SAN JOSÉ/SANTA CLARA TREATMENT PLANT ADVISORY COMMITTEE

JAMIE MATTHEWS, CHAIR
SAM LICCARDO, VICE CHAIR
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DAVID SYKES, MEMBER
MARJORIE MATTHEWS, MEMBER
PAT KOLSTAD, MEMBER
JOSE ESTEVES, MEMBER
STEVEN LEONARDIS, MEMBER
JOHN GATTO, MEMBER

AGENDA/TPAC
SPECIAL MEETING
AMENDED AGENDA

3:00 p.m. **May 14, 2015** **Council Chambers**

1. ROLL CALL

2. APPROVAL OF MINUTES

A. April 9, 2015

3. UNFINISHED BUSINESS/REQUEST FOR DEFERRALS

4. DIRECTOR'S REPORT

A. Directors Report (verbal)
- Monthly Progress Report

B. TPAC Meeting Location Change

5. AGREEMENTS/ACTION ITEMS

A. Biosolids Transition Strategy

Staff Recommendation: Accept the following staff recommendations on the Biosolids Transition Strategy for the San José-Santa Clara Regional Wastewater Facility:

a. Near-term recommendations:
   1. Proceed with implementation of the Digested Sludge Dewatering Facility and the Lagoon and Drying Bed Retirement projects as shown in the 2015-2016 Proposed Capital Budgets and 2016-2020 Capital Improvement Program.
   2. Locate the Digested Sludge Dewatering Facility at Site A.
   3. Direct staff to bring back recommendations on the size and makeup of the Biosolids Management Team (BMT) for City Council consideration as part of the annual budget process for 2016-2017.

b. Long-term recommendations:
   1. Implement any future on-site processing facilities considering conditions at the time including starting small with pilots, demonstrations, and phasing and potentially participating in regional facilities and emerging technologies.

The proposed Strategy is scheduled for Council consideration on June 2, 2015.

B. San José – Santa Clara Regional Wastewater Facility Ten-Year Funding Strategy

Staff Recommendation:

1. Accept the staff report on the San José – Santa Clara Regional Wastewater Facility (RWF) Ten-Year Funding Strategy.
2. Approve staff recommendation to have all agencies contribute to a 60 day operating reserve beginning in FY 2016-17; direct staff to continue to work with all agencies on optimal reserve levels for operating purposes.
3. Direct staff to pursue State Revolving Fund loans for RWF capital improvement projects to the maximum extent possible.
4. Direct staff to continue to work with City of Santa Clara (Santa Clara) and all tributary agencies to confirm participation in a commercial paper program and/or long term revenue bonds through the Clean Water Financing Authority (CWFA), by August 2015.
5. Direct staff to work with Santa Clara and all tributary agencies to amend the 1983 Master Agreement to incorporate terms related to operating reserve contributions, as well as terms related to financing of the RWF improvements through the CWFA.

The proposed Strategy is scheduled for Council consideration on May 19, 2015.

C. San Jose/Santa Clara Water Pollution Control Plant 2016-2020 Proposed Capital Improvement Program

Staff Recommendation: TPAC approval of the San Jose/Santa Clara Water Pollution Control Plant 2016-2020 Proposed Capital Improvement Program

The San Jose/Santa Clara Water Pollution Control Plant 2016-2020 Proposed Capital Improvement Program is scheduled for Council consideration on June 9, 2015, and for adoption on June 16, 2015.

D. San Jose/Santa Clara Water Pollution Control Plant 2015-2016 Proposed Operating and Maintenance Budget

Staff Recommendation: TPAC approval of the San Jose/Santa Clara Water Pollution Control Plant 2015-2016 Proposed Operating and Maintenance Budget

The San Jose/Santa Clara Water Pollution Control Plant 2015-2016 Proposed Operating and Maintenance Budget is scheduled for Council consideration on June 9, 2015, and for adoption on June 16, 2015.

E. San José – Santa Clara Regional Wastewater Facility Capital Improvement Program Semiannual Status Report

Staff Recommendation: Accept the semiannual status report on the San José-Santa Clara Regional Wastewater Facility Capital Improvement Program (CIP) for the period July through December 2014.

The proposed Status Report is scheduled for Council consideration on June 2, 2015.

F. Approval of an Amendment for Legal Services Agreement for Regional Wastewater Facility Capital Program

Staff Recommendation: Approve a First Amendment to the legal services contract with Hawkins, Delafield & Wood LLP, to increase the amount of compensation for the initial one-year term in the amount of compensation for each of the two one-year option terms from $160,000 to $300,000, subject to appropriation of funds by City Council, for a total contract amount not to exceed $1,000,000 to support the San José-Santa Clara Regional Wastewater Facility capital improvement program.

The proposed Amendment is scheduled for Council consideration on May 19, 2015.

6. OTHER BUSINESS/CORRESPONDENCE

A. Informational Memorandum - 4/28/15 Pond A18 Emergency Replacement Update

7. STATUS OF ITEMS PREVIOUSLY RECOMMENDED FOR APPROVAL BY TPAC

A. Second Amendment to the Master Agreement with CDM Smith for Engineering Services for the San José-Santa Clara Water Pollution Control Plant Improvement Program

Staff Recommendation: Approve the Second Amendment to the Master Agreement with CDM Smith, for engineering services for the San José-Santa Clara Regional Wastewater Facility, increasing the amount of compensation by $75, 000, for a total agreement amount not to exceed $1,575,000, and extending the term from June 30, 2015 to December 31, 2016.

The proposed Amendment was heard and approved by Council on April 14, 2015.

B. South Bay Water Recycling Strategic Master Plan Report

Staff Recommendation:

2. Accept the South Bay Water Recycling (SBWR) Strategic and Master Planning report for near term reliability projects for the South Bay Water Recycling Program; and
3. Direct staff to evaluate opportunities to collaborate with the Santa Clara Valley Water on the long term strategies identified in the Strategic and Master Planning report for potable reuse of recycled water

The proposed Master Plan Report was heard and approved by Council on April 21, 2015.

C. Wholesale Recycled Water Rates for FY 2015-16

Staff Recommendation: Adopt a resolution to standardize the discount rate at $105 per acre foot for the wholesale recycled water service rates for the South Bay Water Recycling Program effective July 1, 2015, superseding Resolution No. 76964.

The proposed Resolution was heard and approved by Council on April 21, 2015.

8. REPORTS

A. Open Purchase Orders Greater Than $100,000 (including Service Orders)

The attached monthly Procurement and Contract Activity Report summarizes the purchase and contracting of goods with an estimated value between $100,000 and $1.08 million and of services between $100,000 and $270,000.

9. MISCELLANEOUS

A. The next TPAC meeting is June11, 2015, at 4:30 p.m. City Hall, Room TBD. (*This is subject to change pending discussion of item 4.B.*)

10. OPEN FORUM

11. ADJOURNMENT

NOTE: If you have any changes or questions, please contact Adriana Márquez, Environmental Services, (408) 975-2547.

To request an accommodation or alternative format for City-sponsored meetings, events or printed materials, please contact Adriana Márquez (408) 975-2547 or (408) 294-9337 (TTY) as soon as possible, but at least three business days before the meeting/event.

Availability of Public Records. All public records relating to an open session item on this agenda, which are not exempt from disclosure pursuant to the California Public Records Act, that are distributed to a majority of the legislative body will be available for public inspection at San Jose City Hall, 200 East Santa Clara Street, 10th Floor, Environmental Services at the same time that the public records are distributed or made available to the legislative body.

MINUTES OF THE
SAN JOSE/SANTA CLARA
TREATMENT PLANT ADVISORY COMMITTEE
City Hall, City Manager's Office, 17th Floor, Room 1734
Thursday, April 9, 2015 at 4:30 p.m.

1. ROLL CALL

Minutes of the Treatment Plant Advisory Committee convened this date at 4:30 p.m. Roll call was taken, with the following members in attendance:

Chair: Jamie Matthews; **Committee members**: Sam Liccardo, Pierluigi Oliverio, Margie Matthews, Jose Esteves, John Gatto, Pat Kolstad, David Sykes, Steven Leonardis

2. APPROVAL OF MINUTES

A. March 12, 2015
Item 2.A was approved to note and file.
Ayes – 9 (J. Matthews, Liccardo, Oliverio, M. Matthews, Esteves, Gatto, Kolstad, Sykes, Leonardis)
Nays – 0

3. UNFINISHED BUSINESS/REQUEST FOR DEFERRALS

4. DIRECTORS REPORT

A. Directors Verbal Report:
- Monthly Progress Report

B. TPAC Meeting Location And Time Change

Staff Recommendation: Provide direction to staff on future meeting time and location for the monthly Treatment Plant Advisory Committee meetings.

TPAC Recommendation: On a motion by Committee Member Kolstad and a second by Committee Member Oliverio, TPAC directed staff to research the possibility of holding future meeting in the San José City Hall Council Chambers in order to keep the current meeting time.

Ayes – 8 (J. Matthews, Liccardo, Oliverio, M. Matthews, Esteves, Kolstad, Sykes, Leonardis)

Obstained – 1 (Gatto)

5. AGREEMENTS/ACTION ITEMS

A. Second Amendment to the Master Agreement with CDM Smith for Engineering Services for the San José-Santa Clara Water Pollution Control Plant Improvement Program

Staff Recommendation: Approve the Second Amendment to the Master Agreement with CDM Smith, for engineering services for the San José-Santa Clara Regional Wastewater Facility, increasing the amount of compensation by $75, 000, for a total agreement amount not to exceed $1,575,000, and extending the term from June 30, 2015 to December 31, 2016.

The proposed Amendment is scheduled for Council consideration on April 14, 2015.

On a motion by Committee Member Kolstad and a second by Committee Member Pierluigi, TPAC unanimously approved to adopt the staff recommendation in item 5.A.

Ayes – 9 (J. Matthews, Liccardo, Oliverio, M. Matthews, Esteves, Gatto, Kolstad, Sykes, Leonardis)

B. South Bay Water Recycling Strategic Master Plan Report

Staff Recommendation:
1. Accept the South Bay Water Recycling (SBWR) Strategic and Master Planning report for near term reliability projects for the South Bay Water Recycling Program; and
2. Direct staff to evaluate opportunities to collaborate with the Santa Clara Valley Water on the long term strategies identified in the Strategic and Master Planning report for potable reuse of recycled water

The proposed Master Plan is scheduled for Council consideration on April 21, 2015.

On a motion by Committee Member Leonardis and a second by Committee Member Kolstad, TPAC unanimously approved to adopt the staff recommendation in item 5.B.

Ayes – 9 (J. Matthews, Liccardo, Oliverio, M. Matthews, Esteves, Gatto, Kolstad, Sykes, Leonardis)

David Wall spoke against this item.

C. Wholesale Recycled Water Rates for FY 2015-16

Staff Recommendation: Adopt a resolution to standardize the discount rate at $105 per acre foot for the wholesale recycled water service rates for the South Bay Water Recycling Program effective July 1, 2015, superseding Resolution No. 76964.

The proposed Resolution is scheduled for Council consideration on April 21, 2015.

On a motion by Committee Member Liccardo and a second by Committee Member Kolstad, TPAC unanimously approved to adopt the staff recommendation in item 5.C.

Ayes – 9 (J. Matthews, Liccardo, Oliverio, M. Matthews, Esteves, Gatto, Kolstad, Sykes, Leonardis)

6. OTHER BUSINESS/CORRESPONDENCE

A. Letter from the City of Milpitas regarding Recycled Water Availability and Reliability

B. Informational Memorandum - Pond A18 Emergency Replacement Update

C. Informational Memorandum – Status of Regional Wastewater Facility Ten-Year Funding Strategy

Jim Stallman spoke on item 6.A.
David Wall spoke on item 6B.

7. STATUS OF ITEMS PREVIOUSLY RECOMMENDED FOR APPROVAL BY TPAC

A. Resolution of the San José City Council declaring and finding that public interest and necessity demand the immediate procurement and award of engineering and construction contracts to perform emergency replacement of Pond A18's northern gate structure located at the San José/Santa Clara Regional Wastewater Facility without competitive bidding

Staff Recommendation: Place the following items on the agenda for the March 3, 2015 City Council Meeting:

1. Accept the staff report detailing the current status of the San José/Santa Clara Regional Wastewater Facility's Pond A18's northern gate structure, the likelihood for failure, the consequences of failure, and the plan for immediate action to remove and replace the structure.

2. Adopt a resolution by four-fifths of the City Council as required by California Public Contract Code 22050:

    a. Declaring and finding that, based on substantial evidence, public interest and necessity demand the immediate procurement and award of engineering and construction contracts to perform emergency replacement of the San José/Santa Clara Regional Wastewater Facility's Pond A18's northern gate structure without competitive bidding and that the emergency replacement will not permit a delay resulting from a competitive solicitation for bids, and that the action is necessary to respond to the emergency;

    b. Delegating authority to the Directors of Environmental Services and Public Works to negotiate and award the engineering and construction contracts necessary to replace the northern gate structure in order to protect Pond A18 and levees in an amount not to exceed $1 million.

The proposed Resolution was heard and approved by Council on March 3, 2015.

B. San José – Santa Clara Regional Wastewater Facility Staffing Status Report

Staff Recommendation: Accept this status report on the staffing situation at the San José-Santa Clara Regional Wastewater Facility

The proposed Status Report was approved by Council on March 24, 2015.

C. Continuation Amendments to Master Agreements for Consultant Services with CH2M Hill and GHD for Engineering Services for the San José-Santa Clara Regional Wastewater Facility Capital Improvement Program

Staff Recommendations:

1. Approve the Third Amendment to the Master Agreement with CH2M HILL, for engineering services for the San José-Santa Clara Regional Wastewater Facility, extending the term from June 30, 2015 to December 31, 2017, at no additional cost to the City.

2. Approve the Second Amendment to the Master Agreement with GHD, for engineering services for the San José-Santa Clara Regional Wastewater Facility, extending the term from June 30, 2015 to December 31, 2016, at no additional cost to the City.

The proposed Amendments were approved by Council on March 17, 2015.

D. Project Delivery and Procurement Strategy for the San José-Santa Clara Regional Wastewater Facility

Staff Recommendation:

1. Accept this staff report on the proposed project delivery and procurement strategy for the San José-Santa Clara Regional Wastewater Facility's Capital Improvement Program and refer to the full Council for approval.

2. Recommend that Council adopt a resolution that approves the use of low bid design-build and progressive design-build as potential delivery methods for projects in the San José-Santa Clara Regional Wastewater Facility's Capital Improvement Program and that delegates authority to the Directors of Environmental Services and Public Works, or their designees, to make a determination on the appropriate delivery method for each project.

The proposed Project Delivery and Procurement Strategy was approved by Council on March 24, 2015.

E. San José-Santa Clara Regional Wastewater Facility Ten-Year Funding Strategy

Staff Recommendation: Accept the staff report on the San José-Santa Clara Regional Wastewater Facility Ten-Year Funding Strategy

TPAC directed staff to come back with additional information. Staff will return to TPAC in May, 2015 and the Council date is yet to be determined.

8. REPORTS

A. Open Purchase Orders Greater Than $100,000 (including Service Orders)

The attached monthly Procurement and Contract Activity Report summarizes the purchase and contracting of goods with an estimated value between $100,000 and $1.08 million and of services between $100,000 and $270,000.

Item 8.A was approved to note and file.

Ayes – 9 (J. Matthews, Liccardo, Oliverio, M. Matthews, Esteves, Gatto, Kolstad, Sykes, Leonardis)

9. MISCELLANEOUS

The next TPAC meeting is May 14, 2015, at 4:30 p.m. City Hall, Room 1734.
(*This is subject to change pending discussion of item 4.B.*)

10. PUBLIC COMMENT

David Wall spoke on various items.

11. ADJOURNMENT

A. The Treatment Plant Advisory Committee adjourned at 5:22 p.m.

Jamie Matthews, Chair
TREATMENT PLANT ADVISORY COMMITTEE

San José-Santa Clara Regional Wastewater Facility

Capital Improvement Program
Monthly Status Report for March 2015

May 7, 2015

This report provides a summary of the progress and accomplishments of the Capital Improvement Program (CIP) for the San José-Santa Clara Regional Wastewater Facility (Wastewater Facility or RWF) for the period of March 2015.

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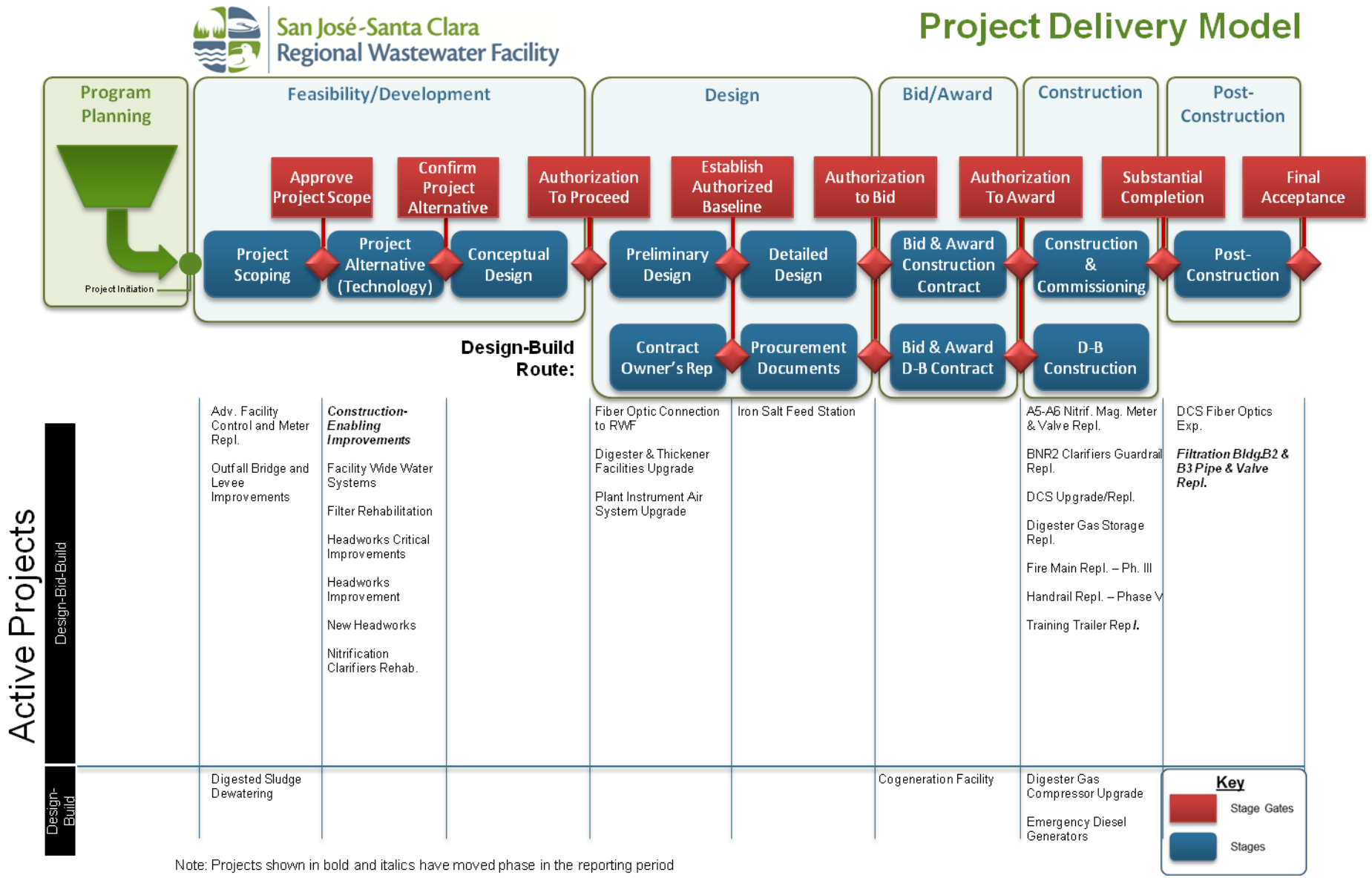
Project Delivery Model



Note: Projects shown in bold and italics have moved phase in the reporting period

Program Summary

March 2015

In the month of March, the CIP progressed on multiple fronts.

We continued to advance studies and projects through stage gates of the Project Delivery Model (PDM) process. In particular, the Construction-Enabling Improvements Project and the Flood Protection Study both advanced through the "Approve Project Scope" stage gate this month.

Our Biosolids and Odor Control teams continued work on a revised Biosolids Transition strategy, based on the input received from the Treatment Plant Advisory Committee (TPAC) and City Council in December 2014. The teams are currently focusing on alternative analyses of options to meet the Plant Master Plan goal to transition out of the open-air lagoons and drying beds and to reduce odors.

Staff presented our project delivery and procurement strategy, including recommendations to use design-build as a delivery method, to the Transportation & Environment Committee (T&E), TPAC, and City Council. This strategy, including the request for the delegation of authority to the Directors of Public Works and Environmental Services to determine the appropriate delivery method for each CIP project, was approved.

We completed the Facility Operations Plan (FOP) this month. The Plan, which will be updated annually, outlines the anticipated operations for the RWF for the next calendar year; describes how each of the unit processes are currently operated; and describes how each unit process may be isolated for upcoming CIP projects and operational maintenance.

The Cogeneration Facility team completed their initial assessments on Statement of Qualifications documents submitted by potential design-builders. Because of a lack of responsive prequalification submittals, the project will be re-advertised. Feedback is currently being sought from potential bidders to better understand opportunities for restructuring the Request for Qualifications to ensure a successful procurement. The Cogeneration Facility Team and the Headworks Improvements Team also continued work on procurement documents to prequalify consultant Technical Advisor / Owners Representative's for these design-build projects.

Our resourcing work on estimating staffing needs for FY15-16 and subsequent years continued. This includes comprehensive staffing needs to support the CIP, including Program Management, Engineering, Operations and Maintenance (O&M) and Environmental staff, and will form part of the wider annual update to our Program Execution Plan (PEP) which continued this month.

Procurement for the emergency repair work required at the Pond A-18 northern gate structure continued this month and a contract was awarded to allow immediate design and construction work to commence.

Construction work continued at the RWF for a number of CIP projects including the Emergency Diesel Generators, Digester Gas Compressor Upgrades, and the Digester Gas Storage Replacement projects. Beneficial Use was achieved this month on the Filtration Building B2 & B3 Pipe and Valve Replacement project.

Look Ahead

In April, we will continue to move forward on numerous efforts related to consultant procurements, including the Cogeneration Facility, Headworks Improvements, New Headworks, Facility Wide Water Systems Improvement, Filter Rehabilitation and Nitrification Clarifiers Rehabilitation. Procurements documents are expected to be issued to potential consultant bidders on the Cogeneration Facility and Headworks Projects in April.

A Stage Gate meeting will be held for the Digester and Thickener Facilities Upgrade project. This key CIP project will reach the 60% Design Stage milestone in April.

Our Biosolids team will continue work on a revised Biosolids Transition strategy, based on input received from TPAC and City Council in December. This will be brought forward for consideration to TPAC and Council in May and June respectively.

Work will continue on developing our programmatic funding and insurance strategies, including our Clean Water State Revolving Fund (SRF) project applications and investigations into the applicability of an Owner Controlled Insurance Program (OCIP).

The 2016-2020 Proposed CIP Budget will be submitted to the Budget Office in April for review and approval.

Program Highlight – The Facility Operations Plan (FOP)

The Facility Operations Plan (FOP) is a key document that allows all staff at the Facility to better understand current operational practices, as well as future CIP and operational requirements.

The Plan, which was completed in March 2015, outlines the anticipated annual operations for the RWF; describes how each of the unit processes are currently operated; and describes how each unit process may be isolated for upcoming CIP projects and operational maintenance.

The Plan consists of three sections:

1. **Annual Operating Plan:** This section describes the anticipated operations for the next calendar year, including anticipated flows and loads, anticipated CIP and Maintenance projects, and operational standby criteria (i.e., number of units allowed off-line).
2. **Unit Process Operating Strategies:** This section contains subsections for each unit process, with detailed descriptions of operations.
3. **Unit Process Isolation Analysis:** This section builds on the contents of the first two sections, and contains subsections for each unit process; describing how each unit process is anticipated to be isolated during routine maintenance, condition assessments and future construction projects.

The Plan will be maintained and updated in close collaboration with the O&M group on an annual basis. It will be used for O&M purposes, as well as become an essential CIP document that will be shared with the CIP project teams, including external designers and contractors.

A designer or contractor will be able to review this document with the CIP project team to understand what the anticipated wastewater treatment flows and loads will be in the upcoming year(s). They will also be able to understand how much of the structures and equipment are required to handle the anticipated work, and the typical operating strategy for the processes in question. Understanding these constraints will allow the teams to collaboratively develop more effective operating strategies and commissioning and start-up plans that can be agreed between all parties.

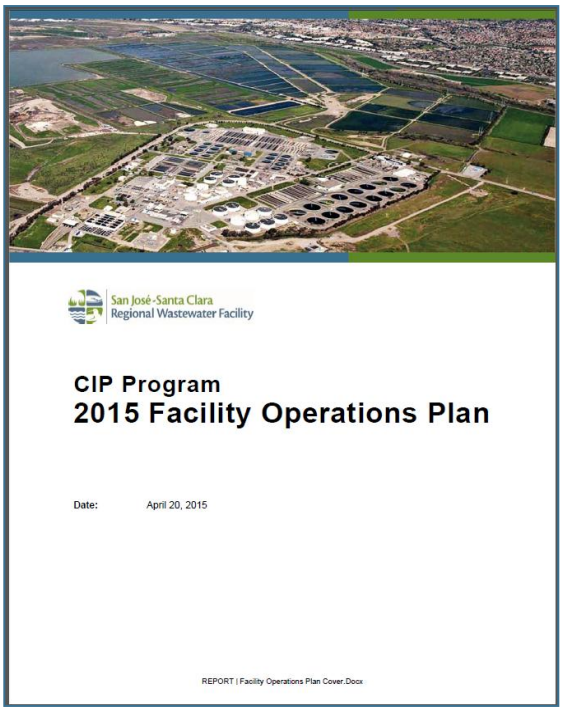


Figure 1: Facility Operation Plan Cover Page

Program Performance Summary

Seven KPIs have been established to measure the overall success of the CIP. Each KPI represents a metric which will be monitored on a regular frequency. Through the life of the CIP, KPIs will be selected and measured which best reflect the current maturity of the program. The target for the seventh KPI "Staffing Level" KPI will be established as part of the analysis of future staffing needs.

Program Key Performance Indicators – Fiscal Year 2014-2015

KPI Description	Target	Actual	Status	Trend	Measurement
Schedule[1]	85%	100% (3/3)			Percentage of CIP projects delivered within 2 months of approved baseline Beneficial Use Milestone. ***Target: 85% of projects delivered within 2 months of approved baseline schedule or better.***
Budget[2]	90%	67% (2/3)			Percentage of CIP projects that are completed within the approved baseline budget. ***Target: 90% of projects delivered are within 101% of the baseline budget.***
Expenditure[3/4]	≥$95.7M	$93.4M			Total CIP actual + forecast committed cost for the fiscal year compared to CIP fiscal year budget. ***Target: Forecast committed cost meets or exceeds 60% of budget for Fiscal Year 14/15 (60% of $159.5M= $95.7M)***
Procurement[5]	100%	86% (6/7)			Number of actual + forecast consultant and contractor procurements compared to planned for the fiscal year. ***Target: Forecast /actual procurements for fiscal year meet or exceed planned.***
Safety	0	0			Number of OSHA reportable incidents associated with CIP construction for the fiscal year. ***Target: zero incidents.***
Environment/Permits	0	0			Number of permit violations caused by CIP construction for the fiscal year. ***Target: zero violations.***
Staffing Level[6]	TBD	TBD	TBD	TBD	Percentage of authorized staffing level ***Target: to be determined***

KEY:

Cost:	Meets or exceeds KPI target	Does not meet KPI target

Notes

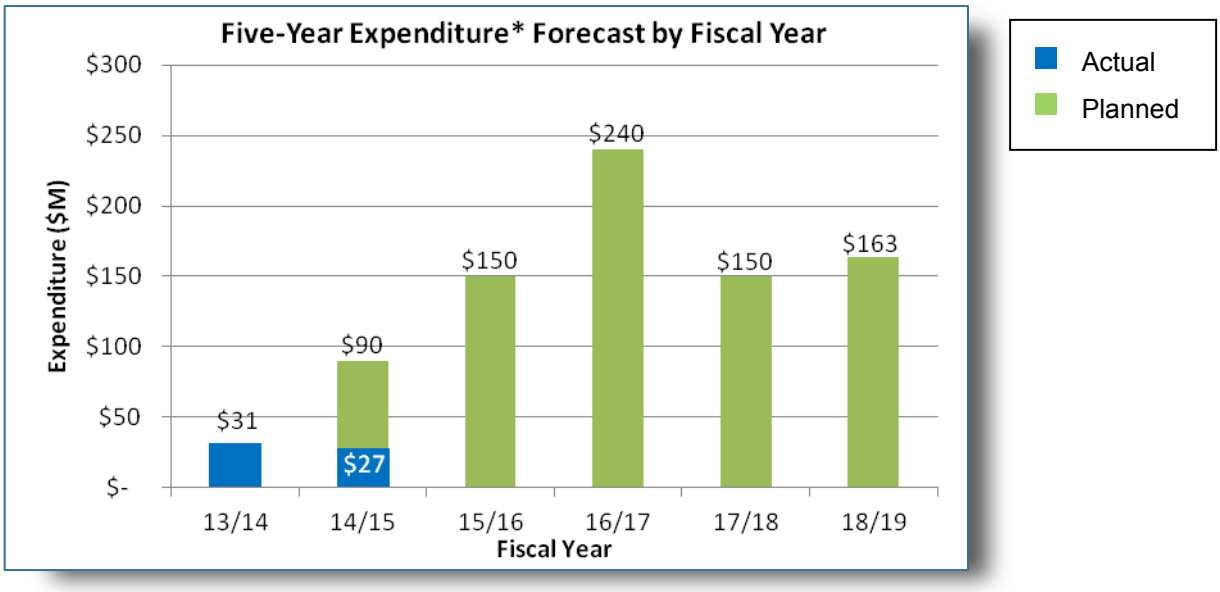
1. For the Schedule KPI, the number of completed projects increased from two to three. This count includes Filtration Building B2 & B3 Pipe & Valve Replacement, which was accepted in February, 2015.
2. For the Budget KPI, two out of three projects were completed within the approved baseline budget. These two projects are RWF Street Rehabilitation – Phase III, which was accepted in March, 2015 and 115KV Circuit Breaker Replacement, which was accepted in October, 2014. Dissolved Air Flotation Dissolution Improvements project finished 7% over budget.
3. FY14-15 budget excludes reserves, ending fund balance, South Bay Water Recycling, Public Art and Urgent and Unscheduled Rehabilitation items.
4. The Expenditure KPI Target has been adjusted from the previous month due to liquidation of the carryover from the previous Fiscal Year. Further details are provided in the "Fiscal Year 2014-2015 Program Budget Performance" section on page 7.
5. Initiation of the Audit Services and Value Engineering procurements have been delayed.
6. Staffing level KPI measured quarterly; all other KPIs measured monthly.

Program Cost Performance

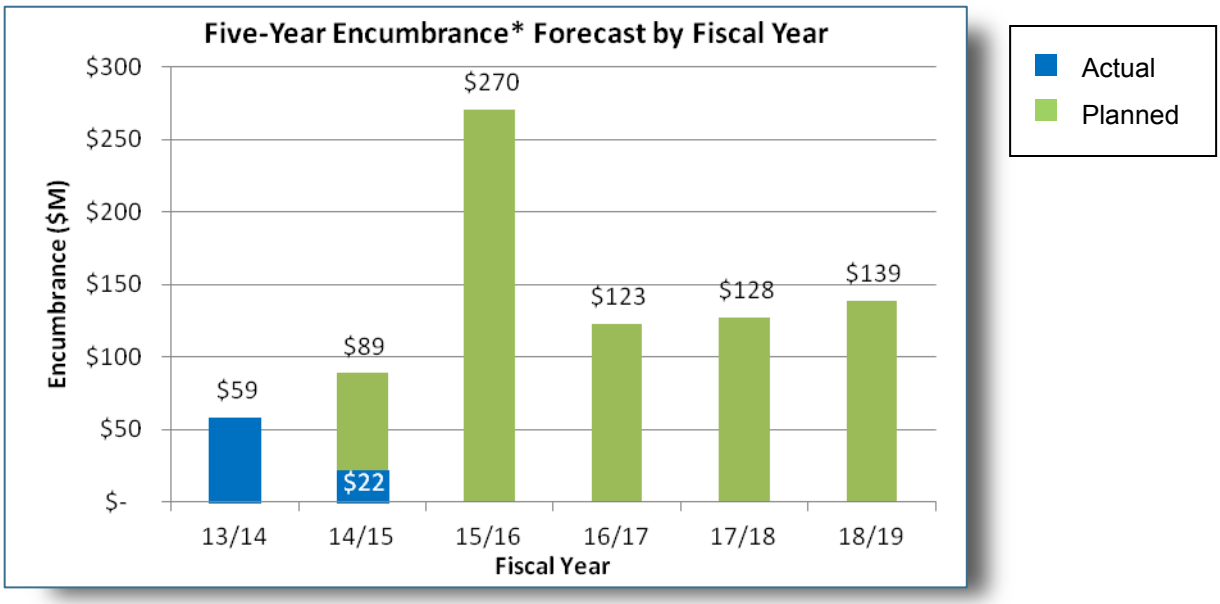
This section provides a summary of CIP cost performance for all construction projects and non-construction activities for FY13-14 and the 2015-2019 CIP.

Adopted 2015-2019 CIP Expenditure and Encumbrances

To accommodate the proposed increase in expenditures and encumbrances over the next five years, the City is developing a long-term financial strategy to fund the needed, major capital improvements while minimizing the impact to ratepayers.



*Expenditure defined as: Actual cost expended associated with services and construction of physical asset which may include encumbered amounts from previous years



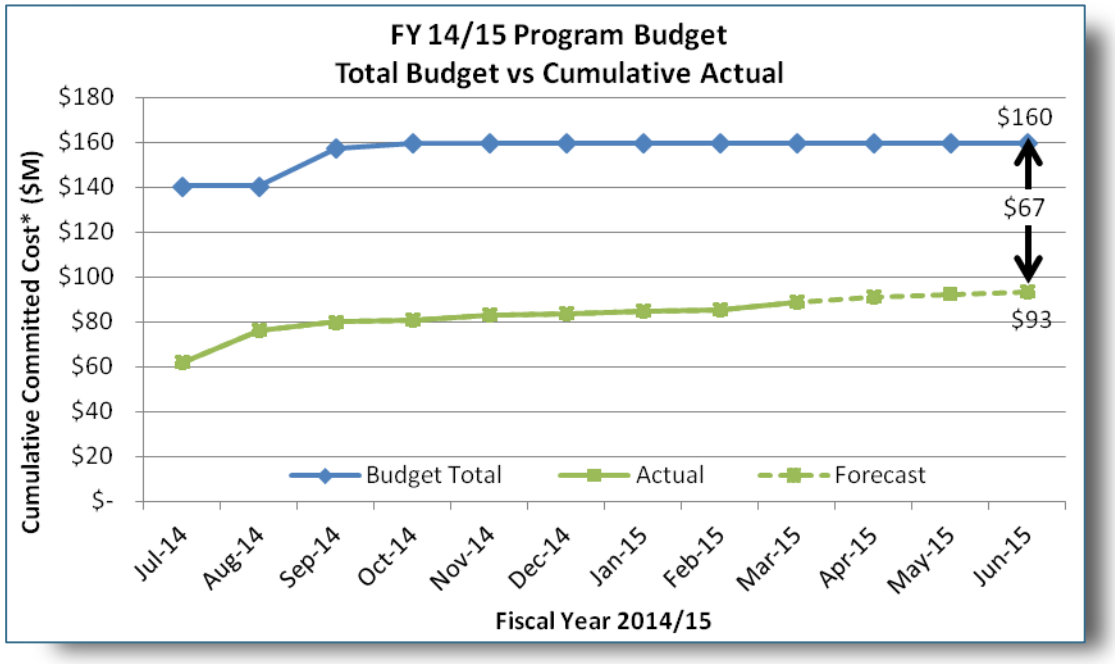
*Encumbrance defined as: Financial commitments, such as purchase orders or contracts, which are chargeable to an appropriation and for which a portion of the appropriation is reserved

Fiscal Year 2014-2015 Program Budget Performance

The fiscal year program budget is $160 million. The budget amount of $160 million represents the 2014-2015 budget of $107 million plus carryover of $53 million. The budget amount excludes reserves, ending fund balance, South Bay Water Recycling, Public Art and Urgent and Unscheduled Rehabilitation items.

The projected year-end variance of approximately $67 million is primarily due to the following reasons:

- Award of the Cogeneration Facility design-build contract and technical support services agreement are now expected in FY15-16 ($24 million).
- Award of construction contracts for the Iron Salt Feed Station, Plant Instrument Air System Upgrade, and Switchgear S40/G3 Relay Upgrade projects are anticipated in FY15-16 ($18 million).
- Award of a design contract for critical rehabilitation work in the Headworks Improvements is expected in FY15-16 ($4 million).
- Work not yet initiated or re-programmed into later years for Secondary and Nitrification Clarifier Rehabilitation and Aeration Tanks and Blower Rehabilitation ($4 million)
- Lower than expected expenditures and encumbrances in Equipment Replacement, Preliminary Engineering, and Program Management ($4 million).
- Award of a design contract for the Advanced Facility Control and Meter Replacement project has been removed from the forecast while the project team reevaluates the scope to determine the best way to implement the project ($2 million).
- Lowered forecasts for consultant services for the Emergency Diesel Generators, Fiber Optic Connection to RWF, and Plant Instrument Air System Upgrade projects ($2 million).
- Miscellaneous project balances across 18 projects ($9 million)



*Committed costs are expenditures and encumbrance balances, including carryover (encumbrance balances from the previous fiscal year).

Project Performance

There are currently 11 active projects in the construction or post-construction phase with a further 15 projects in feasibility/development, design or bid and award phases (see PDM graphic at the front of this report). All active projects are listed in the tables below. Projects in the construction phase have cost and schedule baselines established and are monitored using the City's Capital Project Management System (CPMS). These projects have green/red icons included in the table below to indicate whether they are on budget and schedule using the CPMS data as a source.

Project Performance – Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date[1]	Cost Performance[2]	Schedule Performance[2]
Distributed Control System (DCS) Fiber Optics Network Expansion	Post-Construction	May 2014	●	●
Filtration Building B2 & B3 Pipe & Valve Replacement	Post-Construction	Feb 2015[3]	●	●
Fire Main Replacement - Phase III	Construction	Apr 2015	●	●
A5-A6 Nitrification Mag. Meter & Valve Replacement	Construction	May 2015	◆	◆
BNR-2 Clarifier Guardrail Replacement	Construction	May 2015	●	●
Training Trailer Replacement	Construction	Jun 2015	●	●
Handrail Replacement - Phase V	Construction	Aug 2015	●	◆
Digester Gas Storage Replacement	Construction	Aug 2015	●	●
DCS Upgrade/Replacement	Construction	Jun 2016	●	●
Emergency Diesel Generators	Construction	Aug 2016	●	●
Digester Gas Compressor Upgrade	Construction	Oct 2016	●	◆

KEY:

Cost:	● **On Budget**	◆ **>1% Over Budget**
Schedule:	● **On Schedule**	◆ **>2 months delay**

Notes

1. Beneficial Use is defined as when the work is sufficiently complete, in accordance with the contract documents, so that the City can occupy or use the work. Beneficial use dates are being reviewed as part of project schedule reviews.
2. An explanation of cost and schedule variances on specific projects identified in this table is provided on page 11.
3. Actual Beneficial Use Date

Project Performance – Pre-Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date[1]
Cogeneration Facility	Procurement	Jan 2019
Fiber Optic Connection to RWF	Design	Dec 2015
Iron Salt Feed Station	Design	Nov 2016
Plant Instrument Air System Upgrade	Design	Nov 2017
Digester & Thickener Facilities Upgrade	Design	Sep 2018
Construction-Enabling Improvements	Feasibility/Development	Oct 2016
Headworks Critical Improvements	Feasibility/Development	Apr 2017
Adv. Facility Control & Meter Repl. Ph. 2	Feasibility/Development	Aug 2019
Headworks Improvements	Feasibility/Development	Jan 2021
Outfall Bridge and Levee Improvements	Feasibility/Development	Feb 2021
Facility-wide Water Systems Improvements	Feasibility/Development	Aug 2021
Filter Rehabilitation	Feasibility/Development	Jan 2022
Nitrification Clarifiers Rehabilitation	Feasibility/Development	Mar 2022
New Headworks	Feasibility/Development	May 2022
Digested Sludge Dewatering Facility	Feasibility/Development	Aug 2022

Notes

1. Beneficial Use is defined as when the work is sufficiently complete, in accordance with the contract documents, so that the City can occupy or use the work. Beneficial use dates are being reviewed as part of project schedule reviews.

Significant Accomplishments

Biosolids Package

Biosolids Transition Strategy

The odor modeling study continued this month, evaluating the odor impacts of the existing sludge lagoons and drying beds and studying the feasibility of retaining current operations and meeting the Wastewater Facility's odor goals. Staff will be presenting the odor and cost information for the updated biosolids transition strategy to TPAC and Council in May and June respectively. In addition, staff concluded the site alternatives evaluation for the proposed dewatering facility.

Digester and Thickener Facilities Upgrade

The project team met with the Planning Department to initiate the CEQA process. In addition, staff began the application submittal process for a SRF loan. The State Water Resources Control Board, which administers the fund, assigned a project manager. Staff has planned a meeting with the Board in April to discuss the specifics of the application review process.

Facilities Package

Cogeneration Facility

Staff has completed a review of the prequalification submittals and determined that because of a lack of responsive prequalification submittals, the project will be re-advertised. Staff has restructured the Request for Qualifications to clarify some of the requirements and plans to reissue the RFQ in mid-April.

Pond A18 Northern Gate Emergency Replacement

On March 3, the City Council adopted a resolution finding and declaring an emergency such that the replacement of the Northern Hydraulic Control Structure could begin immediately. Staff received informal bids from three contractors and on March 30, awarded a construction contract to Galindo Construction in the amount of $588,420. Staff also received an emergency permit from the U.S. Army Corps of Engineers to construct the repairs.

Programmatic Studies

Odor and Corrosion Control Study

CIP and O&M staff visited Orange County Sanitation District plants to learn more about odor control facilities. First-hand observation of O&M issues faced by other facilities will help the program as it considers various odor control technologies for the RWF.

Automation Master Plan

The team conducted five workshops, engaging key O&M staff, to review current and proposed process control strategies. The outcome of this study will be a comprehensive control strategy for all CIP projects.

Architectural Guidelines

The City engaged IBI Architects to assist in the development of architectural guidelines for the RWF.

Traffic Circulation and Impact Study

Staff conducted a kick-off meeting with Fehr and Peers to initiate the study. The consultant will prepare a construction management traffic plan that will help the program coordinate and mitigate the anticipated increase in construction traffic in and around the Wastewater Facility over the next several years.

Explanation of Project Performance Issues

A5-A6 Nitrification Mag. Meter & Valve Replacement

In September 2014, during startup, the project team discovered that the actuators that had been specified and installed were incompatible with the available power supply. Engineering staff determined it would be more costly to modify the system than to order and install compatible actuators. In addition, O&M staff requested that the actuators match those used in the other clarifiers. The contractor has submitted a proposal for the requested equipment. Beneficial use is expected by the end of May 2015.

Handrail Replacement - Phase V

For safety reasons, the contractor has only been replacing handrails on empty aeration basins. November through April is designated as the rainy season during which O&M staff need to have aeration basins available in the event of heavy rains. As a result, the contractor has suspended work until the end of April 2015. Work is expected to resume when the remaining basins become available. Beneficial Use is expected by late August 2015.

Digester Gas Compressor Upgrade

During the course of the design portion of this design build project, it was determined that some of the equipment for this project would need to meet the explosion-proof classification of Class 1, Division 1 of the National Electric Code. This classification was more stringent than what was originally called for in the bid documents. Potential cost and schedule impacts will be evaluated by project staff once a change order request is received from contractor, Anderson Pacific. A provisional three-month delay has been estimated based on the delivery schedule for the new motors. Beneficial Use is expected by early October 2016.

Project Profile

RWF Street Treatment – Phase III

This project is a continuation of the roadway improvement efforts, which started in 2012, to rehabilitate and extend the service life of aging roadways inside the Wastewater Facility. Many pavement sections showed structural failures, unraveling surface, potholing and poor surface drainage. Phase III work covered Center Street from Main Street to Zanker Road and 1st Street just south of the Blower Generator Building (Building 40).

Pavement assessment and design were performed by the City's Materials Testing Laboratory. Project bid plans and specifications were prepared by Public Works staff in consultation with RWF staff. Project staff successfully implemented an add-alternate bid item for additional 20,000sf of pavement rehabilitation south of Building 40 that reduced the potential number of change orders. In June 2014, the City awarded a contract to O'Grady Paving, Inc. for a total amount of $388,859. Construction on Phase III began in September 2014 and was beneficially completed in November 2014, on schedule and on budget. Final Acceptance was achieved on March 16, 2015.

Project highlights:

- Surface-grinded existing asphalt pavement: 90,000 sq. ft.
- Placed new rubberized hot mix asphalt overlay: 1300 tons
- Removed and replaced concrete curb and gutter: 960 ft.
- Installed new asphalt berm: 250 ft.
- Project Budget: $657,000.

