIP – The project was broken back out into separate projects. The expansion project's total estimated cost was now $79.4 million, only $500,000 of which was included in the 5-year CIP (scheduled for FY 2012-13). This funding was to further evaluate the prior decision to expand the new headworks or fully refurbish the old headworks.

Although all of the above information is included in the City's annual CIP, the CIP is a budgetary document and it is difficult to piece together all of the changes in scope, progress on the project, or reasons behind changes in scope or timing. This project was also not included in the Citywide CIP Status Report. We believe improved reporting on Master Plan capital projects would enhance oversight over the progress, costs, and efficiency of the overall implementation.

Performance Metrics

According to ESD, they plan to provide semiannual project status reports on Master Plan project implementation. Because this would provide executive leadership (i.e., the City Council and TPAC) and the public the ability to review the status and expected completion of Master Plan projects, we believe this would be a good practice and support these plans. In addition, we believe these reports should include performance measures such as those used by the CIP Action Team or other jurisdictions. Examples include:

- On time, on budget measures
- % of projects which were functional and sustainable after the first year of use (as rated by O&M staff)
- % of customers (staff) rating projects as meeting established goals
- Annual expenditures as a % of annual budget (Orange County Sanitation District set a goal of 90 percent)
- Change order rate
- Non-construction costs as a % of total costs

Recommendation #6: The Environmental Services Department and the Department of Public Works should continue to develop a management oversight structure to monitor overall CIP effort and ensure projects remain on budget and on schedule.

Recommendation #7: The Environmental Services Department should provide regular status reports to the Treatment Plant Advisory Committee and the City Council on Plant Master Plan implementation, including overall progress to date and individual project updates, performance measures, and any issues that have arisen, in particular those which may have rate impacts. To improve transparency, the Environmental Services Department should also post these on its website.

Implementation Will Require Coordination with and Involvement of O&M Staff at the Plant; ESD Has Begun to Address Perceived Problems in This Area

Another challenge that ESD faces is that the Plant is a live facility which runs 24 hours a day, 7 days a week. It cannot be shut down to accommodate construction activity. For this reason, implementation of Master Plan projects will require coordination and involvement with O&M staff who know best what can be taken offline and when. Furthermore, Plant staff is knowledgeable about what currently works and what doesn't at the Plant, and should be consulted about the practical implications of proposed capital projects.

Currently, coordination and involvement of O&M staff is included in ESD's procedures for designing and constructing capital projects at the Plant. Also, the Plant organization chart identifies dedicated maintenance and operations liaisons with the engineering team. However, because of the staffing concerns noted in the Finding 1, actual coordination with O&M has been a challenge. For example, currently the liaison position between the engineering and maintenance divisions is vacant.

ESD management has also noted that communication between engineering and O&M staff related to the capital program can be improved. ESD has begun taking steps to address this, such as planning process area-specific workshops about the CIP that will include both engineering and O&M staff. Among the goals of these will be to gain O&M staff input to ensure the rehabilitation work proceeds smoothly and any problems are corrected. According to staff, O&M staff are also now included in planning meetings and ESD is currently trying to identify ways to share project-related information between CIP and O&M staff, both in the planning and construction phases

According to the Airport, co-locating, or integrating, contractor and City staff was valuable during the Terminal Area Improvement Program, as it helped with the flow of communication. The Airport design/build contractor also had a dedicated staff liaison with Airport operations staff. According to Public Works, co-locating consultant and City staff is being considered for the upcoming Program Management Services contractor as well as for future design/build contracts.

The benefits of co-location go beyond just improving communication with O&M staff, but can facilitate knowledge transfer between consultant staff and the engineering team. According to the Orange County Sanitation District, integrating its consultants with its existing engineering team enabled district staff to learn from the consultants such that their expertise was not lost once the contract had been completed.

Recommendation #8: The Environmental Services Department should continue to improve communication between Operations & Maintenance and capital program staff, and coordinate involvement of Operations & Maintenance staff in capital project delivery.

Recommendation #9: The Environmental Services Department and the Department of Public Works should continue their practice of co-locating contractor and City staff for future Package 1 and Package 2 project implementation to facilitate work and coordination with Operations & Maintenance staff and expedite knowledge transfer. The Environmental Services Department should also consider requiring contractor to dedicate staff to liaise with O&M staff.

ESD Should Periodically Review Its Long-Term Capital Plans in Response to Changing Conditions and Keep Council and TPAC Apprised of Future Ratepayer Impacts

As Master Plan project implementation is in its early stages, it is not yet clear what the full impact will be on sanitary sewer rates. Beginning in FY 2008-09, ESD began raising rates to reflect the increased CIP needs identified in the 2007 Infrastructure Condition Assessment. This resulted in single-family residential rates rising from $23.56/month to the current rate of $33.83/month (an increase of more than 40 percent).

Current Rates Do Not Reflect Cost of All Proposed Master Plan Projects

ESD projects that current sewer rates are sufficient to fund the $450 million in rehabilitation and repair projects in Package 1 as well as the projected future costs of Package 3 (currently estimated at about $60 million per year from 2021 through 2040). Current rates are not presumed to be sufficient to cover the additional costs of Package 2.

ESD is considering bond financing to fund the $400 million of Package 2 projects. They have had preliminary discussions with the Finance Department to evaluate potential timing. Utilizing bond financing is a way to minimize rate spikes that could occur when major capital improvement plans are funded on the "pay as you go" basis. It also is a way to match the cost of capital spending with the length of the lives of assets (i.e., current ratepayers are not paying for assets for which future ratepayers are benefitting).

Sewer rates are set based on the revenue needed to pay for the costs of operating the sanitary sewer system and the Plant. Future revenue needs would be increased by any annual debt service that bond financing would create, and could result in a significant increase in sewer rates for San José and tributary agency ratepayers.[15] Future revenue needs would also be affected by any change in operating costs resulting from implementing Master Plan projects. For example, ESD estimates that the biosolids transition could add up to $10 million in operating costs, primarily related to the energy needs of the new process.

The GFOA stresses the importance of establishing a viable financing approach for supporting multi-year capital plans and recommends that governments evaluate the affordability of the financing strategy, including the impact on ratepayers and others.

[15] The City is currently developing a Sanitary Sewer Master Plan to direct future sewer infrastructure investments. Any increase in sewer-related capital expenditures resulting from this planning process would similarly result in higher sewer rates.

Recommendation #10: The Environmental Services Department should evaluate and present to the City Council and the Treatment Plant Advisory Committee the potential ratepayer impacts of implementing the Master Plan once the Environmental Impact Report is complete.

The Master Plan Relies on Assumptions about Future Events; as a Result, Much Uncertainty Surrounds Projected Costs

As the Master Plan is a 30-year planning document, it includes various assumptions about future events which will impact capital decision making. This creates uncertainty surrounding projects included in the Master Plan, especially those scheduled for many years out. Specific areas of uncertainty which could have rate impacts include:

- Future regulations and permit requirements[16]
- Future flows and loads
- Available technologies—the Master Plan includes provisional technology choices and states that updated technology assessments should be conducted as part of the early implementation of each project
- Cost inflation for both construction materials (see discussion below) and expenses related to operations which could affect the life cycle cost analysis of different technologies
- Potential effects of sea level rise and its impact on the Plant
- Results of an odor study currently underway
- Final decision on addressing the legacy lagoons[17]

In addition to the above, the projects included in the Master Plan are deemed to be in the "study or feasibility" or "concept screening" stage of project definition. As projects move from these stages to fully conceptualized and designed projects, cost estimates can change dramatically. According to American Association of Cost Engineering International guidelines, because projects in the "study or feasibility" phase are at such an early stage of development, actual costs could be as much as 30 percent less than or as much as 50 percent more than these early cost projections. Projects at the "concept screening" stage can expect even greater variation in costs.

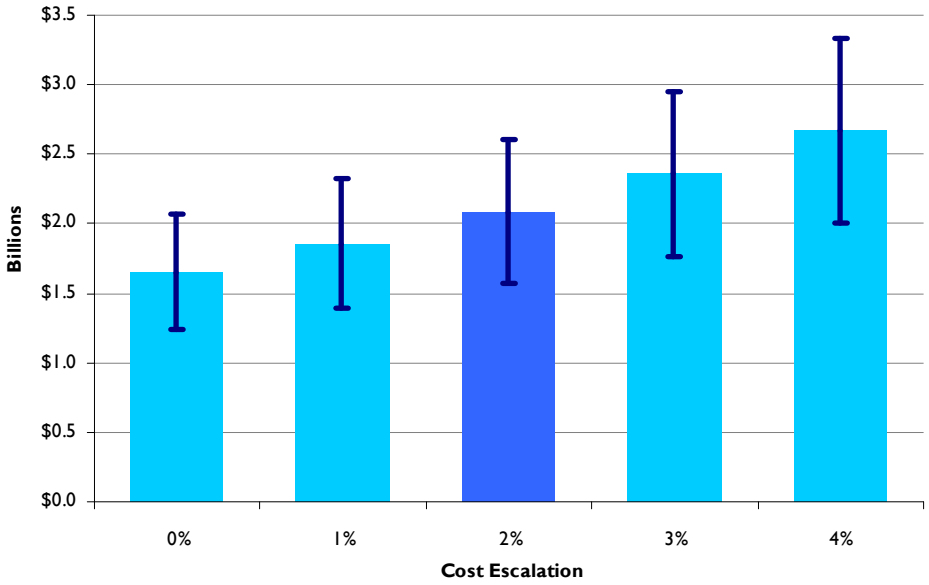
[16] The City may need to conform some elements of the Master Plan to the NPDES permit.

[17] The legacy lagoons refer to biosolids accumulated between 1962 and 1974 and stored on approximately 211 acres of Plant land. Samples from the biosolids lagoons have shown concentrations of contaminants subject to requirements for California hazardous waste. ESD has been evaluating options to remove the legacy lagoons.

The Master Plan includes a cost escalator of 2 percent to reflect expected inflation for construction costs. This was based on the value of the March 2009 Engineering News-Record Construction Cost Index (ENRCCI). Use of the ENRCCI appears to be a standard methodology for calculating cost inflation; however, the index as of March 2009 may not reflect what inflation could be over the 30 years of the Master Plan.

Exhibit 22 shows the total Master Plan project costs using varying cost escalators, as well as error bars showing cost variation of 25 percent to reflect potential variability as projects move from the "study or feasibility" or "concept screening" stages to completed projects. The dark blue column reflects the cost projection included in the Master Plan.

Exhibit 22: Master Plan Costs Using Different Cost Escalators and Potential Cost Variability Resulting from More Refined Project Definitions



Source: Auditor analysis of 30-year Master Plan spreadsheet provided by ESD

As can be seen, a 1 percent difference in cost escalation could increase or decrease overall costs by about $250 million. If those costs were spread over 30 years, it would result in more than $8 million in additional needed annual revenue (of which San José ratepayers would be responsible for about $5.6 million). This could increase single-family residential sewer rates by about 4 percent (or about $1.50/mo.)[18]

[18] The actual impact to different customer classes would vary based on cost parameters in ESD's rate model.

We believe it is important that the City Council and TPAC be kept apprised of the ratepayer impacts from any increased costs resulting from the uncertainties described above. As noted in the background, the City Council reviews sewer rates annually to determine whether adjustments are necessary to align revenue with expected program costs. The rate proposals provided by ESD provide descriptions of the specific capital or operating needs driving the adjustment. It is expected that future rate proposals will include impacts from potential bond financing, changes in cost estimates from future project definition refinement, or other drivers.

Continued Reevaluation and Reprioritization of Projects Will be Necessary as Conditions Change

The Master Plan is a planning tool to guide Plant investments over the next 30 years. In practice, ESD evaluates and prioritizes individual capital projects (both those within the Master Plan as well as those recommended by staff to address unforeseen needs) on an annual basis to develop its 5-year CIP. However, many Master Plan projects and costs are beyond the 5-year time horizon and are integrally linked to projects within the annual CIP.

The GFOA recommends that master plans be updated regularly to determine infrastructure needs as local conditions change. Other jurisdictions, such as the Sacramento County Regional Sanitation District, have updated their Master Plans on different occasions to reflect such changing conditions (e.g., to reflect changes in regulatory compliance and effluent diversion requirements or a change in the planning horizon).

The GFOA also notes that governments are continually faced with extensive capital needs and limited financial resources. Therefore prioritizing capital projects is a critical step in the capital planning process. They recommend that governments should continually reevaluate capital projects approved in previous plans, as well as evaluate the affordability of the financing strategy, including the impact on ratepayers and others.

We believe it would be a good practice for ESD to reevaluate or reprioritize the projects and/or planning framework set out in the Master Plan on a periodic basis to reflect changing conditions. This reevaluation and reprioritization is particularly important given the staffing and other challenges posed by Master Plan implementation, including those created by projects which entail technologies new to the Plant (such as the transition to the new biosolids process or other technology changes). Any changes to the Master Plan could involve CEQA review to determine if an EIR needs to be prepared.

This process has begun in ESD, illustrated by a reduced project list in the current CIP which ESD believed reflected what it could reasonably implement with its current staff. Reserves were also established to reflect costs set aside for future package 1 and 2 project implementation.

Recommendation #11: The Environmental Services Department should develop a policy to periodically review the Master Plan in response to regulatory, technological, or economic changes; implementation and financing challenges; and ratepayer impacts.

Asset Management Program Is Expected to Help Prioritize O&M and Future Capital Budgets

The 2007 Infrastructure Condition Assessment and the Plant master planning process were undertaken, in part, to help prioritize needed capital investment at the Plant. These have helped prioritize investments for the short and near term; however, ESD has noted that improvements in the prioritization process are needed to ensure future investments are directed toward the most critical or needed areas.

In 2008, an asset management program was begun to develop a data-driven strategy to address the long-term capital needs of the Plant as well as inform maintenance decision making. One component of the asset management program was the implementation of a computerized maintenance management system (CMMS). To date, because of questions about data reliability, data from the asset management program and CMMS are not used to inform capital investment decisions. An audit of the asset management and maintenance programs is included in the City Auditor's FY 2012-13 proposed workplan.

Finding 3 The City Raised Sewer Rates in Anticipation of Increased Spending that Did Not Materialize

Summary

San José's utility rates for sanitary sewer, storm sewer, garbage and recycling, and potable water services increased significantly from FY 2006-07 to FY 2011-12. These rates rose between 41 and 89 percent during a period when inflation rose only 15 percent. Increases in sanitary and storm sewer rates in recent years were driven mostly by capital improvement planning and anticipated regulatory requirements. Garbage rate increases were driven by residential waste hauler cost increases, and Muni Water increases by the cost of wholesale water. The use of these special, restricted ratepayer funds is governed by the California Constitution, as amended by California voters in 1996 when they passed Proposition 218, which requires that no fee for property-related service charged by a city exceed the cost to provide the service to the property owner.

However, over the past few years, the City has accumulated large balances in ratepayer funds, totaling $280 million by the end of FY 2010-11. These large balances are especially concerning for sewer funds: the $220 million held in operating and capital funds for the sanitary sewer and Plant, almost entirely from sanitary sewer charges, represents nearly two years of annual sanitary sewer revenue collection. To ensure intergenerational equity, these funds should be used closer in time to when they are collected from the ratepayers.

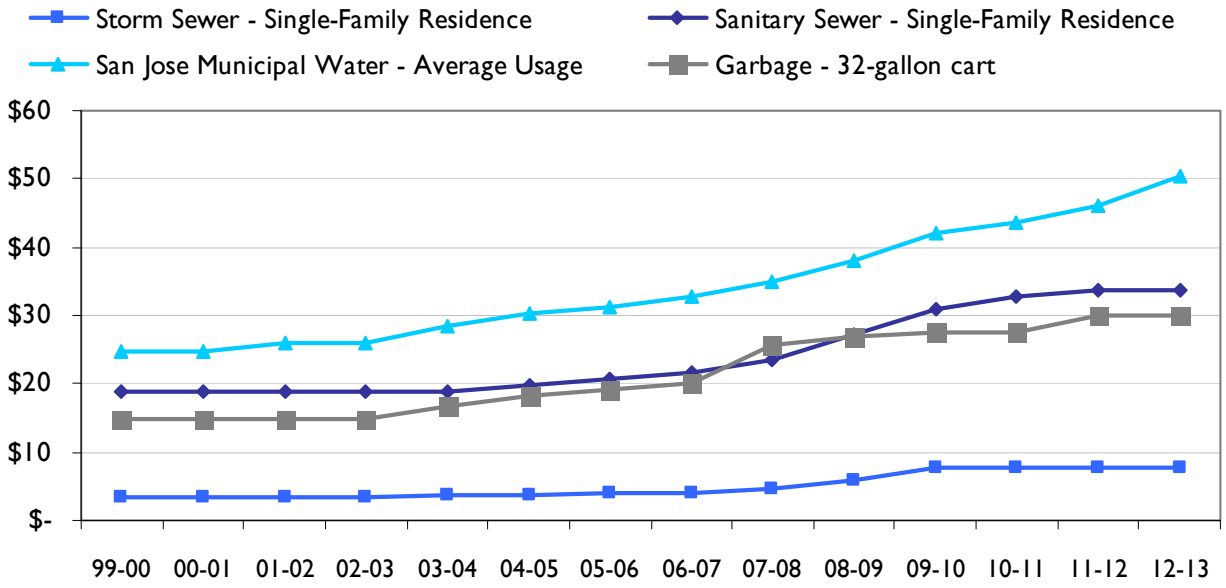
Slower than expected capital spending is the main cause for the large balances, as Plant and sewer capital funds held enough money at the end of FY 2010-11 to pay for 2.5 years of average spending. Other budget savings like vacancies have also contributed to the accumulation of fund balances in excess of ESD's reserve goals. In addition to more realistically budgeting for capital expenditures, ESD can address these balances by developing capital reserve policies and freezing sewer and storm utility rates until the fund balances are reduced to reasonable reserve targets.

Rates Increased Dramatically Over the Past 10 Years

Proposition 218, passed by California voters in 1996, requires that no property owner's fee for public utilities exceed the cost for a jurisdiction to provide services to the property owner. In accordance with this requirement, the rates charged by ESD are meant to cover the costs of providing storm water, sanitary sewer, garbage and recycling (Recycle Plus), and potable water services. Exhibit 23 shows that rates increased dramatically from FY 2006-07 through FY 2011-12, when rates grew between 41 and 89 percent for a typical single-family residence.

By comparison, over those same six years, the Consumer Price Index for the San Francisco-Oakland-San José metropolitan area rose 15 percent.

Exhibit 23: Growth in San José's Monthly Single-Family Residential Rates



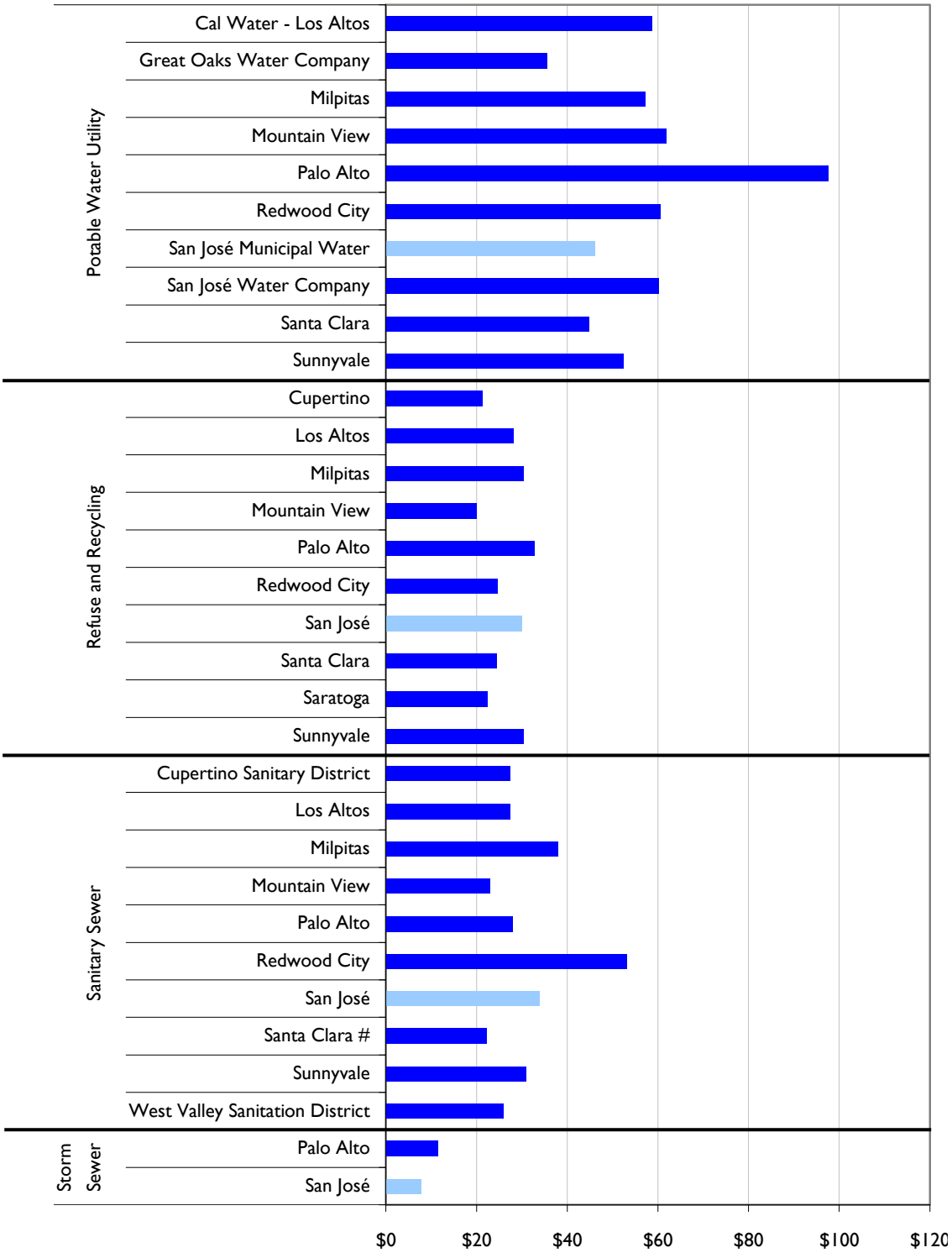
Source: Environmental Services Department FY 2008-09 Fund Management Report and rate memoranda

Despite Increases, San José's Rates Are Mid-Range Among Other Local Jurisdictions

Although the growth in utility and service rates has been dramatic, it is not unique to San José; it is happening across the County, State, and Country. For instance, the Sacramento City Council voted in March 2012 to increase sanitary sewer rates 14 to 16 percent each year for 3 years to upgrade the regional water treatment plant and sewer system. Exhibit 24 shows that, despite recent increases, the City's rates in FY 2011-12 were generally comparable with those of other local jurisdictions.

It is important to note the level of service included with these rates vary from city to city.

Exhibit 24: Monthly Single-Family Rates in the Bay Area (2011)



Sources: Environmental Services Department rate-setting memoranda to the City Council, City of Sunnyvale Utility Rate Comparison, and websites for cited local governments
Note: Some rates were for FY 2010-11.
Santa Clara increased the single-family residence sewer rate to $29.20 in July 2012.

Planned Capital Projects Drove Rate Increases

Each year, the City Council reviews rates for utilities and services to determine whether adjustments are necessary to align revenue with expected program costs. City staff may recommend rate increases for a number of reasons, but, generally speaking, each ratepayer program has a few key cost drivers. The four largest budgeted costs across ESD's programs for FY 2012-13 are Plant operations ($49 million), Plant and sewer capital transfers ($53 million moved from the fund receiving ratepayer money into the fund paying for capital projects), Recycle Plus contracts ($99 million), and wholesale water costs ($19 million). Exhibit 25 charts the growth of key cost components in absolute terms and as a percentage of total budgeted costs for each utility and service ESD provides.

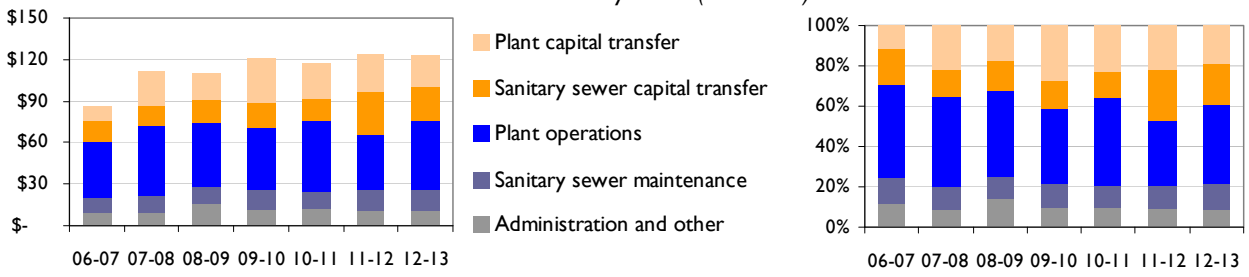
As shown below, the budgeted costs that most influenced rate increases were:

- Sanitary and storm sewer capital transfers, which grew from $27 million in FY 2006-07 to $65 million in FY 2011-12 before declining in FY 2012-13;
- Recycle Plus contracts for residential garbage and recycling, yard trimming/street sweeping, and waste disposal, which grew from $68 million in FY 2006-07 to $99 million in FY 2012-13 largely due to increases in hauler rates; and
- Muni Water's wholesale water budget, which grew from $13 million in FY 2006-07 to $19 million in FY 2012-13 because suppliers raised their prices.