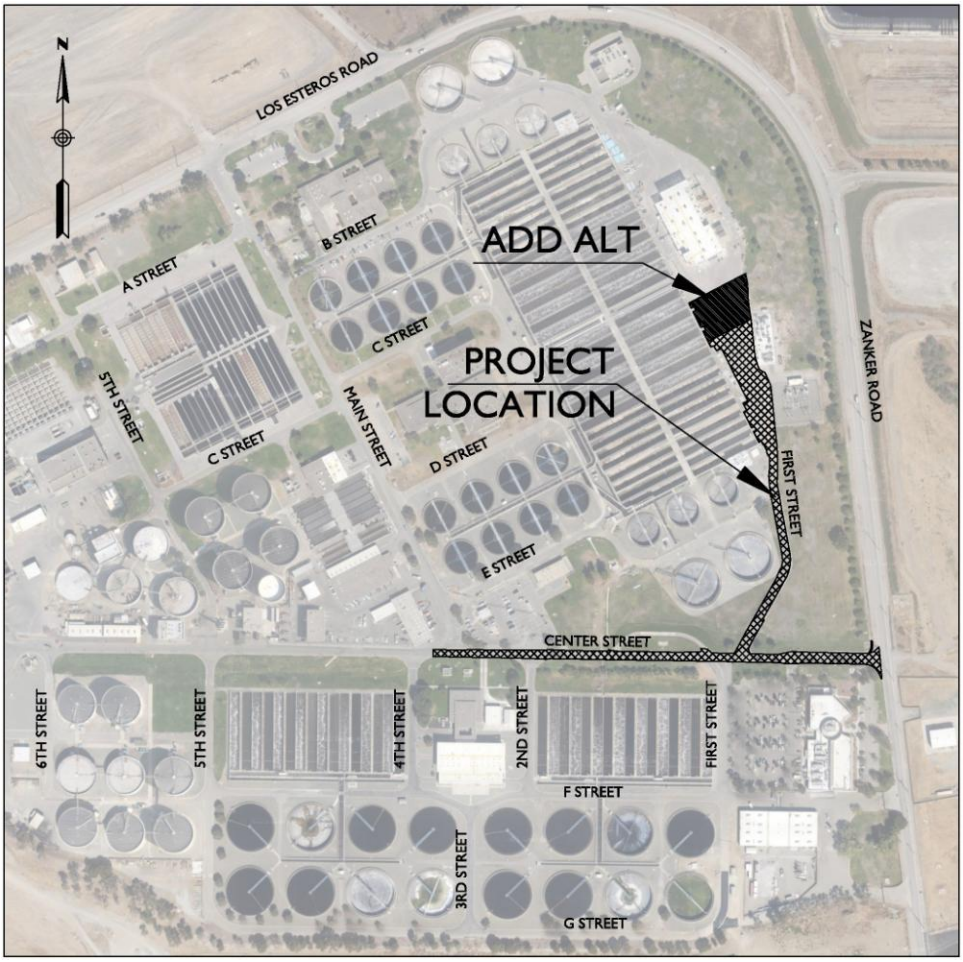


Figure 2: RWF Street Treatment Phase III Location Plan

Figure 3: View of Center and 1st Streets facing East
(Zanker Rd)

Figure 4: View of Center Street facing West

Regional Wastewater Facility Treatment – Current Treatment Process Flow Diagram

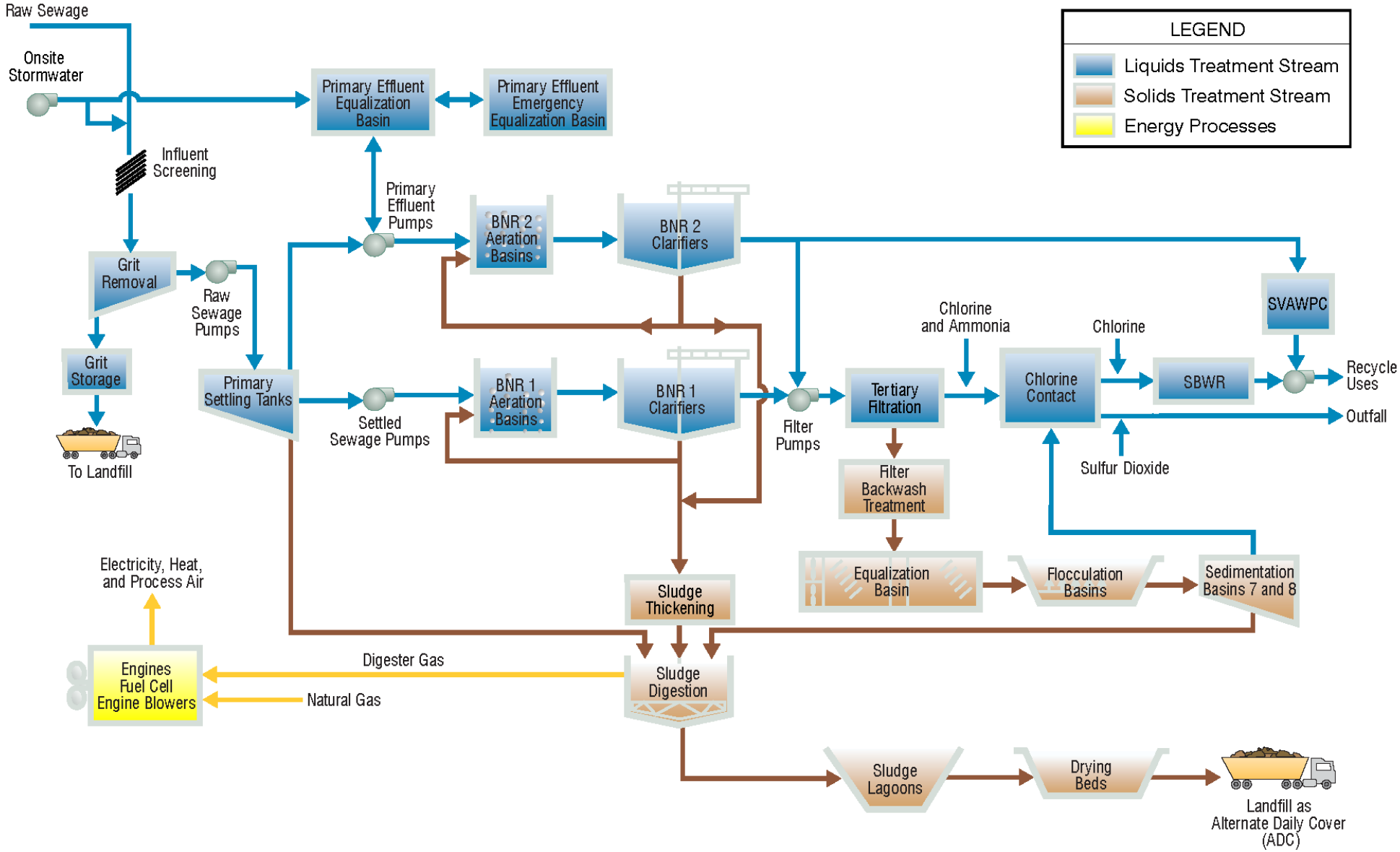


Figure 5—Current Treatment Process Flow Diagram

Regional Wastewater Facility Treatment – Proposed Treatment Process Flow Diagram

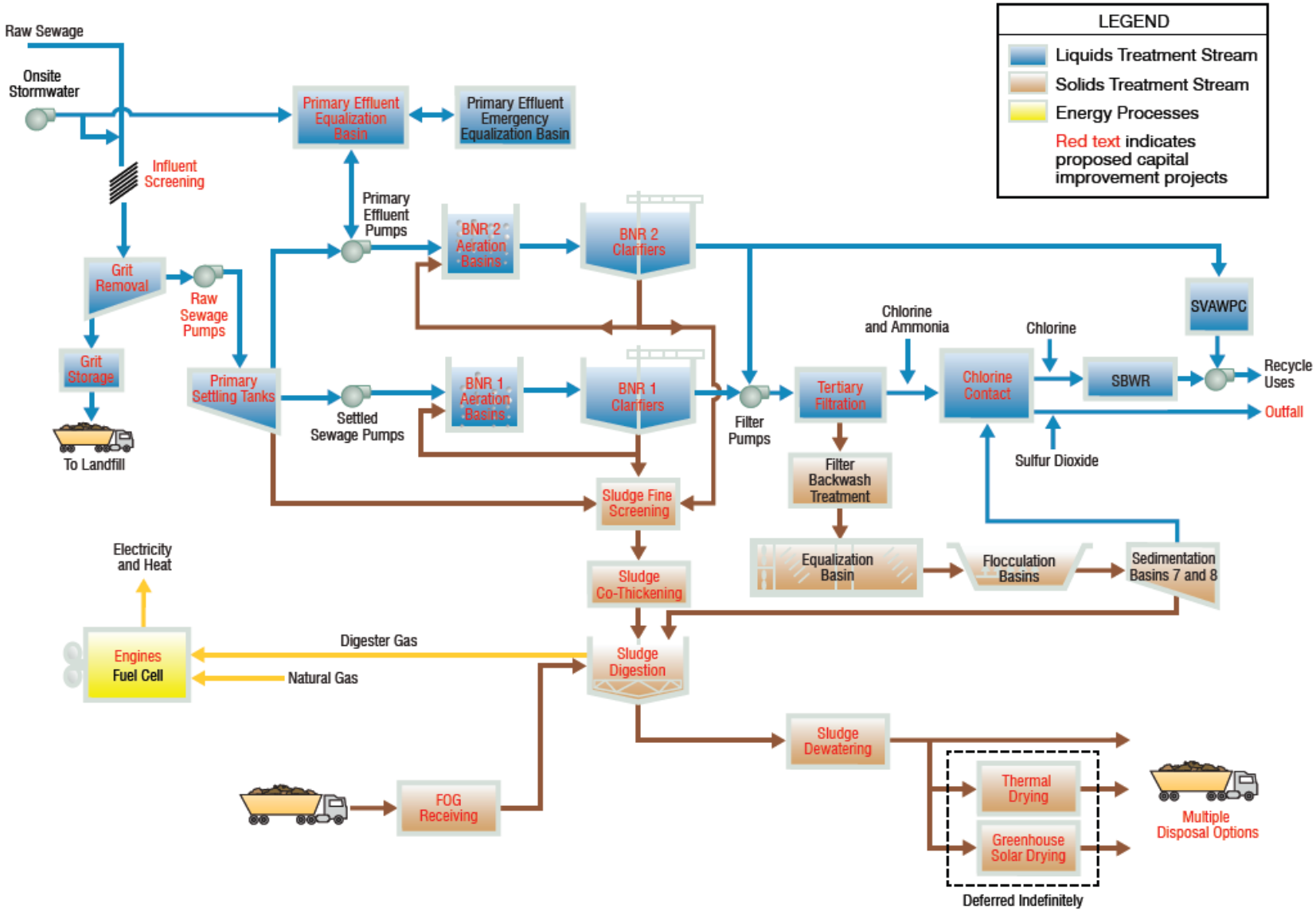
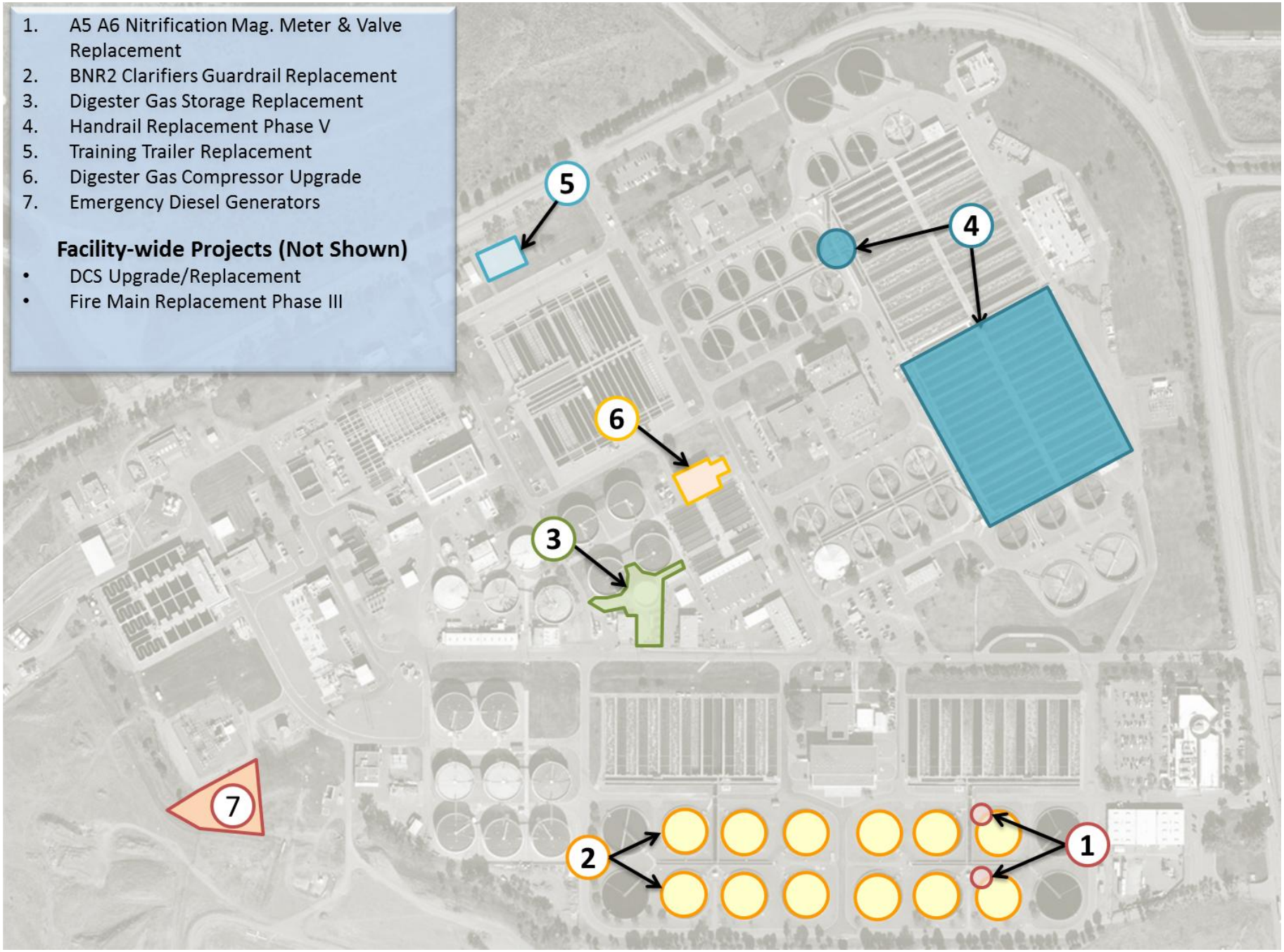


Figure 6—Proposed Treatment Process Flow Diagram

Active Construction Projects – Aerial Plan



COUNCIL AGENDA: 6/2/15
ITEM:

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow

SUBJECT: BIOSOLIDS TRANSITION STRATEGY

DATE: May 1, 2015

Approved D-DSyC Date 5/7/15

RECOMMENDATION

Accept the following staff recommendations on the Biosolids Transition Strategy for the San José-Santa Clara Regional Wastewater Facility:

a. Near-term recommendations:
   1. Proceed with implementation of the Digested Sludge Dewatering Facility and the Lagoon and Drying Bed Retirement projects as shown in the 2015-2016 Proposed Capital Budget and 2016-2020 Capital Improvement Program.
   2. Locate the Digested Sludge Dewatering Facility at Site A.
   3. Direct staff to bring back recommendations on the size and makeup of the Biosolids Management Team (BMT) for City Council consideration as part of the annual budget process for 2016-2017.

b. Long-term recommendations:
   1. Implement any future on-site processing facilities considering conditions at the time including starting small with pilots, demonstrations, and phasing and potentially participating in regional facilities and emerging technologies.

OUTCOME

Approval of the staff recommendations will enable staff to proceed with capital improvements to support the Plant Master Plan (PMP) goals, including Milpitas Guiding Principles No. 4, to transition out of the open air lagoons and drying beds, to reduce odors and to also achieve the approved odor goals for the wastewater facility. Establishment of a BMT will enable staff to implement the PMP goal of multiple and diversified options, and to continue to track and appropriately respond to any future regulatory and market changes through the use of pilot programs and other tools.

EXECUTIVE SUMMARY

Most of the infrastructure at the San José -Santa Clara Regional Wastewater Facility[1] (RWF) is more than 50 years old and has exceeded its useful life, with repairs needed to upgrade every process area. In 2008, the RWF embarked on a master planning process to rehabilitate and upgrade its facilities and to explore potential process changes. The PMP envisioned a comprehensive Biosolids Management Program (BMP) that would transition from the current lagoons and drying bed process to new biosolids treatment processes. This transition was recommended for the following reasons:

1. Reducing odors in the community;
2. Positioning the RWF to have multiple and diversified disposition options with the anticipated closure of Newby Island Sanitary Landfill and Recyclery (Newby Island Landfill) by 2025;
3. Reducing the footprint of the biosolids processing area from 750 acres to about 160 acres and enabling other land uses; and
4. Creating flexibility to respond to future regulatory changes governing the disposal of treated biosolids at landfills as well as changing market conditions related to beneficial reuse of treated biosolids.

There have been extensive discussions and policy direction on the Biosolids Transition Strategy. See Attachment A for a detailed chronology of the key meetings and policy direction. Most recently, staff presented recommendations on the Biosolids Transition Strategy to the Treatment Plant Advisory Committee (TPAC) in November 2014 and the City Council in December 2014. The City Council approved two of seven recommendations including proceeding with temperature phased anaerobic digestion (TPAD) upgrades, and deferring thermal and greenhouse drying facilities. The City Council directed staff to bring back the remaining recommendations in spring 2015 once odor modeling and cost information related to the biosolids transition was available. In November and December 2014 respectively, TPAC and Council also approved an odor strategy for the RWF which outlined specific odor goals. TPAC directed staff to look at other options besides dewatering to meet the approved RWF odor goals. Staff and the technical consultant completed a preliminary evaluation of 14 different technology and process options, three of these options were evaluated in more detail and compared against the current operations and the recommended option. The results of this evaluation are summarized in Attachment B.

Based on TPAC and Council direction in late 2014, a lagoon and drying bed odor evaluation has been performed (See Attachment C). Attachment C also describes the odor impacts of various technology and process options. As discussed in November/December 2014, staff performed additional evaluation of site alternatives for the Digested Sludge Dewatering Facility (Dewatering Facility). Potential sites evaluated are shown in Attachment D. Staff also analyzed the impact of the timing of the closure of Newby Island Landfill on the Biosolids Transition Strategy.

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[1] *The legal, official name of the facility remains San Jose/Santa Clara Water Pollution Control Plant, but beginning in early 2013, the facility was approved to use a new common name, the San José-Santa Clara Regional Wastewater Facility.*

All of the work done since December 2014 validates proceeding with the new Dewatering Facility at the site previously proposed in November/December 2014 and supports the previous staff recommendations on the Biosolids Transition Strategy. Although there was prior discussion about accelerating the timeline for the biosolids transition, subsequent direction and actions have resulted in a timeline that is more in alignment with what was originally proposed in the PMP. In fact, the recommended option envisions decommissioning the lagoons and drying beds in 2027, which is two years later than the date in the PMP.

Staff recommends approval of the remaining recommendations on the Biosolids Transition Strategy as summarized below:

Near-term recommendations

1. Proceed with implementation of the Digested Sludge Dewatering Facility and the Lagoon and Drying Bed Retirement projects as shown in the 2015-2016 Proposed Capital Budget and 2016-2020 Capital Improvement Program.
2. Locate the Digested Sludge Dewatering Facility at Site A.
3. Direct staff to bring back recommendations on the size and makeup of the Biosolids Management Team (BMT) for City Council consideration as part of the annual budget process for 2016-2017.

Long-term recommendations

1. Implement any future on-site processing facilities considering conditions at the time including starting small with pilots, demonstrations, and phasing and potentially participating in regional facilities and emerging technologies.

This memorandum provides information on the pros and cons of technology and process options based on prior policy direction from TPAC and Council. If Council were to reconsider prior policy directions, staff could further evaluate the options to align with any modified or additional policy considerations.

BACKGROUND

Facility Description

The San José-Santa Clara Regional Wastewater Facility is a regional advanced wastewater treatment plant that serves eight South Bay cities and four special districts through the following agencies:

- City of San José
- City of Santa Clara
- City of Milpitas
- Cupertino Sanitary District
- County Sanitation District 2-3
- Burbank Sanitary District
- West Valley Sanitation District (Campbell, Los Gatos, Monte Sereno, and Saratoga)

The RWF is jointly owned by the cities of San José and Santa Clara through a Joint Powers Agreement (JPA), and the City of San José operates the facility as the administering agency of the JPA. The total service area population is about 1.4 million, including a diverse commercial and business sector with more than 17,000 sewer main connections.

The RWF is situated on a nearly 2,600 acre site with the main operational area encompassing approximately 180 acres, a biosolids processing area of about 750 acres, a former salt pond of about approximately 860 acres, and buffer lands of about 790 acres. The buffer lands are located primarily to the south of the main operational area and serve to limit odor exposure to the community.

The current wastewater treatment process includes screening and grit removal, primary sedimentation, secondary treatment by the activated sludge process, secondary clarification, filtration, disinfection, and dechlorination. Treatment of the wastewater results in approximately 85 dry tons of biosolids per day (or the equivalent to 106 wet tons of biosolids per day) which must be further treated and disposed of and/or beneficially reused. Biosolids are classified per EPA Title 40 of the California Federal Regulations Part 503; the classification is based on the level of pathogen reduction in the biosolids. Class A biosolids, with the highest level of treatment, are essentially pathogen free and thus have few restrictions on end use. Class B biosolids have a lesser level of treatment and a higher level of pathogens than Class A. This places some limitations on the end use with regards to public access and use in certain agricultural applications. The current solids treatment process includes anaerobic digestion under mesophilic conditions followed by open-air lagoon stabilization and solar drying. The lagoon stabilization and solar drying process is time-intensive and takes three to four years to complete from start to finish. The dried Class A biosolids are then transported to the adjacent Newby Island Landfill for reuse as Alternate Daily Cover (ADC).

Description of Current Solids Treatment Process and Biosolids Management Practices

The current solids treatment process and biosolids management practices include:

- **Mesophilic Anaerobic Digestion** - solids are biologically treated or "digested" in enclosed tanks at 95-105 degree Fahrenheit temperature and a low oxygen environment. This digestion process typically takes between 15 to 21 days and results in a Class B biosolids that is at about 2 percent total solids.
- **Lagoon Stabilization** – about one million gallon per day (mgd) of the digested sludge is pumped into unlined, open-air lagoons and stored from 2.5 to 3.5 years to allow for further stabilization and concentration of the solids. There are 28 active lagoons divided into four quadrants. Within any 12-month period, one quadrant receives the digested solids (Year 1 lagoon filling), two quadrants of lagoons are inactive to allow the biosolids to further stabilize (Year 2 and 3 lagoons), and the last quadrant (Year 4 lagoon) is dredged and the biosolids are pumped to the unlined, open-air drying beds.

- **Solar Drying** – there are 20 active drying beds, each about 4 acres in size and filled to a depth of about 3 feet. The solar drying process takes about six months from start to finish and results in a Class A biosolids that is at about 80 percent total solids.
- **Odor Control** – the very large surface area of the lagoons and drying beds makes engineered odor control impractical and expensive. A 12 to 14 inch water cap is maintained over the lagoons to help minimize the release of odors into the air. In addition, buffer lands provide for physical separation between the operational area and the community. Sampling data indicates that the Year 1 lagoon block, which receives digested biosolids pumped directly from the digesters, is more odorous than the Year 2, 3 and 4 lagoon blocks where the biosolids are more stabilized. See Attachment C for further detail on lagoon and drying bed sampling.
- **Disposition and Reuse** – at the end of the 4-year lagoon and drying cycle, the dried biosolids are hauled off to the adjacent Newby Island Landfill for use as ADC. This is done through the City's service contract with International Disposal Corporation (IDC), a wholly owned subsidiary of Republic Services, Inc. The contract also allows for the disposal of grit, screenings and grease from RWF operations. The current contract with IDC expires on December 31, 2020.

The Plant Master Plan and Biosolids Transition Strategy - 2008 to Present

Between 2008 and 2013, extensive work and significant resources were invested into the development and adoption of the PMP, a comprehensive planning document to guide infrastructure improvements and land use decisions at the RWF. The PMP provides a roadmap for rehabilitating and upgrading the wastewater treatment facility through 2040, taking into consideration existing and future flows and loads, existing and future regulatory requirements, advances in wastewater treatment technologies, community concerns regarding odors, noise, and traffic, and various other environmental, social, and economic factors.

One of the most significant recommendations from the PMP is the BMP, which includes a phased transitioning out of the open-air biosolids lagoons and drying beds to enclosed dewatering and drying facilities. This transition was recommended for the following reasons:

1. Reducing odors in the community;
2. Positioning the RWF to have multiple and diversified disposition options with the potential closure of Newby Island Landfill by 2025;
3. Reducing the footprint of the biosolids processing area from 750 acres to about 160 acres and enabling other land uses; and
4. Creating flexibility to respond to future regulatory changes governing the disposal of treated biosolids at landfills as well as changing market conditions related to beneficial reuse of treated biosolids

The PMP envisioned a phased transition to handle the near term and long term projected volume of biosolids. The first phase of the dewatering facility was intended to be completed by 2023 and the decommissioning of the lagoons and drying beds was planned to be completed by 2025, to align with the potential closure of the Newby Island Landfill. The second phase of the

dewatering facility, to treat a projected future increase in the volume of biosolids, was planned to be completed by 2033.

Significant discussions have occurred with regards to the biosolids transition through various community meetings, Council Committee meetings, TPAC meetings, and City Council meetings. Attachment A provides a summary of prior work and key meetings and direction related to the biosolids transition.

As evidenced by the information in Attachment A, there has been overarching support and acknowledgement from TPAC and Council for the need to transition out of the open-air lagoons and drying beds largely in response to community concerns over odors, the potential closure of Newby Island Landfill in 2025, and the need to provide the RWF with multiple and diversified biosolids disposition options.

Both TPAC and Council have previously given direction to staff to look for opportunities to accelerate the timing of the biosolids transition including supporting the formation of a Regional Odor Assessment Program (ROAP), use of alternative project delivery methods, and performing an evaluation of market interest for dewatered biosolids at the quantity and quality produced by the RWF, and most recently, approving an Odor Control Strategy which established an odor fence line and odor goals for the RWF.

At the October 22, 2014 Transportation and Environment (T&E) Committee meeting, November 20, 2014 Special TPAC meeting, and December 2, 2014 Council meeting, staff presented a Biosolids Transition Strategy that took into account the outcome of the PMP Environmental Impact Report (EIR) process with regards to the originally proposed siting location for the new dewatering and drying facilities, the program validation efforts, the outcome of the market analysis, and efforts to evaluation options for producing Class A biosolids instead of Class B biosolids. Staff also requested approval of seven recommendations in connection with the Biosolids Transition Strategy.

At the November 20, 2014 TPAC Special Meeting, members endorsed and recommended approval of two of seven recommendations:

1. Proceed with temperature phased anaerobic digestion (TPAD) upgrades; and
2. Defer thermal and greenhouse drying facilities.

TPAC wanted to better understand the odor impacts from the current lagoon and drying bed operations and recommended delaying the decision on the new Dewatering Facility to fall 2015. Staff was asked to evaluate potential options, if any, that would retain the use of the current lagoon and drying bed process and still meet the desired odor goals. TPAC also wanted to understand the implications, if any, of the pending action by the San Jose Planning Commission to allow the Newby Island Landfill to continue operating beyond 2025 to 2041. Staff had also indicated its desire to perform additional analysis on other potential siting locations for the new Dewatering Facility within the RWF's main operational footprint.

At the December 2, 2014 Council meeting, the two recommendations supported by TPAC were approved. Council also reconfirmed the importance of the long term goal of transitioning out of the current open air lagoons and drying beds, and recognized the extensive work that has already been done as part of the PMP process and thereafter to plan for this transition. Furthermore, the City Council expressed concern about delaying the decision on the new Dewatering Facility to fall 2015, as recommended by TPAC. Since TPAC members were specifically looking for modeling and cost information related to the lagoons and drying beds to help inform their decision making, staff proposed completing that work ahead of the comprehensive odor study and bringing back an update on the Biosolids Transition Strategy in spring 2015 to minimize the delay on the implementation of the biosolids transition.

Staff was directed to perform the additional analysis requested by TPAC and to bring back the remaining recommendations in spring 2015. These recommendations included implementing a new Dewatering Facility at Site A, decommissioning the existing lagoons and drying beds, and establishing a BMT to enable effective near-term and long-term disposition of biosolids.

ANALYSIS

Odor Control Goals for the RWF

In December 2014, the City Council approved the Odor Control Strategy including the odor goal and odor fence line. An odor goal of 5 Dilution to Threshold (D/T) at the fence line was adopted for the RWF, which is consistent with the original PMP recommendations and similar to what other wastewater treatment plants in the Bay Area establish as their odor goal. An odor frequency criterion of 99 percent was also selected as the odor frequency goal based on common industry practice. This means that the odor goal may be exceeded no more than one percent of the 8760 hours in a year, or no more than 88 hours in a given year. In addition, a one hour duration goal was selected because, based on industry standards, an odor event lasting one hour or more is typically considered a nuisance and unacceptable to the average person. The PMP indicated that about $70 million in odor control improvements would be needed to meet the odor goal of 5 D/T.

Odor Impacts from Current Lagoon and Drying Bed Operations

CH2M Hill, Inc., a firm that is internationally recognized for its odor expertise, was engaged to prepare an Odor and Corrosion Control Study for the RWF. As part of this study, samples were collected and dispersion modeling was performed to estimate the offsite odor impacts from the current lagoons and drying beds operation. The results indicate that the lagoons and drying beds, as operated today, do not meet odor goals established for the RWF and contribute to significant offsite impacts (see Attachment C for further detail).

To understand what portion of the existing lagoons and drying beds could potentially remain in service and still achieve the fence line odor goal if no modifications were made to the current operations, the dispersion model was run assuming 25%, 50%, and 75% of the lagoons and

drying beds would be taken out of service. The modeling results showed that less than 25% of the lagoons and drying beds' current footprint could remain in service if operated as-is today in order to achieve the desired odor goal. The analysis also assumed that all lagoons and drying beds would be loaded at existing solids loading rates; therefore, 75 percent more of the current biosolids produced (and any future increases to future solids loading) would need to be processed elsewhere.

Of the various operational process areas measured and modeled, the dispersion model showed that the lagoons and drying beds have the biggest offsite odor impacts. If the lagoons and drying beds continue to be operated as-is, it will not be possible to achieve the odor goal set for the RWF as part of the Odor Control Strategy which both TPAC and Council approved in November and December 2014, respectively.

Potential Options to Retain the Use of the Existing Lagoons and Drying Beds

To respond to the request received at the November 20, 2014 TPAC Special Meeting, CH2M Hill was requested to evaluate potential options to retain use of the existing lagoons and drying beds with or without modifications. A total of 14 potential options were initially identified; they included the use of oxygenated water caps, covers, chemical treatment, and reduction of the current footprint of lagoons and drying beds. Based on discussions with engineering and O&M staff about operational and technology considerations, as well as the ability to meet the RWF odor goals, 11 of the 14 potential options were eliminated from further evaluation.

Program management consultant staff, along with City staff, then proceeded to prepare a detailed evaluation of three potential options utilizing a Triple Bottom Line Plus (TBL+) methodology alongside comparison of Net Present Value (NPV) costs. The three potential options were compared against the base case (i.e., current lagoon and drying bed configuration and operations) and the recommended 100% Dewatering Facility.

A brief description of each is provided below and the outcome of the NPV analysis is depicted in Attachment B. These options were developed and analyzed to meet the prior policy direction from TPAC and Council. Further evaluation would be required to reflect additional or modified policy considerations.

- *Base Case – Current Operations*

  Pros: lowest NPV costs
  Cons: does not achieve the approved RWF odor goals. This option does not meet the goals and objectives of the PMP, and does not provide for multiple and diversified disposition options. Retaining the current operations would render the $70 million worth of investments into other odor control improvements ineffective in helping the RWF meet its odor goals.

- Option A: 100% Lagoons/Drying Beds with Chemical Pretreatment - retain the current footprint of the lagoons and drying beds and construct a new chemical addition station to pre-treat 100% digested biosolids prior to pumping the digested biosolids into the existing lagoons and drying beds for processing.

  Pros: second lowest NPV costs and may reduce certain odors compared to current operations
  Cons: this option is highly unlikely to meet the approved RWF odor goals. A one-year full-scale piloting effort (approximately $1.2 million in capital cost and $3 million in additional annual O&M costs) and additional odor sampling and modeling would be needed to confirm the expected odor reduction. This option would have high ongoing O&M costs. This option also does not support the goals and objectives of the PMP, and does not provide flexibility for multiple and diversified disposition options.

- Option B: 75% Lagoons/Drying Beds + 25% Mechanical Dewatering – retain the current footprint of the lagoons and drying beds and implement both physical and operational modifications, i.e., increase the water cap to 3 to 6 feet and install surface aeration systems in the lagoons. This option requires operational changes since the quantity of biosolids sent to the lagoons for processing would need to be reduced by about 25 percent to enable sufficient depth for an effective water cap. This option would also require construction of a new smaller scale dewatering facility for processing about 25 percent of current solids loading and all future increased solids flow due to reduced treatment capacity of the lagoons and drying beds.

  Pros: has the third lowest NPV costs, with moderate O&M costs; may reduce certain odors compared to current operations.
  Cons: this option is highly unlikely to meet the approved RWF odor goals. This option is more energy intensive and adds operational and maintenance inefficiencies due to the need for two separate biosolids management systems, introduces complexity during the annual dredging operations, and is unproven at a facility of this scale. A three-year full-scale piloting effort (approximately $44 million in capital cost and $2.1 million in additional O&M costs per year for three years.) and additional sampling and modeling would be needed to confirm actual performance at the RWF. Similar to Option A, this option does not support the goals and objectives of the PMP, and does not provide flexibility for multiple and diversified disposition options.

- Option C: 25% Lagoons/Drying Beds + 75% Mechanical Dewatering – reduce the current footprint of the lagoons and drying beds to about 25 percent of their current configuration and construct a new dewatering facility for processing about 75 percent or more of the current biosolids produced from the digestion process.

  Pros: this option has a high likelihood of achieving the RWF odor goals. This option provides for multiple and diversified disposition options. This option offers a savings of $33 million over a 30 year period, when compared to the recommended option.

Cons: this option has the second highest NPV costs and high O&M costs. This option adds operational and maintenance inefficiencies due to the need to operate and maintain two separate biosolids management systems. A more detailed operational analysis may demonstrate the need for additional staff with different skill sets, which will reduce the anticipated cost savings from this option. Although this option has a high likelihood of meeting the RWF odor goals and the PMP goals based on the odor sampling and modeling, there is still a possibility that the partial open air process may result in some offsite odor impacts.

- Recommended Option: 100% Dewatering Facility and Lagoon/Drying Bed Decommissioning – construct a new dewatering facility for processing 100% of the digested sludge and decommission the lagoons and drying beds.

  Pros: this recommended option incorporates proven technology for achieving the approved RWF odor goals. This option meets the goals and objectives of the PMP, and provides flexibility for multiple and diversified disposition options. It prepares the RWF to respond to potential changes governing the disposal and/or beneficial reuse of treated biosolids at landfills, and maximizes opportunities for beneficial reuse of biosolids. **Cons:** has the highest NPV costs and high O&M costs.

Other Considerations

- **Newby Island Landfill**

  The Newby Island Landfill is located at 1601 Dixon Landing Road in San José and has three distinct operations: 1) solid waste and non-hazardous municipal solid waste acceptance facility, 2) materials recovery recyclery facility, and 3) green waste, food waste, and wood waste composting facility. Newby Island Landfill has applied for a permit that, if approved by Planning Commission, would extend the life of the landfill from 2025 through 2041.

  The City's contract with Newby Island Landfill enables the hauling and transportation of the biosolids to be used as ADC. Under the terms of the contract, the biosolids average 75 percent solids and, at a minimum, must meet the Class B biosolids designation. The contract also allows for the disposal of grit, screenings and grease from RWF operations. After December 2020, the City may extend the term with Newby Island Landfill for as long as it continues to accept municipal solid waste.

  Comparative costs for hauling the biosolids to the Newby Island Landfill and to alternate locations are shown in Attachment B. At an incremental annual cost of $300,000, the cost differential is not significant. If the landfill were to remain in operation for a longer period of time than envisioned in the PMP, it would be slightly more cost effective in the near term. However, staff does not recommend delaying the biosolids transition based on the future of the Newby Island Landfill because continuing with the current disposition practice does not support the recently approved RWF odor goals, nor does it meet the

PMP goals and objectives with regards to reducing odors and the RWF operational footprint, maximizing beneficial reuse and increasing flexibility in disposition options, and preparing for potential future changes to regulations that may impact the ability to dispose of and/or reuse biosolids as ADC at landfills.

- **Implementation Timeline for a New Dewatering Facility**

If Council approves starting implementation of the new full scale Dewatering Facility and planning for retiring the lagoons and drying beds in July 2015 as included in the 2015-2016 Proposed Budget and 2026-2020 Proposed Capital Improvement Program, the anticipated implementation schedule is as shown in the table below. The implementation schedule is based on a design-bid-build project delivery approach. During the project scoping phases, an evaluation of the delivery method will be undertaken and if design build is selected as the appropriate delivery method, the project schedule will be modified as needed.

Implementation Schedule for the Proposed Biosolids Transition

Milestone	Date
Dewatering Facility Completion	June 2022
• Consultant Selection Council Award	August 2016
• Conceptual Design Completion	August 2017
• Detailed Design Completion	April 2019
• Bid & Award	August 2019
• Beneficial Use	December 2021
• Construction Final Acceptance	June 2022
Decommissioning of Lagoons and Drying Beds	June 2027

The magnitude and complexity of transitioning to a new biosolids process for a facility that treats wastewater for approximately 1.4 million people and 17,000 businesses makes this project one of the largest and complex wastewater treatment projects in the country. This type of project requires significant time to allow for the proper planning, environmental clearance, permitting, procurement, design, construction, and start-up, testing, and commissioning. Although prior TPAC and Council direction to accelerate this transition was referenced earlier, the subsequent discussions and actions have now resulted in a proposed timeline that would decommission the existing lagoons and drying beds two years later than previously envisioned in the PMP.

- **Additional Analysis for Alternative Site Location for the New Dewatering Facility**

After conducting additional analysis to determine whether it would be possible to locate the new Dewatering Facility inside of the main operational footprint, staff concluded that the preferred location for the new Dewatering Facility is the previously presented Site A. Site A is located on the east side of Zanker Road and provides the greatest flexibility for

future expansion. It is also located within the expansion area identified in the PMP with limited utility conflicts and no identified environmental impacts. Its location outside of the central process area helps minimize truck traffic and impact on the day-to-day RWF operations (See Attachment D).

Conclusions

Based on the additional analysis, staff recommends proceeding with the recommended option of constructing a new Dewatering Facility and decommissioning the lagoons and drying beds. Staff also recommends proceeding with locating the new Dewatering Facility at Site A, and starting the process for the formation of a BMT (to be included as part of the 2016-2017 budget process). The BMT would develop, negotiate, and procure a diverse portfolio of disposition contracts and continue to track changing industry, regulatory, market and land use conditions, and conduct market research to better determine local demand and price for dewatered end products. The team would also be involved with regional efforts, demonstration and pilot projects, and evaluation of emerging technologies.

EVALUATION AND FOLLOW-UP

If the proposed recommendations on the Biosolids Transition Strategy are approved, staff will begin the planning and consultant selection for the new Dewatering Facility and for retiring of the lagoons and drying beds. The recommendation for award of consultant agreement for the Dewatering Facility project will be brought forward to Council for approval. Additionally, staff will start the planning for establishment of a BMT and will bring forward recommendations during the 2016-2017 budget process. Progress updates on the project will also be provided through the monthly progress reports to TPAC and semi-annual CIP reports to the Transportation and Environment Committee and the Council.

POLICY ALTERNATIVES

Alternative 1: Direct staff to proceed with 25% Lagoons/Drying Beds + 75% Mechanical Dewatering

Pros: This option is expected to achieve the odor goals established for the RWF and provides for multiple and diversified disposition options. The Net Present Value is about $33 million less than the recommended option.

Cons: This option requires operating and maintaining two completely different and separate biosolids management systems, which results in operational inefficiency and complexity. The cost savings of approximately $1 million annually over a 30 year period are not significant enough to offset these operational considerations. The two different treatment processes may also result in the need for additional staffing levels with different skill sets and further decrease the cost savings; this will need to be further analyzed through a more detailed operational analysis. Additionally, although this option has a high likelihood of meeting the RWF odor goals and the PMP goals based on the odor sampling and modeling, there is still a possibility that the partial open air process may result in some offsite odor impacts.

Reason for not recommending:
Since this option retains 25% of the current footprint and current biosolids management operations, the City would be required to explore disposal options and manage contracts for two different types of biosolids. The savings from this option are not significant enough to offset the operational inefficiency of having two separate biosolids treatment and management operations. Additionally, a more detailed analysis of operations may result in the need for additional staffing with different skill sets; this would further reduce the anticipated savings from this option. This option does not offer the highest probability of meeting the RWF odor goals and PMP goals and objectives.

PUBLIC OUTREACH

This memorandum will be posted on the City's website for the June 2, 2015 Council meeting. Staff will also present this memorandum to the Treatment Plant Advisory Committee (TPAC) on May 14, 2015.

COORDINATION

This memo has been coordinated with the Department of Public Works, City Attorney's Office and City Manager's Budget Office.

FISCAL/POLICY ALIGNMENT

The Biosolids Transition Strategy is aligned with the Envision 2040 General Plan. In addition, the transition strategy is consistent with the following General Budget Principle: "We must focus on protecting our vital core city services for both the short and long-term."

COST SUMMARY/IMPLICATIONS

The PMP had identified approximately $512 million in capital costs for the implementation of a comprehensive biosolids transition including improvements to the digesters, a new dewatering facility, partial thermal and greenhouse drying, a FOG (fats, oils, and grease) receiving facility, covered biosolids storage, and decommissioning of the existing lagoons and drying beds. The CIP project validation process that was completed in February 2014 made some adjustments to this comprehensive biosolids transition and identified approximately $397 million in capital costs for the implementation of the biosolids transition. Since a substantial portion of these costs are for improvements, such as the digesters, which would need to be made regardless of the treatment of the biosolids, it is important to also look at specific costs associated with transitioning out of the open air lagoons and drying beds. The costs for just the dewatering facility, the decommissioning of the drying beds and lagoons, and the thermal and greenhouse drying facilities were identified as approximately $243 million.

In December 2014, City Council approved staff recommendations to defer the thermal and greenhouse drying projects to a future unspecified time when regulatory or market conditions would necessitate the implementation of these projects. The deferral of these projects results in a decrease of approximately $143 million in the ten year CIP. It is important to note that since these projects may be needed in the future, these costs have not been eliminated but rather deferred to a future time outside of the next ten year window.

The capital costs for the new Dewatering Facility and Lagoon & Drying Bed Retirement projects are estimated at approximately $115 million (stated in 2015 dollars). The proposed Dewatering Facility will require an annual O&M budget of approximately $7.4 million (stated in 2015 dollars and based on current biosolids production). This annual O&M cost escalates up to $19.6 million in the year 2045, which includes a cost of $12.1 M for sludge disposition.

When the new Dewatering Facility comes online and while the existing lagoons and drying beds are being decommissioned, existing O&M costs are anticipated to be increased to approximately $10.8 million (stated in 2015 dollars and based on current biosolids production) annually for a period of approximately four years.

The capital costs for the proposed projects have been included in the ten year funding strategy for the RWF and can be financed through a combination of short and long-term debt. Staff will be pursuing Clean Water State Revolving Fund loans to the maximum extent possible to fund the proposed projects, as well as the rest of the projects in the program. The associated O&M costs cannot be financed and will need to be cash-funded.

The cost impact for establishing the BMT is not yet known. Staff will return with more information, as part of the next budget cycle, if the recommendation is approved.

CEQA

Not a Project, File No. PP10-069(a), Staff Reports.

/s/
Kerrie Romanow
Director, Environmental Services

For questions, please contact Ashwini Kantak, Assistant Director (ESD), at 408-975-2553.

Attachments:
Attachment A - Chronology of Key Meetings and Discussions on Biosolids Transition and Odor
Attachment B - Biosolids Transition Strategy – Odor Control Options and Lifecycle Costs
Attachment C – Odor and Corrosion Control Study: Technical Memorandum - Lagoons and Drying Beds Odor Evaluation
Attachment D - Map of Proposed Sites for New Dewatering Facility

ATTACHMENT A

CHRONOLOGY OF KEY MEETINGS AND DISCUSSIONS

ON BIOSOLIDS TRANSITION AND ODOR

October 20, 2010 Rules Committee - the City of Milpitas requested consideration of the Milpitas Guiding Principles in connection with development of the PMP goals, more specifically:

> ***Milpitas Principle 4****: The outdated infrastructure and open air drying systems for the biosolids are public nuisances inappropriate to an urban area. These outdated systems should be replaced or retrofitted to incorporate the most currently available technologies, to significantly reduce or eliminate environmental impacts such as odor, visual, and energy consumption within the first phases of the Master Plan.*

December 9, 2010 TPAC and December 14, 2010 Council meetings - staff was directed to consider the Milpitas Guiding Principles in the final development of the Preferred Alternative for the Plant Master Plan.

December 6, 2010 T&E Committee meeting – staff presented an analysis of a temporary contract dewatering option to eliminate the need for the lagoons and drying beds 12 years sooner while constructing the permanent dewatering and drying facilities by 2025. The analysis indicated that this option would increase expenditures by $178 million to 2025.

December 14, 2010 Council meeting - staff was directed by Council to prioritize the identification of sources and potential solutions for elimination of odors coming from the RWF operations and present options for the elimination of odors, including timelines and cost estimates to do so.

April 4, 2011 T&E Committee, April 7, 2011 TPAC and April 19, 2011 Council meetings - the Preferred Alternative for the Plant Master Plan was presented and staff was directed to proceed with the preparation of an Environmental Impact Report (EIR) and development of the final documents for the Plant Master Plan Preferred Alternative. The Final Preferred Alternative for the Plant Master Plan included recommendations for a phased approach for transitioning to mechanical dewatering, thermal drying, greenhouse drying, new cake storage and covered lagoons by 2025, including retirement of the existing lagoons and drying beds. It also included a recommendation to create a Regional Odor Assessment Program (ROAP) to undertake a comprehensive data collection effort and modeling of current and future odor impacts, along with specific odor control projects for the various treatment process areas, representing a $70 million estimated capital investments not including the lagoons and drying beds transition project which was estimated at $230 million.

Staff was directed to return to Council in May 2011 with additional information on reducing odors and an analysis of the "feasibility of implementing odor mitigation work in three to seven years" (April 19, 2011 memo from Mayor Reed, Vice Mayor Nguyen, and Council members Chu, Rocha, and Liccardo).

May 14, 2011 TPAC and May 24, 2011 Council meetings – staff presented preliminary information regarding odors and a planned regional odor assessment study that would include the RWF as well as other potential odor sources in the region. The regional study would assess other nearby facilities with odor potential including: Republic Services facilities at Newby Island, the Zanker Landfill and Zanker Material Processing Facility, the Milpitas Raw Sewage Pump Station, and the San Jose sanitary sewer collection system. The staff report indicated that the study could cost up to $1 million, would take up to one year to complete, and that all organizations involved in managing these potential odor sources had agreed in principle to be part of a regional study. Staff also presented analysis on the feasibility of accelerating the biosolids transition that considered ceasing the discharge of biosolids to the existing lagoons by 2018, followed by the emptying and clean up of the lagoons and drying beds by 2024. This project, estimated at $230 million, was anticipated to reduce the RWF's potential contribution to offsite odor impacts.

Staff presented its analysis of the feasibility of implementing odor mitigation in relation to the lagoons and drying beds in 3 to 7 years. Staff identified key opportunities and risks if the biosolids transition was to be accelerated including the need to:

- Obtain environmental clearance for the project which was incorporated to be evaluated as part of the PMP EIR
- Evaluate and prepare the legacy biosolids site to serve as the new location for the biosolids transition facilities
- Continue operating the lagoons and drying beds for up to three years after the new dewatering and drying facility comes on line to allow for final emptying and clean up of the lagoons
- Consider utilizing alternative project delivery methods to possibly accelerate the project schedule
- Consider cost and risks associated with foregoing the PMP recommended phased implementation approach which included pilot testing given the magnitude and complexity of the project

- Consider cost and rate impacts to come forward sooner than envisioned due to the acceleration of the biosolids transition, particularly due to additional energy and chemical consumption cost by up to $10 million annually

- Identify unique expertise and dedicated staff for implementing this complex project including the need to explore potential disposition options for the dewatered cake (a different end-product than the dried biosolids generated from the current lagoon and drying bed operations), and for negotiating and managing long term contracts for hauling and disposal

- Consider the significant project delivery staffing and other resource supports that would be need to implement the biosolids transition project, roughly estimated at $300 million at the time

Staff was directed by TPAC and Council to continue to work with its consultant team, other City departments, and the neighboring stakeholders, namely the City of Milpitas and the McCarthy Ranch representatives, to develop a regional odor assessment study and to continue to analyze the implementation timeline for the biosolids transition after completion of the PMP EIR.

June 21, 2011 Supplemental Memo to Council - staff provided an update on the status of working with stakeholders in response to TPAC direction from the May 4, 2011 meeting. Staff had been directed to meet with City of Milpitas and McCarthy Ranch technical consultants to discuss the timeline for the new biosolids process. The City of Milpitas staff representative proposed that the meeting not be rushed to meet the June TPAC schedule, but instead be set at mutually acceptable date to allow parties sufficient time to coordinate, prepare, discuss and review the findings. As a result, staff indicated that it would report back in August 2011.

August 3, 2011 Information Memo to TPAC and September 13, 2011 Supplemental Memo to Council – Following direction given at the May 14 and May 24 TPAC and Council meetings, staff provided an update on the outcome of a meeting between City staff, Milpitas staff, and McCarthy Ranch representatives to discuss the implementation timeline for the biosolids transition project and efforts to form a ROAP. The main outcome was that the timeline proposed by the McCarthy Ranch representatives showed the biosolids transition completing about one year sooner than the City's proposed 2018 timeline for ceasing discharge of biosolids. All parties agreed to continue refining the body of work and to return with additional updates at the end of 2011.

December 5, 2011 T&E Committee meeting and December 8, 2011 TPAC meeting – staff provided a progress update on efforts to complete a regional odor assessment study including retaining the services of CH2M Hill, Inc., a firm that is internationally recognized for its odor expertise and develop comprehensive scope of work and approach for the study, including coordinating the effort with the neighboring stakeholders. The staff report also indicated that Republic Services had agreed to participate and contribute financially to the regional odor

assessment study and that staff would finalize the study logistics and funding plan, and engage other stakeholders such as the City of Milpitas.

February 2, 2012 T&E Committee, February 9, 2012 TPAC, and February 14, 2012 Council meetings – staff provided a "Packaged Delivery" approach for the CIP, including proposed timeline and alternative project delivery options for the biosolids transition. The packaged approach for delivering the CIP considered the challenges with implementing a large, complex program inside the footprint of an active 365-day, 24/7 operating plant, the unprecedented decline in staffing levels that engineering and O&M groups were experiencing, and the financial impacts for implementing the PMP-recommended projects including the acceleration of the biosolids transition. Staff requested direction to proceed with a Request for Information solicitation to determine market interest in Design Build, Design Build Operate, and Design Build Operate Own project delivery options for capital improvements using new technology (i.e., Package 2 Projects included the New Dewatering and Drying Facilities, Cogeneration Facility, Lagoons and Drying Bed Retirement, and the New Filter Building.) Staff indicated that it would report back in fall 2012 if the RFI were to proceed. In May 2012, Carollo Engineers completed an analysis of alternate project delivery options for the biosolids transition. The report confirmed that the progressive D/B or DBO option would allow the transition out of the lagoons and drying bed operations by the end of 2018 (cease discharge of biosolids to the lagoons) and complete the lagoon and drying bed clean up by 2021.

October 1, 2012 T&E Committee meeting – staff updated the committee on the efforts to form a ROAP including completed sampling efforts done by CH2M Hill Engineers, Inc. and development of a preliminary odor model. Staff also informed the committee that other participants from the ROAP withdrew from the effort and the ROAP was not completed.

December 3, 2012 T&E Committee, December 13, 2012 TPAC meetings – staff provided an update on the "packaged delivery" approach, stating that the City would be soliciting an Owner's Engineer for the Cogeneration Facility and Biosolids Transition Program to finalize the project delivery approach, define project performance criteria, and develop bid documents to procure a design-build entity for the projects.

November 19, 2013 Council meeting – the San Jose City Council certified the Final Environmental Impact Report for the Plant Master Plan, formally adopted the Final Draft Plant Master Plan, and approved a General Plan Amendment to change the Envision San Jose 2040 General Plan Land Use/Transportation Diagram designation of 308-acre portion of the Water Pollution Control Plant. The Santa Clara City Council followed with adoption of the Final Draft Plant Master Plan in December 2013.