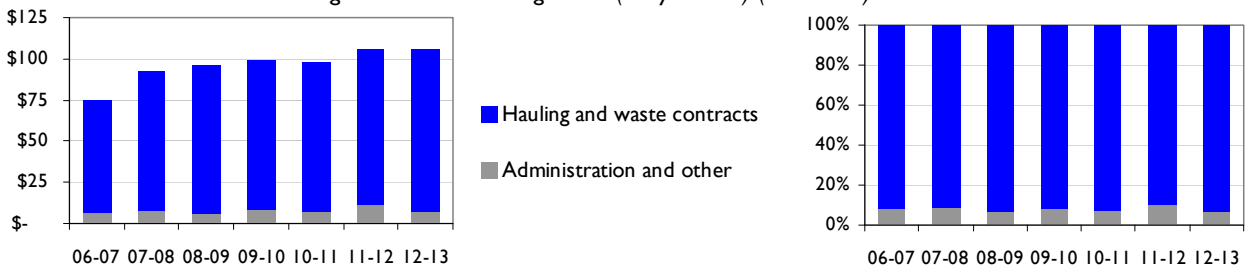
Effectively, rate increases in sanitary sewer rates in recent years were driven mostly by capital improvement planning. Increases in storm sewer rates were driven by a combination of more stringent stormwater permit requirements and capital needs. Increases in garbage rates were the result of residential waste hauler cost increases, and water utility rate increases reflected increases in the cost of wholesale water.

Exhibit 25: Key Ratepayer Cost Drivers ($ in millions)

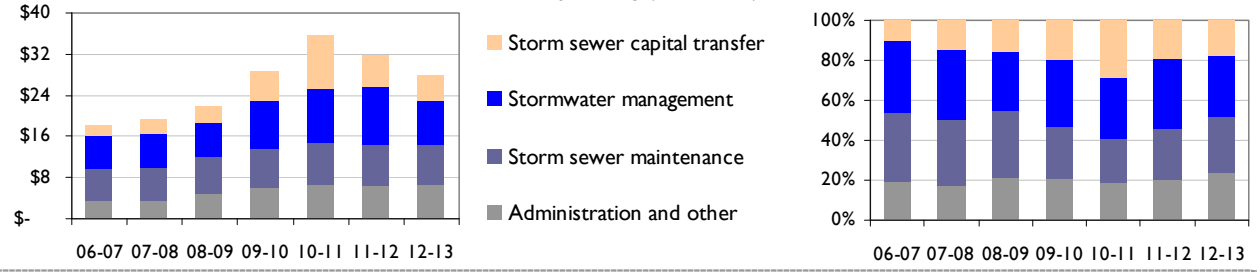
*Sanitary sewer (Fund 541)**



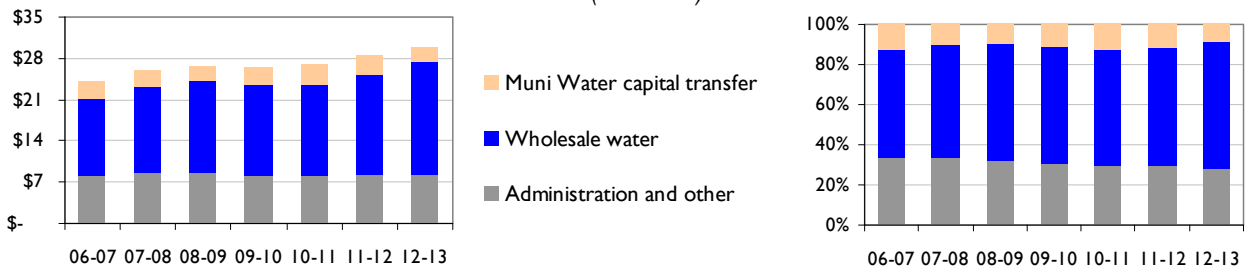
Integrated Waste Management (Recycle Plus) (Fund 423)



Storm sewer operating (Fund 446)



Muni Water (Fund 515)

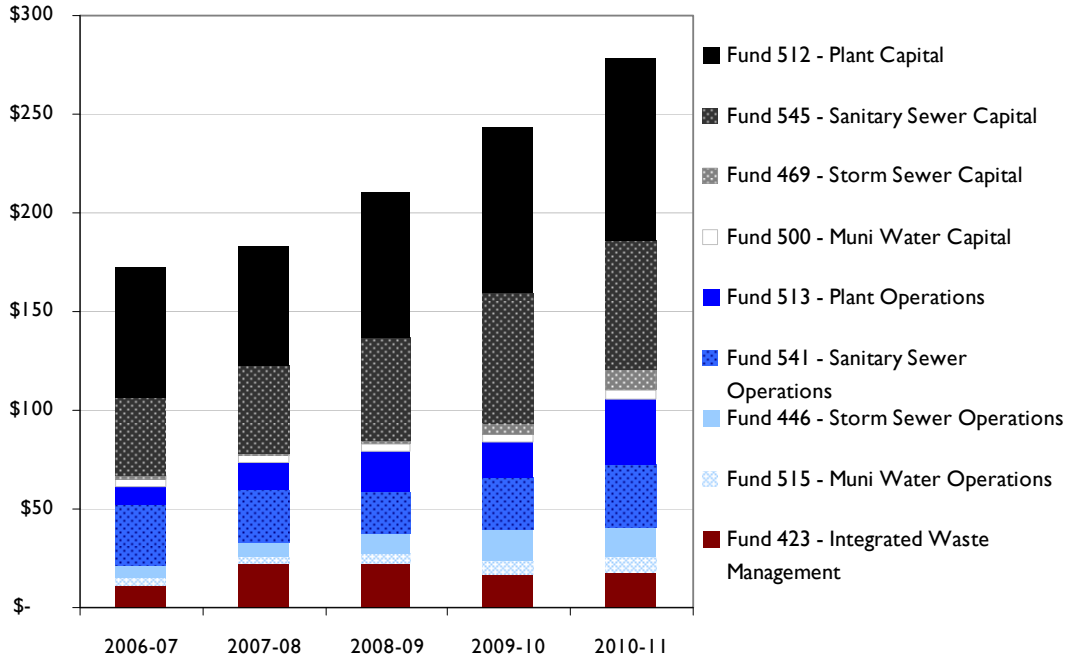


Source: Environmental Services Department budget documents and rate memoranda
Note: These are budgeted figures, rather than actual expenditures, because rates are based on planned spending.
* The budgeted Plant operations transfer varies year to year based on prior year expenditures and the remaining fund balance in the Plant operating fund (Fund 513).

The City Has Accumulated Large Balances in Ratepayers Funds

At the end of FY 2010-11, the City's utility and service fund accounts held nearly $280 million in fund balance, excluding reserves for encumbrances (money set aside for spending planned for the following year). As of the writing of this report, final FY 2011-12 fund balance figures are not yet available; however, it is anticipated that they will be lower than in FY 2010-11. Exhibit 26 shows the growth in ending fund balances across ratepayer funds over the last five years.

Exhibit 26: Ratepayer Fund Balances, in Millions, from Year-end FY 2006-07 to 2010-11



Sources: Capital budgets and operating budget source and use statements for FY 2007-08 to FY 2012-13

Note: Excludes Funds 539 and 540, which account for plant and sewer connection fees paid by developers for access to the City's sanitary sewer system and wastewater treatment plant. Fund 512 includes South Bay Water Recycling funds.

The California Constitution, as amended by Proposition 218, requires that the fee for property-related services charged by a city not exceed the cost to provide the service to the property. However, it does not provide clear guidance on the amount of reserves a public utility may appropriately hold. Large public projects frequently require cost-sharing over a longer period of time. In other words, current residents benefit from the capital investments of prior generations, and future generations will benefit from the investments being made now by the City's ratepayers.

Nonetheless, the money held in Plant and sanitary sewer operating and capital funds (Funds 512, 513, 541, and 545) alone, which is almost entirely from sanitary sewer charges, total $220 million, or nearly two years of sanitary sewer revenue collection as of June 30, 2011. The $25 million in storm sewer operating and capital funds (Funds 446 and 469) was more than 75 percent of annual revenue collection.

It is critical that the City address the fund balances, and their root causes, as described throughout the rest of Finding 3. In particular, funds collected for capital projects should be spent expeditiously for the benefit of ratepayers.

Slower Than Expected Capital Spending Has Led to Large Sewer Fund Balances

As of the writing of this report, final FY 2011-12 fund balance figures were not available. However, at the end of FY 2010-11, nearly $175 million of the $280 million held in fund balance was in various ratepayer capital funds.[19] Exhibit 27 compares FY 2010-11 ending fund balances for ratepayer capital funds to the average actual spending from those funds from FY 2006-07 to FY 2010-11, and presents each balance in terms of the number of years of spending it could potentially cover given recent spending rates.[20] It shows sewer capital funds could, even without additional transfers into them, potentially cover 2.5 years of spending based on average actual spending in recent years.

Exhibit 27: Ratepayer Capital Fund Ending Balances in FY 2010-11 Compared to Actual Spending Rates ($ in millions)

Ratepayer Capital Fund	Fund No.	FY 2010-11 Ending Fund Balance	Average Expenditures from FY 06-07 to 10-11	Possible Years of Spending in Fund Balance
Plant*	512	$92.6	$37.9	2.4
Sanitary sewer	545	65.1	12.9	5.1
Storm sewer	469	10.5	3.1	3.4
Muni Water	500	4.6	2.1	2.2
Total**		**$172.8**	**$56.0**	**3.1**

Sources: Financial Management System (FMS) data and capital budgets for FY 2007-08 to FY 2012-13
* Fund 512 includes South Bay Water Recycling. The average actual spending here differs from Exhibit 18 in Finding 1 because, unlike the above figure, Exhibit 18 excludes debt service and South Bay Water Recycling spending.
** Due to rounding, columns may not foot and rows may not cross-foot.

[19] It is important to note that City staff deposits ratepayer revenue in operating funds and transfers a portion of revenue to the capital funds. This means that, although the majority of ratepayer fund balance was held in capital funds, the City could potentially shift those funds back to the originating operating funds.

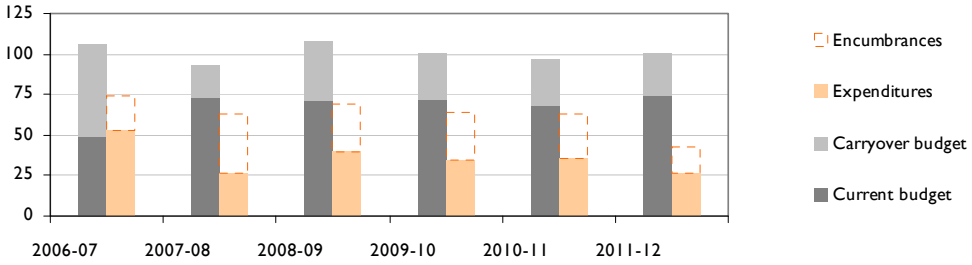
[20] It should be noted that the 2.4 years of possible spending in the Plant capital fund (Fund 512) balance shown in Exhibit 27 is a conservative estimate because average annual spending includes expenditures funded by tributary agencies, whereas the fund balance is entirely City funds. The City typically pays for about 65 percent of capital costs.

ESD and Public Works Have Had Difficulty Spending Capital Budgets

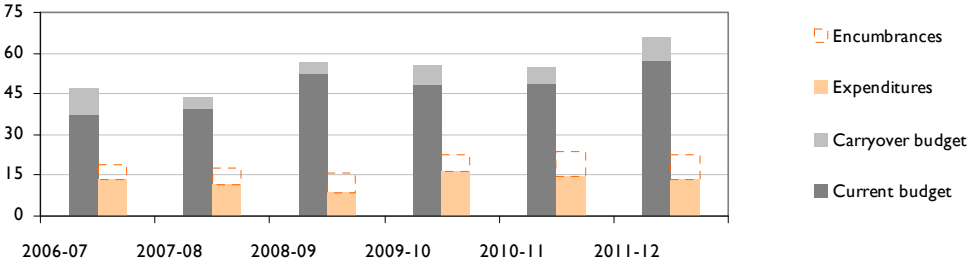
The accumulation of these large balances, particularly in sanitary and storm sewer funds, has been driven by difficulty executing capital spending plans. Exhibit 28 tracks annual capital budgets, including carryover amounts from the prior year, and spending, including encumbrances (money set aside to be spent) in ratepayer funds. The difference between the total budgeted and spent amounts represents, in dollar terms, the amount of planned activity for which a contract was not executed. When the budgeted amount is not fully spent by ESD for Funds 512 and 500, or by Public Works for Funds 469 and 545, the remainder is either re-budgeted for spending in the following year or falls to fund balance.

Exhibit 28: Ratepayer Capital Budgeting and Spending, in Millions, from FY 2006-07 to 2011-12

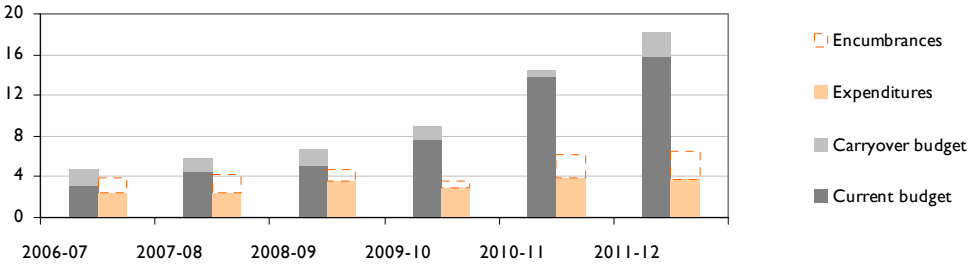
*Plant capital fund (Fund 512)**



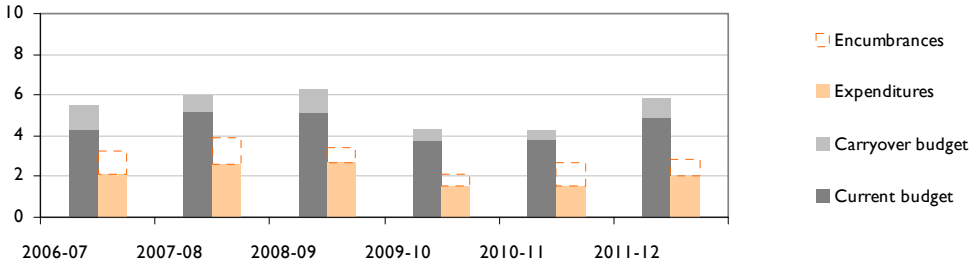
Sanitary sewer capital fund (Fund 545)



Storm sewer capital fund (Fund 469)



Muni Water capital fund (Fund 500)



Sources: Financial Management System (FMS) data for FY 2006-07 to FY 2011-12
Note: FY 2011-12 figures are estimated based on an unaudited and unadjusted year-end accounting report.
* Fund 512 includes South Bay Water Recycling, which was excluded from Exhibit 18 in Finding 1.

ESD explained that to date it has not executed its capital spending plans for the Plant capital fund (Fund 512) because it was unable to ramp up staffing as planned. Similarly, Public Works told us it is staffed at a level to plan and deliver $14 million of sanitary sewer capital projects annually, but that the sanitary sewer fund transfer it receives increased dramatically—from $15 million per year from FY 2006-07 to 2010-11 to $31 million in FY 2011-12 and $25 million in FY 2012-13. Public Works staff indicated they have plans for spending the large balance in the sanitary sewer capital fund (Fund 545) but that project delivery may be impeded by its staffing level and especially its shortage of seasoned staff.

New spending plans notwithstanding, the exhibit also appears to indicate that in the past ESD and Public Works budgeted for capital expenditures beyond their capacity to execute projects. According to ESD, the FY 2013-2017 capital improvement program is intended to be more realistic (i.e. the capital expenditure budget reflects what staff reasonably expects to accomplish).

The City Lacks Reserve Policies for Sewer Capital Funds

Large ratepayer fund balances resulted from the inability of ESD and Public Works to spend funds budgeted for sanitary and storm sewer capital improvement. However, the City's lack of reserve policies for ratepayer capital funds allowed the problem to grow unabated. The City generally budgets capital funds for its utilities on an as-needed basis to accomplish 5-year capital plans, so most capital funds do not have reserve goals. Two exceptions to this are the Plant capital fund (Fund 512), which has a $5,000,000 general (not project specific) reserve for equipment maintenance due to bond covenants, and the Muni Water capital fund (Fund 500), which has a general system rehabilitation reserve set to 7 percent of annual revenues.

To avoid the accumulation of such large capital fund balance in the future, ESD, in conjunction with Public Works, should establish and/or update reserve goals for ratepayer capital funds. The GFOA suggests establishing not only minimum target levels for reserves, but also maximum levels, and explains:

> *It is not unusual for balances to build up in a fund over the normal course of operations. A policy could define the maximum allowable fund balance… The Village of Barrington provides an example of a maximum balance policy:*
>
> > *The maximum fund balance allowable in the capital improvement fund is equal to 3 percent of the equalized assessed value of the taxable real property located in the corporate boundaries of the village.*

With this in mind, ESD could consider establishing both a floor and ceiling for capital reserves, as a percentage of asset value or planned capital spending, to ensure it has sufficient funds to withstand an emergency but does not accumulate excessive balances.

Recommendation #12: In addition to more realistically planning for capital improvements and the related budgeting for capital expenditures, the Environmental Services Department, in coordination with partner departments, should develop and/or update, and formalize fund balance and reserve goals for ratepayer capital funds.

Vacancies and Budget Savings Have Contributed to Sewer Operating Fund Balances Above and Beyond City Targets

It is a best practice for government-run utilities to build and maintain adequate operating reserves to weather emergencies, be they maintenance or cash flow. In its March 2011 utility rate study for the City of Sacramento's Department of Utilities, the FCS Group stated: "Utility reserve policies are intended to create a measure of safety and security for the uncertain events of the future that impact a utility's financial health." Black and Veatch expanded on this idea in its January 2001 Sanitary Sewer Rate Study for the City of San José:

> *Prudent fiscal management requires that reserve funds be established and maintained at adequate levels as part of risk management to provide short term capital in case of emergencies as well as to provide working capital. The different reserve funds typically recommended are operating, capital replacement, capital expansion and debt reserves.*

ESD Has Established Reserve Targets for Operating Funds

The City has established reserve goals and guidelines for various funds, and has established reserves for contingency, operations and maintenance, rate stabilization, debt service (to ensure the City meets debt covenants), capital rehabilitation, and plant/system expansion. Funding expectations for reserves vary, but are typically one to two months of budgeted operating expenditures depending on a reserve's expected use. The City's operating reserve targets are

generally consistent with industry norms—the FCS Group noted that "Depending on several factors (including bond requirements, a separate rate stabilization reserve, revenue collection variability, and fiscal prudence), the target level of an operating reserve can range from as little as 30 to as much as 180 days of its annual operating expenses." Exhibit 29 lists key reserve guidelines for ratepayer funds.

Exhibit 29: Key Reserve Guidelines for Ratepayer Funds

Utility/Service	Fund No.	Description	Reserve Type	Guideline
Recycle Plus	423	Operations	Operating	1 month's expenditures
Storm Sewer	446	Operations	Operating	2 month's expenditures
Muni Water*	515	Operations	Operating	25% expenditures and transfers
			Rate Stabilization	5% annual revenues
	500	Capital	System rehabilitation	7% annual revenues
Sanitary Sewer	541	Operations	Operating	15% annual expenditures
			Debt service	$6,000,000
			Rate stabilization	$2,000,000
Plant	513	Operations	Operating	2 month's expenditures
	512	Capital	Equipment replacement	$5,000,000

Sources: ESD Reserve Policy, 2008-09 Fund Management Report, and interviews with ESD management
* Muni Water's target for an operating reserve of 25 percent of expenditures and transfers is a practice based on industry standard but is not in a policy.

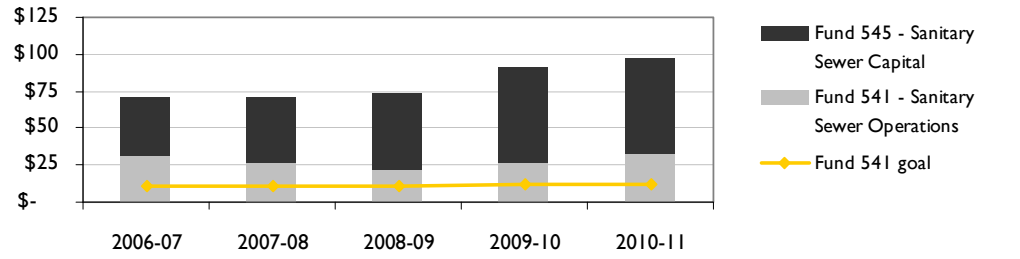
Sewer Operating Fund Balances Were Above and Beyond ESD Reserve Goals

Exhibit 30 compares ending fund balances in ratepayer funds to the established reserve goals for those funds (based on adopted budgets) for the last five fiscal years.[21] It is important to note the reserve goals typically refer only to operating funds. Capital funds are provided for context.

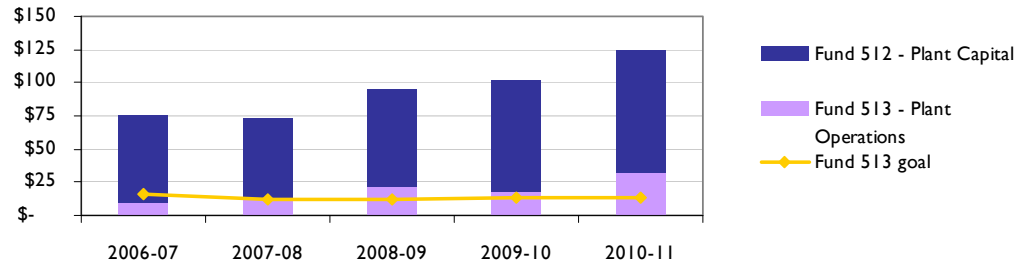
[21] Fund goals do not include $760,000 and $2,352,000 set aside for potential workers' compensation claims in the sanitary sewer and Plant operating funds, respectively, or $1,860,000 for permit implementation in the storm sewer operating fund.

Exhibit 30: Operating Fund Balances and Reserve Goals, in Millions, from Year-end FY 2006-07 to 2010-11

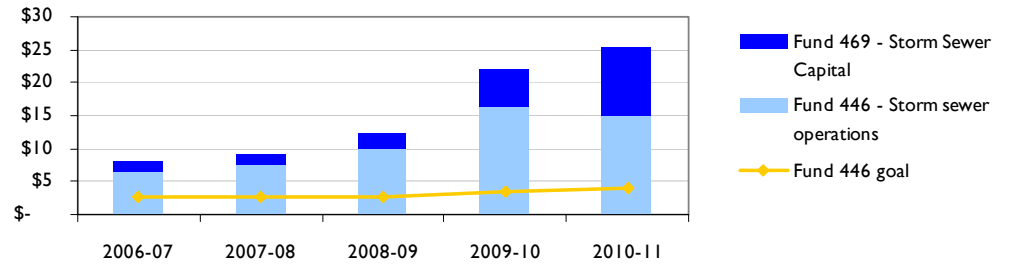
Sanitary sewer operating and capital funds (Fund 541 and Fund 545)



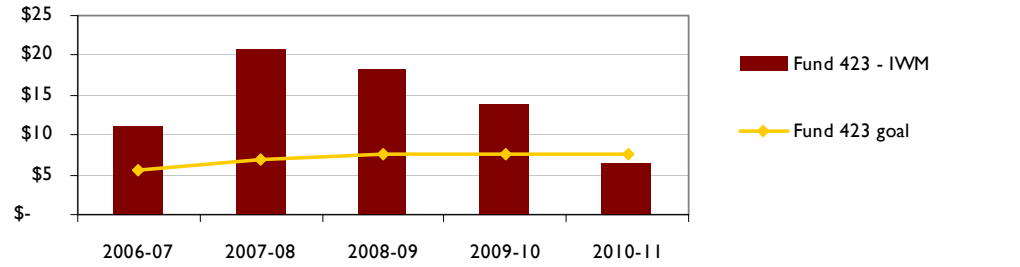
*Plant operating and capital funds (Fund 513 and Fund 512)**



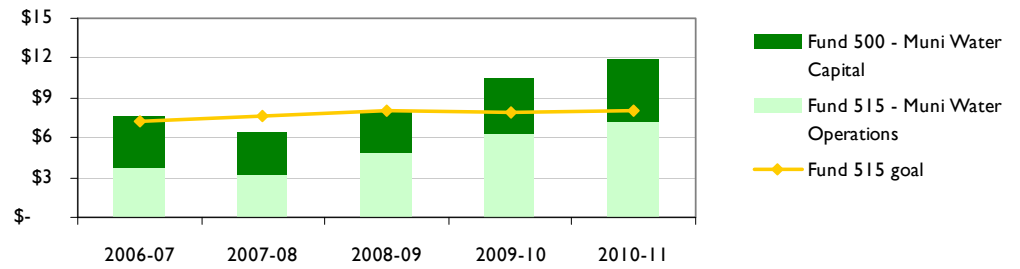
Storm sewer funds (Fund 446 and Fund 469)



*Integrated Waste Management (Fund 423)***



Muni Water operating and capital funds (Fund 515 and Fund 500)



Sources: Capital and operating budget source and use statements for FY 2006-07 to FY 2011-12, ESD Reserve Policy, 2008-09 Fund Management Report, and interviews with ESD management

* Fund 512 includes South Bay Water Recycling.