February 2014 - the RWF's Capital Improvement Program team completed a detailed project validation review process of all projects recommended in the PMP. This validation effort led to a change in assumption from large, open biosolids storage area near the lagoons (sized for 180 days of storage) to a managed, enclosed four-day storage facility.

April 24, 2014 TPAC meeting – staff presented preliminary information on the Biosolids Transition Strategy, including discussions of various disposition option, including potential options specific to the RWF. Staff also outlined steps to solicit interest from the open market and methodology for conducting business case evaluations in order to bring back recommendations to the City Council in fall 2014. Feedback from TPAC on the biosolids transition included consideration of odor impacts, expandability of the facility in the future, the possibility of producing Class A biosolids instead of Class B biosolids, and impact on operations and maintenance cost.

October 22, 2014 T&E, November 13, 2014 TPAC, November 20, 2014 Special TPAC, December 2, 2014 Council meetings – following on the April 24 TPAC meeting, staff returned to present an updated Biosolids Transition Strategy that took into account the outcome of the PMP EIR process with regards to the PMP-proposed location for the new dewatering and drying facilities, the program validation efforts, the outcome of the market analysis, and evaluation of options for producing Class A biosolids instead of Class B biosolids.

TPAC and Council approved 2 of 7 recommendations (i.e., proceed with the thermophilic phased anaerobic digestion (TPAD) and deferring the thermal dryer and greenhouse drying facilities), and requested staff to return with additional odor and cost information related to transitioning out of the lagoons and drying beds to help inform decision making on both the incremental cost benefit for various alternatives and the timing of the biosolids transition, particularly with regards to the Newby Island landfill closure. Staff was also asked to bring back potential alternatives, if any, that would retain the use of the current lagoon and drying bed process and still meet the desired odor goals.

Odor Control Options

1. *Base Case - Current Operations:* This is the current biosolids processing practiced at the RWF Residual Solids Management (RSM) area. This is not a viable odor control option, but is used in this comparison as a base case.
2. *Option A - 100% Lagoons/Drying Beds with Chemical Pretreatment*: This option requires constructing a new chemical feed station and pre-treating 100% digested sludge with chemical prior to conveying the digested sludge to existing lagoons and drying beds for processing.
3. *Option B - 75% Lagoons/Drying Beds + 25% Mechanical Dewatering*: This option requires increasing the water cap in the lagoons to 3 to 6 feet, modifying existing lagoons with surface aeration systems, constructing a new small dewatering facility that can process about 25% digested sludge, conveying about 75% digested sludge to the modified lagoons and drying beds for processing, and sending the remaining 25% digested sludge to the new dewatering facility for separate processing.
4. *Option C - 25% Lagoons/Drying Beds + 75% Mechanical Dewatering*: This option requires constructing a large dewatering facility that can handle about 75% digested sludge, conveying about 25% digested sludge to existing lagoons and drying beds for process, and sending the remaining 75% digested sludge to the new dewatering facility for separate processing. This option does not require any modifications to the existing lagoons. This option also involves decommissioning of 75% of existing lagoons and drying beds.
5. *Recommended Option - 100% Dewatering Facility and Lagoon/Drying Bed Decommissioning*: This option is the previous PMP and Biosolids Management Program recommendation of installing a new mechanical dewatering facility to process 100% of RWF digested sludge volume. This option also requires decommissioning of all existing lagoons and drying beds.

Table 1: Qualitative Comparison of Options

Consideration	Option A	Option B	Option C	Recommended Option
Proven track record in processing biosolids and controlling odors	• Does not address ammonia-based odors • Does not have proven track record at this scale. • Would need full-scale pilot testing for at least one year and subsequent sampling and modeling	• May not address all odors as aeration process is inefficient • Has limited track record at this scale • Would require pilot testing for at least three years and subsequent sampling and modeling	• Modeling indicates this option meets RWF odor goal • Dewatering Faciliy with dedicated odor control system are proven technologies • No pilot testing required	• Proven technology for biosolids processing and controlling odors
Ease of construction, operation and maintenance, and minimizing process complexity	• Easier to operate as similar to current RSM operation	• Requires operation of two parallel biosolids trains that increase O&M complexity • Difficult constructability as requires installing surface aerators and power feed under narrow RSM levee roads that may not be suitable for heavy machinery	• Requires operation of two parallel biosolids trains that increase O&M complexity	• Single biosolids processing train • New treatment process would require staff training
Risk of not meeting Odor goals	• Has high uncertainty in meeting RWF odor goal	• Has high uncertainty in meeting RWF odor goal	• Modeling indicates this option meets RWF odor goal	• Would be designed with dedicated odor control technology to meet RWF odor goal • This is the lowest risk option
Lifecycle Costs	• Lowest lifecycle costs	• Second lowest lifecycle cost	• Second highest lifecycle cost	• Highest lifecycle cost
TBL+ score	5.0	4.0	4.9	5.9

Table 2: Comparison of Lifecycle Cost over 30 years (Year 2016 – 2045)

Cost Component	Base Case	Option A	Option B	Option C	Recommended Option
Electricity	$0	$102,633	$9,212,926	$2,614,713	$3,486,284
Labor and Chemicals	$33,378,042	$91,233,642	$45,883,586	$59,616,504	$58,223,152
Disposition Cost	$47,329,628	$51,148,896	$59,135,455	$82,747,110	$94,552,937
Total O&M	**$80,707,670**	**$142,485,171**	**$114,231,967**	**$144,978,327**	**$156,262,373**
Capital Repayment	$0	$7,743,841	$46,044,460	$101,507,105	$120,343,475
Replacements	$4,210,683	$4,960,436	$7,042,884	$12,707,285	$15,539,486
Salvage Value	$(23,138)	$(23,138)	$(578,444)	$(1,735,331)	$(2,313,774)
Total NPV (assuming Newby Landfill closes in 2025, rounded to nearest million)	**$85,000,000**	**$155,000,000**	**$167,000,000**	**$257,000,000**	**$290,000,000**

Notes:

1. AACE International Class 5 level estimate with accuracy of +100% and -50%.
2. NPV was calculated for a period of 30 years from 2016 – 2045.
3. Total O&M costs include sludge disposition, chemical, labor, power, and other consumables.
4. Sludge Disposition Assumptions:
   a. Alternative Daily Cover (ADC) fee for Newby Island Landfill is approximately $23 per wet ton.
   b. The off-site disposition costs were assumed to range from $35 to $51 per wet ton, depending on disposition type and location (assumes 1/3 of sludge to land application, 1/3 to landfill as ADC, and 1/3 to composting).
   c. Recommended Option biosolids disposition does not utilize Newby Island Landfill.
5. This analysis uses solids loadings as provided by Biosolids Transition Strategy Report (Brown & Caldwell, December 2014).
6. This analysis assumes Newby Island Landfill closure in Year 2025. If Newby Landfill remains open throughout the analysis period (2016-2045), the Lifecycle costs for Base Case, and Options A, B, and C will decrease to $77 M, $146 M, $160 M, and $255 M respectively. Recommended Option biosolids disposition is at alternate locations from Day 1, and NPV for recommended option is independent of Newby Island Landfill closure.
7. Capital costs for Recommended Option and Option C include costs to decommission existing lagoons and drying beds by 100% and 75% capacity respectively. These decommissioning capital costs do not include backfilling of the lagoons to prevent habitat formation, decontamination of the legacy lagoons, or any civil improvements to make the land available for other beneficial uses.

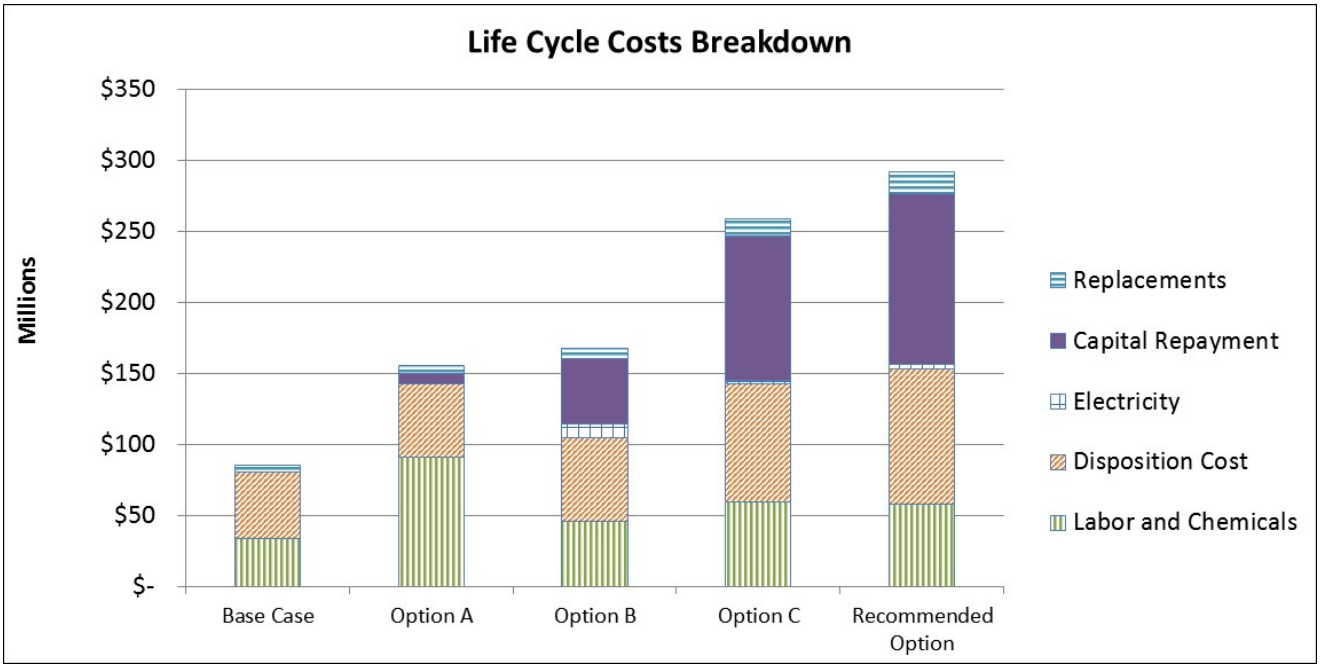

Table 3: Conclusion Summary for Options

Project	Probability of meeting approved RWF odor goals	Supports PMP goals and MGP [4]	Provides flexibility for diversified disposition options	Life Cycle Cost (NPV) [1,2,5]	Capital Cost[1,5]	Annual O&M Cost[1,6] with disposition at:		Average Annual O&M Cost (over a 30-year period)[1,3]	Anticipated timeline to achieve approved RWF odor goals
						Newby Landfill	Other options		
Base Case	None	No	No	$85 M	$ 0	$3.4 M	$4.0 M	$ 5.9 M	Never
Option A	Low	No	No	$155 M	$7.4 M	$6.4 M	$7.0 M	$10.6 M	Unknown
Option B	Low	No	No	$167 M	$44 M	$5.5 M	$5.9 M	$8.7 M	Unknown
Option C	High	Yes	Yes	$257 M	$97 M	$6.8 M	$6.9 M	$11.2 M	2027
Recommended Option	100%	Yes	Yes	$290 M	$115 M	$7.4 M	$7.4 M	$12.1 M	2027

Notes:

1. All costs in 2015 dollars. AACE International Class 5 level estimate with accuracy of +100% and -50%.
2. NPV was calculated for a period of 30 years from 2016 – 2045, assuming Newby Island Landfill closure in Year 2025.
3. Escalated annual O&M costs averaged over a period of 30 years from 2016 – 2045. These include costs for sludge disposition, chemical, labor, power, and other consumables. Sludge disposition costs are for alternate disposition options assuming Newby Island Landfill closes in 2025.
4. Milpitas Guiding Principles.
5. Recommended Option and Option C include capital costs to decommission existing lagoons and drying beds by 100% and 75% capacity respectively. These decommissioning capital costs do not include backfilling of the lagoons to prevent habitat formation, decontamination of the legacy lagoons, or any civil improvements to make the land available for other beneficial uses.
6. Costs in 2015 dollars and for 2015 sludge quantities. Annual O&M costs include sludge disposition, chemical, labor, power, and other consumables. This analysis assumes Newby Island Landfill closure in Year 2025. The off-site disposition costs were assumed to range from $35 to $51 per wet ton, depending on disposition type and location (assumes 1/3 of sludge to land application, 1/3 to landfill as Alternative Daily Cover, and 1/3 to composting). Proposed Facility biosolids disposition does not utilize Newby Island Landfill.

San José-Santa Clara Regional Wastewater Facility

CIP Program

Odor and Corrosion Control Study

Technical Memorandum - Lagoons and Drying Beds Odor Evaluation

Prepared for City of San Jose

Prepared by: Susan Dennis/CH2M HILL
Aidan Shaughnessy/CH2M HILL

Date: April 30, 2015

Reviewed by: Jay Witherspoon/CH2M HILL

Attachment C - Odor and Corrosion Control Study - Technical Memorandum - Lagoons and Drying Beds Odor Evaluation

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LIST OF ABBREVIATIONS

ADC	alternative daily cover
BAAQMD	Bay Area Air Quality Management District
BOD	biochemical oxygen demand
CIP	Capital Improvement Program
D/T	dilution to threshold
DAFT	dissolved air flotation thickening
DO	dissolved oxygen
DSRSD	Dublin San Ramon Services District
mg/L	milligrams per liter
NPV	net present value
PMP	Plant Master Plan
PVRV	pressure vacuum reducing valve
RSM	residual solids management
RWF	Regional Wastewater Facility
SRCSD	Sacramento Regional County Sanitation District
TBL+	Triple Bottom Line Plus
TPAC	Treatment Plant Advisory Committee
TPAD	temperature phased anaerobic digestion
TS	total solids
WAS	waste activated sludge

1.0 INTRODUCTION

Currently, solids stabilization processes at the San José-Santa Clara Regional Wastewater Facility (RWF) include mesophilic anaerobic digestion followed by lagoon stabilization and solar drying utilizing open air drying beds. The RWF Plant Master Plan (PMP)[1] defines a biosolids strategy to transition from use of the lagoons and drying beds to mechanical dewatering and potentially other processes to produce alternative end-use products. The primary goal of this transition strategy is to address community odor concerns associated with the lagoons and drying beds.

The biosolids transition strategy presented in the PMP was been refined as part of PMP validation for the RWF Capital Improvement Program (CIP). The refined biosolids strategy would implement a mechanical dewatering facility sized for 100 percent of the planning period digested sludge quantity in combination with potential thermal drying, solar greenhouses, soil blending, or other unit processes to produce a biosolids product for multiple potential end uses. Implementation of mechanical dewatering was planned year 2018, which would enable phased decommissioning of the lagoons and drying beds (including removal of all biosolids) by year 2024.

City staff presented the refined biosolids transition strategy to the RWF Treatment Plant Advisory Committee (TPAC) in November 2014 and the San José City Council in December 2014, and requested approval to proceed with implementation of the mechanical dewatering facility to enable decommissioning of the lagoons and drying beds by 2024. Although TPAC was supportive of the long-term goal of transitioning out of the current open air process, it wanted additional information about odor impacts from the existing lagoons and drying beds as well as the cost of odor control improvements associated with any new biosolids drying process. TPAC also asked staff to bring back potential alternatives, if any, that would retain the current lagoon and drying bed process and still meet the desired odor goals. San José City Council supported TPAC's recommendations; however, they asked staff to return in spring instead of fall 2015, as recommended by TPAC.

2.0 PURPOSE

The purpose of this technical memorandum (TM) is to present the evaluations and conclusions prepared by the Odor and Corrosion Control Study (odor study) team to assist staff members with their response to TPAC and City Council's request. As requested by RWF staff, this information is organized as follows:

[1] *Plant Master Plan, San José/Santa Clara Water Pollution Control Plant*, prepared by Carollo Engineers in Association with Brown and Caldwell and Skidmore, Owings and Merrill, November 2013.

- Odor contours for the lagoons and drying beds for:
  - Existing conditions
  - Interim condition (during decommissioning)
  - Future condition of empty beds and lagoons
- Estimated odor control costs to achieve the RWF 5 dilution to threshold (D/T) odor goal for the dewatering and truck loadout facility as defined in the refined biosolids transition strategy.
- Odor contours for the existing digesters and dissolved air flotation thickening (DAFT) facilities, and for the future temperature phased anaerobic digestion (TPAD) process with cothickening DAFT.
- Options, if any, to achieve the 5 D/T goal using the lagoons and drying beds to process 100 percent of the RWF biosolids and, if this is not feasible, options to continue use of the lagoons and drying beds to the greatest extent in combination with other biosolids processing options (such as mechanical dewatering).

The findings and conclusions presented in this TM are based on the input provided by RWF staff and experience readily accessible within CH2M HILL given the time frame and budget assigned to this work. Limited research of technical publications and online media was conducted. Solids loadings and estimated costs for mechanical dewatering were provided by the RWF staff. Limited information from equipment vendors was obtained to aid in developing and evaluating alternatives.

3.0 BACKGROUND

This section presents background information on the current lagoon and drying bed configuration and operation, and an overview of the RWF odor goals to aid in understanding of the evaluations and conclusions presented in this TM.

3.1 Existing Residuals Solids Management

Anaerobically digested biosolids are pumped to the residual solids management (RSM) facility to be further stabilized and dewatered. The RSM facility includes 29 sludge lagoons and 20 drying beds, Figure 3-1. The lagoons are operated on a 4-year cycle to provide additional pathogenic inactivation, and using the drying beds to produce a Class A air-dried biosolids of approximately 80-85 percent total solids (TS). The lagoons are operated in four zones, each with seven or eight individual lagoons. Within any 12-month period, one zone receives anaerobically digested sludge (Year 1 filling lagoons) that is pumped from the digesters, two zones of lagoons are inactive to allow the biosolids to further stabilize (Year 2 and 3 lagoons), and one block (Year 4 lagoon) is dredged and the biosolids are pumped to the drying beds over a 6-month period. The biosolids are evenly distributed in the drying beds and are air dried and

turned periodically using a Scat. Annually in September, the drying bed biosolids are stockpiled for haul out to the adjacent Newby Island Landfill and utilized for alternative daily cover (ADC).

Figure 3-1 Existing RWF Lagoons and Drying Beds

3.2 RWF Odor Goal

An odor goal and odor fence line was established as part of the odor study to guide planning for odor reduction at the RWF. An odor goal was selected so that at worst case odor emission levels, public nuisance triggers are not exceeded to result in complaints or a confirmed regulatory odor violation. In selecting the odor goal for the RWF, compliance with BAAQMD regulations, input from the community surrounding the RWF, and cost of odor reduction were considered. Odor goals at similar wastewater treatment facilities in the San Francisco bay area and nationally were also reviewed to understand regional and national odor goal trends.

The RWF is currently in compliance with the BAAQMD odor-related regulations and has not received a confirmed BAAQMD Odor Violation. However, more stringent community- based odor goals and criteria were considered for the RWF given the significant number of "unconfirmed" odor complaints from the community surrounding the facility.

In general, a more stringent offsite goal will require greater odor controls and associated costs while a less stringent offsite goal can result in a greater risk of offsite odor complaints. As a result, a balance between available funding and risk of odor complaints was used to determine an appropriate odor goal for the RWF. An odor goal typically comprises three criteria: odor concentration, odor duration, and odor frequency.

3.2.1 RWF Odor Concentration Criterion

The odor concentration criterion is the detection threshold, in D/T, that is selected to be achieved at the odor fence line. An odor concentration criterion of 5 D/T was selected for the RWF. The 5 D/T criterion corresponds with the lower range at which most people can detect the presence of an odor above background distractions.

City adopted the 5 D/T odor goal for RWF in its Odor Control Strategy approved by Council in December 2014, which was consistent with the 5 D/T criterion established in the PMP and the EIR adopted by City of San Jose City Council on November 19, 2013, and the aforementioned regulatory standard set by the BAAQMD. The 5 D/T criterion is also consistent with odor planning goals currently established by other wastewater treatment plants in similar settings in the San Francisco bay area.

3.2.2 RWF Odor Duration Criterion

Odor duration refers to the amount of time an odor event exceeding the selected concentration criterion occurs. Longer duration odor events are more likely to pose a nuisance than shorter events, other factors being equal. When odor impacts are evaluated using dispersion models, the averaging period over which the input meteorological data are gathered should correspond to the duration criterion.

For the RWF, 1 hour is the shortest averaging period available. A duration of 1 hour represents a reasonable duration criterion because an odor event lasting 1 hour is likely to pose a

nuisance. Additionally, the 1-hour duration criterion is a common industry practice representing an acceptable level of conservativism. For these reasons, the RWF selected a 1-hour odor duration goal.

3.2.3 RWF Odor Frequency Criterion

The odor frequency criterion corresponds to the number of annual occurrences that the odor concentration criterion is exceeded beyond the odor fence line. Because the odor duration criterion and the meteorological data averaging period is 1 hour, the frequency criterion is stated in terms of the number of hours per year during which the concentration criterion is exceeded offsite. For example, an odor frequency goal of 100 percent corresponds to no allowable hours of annual exceedance.

The RWF selected 99 percent as the odor frequency goal based on common industry practice and an acceptable level of conservativism. This means that the odor goal may be exceeded beyond the odor fence line location no more than 1 percent of the hours in a year, or no more than 88 hours.

3.2.4 Peaking Factor Criterion

Peaking factors are used to augment concentration and duration goals in recognition of the variation in odor concentration over the course of any selected interval. Peaking factors are commonly used in dispersion modeling to compensate for meteorological data that are not available with averaging periods shorter than 1 hour. Peaking factors may also be applied to modeling results to offset the inability of dispersion models to capture calm and very low wind speed conditions. The San Jose airport meterological data are limited by the airport wind speed meter which only records wind speeds 1 meter per second or higher (even though the AERMOD dispersion model can handle wind speeds down to 0.5 meter per second). That has resulted in 800 calm hours that cannot be modeled per year—a significant portion of time when impacts are likely but not counted by the model. Three-minute peaking factors are recommended as a means to add conservatism and offset the inability to model calms. Three minutes is recommended because it is considered the shortest duration of an odor event that would be noticeable by most people.

Based on experience at other similar facilities, the combination of 5 D/T concentration, 1 hour averaging with 3-minute peaking and 99 percent frequency criteria is expected to result in a successful level of odor control.

3.2.5 RWF Fence Line

The odor fence line is the location at which the 5 D/T odor goal will be met following completion of odor abatement projects. Odors that emanate beyond this fence line will be less than the 5 D/T odor goal and are expected to be acceptable to the surrounding community and stakeholders.

The City adopted for the RWF, in its Odor Control Strategy approved by City Council in December 2014, the odor fence line shown in Figure 3-2. The RWF odor fence line was selected to generally coincide with the RWF property boundary with the primary except being in the southern portion of the property where the odor fence line is set-back from the southproperty line to exclude the RWF buffer lands . The south set-back is compatible with future land use as defined in the PMP. Figure 3-2 also shows potential modifications to the odor fence line that can be considered in the future once the selected RWF odor goal is achieved.

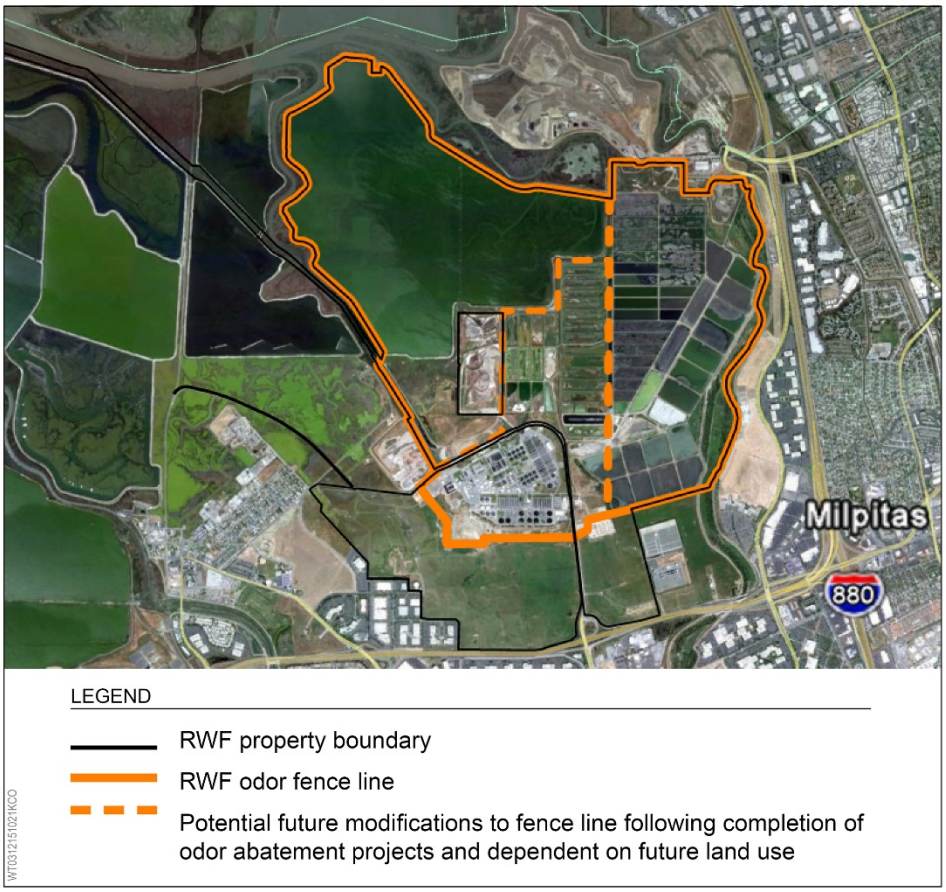


Figure 3-2 RWF Odor Fence Line

4.0 ODOR CONTOURS FOR THE LAGOONS AND DRYING BEDS

Dispersion modeling was performed to estimate the offsite odor impacts of the current lagoon and drying bed operations, and during and at the conclusion of decommissioning.

4.1 Existing Lagoon and Drying Bed Operation

Figure 4-1 shows the baseline odor impacts of all lagoons plus drying beds as operated today. This corresponds to the baseline condition modeled as part of the odor study. The figure shows that the lagoons and drying beds do not comply with the RWF odor goal: the RWF odor goal,

represented by the contour labelled 88 hours (exceedances of the 5 D/T, 1 hour, 99 percent compliance goal) reaches beyond the RWF odor fence line (shown in orange).

Figure 4-1 Number of 5 D/T Exceedances—Lagoons plus Drying Beds

4.2 Lagoon and Drying Bed Decommissioning

A decommissioning strategy for the lagoons and drying beds following implementation of mechanical dewatering has not been developed by the CIP biosolids team. To estimate potential odor impacts during decommissioning, a simplified decommissioning approach was assumed as follows:

- Discharge of digested biosolids to the lagoons would cease once mechanical dewatering (or another means to process biosolids for reuse) is in service.
- During this first year of decommissioning, the drying bed biosolids would be stockpiled and hauled away in September. The Year 4 lagoon biosolids would be dredged and pumped to the drying beds the following spring, air-dried, and removed the following September.
- Once the Year 4 lagoons are dredged in the spring, they would be decommissioned as follows:
  - Each lagoon would be dewatered—any standing water would be pumped and returned to the RWF for treatment..
  - Any residual biosolids would be allowed to dry in the open-air.

  - The residual lagoon material would be removed in September and October, before the rainy season. Since the bottoms of the lagoons are not graded to enable runoff of leachate and may not be suitable to operate a Scat for periodic turning, the residual biosolids may be wetter than that produced in the drying bed. However, it is assumed the stockpiling and hauling would be as for the drying beds.
- The following spring, the next oldest lagoons (now Year 4 lagoons) would be dredged and pumped to the drying beds, air-dried, and removed the following September, and the lagoon emptying and dewatering would commence. This process would be repeated for each of the next 2 years until all lagoons are emptied of biosolids and decommissioned.

- Following the final hauling of biosolids from the drying beds, any residual biosolids would be scraped from the beds and hauled away. This would constitute drying bed decommissioning.

4.2.1 Odors during Decommissioning

Odors from the lagoons containing 2, 3, and 4 year old biosolids and from the drying beds would be similar to existing odors. Since the RSM team has no experience dewatering a lagoon and CH2M HILL staff has no representative experience, it is assumed that the worst case condition during lagoon decommissioning will follow dredging and removal of any standing water, when residual biosolids at the bottom of a lagoon are exposed. It is assumed that the dewatered lagoon odor concentration will be comparable to that of the drying beds and that all lagoon residuals in a zone will be exposed at the same time.

The worst case odor assumptions during each year of this decommissioning scheme are presented in Table 4-1.

Table 4-1 Lagoon and Drying Bed Decommissioning Worst Case Odor Assumptions

Decommissioning Year	Lagoon D/T	Drying Bed D/T
1—cease pumping digested biosolids to lagoons, dredge Year 4 lagoons to drying beds; dewater Year 4 lagoons	1 block = Year 1 D/T 1 block = Year 2 D/T 1 block = Year 3 D/T 1 block = drying bed D/T	Same as baseline
2—dredge year 4 lagoon and pump to drying bed; dewater Year 4 lagoons; 1 zone of lagoons decommissioned	1 block = Year 2 D/T 1 block = Year 3 D/T 1 block = drying bed D/T	Same as baseline
3—dredge Year 4 lagoon and pump to drying bed; dewater Year 4 lagoon; 2 zones of lagoons decommissioned	1 block = Year 3 D/T 1 block = drying bed D/T	Same as baseline
4—dredge Year 4 lagoon and pump to drying bed; dewater Year 4 lagoon; 3 zones of lagoons decommissioned	1 block = drying bed D/T	Same as baseline
5—all lagoons and drying beds decommissioned	No odor	No odor

Based on the above assumptions, the greatest odor generation would occur during the first year of decommissioning. This condition was modeled to determine whether offsite odors during decommissioning would be the same, less than, or greater than current impacts from the lagoon and drying bed operations. Note that in addition to the lagoons and drying beds, emissions from the mechanical dewatering facility (or other biosolids processing) odor control system would also impact offsite odors. Figure 4-2 shows the estimated offsite odor impacts from the assumed Year 1 decommissioning plus the controlled mechanical dewatering and truck loadout facility.

Figure 4-2 Number of 5 D/T Exceedances: Lagoons plus Drying Beds Worst Case Decommissioning plus Dewatering and Loadout Facility with Odor Control

5.0 ESTIMATED COST OF ODOR CONTROL FOR THE DEWATERING AND TRUCK LOADOUT FACILITY

Alternatives for odor control for the dewatering and truck loadout facility are being evaluated as part of the odor study. At this time, the placeholder technology is a covered biofilter with a stack. The CIP Triple Bottom Line Plus (TBL+) evaluation of technology alternatives and development of estimated costs is ongoing and will be included in the Odor and Corrosion Study Report.

6.0 ODOR CONTOURS FOR THE DIGESTERS AND DAFT

This section presents dispersion modeling results for the digesters and DAFT for the baseline condition and for the future digester and DAFT configuration.

6.1 Existing Digester and DAFT Operation

Figure 6-1 shows the baseline odor impacts of the digesters and DAFT as currently operated. The odor contributions from these facilities include: one digester pressure vacuum reducing valve (PVRV) release and surface emissions from the DAFT operation for waste activated sludge (WAS) thickening. These facilities do not individually or together result in offsite odor impacts.

Figure 6-1 Number of 5 D/T Exceedances: Digesters and DAFT Baseline Condition

6.2 Future Digester and DAFT Operation

Rehabilitation of the RWF digesters is scheduled for completion by year 2023 and will include installation of new fixed covers and conversion to the TPAD process. Operation to produce Class A TPAD biosolids will transition over several years. As part of this project, the DAFT will be converted to cothicken primary sludge and WAS. Odor control will be included in the DAFT conversion. In addition, a new biogas storage tank is currently under construction.

In the future it is assumed that the new PVRVs installed on the rehabilitated digester will operate infrequently; thus, no odor contribution is assumed from the digesters or the biogas storage tank. The odor control design assumptions for the cothickening DAFT were modeled based on design criteria provided by the designer. The highest max hour concentration for the future DAFT odor control system is predicted to be less than 1 D/T; no contour exists. These facilities do not individually or together result in offsite odor impacts.

7.0 FEASIBILITY TO RETAIN USE OF LAGOONS AND DRYING BEDS AND COMPLY WITH RWF ODOR GOAL

This section presents the evaluation of alternatives to retain use of the lagoon and drying bed operation for biosolids processing and comply with the RWF fence line odor goal. This work was conducted with two parallel activities:

- A sensitivity analysis was conducted to understand the odor reduction that would be necessary to meet the RWF fence line odor goal using the lagoons and drying beds.
- Alternatives were evaluated to modify the lagoon and drying bed operation to potentially achieve the fence line odor goal.

The RWF AERMOD baseline odor dispersion model was utilized to determine the odor reduction that would be required for the lagoons and drying beds to achieve the fence line odor goal.

7.1 Sensitivity Analysis of Required Odor Reduction to Achieve Fence Line Odor Goal

It is important to understand the current impact that the lagoons and drying beds have on offsite odors as a starting point. As was presented in Figure 4-1, the lagoons and drying beds together significantly impact offsite odors. The odor impact of the lagoons and drying beds individually are shown in Figures 7-1 and 7-2. The lagoons and drying beds together and individually exceed the fence line odor goal.

Figure 7-1 Number of 5 D/T Exceedances: Lagoons Baseline Condition

Figure 7-2 Number of 5 D/T Exceedances: Drying Beds Baseline Condition

It is also important to understand the relative odor of the four lagoon blocks before exploring the potential to reduce the lagoon odors and achieve the fence goal. Results of the sampling data obtained in four sampling events at the RWF during 2011, 2012, and 2014 show that the Year 1 lagoon block, which receive digested biosolids pumped directly from the digesters, are more odorous than the Year 2, 3, and 4 lagoon blocks where the biosolids is more stabilized. For comparison, the odor concentration selected to model the Year 1 lagoon block is 840 D/T. The Year 2, 3, and 4 lagoon blocks were modeled based on 360 D/T, 180 D/T, and 230 D/T respectively.

7.1.1 Reducing D/T to Achieve Fence Line Odor Goal: All Lagoons and Drying Beds in Service

The D/T levels of all lagoons are relatively low as compared with many wastewater treatment plant odors. For example, the primary clarifier quiescent surface is modeled with a baseline odor of 24,000 D/T and the primary effluent equalization basin is modeled with a baseline odor of 2,100 D/T. However, the acreage over which lagoon odors are emitted is tremendous. Thus, even relatively low odors can result in an offsite impact. This is the also the case with the drying beds, which are modeled with a baseline odor of 400 D/T.

Of the four lagoon blocks, the D/T of the Year 2, 3, and 4 lagoons is already quite low—comparatively on the order of the discharge from a well performing odor control biofilter. Thus, it is unlikely to expect to reduce the Year 2, 3, and 4 lagoon odors significantly. It may be possible to reduce the D/T of the Year 1 lagoons to that of the Year 2 lagoon D/T; this condition was modeled and is presented in Figure 7-3. The modeling assumed that all lagoons and drying beds would be in service and process existing biosolids quantities, and be operated as today with the exception of any modifications required to reduce the D/T of the Year 1 lagoons. Note that as biosolids quantities increase in the future, the additional solids would need to be processed elsewhere to not impact odors from the lagoons and drying beds; processing of additional solids in the lagoons and drying beds would likely increase odors.

Based on the modeling results, it's concluded that reducing the Year 1 lagoons D/T to that of the Year 2 lagoons will not achieve the fence line goal.

Figure 7-3 5 D/T Exceedances with All Lagoons and Drying Beds in Service; Year 1 Lagoon D/T = Year 2 D/T; Existing Solids Loading

7.1.2 Reduce Acreage of Lagoons and Drying Beds to Achieve Fence Line Odor Goal

To understand what portion of the RSM system could remain in service and achieve the fence line odor goal if no modifications were made to current operations, the dispersion model was run assuming 25 percent, 50 percent, and 75 percent of the lagoons and drying beds would be taken out of service. The modeling assumed that an equal percentage of each individual lagoon and drying bed would be taken out of service for each scenario, rather than selecting an entire block to be taken out of service (such as removing all Year 4 lagoons to result in 75 percent of the total in service). It is recognized that this is not how RSM would be modified if this were implemented, but was assumed to simplify the modeling.

The modeling results, presented in Figure 7-4, show that less than 25 percent of the lagoons and drying beds could remain in service if operated as today and still achieve the fence line odor goal. For this analysis, it is assumed that all lagoons and drying beds would be loaded at existing solids loading rates; therefore, more than 75 percent of the current biosolids produced would need to be processed elsewhere as well as additional future biosolids elsewhere.

Figure 7-4 5 D/T exceedances versus Percentage of Lagoons and Drying Beds in Service

7.1.3 Impact of TPAD on Future Biosolids Quantity and Odor

The above sensitivity analysis was based existing biosolids quantities. However, changes in future biosolids quantities and their odor characteristics following conversion to the TPAD process were considered.

TPAD is expected to result in approximately 5 percent greater volatile solids destruction, which will result in less biosolids on a dry ton basis. However, the digested biosolids quantities produced by TPAD on a flow basis will not change significantly. RSM staff report that the lagoon capacity is limited on a flow basis, not solids loading, and that they are operating at capacity. Any biosolids volume reduction resulting fromthe TPAD operation is not expected to create significant additional lagoon capacity.

Available data on TPAD sludge odors are inconclusive as to whether there is a significant difference in odor concentration as compared with mesophilic anaerobic digestion sludge. The data indicate that when TPAD sludge is stored, it may take longer for it to reach peak odor releases as compared with mesophilic anaerobic digestion sludge. However, the relevance of this was not considered significant for RSM lagoon operations as the digested solids are discharged directly into the lagoons and comingled with other biosolids.

Some plants operating TPAD experience increased ammonia odors. Therefore, it is concluded that the conversion to TPAD will not improve available lagoon capacity or reduce odors in the

lagoons. The potential for greater odors resulting from ammonia should be considered if continued use of the lagoons with TPAD operation is considered.

7.2 Alternatives to Reduce Lagoon and Drying Bed Odors

Alternatives to modify the lagoon and drying bed operation to potentially meet the fence line odor goal were identified collaboratively by the CIP biosolids transition team, RSM operations staff, and odor study team. The alternatives identified fell into the following categories:

- Oxygenated water cap: create a functional oxygenated water cap on top of the lagoons to inhibit the release of odors
- Covers: cover the lagoon or drying bed surface to prevent the release of odors
- Reduce footprint: reduce the surface area of the lagoons and drying beds for odor emissions
- Reduce the odor of the biosolids before discharge to the lagoons
- Other modifications

Each of the alternatives was screened to assess the feasibility to implement at the RWF. Combinations of alternatives were not considered at this level of evaluation, e.g., reducing the lagoon footprint in combination with reducing odor of the biosolids before discharge was not considered. Each of the alternatives is briefly described below along with conclusions regarding their feasibility to achieve the fence line odor goal.

7.2.1 Oxygenated Water Cap

A water cap is a depth of water on top of the lagoon solids, typically 3 to 6 feet deep. The water cap provides a region of low BOD where sufficient dissolved oxygen (DO) can be established to oxidize odor compounds from the underlying biosolids before they are released to the atmosphere, including ammonia, sulfide, and organics. This mechanism is limited by the rate DO enters the water cap from the atmosphere. To function, natural reaeration must be faster than the flux of odorants from the underlying sludge. The DO is generated by algae during daylight hours so the water cap must be able to generate enough residual DO to last during the night. To maintain effective DO, surface aeration may be required.

The lagoons currently operate with a 12- to 14-inch deep water cap. This depth is not sufficient to inhibit release of odors from the lagoons. Table 7-1 summarizes the alternatives that were identified to establish an oxygenated water cap on the lagoons.

Table 7-1 Oxygenated Water Cap Alternatives

Alternative	Percent of Existing Lagoons/Drying Beds Retained	Impact to RSM Operations	Potential to Achieve Odor Goal	Feasibility of Implementation
Oxygenated Water Cap **Objective:** Provide an oxygenated barrier to reduce odorous emissions from lagoons.				
Establish Water Cap				
Increase height of existing berms around each cell by 3 to 6 feet using soil	Lagoons: 100%, though increasing height of sloped berms would reduce capacity of lagoons Drying Beds: 100%	Impacts to existing dredge operations would need to be resolved.	Will not achieve odor goal as a standalone option	Geotechnical and structural feasibility unknown
Increase height of existing berms around each cell by 3 to 6 feet to using vertical walls (sheet pile or other construction)	Lagoons: 100% Drying Beds: 100%	Impacts to existing dredge operations would need to be resolved.	Will not achieve odor goal as a standalone option	Geotechnical and structural feasibility unknown
Maintain existing lagoon geometry and reduce quantity of biosolids processed to enable capacity for 3 to 6 feet water cap	Lagoons: 100%, though reduced capacity. Drying Beds: 100%	Maximum 75% of existing biosolids quantities can be processed in lagoons	Will not achieve odor goal as a standalone option	Feasible, but requires alternate biosolids processing for more than 25% of existing biosolids
Oxygenate Water Cap				
Install surface brush aerators	Lagoons: 100% Drying Beds: 100 %	Could be implemented without impacting lagoon dredging	Will not achieve odor goal as a standalone option	Feasible; precedence well established.

Table 7-1 Oxygenated Water Cap Alternatives

Alternative	Percent of Existing Lagoons/Drying Beds Retained	Impact to RSM Operations	Potential to Achieve Odor Goal	Feasibility of Implementation
Install fine bubble diffusers; requires diffuser header, diffusers, and blower.	Lagoons: 100% Drying Beds: 100%	Impacts to existing dredge operations would need to be resolved.	Will not achieve odor goal as a standalone option	Not feasible: mechanically complex to operate and maintain; fouling of diffusers a key concern; no precedence of use identified.

7.2.1.1 Application at RWF

Of the alternatives considered, the most feasible combination to establish and oxygenate a water cap is to: maintain existing lagoon geometry and reduce quantity of biosolids processed to enable capacity for 3- to 6-foot water cap and install surface brush aerators

As discussed in Section 7.1.1, it is not expected that the odors from the Year 2, 3, and 4 lagoons can be reduced significantly. Therefore use of an oxygenated water cap to reduce lagoon odors would be focused on the Year 1 lagoons. Since the feed zone rotates annually, a 3- to 6-foot deep water cap would need to be established at all lagoons. At current solids loads, the quantity of biosolids processed by the lagoons would need to be reduced by about 25 percent to enable sufficient depth for an effective water cap. This biosolids quantity (25 percent of current solids loading and all future increased solids flow) would need to be diverted to an alternative dewatering facility for processing.

Brush aerators would be utilized in conjunction with the increased water cap to oxygenate the lagoon surface and would be installed in the feed lagoons in each of the fourblocks . A minimum of 0.10 milligrams per liter (mg/L) DO is recommended for an effective water cap. The specific DO required for the RWF will depend on BOD of the biosolids and its settleability. The brush aerators will float on the surface of the lagoons and use a spinning, horizontal rotor assembly that shears and mixes the water cap. During dredging, the brush aerators can be moved clear of the dredges by detaching them from their anchorages on the shore and floated to the edge of the lagoons. The aerators would be sized to agitate only the water cap. However, the sludge solids are “fluffy” and may be entrained in the water cap in the vicinity of the aerator. Any sludge solids that migrate into the water cap would increase the BOD in the water cap and impact its intended performance. Any water odorants within the water cap could be stripped out during aeration, if DO levels are less than 0.1 mg/L.

7.2.1.2 Precedence at Other Facilities

There is precedence of successfully managing odor emissions from sludge lagoons with a water cap from our work locally with Sacramento Regional County Sanitation District (SRCSD) and Dublin San Ramon Services District (DSRSD), and with Melbourne Water in Australia. However, the performance of a water cap for odor control is highly specific to the site and sludge and the facility's odor goal. SRCSD has a comparable sludge lagoon footprint to RWF, but the lagoons are in the middle of a large facility with no close neighbors. On a much smaller scale, DSRSD successfully operates sludge lagoons to meet a 4 D/T goal. DSRSD operates their sludge lagoons per seasonal set points and use brush aeration during transitional periods.

7.2.1.3 Conclusion

An oxygenated water cap would not achieve the RWF odor goal. Given the large surface area at the RWF and the 5 D/T fence line goal, even relatively low D/T emissions could result in offsite impacts. This was demonstrated by the sensitivity modeling discussed in Section 7.1.

7.2.2 Covers on Lagoons and Drying Beds

Alternatives considered to cover the lagoons and drying beds to contain odors, some in combination with odor control, are presented in Table 7-2.

Table 7-2 Covering Alternatives

Alternative	Percent of Existing Lagoons/Drying Beds Retained	Impact to RSM Operations	Potential to Achieve Odor Goal	Feasibility of Implementation
Lagoon and Drying Bed Covers **Objective**: Contain odors to prevent release to atmosphere, or contain and treat with odor control.				
Floating cover on surface of lagoon (not feasible for drying bed)	Lagoons: 100% Drying Beds: 100%	Cover would need to be removed for dredge operations; alternatively, submerged dredge system may be possible.	Highly effective when in place; odors could be greater when removed for dredging and cover maintenance. Requires modeling.	Complex and costly to engineer, install, and maintain; could be same order of magnitude as mechanical dewatering.
Fixed cover on lagoons with odor control system	Lagoons: 100% Drying Beds: 100%	Covers would need to be tall enough to accommodate dredge, or be removed for	May be possible to achieve odor goal if removal for dredging not required; requires	Complex and costly to engineer, install, and maintain; could be same order of magnitude as mechanical dewatering.

Table 7-2 Covering Alternatives

Alternative	Percent of Existing Lagoons/Drying Beds Retained	Impact to RSM Operations	Potential to Achieve Odor Goal	Feasibility of Implementation
		dredging; consider alternative dredge system.	modeling.	Footprint may not be available for large biofilter or other odor control system.
Fixed cover on drying beds with odor control system	Drying Beds: 100%	Impact to drying performance unknown. Covers would need to be removed to accommodate stockpiling and hauling (covers that are tall enough to accommodate stockpiling would be a building).	Would not achieve odor goal during annual stockpiling and hauling.	Complex and costly to engineer, install, and maintain; could be same order of magnitude as mechanical dewatering. Footprint may not be available for large biofilter or other odor control system.

7.2.2.1 Application at RWF

Compatibility of any type of cover with the lagoon dredging operations appears to be the fundamental operational issue with this approach. RSM operates four floating lagoon dredges which operate on cables that run longitudinally in each lagoon. The dredges are moved between lagoons as each is cleared of solids during dredging season. The covers would either need to be removable or be constructed tall enough to accommodate the dredge.

Odor reduction could be highly effective and possibly achieve the fence line odor goal when the covers are in place. However when removed, floating covers may increase odors above baseline levels and exceed the odor goal. With structural covers, a ventilation system would evacuate odorous air from the head space for treatment with odor control. A large biofilter, or multiple biofilters, would be appropriate for this application. Structural covers for the drying beds are most compatible with the drying operation, but may lengthen the time required for drying or achieve a wetter cake. To accommodate the Scat and loadout equipment, a building would be required. Given the size of building required, other methods of dewatering appear more practical.

7.2.2.2 Conclusion

Covering alternatives are considered not feasible due to the complexity of installing and maintaining covers to be compatible with RSM operations. Costs for covers were not estimated; however, it is expected that they would be significant and may be of similar magnitude as mechanical dewatering or other biosolids processing systems.

7.2.3 Reduce Footprint

The feasibility of reducing the footprint of the lagoons and drying beds to achieve the odor goal was evaluated in the sensitivity analysis presented in Section 7.1.2. To achieve the fence line odor goal, less than 25 percent of the existing lagoons and drying beds can remain in service.

7.2.3.1 Application at RWF

To implement this alternative at the RWF, the lagoons and drying beds would need to be reconfigured to enable operating four lagoon blocks within less than 25 percent of the lagoon area. Preferably the reconfigured lagoons would be furthest from the RWF east property line (and offsite odor receptors). Reconfiguring the drying beds would be relatively simple if left in their existing location, selecting less than 25 percent of the drying beds nearest Zanker Road.

A mechanical dewatering and truck loadout facility would be required to process 75 percent of existing biosolids plus the additional solids projected for the CIP planning period.

7.2.3.2 Conclusion

This option is feasible; however, it retains use of less than 25 percent of the lagoon and drying beds. The cost to construct a smaller dewatering and loadout facility and reconfigure RSM must be compared against the cost of a standalone dewatering and loadout facility recommended in the CIP validation. In addition to capital, O&M, and NPV costs, this decision should weigh the risk of continuing to operate lagoons and drying beds. Continuing to operate a portion of RSM may also preclude the other uses of RWF lands as was planned for in the PMP.

7.2.4 Reduce Odor of Biosolids Upstream of Lagoons

The potential to reduce the odor of the biosolids before discharge to the lagoons and the resultant ability to achieve the fence line odor goal was considered. Table 7-3 presents the alternatives that were considered. Post-digestion chemical addition was considered feasible to implement at the RWF; however, it alone would not achieve the odor goal.