** Recycle Plus fund balance excludes funds for the Las Plumas household hazardous waste facility.

Exhibit 31 aggregates the actual ending balance and reserve goals for operating funds for FY 2010-11, and shows the balances were greater than ESD's established reserve goals for sewer operating funds (does not include ending balances for capital funds).

Exhibit 31: Comparison of Actual FY 2010-11 Operating Fund Balances and Reserve Goals ($ in millions)

Utility/Service	Fund No.	FY 2010-11		
		Ending Balance	Reserve Goal*	Above (Below)
Sanitary Sewer	541	$32.6	$11.6	$21.0
Plant	513	32.3	12.9	19.4
Storm Sewer	446	15.1	4.1	11.0
Muni Water#	515	7.3	8.1	(0.8)
Recycle Plus**	423	6.6	7.6	(1.0)
Total##		**$93.9**	**$44.3**	**$49.6**

Sources: Auditor analysis of operating budget source and use statements for FY 2012-13, ESD Reserve Policy, 2008-09 Fund Management Report, and interviews with ESD management

* Reserve goal does not include $760,000 and $2,352,000 set aside for potential workers' compensation claims in the sanitary sewer and Plant operating funds, respectively, or $1,860,000 for permit implementation in the storm sewer operating fund.

Muni Water's practice is to target a balance of 25 percent of operating expenditures and transfers, though this target is not established in a policy, in addition to 5 percent of water revenue for rate stabilization.

** Recycle Plus year-end fund balance excludes $11.6 million for the Las Plumas household hazardous waste facility.

Due to rounding, columns may not foot and rows may not cross-foot.

As shown, across the five major utilities the City provides, by the end of FY 2010-11 the City accumulated $50 million in operating fund balances beyond the reserve goals called for in ESD policies. To put that into perspective, these amounts above and beyond reserve goals, by fund, represent 83 percent of budgeted sanitary sewer operating expenses (excluding pass-through transfers to the Plant and capital funds, which have their own reserves), 25 percent of budgeted Plant operating expenses, and 43 percent of budgeted storm sewer expenses for FY 2011-12.

Position Vacancies and Non-Personal Budget Savings Have Contributed to Fund Balances

Position vacancies and non-personal budget savings have contributed to these fund balances. For instance, position vacancies led to savings in the Plant operating fund (Fund 513) of $1.6 million per year on average from FY 2006-07 to FY 2010-11, including $3.0 million in FY 2010-11 alone (8 percent of ESD's personnel budget in the fund that year).

ESD also has not spent its full non-personal (e.g., equipment, supplies, etc.) allocations, particularly in storm and Plant operating funds. For instance, ESD ended FY 2010-11 with $2.6 million of unspent non-personal budget for storm sewer activities (Fund 446), and averaged a year-end balance of $1.1 million in that budget line from FY 2006-07 to FY 2010-11. As a result, the FY 2012-13

budget reduced ESD's non-personal budget in Fund 446 by $2.6 million. Similarly, from FY 2008-09 to FY 2010-11 ESD had year-end balances of between $1.5 and $2.6 million in its non-personal budget for the Plant, though Plant staff indicated these balances were largely for open purchase agreements.

Lastly, in some cases fund balances were increased purposefully to raise reserve levels, particularly in the storm sewer operating fund (Fund 446), in preparation for future spending expected from increased regulatory demands.

According to the Budget Office, at the time the Proposed Budget is issued, operating fund balances are set at target levels and, to the extent that savings are foreseen during the budget process, excess operating fund balances are used to offset rate increases for the following year.

Large Fund Balances Should be Reduced Before Increasing Rates

In its March 2011 utility rate study for the City of Sacramento's Department of Utilities, the FCS Group made the following statement about liquidating excess fund balance from a municipal utility:

> *If the operating reserve exceeds the target balance, it should be brought back to the target level through a sequential decision process, with progress contingent on a surplus remaining. This would include steps such as:*
>
> - *Determining whether near-term increases in the operating reserve target would consume all or part of the surplus.*
> - *Determining whether the rate stabilization fund … is at or above its target level. If not, the surplus could be applied toward the rate stabilization reserve target.*
> - *Determining whether funds would have a designated use for one-time or capital outlays.*
> - *Make the surplus balance available to meet projected capital expenditures.*

ESD, its partner department in the Environmental and Utility Services city service area, and the City Manager's Budget Office appeared to have used a process like this preparing the FY 2012-13 budget. Specifically, all rates except for Muni Water's were held at FY 2011-12 levels. Further, the FY 2012-13 budget used excess balances to create capital reserves in the sanitary sewer fund (Fund 541) of $24 million and the storm sewer fund (Fund 446) of $12 million, without raising rates for ratepayers. We agree with ESD's steps to hold rates flat in the presence of large fund balances and believe they should continue to do so in the future.

Recommendation #13: The Administration should propose the City Council establish a City Council Policy which includes guiding principles so as not to raise rates in years in which ratepayer fund balances exceed reasonable targets.

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Finding 4 Expanded Environmental Enforcement Programs Need a Greater Emphasis on Outcomes and the Efficient and Effective Use of Program Resources

Summary

ESD's environmental enforcement programs inspect, educate, and regulate more than 12,000 businesses in San José. As noted in the Background section of this report, growth in ESD's authorized staffing has been concentrated in several key areas, namely Plant planning and development and environmental enforcement. ESD increased its budgeted enforcement staff as the regulatory environment became stricter, adding 7 FTE to the FOG source control program and 16 FTE to the stormwater protection program.

In our opinion, the City's FOG Control Program's focus on food service establishments should be reevaluated in light of data suggesting sanitary sewer overflows may be a greater problem in residential areas. In addition, ESD has begun streamlining its stormwater inspection program by pre-screening potential home businesses and reducing the frequency of food service establishment inspection. It has an opportunity to continue this program improvement by scaling back construction inspections that go beyond regulatory requirements, and re-examining opportunities to leverage the inspections performed by other departments and jurisdictions. Overall, we recommend that all environmental enforcement programs should be reevaluated using an outcome-based approach to ensure that the City's efforts are focused not only on permit compliance but also the most efficient and effective use of program resources.

ESD Added Enforcement Staff as the Regulatory Environment Became Stricter

ESD's environmental enforcement programs inspect, educate, and regulate:

- 300 industrial customers in San José and the tributary areas to the Plant for pollutant discharges to the sanitary sewer system through the Pretreatment Source Control Program
- 3,700 food service establishments in San José and another 1,800 in the tributary areas to the Plant for fats, oils, and grease (FOG) discharges into the sanitary sewer system through ESD's FOG inspection program
- 12,000 industrial and commercial facilities, over 100 construction sites per year, facilities in the vicinity of about 600 reported illicit discharges per year, as well as post-construction developments, for urban runoff into the storm sewer system and creeks through the stormwater inspection program.

As noted in the Background section of this report, growth in ESD's authorized staffing has been concentrated in several key areas, namely Plant planning and development and environmental enforcement. ESD's additions within environmental enforcement (7.0 FTE for its part of the City's FOG Control Program and 16.0 FTE for stormwater management and inspection) were designed to address emerging regulatory requirements. These requirements, including the May 2006 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (2006 sanitary sewer requirements) and the October 2009 Municipal Regional Stormwater NPDES Permit, did not specify staff levels or inspection frequency, but ESD determined it needed more staff to comply with the enhanced regulations and proposed new and expanded inspection programs to meet those requirements.

May 2006 Sanitary Sewer Requirements Included Preparation of a Sewer System Management Plan and FOG Control Program

The City owns, operates, and maintains the sanitary sewer collection system that serves the residents of San José. It is a cross-departmental effort: DOT operates and maintains the system, Public Works oversees sewer construction and capital projects, and ESD regulates pollutant discharges into the system. These efforts are governed by Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Order No. 2006-0003, issued by the State Water Resources Control Board in May 2006. The 2006 sanitary sewer requirements found:

> *Sanitary sewer overflows (SSOs) are overflows from sanitary sewer systems of domestic wastewater, as well as industrial and commercial wastewater, depending on the pattern of land uses in the area served by the sanitary sewer system. SSOs often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen-demanding organic compounds, oil and grease and other pollutants. SSOs may cause a public nuisance, particularly when raw untreated wastewater is discharged to areas with high public exposure, such as streets or surface waters used for drinking, fishing, or body contact recreation. SSOs may pollute surface or ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface waters.*

Requirement to Prepare Sewer System Management Plan

The 2006 sanitary sewer requirements issued by the State Water Resources Control Board stated that major causes of SSOs include grease blockages, root blockages, and various infrastructure failures (e.g., manhole structure failures and pump station mechanical failures), among others. The state board further found that "A proactive approach […] to ensure a system-wide operation, maintenance, and management plan is in place will reduce the number and frequency of SSOs within the state […and] will in turn decrease the risk to human health and the environment caused by SSOs."

Thus, to facilitate proper funding and management of sanitary sewer systems, the 2006 sanitary sewer requirements required each jurisdiction in the state operating a sanitary sewer system greater than one mile in length, to develop and implement a system-specific Sewer System Management Plan (SSMP). According to the 2006 sanitary sewer requirements, "The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system […which] will help reduce and prevent SSOs, as well as mitigate any SSOs that do occur." San José finalized its SSMP in August 2008 and revised it in August 2010.

FOG Control Program Requirement

The 2006 sanitary sewer requirements also required evaluation of whether fats, oils, and grease (FOG) are a problem in the collection system. If a jurisdiction determines that FOG is an issue, it must prepare and implement FOG source control program as part of the Sewer System Management Plan. According to the 2006 sanitary sewer requirements, a FOG control program must include, as appropriate:

a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG

b) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area

c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG

d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, Best Management Practice (BMP) requirements, record keeping and reporting requirements

e) Authority to inspect grease producing facilities, enforcement authorities, and whether the jurisdiction has sufficient staff to inspect and enforce the FOG ordinance

f) An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section

g) Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f) above.

The primary generators of fats, oils, and grease are residents and food service establishments. To control FOG discharged by commercial sources, the City, like many other jurisdictions, has developed and implemented a commercial FOG program.[22] The program includes 1) an ordinance requiring food service

[22] Because residential FOG is difficult to control and the impacts of FOG-related SSOs in commercial areas can be greater due to the volume of wastewater pipes in those areas tend to carry, many jurisdictions chose to implement commercial FOG programs as a strategy for controlling FOG.

establishments to install and regularly maintain grease control devices; 2) inspections to ensure compliance with ordinance requirements and best management practices for reducing FOG discharges; and 3) enforcement actions against violators.[23] In addition to the commercial FOG program, the City has a limited residential FOG outreach program and a program to identify FOG hot spots and clean these pipe segments more frequently. ESD is responsible for implementing the commercial FOG program.

The 2006 sanitary sewer requirements were specific in requiring a FOG control program, but not prescriptive in the sense that it was up to San José to determine a) how to implement the program, b) which facilities to inspect, and c) the frequency with which facilities are inspected.

As a Result of These Requirements, ESD Added Staff to Its Food Service Establishment Inspection Program

ESD began inspecting San José's food service establishments (FSEs) in FY 2002-03, focusing on compliance with stormwater permit requirements in outdoor areas. In FY 2006-07, ESD developed the Commercial/Industrial Grease Control (FOG inspection) Program to emphasize indoor inspection of FSEs to comply with the May 2006 sanitary sewer requirements to minimize FOG impacts on the collection system. The adopted FY 2006-07 operating budget added 4.0 inspectors

> *…to implement a Fats, Oils, and Grease (FOG) control program. The development of a Sanitary Sewer Management Plan (SSMP) is a Water Board requirement for the City. Part of the SSMP requirement is to implement a FOG control program, which will require detailed inspections of over 3,000 food-related facilities in the City of San José, including inspection of the grease removal devices and review of maintenance and clean-up records. Inspection frequencies will range between one and three years depending on the compliance history for a facility, with an estimated annual workload of 1,500 restaurant facilities per year.*

A new inspection unit was created to augment the already occurring stormwater inspections of FSEs to include inspections of grease traps, interceptors, and maintenance records. Rather than assigning distinct FOG and stormwater responsibilities to inspectors, ESD determined that combining stormwater and FOG inspections for FSEs yielded efficiency and cost savings.[24] Although the 2006 sanitary sewer requirements did not specify how frequently facilities must be inspected, ESD chose to inspect them on a one- to three-year rotation based on issues identified at the facility, as noted in the FY 2007-08 budget. In FY 2008-09, ESD expanded the

[23] In February 2009 the City revised Municipal Code chapter 15.14 to implement an enhanced FOG Control Program, including elements listed above. The revised provisions require food service establishments (FSEs) to install and maintain grease removal devices.

[24] Because ESD's FSE inspections check for compliance with both storm and sanitary sewer rules, staff is funded equally by the storm sewer (Fund 446) and Plant (Fund 513) funds.

FOG program with 3.0 inspectors supported by the Plant fund (Fund 513), which is funded by the City (about 65 percent) and Santa Clara and the tributary agencies (about 35 percent), and solely focused on Santa Clara and the Plant's tributary agencies.[25] ESD's FOG inspection program is focused on commercial/industrial facilities; ESD does not have a substantive residential FOG program.

October 2009 Municipal Regional Stormwater NPDES Permit Enhanced Stormwater Requirements

The City also owns, operates, and maintains the storm sewer collection system that serves the residents of San José. Water that enters the storm drain system flows untreated into the nearest creek or river and ultimately to the San Francisco Bay. Stormwater runoff, in the form of rain or irrigation water, collects pollutants by flowing over sidewalks, driveways, curbs, and landscaping. Common pollutants—such as trash, oil, soap, paint, copper, nickel, mercury, and pesticides—can degrade, or impair, water quality in our local creeks and rivers.

ESD also runs stormwater management and inspection programs that strive to minimize pollutants in the storm sewer system and maintain high water quality in the creeks and watersheds into which the system feeds. The inspection program is one component of the City's overall stormwater program required by the October 2009 Municipal Regional Stormwater NPDES Permit (stormwater permit).

ESD's Stormwater Inspection Program

ESD began inspecting San José's industrial and commercial facilities for compliance with stormwater permit requirements in 1990. The program is organized to comply with specific stormwater permit requirements. Specifically, it delivers four types of inspection services: 1) industrial and commercial facility inspections, including food service establishments (a sub-group of industrial facilities); 2) complaint-based illicit discharge detection and elimination inspections; 3) construction site inspections; and 4) post-construction stormwater treatment control measures inspections.

The format of a typical stormwater inspection could be:

- Inspector reviews an industrial/commercial facility's inspection history
- Inspector arrives unannounced at facility
- Inspector reviews any processes within the facility that could create pollutants
- Inspector observes any outdoor areas
- Inspector creates field inspection report that lists any observed violations, required remedial actions, and due dates for those actions (before next rain

[25] The tributary cities and agencies fund FOG inspections for their FSEs; ESD does not inspect those facilities for compliance with stormwater requirements.

event and/or no longer than 10 business days from identification of violation), and that also serves as a Correction Notice, if necessary

- Inspector returns to facility to ensure remedial actions have been completed

The Regional Stormwater Permit Is Specific but Does Not Specify Staffing Levels of Inspection Frequency

ESD's stormwater program is shaped by the stormwater permit which applies to all Bay Area jurisdictions with municipal separate storm sewer systems (i.e., all but San Francisco, which has a combined sanitary and storm sewer system). The stormwater permit brought greater specificity to requirements from prior stormwater permits for Santa Clara County jurisdictions, including requirements to inspect industrial and commercial businesses and illicit discharge reports.[26] Although the stormwater permit provides a level of specificity and detail not seen in prior permits, it does not prescribe the level of inspection activity needed to comply with its requirements.

It is important to note that the 2009 stormwater permit was not simply more specific than previous permits; it also introduced and required implementation of new stormwater program elements. Indeed, whereas the prior permit from February 2001 was 27 pages (before several amendments), the 2009 stormwater permit is 279 pages (including attachments). According to ESD, new program elements include

> *C.3 provisions required institution of a new program for Stormwater Treatment System O&M Verification, Performance Standard Implementation Tracking, Green Streets Pilot Projects, an enhanced Hydromodification Management Controls program, and others.*
>
> *C.8 provisions required a significant increase in the amount and types of monitoring, requiring additional oversight and coordination. New monitoring was also required in other provisions (C.2, C.9, C.11/12, & C.15) and increased support of citizen monitoring was also required.*
>
> *C.10 (Trash Load Reduction) provisions required a significant increase in effort to address aggressive reduction targets in trash loading through capture device installation, enhanced maintenance, product stewardship, and other activities. C.10 also requires an ongoing annual "Trash Hot Spot Cleanup" program where 32 creek hot spots per year in San José are cleaned to the point of "no visual impact".*
>
> *Mostly parallel C.11 and 12 provisions were entirely new from previous permits, requiring a significant level of increased staff participation in regional and local efforts in the form of enhanced*

[26] The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), an association of local stormwater and sewer programs, was formed to help local jurisdictions consistently implement control measures for urban runoff pollution prevention. The City coordinated with SCVURPPP to develop a business inspection plan that applied similar criteria for prioritizing efforts across the county so stormwater inspection programs are consistent with that of other local jurisdictions.

industrial stormwater inspections and pilot projects to evaluate effects of stormwater retrofits, enhanced sediment management practices, diversion of stormwater to the sanitary system, and monitoring.

In Response to (and Sometimes in Advance of) Enhanced Regulatory Requirements, ESD Increased Stormwater Program Staffing

To comply with, and in anticipation of, additional stormwater regulations, ESD added a total of 16.0 FTE to stormwater oversight functions in the last 6 years as shown in Exhibit 32. Overall, authorized staffing of the stormwater management and inspection programs grew by 40 percent and 64 percent, respectively.

Exhibit 32: Growth in Stormwater Program Staffing

Source: ESD adopted operating budgets for FY 2005-06 through FY 2012-13

ESD explained that these staffing additions were to address:

- An increased total business inspection inventory
- Increased regulatory demands for the Construction, Industrial/Commercial, and Illicit Discharge, Detection, and Elimination (IDDE) Inspection Programs, including specified timeframes for responses to identified violations, which results in higher inspection frequency, as well as increased tracking and reporting requirements
- Two newly required inspection programs (mobile businesses and proper operation and maintenance of constructed treatment controls)
- Several newly required stormwater management programs (including local/regional pilot studies, monitoring, reporting, outreach, and technical support requirements) related to new development, mercury, PCBs, pesticides, emerging contaminants, and trash/litter control.

Other Regulations Became More Strict

ESD operates a Pretreatment Source Control Program that permits and inspects specific industrial dischargers to the sanitary sewer system. This program is required by the Plant's NPDES Permit and is shaped by EPA's federal pretreatment regulations. The program regulated 294 facilities in 2011 to ensure they properly treat wastewater, in accordance with federal regulations, before discharging wastewater into the sanitary sewer system and the Plant.

The pretreatment program receives periodic audits and inspections by federal and state regulators.

- In January 2011, ESD received the results of an October 2009 EPA Pretreatment Compliance Audit (PCA), and in April 2011, received results of a January 2011 Pretreatment Compliance Inspection (PCI) conducted by contractors from EPA and representatives of the San Francisco Bay Regional Water Quality Control Board. The reviews required 47 changes and recommended 38 additional improvements to address significant issues such as lapsed permits, misapplication of pretreatment standards and requirements, deficient inspection procedures and inconsistent inspections between inspectors, and missing documentation in inspection files. ESD responded by implementing an expansive corrective action plan, including updating inspector standard operating procedures, updating training and oversight, and upgrading the environmental enforcement database, all while experiencing significant turnover.[27] Staff explained that the department has addressed 45 of the required changes and all 38 of the recommendations, and is addressing the 2

[27] ESD estimated that, as of January 2012, 75 percent of pretreatment inspection staff had been in its current positions for less than a year.

final outstanding requirements concerning the reissuance of an industrial discharge permit and the close-out of the compliance agreement with another industrial discharger.

- In January 2012, the pretreatment program underwent another Pretreatment Compliance Inspection. ESD has not yet received the results of that review, but staff indicated that the regulatory inspectors were pleased with the City's progress.

Also, because of mercury's toxic properties, the San Francisco Regional Water Quality Control Board sets a limit on aggregate mercury discharge.[28] Dental amalgam was estimated to be the largest contributor to the mercury that reaches the Plant. Thus, the City implemented a dental amalgam program that requires dentists in San José and the tributary agencies to obtain a permit and install an amalgam separator to prevent mercury from reaching the sanitary sewer system.

ESD's Focus on Food Service Establishments Should be Reevaluated

In June 2010 federal and state regulators inspected the City's sanitary sewer overflows (SSOs) records to determine compliance with Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. The purpose of the inspection was to conduct a review of collection system records, interview collection system staff and management to obtain information/data regarding the operation and maintenance of the system, and conduct field visits of collection system pump stations and past SSO sites.[29]

After the inspection, the regulators issued a July 2010 inspection report raising concerns about the City's fats, oils, and grease (FOG) Control program. The regulators specifically noted that the City does not maintain a list or map of FOG hot spots (locations where DOT identified FOG-related SSOs), and "although the City has a good FSE inspection program, the number of FOG related spills is high. Over 60% of spills in 2009 were due to FOG." As a result, one of the major deficiencies regulators highlighted during a post-inspection briefing was the City's "lack of an adequate FOG Control Program that identifies FOG hot spots and corrective actions needed to address FOG related SSOs within the collection system."

[28] In 2007, the San Francisco Bay Regional Water Quality Control Board issued Water Discharge Requirements for Municipal and Industrial Wastewater Dischargers of Mercury to San Francisco Bay (mercury permit). The mercury permit restricts the amount of mercury that may be discharged by the Plant.

[29] The regulators alleged the City to be in violation of the 2006 sanitary sewer requirements' record keeping requirements, including rules about recording SSO start and stop times, and estimated flow rates and volumes, and issued a notice of violation in January 2011. In the City's response, staff explained that, following the June 2010 inspection, they instituted a systematic review of the collection system program and practices focused on areas of concern communicated during the exit interview. For instance, staff had reviewed operating procedures and reporting documentation and made modifications as needed. Staff also had provided special training on SSO response to sewer maintenance personnel, and instituted weekly SSO review meetings to discuss and analyze each SSO, including its primary causes and incident response.

ESD's FOG Inspection Program Focuses on Food Service Establishments

FOG that enters the sanitary sewer system from restaurants and residences can cause sewer blockages and SSOs. There are approximately 5,500 food service establishments (FSEs) in San José and the tributary area to the Plant which prepare and/or sell food for consumption either on or off the premises or wash utensils or dishes on premises that could contribute grease to the sewer system.[30] Accordingly, the City's FOG ordinance requires FSEs to install and regularly maintain grease removal devices.

The purpose of ESD's Commercial/Industrial FOG Control Program, which now includes 8.5 FTE after ESD added 7.0 in FY 2006-07 and FY 2008-09, is to minimize the occurrence of FOG-related SSOs in commercial areas as part of a comprehensive Sewer System Management Plan.[31] ESD's program inspects FSEs to ensure they have properly maintained and cleaned grease removal devices to keep FOG out of the sewer system, and thereby reduce the number and severity of SSOs.[32]

Currently, ESD staff determines the requirements for grease removal devices and inspects all restaurants and other FSEs. These inspections focus on determining compliance with the City's FOG ordinance and educating FSEs on how to minimize their impacts on the storm and sanitary sewers by using Best Managements Practices (BMPs). Staff's initial inspection includes determining if the FSE generates grease, if there is a grease removal device in place, and reviewing the cleaning records for the grease removal devices, as well as practices used to clean floor mats, vent hoods, and outside areas. Enforcement actions are taken against any FSE that does not clean its device at the minimum set frequency (monthly for grease traps and quarterly for grease interceptors) or keep three years of cleaning records.

ESD staff also conducts investigations in response to reports from DOT of FOG-related blockages in the sanitary sewer. During these "grease investigations," staff evaluates the area in the vicinity of the blockage and inspects potential sources.

[30] FSEs include but are not limited to restaurants, sandwich shops, delicatessens, bakeries, pizzerias, cafeterias, markets, bed and breakfast inns, motels, hotels, meeting halls, caterers, retirement, and nursing homes.

[31] This number includes 3.0 FTE assigned to inspect FSEs in tributary jurisdictions, but excludes 4.0 FTE of program staff paid for by the storm sewer fund (Fund 446).

[32] Building inspectors from PBCE verify the initial installation and connection of the grease removal device.

ESD's FOG Inspection Program May Be Focused on a Fraction of the Source of Sanitary Sewer Overflows

In response to the state regulators' 2010 FOG program concerns, DOT staff, which is responsible for maintaining and operating the sewer system, initiated a data collection and analysis effort to help identify FOG hot spots more effectively, and to evaluate corrective action opportunities to address FOG-related SSOs within the collection system.[33]

DOT's SSO Analyses Shows SSOs Occur Predominantly in Residential Neighborhoods

DOT staff has performed a basic analysis of SSOs where FOG was listed as the primary cause. SSOs appear to be particularly problematic for small pipes, which are largely located in residential neighborhoods.

- As of November 2011, staff had identified 32 locations where more than one FOG-related SSO has occurred and has placed most of these locations on an enhanced scheduled cleaning cycle of six months or less. Twenty-five of these locations (78 percent) are in residential areas.[34]
- In addition, DOT analyzed the pipes in which all blockages occurred over the last 5 years and found 95 percent were 6-8 inch pipes. Six-to-eight inch pipes are predominantly (but not solely) in residential neighborhoods.[35]

The proportionately fewer number of FOG-related SSOs in commercial areas (as compared to residential areas) may be attributable to the effectiveness of ESD's FOG inspection program, or it could be because the larger pipes found in commercial areas tend to clog less. The City does not have sufficient SSO data prior to 2008 to show that implementation of FOG inspections coincided with a drop-off in FOG-related SSOs in commercial areas (i.e., whether the focus on FSEs in commercial areas is justified). It is important to note that, while infrequent, FOG-related SSOs in commercial areas can have greater consequences because of the volume of sewage these pipes tend to carry.

The Number of SSOs Has Remained Steady

Overall, the City's collection system has experienced approximately 200 SSOs per year. The annual number of SSOs has not declined since the implementation of the FOG inspection program. Exhibit 33 tracks the number of SSOs since 2005 and reported causes of SSOs using data DOT reported to the State Water Resources

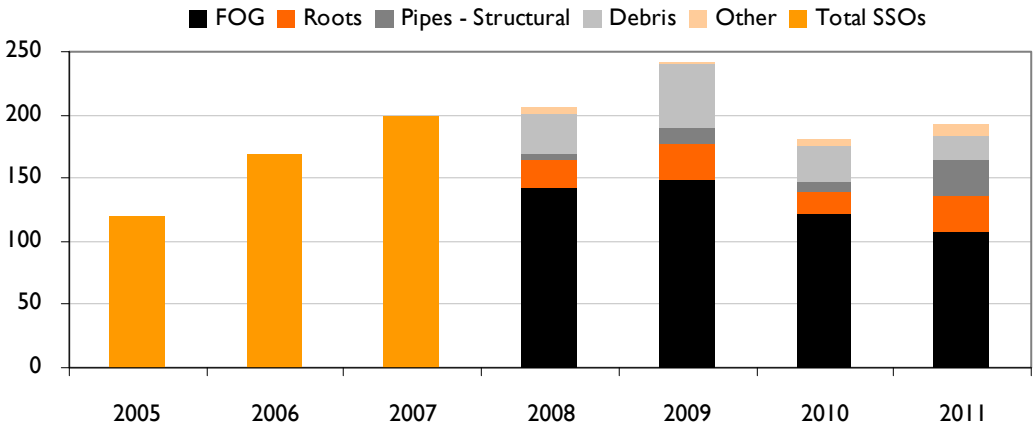
[33] The City also hired a consultant to conduct a comprehensive analysis of the sewer system and historical SSO and blockage data. The goal of the project was to identify sewer line segments and contiguous locations that have a higher probability of experiencing an SSO. The results of the analysis did not show any concentrated patterns or geographical locations that clearly indicate where SSO events have a distinctly higher probability of occurring.

[34] By comparison, DOT cleans about 20 percent of the City's 2,280 miles of sanitary sewer lines each year.

[35] About 1,820 of the City's 2,280 miles of sewer pipe are 6-8 inches in diameter, and 1,600 of the City's 2,400 miles of road are residential.

Control Board (for 2008 to 2011). Prior to 2008, "other" or "unknown" was the most prominent cause noted for SSOs, so the exhibit simply presents the total number of SSOs for 2005 to 2007.

Exhibit 33: Sanitary Sewer Overflows by Year, with Key Causes



Source: DOT-reported data to the State Water Resources Control Board and the City's SSMP

Although the number of FOG-related SSOs appear to have tapered off a bit since 2009, in total and as a percentage of all SSOs, this trend may be a function of staff's ability to identify the cause of an SSO. According to DOT management, in the past, sewer maintenance staff responding to an SSO might see grease in the pipe and immediately note FOG as the cause. However, in 2011 DOT staff began video inspections of SSOs and found that spills once identified as FOG-related actually had underlying causes such as sags in pipes, roots, or debris. Thus, the reduction in FOG-related SSOs may partly reflect DOT's enhanced investigation of SSO primary causes.[36]

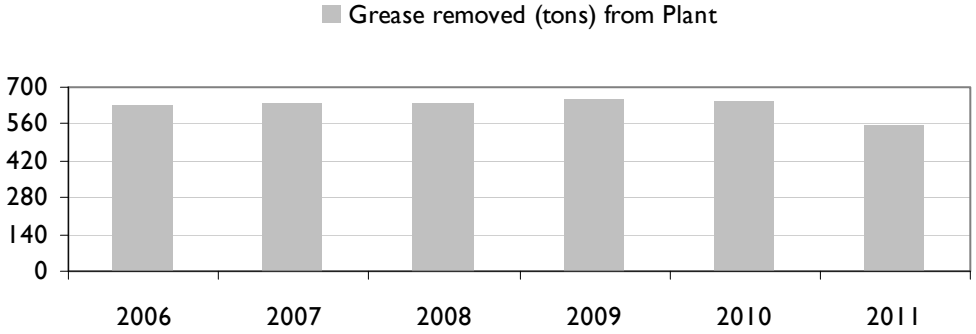
Further, following the June 2010 inspections of the City's sewer system by regulators, DOT began crafting a three-year strategic plan for addressing SSOs. The goals of the plan are to reduce the number and severity of SSOs in the City by high frequency cleaning of roughly 350 miles (15 percent) of the City's sewer pipes that DOT found to be most prone to SSOs and where most blockages in the last 20 years have occurred. In addition, DOT plans to apply chemicals in about 5 percent of the sewer system as part of a root control program. The enhanced cleaning and chemical root control could contribute to a reduction in SSOs.

[36] The chart also shows, in 2011, a large increase in SSOs caused by structural issues for pipes, likely as a result of staff's enhanced ability to identify the primary cause of an SSO using video inspections. Public Works' 2010 sanitary sewer system report noted that a large proportion of the sanitary sewer system will need replacing over the next 50 years. To deal with aging infrastructure and possible future expansion, Public Works prepared a draft sanitary sewer master plan report in September 2011, and the program level Environmental Impact Report for recommended projects is anticipated to be completed by summer 2012.

Grease Removal Trends

Another potential outcome for the FOG inspection program is a reduction in the tonnage of grease the Plant receives and disposes. FOG that makes its way through the sanitary sewer system to the Plant must be removed by the City. For example, in 2007 the Plant removed and disposed of 639.5 tons of FOG at a cost of $24,978. Exhibit 34 shows grease removed over the last six years.

Exhibit 34: Grease Removed by the Plant (in tons) by Year



Source: ESD's 2011 Annual Pollution Prevention Report

ESD staff suggests the drop-off in 2011 may have been the result of an August 2010 amendment to the Sewer Use Ordinance, which clarified FOG requirements for restaurants and allowed ESD to escalate its enforcement. However, there is no data to confirm that. The drop-off in 2011 notwithstanding, the amount of grease that the City has had to remove from the Plant has remained fairly constant despite an increase in the number of FSE inspections by ESD.

Public Outreach to Residents on FOG Is Limited

In spite of the fact that the majority of FOG-related SSOs occur in residential areas, the City's FOG Control Program has limited residential outreach. According to the City's SSMP,

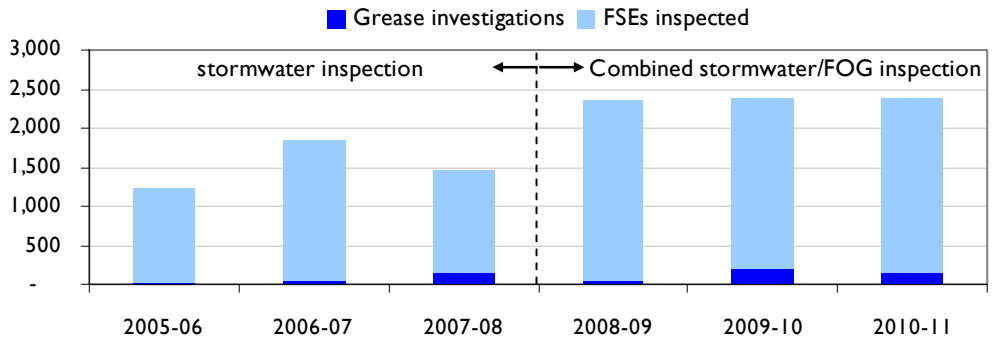
> *A bill insert is sent to every residential property in San José annually in November with information on residential practices to reduce the quantity of FOG reaching the sanitary sewer. Sewer crews distribute door hangers in areas near grease blockages as appropriate. Regional efforts result in articles in area newspapers and radio spots to promote proper disposal of FOG.*

City staff suggested that additional outreach may not be as effective as other options for addressing SSOs in residential areas including DOT's enhanced maintenance and cleaning of pipes that were found to be prone to SSOs and blockages.

ESD Conducts More Inspections of Food Service Establishments Than Comparable Jurisdictions

ESD invests significant staff time inspecting food service establishments. ESD's goal has been to inspect each FSE once every three years. Although it anticipated inspecting only 1,500 per year, ESD inspected more than 2,200 FSEs annually in San José from FY 2008-09 to FY 2010-11.[37] Exhibit 35 tracks the total number of FSEs inspected and inspections related to grease investigations for the last six years. The chart also shows that inspection activity increased after ESD began FOG inspections between FY 2007-08 and 2008-09, and that grease investigations, which are the result of referrals from DOT after a SSO, are infrequent compared to regular FSE inspections likely due to the low number of FOG-related SSOs that occur in commercial areas.

Exhibit 35: ESD's FSE Inspections and Grease Investigations by Year



Sources: ESD staff, reports, and the Environmental Enforcement Data Management System

The roughly 2,200 FSEs ESD inspects annually represents nearly 60 percent of the City's 3,700 FSEs. If the City visited each FSE only once every three years, we would expect roughly 1,200 inspections per year. However, roughly 25 percent of FSEs received one violation, and from 15 to 21 percent received two or more violations over the last three years.[38] Once a violation is noted, the inspection frequency increases. Once an FSE receives a violation, ESD inspects it again the following year. If, in that inspection, it receives another violation, then ESD inspects it annually for three years. This increases the inspection workload and the need for inspectors. According to ESD, another factor that affects inspection frequency is high turnover in FSE ownership.

[37] ESD was likely able to conduct more inspections than contemplated in part by increasing inspector efficiency. ESD also notes that while it anticipated an inventory of 3,000 FSEs, there were 3,700 in FY 2010-11.

[38] Violations can stem from poor record-keeping of grease removal device cleaning, failure to clean and maintain a grease removal device, failure to install screens on drains for grease and debris, and drains or appliances circumventing the grease removal device. Enforcement actions include *Corrections Notices, Official Warning Notices, Administrative Citations, Compliance Meetings, Inspection Warrants, and Misdemeanor Citations*.

By comparison, other large agencies in Northern California appear to comply with the FOG Control Program element in the 2006 sanitary sewer requirements while conducting far fewer FOG inspections than ESD. Exhibit 36 broadly compares the FOG inspection programs in San José and a few other large jurisdictions.

Exhibit 36: Comparison of FOG Control Programs in San José and Other Large Agencies in Northern California

Agency	Total FSEs	Annual Inspections	Percent of FSEs Inspected	Program Notes
San José (in City only)	3,700	2,236	60%	Visits each site at least once every 3 years. Inspections are combined with stormwater inspections. Performs an additional 986 FOG inspections in Santa Clara and the tributary agencies for the 1,800 or so FSEs in those cities.
San Francisco Public Utilities Commission (SFPUC)	7,000	1,136	16%	Conducted an average of 830 inspections per year from 2006 to 2011. Has a goal of 1,200 in FY 2011-12.
Central Contra Costa Sanitary District (CCCSD)	3,200	616	19%	Included 10 grease interceptor installation inspections and 606 discharge compliance inspections for 417 sites. FSEs are inspected once every 5 years, or more frequently as needed based on inspection results. FSE count does not include grocery stores with a food counter/service embedded inside.
East Bay Municipal Utility District (EBMUD)	3,000	150	5%	FOG inspections in 2011on behalf of the collection systems feeding it, plus camera investigations in hotspots, including 11 gravity grease interceptor inspections. Has a goal to visit each FSE at least once every 5 years, which an EPA consultant questioned due to turnover among restaurant staff and ownership. Provides free grease scrapers to residents, and partners with Baykeeper for residential outreach.
Sacramento Area Sanitary District	2,000	n/a	n/a	Does not permit and/or inspect FSEs. It believes targeting FSEs would be inequitable and/or cost ineffective when 80 percent of grease-related SSOs were found to be in residential areas, and the bulk of the district's claim costs are directly related to residential areas, and such a small number of occurrences are actually located in food producing facilities specific areas.

Sources: San José, SFPUC, CCCSD, EBMUD, and SASD Sanitary Sewer Management Plans and/or various program reports (inspection data may be fiscal or calendar year 2010, or 2011)
Note: San José's annual inspections number is a count of inspected facilities.

Managing for Outcomes

ESD's 2011 Annual Pretreatment Compliance Report estimated the costs of the FOG program to be $913,000.[39] These costs cover FSE inspections in San José, Santa Clara, and the tributary agencies, but exclude the portion of FOG program costs related to stormwater inspections.

To determine whether these resources are being put to their highest and best use, it is important to evaluate the program's outcomes. ESD keeps thorough records of FSE inspections and resulting compliance or violations. According to ESD records, from FY 2008-09 to FY 2010-11, 43 to 45 percent of FSEs inspected received one or more violations.

However, the issuance of violations, which are an output of the inspection process, is not the inspection program's primary or desired outcome. While an increase in compliance (reduction in violations) could mean that less FOG is entering the sanitary sewer system, the most important outcome for the City's FOG Control Program's efforts is a reduction in FOG-related SSOs, which was a point of emphasis in the 2006 sanitary sewer requirements.

Options for FOG Program Reevaluation

The FOG inspection program is a component of the City's FOG Control Program and addresses FSEs as a large potential contributor to FOG to the sanitary sewer system. Regulators have approved the City's program and similar programs in many other jurisdictions.

While the authority to inspect FSEs is indeed an element of a Sanitary Sewer Management Plan, the broader purpose of the 2006 sanitary sewer requirements which established these requirements is to reduce the number of SSOs. Furthermore, the City's SSMP defines five performance criteria:

1) The total number of SSOs
2) The number of SSOs for each cause (e.g., roots, grease, debris, pipe failure, etc.)
3) The portion of sewage contained compared to total volume spilled
4) The volume of spilled sewage discharged to surface water
5) The miles of sanitary sewer lines cleaned

Thus, we believe that ESD's FOG efforts could benefit from greater emphasis on outcomes (i.e., reducing the number of FOG-related SSOs). This could mean working more closely with DOT to eventually scale back the City's focus on FSEs and emphasize other elements of a comprehensive FOG Control program, such as residential outreach and FOG hot spot identification and cleaning.

[39] 8.5 FTE consisting of 0.5 for a program manager position, 1.0 senior inspector, 6 inspectors, and 1 assistant inspector.

In December 2009, the Central Valley Clean Water Association and the Bay Area Clean Water Agencies (BACWA) issued "Best Management Practices for Sanitary Sewer Overflow (SSO) Reduction Strategies" that called for regular program evaluation. For FOG Control, the associations recommended the following: "Once a particular strategy has been implemented, it is critical to monitor and measure the effectiveness of that strategy. If SSOs are not eliminated or reduced, choose a different strategy that will better address the specific situation."

As described above, DOT's analyses of where SSOs are occurring may be pointing towards a greater emphasis on residential FOG programs. ESD has begun meeting with DOT to improve the City's FOG Control Program, and plans to continue doing so. If as a result of their additional analyses, ESD and DOT find FOG-related SSOs to be a residential problem, they could (in addition to hot spot identification and cleaning) enhance residential outreach. For instance, the Best Management Practices report cited above recommended that agencies with FOG-related SSOs in residential neighborhoods "institute a concentrated and targeted outreach program to help reduce FOG discharges to the collection system." For example, in April 2012 the Sacramento Area Sanitary District was recognized by the California Association of Public Information Officials with a statewide excellence in communication award for graphics and print materials related to its "Stop the Clog" residential outreach. Another example of outreach is EBMUD's partnership with a non-government organization, Baykeeper, to expand its reach.

Recommendation #14: The Environmental Services Department, in coordination with the Department of Transportation, should review the efficiency and effectiveness of the City's approaches for reducing sanitary sewer overflows.

The Stormwater Inspection Program Has Opportunities to Streamline Its Efforts

ESD's stormwater inspection program broadly strives to prevent pollutants from entering the storm sewer system and/or creeks and watersheds. As described earlier, ESD's program is organized to comply with permit requirements.[40] We estimate the stormwater inspection program has an annual cost of more than $2 million.

[40] ESD management estimated that inspection resources are allocated to sub-programs as follows: 12.0 FTE for industrial and commercial businesses (this includes 3.0 for combined stormwater-FOG inspections of FSEs), 3.0 for complaint-based illicit discharge detection and elimination, 2.5 for construction sites, and 0.5 for post-construction stormwater treatment control measures. There are also 2.0 FTE of supervisors and 0.5 FTE of program management which also oversees the FOG inspection program.

Based on ESD's own critical analysis and program improvement efforts, as well as our review of San José's program and other programs in the Bay Area, we believe the department has opportunities to streamline the City's inspection efforts while maintaining compliance with the stormwater permit.

ESD Has Dramatically Increased Its Inspection of Industrial and Commercial Businesses

According to ESD, the goal of the stormwater industrial and commercial inspection program is to educate and regulate San José's 8,000 non-food service businesses and 4,000 food service businesses regarding stormwater management practices to ensure compliance with federal and state requirements for the City's storm sewer system.

2009 Stormwater Permit Requirements for Industrial and Commercial Business Inspections

For industrial and commercial sites (the most commonly inspected because of their number in San José), local jurisdictions must create an Industrial and Commercial Business Inspection Plan and establish an Implementation Level as follows in the excerpt below from the stormwater permit.

Essentially, the stormwater permit requires each jurisdiction to create its own inspection plan and inspect certain high-risk facilities (often related to vehicles, construction/trades, and manufacturing), along with others at the jurisdiction's discretion. As discussed below, it is the City's Business Inspection Plan that specifically adds retail food facilities.

C.4.b. Industrial and Commercial Business Inspection Plan (Inspection Plan)

i. Task Description – Permittees shall develop and implement an inspection plan that will serve as a prioritized inspection workplan. This inspection plan will allow inspection staff to categorize the commercial and industrial sites within the Permittee's jurisdiction by pollutant threat and inspection frequency, change inspection frequency based on site performance, and add and remove sites as businesses open and close.

The Inspection Plan shall contain the following:

(1) Total number and a list of industrial and commercial facilities requiring inspection, within each Permittee's jurisdiction, to be determined on the basis of a prioritization criteria designed to assign a more frequent inspection schedule to the highest priority facilities per Section C.4.b.ii. below.

(2) A description of the process for prioritizing inspections and frequency of inspections. If any geographical areas are to be targeted for inspections due to high potential for stormwater pollution, these areas should be indicated in the Inspection Plan. A mechanism to include newly opened businesses that warrant inspection shall be included.

ii. Implementation Level – Each Permittee shall annually update and maintain a list of industrial and commercial facilities in the Inspection Plan to inspect that could reasonably be considered to cause or contribute to pollution of stormwater runoff. The following are some of the functional aspects of businesses and types of businesses that shall be included in the Inspection Plans:

(1) Sites that include the following types of functions that may produce pollutants when exposed to stormwater include, but are not limited to:

(a) Outdoor process and manufacturing areas
(b) Outdoor material storage areas
(c) Outdoor waste storage and disposal areas
(d) Outdoor vehicle and equipment storage and maintenance areas
(e) Outdoor wash areas
(f) Outdoor drainage from indoor areas
(g) Rooftop equipment
(h) Other sources determined by the Permittee or Water Board to have a reasonable potential to contribute to pollution of stormwater runoff

(2) The following types of Industrial and Commercial businesses that have a reasonable likelihood to be sources of pollutants to stormwater and nonstormwater discharges:

(a) Industrial facilities, as defined at 40 CFR 122.26(b)(14), including those subject to the State General NPDES Permit for Stormwater Discharges Associated with Industrial Activity (hereinafter the Industrial General Permit);
(b) Vehicle Salvage yards;
(c) Metal and other recycled materials collection facilities, waste transfer facilities;
(d) Vehicle mechanical repair, maintenance, fueling, or cleaning;
(e) Building trades central facilities or yards, corporation yards;
(f) Nurseries and greenhouses;
(g) Building material retailers and storage;
(h) Plastic manufacturers; and
(i) Other facilities designated by the Permittee or Water Board to have a reasonable potential to contribute to pollution of stormwater runoff.

(3) Prioritization of Facilities

Facilities of the types described in Provision 4.b.ii.(2) above and identified by the Permittees as having the reasonable potential to contribute to pollution of stormwater runoff shall be prioritized on the basis of the potential for water quality impact using criteria such as pollutant sources on site, pollutants of concern, proximity to a waterbody, violation history of the facility, and other relevant factors.

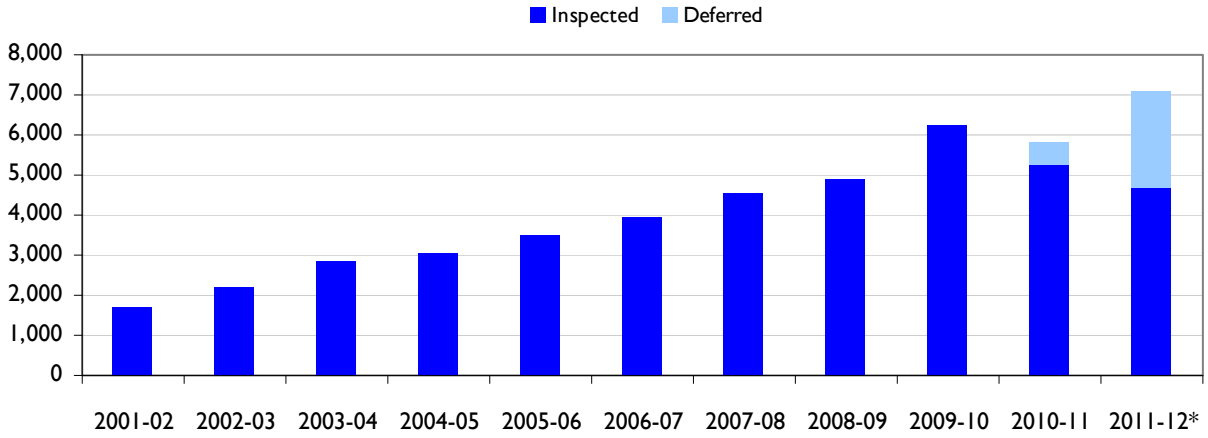
…

(5) Inspection Frequency – Permittees shall establish appropriate inspection frequencies for facilities based on Provision 4.b.ii (3) priority, potential for contributing pollution to stormwater runoff, and commensurate with the threat to water quality.

Growth in ESD Inspections of Industrial and Commercial Businesses

ESD inspections of industrial and commercial businesses grew steadily from 1,720 in FY 2001-02 to 5,240 in FY 2010-11, peaking at 6,232 in FY 2009-10.[41] Exhibit 37 charts the growth in businesses inspected annually over the past decade. Appendix C compares reported stormwater inspection activity and results, as reported in permit-required annual reports, for San José with other cities subject to the regional stormwater permit.

Exhibit 37: Industrial and Commercial Businesses Inspected or Deferred (Stormwater)



Sources: ESD stormwater management annual reports and SCVURPPP annual reports, and ESD staff
* FY 2011-12 numbers are for planned inspections.

According to ESD, the growth in industrial and commercial stormwater inspections stems from business tax amnesty programs in FY 2004-05 and FY 2006-07 which resulted in large increases to the total business list, and FOG Control Program expansion.

ESD's Inspection List Includes Home Businesses and Out-of-Business Facilities

ESD populates the list of businesses it should inspect for stormwater compliance by reviewing business tax certificate activity. This means that its list includes home businesses as well as other businesses that may pose no threat to the City's creeks and watersheds.

[41] The number of businesses in ESD's inventory of facilities, more than 12,000 in FY 2010-11, also increased during this period, but not as sharply. In addition to the 5,240 businesses ESD inspected in FY 2010-11, ESD deferred inspection of another 555 because of staff limitations. In FY 2011-12 ESD planned to inspect 4,700 facilities and defer inspection of another 2,400. If an inspection results in a violation, then the site is re-inspected; therefore, the number of inspections exceeds the number of businesses inspected (for instance, ESD conducted 7,278 inspections of 5,240 businesses in FY 2010-11).