Table 7-3 Reduce Odor of Biosolids Upstream of Lagoons

Alternative	Percent of Existing Lagoons/Drying Beds Retained	Impact to RSM Operations	Potential to Achieve Odor Goal	Feasibility of Implementation
Reduce Odor of Biosolids Upstream of Lagoons **Objective**: Contain odors to prevent release to atmosphere				
Chemical addition pre-digestion to reduce the odor of the sludge discharged to the lagoons	Lagoons: 100% Drying Beds: 100%	Potentially none.	Will not achieve odor goal as a standalone option.	Chemical addition could be implemented.
Chemical addition post-digestion to reduce the odor of the sludge discharged to the lagoons	Lagoons: 100% Drying Beds: 100%	Potentially none.	Will not achieve odor goal as a standalone option.	Would impact ongoing digester design; no precedence in this application.
Oxidation ditch upstream of lagoons to reduce the odor in the sludge discharged to the lagoons	Lagoons: 100% Drying Beds: 100%	Could require additional staffing to operate.	Will not achieve odor goal as a standalone option. Oxidation ditch may also require odor control.	No available land at RSM. Changes RWF treatment process (adds another activated sludge process, can be energy intensive).

7.2.4.1 Application at RWF

This alternative involves chemical addition post-digestion to reduce the odor in the sludge that is discharged to the lagoons. In a WERF study (WERF 03-CTS-9T Phase 3 Odor Study), alum was proven to be effective at managing biosolids odor. H_2S and ammonia are both important odor contributors based on sampling results at the RWF. Ammonia was measured at much higher mass concentrations, but H_2S has a much lower detection limit. Both odorants must be addressed to resolve the overall odor problem. Although alum targets sulfide in the sludge, total odors (including any contribution from ammonia) were shown to be reduced by reaction and binding mechanisms from the addition of alum in WERF studies. Following treatment of the sulfide odors with alum addition, the next predominant odor to be controlled is expected to be ammonia. Ammonia can be bound by the type of chemical used and/or in some cases treated with a side stream scrubber. Some chemicals strip or bind the ammonia up or move it into the liquid phase. The following is expected from liquid phase chemicals:

- An oxidant chemical will help with both ammonia and sulfide, but there will be interference from all the organics.
- A pH adjustor will help one to the detriment of the other and is not being considered.
- A sulfide precipitate will remove sulfide and have no effect on ammonia.
- Nitrate salts will probably not affect ammonia but will decrease sulfide.

However, it takes ambient levels of ammonia greater than 10 parts per million to be a potential odor nuisance. For comparison, hydrogen sulfide can be a nuisance at 8 parts per billion.

The data from WERF showed that an alum dose of 3 to 5 percent is effective at reducing total odors. To put this in perspective for the RWF, 12,000 gallons per day alum (as $Al_2(SO_4)_4$-14 H_2O, 49 percent active fraction) would be required for a 4 percent dose at current solids loadings. The alum would be dosed via chemical metering pumps to the digested sludge pipeline, with an in-line static mixer downstream of the application point. Multiple chemical storage tanks with containment would be required for alum storage. In addition to the capital and operating costs associated with this new chemical feed system, the alum addition will also increase the quanity of the biosolids for processing and disposal.

7.2.4.2 Conclusion

Chemical addition alone would not achieve the odor goal. Given the large surface area of the lagoons and the 5 D/T fence line goal, even relatively low D/T emissions can result in offsite impacts. This was demonstrated by the sensitivity modeling discussed in Section 7.2. However, the biosolids loading to the lagoon would have lower odors than untreated biosolids, but piloting would be required to confirm the expected odor reduction.

7.2.5 Other Modifications

Other modifications were considered that could potentially achieve the odor goal, fully or in part. None were considered feasible to implement or to significantly reduce odors at RSM. Alternatives considered include:

- Modify RSM operations. Continuously dredging or shortening the dredging time were considered. Because the lagoons and drying beds are currently operated at capacity, RSM staff saw no opportunities to change operations without the ability to store significant quantities of sludge elsewhere.
- Concrete lining of the drying beds to shorten the time for dewatering. The drying beds are clay lined and are graded before receiving sludge to enable supernatant to collect on one side of the drying beds where it is pumped back to the supernatant collection channel and conveyed to the headworks. Concrete lining was not expectedto improve drying time. One benefit of concrete-lined drying beds would be to avoid odors resulting from damp

odorous soil under the stockpiles as they are removed. This alternative was eliminated as not being a benefit to odor reduction.

- Installation of aerosol odorant at the lagoon and drying bed perimeters to neutralize or mask odors. Effective contact of any aerosol with odorous air would be difficult given the large surface area of the lagoons and drying beds, particularly under moderate and high wind conditions. Use of aerosols also poses the potential for causing nuisance odors by introducing new smells that may be deemed offensive by RWF neighbors or perceived as harmful (chemicals).

8.0 CONCLUSIONS

No alternatives were identified that will retain full use of the lagoons and drying beds to process 100 percent of the existing RWF biosolids quantities and also achieve the fence line odor goal.

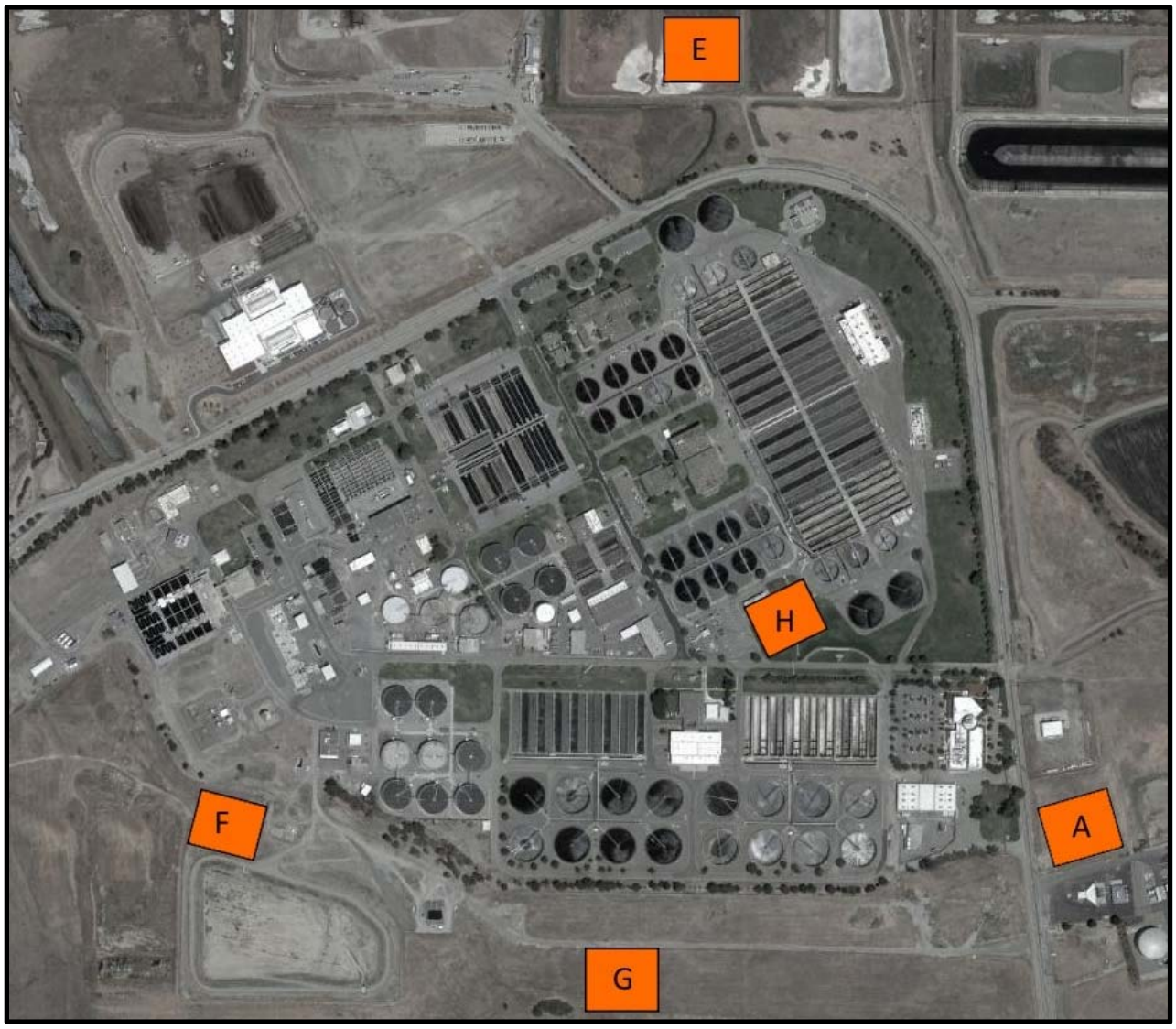
Continued use of the lagoons and drying beds can achieve the fence line odor goal if less than 25 percent of the current acreage remains in service. An alternate means of processing the remaining biosolids would be required, such as a mechanical dewatering and loadout facility provided with odor control.

If continued use of the lagoons and drying beds is to be considered, processing 25 percent or more of existing biosolids may be possible by also utilizing one or more of the alternatives considered in this TM, such as:

- Oxygenated water cap (recognizing that creating depth for an effective water cap would increase the acreage of lagoons required so optimizatingthe benefits of an effective water cap verses additional acreage would need to be evaluated).
- Reducing the odor of the biosolids before discharge to the lagoons using chemical addition.
- Fixed or floating covers.

The cost of implementation of any lagoon and drying been modifications must be carefully evaluated. Pilot testing and dispersion modeling is recommended for both the oxygenated water cap and chemical feed options to confirm performance. In the case of the water cap, piloting can determine needed DO and oxidation reduction potential levels and provide data to establish appropriate standard operating procedures to manage odors.

Attachment D - Map of Proposed Sites for New Dewatering Facility



COUNCIL AGENDA: 5/19/15
ITEM:

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow
Julia H. Cooper

SUBJECT: SEE BELOW

DATE: April 27, 2015

Approved D-DSyL Date 5/6/15

REPLACEMENT

SUBJECT: SAN JOSE-SANTA CLARA REGIONAL WASTEWATER FACILITY TEN-YEAR FUNDING STRATEGY

REASON FOR REPLACEMENT

The San José-Santa Clara Regional Wastewater Facility Ten-Year Funding Strategy was presented to the Treatment Plant Advisory Committee (TPAC) on March 12, 2015. At the meeting, TPAC directed staff to return with specific information related to reserve requirements and financing costs. This replacement memo includes that information.

RECOMMENDATION

(a) Accept the staff report on the San José-Santa Clara Regional Wastewater Facility (RWF) Ten-Year Funding Strategy.
(b) Approve staff recommendation to have all agencies contribute to a 60 day operating reserve beginning in FY 2016-17; direct staff to continue to work with all agencies on optimal reserve levels for operational purposes.
(c) Direct staff to pursue State Revolving Fund loans for RWF capital improvement projects to the maximum extent possible.
(d) Direct staff to continue to work with City of Santa Clara (Santa Clara) and all tributary agencies to confirm participation in a commercial paper program and/or long term revenue bonds through the Clean Water Financing Authority (CWFA), by August 2015.
(e) Direct staff to work with Santa Clara and all tributary agencies to amend the 1983 Master Agreement to incorporate terms related to operating reserve contributions, as well as terms related to financing of the RWF improvements through the CWFA.

OUTCOME

Approval of the recommended fiscal practices outlined in the Ten-Year Funding Strategy will assist staff as they continue the annual budget processes for the San José-Santa Clara Regional Wastewater Facility.

EXECUTIVE SUMMARY

This staff report on the San José-Santa Clara Regional Wastewater Facility Ten-Year Funding Strategy includes a ten-year forecast of the capital and operating needs and outlines guiding principles and recommended fiscal practices for developing a plan to meet those funding needs. The staff report includes preliminary allocations for each agency but does not include a specific financing plan. City staff and the financial consultant have used the ten-year forecast of the capital and operating needs to develop the 2016-2020 Proposed Capital Improvement Program and 2015-2016 Proposed Operating Budget. The 2015-2016 Proposed Operating Budget assumes that San José will continue to contribute to an operating reserve of 60 days in 2015-2016.

Since Santa Clara and some of the other tributary agencies are still evaluating options for their long-term financing needs, the proposed budgets assume that all agencies will address their long-term financing needs individually. To allow flexibility for financing in the short term, a commercial paper program is planned to be established in fiscal year 2015-2016. For the purposes of the proposed budget, it is assumed that San José, Santa Clara, and all tributary agencies will participate in the commercial paper program. Staff is recommending that all agencies evaluate their options and finalize their participation in the commercial paper program and long-term bond financing through CWFA by August 2015. Subsequent to this confirmation, in fall 2015, the 1983 Master Agreement is anticipated to be amended to reflect operating reserve contributions as well as terms related to CWFA financing. If the final financing decisions vary from the assumptions in the proposed budgets, agency allocations will be adjusted thereafter.

BACKGROUND

The San José-Santa Clara Regional Wastewater Facility[1] (RWF) is a regional advanced wastewater treatment plant that serves eight South Bay cities and four special districts through the following agencies:

- City of San José
- City of Santa Clara
- County Sanitation District 2-3
- Burbank Sanitary District

[1] *The legal, official name of the facility remains San Jose/Santa Clara Water Pollution Control Plant, but beginning in early 2013, the facility was approved to use a new common name, the San José-Santa Clara Regional Wastewater Facility.*

- City of Milpitas
- Cupertino Sanitary District
- West Valley Sanitation District (Campbell, Los Gatos, Monte Sereno, and Saratoga)

Jointly owned by the cities of San José and Santa Clara, the RWF is managed and operated by the City of San José. In 1983, San José and Santa Clara entered into a Master Agreement with the other users of the RWF, referred to as the Tributary Agencies, to address their contributions for the operating expenses and capital costs of the RWF.

Constructed in 1956 as a primary treatment plant for agricultural wastewater and a growing population, the RWF subsequently expanded in response to continued population and economic growth and to meet state and federal regulations. Most of the RWF's infrastructure is now more than 50 years old and has exceeded its useful life, with repairs needed to every process area.

With the adoption of the RWF Plant Master Plan (PMP) in 2013 by the San José and Santa Clara City Councils, over $2,100,000,000 in long-term capital improvement projects were identified to upgrade and rebuild the RWF over the next 30 years, with more than $1,000,000,000 occurring in the first 10 years. While the PMP set the direction for future capital projects that will upgrade and rebuild the RWF, it is a high level planning document and does not provide sufficient detail for project implementation. In February 2014, the City of San José completed a project validation process, a systematic approach to project identification, prioritization, and sequencing that utilized combined knowledge from City of San José staff, consultant engineers and executive leadership. The validation process resulted in 33 project packages that are to be initiated in the next ten years, totaling about $1,400,000,000 in capital projects. Further refinement of project schedules and costs was completed in October 2014.

A capital improvement program of this size requires significant financial resources in order to ensure successful and timely project delivery. Over the past year, San José staff has been working with program management and financial consultants to develop a long-term funding strategy to provide sustained funding for the implementation of projects identified in the Master Plan and project validation process, while minimizing potential impacts on rate payers and ensuring intergenerational equity. As part of this effort, staff engaged representatives from Santa Clara and the Tributary Agencies to provide regular progress updates and request feedback. In addition, status updates were provided to the Transportation and Environment Committee in February 2014 and Februáry 2015, and a Special Session of the Treatment Plant Advisory Committee was held on April 17, 2014. The San José-Santa Clara Regional Wastewater Facility Ten-Year Funding Strategy was presented to the Treatment Plant Advisory Committee (TPAC) on March 12, 2015. At the meeting, TPAC directed staff to return with specific information related to reserve requirements and financing costs.

ANALYSIS

In February 2014, a team comprised of San José staff and program management consultant representatives of Carollo Engineers (Carollo) began working on a Preliminary Ten-Year Funding Strategy (Preliminary Funding Strategy) to support implementation of the projects identified in the PMP. The Preliminary Funding Strategy is comprised of a ten year funding forecast, guiding principles and fiscal best practices, and preliminary funding scenarios. These preliminary funding scenarios guided discussions with Santa Clara and the Tributary Agencies and formed the foundation of a potential ten year funding/financing plan which is being developed by City staff and the City's financial advisor, Public Resources Advisory Group (PRAG).

During the initial development phase of the Preliminary Funding Strategy, Carollo developed a financial model to capture the ten year funding requirements, as well as analyze anticipated revenue and expenditure streams through fiscal year 2024-2025. To develop the overall financial forecast, the financial model integrated capital funding requirements, projected operating costs, existing bonds and projected debt issuances of the San José –Santa Clara Clean Water Financing Authority, reserve funding requirements, as well as the RWF revenue streams, including agency contributions in support of the RWF capital and operating costs. This model was used to develop preliminary funding scenarios and may be used in the future to model other scenarios as needed. Although Carollo initially developed several preliminary funding scenarios, their report (Attachment A) is primarily focused on the ten year forecast as well as foundational work to guide City staff along with PRAG in the development of a proposed funding/financing plan.

Guiding Principles

Based on several discussions with the Technical Advisory Committee (TAC), which includes staff representing all of the member agencies, it was determined that the primary objective of any funding strategy was to provide all agencies with predictability and stability, to the maximum extent possible, with respect to annual cash contributions in support of the RWF Capital Improvement Program (CIP). The Preliminary Funding Strategy outlined several guiding principles to support this primary objective. These guiding principles, as outlined below, were developed in collaboration with the City of Santa Clara and Tributary Agencies and received support from TPAC in April 2014:

- Develop a long-term funding strategy that includes a base level of cash-funded capital investments and allows agencies to plan for future revenue needs;
- Identify and incorporate Operations and Maintenance (O&M) costs associated with large capital projects;
- Pursue external financing to the maximum extent practical in order to mitigate impact on rate payers and achieve intergenerational equity; and
- Minimize borrowing costs to the maximum extent practical and maintain high bond ratings to minimize long-term financial costs.

Expenditure Forecasting

The first step in the development of the Preliminary Funding Strategy involved the forecasting of the RWF expenditures. This analysis incorporated all anticipated funding requirements, including capital costs, operating costs, existing debt service, and reserve requirements. Carollo developed a financial model to capture these funding requirements through fiscal year 2024-2025. To develop the overall financial forecast, the financial model integrated such things as capital funding requirements, projected operating costs, existing debt service costs, and existing reserve funding requirements.

The estimated forecast indicates annual expenditures ranging from $150,000,000 to $320,000,000 in the ten year period. Capital costs over the ten year period are estimated at $1,400,000,000. Capital costs are comprised of construction and non-construction costs. Construction costs are direct project costs and are estimated at approximately $1,300,000,000 through 2024-2025. Non-construction costs are comprised of indirect capital costs, including program management and preliminary engineering services. Non-construction expenditures are expected to total approximately $54,000,000 through 2024-2025, including $23,000,000 in program management costs.

Attachment A provides further detail on the ten-year funding forecast. Attachment B provides forecast information by agency, based on the 2015-2016 Proposed CIP and the 2015-2016 Proposed Operating Budget for the RWF. Since all agencies are still continuing to work on their own financing evaluations, staff has developed assumptions for the proposed budgets (which may differ from the actual choices yet to be made by the agencies). The forecasted numbers include assumptions that San José, Santa Clara, and all tributary agencies will be contributing to a 60-day O&M reserve beginning in 2016-2017 and that all agencies will have their proportional cost of the capital program funded through CWFA's issuance of commercial paper starting in 2015-2016. The forecasted numbers do not reflect a higher level of reserves for operational purposes beyond the 60-day O&M reserve. As stated earlier, since some agencies are still evaluating their long-term financing options, the forecasted numbers assume that all agencies will be addressing their individual long-term financing needs. It is important to note that the forecasted numbers are based on the best information available at this time and may change due to a variety of factors such as changes to the schedules and budgets of the capital improvement projects and variances from current assumptions for operations and maintenance costs. The forecasted numbers will be updated on an annual basis through the budget process.

Funding/Financing Plan Approach

Funding future capital improvements at the RWF will require a combination of cash and debt financing, with the RWF and its member agencies taking on a substantial amount of debt in future years. As such, it is important that steps be taken to minimize the cost of borrowing to the maximum extent possible. As part of the financing process, the City has explored the use of a commercial paper program, variable rate debt, and California Clean Water State Revolving Fund (SRF) loans in addition to traditional long-term fixed-rate debt in order to minimize the overall

cost of borrowing for capital improvements. The SRF program offers attractive borrowing rates but would impose specific project requirements that need to be taken into account in analyzing the borrowing costs of the SRF loans. Staff is moving forward with pursuing SRF loans and has started the application process by submitting some of the required application materials for an $83,000,000 loan for the Digester Rehabilitation and Thickener project in February 2015. Consistent with the guiding principles noted earlier, San José staff, working with PRAG, are developing a plan that is intended to balance the need to pursue external financing (as opposed to pay-as-you-go funding) to mitigate near-term impacts on rate payers and achieve intergenerational equity, with the goal of minimizing long-term financial costs.

Financial Metrics

As stated in Carollo's report (Attachment A), two key financial metrics can impact bond ratings and, thus, borrowing costs: debt coverage ratio and cash-on-hand liquidity.

Debt Coverage Ratio: A minimum level of annual rate revenues is required in order to satisfy legal and/or policy-driven debt coverage obligations. Debt coverage refers to the collection of revenues to meet all operating expenses and debt service obligations plus an additional multiple of that debt service. The debt coverage ratio is used as a means of assessing an agency's ability to make debt service payments and its capacity to issue additional debt.

The bond documents for CWFA's existing bonds require a debt coverage ratio of 1.15 x. Based on input from the City's financial advisors, staff believe that in order to achieve acceptable ratings and favorable interest rates when the CWFA sells future bonds, the minimum debt coverage ratio will need to increase to 1.25 x and the CWFA should adopt a target debt coverage ratio of 1.5 x to 2.0 x.

Cash-on-Hand Liquidity: Credit rating agencies also use an agency's amount of cash on hand as a metric to determine the agency's ability to weather declines in revenue or unexpected costs. The cash-on-hand, or liquidity, measurement is typically expressed in days of operating expenses. Based upon a review of other agencies and recent market conditions, staff are anticipating that 365 days of operating expenses will be required to be able to successfully sell the bonds as well as obtain a favorable credit rating. Establishing a lower level of reserves may increase the long-term cost of the CIP by increasing the repayment costs for bonds due to lower credit ratings, and reducing the number of potential buyers of the long-term bonds.

Multiple reserves can make up the needed liquidity metric, such as operating reserves, equipment reserves, and rate stabilization reserves. These reserves are described briefly below with further detail available in Carollo's report (Attachment A).

Operating Reserve: An operating reserve provides a minimum unrestricted operating fund balance to address fluctuations in expenditures. Generally, wastewater utilities target operating reserves that range from 60 to 180 days of operating expenditures. Currently the RWF has an operating reserve of at least 60 days of net operating and maintenance expenses; however, San

José is the sole contributor towards this reserve. As reflected in Carollo's report, maintaining a minimum reserve of 60 days is recommended. In order that the reserve is proportionally funded, staff are recommending that all agencies be required under the Master Agreement to contribute proportionally to this reserve, beginning in fiscal year 2016-2017. Operating reserves can serve dual purposes: they support operational stability and demonstrate financial security for the purposes of minimizing borrowing costs.

Staff will review operating reserves of other wastewater treatment plants to determine the appropriate level of operating reserves for a wastewater treatment plant the size of the RWF, and work with TAC to recommend an operating reserve between 60 to 180 days as indicated by benchmarked facilities. These recommended reserve levels will be incorporated into the Master Agreement to reflect proportionate funding of the operating reserve by all cities and agencies served by the RWF.

Equipment Reserve: An equipment reserve provides funding for emergency replacement of equipment. Currently, there is an equipment reserve in the San José-Santa Clara Treatment Plant Capital Fund of $5,000,000, based on 0.5 percent of an approximately $1,000,000,000 value of assets. All agencies contribute to this reserve. As reflected in Carollo's report, it is recommended that the current contribution practice continues. Staff will evaluate the need to increase this amount as the equipment value increases over the next ten years and will incorporate language in the Master Agreement Amendment.

Rate Stabilization Reserve: A rate stabilization reserve is an additional source of liquidity that would be funded and which could be used to meet unanticipated expenditures and/or allow for a smoother trajectory of rates.

City staff believe that reserve levels should be increased from today's low levels, even if they are not demanded by the external financial markets, and additionally that all participating agencies should contribute to the funding of prudent levels of reserves.

Clean Water Financing Authority

Carollo's report contemplates issuance of debt by the San José-Santa Clara Clean Water Financing Authority (CWFA), a joint powers authority formed by the cities of San José and Santa Clara. The CWFA was specifically established for the purpose of issuing debt for the improvement of the RWF pursuant to a joint exercise of powers agreement, as amended and restated in the Second Amended and Restated Joint Exercise of Powers Agreement, dated as of October 17, 1995.

Ten Year Funding/Financing Plan

Carollo, in collaboration with City staff and PRAG, developed preliminary funding scenarios based on the ten-year funding forecast, guiding principles, and industry standard financial metrics. These preliminary scenarios did not include any assumptions of short term debt or

comparatively lower interest SRF loans. Santa Clara and the Tributary Agencies sought clarification regarding the purpose and need for large cash contributions to establish the reserves.

Through several discussions with TAC it became clear that the CWFA's issuance of long-term debt next fiscal year would be challenging. Furthermore, there are other factors to consider in issuing long-term debt, such as the amount of funding that could potentially be available through SRF loans as well as uncertainty about the timing and scope of large capital projects. In order to issue tax-exempt bonds for a capital program, the IRS requires that the issuer must have a reasonable expectation that bond proceeds will be spent within three years. The RWF CIP is not sufficiently developed at this point such that staff could have such a reasonable expectation. Many of the large capital projects in the program are currently in the early feasibility phase and, therefore, do not have their scopes, budgets, and schedules fully defined. For example, a project that is in the scoping phase may evaluate several discrete technology alternatives or project delivery methods, each of which could result in different project budgets and schedules.

Taking these factors into consideration, staff is developing a proposed ten-year funding/financing plan. This funding/financing plan includes the CWFA's establishment of commercial paper program as a bridge financing tool. Commercial Paper (CP) is a low-interest, short-term borrowing instrument that can be refinanced with long-term debt. The implementation of a CP program could provide several benefits, including allowing the RWF to right-size long-term borrowing based on the availability of SRF loans and more refined project schedules and cost estimates. CP can also be used for stopgap financing until all agencies are able to build up the required reserves to achieve a liquidity target that supports the goal of minimizing borrowing costs for long-term debt. The City successfully used a CP program to manage the capital financing needs of the Airport's large capital program.

The cost of establishing and maintaining the CP program will be borne proportionally by all agencies that wish to have their share of the capital costs financed as opposed to paying with cash, while costs for CP that is actually "drawn" (used) will be borne by those agencies financing their share of the capital costs through the issuance of CP at any given point in time. For example, San José does not need to access CP in 2015-2016 but anticipates accessing the program in 2016-2017. Accordingly, San José will pay its proportional share towards program establishment and maintenance (e.g., costs of issuance and costs associated with the "undrawn" (unused) portion of the CP).

The funding strategies in the proposed ten-year funding/financing plan, as well as each agency's financing needs for the commercial paper program, were used to develop the 2015-2016 Proposed Operating Budget, 2015-2016 Proposed Capital Budget, and 2016-2020 Proposed CIP and the allocations for each agency. It is important to note, however, that this funding/financing plan will continue to be refined based on actual overall funding needs, the cash flow required to construct projects, and market conditions at the various points of debt issuance.

Assumptions for the proposed ten year funding/financing plan are outlined below:

- Funding forecast is based on the February 2015 Carollo report, with adjustments made to reflect budget proposals for the 2015-2016 Proposed Operating and Capital Budgets (Attachment A).
- All agencies will be required to contribute to a 60-day operating reserve beginning in 2016-2017.
- CWFA will establish a Commercial Paper program with a $200,000,000 capacity in 2015-2016. The cost to establish the program is assumed to be $300,000; interest rate is assumed to range from 1% to 3%; and bank credit facility support cost is assumed to be 0.70% of the program's capacity.
- First bond issuance will occur in 2017-2018, with subsequent issuances structured to limit outstanding commercial paper to no more than $200,000,000. Since Santa Clara and the Tributary Agencies are still evaluating their long-term financing needs, the proposed five year CIP budget assumes every agency will manage its own long-term financing needs. This assumption will be updated to reflect the long-term financing decisions of all participating agencies in the next budget cycle.
- Future bond issuances include 30-year debt service structures, interest rates (range of 6.1% - 7.3%), a fully funded debt service reserve, and cost of issuance estimated to equal 1% of the amount issued.
- Overall operating reserve, including, but not limited to, equipment and rate stabilization reserves, is targeted to be implemented incrementally over a multi-year period with an initial goal of reaching 100% of cash equivalent to 365 days of O&M costs. Each agency participating in long-term bond financing through the CWFA will contribute their proportionate amount toward the 365 days of O&M costs.

As Santa Clara and each Tributary Agency evaluate their individual financing options, they will need to consider timing of capital contributions. The 1983 Master Agreement requires payments in four quarters; payments are to be made in the quarter when expenditures and encumbrances are anticipated. For the purposes of operational ease, the current practice is to divide the estimated annual contributions into four equal payments; however, with the large construction contract awards expected in the next ten years, San José will need to receive agency contributions in time for those awards. For agencies participating in CWFA financing, the timing of these contributions can be aligned with draws on the commercial paper program or issuance of bonds. Agencies not participating in CWFA financing will need to plan their financing in advance of construction contract awards. City staff and PRAG will continue to work with Santa Clara and the Tributary Agencies to help them evaluate their financing options.

It is important to note that the funding/financing plan will provide a preliminary analysis and actual contributions over the next ten years will depend on many factors including, but not limited to, the following:

- Any changes in schedules and costs of capital improvement projects;
- Market conditions and interest rates at the time commercial paper notes are issued and at each bond issuance;

- Actual debt coverage ratio and liquidity levels;
- Potential use of financing vehicles other than traditional long-term fixed-rate debt (e.g., variable rate debt or SRF loans) for some or all of the capital costs; and
- Changes in assumptions about staffing, utility, and chemical costs, that may increase or decrease O&M costs.

EVALUATION AND FOLLOW-UP

As stated earlier, San José staff will continue discussions with Santa Clara staff regarding upcoming financing programs through the CWFA. City staff will also continue working with PRAG to determine the optimal mix of cash, revenue bonds, and SRF financing to support RWF capital improvements. Concurrently, staff will continue to evaluate capital project implementation schedules and make adjustments as needed to ensure alignment with available resources as part of the upcoming budget development process. Adjustments to the financial forecast and project implementation schedules will be reflected in the 2016-2020 Capital Improvement Program that will be presented to the City Council in spring 2015.

In addition, once the final funding strategy has been developed, the Master Agreements between the cities of San José/Santa Clara and each of the Tributary Agencies, which govern the wastewater treatment services provided by the RWF, will need to be amended to incorporate the operations reserve contribution and repayment obligations of each agency. San José staff will initiate discussions with representatives of each agency to prepare the amendment(s) of the agreements prior to issuing debt through the CWFA.

The table below details the upcoming key milestones in the development of a long-term funding strategy for the RWF.

January - March 2015	Financing team developed funding/financing plan to address funding of 10-year CIP consistent with guiding principles
May 2015	Anticipated San José City Council approval of RWF Ten-Year Funding/Financing Strategy report
Spring/Summer 2015	Begin discussions regarding commercial paper/financing process; update Agreements as necessary; commence development of commercial paper program
August 2015	Confirm participation in commercial paper program and/or long-term revenue bonds for each agency
Fall 2015	1) Finalize amendments to Master Agreement

2) Obtain approval of San José and Santa Clara City Councils and Clean Water Financing Authority Board for establishment of a commercial paper program
3) Establish commercial paper program, and/or secure SRF loans (Timing will depend on specific funding need)

POLICY ALTERNATIVES

Alternative 1: *Do not develop a long-term funding strategy that considers potential use of external debt financing to support RWF capital improvement projects.*
Pros: The RWF and its participating agencies would not incur additional financing/borrowing costs.
Cons: Significant rate increases would need to be initiated by San José, Santa Clara and Tributary Agencies in order to provide the level of funding needed to implement the RWF capital improvements and would be implemented over a longer period of time, thereby delaying the implementation of necessary capital improvements. In addition, the capital improvements would be paid for by existing utility rate payers, thus creating potential concerns regarding the lack of intergenerational equity.
Reason for not recommending: This approach would delay the implementation of capital improvements and result in significant rate increases for utility ratepayers in San José, Santa Clara and Tributary Agencies in order to support implementation of capital improvements at the RWF. Existing utility rate payers would bear the financial burden of long-term capital improvements, thereby resulting in a lack of intergenerational equity.

Alternative 2: *Do not use a Commercial Paper Program and issue long-term bonds as soon as possible.*
Pros: The RWF and its participating agencies could take advantage of the current interest rates and reduce the level of risk associated with future borrowing costs.
Cons: San José, Santa Clara, and Tributary Agencies would need to make a high level of cash contributions in 2015-2016 to provide adequate funding for the desired liquidity metric. Uncertainty about SRF loans and capital project schedules would make it difficult to size the bond issuance appropriately as required by IRS for the issuance of tax exempt bonds.
Reason for not recommending: This approach would require several agencies to implement significant rate increases or utilize other financing tools to fulfill their cash obligations. The CWFA would not be able to right-size the bond issuance to factor in potential SRF loans or the elements of the capital program that have not yet been fully designed. Significant shifts in project schedules could impact our ability to spend the bond funds within 3 years, as we must reasonably expect at the time of long-term bond issuance per IRS requirements.

Alternative 3: *Do not require all agencies to contribute to a 60 day Operations Reserve beginning in 2016-2017.*

Pros: No amendment to the Master Agreement would be required related to each agency paying its proportional share of the RWF Operations Reserve.
Cons: The City of San José rate payers have funded the entire cost of the Operations Reserve, which may be the result of the City bearing the bulk of the operating and capital costs for the RWF. However, going forward, the cost of the Operations Reserve should be proportionately funded consistent with the funding of the operating and capital costs of the facility.
Reason for not recommending: City of San José rate payers would continue to pay more than their proportionate share of the cost for the RWF Operations Reserve.

PUBLIC OUTREACH

This memorandum will be posted on the City's Internet website on the May 19, 2015 City Council agenda, and is scheduled to be heard at the May 14, 2015 Treatment Plant Advisory Committee meeting.

COORDINATION

This memorandum has been coordinated with the City Attorney's Office and the City Manager's Budget Office.

FISCAL POLICY/ALIGNMENT

This recommendation is consistent with the following General Budget Principle: "We must focus on protecting our vital core city services for both the short and long-term."

CEQA

Not a Project, File PP10-069(a), City Organizational & Administrative Activities.

/s/Ashwini Kantak for
KERRIE ROMANOW
Director of Environmental Services

/s/
JULIA H. COOPER
Director of Finance

For questions, please contact Ashwini Kantak, Assistant Director, Environmental Services at (408) 975-2553 or Derek Hansel, Assistant Director, Finance at (408) 535-7041.

Attachment A - San José-Santa Clara Regional Wastewater Facility Ten-Year Funding Forecast
Attachment B – Forecasted Allocations by Agency

Attachment A

City of San José

SAN JOSE-SANTA CLARA REGIONAL WASTEWATER FACILITY
TEN-YEAR FUNDING FORECAST
FINAL
February 2015

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City of San José

SAN JOSE – SANTA CLARA REGIONAL WASTEWATER FACILITY
TEN-YEAR FUNDING FORECAST

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1.0 EXECUTIVE SUMMARY

The San José-Santa Clara Regional Wastewater Facility (RWF) serves three South Bay cities--San José, Santa Clara, Milpitas, and four special districts including: Cupertino Sanitary District (City of Cupertino and portions of the cities of Saratoga, Sunnyvale, and Los Altos), West Valley Sanitation District (cities of Campbell, Los Gatos, Monte Sereno, and portions of Saratoga), County Sanitation District 2-3 (a county sanitation district within the metropolitan area of San José), and Burbank Sanitary District (an unincorporated area within San José). The RWF has recently commenced an extensive capital improvement program aimed at rehabilitating and replacing aging plant infrastructure, expanding treatment capacity, and improving processes to take advantage of new treatment technologies in anticipation of more stringent regulatory requirements. Over the next decade, the RWF anticipates investing approximately $1.4 billion in upgrading existing infrastructure and building new infrastructure. A preliminary Ten-Year Funding Strategy is being developed by the City and Public Resources Advisory Group (PRAG) to provide guidance to the cities of San José and Santa Clara and the Tributary Agencies as each agency performs their individual financial planning. The funding strategy will be preliminary in nature and will be refined over the next year based on funding and financing assumptions, legal considerations, bond market conditions, available debt instruments and strategies, and availability of State Revolving Fund loans. This report provides forecasted capital and operational expenditure needs over the next ten years and includes a discussion on guiding principles and financial metrics that may serve as a foundation for the preliminary Ten-Year Funding Strategy.

1.1 Background

The RWF is jointly owned by the cities of San José and Santa Clara and has been in operation since 1956 at its current location on 180 acres of a 2,600 acre site along the South Bay shoreline. As the administering agency, the City of San José is responsible for day-to-day operations at the RWF, as well as for planning, designing, and constructing capital improvements. Most of the infrastructure at the RWF is now more than 50 years old and has exceeded its useful like, with repairs needed to every process area. The key role of the RWF is protecting public and environmental health underscoring the critical need for infrastructure rehabilitation and replacement.

1.1.1 Capital Program

The RWF Plant Master Plan (PMP) provides both a roadmap to help determine the projects and funding needed to repair and replace the aging facilities and processes at the RWF. The PMP also presents a land-use plan that defines the future treatment needs along with

zoning designations and guidelines for the future development, restoration, and use of the four-and-a-half square mile RWF site.

The current RWF Capital Improvement Program (CIP) totals approximately $1.4 billion and includes specific projects to address aging infrastructure, expand plant capacity to serve regional population and economic growth, comply with more stringent regulations, and take advantage of improved treatment technologies. Development of the 2015-2025 CIP was guided by the RWF Plant Master Plan (PMP), a 30-year planning-level document focused on long-term rehabilitation and modernization of the RWF, which was approved in 2013 and identified over $2.1 billion in long-term capital improvement projects to rebuild and upgrade the RWF over the next 30 years.

1.1.2 Expenditure Forecast

The preliminary expenditure forecast is intended to provide an outlook of the total annual revenue requirements expected for the RWF through FY 2024-25. The analysis incorporates projected CIP expenditures (encumbrances), projected operating costs, and debt service on existing debt obligations. The preliminary expenditure forecast indicates average annual expenditures between $150 and $320 million. It is expected that the use of debt financing for capital projects will smooth the annual cash requirements of San Jose, Santa Clara, and the Tributary Agencies.

The primary driver of increases in annual RWF expenditures is the implementation of the RWF CIP and the associated project costs. Operating cost increases are also expected due to inflationary increases in operating costs as well as additional incremental operating costs associated with the implementation certain CIP projects.

1.1.3 Fiscal Policies and Guidelines

Funding of the CIP will require the issuance of a substantial amount of debt over the next ten years, above available cash funding. As such, San José, Santa Clara, and the Tributary Agencies evaluated a range of fiscal policies that would achieve long-range financial stability, could minimize the cost of borrowing to the maximum extent practical, and would achieve equity between the participating agencies. Key metrics that will be defined as part of the funding strategy recommended by PRAG include bond coverage and liquidity requirements.

2.0 BACKGROUND

2.1 Introduction

The RWF serves three South Bay cities--San José, Santa Clara, Milpitas, and four special districts including: Cupertino Sanitary District (City of Cupertino and portions of the cities of Saratoga, Sunnyvale, and Los Altos), West Valley Sanitation District (cities of Campbell, Los Gatos, Monte Sereno, and portions of Saratoga), County Sanitation District 2-3 (a county sanitation district within the metropolitan area of San José), and Burbank Sanitary District (an unincorporated area within San José). The RWF is jointly owned by the cities of San José and Santa Clara and has been in operation since 1956 at its current location on 180 acres of a 2,600 acre site along the South Bay shoreline. As the largest advanced wastewater treatment facility in the western United States, the RWF is critical to protecting public health, preventing pollution to San Francisco Bay ecosystems, and protecting the local economy. Operating on a 24-hour schedule, 365 days per year, the RWF treats an average of 110 million gallons per day of wastewater.

As the administering agency for the RWF, the City of San José is responsible for day-to-day operations at the RWF, as well as for planning, designing, and constructing capital improvements. Most of the infrastructure at the RWF is now more than 50 years old and has exceeded its useful like, with repairs needed to every process area. The key role of the RWF is protecting public and environmental health, which underscores the critical need for infrastructure rehabilitation and replacement. Over the next ten years, the RWF CIP is anticipated to be approximately $1.4 billion. The RWF ten-year CIP includes capital improvement projects that will upgrade existing infrastructure and build new infrastructure to support regional population and economic growth, address future anticipated regulatory changes, and take advantage of improved treatment technologies. Development of the 2015-2025 CIP was guided by the RWF Plant Master Plan, a 30-year planning-level document focused on long-term rehabilitation and modernization of the RWF, which was approved in 2013 and identified over $2.1 billion in long-term capital improvement projects to rebuild and upgrade the RWF over the next 30 years.

2.2 Organizational Structure

2.2.1 Ownership and Participation

The 1959 Sewage Treatment Plant Agreement (the 1959 Agreement) between the cities of San José and Santa Clara provides for San José and Santa Clara to own, operate, maintain, and use the RWF on a mutual basis and provide wastewater treatment services. Under the 1959 Agreement, San José serves as the administering agency for the RWF with authority and responsibility for operating the facility and determining annual operating costs. In the case of San José and Santa Clara, the allocation of operating and capital costs is based on annual assessed property valuations for San José and Santa Clara as set forth in the 1959 Agreement between these two cities as the owners of the RWF.

Pursuant to a 1983 Master Agreement for Wastewater Treatment Between City of San José, City of Santa Clara, and each of the Tributary Agencies (1983 Agreement), the allocation of the operating and capital costs among the Tributary Agencies is set forth with the term for wastewater treatment services through 2031. The Tributary Agencies include the City of Milpitas, Cupertino Sanitary District, County Sanitation District 2-3 (CSD 2-3), Burbank Sanitary District (Burbank), and West Valley Sanitation District (WVSD). As the administering agency for the RWF, San José establishes and collects the charges for usage of the RWF from the Tributary Agencies.

The San José-Santa Clara Clean Water Financing Authority (CWFA) is a joint powers authority formed by the cities of San José and Santa Clara. The CWFA was specifically established for the purpose of issuing debt for the improvement of the RWF pursuant to a joint exercise of powers agreement, as amended and restated in the Second Amended and Restated Joint Exercise of Powers Agreement, dated as of October 17, 1995.

2.3 CIP Development

2.3.1 The Plant Master Plan

The PMP, adopted in 2013, includes capital projects needed to address aging infrastructure, reduce odors, accommodate projected population growth in the RWF's service area, and comply with changing regulations. The PMP also provides a land use plan for the surrounding RWF lands for various environmental, social, and economic uses. The PMP was developed with extensive input from Santa Clara, the Tributary Agencies, technical experts, and the community at large.

2.3.2 Ten-Year Capital Improvement Program

The PMP sets the direction for future CIP projects that will upgrade and rebuild the RWF. However, as a high-level planning document, the PMP does not provide the detail required for project implementation. Following the adoption of the PMP, San José staff began a CIP Validation process using a systematic approach to identify, prioritize, and sequence projects utilizing combined knowledge from San José staff, consultant engineers, and executive leadership. The objective of the validation process was to decide which PMP projects to include in the five and ten-year Capital Improvement Programs (CIPs) for the RWF.

The validation process, completed in February 2014, focused on projects to be completed within the next ten fiscal years. Since that time, engineering staff has worked to further refine project costs and schedules. Based on the validation process and refinements, CIP expenditures at the RWF from FY 2014-15 through FY 2024-25 are expected to total approximately $1.4 billion, including the non-construction expenditures associated with CIP implementation. These proposed project costs are based on planning level 4 and 5 cost estimates (in accordance with American Association of Cost Estimators International

guidelines).[1] Planning level estimates and project schedules are developed based on best known information and incorporate necessary contingencies to account for unknowns, such as site conditions and material costs, that will be continually be refined until the final design and project bid process. In addition to the $1.3 billion for construction projections identified by the validation process, another $76 million has been identified for non-construction projects. Thus, total CIP investment for the next ten years is estimated at about $1.4 billion. Projected CIP encumbrances are included for reference in Appendix A.

3.0 EXPENDITURE FORECAST

3.1 Introduction

Given the substantial investment required in the RWF, it is important for San José, Santa Clara, and the Tributary Agencies to develop a long-term plan that could identify funding needs and evaluate funding options. This report outlines the ten-year capital and operating funding needs.

3.1.1 Financial Model

A financial model was developed to analyze the revenue and expenditure streams through FY 2024-25, and to explore various scenarios for the preliminary Ten-Year Funding Strategy. To develop the overall financial forecast, the model integrates capital funding requirements, projected operating costs, existing and projected debt issuances, outstanding loans, and reserve funding requirements, as well as various revenue streams including agency contributions for capital, operating, and debt service costs and other miscellaneous revenues. With the ten-year financial forecast in place, the financial model was used to estimate a contribution range from each agency based on the current accounting practice for allocating annual contributions related to capital, and operating costs. Although the actual funding strategy is being developed by the City and PRAG, this initial analysis helped all the agencies evaluate funding scenarios and provide guidance on the development of a ten year plan. The financial model incorporates assumptions pertaining to minimum target levels of RWF cash reserves and debt service coverage. As a ten year funding plan is developed, assumptions in the model can be easily updated to allow the comparison of various capital and operational scenarios. The model may also be used as a tool to assess the feasibility and impact of different financing scenarios.

3.2 Capital Funding

As discussed above, about $1.4 billion is projected to be invested in the RWF from FY 2014-15 through FY 2024-25. In 2014, guiding fiscal principles were developed and reviewed with the Technical Advisory Committee (TAC) and discussed with the Treatment Plant Advisory Committee (TPAC). These guiding principles serve as the foundation of this

[1] Planning level 5 cost estimates can range from 100% above to 50% below the final project cost. Planning level 4 cost estimates can range from 50% above and 30% below the final project cost.

analysis as well as the Ten-Year Funding Plan. These principles are intended to provide predictability and stability as well as minimize the near-term cost impacts to member agencies by having the cost of the capital improvement be paid over the life of the asset, and are outlined below:*1.Develop a long-term funding strategy that includes a base level of cash-funded capital investments and allows agencies to plan for future revenue needs*

2. Identify and incorporate Operations and Maintenance (O&M) costs associated with large capital projects;

3. Pursue external financing to the maximum extent practical in order to mitigate impact on rate payers and achieve intergenerational equity;

4. Minimize borrowing costs to the maximum extent practical and maintain high bond ratings to minimize long-term financial costs.

The ten year forecast accounts for the projected RWF CIP encumbrances, which are expected to total approximately $1.4 billion over the next decade. CIP expenditures are grouped into two major classifications - construction expenditures and non-construction expenditures. Construction expenditures include all project costs directly related to physical work performed to rehabilitate, replace, or expand any component of the RWF. Construction expenditures through FY 2024-25 will total approximately $1.3 billion. Non-construction expenditures are made up of indirect capital costs including program management and preliminary engineering services. Non-construction expenditures are expected to total approximately $76 million through FY 2024-25, including $23 million in program management costs.

3.3 Operating Costs

As part of the Ten-Year Funding Strategy, a preliminary long-range operating forecast has been developed. Operating expenditures are associated with day-to-day system operations – for example: employee salaries and benefits, system maintenance, fuel, and chemicals. The operating budget expenditures include costs related to administration, maintenance, operations, environmental engineering, planning and regulations, collection systems, wastewater labs, and other miscellaneous expenses. Figure 1 illustrates the projected O&M expenditures for FY 2015-16 by cost category.

The FY 2015-16 RWF operating budget serves as the basis for forecasting future Operations and Maintenance (O&M) expenditures. The budget was compared to the current internal financial forecast and discussed with San José staff to identify any anomalies or one-time expenditures not appropriate to include when projecting for future years. Staff also reviewed the budget to identify costs that might be adjusted due to future operational changes resulting from the implementation of the 2015-2025 CIP.

Unless adjusted based on specifically known future changes, costs incurred in future years were projected using a range of escalation factors. These escalation factors were

developed in collaboration with City staff for consistency with other City of San José funds and include factors for such things as personal services inflation and estimated cost increases for chemicals, power, and natural gas. The O&M expenditure projection incorporates projected annual changes to the existing O&M expenditures as well as incremental O&M costs associated with the implementation of the CIP. Currently RWF O&M expenditures total approximately $87 million annually. Inflationary and incremental increases are expected to drive annual O&M expenditures to nearly $127 million over the coming decade. This represents an increase of 39% through FY 2024-25, an average annual increase of 4.2%. Figure 2 shows the projected RWF O&M costs through FY 2024-25.