To ensure efficient use of resources, ESD staff recently identified "low-risk" businesses by their type of business (standard industrial code) and began conducting "phone inquiries" to confirm the type of activities at their business address (which are most likely home-based). Under this model, a standard inspection could follow a phone inquiry if warranted. In our opinion, ESD's new stepped-inspection process for potentially "low-risk" businesses could reduce the workload on inspectors and eventually allow ESD to clear its backlog of inspections. Further, there may be value in performing a "phone inquiry" prior to all inspections to try to identify out-of-business facilities without losing travel time and provide further deterrence for businesses that may be noncompliant.[42]

In addition, the stormwater inspection program, as part of its continual improvement efforts, reviewed inspection and violation data for FYs 2009-10 and 2010-11 and found 42 percent of industrial and commercial businesses it inspects each year do not need to be inspected again because they were either out-of-business, or found to have no violations, no history of violations, or no exposure potential.[43]

Food Service Establishments Constitute Nearly Half of Stormwater Inspections

The number of food service establishments (FSEs) inspected for compliance with the stormwater permit has increased 206 percent over the last ten years while total industrial/commercial inspections increased 137 percent. FSE inspections grew from 730 in FY 2002-03 (33 percent of the 2,210 total businesses inspected for stormwater compliance), the first year they were done by ESD, to 2,236 in FY 2010-11 (43 percent of the 5,240 total businesses inspected for stormwater compliance).

The annual number of FSE stormwater inspections increased in part because ESD expanded stormwater inspection of FSEs to include indoor (FOG-related) components. ESD combined stormwater and FOG inspections for FSEs because it believed the combination would achieve efficiency, by saving travel time for instance.

In FY 2010-11 ESD inspected 36 percent of non-FSEs, compared to 60 percent of FSEs. Indeed, ESD inspected as many FSEs for stormwater permit compliance in FY 2010-11 as it did all businesses in FY 2002-03.

[42] The phone inquiry would need to be prior to an inspection, but not immediately prior because unannounced inspections are a best practice.

[43] Of the remaining 58 percent of businesses inspected each year, 41 percent had no violations but need to be inspected due to exposure potential, 10 percent had one violation and therefore requires biennial inspection, and 7 percent had multiple violations and therefore requires annual inspections for the following five years.

Food Services Establishment Stormwater Inspections May Be More Frequent Than Necessary

As noted earlier, ESD inspects FSEs on a three-year cycle. The department's 2001-02 Urban Runoff Management Plan Annual Report noted that, initially, FSEs would be inspected at least once every three years—at a time when other facilities were inspected every two years—until ESD could establish a compliance history for these businesses that it began inspecting in FY 2002-03. That inspection frequency would appear to suggest FSEs are riskier than other businesses, as non-FSEs are now inspected on a five-year cycle if they have not recently received violations. Non-FSEs include these businesses: vehicle salvage yards; metal and other recycled materials collection facilities and waste transfer facilities; vehicle mechanical repair, maintenance, fueling, or cleaning; and building trades central facilities or yards. While these facilities are specifically named by the San Francisco Bay Regional Water Quality Control Board in the stormwater permit, food service establishments are not. The stormwater permit does require the City to inspect businesses that have outdoor wash areas and waste storage areas, which may include food service establishments.

However, according to ESD staff analysis, food service establishments are not a higher- or lower-risk source of pollutants from a storm sewer perspective than other businesses. Specifically, to answer an internal question about whether FSEs were more likely to have stormwater violations, staff proactively analyzed data for FY 2009-10 and 2010-11 and found FSEs were as likely as other inspected businesses to be compliant (84 percent and 81 percent in the two years, respectively). In other words, inspections of FSEs were as likely to identify a violation as inspections of other businesses. FSEs had a slightly higher percentage of sites with one violation identified, but a slightly lower percentage of sights with multiple violations, compared to other businesses.

In June 2012, during the audit, ESD revised its Business Inspection Plan to reduce stormwater inspections of FSEs to once every five years, as is the case for other businesses.

ESD's Construction Site Inspections Go Beyond Regulatory Requirements

During FY 2010-11, the City conducted 943 construction site inspections for stormwater compliance. ESD allocated 2.5 FTE towards this activity. According to ESD, the goal of its construction site inspections is to "Educate and regulate builders and contractors at construction sites in San José to prevent sediment and other pollutants from entering the storm sewer system and/or local waterbodies." Stormwater permit section C.6.e.ii.2 requires that "Inspections shall be conducted monthly during the wet season" where the wet season is defined as October through April. Section C.6.e.ii.1 further requires that "By September 1st of each year, each Permittee shall remind all site developers and/or owners disturbing one acre or more of soil to prepare for the upcoming wet season."

To comply with the permit, the City must be involved with construction sites from September through April. However, ESD has chosen to conduct year-round construction site inspections. Staff explained the choice as follows:

> *…year-round construction inspections significantly increase environmental protection and help the City attain regulatory compliance. We find sites are poorly prepared for the start of the rainy season without year-round inspections, requiring inspectors to spend significant amounts of time getting violations corrected at a time when the City could be considered out of compliance with [permit] requirements (i.e., ensuring proper BMPs [best management practices] during wet season). The year-round inspections help ensure environmental protection via proper construction BMPs during the busy dry season, consequently improving BMP implementation at the critical beginning of the wet season as well as reducing violations and inspection time during the wet season.*

In our opinion ESD should reevaluate whether the benefits of its year-round program outweigh the added costs. It could consider an 8-month (or 9-month) construction inspection program, beginning in August (or July if deemed necessary) to ensure sites are properly prepared for the rainy season.

Other Jurisdictions Leverage Existing Inspection Programs

ESD estimates that it allocates 12.0 of its inspectors' time for industrial and commercial business stormwater inspections, including those of FSEs, and another 2.5 FTE of its inspectors' time for construction site inspections. Other jurisdictions leverage existing business inspection programs, which reduces the burden on inspected businesses and on ratepayers. Oakland, for instance, performs construction site inspections for stormwater compliance as part of routine building/construction inspections. Oakland's stormwater program coordinates with Oakland's Fire Department for joint hazardous waste and stormwater inspections. Another jurisdiction, Sacramento County, leverages the work of others whenever possible: the stormwater compliance program states that its "inspections will be conducted in conjunction with existing Hazardous Materials and Environmental Health inspections whenever possible to reduce inconvenience and cost to businesses."

In the past, ESD effectively leveraged the enforcement resources of partner agencies. Its website acknowledges that

> *Most construction sites are inspected by a Building Inspector, Public Works Inspector and an Environmental Services Inspector. All three types of City inspectors are trained to ensure that the construction site is protecting the stormdrains and creeks from polluted runoff.*

However, over the last few years, ESD increased the number of construction inspections it conducts from 267 in FY 2006-07, to 359 in FY 2007-08, to 605 in FY 2008-09, and further increased its estimated capacity to 1,000 inspection for about 100 construction sites in FY 2011-12.

Moreover, in the 1990s, ESD relied on the County Environmental Health Department to inspect food service establishments for compliance with stormwater permit requirements—it began FSE inspections in FY 2002-03 because its program focused on urban runoff management and based on the potential for sanitary sewer overflows. The opportunity to leverage external resources came up again for ESD's FOG program. During ESD's FOG workshops in 2008, the department was asked: "Can you coordinate with the County Health Program? It would be better if we did not have to deal with so many different kinds of inspectors." ESD responded that its FOG inspectors would bring specialized expertise, but that it works closely with the Environmental Health Department on mutual issues.

In our opinion, ESD should re-examine whether inspectors in building, Public Works, and other departments and/or government agencies can conduct required inspections during the visits they already make to businesses and construction sites.

Program Changes Can Reduce ESD's Staffing Needs

According to ESD, over the past year, its environmental enforcement programs have amassed 11.0 inspector vacancies due to retirements, separations, and lateral transfers. It recently eliminated 2.0 of these vacancies and moved the positions into the Integrated Waste Management Division to support the new commercial garbage and recycling program. ESD says that it chose to transfer these positions after it determined that it could amend its stormwater business inspection plan, reprioritize its caseload, and extend the time to complete required baseline inspections while remaining compliant with the stormwater permit. ESD states that it is holding 2.0 other inspector positions temporarily vacant to fund higher priority program needs, and that it is holding the remaining 7.0 inspector positions vacant pending audit results and ESD's ongoing program evaluation. ESD has used temporary contractors to fill the resource void; however, ESD believes the current required inspection caseload cannot be met with diminished resources, resulting in a growing number of deferred inspections (currently estimated at 3,800 for FY 2012-13) unless program objectives are changed.

By proceeding with its critical analysis and internal program improvement, and taking advantage of noted opportunities to leverage existing resources, ESD may be able to address its inspection backlog, reduce its ongoing staffing requirement, and eliminate positions held vacant while protecting the environment and maintaining permit compliance.

Recommendation #15: The Environmental Services Department should implement opportunities to make required stormwater inspection programs more efficient. Opportunities include:

- **Proceeding with its efforts to pre-screen potential home businesses, and possibly all businesses, rather than physically inspecting them**
- **Implementing its plan to reduce the frequency of FSE stormwater and FOG inspection**
- **Considering reducing construction-site inspections from year-round to the rainy season only**
- **Enhancing coordination of construction-site and business inspections with other departments**
- **Continuing to review the efficiency of the City's approaches for reducing stormwater pollutants.**

Managing for Efficient Use of Program Resources

The stormwater inspection programs, like its FOG counterpart, tracks detailed data on inspection activity and violations. Again, as with the FOG program, it is challenging to connect current stormwater inspection results to San José's overarching goals, namely preventing pollutant discharges into, and protecting water quality in, City creeks and watersheds (e.g., to determine if FSE inspections make a measurable difference on pollutant discharges into creeks and watersheds). The San Francisco Bay Regional Water Quality Control Board noted that determining stormwater program effectiveness is particularly challenging because "pollutants present in stormwater and/or urban runoff can be derived from extraneous sources over which the Permittees have limited or no jurisdiction."

Nonetheless, the stormwater permit does not specify the amount or proportion of resources that should be allocated to one permit requirement versus another; that decision is left to each jurisdiction's discretion. Thus, ESD needs to evaluate on an ongoing basis the effectiveness and efficiency of its resource allocation decisions (i.e., to determine whether a dollar is better spent on stormwater inspections, outreach, or creek clean-ups).

Development of performance indicators and measures that can tie inspection activity to outcomes is difficult; however, it would enable a data-driven approach to continual improvement and efficient use of program resources. The California Stormwater Quality Association acknowledges this:

> *Stormwater managers currently find themselves at an important crossroads. Faced with a continually increasing need to demonstrate measurability and accountability, they must have a reasonable expectation of success before committing resources toward specific*

> *activities. Therefore, good effectiveness assessment tools are critical… Integrated Assessment is the process of evaluating whether program implementation is resulting in the protection or improvement of water quality… Because of the number and variety of BMPs [Best Management Practices] and control programs being implemented at any given time, and because many factors external to stormwater programs affect water quality, establishing these relationships is difficult.*

Options for Reevaluation of Other Enforcement Programs

The FOG and stormwater inspection programs are only two of ESD's enforcement programs. Other enforcement programs include dental amalgam and Pretreatment Source Control inspection programs. Like the FOG Control Program, ESD's other inspection programs involve inspecting businesses for compliance with federal, state, and local pollution regulations, and would benefit from outcome-based approaches for managing program resources.

For instance, according to ESD's 2011 Annual Pollution Prevention Report, 99 percent of applicable dentists have obtained permits and 99 percent of inspected dentists have indeed installed amalgam separators as required, surpassing the Regional Water Quality Control Board's 85 percent participation rate target. Despite the high participation rate, an April 2011 report noted that City staff had not seen a reduction in mercury in the influent or effluent at the Plant since beginning the dental amalgam program in 2009. Further, ESD reported that actual mercury measured at the Plant was significantly less than its estimates, most likely due to overestimation of the dental contribution. ESD appears to have used these program outcome data (mercury loads at the Plant) to develop its FY 2012-13 budget, which moved an inspector position from the dental amalgam program to the new commercial garbage and recycling program, because it found that less frequent inspection would not undermine permit compliance. Nonetheless, the department continues to dedicate 1.0 FTE of inspection resources to inspecting permitted dental practices.

Additionally, since 2005, Pretreatment Source Control Program has added 3.0 inspector positions (for a total of 13.0) to help it respond to an Administrative Order from the EPA and to achieve sampling frequencies.[44] The 30 percent increase in authorized inspection staffing followed the March 2005 Administrative Order by the EPA, which found that the City's program had

> *significant deficiencies, many of which result in inadequate or compromised treatment at the [industrial users], unidentified violations, and in January of [2005], the identified pass-through of cyanide through the [Plant] into the South Bay.*

[44] The City Auditor's Office issued an Audit of the Pretreatment Source Control Program in May 2001. The audit recommended a review of the program's mission and staffing. After the audit, ESD eliminated 15.0 positions from the program in the FY 2001-02 budget.

However, since 2005, the number of permitted industrial users the program monitors has fallen from 331 to 294. ESD's program guidelines contribute to the need for the current authorized staffing level despite the 11 percent fall in monitored industrial users. Specifically, ESD's policy is to conduct a minimum of 2.0 inspections and 2.0 monitoring samples per facility per year, even though the Code of Federal Regulations requires 1.0 inspection and 1.0 monitoring sample per year. ESD monitors pollutant loads at the Plant to determine the efficacy of its Pretreatment Source Control Program—these data on program outcomes could help ESD reconsider its inspection frequencies that currently exceed federal minimum guidelines.

We believe all these programs would benefit from a program reevaluation as described in BACWA's "Best Management Practices for Sanitary Sewer Overflow (SSO) Reduction Strategies." That is to say, since ESD has already picked strategies in each program, it should monitor and measure effectiveness, and change its strategies as needed. For instance, another strategy for stormwater management could be hot spotting problematic storm drains in coordination with DOT.

Under new management, ESD has begun this program analysis and reevaluation. We applaud staff's efforts and recommend continued pursuit of program improvement.

Recommendation #16: The Environmental Services Department should continue to reevaluate its enforcement programs and take a more efficiency- and outcome-based approach for managing program resources.

Finding 5 The City Has a Responsibility to Improve the Allocation and Efficiency of Rates and Costs

Summary

As noted in Finding 3, the California Constitution, as amended by California voters in 1996 when they passed Proposition 218, requires that no fee for property-related services charged by a city exceed the cost to provide the service to the property owner. In accordance with this requirement, the rates charged by ESD are meant to cover only the costs of providing storm water, sanitary sewer, garbage and recycling (Recycle Plus), and potable water services. As such, rates for property-related services provided by the City are generally reviewed and adjusted, as needed, on an annual basis by City staff and the City Council as ratepayer programs and their costs change. However, ESD relies on some assumptions made 30 years ago to set sanitary sewer rates—the City's single largest source of ratepayer revenue. These assumptions should be updated, and ESD should establish a policy to periodically evaluate assumptions that influence rates.

In addition, the City may be able to provide savings to ratepayers by 1) eliminating duplicative Recycle Plus billing and customer services that can be provided by haulers or others; 2) exploring opportunities to increase revenues or reduce costs to achieve full cost recovery of South Bay Water Recycling operations; and 3) exempting certain ratepayer capital projects from the Public Art Program.

Finally, it is the City's responsibility to ensure charges to ratepayers are fair and appropriate. As such, the City should adopt guiding principles for evaluating ratepayer costs and future rate increases for fairness and appropriateness, and for balancing priorities, such as safe and reliable services, cost efficiency, ratepayer impacts, and environmental outcomes.

Outdated Assumptions Were Used in Setting Sanitary Sewer Rates

ESD does not track sanitary sewer flow by household, so it uses an "Equivalent Dwelling Unit" (EDU) calculation to assign to each San José household its fair share of sanitary sewer costs. The EDU approach is recognized and accepted and the State Water Resources Control Board annually approves ESD's revenue program for the sanitary sewer fund, including the use of EDU-based allocations to recover costs. However, ESD has not updated the assumptions driving its residential wastewater flow estimates in the 30 years since the City first prepared a procedures manual for computing sanitary sewer rates in February 1982.

Staff follows the following basic process to calculate sewer service and use charges:

1) Establishes the annual expenditure budget for ratepayer funds in coordination with staff in partner departments and the City Manager's Budget Office
2) Identifies revenue needs based on planned uses in the source and use statement for the sanitary sewer fund (Fund 541) and fund reserve requirements
3) Allocates planned costs into eight components by dividing them between capital and operating costs and using four parameters (flow, biochemical oxygen demand (BOD), suspended solids (SS), and ammonia (NH3))
4) Identifies best data for annual flow and strength (BOD, SS, and NH3) for customer groups based on state guidelines or City-specific studies
5) Calculates cost per unit for flow and strength
6) Applies cost per unit for flow and strength to San José customer groups:
    a) Residential—charged flat rate for expected annual flow and strength
    b) Commercial—charged annual projection of flow and strength based on actual 3-month (winter) flow and strength
    c) Monitored industrial—charged based on actual flow and strength

ESD's Sanitary Sewer Residential Multi-Family Rate May Be Artificially Low

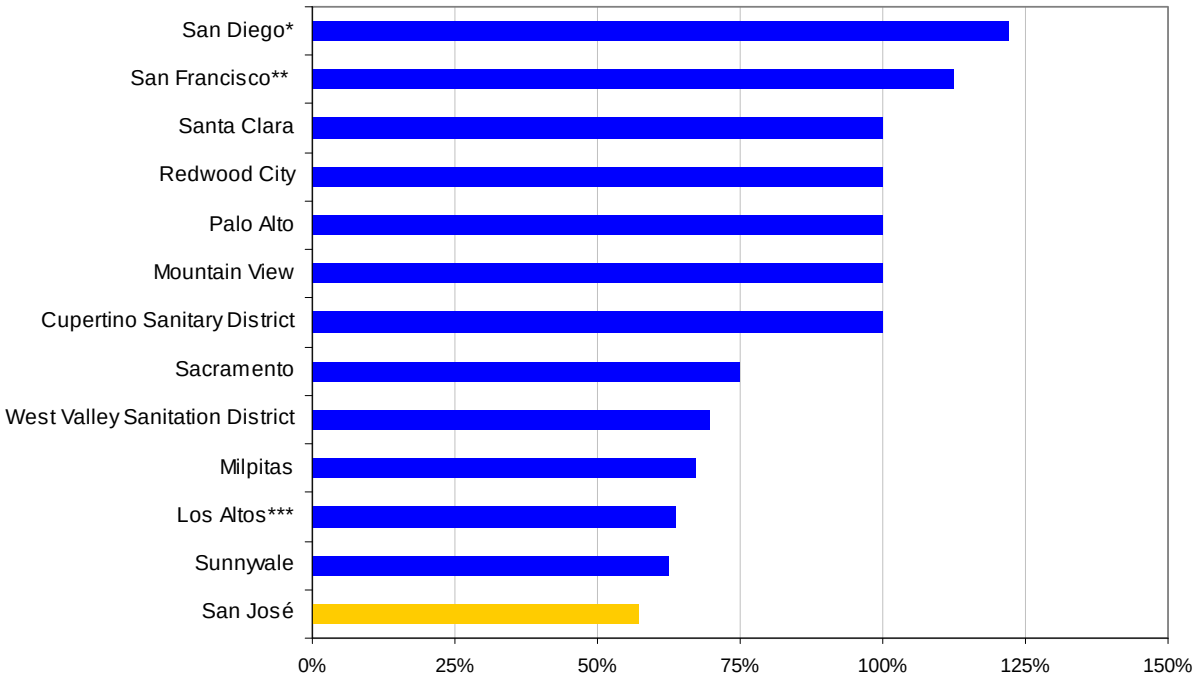
Residential rates are not uniform; San José, like many other jurisdictions, divides dwellings into single-family, multi-family, and mobile-homes. In January 2001, Black and Veatch issued to ESD its study of San José sanitary sewer rates. On the City's existing rates, the consultant raised the following concern:

> *The residential rate structure is a uniform charge based on estimated wastewater generation. The multi-family residential charge is set at 57% of that for single family residences. These estimated flows were established in the seventies and need to be reviewed…The City may want to consider the possibility of revising multi-family charges to 75 percent of single family residential charges based on data widely accepted in the industry.*

ESD did not implement the consultant's recommendations concerning rate-setting for multi-family residences.

As shown in Exhibit 38, many local jurisdictions and other large California cities set multi-family rates at least equivalent to single-family rates. San José charged the lowest multi-family rate as a percentage of the single-family rate among jurisdictions we examined.

Exhibit 38: Monthly Sanitary Sewer Rates for Multi-Family Residence as a Percentage of Single-Family Rates for Local Jurisdictions and Large California Cities



Source: Environmental Services Department rate-setting memoranda to the City Council, City of Sunnyvale Utility Rate Comparison, and websites for cited local governments
* 9 HCF (hundred cubic feet) water consumed, where a HCF is 748 gallons, which is average monthly water consumption for single-family residences in San Diego
** 10 HCF water consumed, which is used by SFPUC to show possible rates
*** Los Altos uses a sliding scale for multi-family residences; rate used is for a 2-unit residence

ESD Relies on Assumptions Made 30 Years Ago to Set Sanitary Sewer Rates

Some jurisdictions bill for sewer use based on actual water consumption. This enables these cities (for example San Francisco and San Diego that also provide the potable water utility for their residents) to assign to each household its fair share of sewer costs each month based on dynamic usage patterns.[45]

However, San José uses estimates because: 1) it does not track actual sewage flow by household, which would require substantial investment in metering devices and readers; and 2) it does not obtain water usage by household from water companies. Charging flat rates for sanitary sewer usage is not uncommon.

[45] Citywide averages obscure differences across the City—for instance, average household size varies from 2.5 to 4.2 persons per household according to PBCE estimates.

The City's methodology estimates household use of the sanitary sewer system and Plant by projecting the amount of daily sewage flow that likely happens in the household based on the number of individuals that likely reside in the household. Specifically, ESD estimates multi-family, single-family, and mobile home household size based on 1975 census data for Santa Clara County, and the average daily sewage flow per person based on the results of a study from that same year.

In 1975, the average single-family household in Santa Clara County had 3.37 people in it, compared to 2.05 people in a multi-family unit, and 1.90 for mobile homes. Much has changed for the City since 1975, including average household size. Exhibit 39 shows that, while the average size of a household in multi-family residences and in mobile homes has increased, the average household size for single-family residences has remained essentially unchanged.

Exhibit 39: Household Size by Structure Type According to ESD's Sanitary Sewer Rate Model and a Recent Census Survey

Housing Type	ESD Assumptions	2006-2010 ACS Estimates
Single-Family	3.37	3.31
Multi-Family	2.05	2.50
Mobile Home	1.90	2.86

Sources: ESD Procedures Manual for Computation of Sewer Service and Use Charges Rates, and auditor analysis of 2010 American Community Survey data for San José

ESD's 1975 flow study also suggested residents living in multi-family residences produce slightly less wastewater than everyone else—60 gallons per person per day compared to 65 gallons per person per day—which also affects rate setting. Unlike ESD's 1975 study, Public Works' draft sanitary sewer plan from September 2011 assumed a single daily sewage flow per person for residents, and used more recent Census data to estimate sewer flows.

Impact of Household Size and Flow Assumptions on Sewer Rates

While the changes to household size may seem minor, ESD's assumption has a dramatic impact on sanitary sewer rates. Exhibit 40 shows the potential effects of setting residential sanitary sewer rates based on current demographics.

Exhibit 40: Potential Effect of Revising Household Size Assumption

Housing Type	Units	ESD Current Rate	Potential Rates with Revised Assumptions
Single-Family	179,803	$33.83	$31.25
Multi-Family	118,358	$19.35	$23.58
Mobile Home	10,801	$19.39	$26.97

Source: ESD analysis of FY 2011-12 revenue program for Sewer Service and Use Charges using auditor-provided assumptions (2010 demographics for San José households, and for the purpose of calculating new rates, 65 gallons per capita daily of sewage flow regardless of housing type)

Sanitary Sewer Rates Also Depend on the Number of Households

Another assumption ESD needs to revisit, in addition to household size and daily sewage flow per capita, is the number of households that belong in the single-family and multi-family sub-groups of residential customers. Exhibit 41 shows the number of single- and multi-family residences, and mobile homes assumed in ESD's sanitary sewer rate model and found in an analysis of U.S. Census Bureau 2006-2010 American Community Survey data by the PBCE.

Exhibit 41: Number and Type of Housing Units According to ESD's Sanitary Sewer Rate Model and a Recent Census Survey

Housing Type	ESD Counts	2006-2010 ACS Estimates
Single-Family	179,803	199,613
Multi-Family	118,358	90,083
Mobile Home	10,801	10,196
Total	308,962	299,892

Source: ESD's FY 2011-12 sanitary sewer revenue program, and PBCE's analysis of 2006-2010 American Community Survey data from the U.S. Census Bureau

Although the Census data includes only occupied units, it shows there to be nearly 20,000 more single-family residences and almost 30,000 fewer units in multi-family residences than are included in ESD's sanitary sewer rate calculation.

There are a number of possible reasons for these differences.[46] Nonetheless, changing the number of units in each residential sub-group would affect the rate calculation. Because ESD's model calculates residential, commercial, and industrial sanitary sewer rates together and assumes a fixed, total revenue need, any change to residential assumptions—and therefore residential rates—would have some impact on commercial and industrial rates as well.