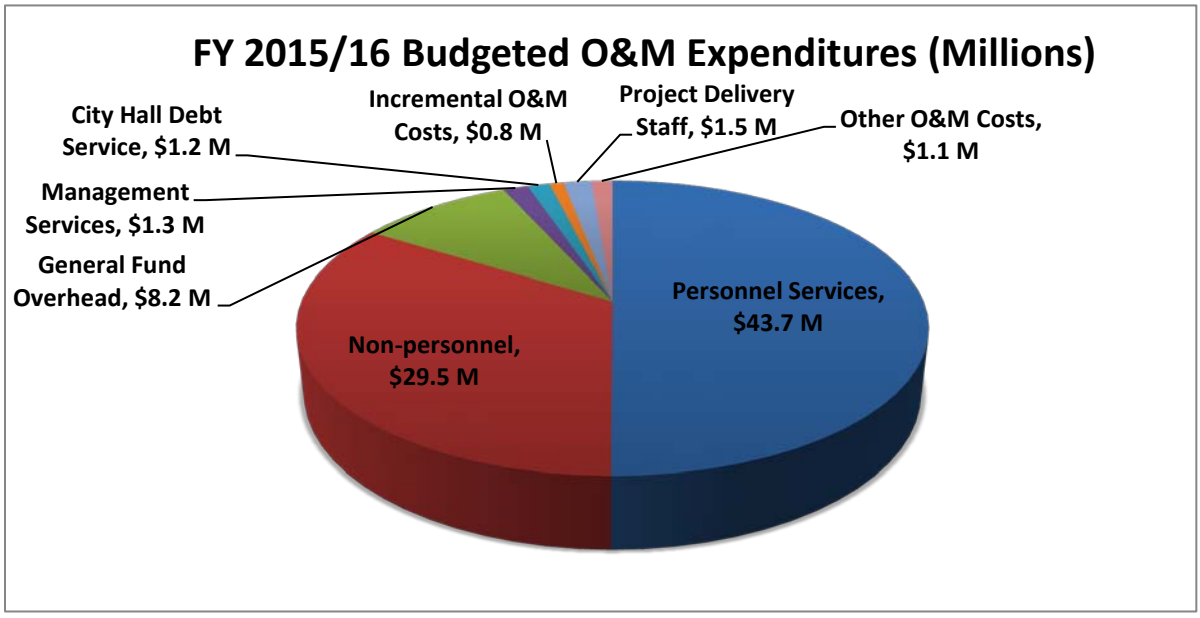


Figure 1: FY 2015-16 O&M Expenditures

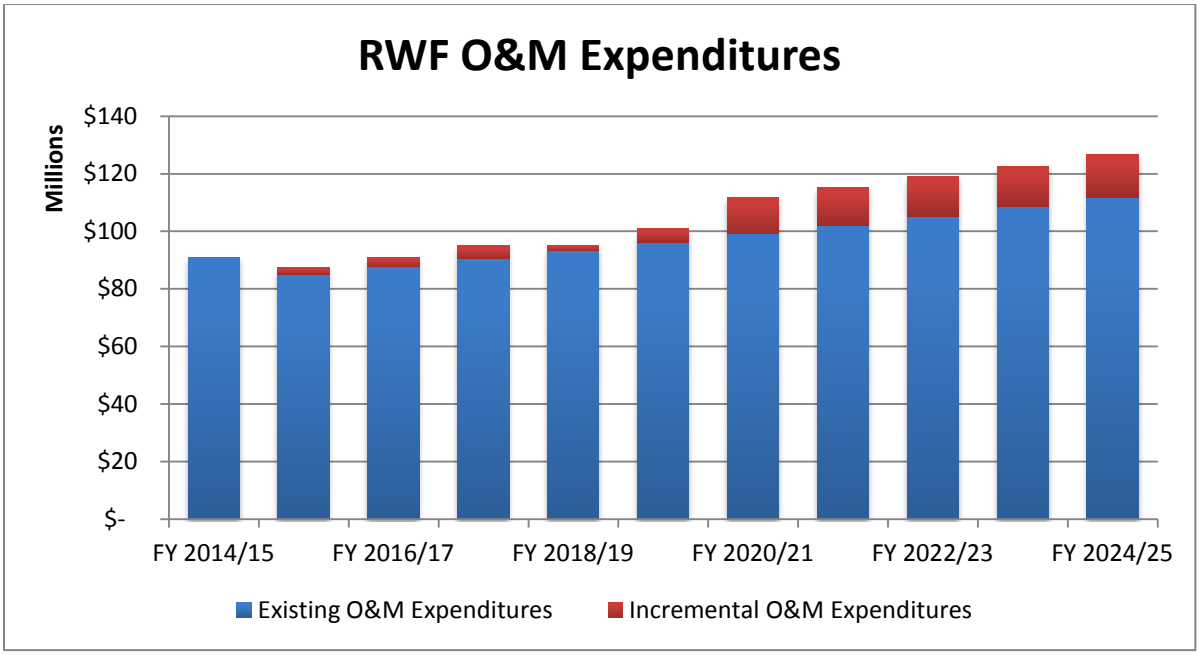


Figure 2: Projected RWF O&M Expenditures

3.3.1 Current Debt Service Obligations

The CWFA has approximately $32 million in principal and interest remaining on its outstanding bonds. In addition, the City has outstanding California Clean Water State Revolving Fund (SRF) loans of approximately $20 million for RWF projects that are to be repaid from RWF revenues. The current bonds and loans total approximately $56 million. Table 1 outlines the total outstanding debt obligations.

Table 1: Outstanding Debt (Millions)
RWF Ten-Year Funding Forecast

	Outstanding Principal	Interest	Total Remaining	Maturity
CWFA 2005A Sewer Revenue Bond	$10.9	$0.4	$11.3	FY2016-17
CWFA 2009A Revenue Bond	$21.4	$3.1	$24.5	FY2020-21
Existing SRF (many project-specific loans)	$13.5	$1.6	$15.2	FY2018-19
Total Remaining			**$51.0**	

Note: Amounts in the 'Total Remaining' column amount may not reflect the sum or other columns due to rounding.

Santa Clara and some of the Tributary Agencies did not participate in the financing through the previous bond issuances or the loans. Consequently, the annual debt service payments for these outstanding bonds and loans are funded only by those agencies that debt funded their share of costs, in proportion to their respective participation.

San José, Santa Clara, and the Tributary Agencies currently anticipate financing a majority of the capital improvements. This is the planned approach based on two primary reasons. Firstly, given the size of the capital program, the agencies do not have the available financial reserves that would otherwise be required to fund the capital improvement program, nor would it be reasonable to increase the wastewater rates and charges in order to cash fund these improvements. Secondly, spreading the debt service costs for long-lasting projects over the repayment period provides intergenerational equity by effectively spreading the financial burden between both existing and future users of the system. This approach allows the agencies to better match the cost of improvements with the customers benefitting from the improvements.

3.3.1.1 Potential SRF Loans

As part of the upcoming 2015 financing process, San José staff will explore the use of California Clean Water State Revolving Fund (SRF) loans in order to minimize the overall cost of borrowing for capital improvements. The SRF program is administered by the California State Water Resources Control Board (SWRCB) and provides low-interest funding for projects that improve water quality, renew wastewater infrastructure, and support local economies.

The SRF program offers attractive borrowing rates, but could impose additional project requirements, such as added environmental compliance verifications and a requirement to buy American steel and iron. The SRF program offers 30-year loans at half of the State of California borrowing rates, which was 1.5% as of the last SRF publication date in November 2014. The low interest rates offer an attractive financing option if funding is available. As of the writing of this report, City staff have engaged the SWRCB to discuss the availability of funding and the participation requirements.

3.3.1.2 Commercial Paper Program

Commercial paper (CP) is a low interest, short-term borrowing instrument that reaches maturity in no more than 270 days that can be refinanced with long-term debt. The implementation of a CP program could provide several benefits to the CWFA including:

- Provide low interest costs for short-term borrowing.
- Can be used for stopgap financing allowing the RWF to commence the capital program and take advantage of longer term financing options at a later date.

- Can allow the RWF to right-size long-term borrowing based on more refined project estimates or actual project costs.

3.4 Policy Considerations

3.4.1 Financing Best Practices

At this time it is anticipated that funding of the CIP will require the CWFA to issue a substantial amount of debt over the next ten years. As such, it is important that steps be taken to minimize the cost of borrowing to the maximum extent practical. Key financial metrics dictate the CWFA's credit rating and borrowing costs. Those metrics include the debt coverage factor and liquidity measured by the amount of cash on hand.

In addition to providing long-term cost savings through decreased borrowing costs, a solid debt coverage ratio and sound cash on hand/reserve practices will help the RWF maintain a strong financial and operational footing. City staff and PRAG will work towards targets for both metrics which are aligned with industry standards and similar to those followed by other wastewater agencies. The following sections provide more detail on debt coverage, liquidity, and reserve practices.

Debt Coverage: A minimum level of annual rate revenues is required in order to satisfy legal and/or policy driven debt coverage obligations. Debt coverage refers to the collection in revenues to meet all operating expenses and debt service obligations plus an additional multiple of that debt service. The debt coverage ratio is used as a means of assessing an agency's debt service performance or capacity. It is important to note that the debt service requirement is a revenue generation requirement, and not a reserve or expenditure requirement. Thus, revenues collected to meet the coverage requirement will still be available to the agency to fund other operating and capital expenditure needs.

The equation below shows the general calculation for debt coverage.

$$Debt\ Coverage\ Factor = \frac{Revenues - Ongoing\ Operating\ Expenditures}{Annual\ Debt\ Service}$$

The specific revenues and expenditures included in the calculation of legally required debt coverage are dictated by the governing documents for the issuance of bonds by an issuer.

Cash on Hand (Liquidity Measurement): Credit rating agencies often use an agency's amount of cash on hand as a metric to determine the agency's viability as a debt issuer, and therefore its credit rating. The cash on hand, or liquidity measurement, is typically expressed in days of operating expenses. The assumed minimum level of cash on hand will be evaluated by the City's financial advisors, based on market conditions at the time of issuance and rate affordability considerations.

In order to allow the RWF to meet cash on hand requirements, the RWF could establish reserves including an RWF Operating Reserve and an RWF Rate Stabilization Reserve, to

be funded by San José, Santa Clara, and the Tributary Agencies, along with continued funding of the existing Renewal and Replacement Fund. The sections below provide a description of industry typical practices as related to these types of reserves.

3.4.1.1 Operating Reserve

Operating reserves provide a minimum unrestricted operating fund balance needed to accommodate the short-term cycles of revenues and expenses. They provide a necessary "cushion" which can be used to cover cash balance fluctuations on a month-to-month basis. These reserves are intended to address both anticipated and unanticipated fluctuations in expenditures.

Typically, the operating reserve is not actually a reserved or restricted account balance. Instead, it functions as a minimum year-end unrestricted fund balance targeted for budgeting. The actual fund balance will vary both upward and downward from this target through the course of a fiscal year. If the actual ending balance is below or is projected to drop below the defined targeted level then rates should be increased in order to replenish the balance. Similarly, projected excesses can, with care, be used to fund a rate stabilization reserve (as discussed below).

Appropriate Reserve Levels: Generally, utilities should target a defined minimum operating reserve as a beginning cash balance to provide the liquidity needed to allow regular management of payables and payment cycles. Since expenses typically increase over time, the reserve target should also increase proportionally with increases in expenditures, meaning that rates would incorporate small annual increments of additions to the working capital reserve. When setting this reserve level, the utility should consider the guidelines of its other reserves. Depending on several factors (including bond requirements, a separate rate stabilization reserve, revenue collection variability, and fiscal prudence), the target level of a working capital reserve can range from as little as 60 to as much as 180 days of its annual operating expenses along with all or a portion of annual debt service.

Current Practice: The City of San José currently maintains an operating reserve of at least 2.0 times monthly net operating and maintenance expenses. The intended purpose of this reserve is to meet operating requirements and to offset unexpected fluctuations in expenditures. The City evaluates funds annually based on projected revenues and expenditures, and sets aside the required two-month minimum reserve within the RWF Operating Fund.

Recommended Practice: It is recommended that the City formalize the RWF operating reserve with a minimum target. Because the operating reserve would provide a benefit to San José, Santa Clara, and the Tributary Agencies, it is recommended that Santa Clara and the Tributary Agencies help fund the operating reserve based on their proportionate shares of O&M expenditures and debt service.

Funds held in the operating reserve required to cover debt service will become available at the time that the specific debt issuance that they are tied to reaches maturity. At that time, each agency will have the opportunity to decide how their share of the available the funds will be used. Possible uses of the funds include cash funding of capital, funding of additional reserves, or cash reimbursements from the RWF to the agencies.

3.4.1.2 Equipment Reserve [Treatment Plant Renewal and Replacement Fund]

An equipment replacement reserve known as the Treatment Plant Renewal and Replacement Fund was established for the ongoing maintenance of mechanical equipment, as well as serve as an emergency equipment reserve. It is prudent to maintain funds to meet unexpected emergency capital outlays. While it would be impractical to reserve against major system-wide failures such as those resulting from a catastrophic earthquake, it is reasonable and prudent to identify and quantify possible failures of individual system components.

Appropriate Reserve Levels: There are several ways to set an appropriate funding target, including the percentage of the utility booked fixed assets; the most costly system components; the reliance on other reserve resources; and the reliance on risk management provisions, such as insurance.

Current Practice: The Treatment Plant Renewal and Replacement Fund (Equipment Reserve) has been maintained at a minimum level of $5 million, based on 0.5 percent of the $1.0 billion RWF system value. San José, Santa Clara, and the Tributary Agencies have contributed to funding of this reserve.

Recommended Practice: It is recommended that the Treatment Plant Renewal and Replacement Fund continue to be funded at a minimum level required to pay for ongoing plant maintenance. It is further recommended that San José, Santa Clara, and the Tributary Agencies should continue to fund this reserve.

3.4.1.3 Rate Stabilization Reserve

The rate stabilization reserve is a restricted bond reserve. At the time of a bond issuance, money is set aside in a restricted fund and can later be used to meet the utility's annual debt service coverage obligation. In years that the utility cannot meet its coverage test, money may be withdrawn from this account and treated as revenue for the purpose of meeting this test. The reserve can be structured to allow the utility to repay money into the account in subsequent years.

Appropriate Reserve Levels: As noted, a rate stabilization reserve is established and funded to meet a specific risk, such as the revenue loss or unexpected operating expenditures, which will be accounted for in the annual bond coverage test. This reserve differs from the operating reserve, which is designed to provide a minimum unrestricted operating fund balance needed to accommodate both anticipated and unanticipated

fluctuations in expenditures. The rate stabilization reserve is commonly established with specific rules and restrictions regarding contributions, withdrawals, and replenishment – as set by the bond documents. Those rules are generally constructed to minimize or mitigate rate impacts. The sizing of the reserve is often related to the plan for replenishing spent reserves.

Current Practice: The City maintains a rate stabilization reserve per the provisions in the bond documents for the CWFA existing outstanding bonds. The maintenance of this reserve is discretionary under the terms of the existing CWFA bond documents. The maximum is set at $2 million and the City has maintained the full $2 million in the rate stabilization reserve since the issuance of CWFA's bonds in 1995, San José has been the sole contributor to the rate stabilization reserve although a number of the Tributary agencies have had their contributions to the capital projects funded through the issuance of the CWFA bonds.

Recommended Practice: It is appropriate that the bond rate stabilization reserves be governed by the bond indentures and are flexible to meet bond market conditions at the time of each issuance. This reserve is intended to assist in meeting bond coverage requirements, when needed, and can help to enhance the bond ratings by satisfying the rating agency defined liquid cash reserves. As the CWFA issues new debt, it could increase the rate stabilization reserve based on bond market conditions at that time and the cost benefit realized through lower interest rates as applicable. These increases to the reserve would reflect the coverage requirements of each new debt issuance. All agencies should contribute to the rate stabilization reserve based on their proportional share of debt service.

Funds held in the rate stabilization reserve will become available at the time that the specific debt issuance that they are tied to reaches maturity. At that time, each agency will have the opportunity to decide how their share of the available the funds will be used.

3.4.2 Projected Annual Cash Requirements

Total amount of cash needed in each year is equal to the sum of O&M costs, CIP encumbrances, equipment replacement, and existing debt service. Although the total annual funding requirement varies from approximately $150 million to $320 million, the use of debt to finance capital projects is expected to smooth annual cash needs. Figure 3 shows the approximate cash requirements for each year of the financial projection. These requirements might fluctuate based on timing of the CIP implementation and the funding strategy.

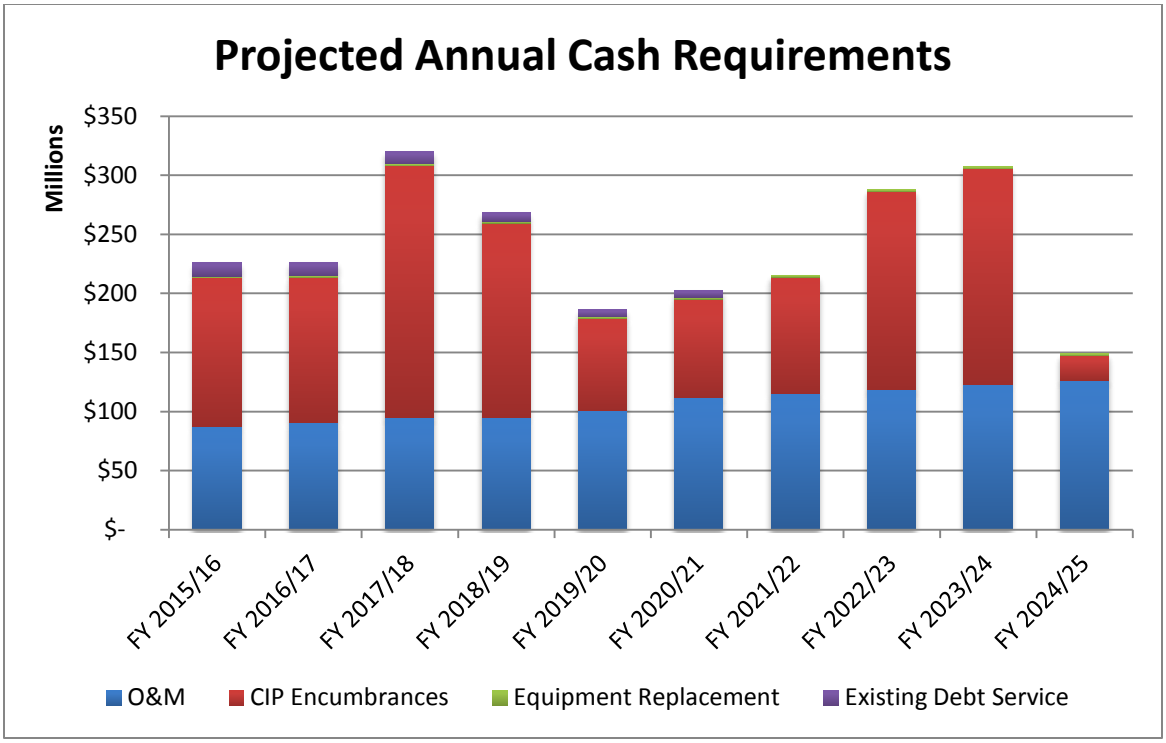


Figure 3: Projected Annual Cash Requirements

3.4.2.1 O&M Costs

Increases in contributions to cover operating costs are driven by inflationary increases in operating costs, and by the projected incremental operating costs associated with the CIP. For FY 2015/16 annual operating contributions are expected to total approximately $87 million. Total agency contributions for operating costs are expected to reach $127 million by FY 2024-25.

3.4.2.2 Debt Service

As implementation of the CIP continues, debt service will make up an increasing share of annual cash needs. In FY 2014-15 debt service accounted for less than 6 percent of cash requirements. Debt service contributions will increase steadily through FY 2024-25 to mitigate impacts on ratepayers and achieve intergenerational equity.

4.0 REGIONAL ALLOCATION

4.1.1 Overview of Allocation Process

On an annual basis, after the total CIP and O&M funding needs for the RWF are determined, costs are allocated to San José, Santa Clara, and each of the Tributary Agencies. In the case of San José and Santa Clara, the allocation of costs is based on annual assessed property valuations for San José and Santa Clara as set forth in the 1959 Agreement between these two cities as the owners of the RWF. Costs between the two

cities are currently allocated at roughly 82.5% to San José and 17.5% to Santa Clara based on the most current property valuations between both of the cities.

The 1983 Master Agreements with the Tributary Agencies proportionately allocate capital costs based on contractual capacity for each Tributary Agency and proportionally allocate operating costs based on annual wastewater flows and loadings for each Agency.

While this preliminary analysis aims to allocate capital and O&M costs to San José, Santa Clara, and the Tributary Agencies in a manner consistent with the 1959 Agreement and the 1983 Master Agreements, the projected allocations are intended to be illustrative only. The allocations have been included to provide a general outlook of the impacts to each agency based upon model assumptions and funding scenarios. It is assumed that San José will continue to use the current accounting practice in the allocation of costs to each agency.

The allocation for both capital and O&M costs are comprised of a three-step process as follows:

1. Allocation to Billable Constituents: Costs are allocated to flow, Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), and Ammonia (NH_3) based on the proportionate share of annual operating expenditures or capital improvements.

2. Allocation to Agencies: After costs have been allocated to each of the four billable constituents, costs are then distributed to each agency based on their proportionate discharges and capacity ownership for O&M and capital costs, respectively.

3. Allocation Based on Assessed Valuation: After costs have been allocated to San José and Santa Clara, these costs are then redistributed to each owner based on the assessed valuation within each jurisdiction.

4.1.2 Flow and Loadings Assumptions and Growth

Wastewater flows and loadings dictate many collections system and RWF operational costs and capital expenditures. Therefore, they serve as the basis for allocating RWF costs to each of the member agencies. The analysis performed for this report assumes even growth throughout the region.

4.1.2.1 Flow and Loadings Across Agencies

As of FY 2013-14, the RWF processed over 39 billion gallons of wastewater annually at an average flow of 110 million gallons per day (MGD). Flows from San José and Santa Clara contribute roughly 80% to total wastewater, with Tributary Agencies contributing the remaining 20%.

4.1.2.2 Loadings Assumptions and Projected Loads

Wastewater strength characteristics (loadings) greatly affect RWF operations and costs, as well as capital improvements and rehabilitation projects. Therefore, it is important to account for system loadings in the development of user rates and fees. Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), and Ammonia (NH_3) are the measured wastewater parameters that are used to quantify wastewater strength.

4.1.2.3 Billable Constituents

Wastewater flow, BOD, TSS, and NH_3 serve as the billable constituents that are used to allocate operating and capital costs to each of the agencies. Billable constituents are parameters that can be measured or estimated both at the treatment facilities and for each Tributary Agency. For example, wastewater flows are monitored at the RWF and can be estimated for each Tributary Agency.

This analysis has been developed under the assumption that flow and loadings for the City of San José and all of the member agencies will remain flat at the FY 2014-15 level through the projection period. An intrinsic characteristic of this assumption is that each agency's percentage share of flow and loading remains constant through the projection period. As development and annexations take place throughout the projection period, San José will continue its practice of updating flow and loadings values form each agency and incorporating them into the revenue plan.

4.2 Operating Expenditure Allocation

The process of allocating operating expenditures to each agency consists of three main steps. First, offsetting revenues are subtracted from projected expenditures to determine how much revenue will need to be collected through O&M contributions. Next, the projected O&M revenue needs are allocated to the billable constituents of Flow, BOD, TSS, and NH_3. Lastly, those allocated costs are then applied to each agency based on each agency's share of annual flows and loads (billable constituents). Each of the three steps is detailed below.

4.2.1 O&M Revenue Needs

The primary source of revenue for the RWF is O&M contributions from San José, Santa Clara, and the Tributary Agencies. The RWF's O&M revenue need is the amount of revenue that must be collected through O&M contributions. O&M contributions are calculated each year, and are set to recover all of the RWF's O&M expenditures. Detailed discussion of O&M costs can be found in section 3.3.

4.2.2 Functional Allocation of RWF O&M Expenditures

Once the total revenue needs from O&M contributions have been determined, they are allocated to billable constituents. For the purposes of this analysis, O&M revenue needs

have been allocated to flow, BOD, TSS, and NH_3 based on the allocation percentages in the current revenue plan. All existing and incremental RWF O&M revenue needs are assigned to flow and strength parameters as follows:

- Flow: 34 percent
- BOD: 22 percent
- TSS: 22 percent
- NH_3: 22 percent

4.2.3 O&M Regional Allocation

O&M revenue needs are divided among the agencies based on estimated flow and loading for each agency. Revenue needs are assigned to each agency by multiplying the O&M revenue need for each constituent by each agency's percentage share of that constituent. This analysis assumes that the proportional share of costs between agencies is expected to remain constant, even as growth occurs throughout the region.

4.3 Capital Funding Allocation

4.3.1 Functional Allocation of RWF Capital Expenditures

The process of assigning capital costs to billable constituents is developed by first allocating the physical system to the billable constituents on a unit cost basis. For example, the Headworks project is primarily sized based on hydraulic capacity requirements. Consequently, the cost of operating and maintaining a Headworks is proportional to the amount of flow that passes through it and is allocated 100 percent to sewer flow. Using the allocation of the physical system, capital costs are allocated to billable constituents. Costs that cannot be assigned a specific allocation to functional components (un-assignable costs), because they serve a general benefit, are allocated based on the weighted average allocation of assignable costs.

Table 2 below indicates the weighted average allocation by wastewater flow and strength constituents for the RWF CIP in the coming decade.

Table 2: Overall CIP Functional Allocation (Millions)
RWF Ten-Year Funding Forecast

	Flow	BOD	TSS	NH3
Weighted Average	59.7%	19.5%	14.9%	5.9%
Allocation To Each Component	$821.8	$268.7	$204.7	$81.7
Total				**$1,377**
Note: Based on allocation of CIP encumbrances for FY 2014-15 through FY 2024-25.				

It should be noted that capital costs will not be allocated to each of the agencies based on the allocations shown in Table 2. Rather, the functional allocation of capital costs will be adjusted each year using the existing allocation methodology, which takes new projects into account as they are undertaken, and provides adjustments for asset depreciation. Table 3 provides an illustrative example of the expected weighted average functional allocation of the CIP for each year of the projection based on the expected CIP project expenditures and timing as of February 2015.

Table 3: Overall CIP Functional Allocation (Millions)
RWF Ten-Year Funding Forecast

	Flow	BOD	TSS	NH3
FY 2014/15	73.2%	13.9%	8.4%	4.6%
FY 2015/16	73.1%	13.9%	8.4%	4.6%
FY 2016/17	73.1%	13.9%	8.4%	4.6%
FY 2017/18	69.3%	15.7%	10.6%	4.3%
FY 2018/19	69.8%	15.4%	10.4%	4.5%
FY 2019/20	67.1%	17.1%	11.8%	4.0%
FY 2020/21	67.9%	16.7%	10.7%	4.7%
FY 2021/22	67.7%	16.7%	10.8%	4.8%
FY 2022/23	67.4%	16.7%	10.9%	5.0%
FY 2023/24	67.4%	16.7%	10.9%	5.0%
FY 2024/25	67.2%	16.5%	11.3%	5.0%

Note: Values presented in each row may not add to 100 percent due to rounding.

4.3.2 Capital Allocation to Each Agency

Capital costs are divided amongst the agencies based on contractual capacity of flow, BOD, TSS, and NH_3 in the system. Once the capital costs have been allocated to billable constituents, each agency's share is calculated by multiplying the cost for each constituent by each agency's respective capacity share of that constituent. The cost associated with the constituents for the remaining capacity is shared between the City of San José and Santa Clara based on the San José and Santa Clara annual assessed property value percentages, which will vary each year. For 2013-14, the property value percentages were 82.5 percent for San José and 17.5 percent for Santa Clara.

Capacity ownership is updated as annexation and development occurs within each agency. The projected capital allocations in this model have been developed assuming that there will be no changes to the capacity ownership percentages through the projection period, thus each agency's proportional share of capital costs will not change. San José will continue to perform its internal allocation and accounting process, adjusting capacity share for each agency annually to reflect annexation and development.

5.0 FUTURE CONSIDERATIONS

5.1.1 Review of Key Assumptions

The analysis is based on a series of assumptions that were determined through discussions with San José staff, many of which directly influence the allocation of costs to each agency. The following key assumptions play a significant role in the determination of agency allocations.

Annual Flow and Loads – Annual flow and loads affect the allocation of operating costs to each agency. Large increases or decreases in flows and loads could also impact the cost of operating the RWF. The Ten-Year Funding Forecast has been developed assuming that flows and loads for each agency will remain flat at the FY 2013-14 estimated levels.

Contractual Capacity – Contractual capacity affects the allocation of capital costs (including debt service from future issuances) to each agency. The Ten-Year Funding Strategy has been developed based on the assumption that contractual capacity for each agency will remain constant at the FY 2013-14 estimated levels.

Agency Growth – Agency growth indirectly affects cost allocations by driving annual flow and loads and contractual capacity. The Ten-Year Funding Strategy has been developed assuming a zero percent growth factor for all agencies.

5.1.2 Implications of Flow and Loads Study

The RWF is in the process of completing a Flow and Loads Study concurrent to the development of the Ten-Year Funding Strategy. The Flow and Loads Study will provide a comprehensive review of the flow and loading assumptions used by the RWF to estimate annual flows and loads from San José, Santa Clara, and the Tributary Agencies. As the results of the study become available, they will be incorporated into the financial model to assess their impact on projected agency allocations.

The outcomes and recommendations of the Flow and Loads study have the potential to change the estimated annual flow and loads from each agency. If those changes result in shifts in the percentage share of flow and loads allocated to each agency, the portion of operating costs allocated to each agency will change. Any change to operating cost allocations will carry through to the required operating reserve contributions that cover the 60 days of O&M portion of the reserve.

The Flow and Loads Study would indicate each agency's usage of its capacity. The sale and purchase of capacity between agencies would impact each agency's allocated share of capital costs, which may include current and future debt service and reserves associated with the capacity.

5.1.3 Agency Growth

The assumption of zero percent growth for all agencies carries with it an intrinsic assumption that each agency's percentage share of flow and loading and of contractual capacity will remain constant. Using this assumption allows the analysis to assess the impacts of funding the RWF capital program as compared to the current status quo. In reality, each agency's unique build-out, development, and economic conditions will drive demand for wastewater service or capacity and will result in annual allocations that will vary from this preliminary analysis.

Staff will use the preliminary ten-year forecast and the financial model to guide the implementation of the CIP and the associated debt issuance processes. Each time new and pertinent information becomes available, it will be incorporated into the analysis to ensure that decisions are made based upon the best available information. San José will continue its internal accounting and allocation practices to ensure that all changes affecting the financial forecasts and annual allocations are reflected in the capital, operating, and reserve contributions required of each agency.

The costs and schedules for the CIP will continue to be further developed as projects go through detailed design. The updated CIP information will be used by the City's financial advisor to develop the detailed financing strategy and to plan the timing of the actual bond issuances or loans.

San Jose-Santa Clara RWF
Ten-Year Funding Forecast
Appendix A - Expenditure Forecast

TABLE I RWF Capital Expenditures - Escalated to Mid-point of Construction

RWF CIP Expenditures	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25
RWF CIP Encumbrances											
Construction Expenditures	$ 80,750,000	$ 115,580,000	$ 98,470,000	$ 210,860,000	$ 162,480,000	$ 76,610,000	$ 83,930,000	$ 99,080,000	$ 167,830,000	$ 183,410,000	$ 21,520,000
Non-Construction Expenditures	22,820,000	11,840,000	25,750,000	3,800,000	3,570,000	2,850,000	1,180,000	1,180,000	1,180,000	1,180,000	1,040,000
Total RWF CIP Encumbrances	**$ 103,570,000**	**$ 127,420,000**	**$ 124,220,000**	**$ 214,660,000**	**$ 166,050,000**	**$ 79,460,000**	**$ 85,110,000**	**$ 100,260,000**	**$ 169,010,000**	**$ 184,590,000**	**$ 22,560,000**
Existing Debt											
2009 Revenue Bonds											
Principal	$ -	$ -	$ 725,000	$ 5,145,000	$ 4,965,000	$ 5,175,000	$ 5,410,000	$ -	$ -	$ -	$ -
Interest	847,375	847,375	836,500	735,588	236,210	352,087	116,200	-	-	-	-
Total 2009 Revenue Bonds	**$ 847,375**	**$ 847,375**	**$ 1,561,500**	**$ 5,880,588**	**$ 5,201,210**	**$ 5,527,087**	**$ 5,526,200**	**$ -**	**$ -**	**$ -**	**$ -**
2005 Revenue Bonds											
Principal	$ 5,520,000	$ 5,795,000	$ 5,130,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest	547,688	301,031	96,188	-	-	-	-	-	-	-	-
Total 2005 Revenue Bonds	**$ 6,067,688**	**$ 6,096,031**	**$ 5,226,188**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
SRF Loans											
Principal	$ 3,976,581	$ 3,976,581	$ 3,976,581	$ 3,976,581	$ 1,591,913	$ -	$ -	$ -	$ -	$ -	$ -
Interest	487,301	487,301	487,301	487,301	212,107	-	-	-	-	-	-
Total SRF Loans	**$ 4,463,882**	**$ 4,463,882**	**$ 4,463,882**	**$ 4,463,882**	**$ 1,804,020**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Debt											
Principal	$ 9,496,581	$ 9,771,581	$ 9,831,581	$ 9,121,581	$ 6,556,913	$ 5,175,000	$ 5,410,000	$ -	$ -	$ -	$ -
Interest	1,882,363	1,635,707	1,419,988	1,222,888	448,317	352,087	116,200	-	-	-	-
Total Debt	**$ 11,378,944**	**$ 11,407,288**	**$ 11,251,569**	**$ 10,344,469**	**$ 7,005,230**	**$ 5,527,087**	**$ 5,526,200**	**$ -**	**$ -**	**$ -**	**$ -**

TABLE II RWF O&M Expenditures

RWF O&M Expenditures	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25
Existing O&M	$ 90,990,000	$ 85,090,000	$ 87,740,000	$ 90,460,000	$ 93,330,000	$ 96,180,000	$ 99,120,000	$ 102,160,000	$ 105,290,000	$ 108,520,000	$ 111,860,000
CIP Incremental O&M	-	2,230,000	3,260,000	4,560,000	1,840,000	4,850,000	12,660,000	13,010,000	13,700,000	14,090,000	14,760,000
Total	**$ 90,990,000**	**$ 87,320,000**	**$ 91,000,000**	**$ 95,020,000**	**$ 95,170,000**	**$ 101,030,000**	**$ 111,780,000**	**$ 115,170,000**	**$ 118,990,000**	**$ 122,610,000**	**$ 126,620,000**

San Jose-Santa Clara Regional Wastewater Facility **Attachment B- Forecasted Allocations by Agency**

(1) Beginning in 2016-2017, all agencies will contribute toward the 60-day O&M reserve.

(2) Beginning in 2015-2016, all agencies will participate in a Commercial Paper (CP) program, including funding the cost to establish and maintain the CP program.

(3) First bond issuance (San Jose only) will be in 2017-2018.

(4) All agencies responsible for addressing their own long term financing needs.

AGGREGATE TOTAL

Fiscal Year	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25
O&M Allocation	96,096,660	92,433,225	95,781,972	99,308,551	102,890,604	115,566,532	119,585,283	123,748,304	128,060,869	132,528,446
Aggregate Debt-Funded Encumbrance	30,025,000	86,755,000	171,670,000	125,625,000	42,190,000	37,726,000	48,849,000	109,138,000	122,642,000	-
Aggregate Contributions for										
Existing Debt Service	11,545,408	11,393,688	10,450,588	7,392,660	5,642,079	5,641,200	115,000	-	-	-
New Debt Service	-	-	4,287,701	11,156,845	15,650,467	22,038,737	23,754,986	26,194,857	31,613,014	39,315,630
Commercial Paper Facility Costs[1]	1,556,144	1,643,426	1,582,874	1,661,575	1,562,555	1,581,128	1,561,809	1,632,041	1,567,120	1,563,560
Reserve Balance	6,585,384	13,390,382	17,922,786	20,614,983	3,580,035	12,668,786	4,016,488	4,160,675	4,310,134	4,465,063
Equipment Replacement Reserve	-	1,663,000	1,663,000	1,663,000	1,663,000	1,663,000	1,663,000	1,663,000	1,663,000	1,663,000
Est. Pay-Go Capital	94,331,000	38,006,000	42,979,000	41,049,000	38,034,000	47,376,000	51,397,000	59,861,000	61,935,965	22,552,000
CP Paydown from Pay-Go	-	-	42,593,547	42,873,950	30,894,667	22,554,921	19,017,507	21,808,618	20,406,224	27,120,827
Total	114,017,935	66,096,496	121,479,496	126,412,013	97,026,803	113,523,772	101,525,790	115,320,191	121,495,456	96,680,080
Total Contribution:	210,114,595	158,529,721	217,261,468	225,720,564	199,917,407	229,090,304	221,111,073	239,068,495	249,556,325	229,208,526
Notes										
[1] CP Facility/Cost Breakdown										
Facility Amount										
Drawn Amount	16,143,618	103,425,850	42,873,950	121,574,603	21,954,921	41,128,507	21,808,618	92,040,652	27,120,827	23,559,657
Undrawn	203,856,382	116,574,150	177,126,050	98,425,397	197,445,079	178,871,493	198,191,382	127,959,348	192,879,173	196,440,343
Total Facility	220,000,000	220,000,000	220,000,000	220,000,000	219,400,000	220,000,000	220,000,000	220,000,000	220,000,000	220,000,000
Cost @ 0.70%										
Drawn Amount	113,005	723,981	300,118	851,022	157,884	287,900	152,660	644,285	189,846	164,918
Undrawn	1,426,995	816,019	1,239,882	688,978	1,382,116	1,252,100	1,387,340	895,715	1,350,154	1,375,082
Total Facility	1,540,000	1,540,000	1,540,000	1,540,000	1,540,000	1,540,000	1,540,000	1,540,000	1,540,000	1,540,000

San Jose-Santa Clara Regional Wastewater Facility	Attachment B- Forecasted Allocations by Agency									
SAN JOSE										
Fiscal Year	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25
O&M Allocation	**62,584,872**	**60,198,986**	**62,379,925**	**64,676,680**	**67,009,564**	**75,265,015**	**77,882,308**	**80,593,558**	**83,402,201**	**86,311,802**
San Jose Debt-Funded Encumbrance	-	61,000,000	117,000,000	90,000,000	28,000,000	22,111,000	30,349,000	77,538,000	88,077,000	-
San Jose Contributions for										
Existing Debt Service	8,910,362	8,909,506	8,912,017	6,732,708	5,487,219	5,486,356	115,000	-	-	-
New Debt Service	-	-	4,287,701	11,156,845	15,650,467	22,038,737	23,754,986	26,194,857	31,613,014	39,315,630
Commercial Paper Facility Costs[1]	980,000	1,040,832	980,000	1,070,680	980,000	1,002,111	980,000	1,051,634	980,000	980,000
Reserve Balance	6,585,384	8,091,602	17,730,818	20,412,820	3,374,692	11,942,132	3,786,112	3,922,027	4,062,914	4,208,957
Equipment Replacement Reserve	-	1,083,727	1,083,727	1,083,727	1,083,727	1,083,727	1,083,727	1,083,727	1,083,727	1,083,727
Est. Pay-Go Capital	82,685,954	21,955,244	26,368,834	21,281,543	25,638,506	34,760,883	36,630,475	35,348,224	35,220,651	15,055,819
CP Paydown from Pay-Go	-	-	-	-	-	-	-	-	-	-
Total	**99,161,700**	**41,080,911**	**59,363,097**	**61,738,323**	**52,214,612**	**76,313,946**	**66,350,300**	**67,600,470**	**72,960,305**	**60,644,133**
Total Contribution:	**161,746,572**	**101,279,897**	**121,743,022**	**126,415,003**	**119,224,176**	**151,578,961**	**144,232,608**	**148,194,028**	**156,362,506**	**146,955,935**
Notes										
[1] CP Facility/Cost Breakdown										
Facility Amount										
Drawn Amount	-	60,832,303	-	90,679,936	-	22,111,000	-	71,634,428	-	-
Undrawn	140,000,000	79,167,697	140,000,000	49,320,064	140,000,000	117,889,000	140,000,000	68,365,572	140,000,000	140,000,000
Total Facility	140,000,000	140,000,000	140,000,000	140,000,000	140,000,000	140,000,000	140,000,000	140,000,000	140,000,000	140,000,000
Cost @ 0.70%										
Drawn Amount	-	425,826	-	634,760	-	154,777	-	501,441	-	-
Undrawn	980,000	554,174	980,000	345,240	980,000	825,223	980,000	478,559	980,000	980,000
Total Facility	980,000	980,000	980,000	980,000	980,000	980,000	980,000	980,000	980,000	980,000

San Jose-Santa Clara Regional Wastewater Facility **Attachment B- Forecasted Allocations by Agency**

SANTA CLARA

Fiscal Year	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25
O&M Allocation	**13,182,540**	**12,679,990**	**13,139,371**	**13,623,147**	**14,114,533**	**15,853,417**	**16,404,709**	**16,975,792**	**17,567,390**	**18,180,252**
Santa Clara Debt-Funded Encumbrance	8,500,000	7,000,000	15,000,000	5,000,000	-	-	-	-	-	-
Santa Clara Contributions for										
Existing Debt Service	687,858	687,858	687,858	227,978	-	-	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-
Commercial Paper Facility Costs[1]	181,798	190,500	190,000	180,000	175,000	175,000	175,000	175,000	175,000	175,000
Reserve Balance	-	2,084,382	75,515	79,525	80,776	285,844	90,623	93,877	97,249	100,744
Equipment Replacement Reserve	-	229,976	229,976	229,976	229,976	229,976	229,976	229,976	229,976	229,976
Est. Pay-Go Capital	9,046,545	10,603,690	15,423,941	18,614,772	11,382,497	12,068,648	14,213,554	23,955,312	26,164,702	3,194,959
CP Paydown from Pay-Go	-	-	15,500,000	15,000,000	5,000,000	-	-	-	-	-
Total	**9,916,201**	**13,796,406**	**32,107,290**	**34,332,251**	**16,868,249**	**12,759,468**	**14,709,154**	**24,454,164**	**26,666,927**	**3,700,680**
Total Contribution:	**23,098,741**	**26,476,396**	**45,246,661**	**47,955,398**	**30,982,782**	**28,612,885**	**31,113,863**	**41,429,956**	**44,234,317**	**21,880,932**
Notes										
[1] CP Facility/Cost Breakdown										
Facility Amount										
Drawn Amount	6,797,802	15,500,000	15,000,000	5,000,000	-	-	-	-	-	-
Undrawn	18,202,198	9,500,000	10,000,000	20,000,000	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000
Total Facility	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000
Cost @ 0.70%										
Drawn Amount	47,585	108,500	105,000	35,000	-	-	-	-	-	-
Undrawn	127,415	66,500	70,000	140,000	175,000	175,000	175,000	175,000	175,000	175,000
Total Facility	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000

San Jose-Santa Clara Regional Wastewater Facility — Attachment B- Forecasted Allocations by Agency

WVSD

Fiscal Year	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25
O&M Allocation	**8,745,757**	**8,412,348**	**8,717,117**	**9,038,071**	**9,364,074**	**10,517,710**	**10,883,457**	**11,262,333**	**11,654,820**	**12,061,414**
WVSD Debt-Funded Encumbrance	7,310,000	6,370,000	13,555,000	10,465,000	4,860,000	5,340,000	6,325,000	10,800,000	11,810,000	-
WVSD Contributions for										
Existing Debt Service	1,022,933	930,781	377,119	152,402	-	-	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-
Commercial Paper Facility Costs1	108,174	114,200	114,524	113,844	112,719	111,500	112,453	111,971	114,264	113,041
Reserve Balance	-	1,382,852	50,099	52,760	53,590	189,639	60,123	62,281	64,518	66,837
Equipment Replacement Reserve	-	144,565	144,565	144,565	144,565	144,565	144,565	144,565	144,565	144,565
Est. Pay-Go Capital	881,685	1,848,363	405,146	387,865	343,034	184,200	186,248	185,994	185,994	1,467,939
CP Paydown from Pay-Go	-	-	9,200,232	9,524,238	8,843,668	7,719,137	6,500,431	7,452,976	6,971,403	9,264,371
Total	**2,012,791**	**4,420,761**	**10,291,685**	**10,375,673**	**9,497,576**	**8,349,041**	**7,003,820**	**7,957,787**	**7,480,745**	**11,056,753**
Total Contribution:	**10,758,548**	**12,833,109**	**19,008,802**	**19,413,744**	**18,861,650**	**18,866,751**	**17,887,277**	**19,220,120**	**19,135,565**	**23,118,167**

Notes

1 CP Facility/Cost Breakdown

Facility Amount										
Drawn Amount	3,173,585	9,200,232	9,524,238	8,843,668	7,119,137	6,500,431	7,452,976	6,971,403	9,264,371	8,040,541
Undrawn	11,826,415	5,799,768	5,475,762	6,156,332	7,280,863	8,499,569	7,547,024	8,028,597	5,735,629	6,959,459
Total Facility	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000
Cost @ 0.70%										
Drawn Amount	22,215	64,402	66,670	61,906	54,034	45,503	52,171	48,800	64,851	56,284
Undrawn	82,785	40,598	38,330	43,094	50,966	59,497	52,829	56,200	40,149	48,716
Total Facility	105,000	105,000	105,000	105,000	105,000	105,000	105,000	105,000	105,000	105,000

San Jose-Santa Clara Regional Wastewater Facility — Attachment B- Forecasted Allocations by Agency

CUPERTINO

Fiscal Year	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25
O&M Allocation	**4,897,086**	**4,710,397**	**4,881,049**	**5,060,764**	**5,243,305**	**5,889,270**	**6,094,066**	**6,306,214**	**6,525,982**	**6,753,650**
Cupertino Debt-Funded Encumbrance	4,830,000	4,210,000	8,895,000	6,865,000	3,180,000	3,505,000	4,150,000	7,090,000	7,760,000	-
Cupertino Contributions for										
Existing Debt Service	677,323	618,747	226,816	91,661	-	-	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-
Commercial Paper Facility Costs[1]	72,097	76,080	76,249	75,805	75,054	74,268	74,894	74,579	76,088	75,291
Reserve Balance	-	774,312	28,052	29,542	30,007	106,186	33,665	34,874	36,126	37,425
Equipment Replacement Reserve	-	85,262	85,262	85,262	85,262	85,262	85,262	85,262	85,262	85,262
Est. Pay-Go Capital	583,496	1,221,126	265,056	258,899	226,698	122,034	125,356	125,339	122,938	965,976
CP Paydown from Pay-Go	-	-	6,079,997	6,249,401	5,805,048	5,054,122	4,268,000	4,893,705	4,578,652	6,088,394
Total	**1,332,916**	**2,775,527**	**6,761,433**	**6,790,570**	**6,222,068**	**5,441,872**	**4,587,176**	**5,213,758**	**4,899,067**	**7,252,348**
Total Contribution:	**6,230,002**	**7,485,924**	**11,642,482**	**11,851,334**	**11,465,373**	**11,331,142**	**10,681,242**	**11,519,972**	**11,425,049**	**14,005,998**

Notes

[1] CP Facility/Cost Breakdown

Facility Amount										
Drawn Amount	2,097,272	6,079,997	6,249,401	5,805,048	5,054,122	4,268,000	4,893,705	4,578,652	6,088,394	5,291,068
Undrawn	7,902,728	3,920,003	3,750,599	4,194,952	4,945,878	5,732,000	5,106,295	5,421,348	3,911,606	4,708,932
Total Facility	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
Cost @ 0.70%										
Drawn Amount	14,681	42,560	43,746	40,635	35,379	29,876	34,256	32,051	42,619	37,037
Undrawn	55,319	27,440	26,254	29,365	34,621	40,124	35,744	37,949	27,381	32,963
Total Facility	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000

San Jose-Santa Clara Regional Wastewater Facility **Attachment B- Forecasted Allocations by Agency**

MILPITAS

Fiscal Year	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25
O&M Allocation	**5,582,255**	**5,369,446**	**5,563,975**	**5,768,834**	**5,976,915**	**6,713,260**	**6,946,709**	**7,188,539**	**7,439,056**	**7,698,577**
Milpitas Debt-Funded Encumbrance	8,495,000	7,400,000	15,580,000	12,035,000	5,570,000	6,125,000	7,260,000	12,405,000	13,560,000	-
Milpitas Contributions for										
Existing Debt Service	67,485	67,448	67,446	51,741	43,001	42,994	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-
Commercial Paper Facility Costs1	143,687	150,687	150,945	150,173	148,849	147,459	148,556	148,009	150,640	149,247
Reserve Balance	-	882,649	31,977	33,675	34,205	121,043	38,375	39,753	41,181	42,661
Equipment Replacement Reserve	-	98,882	98,882	98,882	98,882	98,882	98,882	98,882	98,882	98,882
Est. Pay-Go Capital	1,020,878	2,146,869	463,185	449,708	394,514	213,402	214,714	215,351	215,640	1,688,116
CP Paydown from Pay-Go	-	-	10,687,457	10,945,381	10,173,408	8,848,857	7,458,518	8,555,789	8,008,520	10,639,627
Total	**1,232,049**	**3,346,535**	**11,499,893**	**11,729,561**	**10,892,858**	**9,472,636**	**7,959,045**	**9,057,783**	**8,514,863**	**12,618,533**
Total Contribution:	**6,814,304**	**8,715,981**	**17,063,868**	**17,498,395**	**16,869,773**	**16,185,896**	**14,905,754**	**16,246,322**	**15,953,919**	**20,317,110**

Notes

1 CP Facility/Cost Breakdown

Facility Amount										
Drawn Amount	3,686,598	10,687,457	10,945,381	10,173,408	8,848,857	7,458,518	8,555,789	8,008,520	10,639,627	9,246,545
Undrawn	16,313,402	9,312,543	9,054,619	9,826,592	11,151,143	12,541,482	11,444,211	11,991,480	9,360,373	10,753,455
Total Facility	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000
Cost @ 0.70%										
Drawn Amount	25,806	74,812	76,618	71,214	61,942	52,210	59,891	56,060	74,477	64,726
Undrawn	114,194	65,188	63,382	68,786	78,058	87,790	80,109	83,940	65,523	75,274
Total Facility	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000

San Jose-Santa Clara Regional Wastewater Facility **Attachment B- Forecasted Allocations by Agency**

CSD No 2-3

Fiscal Year	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25
O&M Allocation	**885,050**	**851,310**	**882,152**	**914,632**	**947,622**	**1,064,368**	**1,101,380**	**1,139,722**	**1,179,441**	**1,220,587**
CSD No. 2-3 Debt-Funded Encumbrance	625,000	545,000	1,155,000	890,000	410,000	455,000	540,000	920,000	1,010,000	-
CSD No. 2-3 Contributions for										
Existing Debt Service	151,005	150,918	150,893	115,645	96,006	95,990	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-
Commercial Paper Facility Costs[1]	35,273	35,792	35,814	35,756	35,658	35,555	35,637	35,596	35,792	35,689
Reserve Balance	-	139,941	5,070	5,339	5,423	19,191	6,084	6,303	6,529	6,764
Equipment Replacement Reserve	-	15,965	15,965	15,965	15,965	15,965	15,965	15,965	15,965	15,965
Est. Pay-Go Capital	80,230	162,527	37,683	37,666	33,564	17,051	16,476	19,214	15,927	125,714
CP Paydown from Pay-Go	-	-	792,057	813,702	755,927	658,065	555,472	636,960	595,999	792,376
Total	**266,508**	**505,143**	**1,037,482**	**1,024,073**	**942,543**	**841,818**	**629,634**	**714,038**	**670,213**	**976,507**
Total Contribution:	**1,151,558**	**1,356,453**	**1,919,634**	**1,938,705**	**1,890,165**	**1,906,186**	**1,731,014**	**1,853,760**	**1,849,654**	**2,197,094**

Notes

[1] CP Facility/Cost Breakdown

Facility Amount										
Drawn Amount	273,217	792,057	813,702	755,927	658,065	555,472	636,960	595,999	792,376	688,591
Undrawn	4,726,783	4,207,943	4,186,298	4,244,073	4,341,935	4,444,528	4,363,040	4,404,001	4,207,624	4,311,409
Total Facility	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Cost @ 0.70%										
Drawn Amount	1,913	5,544	5,696	5,291	4,606	3,888	4,459	4,172	5,547	4,820
Undrawn	33,087	29,456	29,304	29,709	30,394	31,112	30,541	30,828	29,453	30,180
Total Facility	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000

San Jose-Santa Clara Regional Wastewater Facility — Attachment B- Forecasted Allocations by Agency

BURBANK

Fiscal Year	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25
O&M Allocation	**219,100**	**210,748**	**218,383**	**226,423**	**234,591**	**263,492**	**272,654**	**282,146**	**291,979**	**302,164**
Burbank Debt-Funded Encumbrance	265,000	230,000	485,000	370,000	170,000	190,000	225,000	385,000	425,000	-
Burbank Contributions for										
Existing Debt Service	28,442	28,430	28,439	20,525	15,853	15,860	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-
Commercial Paper Facility Costs[1]	35,115	35,334	35,341	35,317	35,275	35,235	35,269	35,252	35,336	35,293
Reserve Balance	-	34,644	1,255	1,322	1,343	4,751	1,506	1,560	1,616	1,674
Equipment Replacement Reserve	-	4,623	4,623	4,623	4,623	4,623	4,623	4,623	4,623	4,623
Est. Pay-Go Capital	32,212	68,180	15,154	18,548	15,187	9,781	10,176	11,565	10,112	53,476
CP Paydown from Pay-Go	-	-	333,804	341,228	316,616	274,741	235,086	269,189	251,649	336,059
Total	**95,769**	**171,211**	**418,617**	**421,562**	**388,896**	**344,991**	**286,660**	**322,190**	**303,337**	**431,126**
Total Contribution:	**314,869**	**381,959**	**637,000**	**647,985**	**623,487**	**608,483**	**559,314**	**604,336**	**595,316**	**733,290**

Notes

[1] CP Facility/Cost Breakdown

Facility Amount										
Drawn Amount	115,145	333,804	341,228	316,616	274,741	235,086	269,189	251,649	336,059	292,912
Undrawn	4,884,855	4,666,196	4,658,772	4,683,384	4,725,259	4,764,914	4,730,811	4,748,351	4,663,941	4,707,088
Total Facility	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Cost @ 0.70%										
Drawn Amount	806	2,337	2,389	2,216	1,923	1,646	1,884	1,762	2,352	2,050
Undrawn	34,194	32,663	32,611	32,784	33,077	33,354	33,116	33,238	32,648	32,950
Total Facility	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: TREATMENT PLANT ADVISORY COMMITTEE **FROM:** Kerrie Romanow

SUBJECT: FIVE-YEAR 2016-2020 PROPOSED CAPITAL IMPROVEMENT PROGRAM **DATE:** May 7, 2015

Approved Date

This memorandum serves to transmit the San José/Santa Clara Regional Wastewater Facility Proposed Five-Year 2016-2020 Capital Improvement Program (CIP). The Proposed Five-Year CIP is provided to the Treatment Plant Advisory Committee for review, and for a recommendation to the San José City Council for approval.