The disparity between the City's sewer rates for multi- and single-family residences is driven by key assumptions made more than 30 years ago that need to be updated. A periodic reevaluation would help prevent the development of major disparities like those shown in the household size chart and the revenue program table, and ensure the fairness of the City's allocation of sanitary sewer costs in the future.

[46] It appears the reason for the difference between ESD's housing numbers and the Census-based numbers is that some housing units that ESD treats as multi-family, like condominiums, may be single-family in Census data. ESD staff noted that the Municipal Code defines what constitutes residential and non-residential properties for San José's sewer billing purposes, and what households fall into different sub-groups. City staff takes the following steps to ensure households receive accurate sanitary sewer charges on their property tax assessments according to Municipal Code definitions:

- IT staff receives regular data downloads from the County Assessor's Office containing current parcel information.
- ESD staff identifies changes to premises data by verifying premises through City of San José permits page and inputs these into the City's billing system (discussed again later).
- Finance Department verifies that changes will be billed correctly, such as the number of units in a multi-family premises or type of business for commercial property.

City staff uses the final, updated parcel list for both the tax roll and as a basis for the rate model.

Recommendation #17: The Environmental Services Department should update assumptions driving sanitary sewer rates for residential customers, and should establish a policy to periodically evaluate assumptions that influence rates, including household size, daily per capita sewage flow, and housing stock composition.

South Bay Water Recycling Continues to Rely on Ratepayer Funding to Cover Ongoing Costs; the City Should Attempt to Minimize the Cost to Ratepayers

ESD operates South Bay Water Recycling (SBWR) to divert Plant effluent from the Bay and deliver wholesale recycled water to retailers in Milpitas, San José, and Santa Clara. Currently, SBWR operations are subsidized by San José and Plant tributary agency sewer rate payers.

The City's initial plan to reduce Plant effluent originated in 1991, as a result of the San Francisco Bay Regional Water Quality Control Board reporting that increasing discharges of high quality, fresh water effluent from the Plant had adversely affected 381 acres of salt marsh in the South Bay. In response to the regional board's findings, SBWR began operating in 1995 as a diversion program to meet the Plant's NPDES permit. It has since supported maintaining Plant flows below the 120 million gallons per day (mgd) flow trigger. Initial infrastructure investments were partially funded through bonds, state loans, and grants, with sewer ratepayer funds making up the difference.

Current revenue streams from grants and recycled water sales do not cover the cost of operations and maintenance for SBWR. For FY 2010-11, ESD reports that recycled water operating costs totaled $5.6 million. In addition, there was $11.4 million in debt service from past bond financing of water recycling capital projects. Funding for SBWR comes in part from federal grants, ratepayer funds, and revenue from recycled water sales. Revenue from wholesale recycled water sales totaled $2.5 million in FY 2010-11. Sewer ratepayers covered the remaining cost.

According to ESD, the Plant's average dry-weather effluent flow was 89.6 mgd in 2010 and 91.2 mgd in 2011. These numbers are now well below the 120 mgd dry weather effluent flow trigger set by the state to protect wildlife habitat. Sewer ratepayers continue to repay the bonds for past construction as required by bond covenants. A review should be conducted to determine whether it is desirable or appropriate for sewer ratepayers to continue to subsidize the operation and at what cost, subject to any limitations from past loans and grants.

Recycled Water Is Sold at a Discount

ESD provides recycled water at a discounted rate to incentivize customers to use recycled water rather than potable water sources. Current recycled water rates are from 18 to 57 percent less than potable water rates as displayed in Exhibit 42 below.

Exhibit 42: South Bay Water Recycling Water Retail Rates as of June 2012

South Bay Water Recycling Water Retail Rates

Retailer (1)	Potable Rate ($/HCF)	Recycled Rate ($/HCF)	Difference in Rate ($/HCF)	Difference in Rate ($/AF)	Percentage Savings (%)
City of Milpitas					
Irrigation	$4.79	$3.79	$1.00	$435.60	21%
Industrial	$4.32	$2.16	$2.16	$940.90	50%
Agricultural	$4.79	$3.79	$1.00	$435.60	21%
Irrigation - Former Well User (2)	$1.31	-	-	-	-
City of San Jose - Municipal Water					
Irrigation	$2.58	$1.70	$0.89	$385.51	34%
Industrial	$2.58	$1.21	$1.37	$597.21	53%
Agriculture	$2.58	$1.17	$1.42	$617.25	55%
Irrigation - Former Well User (2)	$1.31	$1.06	$0.25	$109.34	19%
Industrial/ Agricultural - Former Well User (2)	$1.31	$0.88	$0.43	$188.61	33%
City of Santa Clara					
Irrigation	$2.99	$1.75	$1.24	$540.14	41%
Industrial	$2.99	$1.40	$1.59	$692.60	53%
Irrigation - Former Well User (2)	$1.31	$1.06	$0.25	$108.90	19%
Industrial - Former Well User (2)	$1.31	$0.25	$1.06	$461.74	81%
San Jose Water Company					
Irrigation	$2.60	$2.13	$0.47	$204.73	18%
Industrial/ Agricultural	$2.60	$1.62	$0.98	$426.89	38%
Irrigation - Former Well User (2)	$1.31	$1.07	$0.24	$104.54	18%
Industrial/ Agricultural - Former Well User (2)	$1.31	$0.56	$0.75	$326.70	57%

Note:
(1) Rates shown to two decimal places. Each retailer may have a meter/service charge in addition to the above rates. Check each retailer's website for more information.
(2) Potable rate shown ($1.31/hcf) is the SCVWD Groundwater Charge a well user would otherwise pay.

Updated 5-3-12

Source: Environmental Services Department website

SBWR Strategic Master Plan Under Development

The City and the Santa Clara Valley Water District (SCVWD) have initiated a cost sharing agreement to develop a strategic master plan for SBWR. The purpose of this proposal is to conduct a comprehensive planning effort to identify and prioritize the

short- and long-term improvements necessary to maintain, improve, and expand the SBWR system, and meet regulatory and financial commitments into the future.[47] The planning process will address three key issues for the SBWR system: system reliability, economic viability, and governance.

According to ESD, financial (including wholesale and retail rate evaluation) and operational analyses (including existing system rehabilitation and maintenance) will be necessary to support development of a new business model for the existing SBWR system to achieve cost recovery and potentially a return on investment. ESD is also considering an evaluation of the most appropriate strategy for SBWR to expand given the legal, funding, and infrastructure constraints of the system.

The continued operation of this program means ratepayers bear a financial burden because the revenue from recycled water sales does not cover the operating cost even as the initial impetus for recycled water has been diminished. While sewer ratepayers are obligated to repay the bonds for past construction, a review should be conducted to evaluate if there are other opportunities to increase the revenue from the sale of recycled water to offset the operation and maintenance cost of the program subject to any obligations under existing grants and loans.

Recommendation #18: The Environmental Services Department should explore opportunities to increase revenues or reduce costs to achieve full cost recovery of South Bay Water Recycling operations and minimize the cost to sanitary sewer ratepayers.

The City Should Minimize Costs to Ratepayers by Eliminating Duplicative Recycle Plus Billing and Customer Services

Currently, the City provides recycling services (Recycle Plus) to the residents of San José and bills residents monthly for these services. The City collects these monthly payments and then reimburses recycling haulers for contracted waste collection. The City also offers Recycle Plus customer support through the City's call center. Collectively, these services use 35 full time equivalent employees in ESD and IT, at an average annual cost of $11.9 million.

The City's new commercial waste collection and processing system, effective July 2012, is operated under exclusive 15-year franchise agreements under which the hauler is responsible for commercial billing and service options.

[47] The cost sharing agreement between the City and SCVWD calls for each party to contribute up to $1.2 million and share in reimbursements from a United States Department of Interior Bureau of Reclamation grant of up to $1.2 million for costs associated with developing the plan. Also, in 2010 the City executed a 40-year agreement with SCVWD to collaborate on the development of local recycled water use. The agreement includes provisions for joint funding of SBWR operations and joint funding towards the construction of an Advanced Recycled Water Treatment Facility.

The City is conducting a service delivery evaluation for the residential Recycle Plus billing and customer service functions. The primary impetus for the analysis is to resolve potential issues arising from a loss of vendor support for the City's integrated billing system software. The evaluation is exploring alternatives for residential Recycle Plus billing and customer service.

One alternative is to stop in-house billing and customer service and contract these functions out to the haulers. The City's residential recycling contractors have billing and customer service capabilities, and the hauler contracts include the option for hauler billing for services, so it seems that the City may be performing a duplicative effort. For example, under the current system both the haulers and the City maintain customer information. [48]

According to a preliminary analysis by City staff, removing the duplicative efforts could provide significant savings by eliminating full time positions which currently handle Recycle Plus billing, customer service, and credit collection for default payments. The City is currently preparing a full service delivery evaluation for this alternative including a comparison of costs and benefits.

Recommendation #19: To minimize costs to ratepayers, the City should explore alternatives for eliminating duplicative Recycle Plus billing and customer service efforts.

The City Can Provide Savings by Exempting Ratepayer-Funded Capital Projects from Public Art Program Requirements

The City's Public Art Ordinance provides that 1 percent of the cost of all capital improvement projects be set aside for public art. The Ordinance excludes certain projects, including projects designated as maintenance, retrofits (such as seismic or those required to meet legal requirements), and site remediation. For projects funded by the former Redevelopment Agency, a further exclusion existed for "projects that do not expand the capacity of an existing facility."

When funding for public art comes from Proposition 218 restricted funds, such as those in ESD's ratepayer-funded capital programs, public art appropriations are restricted to art associated with these programs.

[48] In 1997, the City Auditor's Office published a report recommending outsourcing the billing and customer service functions performed by the City.

Public Art Associated with Ratepayer-Funded Capital Programs Has Grown in Recent Years

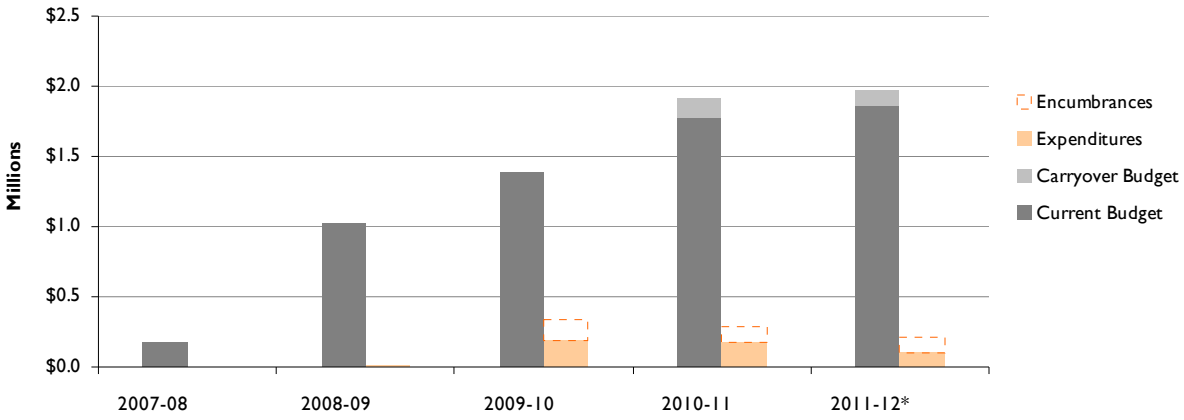
Prior to 2008, the City had an exemption from the public art allocation for construction projects where certain criteria were met, including minimal anticipated public visibility and/or public traffic usage. This exemption was eliminated in 2008 to provide for easier administration of the program and to broaden the pool of projects subject to the allocation.[49] In the two Capital Budgets prior to the elimination of the exemption, all sanitary sewer, storm sewer, Plant, and Muni Water capital projects were exempted from the public art allocation because of low public visibility.

Public Art Budgets Have Grown; However Actual Spending Has Not Kept Up

Exhibit 43 shows the growth in the combined public art budgets in the sanitary sewer, Plant, storm sewer, and Muni Water capital funds since the elimination of the exemption for projects with low public visibility.

Exhibit 43 also shows the actual expenditures and encumbrances for public art out of these funds for the last five fiscal years. Annual expenditures or encumbrances for public art in these funds never surpassed one quarter of planned activity (as represented by the annual budget). This has been most noticeable in public art allocations from the sanitary sewer fund as there have been no expenditures or encumbrances in any of the past five fiscal years (note, this is also the fund with the highest level of public art allocations). See Finding 3 for discussion regarding the build up of capital reserves resulting from spending not keeping pace with budgets.

Exhibit 43: Public Art Budgeting and Spending in Selected Ratepayer-Funded Capital Programs, FY 2007-08 Through FY 2011-12



Source: Auditor analysis of Capital Budgets and FMS expenditures
* Includes the sanitary sewer, Plant, storm sewer, and Muni Water capital funds (Funds 545, 512, 469, and 500, respectively). FY 2011-12 figures do not reflect any year-end adjustments.

[49] A further change was the reduction of the allocation from 2 percent to 1 percent of the cost of the capital project.

Ratepayer-Funded Capital Programs Allocate $1.1 Million to Public Art Over the Next Five Years

The City's *2012-2013 Proposed Capital Budget and 2013-2017 Capital Improvement Program* allocates $1.7 million to public art in total over the next five years. About $1.1 million of that are in capital funds related to the City's sanitary and storm sewers, the Plant, and Muni Water, or 63 percent of all public art allocations.

In addition to the above, $1.8 million in public art appropriation balances were carried over from FY 2011-12, including $1.1 million in the sanitary sewer capital fund. All told, that amounts to potentially $2.9 million in public art appropriations over the next five years from these funds. Exhibit 44 shows a breakdown of public art budgets across these capital funds in the 2013-2017 CIP.

Exhibit 44: Public Art Allocations for Selected Ratepayer-funded Capital Programs

	5-year total
Carryover balances	$1,770,000
2013-2017 Capital Improvement Program:	
• Sanitary sewer	$725,000
• Water Pollution Control Plant	169,000
• Storm sewer	144,000
• Muni Water	54,000
Subtotal	$1,092,000
TOTAL	$2,862,000

Source: 2012-2013 Proposed Capital Budget and 2013-2017 Capital Improvement Program

Additional Review May be Needed to Ensure Appropriate Public Art Allocations Associated with Some Ratepayer-Funded Capital Projects

Upgrades to the sewer system (funded through the sanitary sewer capital fund) generate the largest public art allocations among the four ratepayer-funded capital programs. The largest individual project is the replacement and upgrade of 5,000 linear feet of existing 54" concrete sewer located from Old Bayshore Highway to Commercial Street with 84" inch lined reinforced concrete pipe; the 5-year CIP for this project is $30.2 million (thus generating over $300,000 in public art). Also included is $14 million budgeted over five years for "Immediate Replacement and Diversion Projects" to address needs that arise from DOT's maintenance and response activities. It is unclear how this latter project meets the criteria for inclusion in the public art allocation.

In the Plant capital fund, two projects generate all of the public art appropriations. The first is $2.5 million in enhancements over five years to the new headworks (which came online in 2008) to allow it to accommodate all dry weather flows when the old headworks is taken out of service. The second is $14.5 million over five years to construct a pipeline to connect two facilities within the secondary process area to improve performance. As these two projects are meant to enhance performance of existing facilities, it is unclear how they meet the criteria for inclusion in the public art allocation.

In the storm sewer and Muni Water capital funds, projects generating public art include the following:

- $2.7 million over five years for "Urgent Flood Prevention and Repair Projects" in the storm sewer capital fund. This allocation funds unscheduled engineering and construction for unanticipated projects that are necessary to ensure public health and safety.
- $1.2 million to rehabilitate two three million gallon steel reservoirs that provide fire protection and emergency supply for the North San José and Alviso service areas from the Muni Water capital fund.

Similar to the concerns noted above regarding projects generating public art allocations in the sanitary sewer and Plant capital funds, it is also unclear how the above two projects meet the criteria for inclusion in the public art allocation.

Subsequent to the release of the *2012-2016 Proposed Capital Improvement Program*, ESD, along with the Office of Cultural Affairs and the City Attorney's Office, reviewed public art funding from the sanitary sewer, Plant, and storm sewer capital funds. They found they needed to correct the allocations to exclude projects that replaced assets in kind, projects which primarily replaced existing equipment, and projects which constituted site remediation. As a result, the five-year public art allocation in the Plant Capital fund was reduced by $2 million, the sanitary sewer allocation was reduced by $331,000, and the storm sewer allocation was reduced by $21,000.

Based on the public art allocations in the current 5-year CIP, we believe this review should be conducted again.

Recommendation #20: The Environmental Services Department, along with the Office of Cultural Affairs and the City Attorney's Office, should review past and current public art allocations in the Sanitary Sewer System, Water Pollution Control, Storm Sewer, and Water Utility Capital Funds to determine whether appropriations are in accordance with the City's Public Art Ordinance.

The Uses of Ratepayer Funds Should Focus on the Benefits Provided to Ratepayers

The goals of the Ordinance include enhancing the appearance of public places and helping beautify the appearance of the City. Artwork acquired through this program is to be installed in public places. As noted earlier, prior to the adoption of the Ordinance in 2008, capital projects in the sanitary sewer, Plant, storm sewer, and Muni Water capital funds were exempted from the public art allocation because of their low public visibility. It is unclear how ratepayers have benefited since the adoption of the Ordinance based on the level of spending to date as shown above.

According to the Office of Cultural Affairs, which administers the City's public art program, despite not spending its public art appropriations in prior years, it does have a plan to spend these budgets moving forward. The Plan includes using public art as an extension of ESD's current education and marketing program to promote the sustainability of the wastewater system and other ESD goals.

The Master Plan Assumes $5.4 Million for Public Art Over the Next 30 Years

The Master Plan assumes $5.4 million will be spent on public art over 30-years (or about $180,000 per year), based on 1 percent of the cost of selected Master Plan projects. According to the Office of Cultural Affairs, there is currently a Plant Master Plan artist who has identified opportunities to educate the public about the Plant and provided ideas on how to enhance the appearance of the Plant.

Among the Master Plan projects assumed to be subject to the public art allocation are:

- Roughly $300 million in projects related to the biosolids transition. These projects will replace the current process of open air drying to a new mechanical process of dewatering and drying, therefore allowing for a smaller Plant footprint and future development of the Plant lands.
- $133 million for new filters, the justification (according to the Master Plan) of which is to meet potential future regulatory requirements.
- $49 million for new ultraviolet disinfection facilities which would replace the existing hypochlorite system.
- $24 million for odor control projects for the new headworks.

Although it is unclear why the above projects were assumed to be subject to the public art allocation given the exclusions noted in the Ordinance, it is not unreasonable to assume that the $2.1 billion in Master Plan projects may generate a significant amount of public art funding in the future.[50]

[50] Similarly, there could be significant public art funding resulting from projects recommended as part of the Sewer System Master Plan being developed by Public Works.

The City Council Should Reconsider the Public Art Allocation for Certain Ratepayer-Funded Capital Projects

As noted previously, the use of ratepayer funds is restricted to spending that is related to the service being provided through those rates. Before ESD embarks on implementing Master Plan projects, we believe the City Council should reconsider whether public art funding derived from upgrading existing sewer, Plant, or other utility-related capital infrastructure truly benefits ratepayers.

Although some California cities include ratepayer-funded capital projects in their public art allocation policies, others include specific exemptions for sewer or other utility-related capital projects. For example, San Francisco restricts its public art allocation to aboveground projects and provides a specific exemption for aboveground pipelines and their supports. San Diego similarly exempts underground utilities, including water, sewer, and storm drains.

The City Council has discretion over public art funding. For example, in June 2010, the Council deferred Airport-related public art expenditures until passenger levels reach certain levels. Also, the Ordinance states that nothing is intended to prohibit the Administration, subject to the approval of the City Council, from designating additional funds for public art outside the normal 1 percent allocation methodology. This latter methodology can be used for situations when ESD identifies specific public art opportunities which do benefit ratepayers, including educational or other projects related to the ratepayer-funded services.

Recommendation #21: The Administration should consider recommending that the City Council amend the public art ordinance to eliminate the public art requirement for certain ratepayer-funded capital projects, including those related to underground utilities and the wastewater treatment process.

The City Has a Responsibility to Evaluate Ratepayer Costs and Rate Increases for Fairness and Appropriateness

The City has a responsibility toward ratepayers to provide the highest level of service while maintaining efficient spending levels. From FY 2006-07 to FY 2012-13, the City raised sanitary and storm sewer rates 56 and 89 percent, respectively, or $12.20 and $3.71 per month, respectively, to address the capital needs of aging Plant and sewer infrastructure and enhanced regulatory requirements. At the same time, the City's residents and businesses were coping with a challenging economy, and the City faced enormous General Fund budget deficits, leading to stark reductions to core City services. In hindsight, the sanitary and storm sewer increases could have been delayed because spending did not materialize as expected. Current leadership,

recognizing the growth in reserves and the impact on ratepayers, determined that rate increases were unnecessary for FY 2012-13 despite the future need for additional capital funds.[51]

In our opinion, the City should consider a set of guidelines for balancing the competing interests of developing and expanding operationally versus minimizing the cost burden shouldered by ratepayers. For example, the City could implement a "guiding principle" policy similar to the SFPUC's February 2012 Rates Policy that said "the SFPUC will ensure the rates and the budgets … conform to … four key principles of: (1) Affordability (2) Compliance (3) Sufficiency (4) Transparency."

Moreover, the City has a guiding principle that balances priorities in its investment policy:

> *The purpose of this Investment Policy ("Policy") is to establish overall guidelines for the management and investment of the City of San José's ("City") public funds.*
>
> *It is the policy of the City to invest public funds in a manner to meet the City objectives, in order of priority, safety of invested funds, maintenance of sufficient liquidity to meet cash flow needs; and attainment of a rate of return consistent with the first two objectives, while conforming to the provisions of California Government Code … , the Charter of the City of San José, the City of San José Municipal Code, and this Policy.*

Adopting guiding principles that address the difficult balance between safe and reliable services, cost efficiency, ratepayer impacts, and environmental outcomes is one option for ensuring against raising rates unduly. Alternatively, other jurisdictions, including the city of Los Angeles, have elected to use a "ratepayer advocate" to provide independent public review of public utility rates.

Recommendation #22: The Administration should propose the City Council adopt a City Council Policy which includes guiding principles for evaluating ratepayer costs and rate increases for fairness and appropriateness, and balancing priorities, such as safe and reliable services, cost efficiency, ratepayer impacts, and environmental outcomes.

[51] Excepting Muni Water which required a rate increase to recover the cost of wholesale water cost increases.

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Conclusion

ESD is confronting troubling staffing trends and high vacancy levels at the Water Pollution Control Plant. Compounding this issue is the ongoing implementation of the Plant Master Plan which will require strong oversight and reporting systems to ensure success. ESD raised rates in anticipation of increased spending, especially for capital projects, however projected spending did not materialize and large reserves accumulated in ratepayer funds. To address regulatory concerns, the City expanded enforcement programs which now need a greater emphasis on outcomes. Lastly, the City needs to update its rate assumptions and address other expenses to ensure ratepayer costs are appropriate and fair.

RECOMMENDATIONS

Recommendation #1: The Administration should continue pursuing ways to retain high-performing, critical Plant staff, such as skill-specific, time-limited retention incentives/bonuses, requesting the Department of Human Resources/Office of Employee Relations conduct formal salary surveys for critical Plant work sections, and working with the Office of Employee Relations on potential meet-and-confer issues that such changes would present.

Recommendation #2: The Department of Human Resources/Office of Employee Relations should conduct a formal salary survey for consideration in an evaluation for retaining critical Plant engineering staff.

Recommendation #3: To ensure that contract deliverables, goals and performance standards are clearly defined, the Environmental Services Department and the Department of Public Works should consider utilizing outside consultants to help solicit and draft agreements for program management services and future Design/Build or Design/Build/Operate contracts related to the Water Pollution Control Plant's capital projects. The City Attorney's Office should determine whether retaining counsel to assist with the negotiation and drafting of these contracts is warranted.

Recommendation #4: During implementation of Plant Master Plan projects, the Environmental Services Department should provide for ongoing construction audit or other audit work.

Recommendation #5: The City should consider using an external firm(s) to provide independent cost estimating services or additional cost/scheduling controls for projects utilizing Design/Build or Design/Build/Operate contracts related to Water Pollution Control Plant capital projects.

Recommendation #6: The Environmental Services Department and the Department of Public Works should continue to develop a management oversight structure to monitor overall CIP effort and ensure projects remain on budget and on schedule.

Recommendation #7: The Environmental Services Department should provide regular status reports to the Treatment Plant Advisory Committee and the City Council on Plant Master Plan implementation, including overall progress to date and individual project updates, performance measures, and any issues that have arisen, in particular those which may have rate impacts. To improve transparency, the Environmental Services Department should also post these on its website.

Recommendation #8: The Environmental Services Department should continue to improve communication between Operations & Maintenance and capital program staff, and coordinate involvement of Operations & Maintenance staff in capital project delivery.

Recommendation #9: The Environmental Services Department and the Department of Public Works should continue their practice of co-locating contractor and City staff for future Package 1 and Package 2 project implementation to facilitate work and coordination with Operations & Maintenance staff and expedite knowledge transfer. The Environmental Services Department should also consider requiring contractor to dedicate staff to liaise with O&M staff.

Recommendation #10: The Environmental Services Department should evaluate and present to the City Council and the Treatment Plant Advisory Committee the potential ratepayer impacts of implementing the Master Plan once the Environmental Impact Report is complete.

Recommendation #11: The Environmental Services Department should develop a policy to periodically review the Master Plan in response to regulatory, technological, or economic changes; implementation and financing challenges; and ratepayer impacts.

Recommendation #12: In addition to more realistically planning for capital improvements and the related budgeting for capital expenditures, the Environmental Services Department, in coordination with partner departments, should develop and/or update, and formalize fund balance and reserve goals for ratepayer capital funds.

Recommendation #13: The Administration should propose the City Council establish a City Council Policy which includes guiding principles so as not to raise rates in years in which ratepayer fund balances exceed reasonable targets.

Recommendation #14: The Environmental Services Department, in coordination with the Department of Transportation, should review the efficiency and effectiveness of the City's approaches for reducing sanitary sewer overflows.

Recommendation #15: The Environmental Services Department should implement opportunities to make required stormwater inspection programs more efficient. Opportunities include:

- Proceeding with its efforts to pre-screen potential home businesses, and possibly all businesses, rather than physically inspecting them
- Implementing its plan to reduce the frequency of FSE stormwater and FOG inspection
- Considering reducing construction-site inspections from year-round to the rainy season only

- Enhancing coordination of construction-site and business inspections with other departments
- Continuing to review the efficiency of the City's approaches for reducing stormwater pollutants.

Recommendation #16: The Environmental Services Department should continue to reevaluate its enforcement programs and take a more efficiency- and outcome-based approach for managing program resources.

Recommendation #17: The Environmental Services Department should update assumptions driving sanitary sewer rates for residential customers, and should establish a policy to periodically evaluate assumptions that influence rates, including household size, daily per capita sewage flow, and housing stock composition.

Recommendation #18: The Environmental Services Department should explore opportunities to increase revenues or reduce costs to achieve full cost recovery of South Bay Water Recycling operations and minimize the cost to sanitary sewer ratepayers.

Recommendation #19: To minimize costs to ratepayers the City should explore alternatives for eliminating duplicative Recycle Plus billing and customer service efforts.

Recommendation #20: The Environmental Services Department, along with the Office of Cultural Affairs and the City Attorney's Office, should review past and current public art allocations in the Sanitary Sewer System, Water Pollution Control, Storm Sewer, and Water Utility Capital Funds to determine whether appropriations are in accordance with the City's Public Art Ordinance.

Recommendation #21: The Administration should consider recommending that the City Council amend the public art ordinance to eliminate the public art requirement for certain ratepayer-funded capital projects, including those related to underground utilities or the wastewater treatment process.

Recommendation #22: The Administration should propose the City Council adopt a City Council Policy which includes guiding principles for evaluating ratepayer costs and rate increases for fairness and appropriateness, and balancing priorities, such as safe and reliable services, cost efficiency, ratepayer impacts, and environmental outcomes.

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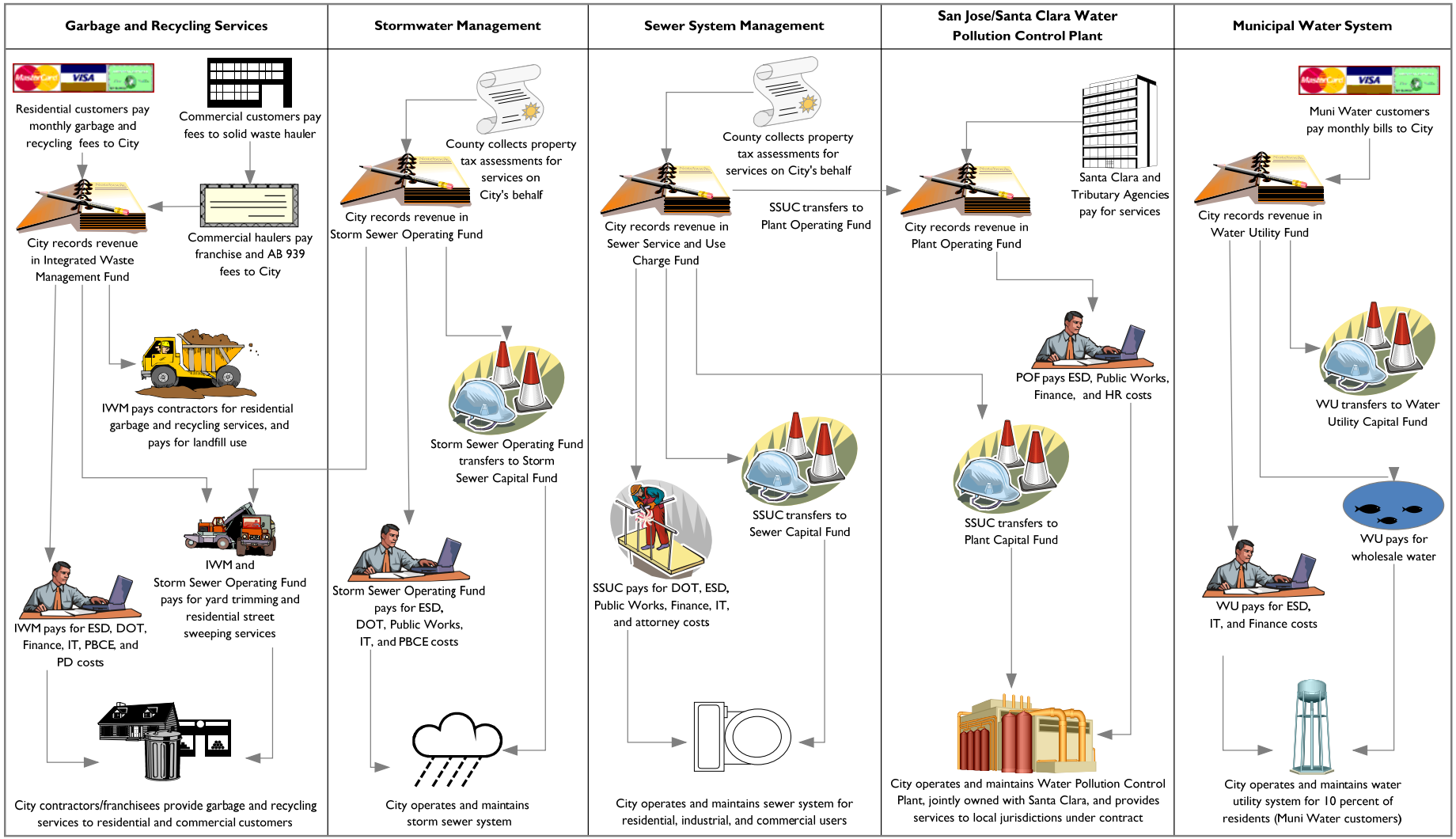
Appendix A

Simplified Flow of Utilities and Services Funds for Operating Expenditures

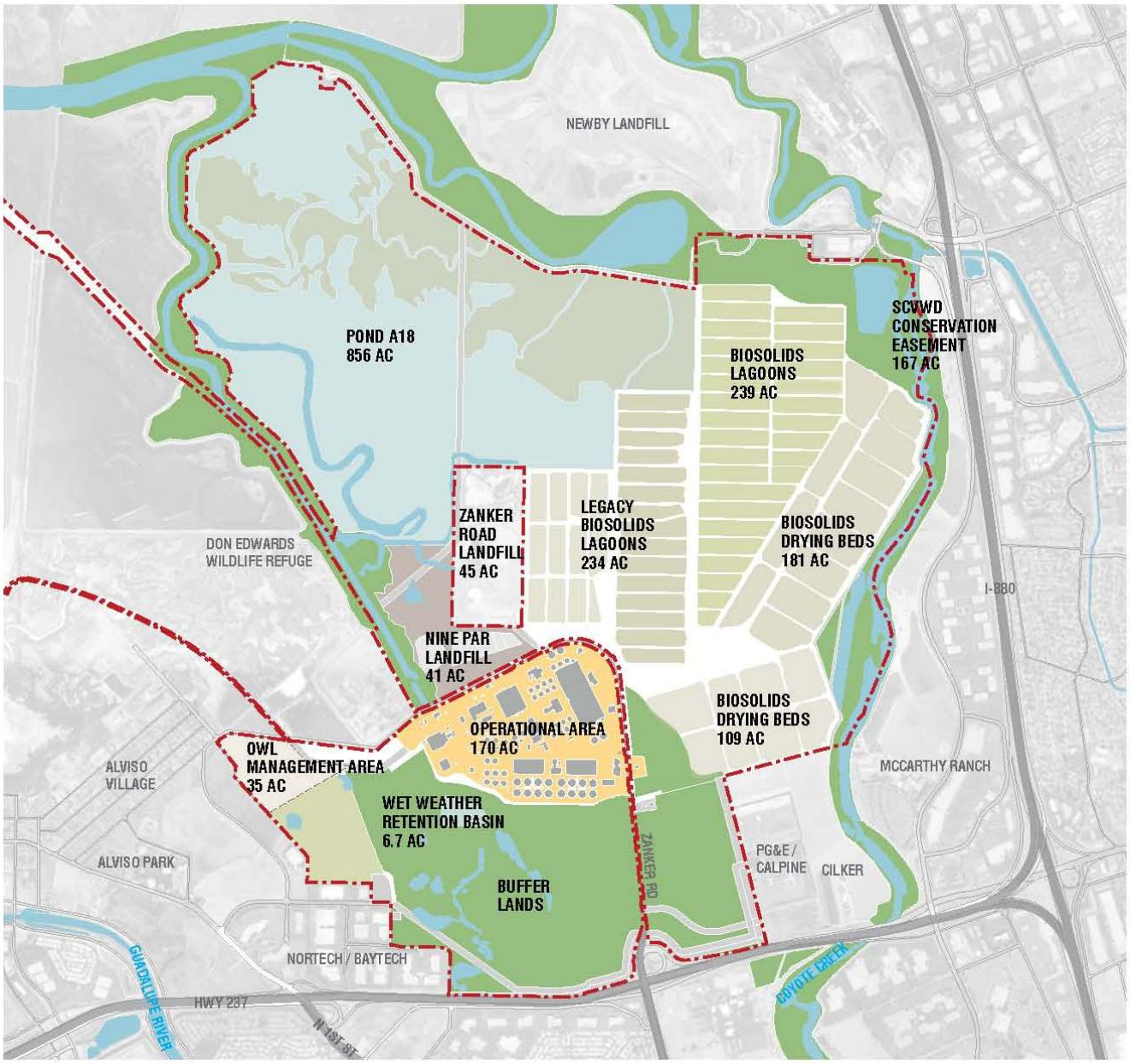


Source: Auditor's summary based on FY 2011-12 Proposed Operating Budget Source and Use Statements and ESD's 2008-09 Fund Management Report
Note: Santa Clara and tributary agencies also contribute toward Plant capital expenditures

Appendix B

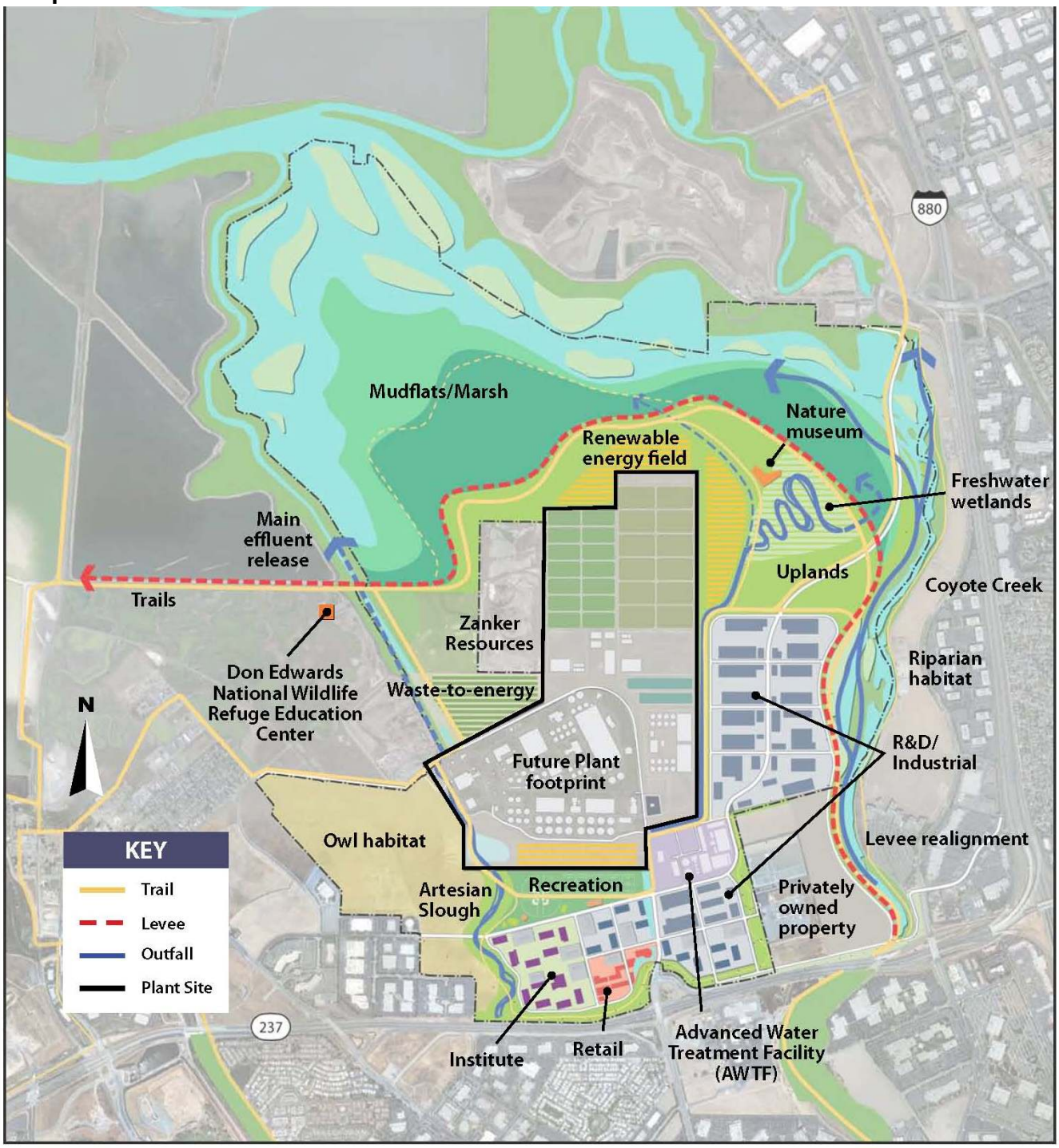
Current and Future Proposed Uses of Plant Lands

Current Land Uses



Source: Draft Master Plan

Proposed Future Uses of Plant Lands



Source: www.rebuildtheplant.org

Appendix C

Comparison of Reported Inspection Activity and Results for Programs in the Municipal Regional Stormwater NPDES Permit

	San José		Oakland		Fremont		Hayward		Sunnyvale		Santa Clara		Palo Alto	
Population (2010 Census)	945,942		390,724		214,089		144,186		140,081		116,468		64,403	
Approximate square miles (excluding water)	177		56		77		45		22		18		24	
Reported data	09-10	10-11	09-10	10-11	09-10	10-11	09-10	10-11	09-10	10-11	09-10	10-11	09-10	10-11
C.4 - Industrial and Commercial Site Controls														
C.4.b.iii.(1) ► Potential Facilities List	12,057	12,024	11,837	7,821	1,375	1,171	4,773	5,056	766	733	2,655	3,000	1,087	547
C.4.b.iii.(2) ►Facilities Scheduled for Inspection	4,710	4,782	1,200	1,200	614	601	200	175	651	595	390	967	201	223
C.4.c.iii.(1) ►Facility Inspections														
Number of businesses	6,232	5,240	1,122	359	654	715	220	209	357	475	23	128	201	223
Number of inspections	8,149	7,278	1,215	370	902	907	233	240	360	540	23	149	275	297
Number of violations (not verbal)	1,827	1,750	81	23	48	27	-	7	10	39	9	26	26	20
Sites inspected in violation	961	1,004	81	60	38	25	37	26	6	32	7	22	46	37
Violations resolved within 10 working days and/or timely	949	1,590	78	59	15	27	5	23	8	33	9	26	46	19
C.4.c.iii.(2) ►Frequency and Types of Violations Observed														
Actual discharge	147	102	2	2	12	14	-	4	5	9	-	3	-	1
Potential discharge and other	1,680	1,648	79	59	36	13	39	24	5	30	9	23	-	36
C.4.c.iii.(2) ►Frequency and Type of Enforcement														
Level 1 / Verbal	-	-	-	38	17	94	39	21	37	49	-	-	20	17
Level 1 - Non-verbal (SJ - Correction Notice)	806	864	77	21	-	-	-	-	-	-	7	20	-	-
Level 2 (SJ -Official Warning Notice)	253	320	-	-	15	7	-	7	10	36	-	3	24	20
Level 3 (SJ -Administrative Citation)	14	22	3	2	16	20	-	-	-	3	-	-	2	-
Level 4 (SJ -Compliance Meeting)	-	5	1	-	-	-	-	-	-	-	-	-	-	-
C.4.d.iii ► Staff Training Summary														
Inspectors (inferred from training record)	17	17	1.5	1.5	2	2	4	3	5	7	1	1	1	1
C.5 - Illicit Discharge Detection and Elimination														
C.5.f.iii.(1) Discharges reported	604	555	189	66	136	97	59	56	31	26	31	43	61	101
C.5.f.iii.(2) Discharges reaching storm drains or waters	136	135	85	40	42	23	33	29	8	10	3	21	-	6
C.5.f.iii.(3) Discharges resolved in a timely manner	325	454	52	36	135	97	33	29	29	25	31	43	61	101
C.6 – Construction Site Controls														
C.6.e.iii.1.a No. of sites less than 1 acre of soil for inspection	38	19	-	17	7	1	-	-	18	2	1	3	-	13
C.6.e.iii.1.b No. of sites disturbing 1 acre of soil (or more)	119	97	-	24	21	20	11	10	9	19	6	6	40	17
C.6.e.iii.1.c Total no. of storm water inspections	1,075	943	-	683	272	157	82	93	96	97	693	52	175	226
C.6.e.iii.1.d Number of violations (total)	183	126	-	67	26	70	11	23	82	52	13	12	15	2
C.6.e.iii.1.e ►Construction Storm Water Enforcement														
Correction notice/Verbal warning	133	86	-	35	18	20	13	23	58	37	4	4	15	6
Official warning	45	22	-	11	6	18	-	-	4	2	1	2	-	-
Administrative Fine/Stop Work Order	3	-	-	-	2	9	-	-	1	1	-	3	-	1
C.6.e.iii.1.f No. of illicit discharges, actual and inferred	6	3	-	2	8	14	2	1	1	-	-	1	-	1
C.6.e.iii.1.g No. of sites with discharges, actual and inferred	4	3	-	2	6	9	2	1	1	-	-	1	-	1

(continued on next page)

Performance metrics	San José		Oakland		Fremont		Hayward		Sunnyvale		Santa Clara		Palo Alto	
	09-10	10-11	09-10	10-11	09-10	10-11	09-10	10-11	09-10	10-11	09-10	10-11	09-10	10-11
C.4 - Industrial and Commercial Site Controls														
Work plan metrics														
Percent of total facilities scheduled for inspection	39.1%	39.8%	10.1%	15.3%	44.7%	51.3%	4.2%	3.5%	85.0%	81.2%	14.7%	32.2%	18.5%	40.8%
Percent of total facilities actually inspected	51.7%	43.6%	9.5%	4.6%	47.6%	61.1%	4.6%	4.1%	46.6%	64.8%	0.9%	4.3%	18.5%	40.8%
Percent of scheduled facilities actually inspected	132.3%	109.6%	93.5%	29.9%	106.5%	119.0%	110.0%	119.4%	54.8%	79.8%	5.9%	13.2%	100.0%	100.0%
Violation metrics														
Voluntary compliance rate (by site)	84.6%	80.8%	92.8%	83.3%	94.2%	96.5%	83.2%	87.6%	98.3%	93.3%	69.6%	82.8%	77.1%	83.4%
Violation rate per site	15.4%	19.2%	7.2%	16.7%	5.8%	3.5%	16.8%	12.4%	1.7%	6.7%	30.4%	17.2%	22.9%	16.6%
Violation rate per inspection	22.4%	24.0%	6.7%	6.2%	5.3%	3.0%	0.0%	2.9%	2.8%	7.2%	39.1%	17.4%	9.5%	6.7%
Follow-up inspection rate	30.8%	38.9%	8.3%	3.1%	37.9%	26.9%	5.9%	14.8%	0.8%	13.7%	0.0%	16.4%	36.8%	33.2%
Timely violation resolution rate	90.4%	90.9%	96.3%	256.5%	31.3%	100.0%	n/a	328.6%	80.0%	84.6%	100.0%	100.0%	176.9%	95.0%
Enforcement metrics														
Level 1 - Verbal as a % of total	0.0%	0.0%	0.0%	62.3%	35.4%	77.7%	100.0%	75.0%	78.7%	55.7%	0.0%	0.0%	43.5%	45.9%
Level 1 - Non-verbal as a % of total	75.1%	71.3%	95.1%	34.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	87.0%	0.0%	0.0%
Level 2 as % of total	23.6%	26.4%	0.0%	0.0%	31.3%	5.8%	0.0%	25.0%	21.3%	40.9%	0.0%	13.0%	52.2%	54.1%
Level 3+ as % of total	1.3%	2.2%	4.9%	3.3%	33.3%	16.5%	0.0%	0.0%	0.0%	3.4%	0.0%	0.0%	4.3%	0.0%
Level 1 as a % of inspected facilities	12.9%	16.5%	6.9%	5.8%	2.6%	13.1%	17.7%	10.0%	10.4%	10.3%	30.4%	15.6%	10.0%	7.6%
Level 2 as a % of inspected facilities	4.1%	6.1%	0.0%	0.0%	2.3%	1.0%	0.0%	3.3%	2.8%	7.6%	0.0%	2.3%	11.9%	9.0%
Level 3+ as a % of inspected facilities	0.2%	0.5%	0.4%	0.6%	2.4%	2.8%	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	1.0%	0.0%
Discharge metrics														
Actual-discharge violation rate per inspection	1.8%	1.4%	0.2%	0.5%	1.3%	1.5%	0.0%	1.7%	1.4%	1.7%	0.0%	2.0%	0.0%	0.3%
Potential-discharge violation rate per inspection	20.6%	22.6%	6.5%	15.9%	4.0%	1.4%	16.7%	10.0%	1.4%	5.6%	39.1%	15.4%	0.0%	12.1%
Actual-discharge as a % of total violations (not verbal)	8.0%	5.8%	2.5%	8.7%	25.0%	51.9%	0.0%	57.1%	50.0%	23.1%	0.0%	11.5%	n/a	5.0%
Actual-discharge violations per inspector (not verbal)	9	6	1	1	6	7	-	1	1	2	-	3	-	1
Workload metrics														
Businesses actually inspected per inspector	367	308	748	239	327	358	55	70	71	68	23	128	201	223
Inspections per inspector	479	428	810	247	451	454	58	80	72	77	23	149	275	297
Violations per inspector (not verbal)	107	103	54	15	24	14	-	2	2	6	9	26	26	20
C.6 – Construction Site Controls														
Inspections per site	6.8	8.1	-	16.7	9.7	7.5	7.5	9.3	3.6	4.6	99.0	5.8	4.4	7.5
Violation metrics														
Violation rate per site	116.6%	108.6%	-	163.4%	92.9%	333.3%	100.0%	230.0%	303.7%	247.6%	185.7%	133.3%	37.5%	6.7%
Violation rate per inspection	17.0%	13.4%	-	9.8%	9.6%	44.6%	13.4%	24.7%	85.4%	53.6%	1.9%	23.1%	8.6%	0.9%
Enforcement metrics														
Enforcement action rate per site	115.3%	93.1%	-	112.2%	92.9%	223.8%	118.2%	230.0%	233.3%	190.5%	71.4%	100.0%	37.5%	23.3%
Enforcement action rate per inspection	16.8%	11.5%	-	6.7%	9.6%	29.9%	15.9%	24.7%	65.6%	41.2%	0.7%	17.3%	8.6%	3.1%
Enforcement action rate per inspection (not verbal)	4.5%	2.3%	-	1.6%	2.9%	17.2%	0.0%	0.0%	5.2%	3.1%	0.1%	9.6%	0.0%	0.4%
Discharge metrics														
Illicit discharge rate per site	2.5%	2.6%	-	4.9%	21.4%	42.9%	18.2%	10.0%	3.7%	0.0%	0.0%	11.1%	0.0%	3.3%
Illicit discharge rate per inspection	0.6%	0.3%	-	0.3%	2.9%	8.9%	2.4%	1.1%	1.0%	0.0%	0.0%	1.9%	0.0%	0.4%

Sources: 2009-10 and 2010-11 Stormwater Management Annual Reports for listed jurisdictions
Note: Some numbers are estimates.