/s/
KERRIE ROMANOW
Director, Environmental Services

If you should have any questions, please contact Ashwini Kantak at 408-975-2553.

PROPOSED

SAN JOSE / SANTA CLARA WATER POLLUTION CONTROL PLANT

700 Los Esteros Road
San Jose, California 95134

Five-Year 2016-2020 Capital Improvement Program

Submitted by

Kerrie Romanow, Director

Environmental Services Department

City of San Jose

TO: Treatment Plant Advisory Committee

Jamie Matthews	(Chair) Mayor, City of Santa Clara
Sam Liccardo	(Vice Chair) Mayor, City of San Jose
Pat Kolstad	Councilmember, City of Santa Clara
Jose Esteves	Mayor, City of Milpitas
Steven Leonardis	Boardmember, West Valley Sanitation District
John M. Gatto	Boardmember, Cupertino Sanitary District
David Sykes	Assistant City Manager (Int), City of San Jose
Pierluigi Oliverio	Councilmember, City of San Jose
Marjorie Matthews	Councilmember, City of San Jose

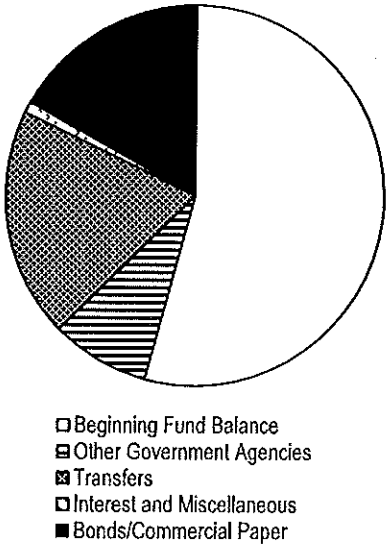
2015-2016 Capital Budget

2016-2020 Capital Improvement Program

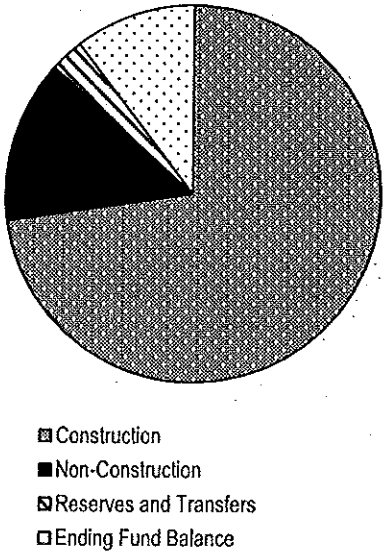
Water Pollution Control

WATER POLLUTION CONTROL
2016-2020 Capital Improvement Program

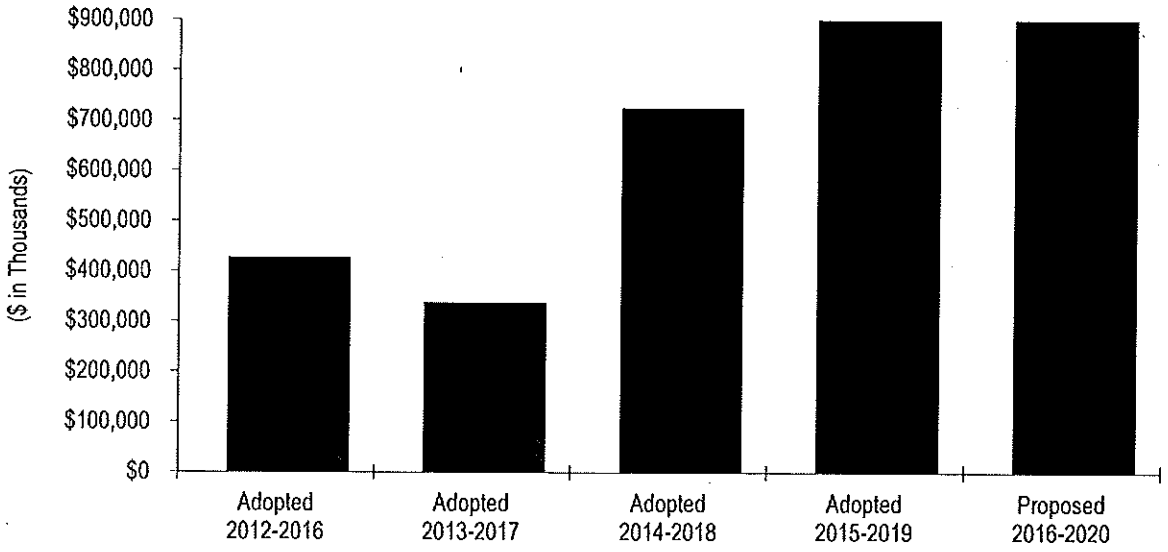
2015-2016 Proposed Source of Funds



2015-2016 Proposed Use of Funds



CIP History



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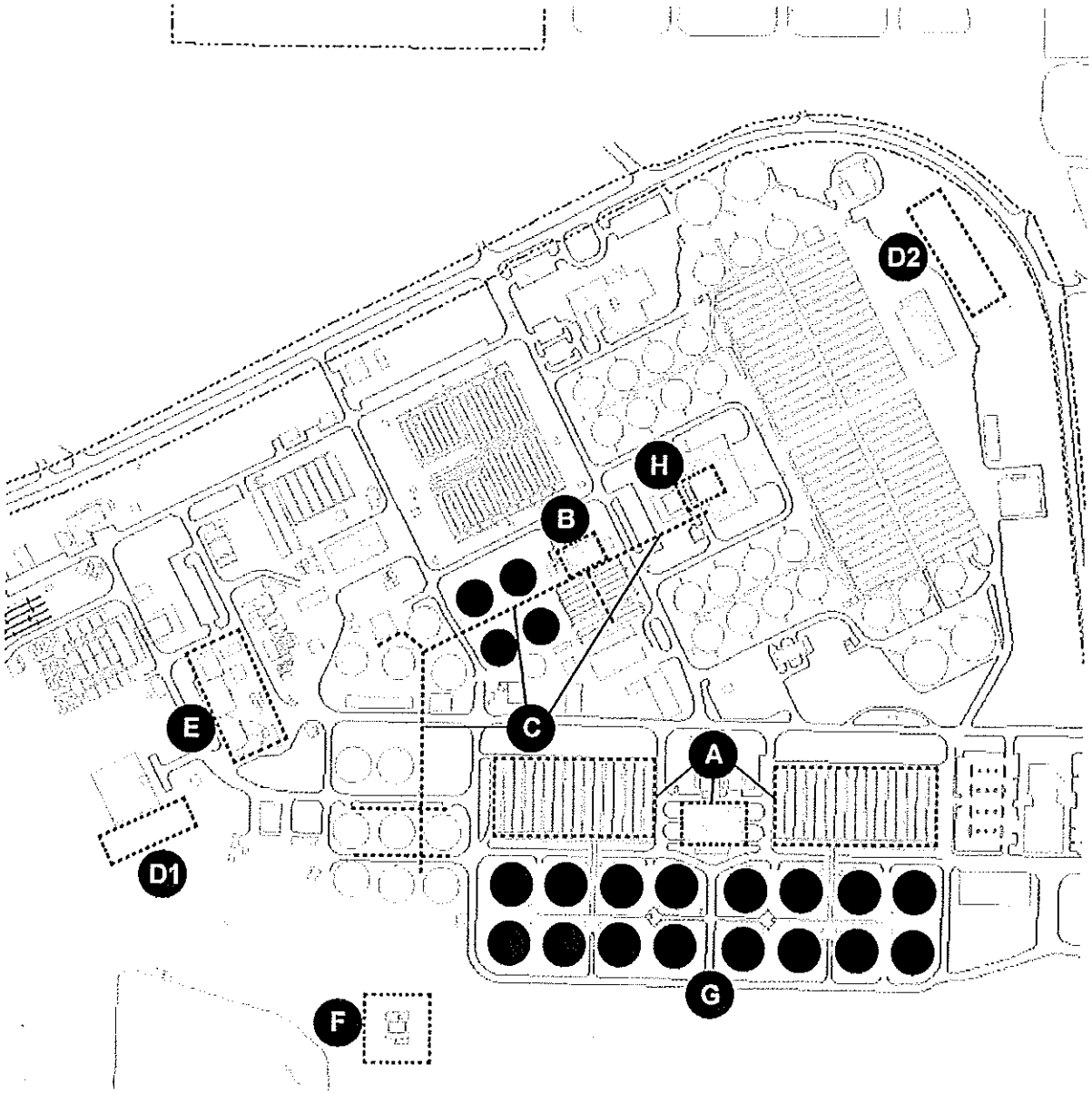
Water Pollution Control

2016-2020 Proposed Capital Improvement Program*

Major Projects

- **A)** Aeration Tanks and Blower Rehabilitation
- **B)** Combined Heat and Power Equipment Repair and Rehabilitation (Digester Gas Compressor Upgrades)
- **C)** Digester and Thickener Facilities Upgrade
- **D)** Energy Generation Improvements
  1. Emergency Diesel Generators
  2. Cogeneration Facility
- **E)** Headworks Improvements & New Headworks
- **F)** Iron Salt Feed Station
- **G)** Nitrification Clarifier Rehabilitation
- **H)** Plant Instrument Air System Upgrade



* Includes only the first set of projects to be in construction at the Plant. Please see the Source & Use for a full listing.

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Overview

INTRODUCTION

PLANT INFRASTRUCTURE	
ACRES OF LAND	2,684
AVERAGE DRY WEATHER INFLUENT CAPACITY (MILLIONS OF GALLONS PER DAY)	167
AVERAGE DRY WEATHER INFLUENT FLOW (MILLIONS OF GALLONS PER DAY)	108
DRY METRIC TONS OF BIOSOLIDS HAULED EACH YEAR	45,100
AVERAGE MEGAWATTS PRODUCED	9.8

The San José/Santa Clara Water Pollution Control Plant (Plant) is a regional wastewater treatment facility serving eight South Bay cities and four special districts including: San José, Santa Clara, Milpitas, Cupertino Sanitary District (Cupertino), West Valley Sanitation District (Campbell, Los Gatos, Monte Sereno, and Saratoga), County Sanitation Districts 2-3 (unincorporated), and Burbank Sanitary District (unincorporated). The Plant is jointly owned by the cities of San José and Santa Clara and is administered and operated by the City of San José's Environmental Services Department (ESD). ESD is also responsible for planning, designing, and constructing capital improvements at the Plant, including water reuse facilities. On March 4, 2013, the City Council approved to change the name of the Plant to the San José-Santa Clara Regional Wastewater Facility for use in future communications and public outreach.

The 2016-2020 Proposed Capital Improvement Program (CIP) provides funding of $1.04 billion, of which $177.8 million is allocated in 2015-2016. The five-year CIP is developed by City staff, reviewed by the Treatment Plant Advisory Committee (TPAC), and forwarded to the San José City Council for budget approval. The budgeted costs are allocated to each agency based on its contracted-for capacity in the Plant. Each agency is responsible for its allocated share of Plant costs, as well as the operation, maintenance, and capital costs of its own sewage collection system; debt service on bonds issued by the agency for sewer purposes; and any other sewer service related costs. Each agency is also responsible for establishing and collecting its respective sewer service and use charges, connection fees, or other charges for sewer service.

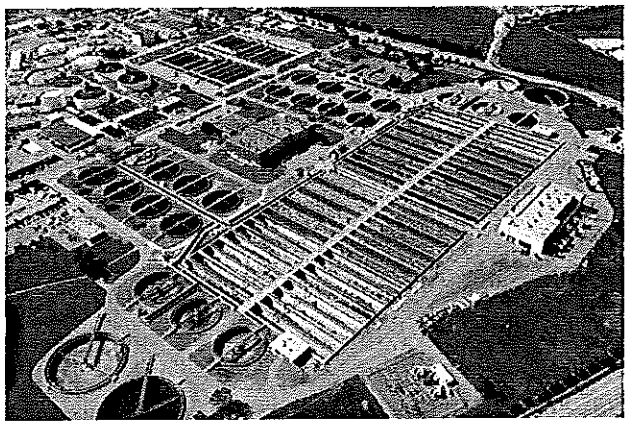
This program is part of the Environmental and Utility Services City Service Area (CSA) and supports the following outcomes: *Reliable Utility Infrastructure; Healthy Streams, Rivers, Marsh, and Bay;* and *Safe, Reliable, and Sufficient Water Supply.*

PROGRAM PRIORITIES AND OBJECTIVES

The 2016-2020 Proposed CIP is consistent with the goals and policies outlined in the City's Envision San José 2040 General Plan. These include maintaining adequate operational capacity for wastewater treatment to accommodate the City's economic and population growth; adopting and implementing new technologies for wastewater to achieve greater safety, energy efficiency, and environmental benefit; and maintaining and operating the Plant in compliance with all applicable local, state, and federal regulatory requirements.

PROGRAM PRIORITIES AND OBJECTIVES

The development of this Proposed CIP is guided by the Plant Master Plan (PMP), a 30-year planning-level document focused on long-term rehabilitation and modernization of the Plant. On April 19, 2011, the City Council approved a preferred alternative for the Draft PMP and directed staff to proceed with a program-level environmental review of the preferred alternative. In November 2013, the City Council approved the PMP and certified the final Environmental Impact Report. In December 2013, Santa Clara's City Council took similar actions.



San José-Santa Clara Regional Wastewater Facility

The PMP recommends more than 114 capital improvement projects to be implemented over a 30-year planning period at an estimated investment level of approximately $2 billion.

A capital program of this size will require significant resources in order to manage and deliver effective projects on time and on budget. On September 24, 2013, the City Council approved a consultant agreement with MWH Americas, Inc. to assist and support ESD in developing and implementing this CIP. On October 15, 2013, MWH program team members mobilized and are now co-located with City staff to form an integrated Program Management Office and program team. In February 2014, the MWH program team completed a detailed project validation process to critically evaluate project needs and priorities. The projects included with this Proposed CIP are based on the outcome of the validation process. Priorities for the near term include securing program funding, evaluating project delivery approaches, developing program staff, and continuing development of project delivery processes.

Program Funding: Over the last year, City staff has worked with program management and financial consultants to develop a long-term funding strategy to provide sustained funding for implementing the CIP program, while minimizing potential impacts on rate payers and ensuring intergenerational equity. As part of this effort, staff met with representatives from Santa Clara and the tributary agencies to discuss guiding principles, funding options, and reserve policies, and to request feedback. Some of the key guiding principles include establishing a predictable base level of cash-funded capital investments, allowing time for all tributary agencies to plan for future revenue needs, and minimizing borrowing costs to the maximum extent practical. A recommended funding strategy will be brought to TPAC and the City Council in spring 2015. For the next five years, San José's portion of the funding for the Proposed CIP is programmed into the 2016-2020 sewer rate models with moderate rate increases planned beginning in 2015-2016.

PROGRAM PRIORITIES AND OBJECTIVES

Project Delivery Approach: The Proposed CIP assumes that the majority of projects will be delivered using traditional project delivery (design-bid-build). With the passage of SB 785 in September 2014, the Plant now has the option, under State authority, to use progressive design-build to deliver projects, pending approval of City Council on a case-by-case or programmatic basis. Staff will be evaluating the application of these delivery methods as projects come forward.

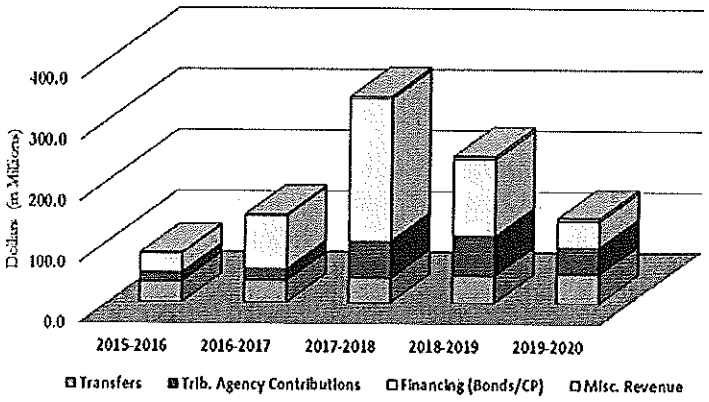
Program Staff Development: Successful delivery of this large, multi-disciplinary CIP requires an integrated team of City staff, outside consultants, and contractors. Over the last fiscal year, the program team has increased its attention on project delivery. Staff continues to identify resource needs and secure a combination of City staff and consultants to deliver the program. The program team is currently supported by City staff from Environmental Services, Public Works, Planning, Finance, and the City Attorney's Office, and staff from MWH Americas, Inc. The program will also continue to draw from the professional consultant and contractor community for subject-matter technical expertise, engineering services, and construction management.

Program Delivery Process Development: Building on the program start-up activities, which concluded in June 2014, the program team will continue to develop schedule and budget control, reporting, and central document management systems to provide a consistent approach for effective and efficient program and project delivery. The program team continues to work on developing standardized project delivery tools; design standards and specifications; control system and integration strategies; startup; commissioning; and training.

SOURCES OF FUNDING

Revenues for the Proposed 2016-2020 CIP are derived from several sources: transfers from the City of San José Sewer Service and Use Charge (SSUC) Fund and Sewage Treatment Plant Connection Fee Fund; contributions from the City of Santa Clara and other tributary agencies; interest earnings; Calpine Metcalf Energy Center Facilities repayments; a federal grant from the US Bureau of Reclamation; and bond and commercial paper proceeds.

Summary of Revenues



The SSUC Fund derives its revenues from fees imposed on San José users of the residential, commercial, and industrial sanitary sewer system. Transfers from this fund to the Plant CIP over the five years total $193.4 million, which reflects a $23.0 million (10.6%) decrease compared to the 2015-2019 Adopted CIP, due to the change in projects recommended from the validation process as described under Program Priorities and Objectives.

Overview

SOURCES OF FUNDING

Contributions from the City of Santa Clara and other agencies are determined according to agreements with the participating agencies, based on financing plans, anticipated Plant expenditures, and the amount and characteristics of flows from each agency's connections to the Treatment Plant. These contributions reimburse the City for actual project expenditures. In this Proposed CIP, contributions from the City of Santa Clara and other agencies total $203.4 million, which represents a $70.2 million (52.7%) increase compared to the 2015-2019 Adopted CIP, due primarily to the assumption included in the CIP that all tributary agencies will use commercial paper proceeds as part of their financing strategies.

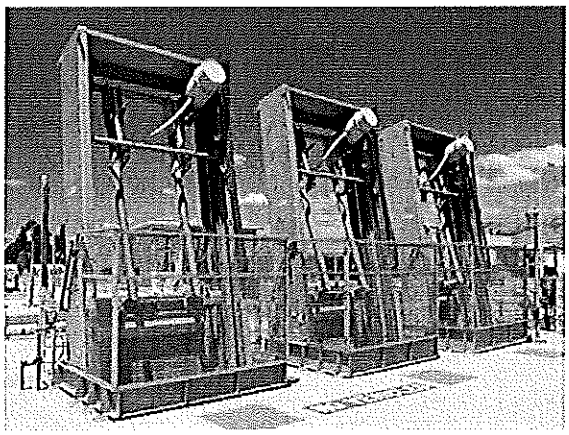
To accommodate PMP project costs, a bond issuance combined with Commercial Paper proceeds (CP), totaling $517.3 million, has been programmed in this CIP. Debt service on the bonds/CP is estimated to be approximately $1.6 million in 2015-2016 and 2016-2017, rising to approximately $109.5 million in 2017-2018, $55.7 million in 2018-2019, and $48.1 million in 2019-2020, reflecting the amortization of the interest and principal loan amount, in addition to the retirement of commercial paper loans. Based on the priorities identified through the validation process, the estimated size of the issuance and the related debt service are scheduled to cover project costs programmed in the 2016-2020 Proposed CIP while avoiding large rate increases that would be required to fund the PMP in a "pay-as-you-go" scenario. The bond issuance does not reflect a more comprehensive financing plan that will be required to accomplish the full 30-year PMP. Staff is currently pursuing funding for some projects through the Clean Water State Revolving Fund. If successful, the debt service in 2017-2018 would be eliminated.

PROGRAM HIGHLIGHTS

The wastewater that enters the Plant is treated using various physical and biological processes before being discharged into San Francisco Bay. This section provides an overview of each treatment process and identifies some of the major projects to be implemented with this CIP.

Preliminary Wastewater Treatment

The headworks facility, located at the front end of the Plant, is designed to provide preliminary treatment of the incoming wastewater. Large solids such as rags, sticks, floatables, grit, and grease are removed through a screening and grit removal process to protect downstream pumping and other equipment. Projects included with this CIP are focused on constructing a new headworks facility and improving the existing wet weather reliability headworks structures.



Headworks Bar Screens

PROGRAM HIGHLIGHTS

Preliminary Wastewater Treatment (Cont'd.)

Project Name	Description	2016-2020 CIP Cost	Estimated Completion
Headworks Improvements	Modify Headworks No. 2 to accommodate all dry weather flow to allow Headworks No. 1 (HW1) to be taken out of service. Based on condition assessment, rehabilitate HW1 to keep it operational until the New Headworks is completed.	$27.8 million	3rd Quarter 2020
New Headworks	Construct new headworks, expand and line the equalization basin as needed, and incorporate odor control measures.	$90.0 million	2nd Quarter 2022

Primary Wastewater Treatment

The primary treatment process consists of a series of uncovered concrete holding tanks fitted with mechanisms that work to slow the flow of wastewater and allow heavy solids to settle out while allowing oil, grease, and lighter solids to float to the surface.

Mechanical skimmers remove grease and floatable materials from the water surface and settled solids (i.e., sludge) are collected at the bottom of the tanks while the remaining liquid waste stream is moved onto the next process for further treatment. Rehabilitation of the primary tanks will be conducted in four phases, one quadrant at a time over an estimated ten-year period. Funding included with this CIP focuses on the first phase of work, which will include replacement of all mechanical, electrical, and controls equipment; refurbishment and coating of concrete; structural modifications to accommodate odor control covers; and odor treatment.

Project Name	Description	2016-2020 CIP Cost	Estimated Completion
East Primary Rehabilitation, Seismic Retrofit, and Odor Control	Seismic retrofit primary tanks for odor control covers, coat concrete, convert clarifier mechanisms to stainless steel, and install odor control treatment system.	$36.0 million	4th Quarter 2025

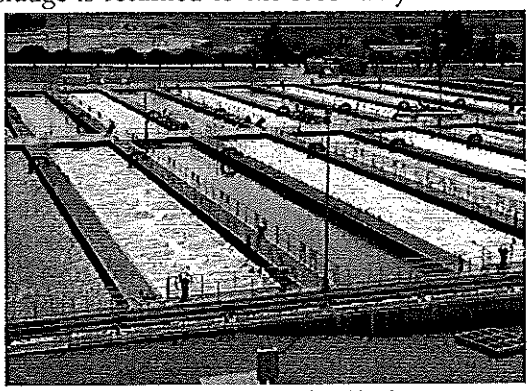
PROGRAM HIGHLIGHTS

Primary Wastewater Treatment (Cont'd.)

Project Name	Description	2016-2020 CIP Cost	Estimated Completion
Iron Salt Feed Station	Construct permanent iron salt and polymer dosing station including a concrete containment structure, pumps, piping, and instrumentation to dose and deliver iron salt solution. Adding iron salts to incoming wastewater will improve Plant operations by enhancing the settling of sludge in the primary clarifiers and reducing corrosion and odor.	$2.2 million	3rd Quarter 2017

Secondary Wastewater Treatment

The secondary treatment process at the Plant consists of a series of aeration basins and clarifiers where biological treatment of the wastewater takes place. Microorganisms and wastewater are mixed and aerated in these tanks for varying lengths of time and intensity, resulting in the settling out of large particulate matter or sludge. A portion of the settled sludge is returned to the secondary treatment process for re-use with the remainder removed as excess waste.



Secondary Aeration Tanks

The secondary treatment process removes contaminants as required by the Plant's National Pollutant Discharge Elimination System (NPDES) discharge permit. Rehabilitation of the secondary and nitrification clarifiers will be conducted in phases and involves performance modifications, along with mechanical, structural, and electrical rehabilitation. Funding included with this CIP focuses on rehabilitating a number of nitrification and secondary aeration tanks and clarifiers.

Project Name	Description	2016-2020 CIP Cost	Estimated Completion
Aeration Tanks and Blower Rehabilitation	Rehabilitate secondary and nitrification aeration tanks. Replace coarse bubble diffusers with fine bubble diffusers. Install Variable Frequency Drives (VFDs) in Secondary Blower Building or Building 40. May replace S11 switchgear and install VFDs in Nitrification Blower Building.	$35.0 million	1st Quarter 2029

PROGRAM HIGHLIGHTS

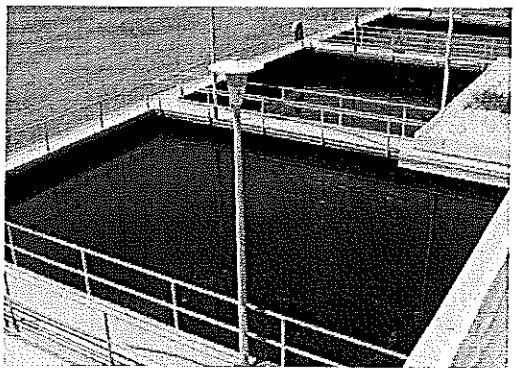
Secondary Wastewater Treatment (Cont'd.)

Project Name	Description	2016-2020 CIP Cost	Estimated Completion
Nitrification Clarifier Rehabilitation	Rehabilitate structural, mechanical, and electrical elements of existing nitrification clarifiers.	$48.2 million	2nd Quarter 2022
Secondary Clarifier Rehabilitation	Rehabilitate structural, mechanical, and electrical elements of existing secondary clarifiers.	$25.9 million	4th Quarter 2021

Tertiary Wastewater Treatment

The tertiary treatment process is the final treatment stage at the Plant and consists of a gravity filtration process and a disinfection process. The Plant currently filters a portion of the secondary effluent stream to re-use standards, and the remainder to the standards required for discharge to San Francisco Bay.

Due to the age and condition of the existing tertiary filters, a significant investment would be required to refurbish and retain them for long-term future use. Work included with this CIP focuses on replacing filter media and underdrain systems to ensure continued regulatory compliance and operational reliability. Other work includes improvements to the Plant's outfall bridge and levee and tracking regulatory developments, which may trigger the need for a new disinfection facility in the next two to three NPDES permit cycles (a permit cycle takes five years).



Existing Filter Complex

Project Name	Description	2016-2020 CIP Cost	Estimated Completion
Filter Rehabilitation	Replace filter media and, potentially, underdrain systems, replace valves and electrical controls, install air scouring equipment and piping, and repair concrete.	$32.7 million	2nd Quarter 2022
Outfall Bridge and Levee Improvements	Conduct condition assessment, repair or replace bridge and instrumentation supports, repair levee and gate, and refurbish electrical transformer.	$9.4 million	4th Quarter 2020

PROGRAM HIGHLIGHTS

Biosolids

The Plant currently processes biosolids material through a combination of anaerobic digestion, lagoon storage, and air drying. The final product is recycled as Alternative Daily Cover (ADC) at the Newby Island landfill. Based on the potential closure of the Newby Island landfill in 2025, potential changes to biosolids regulations, and odor impacts to the surrounding community, the Plant Master Plan recommended transitioning out of the current open-air lagoons and solar drying beds to new enclosed mechanical dewatering and thermal drying facilities. In November 2014, staff presented a biosolids transition strategy to TPAC and the City Council that recommended converting the anaerobic digesters from a mesophilic to thermophilic process (TPAD), proceeding with mechanical dewatering, and deferring thermal drying. In December 2014, the City Council approved proceeding with TPAD and deferring thermal drying. The City Council also directed staff to return with more information on the dewatering facility and concurrent odor study in spring 2015; this is currently planned to be heard at the Transportation and Environmental Committee on May 4, TPAC on May 14, and the City Council on June 2, 2015.

Funding included with this CIP focuses on the first phase of the digester rehabilitation, construction of a new digested sludge dewatering facility (pending City Council approval), and retirement of the existing lagoons and drying beds.

Project Name	Description	2016-2020 CIP Cost	Estimated Completion
Digested Sludge Dewatering Facility	Construct new mechanical dewatering facility and support systems to replace existing sludge storage lagoons and open air solar drying beds.	$67.4 million	3rd Quarter 2020
Digester and Thickener Facilities Upgrade	Rehabilitate up to ten anaerobic digesters, including new covers and mixing systems, and heating system upgrades. Modify six dissolved air flotation units for co-thickening and odor control upgrades. Construct new above-ground gas manifold, new sludge pipeline, and new waste biogas flare system. Convert four digesters from mesophilic to thermophilic operation.	$92.3 million	4th Quarter 2025
Lagoons and Drying Beds Retirement	Decommission use of existing sludge storage lagoons and open air solar drying beds for post-digestion processing through a phased approach.	$4.4 million	2nd Quarter 2028

PROGRAM HIGHLIGHTS

Electrical Systems and Power Generation

The day-to-day operation of the Plant depends heavily on having reliable energy sources and reliable, operable systems with built-in redundancy. The Plant's engine generators, mechanical and electrical process air compressor, and gas compressors are between 17 and 58 years old, and have been breaking down with increasing frequency, well beyond forecasted levels. Funding included with this CIP focuses on construction of a new digester gas compressor facility, a new gas holder, new advanced internal combustion engines, and backup diesel generators. Additional switchgear replacements/upgrades and other electrical improvements will also be made to further enhance electrical reliability at the Plant.

Project Name	Description	2016-2020 CIP Cost	Estimated Completion
Combined Heat and Power Equipment Repair and Rehabilitation	Install new digester gas compressors and digester gas holder.	$915,000	3rd Quarter 2016
Energy Generation Improvements	Construct a new cogeneration facility to replace existing engine-generators with new internal combustion engines and construct new emergency diesel generators.	$86.7 million	1st Quarter 2019

Advanced Process Control Systems

The Plant is a highly complex, automated facility monitored and controlled by a system of instrumentation (meters, gauges, controllers, etc.) and a Distributed Control System (DCS). The DCS allows operators in a control center to remotely monitor and control operations of the treatment processes, such as opening a valve and adjusting flow through a certain process area using information gathered through the meters and gauges. Funding included with this CIP focuses on development of a Plant-wide automation master plan, flow meter replacement, sensor and control upgrades, and DCS system upgrades.

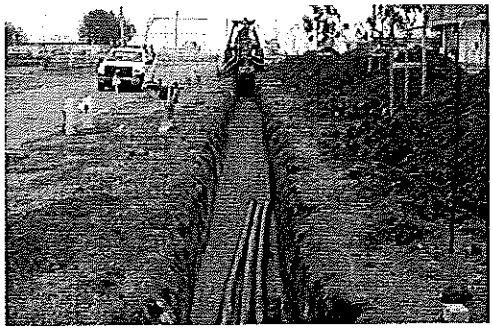
PROGRAM HIGHLIGHTS

Advanced Process Control Systems (Cont'd.)

Project Name	Description	2016-2020 CIP Cost	Estimated Completion
Advanced Facility Control and Meter Replacement	Develop an automation master plan, replace existing flowmeters and actuators, and upgrade sensors, controls, and monitoring equipment throughout the Plant.	$29.3 million	4th Quarter 2019
Treatment Plant Distributed Control System	Upgrade and convert system hardware and software components.	$2.0 million	2nd Quarter 2019

Site Facility Improvements

Many of the Plant's buildings and grounds are up to 50 years old. As the Plant expanded, support buildings and infrastructure have become decentralized, resulting in inefficient operations. This CIP includes funding for various site improvement projects, such as building improvements, road and storm drainage improvements, equipment replacement, handrail replacements, yard piping rehabilitation, and water systems improvements.



Fire Main Replacement - Phase 2

PROGRAM HIGHLIGHTS

Site Facility Improvements (Cont'd.)

Project Name	Description	2016-2020 CIP Cost	Estimated Completion
Construction-Enabling Improvements	Construct new construction management trailers, utility connections, fencing, and security facilities.	$3.6 million	4th Quarter 2016
Equipment Replacement	In-kind replacement of air compressors, tanks, pumps, motors, control systems, valves, heat exchangers, engine auxiliaries, lab instruments, and other capital equipment as required.	$8.3 million	Ongoing
Facility Wide Water Systems Improvements	Rehabilitate, replace, and/or extend the Plant's four water systems, including piping, valves, pumps, controls, and other ancillary equipment.	$15.3 million	3rd Quarter 2020
Plant Infrastructure Improvements	Replacement and rehabilitation work includes handrail replacement, concrete repairs, and Plant support systems/building improvements.	$5.0 million	Ongoing
Support Building Improvements	Construct various tenant improvements to administration, operations, engineering, and other support buildings. Construct new warehousing facilities and electronic warehouse management system.	$16.4 million	4th Quarter 2026
Tunnel Rehabilitation	Structural, mechanical, coating, and piping improvements to the Plant's tunnel system.	$9.2 million	3rd Quarter 2026
Urgent and Unscheduled Treatment Plant Rehabilitation	Timely response to unanticipated maintenance and repair needs at the Plant.	$7.5 million	Ongoing
Yard Piping and Road Improvements	Phased rehabilitation or replacement of pipes throughout the Plant. Roadway and drainage improvements to Plant's main operations and residual solids management areas.	$16.2 million	Ongoing

PROGRAM HIGHLIGHTS

South Bay Water Recycling Program

The South Bay Water Recycling (SBWR) System was authorized by the City Council in 1993 as a project to divert up to 15 million gallons per day of treated effluent from the bay during the summer by providing non-potable recycled water to customers in Milpitas, Santa Clara, and San José. Major developments during the previous CIP period include the March 24, 2014 commissioning of the Advanced Water Purification Center (Center), which is a joint project with the Santa Clara Valley Water District (District). The Center has been providing purified water from secondary effluent. Product water is blended with tertiary Title 22 water at the transmission pumping station and provided to customers. The addition of the purified water from the Center reduces total dissolved solids of the water to under 550 mg/L, as well as augmenting recycled water supplies during peak hours in the summer.

In another joint effort with the City of San José and the District, the multi-year SBWR Master Plan was completed in December 2014. The strategic guidance document provides recommendations and options for SBWR's current service reliability, potential future expansion, operation, and maintenance of the system, cost effectiveness, and funding through engagement of key stakeholders from the Plant Tributary Agencies and the Santa Clara Valley Water District. The Master Plan includes an assessment of the ability of existing infrastructure to meet current and future recycled water demands and identifies future capital improvements to enhance system reliability and water quality.

Project Name	Description	2016-2020 CIP Cost	Estimated Completion
SBWR System Reliability and Infrastructure Replacement	System reliability improvements including, but not limited to, rehabilitation and/or replacement of pump station components, control and communication systems, pipelines, and other system related infrastructure.	$1.5 million	2nd Quarter 2016

Reserves

As in prior years, the 2016-2020 Proposed CIP includes a $5.0 million Equipment Replacement Reserve. The reserve level was established in accordance with the State Water Resources Control Board Fund Loan Agreement policy, the Clean Water Financing Authority bond covenants, and requirements in the Master Agreements for Wastewater Treatment between the City of San José, City of Santa Clara, and the Plant Tributary Agencies.

MAJOR CHANGES FROM THE 2015-2019 ADOPTED CIP

Major changes from the 2015-2019 Adopted CIP include:

Process Area	Project Name	Funding Change ($)
Preliminary Treatment	Headworks Improvements	- 1.4 million
Preliminary Treatment	New Headworks	+ 1.7 million
Primary Treatment	E. Primary Rehab, Seismic Retrofit, & Odor Ctrl.	- 6.2 million
Primary Treatment	Iron Salt Feed Station	+ 2.3 million
Secondary Treatment	Nitrification Clarifier Rehabilitation	+ 18.6 million
Secondary Treatment	Secondary Clarifier Rehabilitation	+ 23.9 million
Secondary Treatment	Aeration Tanks and Blower Rehabilitation	- 8.9 million
Tertiary Treatment	Filter Rehabilitation	+ 5.8 million
Tertiary Treatment	Outfall Bridge and Levee Improvements	+ 1.3 million
Biosolids	Digester and Thickener Facilities Upgrade	+ 28.6 million
Biosolids	Lagoons and Drying Beds Retirement	- 7.8 million
Elect. Sys. & Power Gen.	Energy Generation Improvements	- 15.2 million
Adv. Proc. Ctrl. & Automation	Advanced Facility Control and Meter Replacement	- 2.8 million
Site Facility Improvements	Construction-Enabling Improvements	+ 3.6 million NEW
Site Facility Improvements	Facility Wide Water Systems Improvements	+ 1.5 million
Site Facility Improvements	Plant Instrument Air System Upgrade	- 8.6 million
Site Facility Improvements	Support Building Improvements	- 5.9 million
Non-Construction	Program Management	- 17.6 million

While the overall proposed CIP program amount dropped compared to the 2015-2019 Adopted CIP, and capital funding dropped in 2015-2016, 2016-2017, and 2017-2018, the proposed CIP increases in 2018-2019. The three main reasons for this shift in costs are:

1. The program team reexamined the activity durations for the feasibility/development phases developed during the validation process. Activities included environmental clearance, procurement, project alternative analysis, condition assessment, and conceptual design.

2. The program team has chosen to procure major consultant contracts as master agreements, instead of standard agreements as assumed in the 2015-2019 Adopted CIP, effectively postponing the encumbrance of design funds by up to one year.

MAJOR CHANGES FROM THE 2015-2019 ADOPTED CIP

3. In December 2014, the City Council directed staff to place the Digested Sludge Dewatering Facility on hold and return with more information on the project and the concurrent odor study in spring 2015, which moved the construction award to 2017-2018.

OPERATING BUDGET IMPACT

Most projects in this Proposed CIP are expected to reduce operations and maintenance liabilities in the Operating Budget. The Energy Generation Improvements will replace existing engine generators with lower emissions internal combustion engines and will start operation in 2018-2019. As part of the Energy Generation Improvements, emergency diesel generators will start operation in 2016-2017 and will have some marginal maintenance and operations costs. A few other projects are expected to introduce new operating costs (primarily chemical costs), particularly those with odor control elements (e.g., Iron Salt Feed Station and Digester and Thickener Facilities Upgrade). These costs are expected to be partially offset by energy savings achieved through better solids settling, less aeration demand, and improved bio-gas production, as well as other operational efficiencies and lower maintenance costs.

The table below and Attachment A summarize the operating and maintenance impact to the Sewer Service and Use Charge Fund for several projects.

Net Operating Budget Impact Summary

	2016-2017	2017-2018	2018-2019	2019-2020
Iron Salt Feed Station	$245,000	$1,117,000	$1,176,000	$1,239,000
Digested Sludge Dewater Facility				$2,456,000
Digester and Thickener Facilities Upgrade			$609,000	$634,000
Combined Heat and Power Equipment Repair and Rehabilitation	$4,000	$4,000	$4,000	$4,000
Energy Generation Improvements	$77,000	$79,000	($5,268,000)	($5,169,000)
	$326,000	$1,200,000	($3,479,000)	($836,000)

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

Of significance, the new biosolids process is expected to have a significant impact on the operating budget in 2019-2020. The new biosolids dewatering facility is energy-intensive, requires an enclosed odor-controlled building, and potentially 24-hour operations. The final biosolids disposition alternatives will also impact future operating costs. In December 2014, the City Council directed staff to return with more information on the dewatering facility and concurrent odor study in spring 2015.

Water Pollution Control

2016-2020 Proposed Capital Improvement Program

Attachment A - Operating Budget Impact

	2016-2017	2017-2018	2018-2019	2019-2020
Water Pollution Control				
Iron Salt Feed Station	$245,000	$1,117,000	$1,176,000	$1,239,000
Digested Sludge Dewatering Facility				$2,456,000
Digester and Thickener Facilities Upgrade			$609,000	$634,000
Combined Heat and Power Equipment Repair and Rehabilitation	$4,000	$4,000	$4,000	$4,000
Energy Generation Improvements	$77,000	$79,000	($5,268,000)	($5,169,000)
Total Water Pollution Control	**$326,000**	**$1,200,000**	**($3,479,000)**	**($836,000)**

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2015-2016 Capital Budget

2016-2020 Capital Improvement Program

Water Pollution Control

Source of Funds

Use of Funds

The Source of Funds displays the capital revenues by funding source for each year of the Five-Year Capital Improvement Program. The Use of Funds displays the capital expenditures by line-item for each year of the five-year period.

Water Pollution Control

2016-2020 Proposed Capital Improvement Program

Source of Funds (Combined)

SOURCE OF FUNDS	Estimated 2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	5-Year Total
San José-Santa Clara Treatment Plant Capital Fund (512)							
Beginning Fund Balance	122,434,440	96,359,357	18,573,357	25,233,357	28,929,357	39,512,357	96,359,357 *
Sale of Bonds				178,000,000	90,000,000	28,000,000	296,000,000
Revenue from Other Agencies:							
Federal Government							
- SBWR Master Plan Grant	439,000						
- U.S. Bureau of Reclamation Grant	250,000	250,000	250,000	250,000	250,000	250,000	1,250,000
Water Pollution Control Plant User Agencies							
- 2005 Bond Debt Repayment	1,216,000	1,221,000	1,070,000	165,000	155,000	155,000	2,766,000
- 2015-2016 Bond Debt Service Repayment		576,000	603,000	43,196,000	43,465,000	31,477,000	119,317,000
- Equipment Replacement			580,000	580,000	580,000	580,000	2,320,000
- State Revolving Fund Loan Repayment	1,374,000	1,374,000	1,374,000	1,374,000	555,000		4,677,000
- WPCP Projects	21,341,000	11,553,000	15,382,000	15,774,000	19,858,000	11,731,000	74,298,000
Contributions, Loans and Transfers from:							
Special Funds							
- Transfer for 2015-2016 Debt Service from the Sewer Service and Use Charge Fund (541)		980,000	1,041,000	5,268,000	12,228,000	16,631,000	36,148,000
- Transfer from the Sewage Treatment Plant Connection Fee Fund (539)	3,090,000	3,090,000	3,090,000	3,090,000	1,249,000		10,519,000
- Transfer from the Sewer Service and Use Charge Fund (541)	48,000,000	30,722,000	31,800,000	31,799,000	31,452,000	31,455,000	157,228,000
Interest Income	569,000	1,272,000	2,224,000	3,848,000	4,734,000	4,443,000	16,521,000

2016-2020 Proposed Capital Improvement Program

Source of Funds (Combined)

SOURCE OF FUNDS (CONT'D.)	Estimated 2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	5-Year Total
San José-Santa Clara Treatment Plant Capital Fund (512)							
Miscellaneous Revenue							
– Calpine Metcalf Energy Center Facilities Repayment	389,000	389,000	389,000	389,000	389,000	389,000	1,945,000
– Miscellaneous Revenue	598,000						
Reserve for Encumbrances	58,434,917						
Commercial Paper Proceeds		30,025,000	86,755,000	54,670,000	35,625,000	14,190,000	221,265,000
Total San José-Santa Clara Treatment Plant Capital Fund	**258,135,357**	**177,811,357**	**163,131,357**	**363,636,357**	**269,469,357**	**178,813,357**	**1,040,613,357** *
TOTAL SOURCE OF FUNDS	**258,135,357**	**177,811,357**	**163,131,357**	**363,636,357**	**269,469,357**	**178,813,357**	**1,040,613,357** *

* The 2016-2017 through 2019-2020 Beginning Balances are excluded from the FIVE-YEAR TOTAL SOURCE OF FUNDS to avoid multiple counting of the same funds.

Water Pollution Control

2016-2020 Proposed Capital Improvement Program

Use of Funds (Combined)

USE OF FUNDS	Estimated 2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	5-Year Total
Construction Projects							
Public Art							
Public Art	849,000	41,000	657,000	774,000	799,000	51,000	2,322,000
Total Public Art	**849,000**	**41,000**	**657,000**	**774,000**	**799,000**	**51,000**	**2,322,000**
Preliminary Wastewater Treatment							
Headworks No. 2 Enhancement	100,000						
1. Headworks Improvements	2,536,000	1,836,000	2,763,000	22,011,000	944,000	291,000	27,845,000
2. New Headworks	2,917,000	1,711,000	10,515,000	801,000	75,218,000	1,799,000	90,044,000
Total Preliminary Wastewater Treatment	**5,553,000**	**3,547,000**	**13,278,000**	**22,812,000**	**76,162,000**	**2,090,000**	**117,889,000**
Primary Wastewater Treatment							
3. East Primary Rehabilitation, Seismic Retrofit, and Odor Control		1,636,000	691,000	10,841,000	22,176,000	686,000	36,030,000
4. Iron Salt Feed Station	4,860,000	1,700,000	492,000				2,192,000
Total Primary Wastewater Treatment	**4,860,000**	**3,336,000**	**1,183,000**	**10,841,000**	**22,176,000**	**686,000**	**38,222,000**
Secondary Wastewater Treatment							
Aeration Basin Future Modifications						846,000	846,000
Secondary Clarifier Rehabilitation			448,000	221,000	4,003,000	21,209,000	25,881,000
5. Aeration Tanks and Blower Rehabilitation	1,580,000	435,000	492,000	10,705,000	1,211,000	22,156,000	34,999,000
6. Nitrification Clarifier Rehabilitation	3,300,000		7,161,000	40,592,000	213,000	213,000	48,179,000
Total Secondary Wastewater Treatment	**4,880,000**	**435,000**	**8,101,000**	**51,518,000**	**5,427,000**	**44,424,000**	**109,905,000**

Water Pollution Control

2016-2020 Proposed Capital Improvement Program

Use of Funds (Combined)

USE OF FUNDS (CONT'D.)	Estimated 2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	5-Year Total
Construction Projects							
Tertiary Wastewater Treatment							
Alternative Filter Technology Field Verification						81,000	81,000
Final Effluent Pump Station & Stormwater Channel Improvements						902,000	902,000
New Disinfection Facilities					653,000	299,000	952,000
New Filter Complex	27,000						
7. Filter Rehabilitation	1,153,000	1,061,000	5,741,000	481,000	25,201,000	240,000	32,724,000
8. Outfall Bridge and Levee Improvements	300,000	1,083,000	1,331,000	209,000	6,469,000	320,000	9,412,000
Total Tertiary Wastewater Treatment	**1,480,000**	**2,144,000**	**7,072,000**	**690,000**	**32,323,000**	**1,842,000**	**44,071,000**
Biosolids							
Dissolved Air Flotation Rehabilitation and Odor Control	205,000						
FOG Receiving						313,000	313,000
9. Digested Sludge Dewatering Facility	2,794,000	390,000	12,175,000	48,240,000	3,235,000	3,315,000	67,355,000
10. Digester and Thickener Facilities Upgrade	14,080,000	89,971,000	712,000	360,000	32,000	1,191,000	92,266,000
11. Lagoons and Drying Beds Retirement		443,000	1,158,000	112,000	2,022,000	659,000	4,394,000
Total Biosolids	**17,079,000**	**90,804,000**	**14,045,000**	**48,712,000**	**5,289,000**	**5,478,000**	**164,328,000**
Electrical Systems and Power Generation							
Plant Electrical Reliability	8,216,000						
12. Combined Heat and Power Equipment Repair and Rehabilitation	15,919,000	795,000	120,000				915,000

Water Pollution Control

2016-2020 Proposed Capital Improvement Program

Use of Funds (Combined)

USE OF FUNDS (CONT'D.)	Estimated 2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	5-Year Total
Construction Projects							
Electrical Systems and Power Generation							
13. Energy Generation Improvements	26,912,000	15,000,000	42,018,000	28,282,000	1,400,000		86,700,000
Total Electrical Systems and Power Generation	**51,047,000**	**15,795,000**	**42,138,000**	**28,282,000**	**1,400,000**		**87,615,000**
Advanced Process Control & Automation							
14. Advanced Facility Control and Meter Replacement	3,526,000		4,350,000	23,730,000	1,051,000	193,000	29,324,000
15. Treatment Plant Distributed Control System	1,662,000	500,000	500,000	500,000	500,000		2,000,000
Total Advanced Process Control & Automation	**5,188,000**	**500,000**	**4,850,000**	**24,230,000**	**1,551,000**	**193,000**	**31,324,000**
Site Facility Maintenance and Improvements							
Plant Backup Water Supply	1,064,000						
Treatment Plant Engine Rebuild	660,000						
Treatment Plant Fire Main Replacement	2,041,000						
16. Construction-Enabling Improvements		3,476,000	76,000				3,552,000
17. Equipment Replacement	3,956,000	1,663,000	1,663,000	1,663,000	1,663,000	1,663,000	8,315,000
18. Facility Wide Water Systems Improvements	460,000	1,042,000	2,176,000	11,221,000	247,000	610,000	15,296,000
19. Plant Infrastructure Improvements	4,834,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000
20. Plant Instrument Air System Upgrade	8,540,000		493,000	30,000			523,000
21. Support Building Improvements	490,000	400,000	219,000	4,738,000	806,000	10,192,000	16,355,000
22. Tunnel Rehabilitation	60,000	940,000	141,000	2,421,000	396,000	5,262,000	9,160,000

Water Pollution Control

2016-2020 Proposed Capital Improvement Program

Use of Funds (Combined)

USE OF FUNDS (CONT'D.)	Estimated 2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	5-Year Total
Construction Projects							
Site Facility Maintenance and Improvements							
23. Urgent and Unscheduled Treatment Plant Rehabilitation	3,027,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	7,500,000
24. Yard Piping and Road Improvements	888,000	1,127,000	494,000	492,000	12,443,000	1,674,000	16,230,000
Total Site Facility Maintenance and Improvements	**26,020,000**	**11,148,000**	**7,762,000**	**23,065,000**	**18,055,000**	**21,901,000**	**81,931,000**
South Bay Water Recycling							
SBWR Extension	7,923,000						
SBWR Reservoir Facility	90,000						
25. SBWR System Reliability and Infrastructure Replacement	3,250,000	1,500,000					1,500,000
Total South Bay Water Recycling	**11,263,000**	**1,500,000**					**1,500,000**
Total Construction Projects	**128,219,000**	**129,250,000**	**99,086,000**	**210,924,000**	**163,182,000**	**76,665,000**	**679,107,000**
Non-Construction							
General Non-Construction							
Capital Program and Public Works Department Support Service Costs	692,000	789,000	797,000	805,000	814,000	823,000	4,028,000
Master Plan Updates			3,000,000				3,000,000
Plant Master Plan	125,000						
SBWR Master Plan	918,000						
SBWR Recycling Master Plan Reimbursement	243,000						

Water Pollution Control

2016-2020 Proposed Capital Improvement Program

Use of Funds (Combined)

USE OF FUNDS (CONT'D.)	Estimated 2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	5-Year Total
Non-Construction							
General Non-Construction							
Transfer to Clean Water Financing Authority Debt Service 2015-2016		1,556,000	1,643,000	109,464,000	55,692,000	48,108,000	216,463,000
Transfer to the Clean Water Financing Authority Debt Service Payment Fund	6,915,000	6,943,000	6,788,000	5,881,000	5,524,000	5,527,000	30,663,000
26. Payment for Clean Water Financing Authority Trustee	5,000	5,000	5,000	5,000	5,000	5,000	25,000
27. Preliminary Engineering	5,513,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000
28. Program Management	14,332,000	10,065,000	8,125,000	1,845,000	1,605,000	1,670,000	23,310,000
29. Record Drawings	250,000		12,839,000	162,000	162,000	164,000	13,327,000
30. State Revolving Fund Loan Repayment	4,464,000	4,464,000	4,464,000	4,464,000	1,804,000		15,196,000
Total General Non-Construction	**33,457,000**	**24,822,000**	**38,661,000**	**123,626,000**	**66,606,000**	**57,297,000**	**311,012,000**
Contributions, Loans and Transfers to General Fund							
Transfer to the General Fund - Human Resources/Payroll/ Budget Systems Upgrade	4,000	21,000					21,000
Total Contributions, Loans and Transfers to General Fund	**4,000**	**21,000**					**21,000**
Contributions, Loans and Transfers to Special Funds							
Transfer to the City Hall Debt Service Fund	96,000	145,000	151,000	157,000	169,000	169,000	791,000
Total Contributions, Loans and Transfers to Special Funds	**96,000**	**145,000**	**151,000**	**157,000**	**169,000**	**169,000**	**791,000**
Reserves							
Equipment Replacement Reserve		5,000,000					5,000,000
Total Reserves		**5,000,000**					**5,000,000**

Water Pollution Control

2016-2020 Proposed Capital Improvement Program

Use of Funds (Combined)

USE OF FUNDS (CONT'D.)	Estimated 2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	5-Year Total
Non-Construction							
Total Non-Construction	33,557,000	29,988,000	38,812,000	123,783,000	66,775,000	57,466,000	316,824,000
Ending Fund Balance	96,359,357	18,573,357	25,233,357	28,929,357	39,512,357	44,682,357	44,682,357*
TOTAL USE OF FUNDS	258,135,357	177,811,357	163,131,357	363,636,357	269,469,357	178,813,357	1,040,613,357*

* The 2015-2016 through 2018-2019 Ending Balances are excluded from the FIVE-YEAR TOTAL USE OF FUNDS to avoid multiple counting of the same funds.

2015-2016 Capital Budget

2016-2020 Capital Improvement Program

Water Pollution Control

Detail of Construction Projects

Detail of Non-Construction Projects

The Detail of Construction Projects section provides information on the individual construction projects with funding in 2015-2016. The Detail of Non-Construction Projects section is abbreviated and provides information on the individual non-construction project, with funding in 2015-2016. On the Use of Funds statement, these projects are numbered.

1. Headworks Improvements

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2012
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2015
Council District:	4	**Revised Completion Date:**	3rd Qtr. 2020
Location:	Water Pollution Control Plant		

Description: This project will modify Headworks No. 2 (HW2) to accommodate all dry weather flow. Improvements include re-routing some inlet and recycle flow piping, new storm water pump stations, and other mechanical enhancements to improve reliability and operation performance. In addition, this project will complete a condition assessment of Headworks No. 1 (HW1) to identify equipment that may require rehabilitation. Improvements may include refurbishment of bar screens, grit classifiers, discharge valves, channel gate valves, and/or concrete.

Justification: HW1 was built in the mid-1950s and early 1960s and is the Plant's duty headworks. HW2 was built in 2008 and designed to operate in parallel with HW1 to handle peak hour wet weather flow. This project will improve the functional reliability of HW2 so HW1 can be taken out of service for repair, which will allow it to remain in operation until a new headworks is constructed to serve as the Plant's new duty headworks.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development	161	2,098	2,098		369				369		2,628
Design		322	322		1,798	311			2,109		2,431
Bid & Award		78	78		30	148			178		256
Construction		24	24	1,836	504	21,552	944	170	25,006		25,030
Post Construction		14	14		62			121	183		197
TOTAL	**161**	**2,536**	**2,536**	**1,836**	**2,763**	**22,011**	**944**	**291**	**27,845**		**30,542**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	161	2,536	2,536	1,836	2,763	22,011	944	291	27,845		30,542
TOTAL	**161**	**2,536**	**2,536**	**1,836**	**2,763**	**22,011**	**944**	**291**	**27,845**		**30,542**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2015-2019 CIP - increase of $23.7 million due to incorporation of a portion of Headworks No. 2 Enhancement project.
2016-2020 CIP - increase of $863,000 due to revised cost estimate.

Notes:

This project corresponds to Plant Master Plan Project Nos. 1, 2, and 7 and Validation Project PLH-01. Prior to 2015-2019, this project was titled "Headworks No. 1 Repair and Rehabilitation". The schedule was revised during the 2015-2019 project validation process. This project will have Close-Out costs only in 2020-2021.

FY Initiated:	2012-2013	**Appn. #:**	7448
Initial Project Budget:	$5,975,000	**USGBC LEED:**	N/A

2. New Headworks

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2012
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2013
Council District:	4	**Revised Completion Date:**	2nd Qtr. 2022
Location:	Water Pollution Control Plant		

Description: This project will construct a new headworks to serve as the Plant's duty headworks. It also involves increasing the equalization basin volume and installing lining and spraydown systems to facilitate cleaning. The project will also install new covers over select areas, such as junction boxes and grit collection, for odor control. New conduits will be installed for the collected foul air, and a new odor treatment facility that could combine biological and/or chemical treatment technology will be provided.

Justification: The original headworks, Headworks No. 1, was built in the mid 1950s and further expanded in the 1960s. Due to its age and condition, extensive structural rehabilitation and mechanical rehabilitation would be needed to operate it as the Plant's long-term duty headworks. Based on previous studies, building a new duty headworks facility would be more cost effective and provide greater operational reliability and enhanced treatment, addressing some of the operational issues currently experienced at the Plant, such as the deposition of grit in downstream processes.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development	331	2,917	2,917	1,711	469				2,180		5,428
Design					7,384	801	160		8,345		8,345
Bid & Award					300				300		300
Construction					2,212		75,058	1,799	79,069	2,599	81,668
Post Construction					150				150	135	285
TOTAL	**331**	**2,917**	**2,917**	**1,711**	**10,515**	**801**	**75,218**	**1,799**	**90,044**	**2,734**	**96,026**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	331	2,917	2,917	1,711	10,515	801	75,218	1,799	90,044	2,734	96,026
TOTAL	**331**	**2,917**	**2,917**	**1,711**	**10,515**	**801**	**75,218**	**1,799**	**90,044**	**2,734**	**96,026**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2015-2019 CIP - increase of $11.8 million due to incorporation of a portion of Headworks No. 2 Enhancement project.
2016-2020 CIP - increase of $4.8 million due to revised cost estimate.

Notes:

This project corresponds to Plant Master Plan Project Nos. 1, 3, 4, 5, and 8 and Validation Project PLH-02. Prior to 2015-2019, this project was titled "Headworks No. 2 Expansion". The schedule was revised during the 2015-2019 project validation process.

FY Initiated:	2012-2013	**Appn. #:**	7449
Initial Project Budget:	$79,400,000	**USGBC LEED:**	N/A

3. East Primary Rehabilitation, Seismic Retrofit, and Odor Control

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2009
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	3rd Qtr. 2010
Department:	Environmental Services	**Initial Completion Date:**	4th Qtr. 2012
Council District:	4	**Revised Completion Date:**	4th Qtr. 2025
Location:	Water Pollution Control Plant		

Description: This project rehabilitates the existing primary clarifiers, including the coating of concrete and replacement of clarifier mechanisms with corrosion resistant materials. It also includes structural retrofits to allow new covers to be installed over a portion or all of the primary treatment area to contain odors. A new odor extraction and treatment system will also be constructed.

Justification: This project restores the mechanical and structural integrity of the aging clarifiers and provides odor control measures.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development	30			1,636	691	295			2,622		2,652
Design						9,411	1,211		10,622		10,622
Bid & Award						138	70		208		208
Construction						997	20,895	686	22,578	75,977	98,555
Post Construction										1,167	1,167
TOTAL	**30**			**1,636**	**691**	**10,841**	**22,176**	**686**	**36,030**	**77,144**	**113,204**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	30			1,636	691	10,841	22,176	686	36,030	77,144	113,204
TOTAL	**30**			**1,636**	**691**	**10,841**	**22,176**	**686**	**36,030**	**77,144**	**113,204**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2012-2016 CIP - increase of $80.1 million; $16.626 million due to increase of scope to incorporate master planning recommendations for seismic upgrades and odor control measures; $63.52 million reflects the addition of the Beyond 5-Year expense not previously programmed.
2013-2017 CIP - decrease of $1.7 million due to revised cost estimate.
2015-2019 CIP - increase of $27.5 million due to revised project validation cost estimate.
2016-2020 CIP - increase of $3.6 million due to escalation of construction costs.

Notes:

This project corresponds to Plant Master Plan Project Nos. 9, 10, and 11 and Validation Project PLP-02. The schedule was revised during the 2015-2019 project validation process.

FY Initiated:	2010-2011	**Appn. #:**	7226
Initial Project Budget:	$3,605,000	**USGBC LEED:**	N/A

4. Iron Salt Feed Station

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2010
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	1st Qtr. 2012
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2012
Council District:	4	**Revised Completion Date:**	3rd Qtr. 2017
Location:	Water Pollution Control Plant		

Description: This project constructs a permanent iron salt and polymer dosing station, including a concrete containment structure and ancillary pumping, piping, and instrumentation to deliver chemical solution to incoming wastewater.

Justification: The addition of iron salts and polymer to incoming wastewater will improve Plant operation by enhancing the sludge settling in the primary clarifiers, reducing corrosion and odor, reducing energy usage in the secondary treatment system, and increasing feedstock to digesters, which will increase biogas production.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development	99	1	1								100
Design	42	1,420	1,420								1,462
Bid & Award		22	22	10					10		32
Construction		3,417	3,417	1,690	380				2,070		5,487
Post Construction					112				112		112
TOTAL	**141**	**4,860**	**4,860**	**1,700**	**492**				**2,192**		**7,193**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	141	4,860	4,860	1,700	492				2,192		7,193
TOTAL	**141**	**4,860**	**4,860**	**1,700**	**492**				**2,192**		**7,193**

ANNUAL OPERATING BUDGET IMPACT (000'S)

Cost Offset	(236)	(999)	(1,059)	(1,122)
Maintenance	56	233	243	252
Operating	425	1,883	1,992	2,109
TOTAL	**245**	**1,117**	**1,176**	**1,239**

Major Changes in Project Cost:

2014-2018 CIP - decrease of $347,000 due to scope revision.
2015-2019 CIP - increase of $3.3 million due to revised project validation cost estimate.
2016-2020 CIP - increase of $1.9 million due to revised scope and cost estimate.

Notes:

This project corresponds to Plant Master Plan Project No. 14 and Validation Project PLP-01. The schedule was revised during the 2015-2019 project validation process. This project will have Close-Out costs only in 2017-2018.

FY Initiated:	2010-2011	**Appn. #:**	7230
Initial Project Budget:	$2,340,000	**USGBC LEED:**	N/A

5. Aeration Tanks and Blower Rehabilitation

CSA:	Environmental and Utility Services	**Initial Start Date:**	1st Qtr. 2015
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	3rd Qtr. 2025
Council District:	4	**Revised Completion Date:**	1st Qtr. 2029
Location:	Water Pollution Control Plant		

Description: This project rehabilitates the secondary and nitrification aeration tanks including structural, mechanical, electrical, and instrumentation upgrades. It also replaces the existing coarse bubble diffusers with fine bubble diffusers, installs partition walls, and reconfigures air piping to optimize process treatment capabilities. The project will also install variable frequency drives (VFDs) to the electric driven blowers in Building 40 and decommission the engine drive blowers in the Secondary Blower Building. It will also replace the S11 switchgear and install VFDs on the nitrification blowers. A condition assessment study, aeration assessment, and process modeling will be completed to inform the ultimate project scope.

Justification: The secondary and nitrification aeration tanks were constructed in phases between the 1960s and 1980s. Due to their age and the aggressive and corrosive environment they operate in, extensive rehabilitation is required. Conversion to fine bubble diffusers will increase the oxygen transfer efficiency and decrease energy requirements. Installing VFDs will minimize the impact of starting current on the blowers when the Plant is running on emergency power. Lastly, the S11 switchgear is outdated and needs to be upgraded to be compatible with the new VFDs.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development		1,580	1,580	435	492	41			968		2,548
Design						9,645	1,163		10,808		10,808
Bid & Award						146	48	25	219		219
Construction						873		22,131	23,004	81,392	104,396
Post Construction										1,326	1,326
TOTAL		**1,580**	**1,580**	**435**	**492**	**10,705**	**1,211**	**22,156**	**34,999**	**82,718**	**119,297**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		1,580	1,580	435	492	10,705	1,211	22,156	34,999	82,718	119,297
TOTAL		**1,580**	**1,580**	**435**	**492**	**10,705**	**1,211**	**22,156**	**34,999**	**82,718**	**119,297**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2016-2020 CIP - increase of $4.4 million due to escalation of construction costs.

Notes:

This project corresponds to Plant Master Plan Project Nos. 20, 24, and 85 and Validation Project PLS-01.

FY Initiated:	2014-2015	**Appn. #:**	7677
Initial Project Budget:	$114,880,000	**USGBC LEED:**	N/A

6. Nitrification Clarifier Rehabilitation

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2009
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2024
Council District:	4	**Revised Completion Date:**	2nd Qtr. 2022
Location:	Water Pollution Control Plant		

Description: This project includes phased rehabilitation of the 16 nitrification clarifiers. Structural improvements may include but are not limited to concrete repairs and coating, new clarifier mechanisms and baffle installations, pipe support and meter vault replacements, and walkway improvements. Mechanical improvements may include but are not limited to piping, valve and actuator replacements, spray water system replacements, scum skimmer system upgrades, and return activated sludge piping lining. Electrical and Instrumentation improvements may include but are not limited to motor control center replacements, new wiring, and other electrical equipment upgrades. Other incidental work may include grouting, painting, coating, and other surface treatments.

Justification: The Plant's 16 nitrification clarifiers have been in service for 30 to 40 years depending on the year of construction. A condition assessment study, completed in 2011, recommended phased rehabilitation of the nitrification clarifiers. The improvements are needed to address structural, mechanical, electrical, and instrumentation deficiencies and will extend the useful life of the clarifier assets for an additional 30 years.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development	1,146	3,300	3,300		1,050				1,050		5,496
Design	18				4,711				4,711		4,729
Bid & Award					50	80			130		130
Construction					1,250	40,512	213	213	42,188	426	42,614
Post Construction					100				100	113	213
TOTAL	**1,164**	**3,300**	**3,300**		**7,161**	**40,592**	**213**	**213**	**48,179**	**539**	**53,182**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	1,164	3,300	3,300		7,161	40,592	213	213	48,179	539	53,182
TOTAL	**1,164**	**3,300**	**3,300**		**7,161**	**40,592**	**213**	**213**	**48,179**	**539**	**53,182**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes In Project Cost:

2014-2018 CIP - increase of $13.0 million due to revised estimate.
2015-2019 CIP - increase of $22.0 million due to revised project validation cost estimate.
2016-2020 CIP - decrease of $8.5 million due to revised scope and cost estimate.

Notes:

This project corresponds to Plant Master Plan Project Nos. 21 and Validation Project PLS-02. This project is planned to be completed in multiple phases. However, funding in 2015-2016 was not programmed for this project in order to align project timing and prioritization with staffing resources. Prior to 2016-2020, this project was titled "Secondary and Nitrification Clarifier Rehabilitation".

FY Initiated:	2009-2010	**Appn. #:**	7074
Initial Project Budget:	$26,701,000	**USGBC LEED:**	N/A

7. Filter Rehabilitation

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2011
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	3rd Qtr. 2013
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2013
Council District:	4	**Revised Completion Date:**	2nd Qtr. 2022
Location:	Water Pollution Control Plant		

Description: This project will replace filter media and potentially underdrain systems for all filters. It will also include valve replacements, electrical control replacements, air scouring equipment and piping additions, and concrete repairs. The extent of rehabilitation will depend on the results of a detailed condition assessment to be completed in summer 2016, which will determine whether to fully refurbish the filter facility or keep it operational until a new filter complex is built.

Justification: The existing filter complex was constructed in the 1970s and requires significant refurbishment. The filter media, consisting of anthracite and sand, needs to be replaced and some of the mechanical and electrical components need to be upgraded. These potentially interim improvements are needed to ensure continued regulatory compliance and operational reliability.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development	3	490	490	1,061	598				1,659		2,152
Design	117	22	22		3,568	425			3,993		4,132
Bid & Award	2	1	1		25	56			81		84
Construction	1	591	591		1,500		25,201	240	26,941	116	27,649
Post Construction		49	49		50				50	104	203
TOTAL	**123**	**1,153**	**1,153**	**1,061**	**5,741**	**481**	**25,201**	**240**	**32,724**	**220**	**34,220**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	123	1,153	1,153	1,061	5,741	481	25,201	240	32,724	220	34,220
TOTAL	**123**	**1,153**	**1,153**	**1,061**	**5,741**	**481**	**25,201**	**240**	**32,724**	**220**	**34,220**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2014-2018 CIP - decrease of $2.7 million due to the removal of scope that is dependent on the evaluation of the demonstration project.
2015-2019 CIP - increase of $26.9 million due to revised scope and project validation cost estimate.
2016-2020 CIP - increase of $6.5 million due to revised cost estimate and escalation of construction costs.

Notes:

This project corresponds to Plant Master Plan Project Nos. 31 and 32 and Validation Project PLF-01. Prior to 2015-2019, this project was titled "Filter Improvements". The schedule was revised during the 2015-2019 project validation process.

FY Initiated:	2010-2011	**Appn. #:**	7227
Initial Project Budget:	$3,506,000	**USGBC LEED:**	N/A

8. Outfall Bridge and Levee Improvements

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2014
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2019
Council District:	4	**Revised Completion Date:**	4th Qtr. 2020
Location:	Water Pollution Control Plant		

Description: This project includes a condition assessment, bridge repairs or replacement, levee and levee gate repairs, and electrical transformer refurbishment.

Justification: The existing outfall bridge and instrumentation supports are in poor condition. In addition, the west-side levee of Pond A-18 is experiencing significant erosion. This project will improve the aging facilities to ensure reliability at the outfall compliance point.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development		300	300	1,083	61				1,144		1,444
Design					843	209	61		1,113		1,113
Bid & Award					28		25		53		53
Construction					343		6,383	320	7,046	67	7,113
Post Construction					56				56	49	105
TOTAL		**300**	**300**	**1,083**	**1,331**	**209**	**6,469**	**320**	**9,412**	**116**	**9,828**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		300	300	1,083	1,331	209	6,469	320	9,412	116	9,828
TOTAL		**300**	**300**	**1,083**	**1,331**	**209**	**6,469**	**320**	**9,412**	**116**	**9,828**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2016-2020 CIP - increase of $1.7 million due to escalation of construction costs.

Notes:

This project corresponds to Validation Project PLD-02.

FY Initiated:	2014-2015	**Appn. #:**	7678
Initial Project Budget:	$8,120,000	**USGBC LEED:**	N/A

9. Digested Sludge Dewatering Facility

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2012
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	2nd Qtr. 2014
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2013
Council District:	4	**Revised Completion Date:**	3rd Qtr. 2020
Location:	Water Pollution Control Plant		

Description: This project will construct a new mechanical dewatering facility and support systems to replace the existing sludge storage lagoons and open air solar drying beds. The size, type, design, and technology selected for the new biosolids dewatering facility will depend on an engineering study currently underway that looks at siting, available technologies, and an evaluation of capital and operational costs for various alternatives. All new mechanical dewatering units, feed tank, storage, conveyance, and chemical dosing facilities will be housed in an odor-controlled building.

Justification: The adopted Plant Master Plan recommends consolidating the Plant's operational area by reducing the biosolids process footprint. This project responds to this recommendation. It also provides greater flexibility in biosolids disposal options in anticipation of the potential Newby Island landfill closure in 2025, responds to stricter regulations for landfilling and alternative daily cover, and addresses odor, noise, and aesthetics concerns from the operations of the lagoons and sludge drying beds.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development	527	2,794	2,794	390	1,490				1,880		5,201
Design					5,630	1,080			6,710		6,710
Bid & Award					312	200			512		512
Construction					4,270	46,960	3,235	3,115	57,580		57,580
Post Construction					473			200	673	200	873
TOTAL	**527**	**2,794**	**2,794**	**390**	**12,175**	**48,240**	**3,235**	**3,315**	**67,355**	**200**	**70,876**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	527	2,794	2,794	390	12,175	48,240	3,235	3,315	67,355	200	70,876
TOTAL	**527**	**2,794**	**2,794**	**390**	**12,175**	**48,240**	**3,235**	**3,315**	**67,355**	**200**	**70,876**

ANNUAL OPERATING BUDGET IMPACT (000'S)

Maintenance	234
Operating	2,222
TOTAL	**2,456**

Major Changes in Project Cost:

2014-2018 CIP - increase of $325.0 million due to accelerated project start and compressed implementation schedule.
2015-2019 CIP - decrease of $256.8 million due to creation of separate biosolids projects through project validation.
2016-2020 CIP - increase of $1.6 million due to escalation of construction costs.

Notes:

This project corresponds to Plant Master Plan Project Nos. 44, 54, 57-60, and 64 and Validation Project PS-03. The Expenditure Schedule is based on the design/build estimate. Prior to 2015-2019, this project was titled "New Biosolids Facility". The schedule was revised during the 2015-2019 project validation process.

FY Initiated:	2012-2013	**Appn. #:**	7452
Initial Project Budget:	$1,000,000	**USGBC LEED:**	N/A

10. Digester and Thickener Facilities Upgrade

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2006
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2008
Council District:	4	**Revised Completion Date:**	4th Qtr. 2025
Location:	Water Pollution Control Plant		

Description: This project will rehabilitate up to ten anaerobic digesters through a phased approach. This first phase rehabilitates four digesters. The project also rehabilitates and modifies six dissolved air flotation units, pressure saturation tanks, pipes, pumps, and ancillary equipment. A new odor control system, blending tank, primary sludge screening facility, heat exchangers, waste biogas flare, and polymer dosing facility will be constructed. The digester gas conveyance and tunnel systems will also be upgraded.

Justification: The Plant has 16 anaerobic digesters constructed between 1956 and 1983. This project will restore digester capacity and improve reliability and safety of the gas conveyance system to ensure reliable operation of the digestion process.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development	669	113	113					1,191	1,191	389	2,362
Design	1,844	13,887	13,887	313					313	6,386	22,430
Bid & Award	1	80	80							117	198
Construction	1			89,658	712	344			90,714	55,753	146,468
Post Construction						16	32		48	639	687
TOTAL	**2,515**	**14,080**	**14,080**	**89,971**	**712**	**360**	**32**	**1,191**	**92,266**	**63,284**	**172,145**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	2,515	14,080	14,080	89,971	712	360	32	1,191	92,266	63,284	172,145
TOTAL	**2,515**	**14,080**	**14,080**	**89,971**	**712**	**360**	**32**	**1,191**	**92,266**	**63,284**	**172,145**

ANNUAL OPERATING BUDGET IMPACT (000'S)

Maintenance	11	11
Operating	598	623
TOTAL	**609**	**634**

Major Changes in Project Cost:

2008-2012 CIP-increase of $1.6M based on revised estimates. 2009-2013 CIP-increase of $84.0M due to increased scope. 2010-2014 CIP-increase of $11.5M due to inclusion of digester gas line replacement. 2011-2015 CIP-decrease of $34.0M due to decrease in the number of digesters. 2012-2016 CIP-decrease of $23.2M due to realignment of project. 2013-2017 CIP-increase of $24.2M due to revision of estimation methodology. 2014-2018 CIP-increase of $57.3M to align with the Master Plan recommendation. 2015-2019 CIP- increase of $18.3M due to revised project validation cost estimate. 2016-2020 CIP-increase of $31.4M due to conversion to thermophilic digestion and inclusion of scope from other projects.

Notes:

This project corresponds to Plant Master Plan Project Nos. 45 -53 and Validation Project PS-01. This project is planned to be completed in two phases. Prior to 2015-2019, this project was titled "Digester Rehabilitation".

FY Initiated:	2006-2007	**Appn. #:**	4127
Initial Project Budget:	$1,000,000	**USGBC LEED:**	N/A

11. Lagoons and Drying Beds Retirement

CSA:	Environmental and Utility Services	**Initial Start Date:**	1st Qtr. 2016
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2025
Council District:	4	**Revised Completion Date:**	2nd Qtr. 2028
Location:	Water Pollution Control Plant		

Description: This project will decommission the use of the existing sludge storage lagoons and open-air solar drying beds for post digestion processing through a phased approach. It involves successively turning over and emptying the existing lagoons of their biosolids contents in coordination with commissioning of the new biosolids dewatering facility. The project does not address follow up earthwork or rehabilitation needs to prepare the site for future development.

Justification: The adopted Plant Master Plan recommends consolidating the Plant's operational area including reducing the biosolids process footprint. This project responds to this recommendation. It also provides for more flexibility in biosolids disposal options in anticipation of the potential Newby Island landfill closure in 2025, responds to more stringent regulations for landfilling and alternative daily cover, and addresses odor, noise, and aesthetics concerns from the operations of the lagoons and sludge drying beds.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development				443	1,158	112	111		1,824		1,824
Design							1,363	649	2,012	182	2,194
Bid & Award							42	10	52	12	64
Construction							298		298	29,638	29,936
Post Construction							208		208	156	364
TOTAL				**443**	**1,158**	**112**	**2,022**	**659**	**4,394**	**29,988**	**34,382**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund				443	1,158	112	2,022	659	4,394	29,988	34,382
TOTAL				**443**	**1,158**	**112**	**2,022**	**659**	**4,394**	**29,988**	**34,382**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

N/A

Notes:

This project corresponds to Plant Master Plan Project No. 62 and Validation Project PS-07. Construction costs under this project have been divided into four phases to correspond with yearly retirement requirements.

FY Initiated:	2015-2016	**Appn. #:**	
Initial Project Budget:	$34,382,000	**USGBC LEED:**	N/A

12. Combined Heat and Power Equipment Repair and Rehabilitation

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2012
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2013
Council District:	4	**Revised Completion Date:**	3rd Qtr. 2016
Location:	Water Pollution Control Plant		

Description: This project will install new digester gas compressors housed in a new building, along with new digester gas pre-coolers, cooling towers, gas piping, and associated utility tie-ins. In addition, this project will replace an existing digester gas holder.

Justification: A reliable supply of digester gas will be a key input to the Plant's new cogeneration facility. The existing gas compressors are more than 30 years old and increasingly unreliable and difficult to maintain. The existing digester gas holder was built in 1984 and is currently out of service. Rehabilitating these systems is critical to safely and efficiently manage the Plant's valuable digester gas.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development	3										3
Design	677	140	140								817
Bid & Award	85										85
Construction	29	15,779	15,779	745					745		16,553
Post Construction	1			50	120				170		171
TOTAL	**795**	**15,919**	**15,919**	**795**	**120**				**915**		**17,629**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	795	15,919	15,919	795	120				915		17,629
TOTAL	**795**	**15,919**	**15,919**	**795**	**120**				**915**		**17,629**

ANNUAL OPERATING BUDGET IMPACT (000'S)

Operating					4	4	4	4			
TOTAL					**4**	**4**	**4**	**4**			

Major Changes in Project Cost:

2014-2018 CIP - increase of $8.2 million due to addition of new projects (Digester Gas Compressor Upgrade and Digester Gas Holding Tank Upgrade).
2015-2019 CIP - increase of $600,000 due to increased engineer's estimate for Digester Gas Compressor Upgrade project.
2016-2020 CIP - increase of $5.7 million due to higher than expected construction costs for Digester Gas Compressor Upgrade project.

Notes:

This project corresponds to Validation Projects PE-03 and PE-04. The schedule was revised during the 2015-2019 project validation process.

FY Initiated:	2012-2013	**Appn. #:**	7453
Initial Project Budget:	$3,200,000	**USGBC LEED:**	N/A

13. Energy Generation Improvements

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2012
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2013
Council District:	4	**Revised Completion Date:**	1st Qtr. 2019
Location:	Water Pollution Control Pant		

Description: This project will install new, lower-emission engine-generators to replace the aged existing engine-generators and allow the aged engine-driven blowers to be retired. It includes a new generator building, gas cleaning and blending systems, piping, control system, and motor control centers. This project will also install emergency diesel generators and storage tanks to provide backup power in the event of an extended PG&E power outage. The emergency diesel generators will start operation in 2016-2017 and will have associated maintenance and operating costs.

Justification: Energy generation capacity and operational reliability are significant issues at the Plant. The outdated engine-generators are increasingly difficult to maintain. Moreover, while the existing systems meet current air regulations, they will not meet the stricter regulations anticipated in the future. Replacing these facilities with new lower-emission engine-generators will reduce the risk of operational failure and permit violations while providing reliable energy generating facilities to power the Plant for decades.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development	1,270	679	679								1,949
Design	461	330		5,080	2,885	120			8,085		8,546
Bid & Award	87	362	200	20					20		307
Construction	1	40,541	26,033	9,900	38,660	28,162	1,150		77,872		103,906
Post Construction					473		250		723		723
TOTAL	**1,819**	**41,912**	**26,912**	**15,000**	**42,018**	**28,282**	**1,400**		**86,700**		**115,431**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	1,819	41,912	26,912	15,000	42,018	28,282	1,400		86,700		115,431
TOTAL	**1,819**	**41,912**	**26,912**	**15,000**	**42,018**	**28,282**	**1,400**		**86,700**		**115,431**

ANNUAL OPERATING BUDGET IMPACT (000'S)

Cost Offset							(9,884)	(10,115)			
Maintenance					37	38	(2,442)	(2,469)			
Operating					40	41	7,058	7,415			
TOTAL					**77**	**79**	**(5,268)**	**(5,169)**			

Major Changes in Project Cost:

2014-2018 CIP - increase of $100.0 million due to acceleration of the implementation schedule.
2015-2019 CIP - increase of $24.5 million due to revised program validation cost estimate.
2016-2020 CIP - decrease of $10.4 million due to reduction of project scope and revised cost estimate.

Notes:

This project corresponds to Plant Master Plan Nos. 74, 75, and 76 and Validation Projects PE-01 and PE-02. Prior to 2014-2018, this project was titled "Combined Heat and Power Technology Evaluation".

FY Initiated:	2012-2013	**Appn. #:**	7454
Initial Project Budget:	$1,300,000	**USGBC LEED:**	N/A

14. Advanced Facility Control and Meter Replacement

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2010
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2014
Council District:	4	**Revised Completion Date:**	4th Qtr. 2019
Location:	Water Pollution Control Plant		

Description: This project will develop a Plant-wide automation master plan, replace existing flow meters and actuators, and upgrade sensors, controls, and monitoring equipment throughout the Plant.

Justification: The Plant currently has hundreds of meters measuring liquid, sludge, and gas streams. Many existing sensors, actuators, and flow meters are inaccurate or unreliable. Due to their age, it is more cost effective to replace them with modern equipment to ensure performance reliability and assure that needed components are available for ongoing maintenance. This project will allow the Plant to move towards improved data capture, resulting in greater operational reliability and flexibility.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development	45	1,549	1,549		66				66		1,660
Design	46	685	685		2,979	73			3,052		3,783
Bid & Award		19	19		42	21			63		82
Construction	36	1,273	1,273		1,158	23,636	1,051	88	25,933		27,242
Post Construction	147				105			105	210		357
TOTAL	**274**	**3,526**	**3,526**		**4,350**	**23,730**	**1,051**	**193**	**29,324**		**33,124**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	274	3,526	3,526		4,350	23,730	1,051	193	29,324		33,124
TOTAL	**274**	**3,526**	**3,526**		**4,350**	**23,730**	**1,051**	**193**	**29,324**		**33,124**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2012-2016 CIP - decrease of $5.9 million due to decreased scope.
2013-2017 CIP - decrease of $2.1 million due to the establishment of the Treatment Plant Distributed Control System project as part of the approval of the 2011-2012 Mid-Year Budget Review.
2014-2018 CIP - increase of $500,000 due to updated cost estimate.
2015-2019 CIP - increase of $30.4 million due to revised scope, addition of meter replacement scope, and project validation cost estimate.
2016-2020 CIP - decrease of $823,000 due to reduction of project scope.

Notes:

This project corresponds to Plant Master Plan No. 90 and Validation Project PA-01. Prior to the 2015-2019 CIP, this project was titled "Advanced Process Control and Automation". This project is planned to be completed in two phases. The schedule was revised during the 2015-2019 project validation process. Funding in 2015-2016 was not programmed for this project in order to align project timing and prioritization with staffing resources.

FY Initiated:	2010-2011	**Appn. #:**	7224
Initial Project Budget:	$11,000,000	**USGBC LEED:**	N/A

15. Treatment Plant Distributed Control System

CSA:	Environmental and Utility Services	**Initial Start Date:**	1st Qtr. 2012
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2016
Council District:	4	**Revised Completion Date:**	2nd Qtr. 2019
Location:	Water Pollution Control Plant		

Description: This project will upgrade and convert the existing Distributed Control System (DCS) at the Plant. The system is composed of a network of field controllers, workstations, and servers that control most aspects of Plant operations.

Justification: The current control system is outdated and will no longer be supported by the vendor beginning in 2015. Upgrading the system is vital to maintaining efficient operations and improving monitoring capabilities.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Design	253	75	75	75	75	75	75		300		628
Construction	1,380	1,693	1,587	425	425	425	425		1,700		4,667
TOTAL	**1,633**	**1,768**	**1,662**	**500**	**500**	**500**	**500**		**2,000**		**5,295**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	1,633	1,768	1,662	500	500	500	500		2,000		5,295
TOTAL	**1,633**	**1,768**	**1,662**	**500**	**500**	**500**	**500**		**2,000**		**5,295**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2014-2018 CIP - increase of $499,000 due to higher than expected consultant costs.
2015-2019 CIP - decrease of $163,000 due to lower than expected construction costs.
2016-2020 CIP - increase of $894,000 due to inclusion of an additional project phase.

Notes:

FY Initiated:	2012-2013	**Appn. #:**	7394
Initial Project Budget:	$4,065,000	**USGBC LEED:**	N/A

16. Construction-Enabling Improvements

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2015
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	4th Qtr. 2016
Council District:	4	**Revised Completion Date:**	
Location:	Water Pollution Control Plant		

Description: This project provides funding for construction management trailers, utility connections, fencing, and security facilities. In addition, it includes road and parking improvements and access improvements from Zanker Road to the Plant.

Justification: This project provides the infrastructure necessary to support the increased construction activity anticipated at the Plant.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Design				520					520		520
Bid & Award				65					65		65
Construction				2,891	21				2,912		2,912
Post Construction					55				55		55
TOTAL				**3,476**	**76**				**3,552**		**3,552**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund				3,476	76				3,552		3,552
TOTAL				**3,476**	**76**				**3,552**		**3,552**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

N/A

Notes:

FY Initiated:	2015-2016	**Appn. #:**	
Initial Project Budget:	$3,552,000	**USGBC LEED:**	N/A

17. Equipment Replacement

CSA:	Environmental and Utility Services	**Initial Start Date:**	Ongoing
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	Ongoing
Council District:	4	**Revised Completion Date:**	
Location:	Water Pollution Control Plant		

Description: This allocation provides for the ongoing replacement and rehabilitation of equipment at the Plant. Equipment anticipated to be replaced or rehabilitated includes air compressors, tanks, pumps, motors, control systems, valves, heat exchangers, engine auxiliaries, lab instruments, and other equipment as required.

Justification: The replacement and rehabilitation of Plant equipment are necessary as a result of wear, obsolescence, or new or updated regulatory requirements and will ensure continued efficient operation of the Plant facilities.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development Design Construction Equipment		3,956	3,956	1,663	1,663	1,663	1,663	1,663	8,315		
TOTAL		**3,956**	**3,956**	**1,663**	**1,663**	**1,663**	**1,663**	**1,663**	**8,315**		

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		3,956	3,956	1,663	1,663	1,663	1,663	1,663	8,315		
TOTAL		**3,956**	**3,956**	**1,663**	**1,663**	**1,663**	**1,663**	**1,663**	**8,315**		

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

N/A

Notes:

Project schedule dates and selected budget information are not provided due to the ongoing nature of this project.

FY Initiated:	Ongoing	**Appn. #:**	4332
Initial Project Budget:		**USGBC LEED:**	N/A

18. Facility Wide Water Systems Improvements

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2014
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	1st Qtr. 2022
Council District:	4	**Revised Completion Date:**	3rd Qtr. 2020
Location:	Water Pollution Control Plant		

Description: This project rehabilitates, replaces, and/or extends the Plant's four water systems including piping, valves, pumps, controls, and other ancillary equipment. The scope of work will be based on hydraulic modeling and study of existing and future water demands at the Plant. The project may be constructed in phases based on the outcome of the study and priority of needs.

Justification: The Plant's four water systems include potable water, groundwater, process/fire protection water, and recycled water. These were constructed over time with various Plant expansions and are in need of rehabilitation and upgrade due to age, condition, worker safety, and code compliance requirements. In addition, changes to water uses and demands have not been addressed over time. An updated hydraulic model and assessment of current and future water demands will allow for the proper sizing of these systems to improve current and future performance and reduce damage to pumping equipment.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development		460	460	1,017					1,017		1,477
Design				25	2,176	283			2,484		2,484
Bid & Award						126			126		126
Construction						10,812	247	436	11,495		11,495
Post Construction								174	174		174
TOTAL		**460**	**460**	**1,042**	**2,176**	**11,221**	**247**	**610**	**15,296**		**15,756**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		460	460	1,042	2,176	11,221	247	610	15,296		15,756
TOTAL		**460**	**460**	**1,042**	**2,176**	**11,221**	**247**	**610**	**15,296**		**15,756**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2016-2020 CIP - increase of $1.6 million due to escalation of construction costs.

Notes:

This project corresponds to Plant Master Plan Project No. 105 and Validation Project PF-06. This project will have Close-Out costs only in 2020-2021.

FY Initiated:	2014-2015	**Appn. #:**	7679
Initial Project Budget:	$14,130,000	**USGBC LEED:**	N/A

19. Plant Infrastructure Improvements

CSA:	Environmental and Utility Services	**Initial Start Date:**	Ongoing
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	Ongoing
Council District:	4	**Revised Completion Date:**	
Location:	Water Pollution Control Plant		

Description: This allocation provides for improvements, rehabilitation, or replacement of existing Plant infrastructure. Examples of the ongoing replacement and rehabilitation work include handrail replacement, concrete repairs, telecommunication systems upgrade, and Plant support system improvements.

Justification: Many mechanical, electrical, and structural assets at the Plant are in poor condition due to age and wear. Rehabilitation, improvements, and replacement of capital infrastructure are necessary to maintain process viability and to ensure regulatory compliance, structural integrity, reliability, functionality, and safety of Plant buildings and process facilities.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development		539	539								
Design		154	154								
Bid & Award		6	6								
Construction		3,878	3,878	994	1,000	1,000	1,000	1,000	4,994		
Post Construction		257	257	6					6		
Program Management											
TOTAL		**4,834**	**4,834**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**5,000**		

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		4,834	4,834	1,000	1,000	1,000	1,000	1,000	5,000		
TOTAL		**4,834**	**4,834**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**5,000**		

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

N/A

Notes:

This project corresponds to Plant Master Plan Project No. 97 and Validation Project PF-03. Project schedule dates and selected budget information are not provided due to the ongoing nature of this project.

FY Initiated:	Ongoing	**Appn. #:**	5690
Initial Project Budget:		**USGBC LEED:**	N/A

20. Plant Instrument Air System Upgrade

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2014
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	1st Qtr. 2019
Council District:	4	**Revised Completion Date:**	1st Qtr. 2018
Location:	Water Pollution Control Plant		

Description: This project replaces the existing high-pressure Plant instrument air supply system with a new above-grade distributed system. This project also makes electrical upgrades to provide for power and redundancy improvements to the Plant air supply system.

Justification: The instrument air supply system plays a critical role by providing high pressure air for pneumatic operations and controls of valves and instruments located throughout the Plant process areas. The existing system is outdated and its location in the basement of the Secondary Blower Building makes it vulnerable to flooding. The existing system also lacks an independent power source and sufficient reservoirs for maintaining operations during an extended power failure. Replacement of the system will improve operational reliability and minimize interruptions to critical operations.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development		278	278								278
Design		731	731								731
Bid & Award		190	190								190
Construction		7,316	7,316		493				493		7,809
Post Construction		25	25			30			30		55
TOTAL		**8,540**	**8,540**		**493**	**30**			**523**		**9,063**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		8,540	8,540		493	30			523		9,063
TOTAL		**8,540**	**8,540**		**493**	**30**			**523**		**9,063**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2016-2020 CIP - decrease of $37,000 due to revised cost estimate.

Notes:

This project corresponds to Validation Project PF-07. Funding in 2015-2016 was not programmed for this project in order to align project timing and prioritization with staffing resources.

FY Initiated:	2014-2015	**Appn. #:**	7680
Initial Project Budget:	$9,100,000	**USGBC LEED:**	N/A

21. Support Building Improvements

CSA:	Environmental and Utility Services	**Initial Start Date:**	1st Qtr. 2015
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	3rd Qtr. 2023
Council District:	4	**Revised Completion Date:**	4th Qtr. 2026
Location:	Water Pollution Control Plant		

Description: This project constructs various tenant improvements to the administration, operations, engineering, and other support buildings located throughout the Plant. It may include floor, ceiling, wall, partition, plumbing, heating, ventilation and air conditioning upgrades, fire protection, and security improvements, as well as ancillary landscaping improvements. It also constructs new warehousing facilities and an electronic warehouse management system which may include new computers, a central database, barcode scanners, mobile tablets, and other technology improvements. This project will be constructed in phases based on a detailed tenant improvement study, warehouse design study, and priority of needs.

Justification: Most of the buildings at the Plant are between 30 and 50 years old and are in need of refurbishment to improve worker health, safety, and environment. The tenant improvements are also needed to bring the buildings into compliance with current building and safety codes. The new warehousing facility and warehouse management system will improve operational efficiency through better control of the movement and storage of materials, including shipping, receiving, material stocking, use, and distribution.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development		490	490	400	219	101			720		1,210
Design						4,095	806	29	4,930		4,930
Bid & Award						67		34	101		101
Construction						475		10,129	10,604	37,333	47,937
Post Construction										556	556
TOTAL		**490**	**490**	**400**	**219**	**4,738**	**806**	**10,192**	**16,355**	**37,889**	**54,734**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		490	490	400	219	4,738	806	10,192	16,355	37,889	54,734
TOTAL		**490**	**490**	**400**	**219**	**4,738**	**806**	**10,192**	**16,355**	**37,889**	**54,734**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2016-2020 CIP - decrease of $856,000 due to revised cost estimate.