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: Public Safety, Finance and Strategic Support Committee

FROM: Kerrie Romanow
Acting Director,
Environmental Services

SUBJECT: SEE BELOW

DATE: August 8, 2012

Approved [signature] Date 8-8-12

SUBJECT: RESPONSE TO 2012 AUDIT OF ENVIRONMENTAL SERVICES

The Administration has reviewed the City Auditor's report entitled "Environmental Services: A Department at a Critical Juncture" and is in general agreement with the recommendations. The Administration's response to specific recommendations is presented below.

BACKGROUND

In June 2011, the City Council directed the City Auditor's Office to conduct a broad staffing and management audit of ESD, with a special focus on how ratepayer funds are used (i.e. Sanitary Sewer, Storm Sewer, Muni Water, and Recycle Plus). The Council also asked that the audit include reviewing the San José/Santa Clara Water Pollution Control Plant rehabilitation project for opportunities to reduce the cost of the project, expedite the project, and create savings for ratepayers.

The requested audit has been completed by the City Auditor's office and includes 22 recommendations.

Recommendation #1
The Administration should continue pursuing ways to retain high-performing, critical Plant staff, such as skill-specific, time-limited retention incentives/bonuses, requesting the Department of Human Resources/Office of Employee Relations conduct formal salary surveys for critical Plant work sections, and working with Office of Employee Relations on potential meet-and-confer issues that such changes would present.

The Administration agrees with this recommendation. The Administration acknowledges that there is a critical Plant staffing shortage in certain classifications resulting from a loss of staff due to retirements and staff leaving to go to other agencies, and the lack of success in recent recruitments for certain classifications, specifically Plant Operator, Plant Mechanic and certain Electrician classes. The Human Resources Department, Office of Employee Relations and the Environmental Services Department (ESD) have been working on a variety of solutions to

address these issues. The Plant Operators series was amended from single level classifications, to two- or three-level classifications (Plant Operator to Plant Operator I, Plant Operator II, Plant Operator III, etc.). To promote to the next higher level in the two or three level series, employees must satisfy length of time in class and certification requirements. Second, the certification requirements for the Plant Operator series were lowered to attract a larger candidate pool for entry-level positions. As a short-term solution, ESD conducted a Request for Qualifications to bring onboard temporary staffing from a third party vendor to temporarily fill critical vacancies at the lower levels within the Operations and Maintenance Divisions of the Plant. ESD will be seeking authority from the City Council to engage a temporary agency to fill electricians and Instrument Control Technicians positions, but ESD was unable to secure temporary staffing for the Operator or Mechanic classifications. In addition, we are currently in the process of creating a higher level Electrician classification, Industrial Electrician, which provides a higher level of pay in recognition of the high voltage work required by Electricians at the Water Pollution Control Plant (WPCP).

For those classifications that ESD is experiencing difficulty filling such as operators and maintenance mechanics, a formal salary survey would be helpful in evaluating one consideration in how the City could address its retention and recruitment challenges. In the event the options are subject to meet and confer, the Administration will follow the requisite steps for communication and coordination regarding the proposed changes with the appropriate bargaining units.

Recommendation #2
The Department of Human Resources/Office of Employee Relations should conduct a formal salary survey for consideration in an evaluation for retaining critical Plant engineering staff.

The Administration agrees with this recommendation. Salary surveys can be an important component of a variety of information to consider when evaluating ways to retain critical Plant engineering staff in the event there are recruitment and retention issues in a particular classification. As the City's Fiscal Reform Plan states however, there are a variety of factors to look at when looking at competitiveness. In addition to salary, retirement benefits, health and other benefits and promotional opportunities are also factors that need be considered.

Recommendation #3
To ensure that contract deliverables, goals and performance standards are clearly defined, the Environmental Services Department and Department of Public Works should consider utilizing outside consultants to help solicit and draft agreements for program management services and future Design/Build or Design/Build/Operate contracts related to the Water Pollution Control Plant capital projects. The City Attorney's Office should determine whether retaining counsel to assist with the negotiation and drafting of these contracts is warranted.

The Administration partially agrees with this recommendation.

a. *Use of outside consultants for the procurement of Program Management services*: ESD/Public Works (PW) intends to utilize in-house staff to develop an RFQ for Program Management services. This work is currently underway with contract award estimated for early 2013.

b. *Use of outside consultants for development of Package 2 contracts*: ESD/PW intends to utilize "Owner's Agent" consultant services to assist with development of RFQ packages for the Package 2 projects. Service order negotiations are currently underway with award anticipated in late 2012. Anticipated services include: scope definition, preliminary engineering, RFQ/RFP development, SOQ evaluation, contract negotiations assistance and preparation, technical submittal review, and construction support.

c. *Use of outside counsel for contract support*: PW has begun discussions with City Attorney's Office, and the City Attorney's Office will determine whether retaining outside counsel to assist with negotiations and development of the Design/Build or Design/Build/Operate contracts for the Package 2 projects is warranted.

Recommendation #4
During implementation of Plant Master Plan projects, the Environmental Services Department should provide for ongoing construction audit or other audit work.

The Administration agrees with this recommendation. ESD/PW intends to utilize Program Management consultant services to provide for broad oversight of the Water Pollution Control Plant's capital projects. Anticipated services include: program planning and administration, program controls (e.g. schedules, budgets, cost controls, QA/QC, standards development, cost estimating, etc.), program audits, communications and reporting. All or some of these services may fall under the Program Management consultant or may be contracted separately depending on level of expertise and services sought.

Recommendation #5
The City should consider using an external firm(s) to provide independent cost estimating services or additional cost/scheduling controls for projects utilizing Design/Build or Design/Build/Operate contracts related to Water Pollution Control Plant's capital projects.

See response to Recommendation #4.

Recommendation #6
The Environmental Services Department and Department of Public Works should continue to develop a management oversight structure to monitor overall CIP effort and ensure projects remain on budget and on schedule.

The Administration agrees with this recommendation. ESD and PW have taken steps to develop a management oversight structure for monitoring delivery of the Water Pollution Control Plant Capital Improvement Program. Preliminary efforts include:

a. Establishment of a CIP Steering Committee - comprised of ESD/PW/CMO executive staff (and City Attorney's Office, Finance, or others as needed). The CIP Steering Committee will act as the internal decision making body on recommendations related to technology selections, project prioritization, project delivery options, and financing options. The Committee will provide guidance on strategic planning and resolution of issues.

b. Establishment of a CIP Implementation Committee - comprised of ESD CIP/ESD O&M/PW senior staff in responsible charge program implementation. This group meets bi-weekly to discuss items such as new project prioritization and funding, project delivery strategy including consultant procurement efforts, project progress and issues, and staffing/resources.

c. Leveraging existing capital project tracking database and reporting tools - ESD/PW intends to adopt more rigorous use of the Capital Program Management System (CPMS) database for tracking the Water Pollution Control Plant CIP projects, including providing additional training to ESD users and making improvements to the CPMS as needed. ESD will also continue to provide updates to the annual Status Report on the Citywide Capital Improvement Program (CIP) that is prepared by PW and presented to the City Council on an annual basis. This annual Citywide CIP status report summarizes project delivery status including trends and issues, and project specific schedule and budget on current year CIP projects.

Recommendation #7
The Environmental Services Department should provide regular status reports to Treatment Plant Advisory Committee and the City Council on Plant Master Plan implementation, including overall progress to date and individual project updates, performance measures, and any issues that have arisen, in particular those which may have rate impacts. To improve transparency, the Environmental Services Department should also post these on its website.

The Administration agrees with this recommendation. In addition to the performance measures information included in the Proposed and Adopted Budget documents and in the City Auditor's Service Efforts and Accomplishments (SEA) Report, Staff will be submitting to Council semi-annual status reports on the progress of the Plant Capital Program. As stated under the response the Recommendation #6, updates on the Plant CIP will also be included in the annual Citywide CIP status report to Council. All reports will be available through the City's website. The fall 2012 Transportation and Environment Committee Workplan includes a November 2012 report entitled "Status of the Environmental Impact Report (EIR) for the Plant Master Plan" and a December 2012 report entitled "Water Pollution Control Plant CIP Update".

Recommendation #8
The Environmental Services Department should continue to improve communication between Operations and Maintenance and the capital program staff and involvement of Operations and Maintenance in capital project delivery.

The Administration agrees with this recommendation. A number of measures are already in place to ensure ongoing communications between O&M and capital program staff. These include:

a. CIP participation at weekly O&M meetings
b. O&M participation at bi-weekly CIP construction coordination meetings
c. O&M liaisons assigned to CIP delivery team

In addition, see response to Recommendation #6.

Recommendation #9
The Environmental Services Department and Department of Public Works should continue their practice of co-locating contractor and City staff for future Package 1 and Package 2 project implementation to facilitate work and coordination with Operations and Maintenance staff and expedite knowledge transfer. The Environmental Services Department should also consider requiring contractor to dedicate staff to liaise with Operations and Maintenance staff.

The Administration partially agrees with this recommendation. ESD and PW staff is already co-located at the Plant. ESD/PW intend to require key consultant and/or contractor staff to be co-located with City staff for the implementation of Package 1 and Package 2 projects, and to liaise with O&M staff. The logistics of integrating a large work force will require pre-planning and evaluation of available work space, equipment, etc. Furthermore, the desire to co-locate must be balanced with the importance of maintaining the integrity of the City and contractor relationship by providing adequate separation to preserve independent oversight and enforcement of performance measures and deliverables. ESD/PW will continue to evaluate and plan for this integration as implementation timing for the various RFQ/RFP packages and projects become more defined.

Recommendation #10
The Environmental Services Department should evaluate and present to the City Council and Treatment Plant Advisory Committee the potential ratepayer impacts of implementing the Master Plan once the Environmental Impact Report is complete.

The Administration agrees with this recommendation. Proposed projects and technology choices will be presented to TPAC/T&E/City Council as part of the semi-annual Plant CIP report and/or as part of the budget process for discussion. Input and approval from committees/Council will be obtained prior to the issuance of RFQ's or RFP's. Staff has also offered and continues to offer to attend co-owner and tributary agencies' oversight board meetings.

Recommendation #11
The Environmental Services Department should develop a policy to periodically review the Master Plan in response to regulatory, technological, or economic changes; implementation and financing challenges; and ratepayer impacts.

The Administration agrees with this recommendation. ESD will develop a policy for the periodic review and updating of the Master Plan. It is recognized that the Master Plan is a high level planning document comprised of both technical and land use components. As the various technical components are validated through additional detailed studies and/or pilot testing (when warranted), it is expected that some project scopes, schedules, and cost may change. A number of other factors may also influence whether certain projects will be implemented as recommended by the Master Plan. These include: 1) changes to the Plant's operating strategy, 2) timing of future regulatory changes, 3) advances made in wastewater treatment technologies, 4) adoption of new department policies/visions, 5) amendments to the General Plan or other guiding policies, and 6) staffing levels. Staff is considering doing a minor update to the Master Plan every 5 years and a major update every 10 years.

Recommendation #12
In addition to more realistically planning for capital improvements and the related budgeting for capital expenditures, the Environmental Services Department, in coordination with partner departments, should develop and/or update, and formalize fund balance and reserve goals for ratepayer capital funds.

The Administration agrees with this recommendation. Staff will engage a consultant to conduct a survey regarding reserve goals for the utility capital programs. Based on the results of the survey, the Administration will develop and/or update and formalize fund balance and reserve goals for ratepayer capital funds. Appropriation action will be required to fund this study.

Recommendation #13
The Administration should propose the City Council establish a City Council Policy which includes guiding principles so as not to raise rates in years in which ratepayer fund balances exceed reasonable targets.

The Administration agrees with this recommendation. Consistent with past budget process practices, ESD will continue to work with the Budget Office to align rate increases with projected expenses, planned transfers, prudent fund balances, and determined reserve goals for capital funds. For example, as part of the 2012-2013 Adopted Budget, the Administration did not recommend a rate increase to the City Council and recommended the use of fund balance to budget for some operating and capital budget needs.

Recommendation #14
The Environmental Services Department, in coordination with Department of Transportation, should review the efficiency and effectiveness of the City's approaches for reducing sanitary sewer overflows.

The Administration agrees with this recommendation. As stated in the City Auditor's report, the Department of Transportation (DOT) has crafted a three-year strategic plan for addressing sanitary sewer overflows (SSOs). Incorporated in the plan are actions to evaluate and implement improved strategies for preventing SSOs caused by fats, oils and grease (FOG), including "hot

spot" identification, sewer line cleaning and other maintenance practices, public education and outreach, and inspection and enforcement. DOT and ESD have begun reviewing the City's FOG Control Program, and will continue to develop strategies for collectively implementing the most effective and efficient approaches for reducing all SSOs. For example, ESD and DOT have begun work to identify key factors influencing FOG-related SSOs in San José and to correlate SSO risk with Food Service Establishment (FSE) locations. These results will help the FSE Inspection Program prioritize inspections and modify FSE inspection types and frequencies using a SSO risk-based approach. Although ESD's role in the City's residential FOG program has been quite limited to-date, ESD and DOT, concurrent with DOT's three-year strategic plan, will also evaluate the residential FOG outreach programs utilized by other agencies to identify new methods, tools, and techniques aimed at reducing FOG-related SSOs in residential areas, and determine the appropriate department lead as well as funding needs to expand the City's residential FOG program.

Recommendation #15
The Environmental Services Department should implement opportunities to make required stormwater inspection programs more efficient. Opportunities include:

- *Proceeding with its efforts to pre-screen potential home businesses, and possibly all businesses, rather than physically inspecting them*
- *Implementing its plan to reduce the frequency of FSE stormwater and FOG inspection*
- *Considering reducing construction-site inspections from year-round to the rainy season only*
- *Enhancing coordination of construction-site and business inspections with other departments*
- *Continuing to review the efficiency of the City's approaches for reducing stormwater pollutants*

The Administration partially agrees with this recommendation.

a. *Proceeding with its efforts to pre-screen potential home businesses, and possibly all businesses, rather than physically inspecting them*

   The Administration agrees with this recommendation to the extent it recommends pre-screening those businesses that have been identified as low risk, such as home businesses.

   As stated in the City Auditor's report, ESD, as part of its ongoing process to maximize program efficiency, recently implemented and will continue to refine its methods to pre-screen businesses through phone inquiries to efficiently identify businesses least likely to cause or contribute to pollution of stormwater runoff. However, to optimize that efficiency and avoid expending undue efforts pre-screening facilities that have strong potential for stormwater pollution, ESD recently completed a probability assessment based on data from several years to identify types of businesses most likely to be low risk facilities. This process maximizes resource efficiency by avoiding pre-screening of businesses that are very likely to contribute to stormwater pollution, as well as identifying

businesses that must be inspected based on explicit regulatory requirements. ESD will continue to evaluate alternative methods but at this time has not identified a method to confirm out-of-business facilities without field validation. Field validation of out-of-business facilities can also provide the Finance Department with information needed to update their business inventory, further promoting collaboration and efficiency amongst City departments.

b. *Implementing its plan to reduce the frequency of FSE stormwater and FOG inspection*

The Administration agrees with this recommendation. As part of ESD's ongoing process to maximize program efficiency, and as stated in the City Auditor's report, ESD has recently completed data analysis which resulted in reductions in stormwater inspections of FSEs from once every three years to once every five. ESD has begun implementation of these new inspection frequencies, to be completed in FY 12-13, and will continue to refine as needed, including reevaluating the efficiency of joint stormwater/FOG inspections at FSEs, as part of a broader FOG Control Program reevaluation. ESD, as part of its multi-year upgrade to the Environmental Enforcement Data Management System, has already implemented methods to separately track and implement FOG and stormwater inspections.

c. *Considering reducing construction-site inspections from year-round to the rainy season only*

The Administration agrees with this recommendation to the extent that ESD's data and risk analysis support a reduction in, or elimination of, dry season inspections. As stated in the City Auditor's report, ESD feels year-round construction inspections significantly increase environmental protection and help the City ensure regulatory compliance. Sediment runoff from construction sites can have a substantial impact on our local watersheds, causing habitat degradation as well as contributing several other significant pollutants - including copper, nickel, mercury, PCBs, and pesticides – to our local creeks and Bay. Prior to 2009, the City conducted inspections in the wet season only and found construction sites to be poorly prepared for the start of the rainy season, requiring ESD to expend significant resources ensuring construction sites correct all violations. Year-round inspections at construction sites help the City more reliably ensure environmental protection through proper construction Best Management Practices (BMPs) during the busy dry season, consequently improving BMP implementation at the critical beginning of the wet season as well as reducing violations and needed resources for inspections during the wet season. Regulations require the City to be able to ensure year-round, seasonally appropriate BMPs, and regulators have recently been conducting dry season inspections at construction sites in San José with subsequent requests for the City's inspection records for those construction sites. ESD has conducted year-round inspections only since 2009 and will continue its current inspection schedule, as field observations and experience appears to indicate that this practice better ensures environmental protection and regulatory compliance throughout the year, with only a

small net increase in staffing resources. That said, ESD will continue to monitor violation trends both prior to and during the wet season, and will modify its monthly inspection schedule, possibly reducing or eliminating dry season inspections at construction sites, based on observed reductions in violations and subsequent risk analysis.

d. *Enhancing coordination of construction-site and business inspections with other departments*

The Administration agrees with this recommendation. ESD has worked collaboratively with other departments to enhance and streamline the construction and business inspection programs. ESD coordinates its inspection programs with other departments such as Public Works (PW) development services and construction inspection divisions and PBCE's Building division. ESD has had discussions with PBCE and PW on the potential for rolling stormwater inspection requirements into existing construction inspections conducted by those departments. However, because those department inspection programs are predominately milestone based (contractors call in to schedule an inspection when a milestone is completed such as grading, plumbing, or electrical), it was determined that the scope, frequency, and timing of those inspections would not align with regulatory requirements for monthly inspections. ESD, in coordination with other departments, continues to evaluate and identify opportunities to efficiently attain inspection requirements. For example, ESD and PW evaluated a Stormwater Permit requirement to conduct "initial" inspections of newly installed stormwater treatment systems within 45 days of installation and determined the inspection could be included as a grading permit requirement and could be conducted by PW. Likewise, since PW inspectors are at public construction sites very frequently, they now maintain the lead responsibility for conducting public project stormwater construction inspections. ESD will continue to work with PW, PBCE, and other departments to enhance collaboration opportunities for the construction and business inspection programs, as well as continuing to review the efficiency of the City's approaches, consistent with stormwater permit requirements, for best reducing stormwater pollutants to our local creeks and Bay.

e. *Continuing to review the efficiency of the City's approaches for reducing stormwater pollutants*

The Administration agrees with this recommendation. ESD will continue to work with PW, PBCE, and other departments to enhance collaboration opportunities for the construction and business inspection programs, as well as continuing to review the efficiency of the City's approaches, consistent with stormwater permit requirements, for best reducing stormwater pollutants to our local creeks and Bay.

Recommendation #16

The Environmental Services Department should continue to reevaluate its enforcement programs and take a more efficiency- and outcome-based approach for managing program resources.

The Administration agrees with this recommendation to the extent it recommends that ESD reevaluate its enforcement programs with the goal of increasing efficiency and effectiveness. ESD proposes to continue to develop and implement effectiveness assessment tools to promote efficient use of stormwater program resources consistent with regulatory guidance for measuring effectiveness for such programs. In addition to the on-going evaluation and improvements noted in our response to Recommendations #14 and #15, ESD has also implemented program improvements for the Dental Amalgam and Pretreatment Programs. ESD began implementing the Dental Amalgam Program in 2009 to comply with requirements of the San Francisco Bay Mercury Watershed Permit. Although a small reduction of mercury in Plant influent observed in 2011 coincided with the installation of amalgam separators by dentists in that same year, ESD continues to refine its measures of effectiveness for this Program. Notably, while ESD's Pretreatment Program has implemented numerous program improvements and responded to all of the requirements and recommendations of the 2009 EPA Pretreatment Compliance Audit and 2011 Pretreatment Compliance Inspection, the Program remains under an open Administrative Order issued by the EPA in 2005. ESD will continue efforts to ensure compliance with pretreatment requirements, including the Administrative Order, while evaluating opportunities for efficiencies. This includes the potential for modifications to inspection and monitoring frequencies. All facilities are evaluated for risk as part of the permitting process. Those facilities that are deemed lower risk are inspected only once per year, while facilities determined to pose greater risk to the Plant are inspected more often. This approach allows ESD to ensure compliance with regulatory requirements; and, above all, to best ensure the health and safety of staff, and the protection of the collection system, the Plant, and the Bay.

ESD will continue to investigate ways to improve overall program efficiency and effectiveness measures for its enforcement programs, including the Dental Amalgam and Pretreatment Programs, as part of its ongoing program review and benchmarking.

Recommendation #17
The Environmental Services Department should update assumptions driving sanitary sewer rates for residential customers, and should establish a policy to periodically evaluate assumptions that influence rates, including household size, daily per capita sewage flow, and housing stock composition.

The Administration agrees with this recommendation. Staff will engage a consultant to conduct a Rate and Flow Study for the sanitary sewer program. Appropriation action will be required to fund these studies. Staff will engage TPAC since San Jose is the lead agency for the annual revenue program which must comply with State Water Resources Control guidelines.

Recommendation #18
The Environmental Services Department should explore opportunities to increase revenues or reduce costs to achieve full cost recovery of South Bay Water Recycling operations and minimize the cost to sanitary sewer ratepayers.

The Administration agrees with this recommendation. The City has operated South Bay Water Recycling since 1997 and periodically reviews its business operations and customer rates to manage the system as effectively as possible. In 2011, City staff identified the need to conduct a comprehensive planning effort to identify and evaluate program improvements to maintain, improve, and market the SBWR system; and satisfy federal and state regulatory and SBWR financial commitments into the future. Additionally, in fall 2011, ESD management implemented a policy of no rate payer funded expansion and reduced staffing allocated to public outreach for recycled water. In June 2012, the City entered into a cost sharing agreement with the Santa Clara Valley Water District to jointly fund and develop a strategic master plan for the SBWR Program. This agreement will initiate a comprehensive, two-year planning process that will evaluate SBWR's business model, market opportunities for recycled water, NPDES regulatory requirements, governance structures, and financing strategies for the future. The strategic planning process will result in a carefully planned platform to guide SBWR's future and provide Council and District Board recycled water policy options and financing strategies for further consideration.

Recommendation #19
To minimize costs to ratepayers the City should explore alternatives for eliminating duplicative Recycle Plus billing and customer service efforts.

The Administration agrees with this finding and efforts are already underway to evaluate alternatives. The current Recycle Plus hauler agreements include an option for the haulers to perform billing and customer service at the City's direction. Staff has been preparing a Service Delivery Evaluation over the past several months on alternatives for City-provided billing and customer service, including a hauler alternative, and is preparing to present these options to the Public Safety, Finance and Strategic Support Committee in fall 2012. It should be noted that the current billing system provides many other billing services in addition to Recycle Plus and any alternate solutions have to take options for these other billing services into consideration.

Recommendation #20
The Environmental Services Department, along with the Office of Cultural Affairs and the City Attorney's Office, should review past and current public art allocations in the Sanitary Sewer System, Water Pollution Control, Storm Sewer, and Water Utility Capital Funds to determine whether appropriations are in accordance with the City's Public Art Ordinance.

The Administration agrees with this recommendation. The Public Art allocation in the Water Pollution Control and Water Utility Capital Funds was reviewed during the Fiscal Year 2011-2012 budget process, and the Public Art Allocation from the WPC Capital Budget were adjusted downward as a result of this review. An ongoing review of public art allocations for new projects will continue to occur as part of the annual proposed Capital Budget process.

Recommendation #21
The Administration should consider recommending that the City Council amend the public art ordinance to eliminate the public art requirement for certain ratepayer-funded capital projects, including those related to underground utilities or the wastewater treatment process.

The Administration partially agrees with this recommendation. Public art projects funded by ratepayer-funded capital projects, including those related to underground utilities or the wastewater treatment process, are intended to facilitate education and behavior change in ways that are beneficial to the utility systems and ultimately the rate payers. To maximize their impact, public art projects related to utility capital projects do not need to be limited to locations physically connected to the utility, but can be distributed in highly visible locations throughout the City and the tributary agency communities. Taking these considerations into account, ESD and OCA staff will work together to further evaluate this recommendation including consideration that City Council direct that public art funds should be spent in highly visible locations that benefit rate payers and facilitate environmental education.

It is important to note that in August 2008, City Council made a policy decision to adopt the Public Art Masterplan and amend the Municipal Code to reduce the Percent for Art from two percent to one percent and broadening its base to include infrastructure projects whose sites were not accessible from a public right of way. As stated above, Percent for Art funds do not have to be expended on the site of capital improvements and can be pooled to create artworks in other public locations that serve the same purpose as the fund source and provide the highest public impact. Other California cities, including the City of Santa Monica and City of Ventura, also allow underground capital improvement projects as eligible percent for art applications.

Recommendation #22
The Administration should propose the City Council adopt a City Council Policy which includes guiding principles for evaluating ratepayer costs and rate increases for fairness and appropriateness, and balancing priorities, such as safe and reliable services, cost efficiency, ratepayer impacts, and environmental outcomes.

The Administration agrees with this recommendation, and will bring a City Council Policy which includes these guiding principles to the City Council for consideration.

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