Notes:

This project corresponds to Plant Master Plan Project Nos. 94, 95, 96, 98, 106, and 107 and Validation Project PF-02.

FY Initiated:	2014-2015	**Appn. #:**	7681
Initial Project Budget:	$55,590,000	**USGBC LEED:**	N/A

22. Tunnel Rehabilitation

CSA:	Environmental and Utility Services	**Initial Start Date:**	2nd Qtr. 2015
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	4th Qtr. 2024
Council District:	4	**Revised Completion Date:**	3rd Qtr. 2026
Location:	Water Pollution Control Plant		

Description: This project will rehabilitate and make safety improvements to the tunnel system throughout the Plant. The work may include structural, mechanical, electrical, ventilation, fire safety, and coating improvements and will be completed in phases based on a detailed condition assessment, physical testing, and prioritization of needs.

Justification: The Plant has an extensive tunnel system that houses piping, valves, pumps, controls, and other equipment. Many of these tunnels were built more than 50 years ago and need to be rehabilitated and upgraded to ensure compliance with safety requirements. To the extent practical, obsolete piping in the tunnels should also be removed to improve maintenance access and make room for new process piping.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development		60	60	940	141	68			1,149		1,209
Design						2,088	384		2,472		2,472
Bid & Award						33	12	5	50		50
Construction						232		5,257	5,489	18,222	23,711
Post Construction										277	277
TOTAL		**60**	**60**	**940**	**141**	**2,421**	**396**	**5,262**	**9,160**	**18,499**	**27,719**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		60	60	940	141	2,421	396	5,262	9,160	18,499	27,719
TOTAL		**60**	**60**	**940**	**141**	**2,421**	**396**	**5,262**	**9,160**	**18,499**	**27,719**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2016-2020 CIP - increase of $2.2 million due to escalation of construction costs.

Notes:

This project corresponds to Plant Master Plan Project Nos. 12, 13, 46, 103, and 104 and Validation Project PF-01.

FY Initiated:	2014-2015	**Appn. #:**	7698
Initial Project Budget:	$25,550,000	**USGBC LEED:**	N/A

23. Urgent and Unscheduled Treatment Plant Rehabilitation

CSA:	Environmental and Utility Services	**Initial Start Date:**	Ongoing
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	Ongoing
Council District:	4	**Revised Completion Date:**	
Location:	Water Pollution Control Plant		

Description: This ongoing allocation is used to investigate, prioritize, and rehabilitate structures and systems at the Water Pollution Control Plant. This funding will be used to respond to the Plant's urgent maintenance and rehabilitation needs that cannot be programmed during the annual CIP budget process.

Justification: This allocation is required due to the deterioration of structures and systems at the Plant.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development		2,431	2,331	1,500	1,500	1,500	1,500	1,500	7,500		
Design		190	190								
Construction		500	500								
Post Construction		6	6								
TOTAL		**3,127**	**3,027**	**1,500**	**1,500**	**1,500**	**1,500**	**1,500**	**7,500**		

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		3,127	3,027	1,500	1,500	1,500	1,500	1,500	7,500		
TOTAL		**3,127**	**3,027**	**1,500**	**1,500**	**1,500**	**1,500**	**1,500**	**7,500**		

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

N/A

Notes:

Project schedule dates and selected budget information are not provided due to the ongoing nature of this project.

FY Initiated:	Ongoing	**Appn. #:**	7395
Initial Project Budget:		**USGBC LEED:**	N/A

24. Yard Piping and Road Improvements

CSA:	Environmental and Utility Services	**Initial Start Date:**	Ongoing
CSA Outcome:	Reliable Utility Infrastructure	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	Ongoing
Council District:	4	**Revised Completion Date:**	
Location:	Water Pollution Control Plant		

Description: This project will rehabilitate and/or replace process piping systems, valves, and related appurtenances throughout the Plant. The work will be completed in phases based on the outcome of a detailed condition assessment, physical testing, and prioritization of needs. This project will also make roadway and drainage-related improvements throughout the Plant's main operations and residual management areas.

Justification: The Plant has approximately 300,000 linear feet of piping along with associated valves and related appurtenances. The pipes range in diameter from 8 inches to 144 inches and carry gas, liquids, sludge, air, steam, and other process streams to and from the various treatment areas. The pipes vary in age, material, condition, reliability, and redundancy. Over 70 percent of the piping was installed more than 25 years ago and is in need of rehabilitation or replacement due to age, failure, and/or excessive maintenance. The Plant also has an extensive roadway network, nearly 40,000 linear feet of paved surfaces, that needs rehabilitation and/or replacement due to excessive wear, heavy vehicle traffic, and drainage issues.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development		362	362	1,127	494	492	10		2,123		
Design		1	1				11,079	1,602	12,681		
Bid & Award		1	1				166	72	238		
Construction		514	514				1,188		1,188		
Post Construction		10	10								
TOTAL		**888**	**888**	**1,127**	**494**	**492**	**12,443**	**1,674**	**16,230**		

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		888	888	1,127	494	492	12,443	1,674	16,230		
TOTAL		**888**	**888**	**1,127**	**494**	**492**	**12,443**	**1,674**	**16,230**		

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

N/A

Notes:

Project schedule dates and selected budget information are not provided due to the ongoing nature of this project. This project corresponds to Plant Master Plan Project Nos. 98 and 100 and Validation Project PF-04. Prior to 2015-2019, this project was titled "Treatment Plant Street Rehabilitation".

FY Initiated:	Ongoing	**Appn. #:**	7396
Initial Project Budget:		**USGBC LEED:**	N/A

25. SBWR System Reliability and Infrastructure Replacement

CSA:	Environmental and Utility Services	**Initial Start Date:**	3rd Qtr. 2012
CSA Outcome:	Safe, Reliable, and Sufficient Water Supply	**Revised Start Date:**	
Department:	Environmental Services	**Initial Completion Date:**	2nd Qtr. 2016
Council District:	4	**Revised Completion Date:**	
Location:	Water Pollution Control Plant		

Description: This allocation will be used for system reliability improvements including, but not limited to, rehabilitation and/or replacement of pump station components (pumps, motors, and ancillary equipment), control and communication systems, pipelines, and other system-related infrastructure.

Justification: This project improves system reliability, addresses critical infrastructure needs, and ensures the integrity and reliability of the distribution system.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Design	18										18
Construction	115	3,250	3,250	1,500					1,500		4,865
TOTAL	**133**	**3,250**	**3,250**	**1,500**					**1,500**		**4,883**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	133	3,250	3,250	1,500					1,500		4,883
TOTAL	**133**	**3,250**	**3,250**	**1,500**					**1,500**		**4,883**

ANNUAL OPERATING BUDGET IMPACT (000'S)

None

Major Changes in Project Cost:

2015-2019 CIP - decrease of $1.1 million due to reduction of scope.
2016-2020 CIP - decrease of $505,000 due to reduction of scope.

Notes:

FY Initiated:	2012-2013	**Appn. #:**	7455
Initial Project Budget:	$6,500,000	**USGBC LEED:**	N/A

26. Payment for Clean Water Financing Authority Trustee

CSA: Environmental and Utility Services
CSA Outcome: Reliable Utility Infrastructure
Department: Environmental Services
Description: This allocation provides for administrative costs of the San José/Santa Clara Clean Water Financing Authority related to bond issuances.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Program Management		5	5	5	5	5	5	5	25		
TOTAL		**5**	**5**	**5**	**5**	**5**	**5**	**5**	**25**		

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		5	5	5	5	5	5	5	25		
TOTAL		**5**	**5**	**5**	**5**	**5**	**5**	**5**	**25**		

Notes:
Selected budget information is not provided due to the ongoing nature of this project.

Appn. #: 6584

27. Preliminary Engineering

CSA: Environmental and Utility Services
CSA Outcome: Reliable Utility Infrastructure
Department: Environmental Services
Description: This allocation provides funding to support preliminary engineering for Plant-related projects, including studies, pilots, and field verifications to evaluate impacts on operations.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development		5,513	5,513	1,000	1,000	1,000	1,000	1,000	5,000		
TOTAL		**5,513**	**5,513**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**5,000**		

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		5,513	5,513	1,000	1,000	1,000	1,000	1,000	5,000		
TOTAL		**5,513**	**5,513**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**5,000**		

Notes:
Selected budget information is not provided due to the ongoing nature of this project.

Appn. #: 7456

28. Program Management

CSA: Environmental and Utility Services
CSA Outcome: Reliable Utility Infrastructure
Department: Environmental Services
Description: This allocation funds the administration and management of the Water Pollution Control CIP.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development Program Management		14,332	14,332	10,065	8,125	1,845	1,605	1,670	23,310		
TOTAL		**14,332**	**14,332**	**10,065**	**8,125**	**1,845**	**1,605**	**1,670**	**23,310**		

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		14,332	14,332	10,065	8,125	1,845	1,605	1,670	23,310		
TOTAL		**14,332**	**14,332**	**10,065**	**8,125**	**1,845**	**1,605**	**1,670**	**23,310**		

Notes:
Selected budget information is not provided due to the ongoing nature of this project.

Appn. #: 7481

29. Record Drawings

CSA: Environmental and Utility Services
CSA Outcome: Reliable Utility Infrastructure
Department: Environmental Services
Description: This project develops a document management system and standards for electronically capturing, indexing, storing, retrieving, distributing, and versioning master drawings, specifications, and other final design documents. It also involves inventorying, developing, updating, and integrating existing records and field drawings.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Development					58				58		58
Post Construction		250	250		12,781	162	162	164	13,269		13,519
TOTAL		**250**	**250**		**12,839**	**162**	**162**	**164**	**13,327**		**13,577**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund		250	250		12,839	162	162	164	13,327		13,577
TOTAL		**250**	**250**		**12,839**	**162**	**162**	**164**	**13,327**		**13,577**

Notes:
This project corresponds to Plant Master Plan Project No. 114 and Validation Project PF-05. Funding in 2016-2017 is for the consultant encumbrance and some staff costs; the remaining years of this project fund staff costs necessary to complete the project.

Appn. #: 7683

30. State Revolving Fund Loan Repayment

CSA: Environmental and Utility Services

CSA Outcome: Healthy Streams, Rivers, Marsh and Bay

Department: Environmental Services

Description: This allocation provides for the repayment of low interest State loans awarded for South Bay Water Recycling projects.

EXPENDITURE SCHEDULE (000'S)

Cost Elements	Prior Years	2014-15 Appn.	2014-15 Estimate	2015-16	2016-17	2017-18	2018-19	2019-20	5-Year Total	Beyond 5-Year	Project Total
Debt Service	67,654	4,464	4,464	4,464	4,464	4,464	1,804		15,196		87,314
TOTAL	**67,654**	**4,464**	**4,464**	**4,464**	**4,464**	**4,464**	**1,804**		**15,196**		**87,314**

FUNDING SOURCE SCHEDULE (000'S)

San José-Santa Clara Treatment Plant Capital Fund	67,654	4,464	4,464	4,464	4,464	4,464	1,804		15,196		87,314
TOTAL	**67,654**	**4,464**	**4,464**	**4,464**	**4,464**	**4,464**	**1,804**		**15,196**		**87,314**

Appn. #: 6590

2015-2016 Capital Budget

2016-2020 Capital Improvement Program

Water Pollution Control

Summary of Projects that Start after 2015-2016

Summary of Reserves

Explanation of Funds

Flow and Priority of Funds

The Summary of Projects that Start after 2015-2016 includes those projects that have funding budgeted starting after 2015-2016. The Summary of Reserves includes all reserves budgeted within the Five-Year Capital Improvement Program. On the Use of Funds statement, the projects in these summaries are not numbered.

Summary of Projects that Start after 2015-2016

Project Name:	**Aeration Basin Future Modifications**	**Initial Start Date:**	3rd Qtr. 2019
5-Year CIP Budget:	$846,000	**Revised Start Date:**	
Total Budget:	$50,277,000	**Initial End Date:**	4th Qtr. 2030
Council District:	4	**Revised End Date:**	
USGBC LEED:	N/A		

Description: This project modifies the existing step-feed aeration basins to a Modified Ludzack-Ettinger (MLE) process, which would involve structural modifications to existing tanks and new mixers, pumps, fine bubble diffusers, and methanol feed systems.

Project Name:	**Alternative Filter Technology Field Verification**	**Initial Start Date:**	3rd Qtr. 2019
		Revised Start Date:	
5-Year CIP Budget:	$81,000	**Initial End Date:**	3rd Qtr. 2024
Total Budget:	$3,258,000	**Revised End Date:**	
Council District:	4		
USGBC LEED:	N/A		

Description: The Plant has several filtration options to achieve NPDES permit compliance. One approach is to rehabilitate the existing filters. Another approach is to replace existing dual-membrane filters with alternative technology, such as disk filters. This project will field test and verify up to three filtration technologies to determine the alternative most suitable for the needs of the Plant's secondary effluent, for both Bay discharge and recycled water supply.

Project Name:	**FOG Receiving**	**Initial Start Date:**	3rd Qtr. 2019
5-Year CIP Budget:	$313,000	**Revised Start Date:**	
Total Budget:	$12,850,000	**Initial End Date:**	2nd Qtr. 2026
Council District:	4	**Revised End Date:**	
USGBC LEED:	N/A		

Description: This project constructs a new FOG (Fats, Oils, Grease) receiving station; including storage tanks, access control, feed piping from the receiving station to the digesters accepting FOG, and a ½-mile of access road improvements.

Project Name:	**Final Effluent Pump Station & Stormwater Channel Improvements**	**Initial Start Date:**	3rd Qtr. 2019
		Revised Start Date:	
5-Year CIP Budget:	$902,000	**Initial End Date:**	3rd Qtr. 2025
Total Budget:	$47,358,000	**Revised End Date:**	
Council District:	4		
USGBC LEED:	N/A		

Description: This project constructs a new pump station to hydraulically push the Plant's final treated effluent to the Coyote Creek. Additionally, it will improve the existing stormwater channel by rehabilitating the flapper gates and embankments.

Summary of Projects that Start after 2015-2016

Project Name:	**Master Plan Updates**	**Initial Start Date:**	4th Qtr. 2016
5-Year CIP Budget:	$3,000,000	**Revised Start Date:**	
Total Budget:	$3,000,000	**Initial End Date:**	4th Qtr. 2018
Council District:	4	**Revised End Date:**	
USGBC LEED:	N/A		

Description: This project will periodically review and update the Plant Master Plan to ensure program goals and objectives are being met and incorporate any major changes that may be triggered by operational, regulatory, technological, and economic conditions.

Project Name:	**New Disinfection Facilities**	**Initial Start Date:**	2nd Qtr. 2019
5-Year CIP Budget:	$952,000	**Revised Start Date:**	
Total Budget:	$56,977,000	**Initial End Date:**	1st Qtr. 2027
Council District:	4	**Revised End Date:**	4th Qtr. 2027
USGBC LEED:	N/A		

Description: This project constructs a new disinfection facility (currently assumed to be based on ultraviolet (UV) technology) to replace the existing sodium hypochlorite disinfection facility. It may also expand the existing chlorine contact basins to accommodate future peak hour wet weather flows and construct a new on-site hypochlorite generation facility. This project would only be triggered if new regulations concerning emerging contaminants are issued by the Regional Water Board within the next two to three NPDES permit cycles, and additional studies confirm future flow projections.

Project Name:	**Secondary Clarifier Rehabilitation**	**Initial Start Date:**	1st Qtr. 2017
5-Year CIP Budget:	$25,881,000	**Revised Start Date:**	
Total Budget:	$26,559,000	**Initial End Date:**	2nd Qtr. 2020
Council District:	4	**Revised End Date:**	4th Qtr. 2021
USGBC LEED:	N/A		

Description: The Plant has 26 secondary clarifiers configured with peripheral mix liquor feed channel, and either central or peripheral launders. The first phase of this project rehabilitates one secondary (BNR1) clarifier and retrofits it to receive a new baffle configuration based on computational fluid dynamic (CFD) modeling results. The new configuration is expected to improve clarifier performance and efficiency. The subsequent phases of the project will rehabilitate and convert the remaining 25 clarifiers based on the results of the first phase. Rehabilitation will include structural, mechanical, electrical, and instrumentation improvements.

Summary of Reserves

Project Name:	**Equipment Replacement Reserve**	**Initial Start Date:**	N/A
5-Year CIP Budget:	$5,000,000	**Revised Start Date:**	
Total Budget:	$5,000,000	**Initial End Date:**	N/A
Council District:	4	**Revised End Date:**	
USGBC LEED:	N/A		

Description: This reserve provides for unforeseen replacement and rehabilitation of equipment that, due to age, wear, or obsolescence, must be replaced for the efficient operation of the Plant.

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Explanation of Funds

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

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

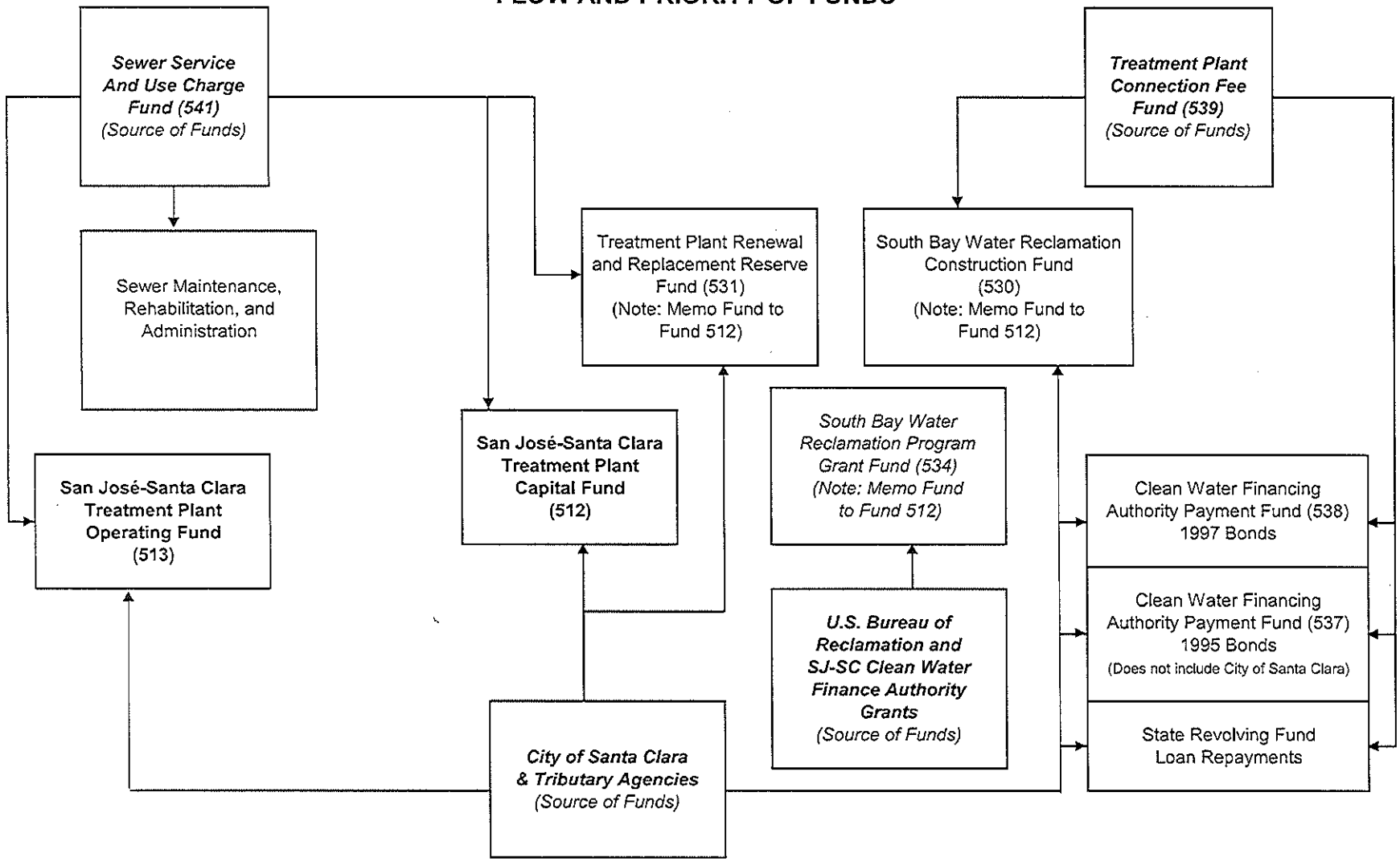
Tributary agencies are assessed for their share of annual operation, maintenance, equipment, and facilities replacement and capital costs, based on their respective flow and strength of sewage conveyed to the Plant.

The San José Sewer Service and Use Charge Fund was established in the San José Municipal Code Section 15.12.640 in August 1959. This fund is the depository of revenues from Sewer Service and Use Charges received from residential, commercial, and industrial users of the sanitary sewer system. A portion of these monies is transferred to the Operating and Capital Funds to pay for the City of San José's share of operating and capital costs of the Plant.

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

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

WATER POLLUTION CONTROL PLANT
FLOW AND PRIORITY OF FUNDS



The arrows indicate the flow of funds from each of the various sources to the fund in which the revenues are expended.

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: TREATMENT PLANT ADVISORY COMMITTEE **FROM:** Kerrie Romanow

SUBJECT: 2015-2016 PROPOSED OPERATING BUDGET **DATE:** May 7, 2015

Approved Date

This memorandum serves to transmit the San José/Santa Clara Regional Wastewater Facility Proposed 2015-2016 Operating and Maintenance Budget. The Proposed Operating and Maintenance Budget is provided to the Treatment Plant Advisory Committee for review and for recommendation to the San José City Council for approval.

/s/
KERRIE ROMANOW
Director, Environmental Services

If you should have any questions, please contact Ashwini Kantak at 408-975-2553.

PROPOSED

SAN JOSE / SANTA CLARA WATER POLLUTION CONTROL PLANT

700 Los Esteros Road
San José, California 95134

2015-2016

Operating & Maintenance Budget

Submitted by
Kerrie Romanow, Director
Environmental Services Department
City of San José

TO: Treatment Plant Advisory Committee

Jamie Matthews	(Chair) Mayor, City of Santa Clara
Sam Liccardo	(Vice Chair) Mayor, City of San José
Pat Kolstad	Councilmember, City of Santa Clara
Jose Esteves	Mayor, City of Milpitas
Steven Leonardis	Board Member, West Valley Sanitation District
John M. Gatto	Board Member, Cupertino Sanitation District
David Sykes	Assistant City Manager (Int), City of San José
Pierluigi Oliverio	Councilmember, City of San José
Marjorie Matthews	Councilmember, City of San José

SAN JOSE / SANTA CLARA

WATER POLLUTION CONTROL PLANT

700 Los Esteros Road
San José, California 95134

2015-2016

PROPOSED

Operating & Maintenance Budget

Environmental Services Department
City of San José

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

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San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

BUDGET SUMMARY

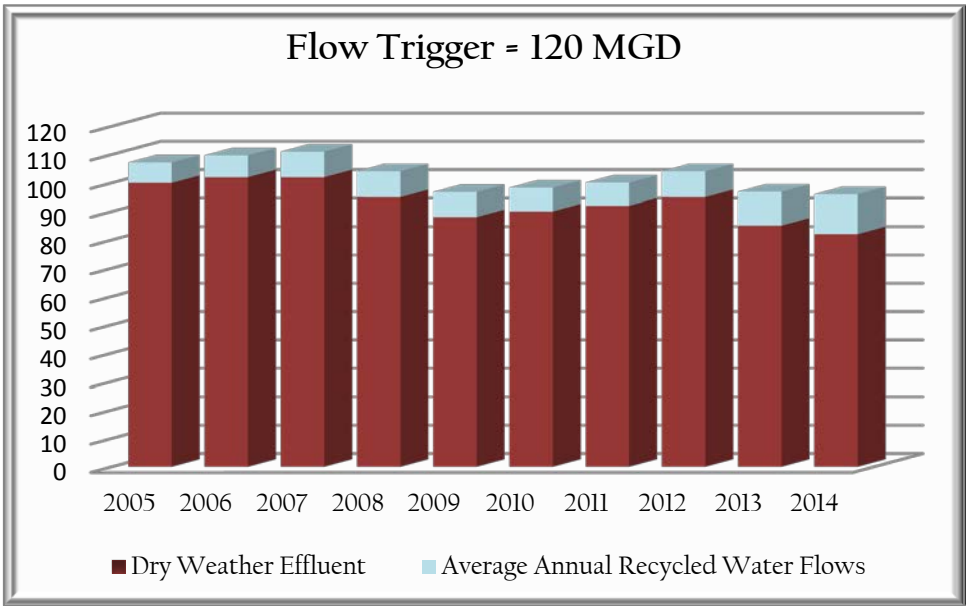
	Adopted 14-15	Proposed 15-16	% Change
Treatment Plant Operating Fund Budget	91,904,551	93,462,052	1.7%
ESD Authorized Positions	354.15	363.10	2.5%

BUDGET HIGHLIGHTS 2015-2016

- Additional staffing resources are recommended to assist the Plant Capital Improvement Program
- Additional funding is recommended to support preventative maintenance projects Plant-wide
- Additional funding is recommended for large, one-time repair and replacement projects
- Additional funding is recommended for engineering support services

Budget Byte

10 year History of Average Dry Weather Flow (in millions of gallons per day)



San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

TREATMENT PLANT OPERATING FUND BUDGET SUMMARY

Budget Summary	2013-14 Actual Expenses	2014-15 Adopted Budget	2015-16 Base Budget	2015-16 Proposed Budget
Personal Services	41,997,418	49,018,690	49,801,602	50,574,575
Non-personal Expenses	26,353,666	29,887,798	29,103,570	29,912,570
Equipment	393,013	1,450,000	900,000	1,750,000
Inventory	341,147	400,000	400,000	400,000
Department Expenses	**69,085,244**	**80,756,488**	**80,205,172**	**82,637,145**
Overhead	8,380,904	8,000,024	7,478,317	7,478,317
City Hall Debt Service	464,076	1,092,295	1,121,240	1,121,240
Workers' Compensation	483,194	645,000	645,000	645,000
City Services	1,079,524	1,410,744	1,580,350	1,580,350
City Expenses	**10,407,698**	**11,148,063**	**10,824,907**	**10,824,907**
TOTAL EXPENSES	**$ 79,492,942**	**$ 91,904,551**	**$ 91,030,079**	**$ 93,462,052**

ESTIMATED COST DISTRIBUTION

2015-16 Estimated Total Gallons Treated (MG)	(1) Percent of Total Sewage Treated	City / District	2015-16 Proposed
25,421.534	65.127	City of San Jose	$60,869,032
5,214.087	13.719	City of Santa Clara	$12,822,059
30,635.621	78.846	Sub-Total	$73,691,091
3,501.616	9.101	West Valley Sanitation District	$8,505,980
1,911.380	5.096	Cupertino Sanitary District	$4,762,826
2,239.390	5.809	City of Milpitas	$5,429,211
347.827	0.921	Sanitation District # 2 - 3	$860,785
85.897	0.227	Burbank Sanitary District	$212,159
8,086.110	21.154	Sub-Total	$19,770,961
38,721.731	**100.0**	**TOTAL**	**$93,462,052**

(1) Composite of four parameters (flow, BOD, SS, ammonia). Source: 2015-16 Revenue Program.

OVERVIEW

This year's Water Pollution Control Plant Operating Budget recommends a 1.7% increase over the 2014-2015 Adopted Operating Budget. This increase is largely due to increased staffing in support of the capital improvement program, pension, and non-personal/equipment costs.

With the adoption of the Plant Master Plan (PMP) in 2013 by the San José and Santa Clara City Councils, over $2.1 billion in long-term capital improvement projects were identified to upgrade and rebuild the San José/Santa Clara Water Pollution Control Plant (Plant) over the next 30 years. A validation process was completed in February 2014 to update and prioritize the recommended PMP projects into 33 construction packages to inform the five-year Capital Improvement Program (CIP) and ten-year funding strategy. Based on the validation process, the ten-year CIP is estimated at approximately $1.4 billion. A CIP of this size and complexity requires significant resources in order to ensure successful and timely project delivery. In September 2013, Council approved a program management services consultant contract with MWH Americas, Inc. to assist with the overall set-up and management of the CIP, which has more than doubled in size as compared to previously adopted budgets. In 2014-2015, four positions were added at the Plant to support the implementation of capital improvement projects. An additional 23 full-time positions were recommended in the 2015-2016 Proposed Operating Budget, released on May 1, 2015, to support ramp-up in capital implementation activities and prepare for the transition out of the program management contract in three to five years. Currently, there are eight projects in active construction totaling more than $34 million, with an additional 25 projects progressing through the various phases of feasibility and development, design, and/or bid and award. The size of the projects already underway, or set to initiate in the ten-year timeframe range from $5 million to $120 million.

The Plant and the Environmental Services Department continue to focus significant efforts on attracting qualified technical and engineering professionals to fill key O&M position vacancies, as well support the implementation of the CIP. The Plant has seen significant improvements in the vacancy rate for several key groups. For example, the vacancy rate for the Plant CIP/Engineering Services group has improved from 27% in July 2014 to 12% as of May 2015.

Retirement (Pension) costs continue to rise on an annual basis, as detailed in the City's 2016-2020 Five-Year Economic Forecast and Revenue Projections, due to continuing actions to fund required retirement contributions, combined with the assumption to fully fund retiree healthcare benefits. These increased costs are partially offset by the impact of new employees entering into the City of San José's Tier 2 plans, which are lower in costs to the City than Tier 1 plans.

Chemical expenditures have tracked lower than budgeted levels over the past year due to the conversion from gaseous to liquid disinfection. With this, the Treatment Plant O&M Program is able to reduce the base chemical budget for 2015-2016.

Additional funding for safety improvements, equipment, consultant services, and preventative maintenance programs are also included in this proposed budget. The following sections provide the budget proposal descriptions and a breakdown by program of all associated expenditures and detail-specific budgets.

OVERVIEW CONTINUED

DEPARTMENT BUDGET SUMMARY

Budget Summary	2013-14 Actual 1	2014-15 Adopted 2	2015-16 Forecast 3	2015-16 Proposed 4	% Change (2 to 4)
Dollars by Program					
Treatment Plant O&M	47,783,763	54,369,984	53,604,534	55,112,638	1.4%
Watershed Protection	8,285,787	10,352,859	10,564,635	10,564,635	2.0%
South Bay Water Recycling	3,409,217	4,339,166	4,363,990	4,363,990	0.6%
CIP-Engineering Services	2,005,699	3,519,741	3,339,573	4,270,970	21.3%
Mgmt & Admin Svcs	4,716,160	4,380,625	4,700,275	4,700,275	7.3%
Environmental Compliance & Safety	1,635,054	2,141,690	1,999,277	1,999,277	(6.6%)
Office of Sustainability	690,494	889,590	866,922	859,394	(3.4%)
Communications	559,071	762,833	765,966	765,966	0.4%
Total	**$ 69,085,244**	**$ 80,756,488**	**$ 80,205,172**	**$ 82,637,145**	**2.3%**
Personal Services					
Salaries	24,060,554	27,977,150	28,335,208	28,823,160	3.0%
Pension	12,075,491	15,578,379	16,227,659	16,435,975	5.5%
Medical	3,761,356	4,811,495	4,587,069	4,663,774	(3.1%)
Overtime	2,100,017	651,666	651,666	651,666	0.0%
Subtotal	$ 41,997,418	$ 49,018,690	$ 49,801,602	$ 50,574,575	3.2%
Non-Personal/Equipment					
Energy	6,014,704	6,730,000	6,800,000	6,800,000	1.0%
Supplies & Materials	6,068,933	4,688,020	4,539,118	5,038,118	7.5%
Chemicals	1,728,042	2,655,000	2,155,000	2,155,000	(18.8%)
Contractual Services	9,671,308	11,639,740	11,727,229	11,977,229	2.9%
All Others	3,604,839	6,025,038	5,182,223	6,092,223	1.1%
Subtotal	$ 27,087,826	$ 31,737,798	$ 30,403,570	$ 32,062,570	1.0%
Total	**$ 69,085,244**	**$ 80,756,488**	**$ 80,205,172**	**$ 82,637,145**	**2.3%**
Authorized Positions	**347.01**	**354.15**	**353.84**	**363.1**	**2.53%**

Budget Proposals

Proposed Program Changes	Positions	Treatment Plant Appropriations
1. Water Pollution Control Plant Capital Improvement Program Staffing	**9.3**	**931,397**

This action adds 2.3 Senior Engineer, 2.3 Associate Engineer, 0.9 Senior Engineering Technician, 0.9 Associate Engineering Technician, 1.4 Sanitary Engineer, 0.6 Engineer II, 0.3 Analyst II, and 0.3 Staff Specialist; converts 0.4 Senior Engineer and 0.3 Supervising Environmental Services Specialist from temporary to permanent status; and eliminates 0.4 Senior Construction Inspector at the Water Pollution Control Plant (Plant) for various capital improvement projects. These positions are necessary to support the capital improvement projects that have resulted from the Plant Master Plan, which identified more than 100 major capital improvement projects to be implemented at the Plant over a 30-year planning period, in order to address aging infrastructure, future regulatory requirements, population growth and sea-level rise, and treatment process improvements. (Ongoing costs: $1,021,444)

2. Water Pollution Control Plant Filter Maintenance **475,000**

This action provides funding for the second year of a four-year effort to rehabilitate four tertiary filters used in the normal course of wastewater treatment and recycled water production. Filtration is provided by 16 dual media filters that remove suspended solids from the secondary process effluent. Rehabilitation is needed for four filters to ensure secondary effluent flows properly through the filter before it is disposed into the San Francisco Bay or reused through the recycled water system. (Ongoing costs: $0)

3. Paint Shop Spray Booth System Replacement **450,000**

This action provides funding to replace the existing Paint Shop Spray Booth System (PSBS) and associated equipment with a newer, larger, and more efficient system at the Plant. Replacement parts are no longer available in the market to make any repairs to the current system. Additionally, the current system uses a water-based scrubbing system, which is very inefficient and a technology that has become obsolete. Due to newer technology, the new PSBS will also be larger, allowing for greater painting/coating capacity of products such as valves, pumps, pipes, gearboxes, and motors, among other process equipment. (Ongoing costs: $0)

4. Engine Generator Controls Replacement **400,000**

This action provides funding to replace the electro-mechanical engine generator control systems for Engine Generator #2 and #3 at the Plant. The current control systems for these two generators are in constant need of repairs and are not reliable, resulting in frequent interruption of the cogeneration process, which causes additional purchased utility expenses every month. The controls technology is also obsolete and spare parts are no longer available. (Ongoing costs: $0)

Budget Proposals (cont'd)

Proposed Program Changes	Positions	Treatment Plant Appropriations
5. Electrical Engineer Contractual Services		**183,104**

This action provides funding of $250,000 for consultant services for six months in the Energy and Automation Division at the Plant, offset by defunding a vacant Senior Engineer at the Plant for six months ($66,896). The consultant would provide critical senior-level electrical engineering support to help address an extensive backlog of pending projects requiring this level of electrical expertise. The consultant would manage electrical cogeneration; instrumentation and controls; renewable and non-renewable fuel consumption related to state-mandated cap-and-trade requirements; and provide engineering review and coordination of air permit regulations. Past efforts at recruiting for the vacant Senior Engineer have been unsuccessful due to the highly technical nature of this position. An analysis is underway for potential adjustments to this classification to support recruitment efforts in the near future. Utilization of consultant services will be phased out once this position is filled. (Ongoing costs: $0)

6. Water Conservation Staffing	**(0.04)**	**(7,528)**

This action shifts funding in 2015-2016 for a portion of a Supervising Environmental Services Specialist (0.04 FTE) in the Sustainability and Compliance Division to the General Fund to support city-wide water conservation efforts and planning efforts to recharge local aquifers with recycled water. This position had supported Plant staff with ensuring environmental and regulatory compliance. While this position will continue to support environmental and regulatory compliance efforts at the Plant, the General-Fund portion of the position will be dedicated to supporting city-wide water conservation activities. With this partial shift to the General Fund, the Supervising Environmental Services Specialist position will be able to advance city-wide efforts related to Indirect Potable Reuse (IPR) and water conservation programs; coordinate with all water retailers and water wholesalers serving San José; and lead inter-departmental coordination on monitoring and reducing City water use. (Ongoing costs: $0)

2015-2016 Total Department Proposals	**9.26**	**2,431,973**

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

PROGRAM: TREATMENT PLANT O&M
RESPONSIBLE MANAGER: JOANNA DE SA

PROGRAM PURPOSE AND DESCRIPTION

This program is responsible for the technologically advanced and cost-effective treatment of an average wastewater flow of over 100 millions of gallons per day. With a management focus on three primary aspects: compliance with the discharge permit, operations and maintenance, and equipment reliability, the Plant is able to produce an effluent that regularly meets or exceeds all permit conditions and represents the City's largest asset and critical public health service. The end results are a high quality effluent discharge to the Bay and user rates that reflect a commitment to cost-efficient operations.

PERSONNEL SUMMARY				
Full Time Positions	**2013-14**	**2014-15**	**2015-16**	**2015-16**
	Adopted	**Adopted**	**Base**	**Proposed**
Air Conditioning Mech	3.00	3.00	3.00	3.00
Analyst II C	1.00	1.00	1.00	1.00
Assist Hvy Dsl Eq Op Mech	3.00	1.00	1.00	1.00
Assoc Engineer	1.00	1.00	1.00	1.00
Assoc Engineering Tech	2.00	2.90	2.90	2.90
Deputy Dir U	1.00	1.00	1.00	1.00
Division Manager	3.00	3.00	3.00	3.00
Electrician	0.90			
Electrician Supervisor	1.00			
Engineerg Technician II	2.85	1.85	1.85	1.85
Geographic Systms Spec II	1.00	2.00	2.00	2.00
Groundsworker	0.95	0.95	0.95	0.95
Heavy Diesel Equip Op/Mec	13.00			
Heavy Diesel Equip Supvr	1.00			
Heavy Equip Oper	5.00	5.00	5.00	5.00
Industrial Electrician	6.30	7.20	7.20	7.20
Industrial Electrician Supervisor		1.00	1.00	1.00
Instrument Control Supvr	0.90	0.90	0.90	0.90
Instrument Control Technician	7.50	7.50	7.50	7.50
Maintenance Assistant	1.00	1.00	1.00	1.00
Maintenance Superintend	2.85	0.95	0.95	0.95
Maintenance Supervisor	1.00	1.00		
Maintenance Worker I	2.00	1.00	1.00	1.00
Network Engineer	1.00	1.00	1.00	1.00
Office Specialist II	2.00	2.00	2.00	2.00
Painter Supvr WPCP	1.00	1.00	1.00	1.00
Painter WPCP	6.00	6.00	6.00	6.00
Plant Ast Operations Manager I	4.00			
Plant Attendant	9.00			

PERSONNEL SUMMARY (continued)				
Full Time Positions	**2013-14**	**2014-15**	**2015-16**	**2015-16**
	Adopted	**Adopted**	**Base**	**Proposed**
Plant Mechanic	17.75			
Plant Mechanical Supvr	5.00			
Plant Operator I	3.00			
Plant Operator II	15.00			
Plant Operator III	14.00			
Plant Shift Supervisor I	1.00			
Plant Shift Supervisor II	6.00			
PlantAst Operations Manager II	2.00			
Prin Office Specialist	1.00	1.00	1.00	1.00
Process & Systems Spec II	1.00	1.00	1.00	1.00
Secretary	1.00	1.00	1.00	1.00
Senior Industrial Electrician	0.90			
Senr Air Cond Mechanic	1.00	1.00	1.00	1.00
Senr Analyst	3.00	2.00	1.00	1.00
Senr Electrician	0.90			
Senr Engineer	2.00	2.00	2.00	2.00
Senr Engineering Tech	3.00	3.00	3.00	3.00
Senr Geographic Syst Spec	1.00	1.00	1.00	1.00
Senr Hvy Dsl Eq Oper Mech	3.00			
Senr Hvy Equipment Oper	2.00	2.00	2.00	2.00
Senior Industrial Electrician		1.80	1.80	1.80
Senr Instrument Control Tech	1.80	1.80	1.80	1.80
Senr Maintenance Worker	0.95	0.95	0.95	0.95
Senr Painter	1.00	1.00	1.00	1.00
Senr Plant Mechanic	8.00			
Senr Plant Operator I	2.00			
Senr Plant Operator II	11.00			
Senr Process & Syst Spec	2.00	2.00	2.00	2.00
Senr Warehouse Worker			0.88	0.88
Supervg Applicat Analyst	1.00	1.00	1.00	1.00
Supply Clerk	1.00	1.00	1.00	1.00
Warehouse Supervisor	0.88	0.88	0.88	0.88
Warehouse Worker I	1.76	1.76	0.88	0.88
Warehouse Worker II	1.76	1.76	1.76	1.76
Wastewater Attendant		18.00	18.00	18.00
Wastewater Maintenance Supt		1.90	1.90	1.90
Wastewater Mechanic I		6.85	4.85	4.85
Wastewater Mechanic II		23.90	25.90	25.90
Wastewater Mechanical Supvr I		1.00	1.00	1.00
Wastewater Mechanical Supvr II		5.00	6.00	6.00
Wastewater Operations Supt I		1.00	1.00	1.00
Wastewater Operations Supt II		6.00	6.00	6.00
Wastewater Operator I		4.00		
Wastewater Operator II		12.00	11.00	11.00
Wastewater Operator III		16.00	21.00	21.00
Wastewater Ops Foreperson I		13.00	11.00	11.00
Wastewater Ops Foreperson II		7.00	9.00	9.00
Wastewater Senior Mechanic I		1.00	1.00	1.00
Wastewater Senior Mechanic II		10.00	10.00	10.00
Total Full-Time Positions	200.95	207.85	206.85	206.85

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

DETAILED PROGRAM BUDGET				
	2013-14	2014-15	2015-16	2015-16
Detail/Category	Actual	Adopted	Base	Proposed
Salaries-Reg-Full Time	12,710,523	16,184,282	16,341,576	16,303,099
Salaries-Reg-Part Time	358,706			
Salaries - Overtime	2,008,587	599,573	599,573	599,573
Other Personnel				
Benefits: Retirement Contrib	6,852,776	8,818,169	9,265,046	9,243,231
Other Fringe Benefits	2,279,932	2,945,277	2,804,493	2,797,890
Sub Total	**$ 24,210,524**	**$ 28,547,301**	**$ 29,010,689**	**$ 28,943,793**
Utilities: Gas	2,996,342	2,300,000	2,300,000	2,300,000
Utilities: Electricity	2,360,968	3,730,000	3,800,000	3,800,000
Supplies and Materials	5,366,018	3,945,327	3,795,327	4,270,327
Stores Fund - Stores				
Comm Expnse: Telephne-Telegrph	82,497	43,805	43,805	43,805
Comm Expnse: Postage	2,788	6,000	6,000	6,000
Print/Adv-Outside Vendors	6,488	5,750	5,750	5,750
Duplicating-Stores Fund	0			
Utilities: Other	135,982	139,000	139,000	139,000
Chemicals	1,728,042	2,655,000	2,155,000	2,155,000
Rent: Equipment & Vehicles	343,354	337,424	337,424	337,424
Trans/Travel: In County	59	14,144	14,144	14,144
Trans/Travel: Out of County	5,539	28,395	28,395	28,395
Trans/Travel: Out of State	7,999	51,069	51,069	51,069
Training	133,402	112,382	137,382	137,382
Mileage Reimbursement	3,033	150	150	150
Vehicle Operating Costs	553,684	588,948	421,948	421,948
Dues & Subscriptions	1,114,047	1,013,300	1,124,973	1,124,973
Computer Data Processing	121,451	606,000	354,000	354,000
Prof & Consultant Svcs	8,203,578	8,381,397	8,564,886	8,814,886
Books				
Insurance	137,883	564,592	564,592	564,592
Taxes	28,683			
Judgement and Claims				
Capital Outlay				
Machnry/Equipmt: Machinery	241,405	1,300,000	750,000	1,600,000
Sub Total	**$ 23,573,239**	**$ 25,822,683**	**$ 24,593,845**	**$ 26,168,845**
Combined Totals	**$ 47,783,763**	**$ 54,369,984**	**$ 53,604,534**	**$ 55,112,638**

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

PROGRAM: WATERSHED PROTECTION
RESPONSIBLE MANAGER: NAPP FUKUDA

PROGRAM PURPOSE AND DESCRIPTION

Provides environmental enforcement and technical support functions to support Department programs, enforce Federal, State, and local regulations pertaining to industrial and commercial waste discharges to the sanitary system. The Source Control/Pretreatment Program provides engineering evaluation, permitting, inspection, and monitoring of industrial waste dischargers, maintains a source reduction program, and ensures that industrial discharges to the SJ/SC Water Pollution Control Plant are in compliance with all applicable industrial waste ordinances within San José and the tributary agencies. The Watershed Enforcement Program provides inspection and investigation of food service establishments to ensure proper management of fats, oils, and grease at the point of source to reduce discharges to the sanitary system. Lastly, the Laboratory Services Program provides analytical support to monitor wastewater treatment processes and NPDES compliance and support related special projects.

PERSONNEL SUMMARY				
Full Time Positions	**2013-14**	**2014-15**	**2015-16**	**2015-16**
	Adopted	**Adopted**	**Base**	**Proposed**
Analyst II C	0.75	0.75	0.75	0.75
Aquatic Toxicologist	1.00	1.00	1.00	1.00
Assoc Engineer	1.00	1.00	1.00	1.00
Biologist	1.00	1.00	1.00	1.00
Chemist	8.00	8.00	9.00	9.00
Deputy Dir U	0.75	0.75	0.75	0.75
Environment Insp, Assistant	3.60	3.00	4.00	4.00
Environment Inspector II	17.40	19.00	20.00	20.00
Environment Inspector, Sr	2.00	2.00	2.00	2.00
Environment Serv Prog Mgr	1.30	1.50	1.50	1.50
Environment Serv Spec	2.00	2.00	2.00	2.00
Environmental Laboratory Mgr	1.00	1.00	1.00	1.00
Environmental Laboratory Supvr	2.00	2.00	2.00	2.00
Laboratory Tech II	13.00	13.00	13.00	13.00
Microbiologist	2.00	2.00	1.00	1.00
Office Specialist II	2.28	2.28	2.28	2.28
Prin Office Specialist	0.85	0.85	0.85	0.85
Sanitary Engineer	3.00	3.00	3.00	3.00
Senr Office Specialist	1.52	1.52	1.52	1.52
Staff Specialist	0.76	0.76	0.76	0.76
Supervg Environ Serv Spec	1.00	1.00	1.00	1.00
Total Full-Time Positions	66.21	67.41	69.41	69.41

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

DETAILED PROGRAM BUDGET				
	2013-14	2014-15	2015-16	2015-16
Detail/Category	**Actual**	**Adopted**	**Base**	**Proposed**
Salaries-Reg-Full Time	4,346,020	5,086,472	5,242,904	5,242,904
Salaries-Reg-Part Time	9,524			
Salaries - Overtime	21,253	27,733	27,733	27,733
Other Personnel	-			
Benefits: Retirement Contrib	2,253,925	2,851,772	2,951,290	2,951,290
Other Fringe Benefits	666,927	811,225	767,051	767,051
Sub Total	**$ 7,297,649**	**$ 8,777,202**	**$ 8,988,978**	**$ 8,988,978**
Supplies and Materials	485,056	544,198	544,198	544,198
Comm Expnse: Telephne-Telegrph	20,970	34,550	34,550	34,550
Comm Expnse: Postage	2,263	11,500	11,500	11,500
Print/Adv-Outside Vendors	4,976	31,490	31,490	31,490
Rent: Land & Buildings	1,633	1,250	1,250	1,250
Rent: Equipment & Vehicles	25,307	35,000	35,000	35,000
Trans/Travel: In County	2,311	12,575	12,575	12,575
Trans/Travel: Out of County	755	29,234	29,234	29,234
Trans/Travel: Out of State	3,516	33,200	33,200	33,200
Training	14,372	43,680	43,680	43,680
Mileage Reimbursement	1,446	5,200	5,200	5,200
Vehicle Operating Costs	37,813	25,052	25,052	25,052
Dues & Subscriptions	20,089	23,297	23,297	23,297
Computer Data Processing	20,690	66,250	66,250	66,250
Prof & Consultant Svcs	346,929	529,181	529,181	529,181
Machnry/Equimt: Machinery	11	150,000	150,000	150,000
Sub Total	**$ 988,137**	**$ 1,575,657**	**$ 1,575,657**	**$ 1,575,657**
Combined Totals	**$ 8,285,787**	**$ 10,352,859**	**$ 10,564,635**	**$ 10,564,635**

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

PROGRAM: SOUTH BAY WATER RECYCLING
RESPONSIBLE MANAGER: JEFF PROVENZANO

PROGRAM PURPOSE AND DESCRIPTION

This program is responsible for coordinating the operations, maintenance and capital improvements of the water recycling system in the three cities it serves; providing customer support and Site Supervisor training; planning and implementing SBWR system improvements; facilitating compliance with local and State regulations; coordinating with regional agencies and implementing practices which result in increased water reuse and wastewater diversion.

PERSONNEL SUMMARY				
Full Time Positions	**2013-14**	**2014-15**	**2015-16**	**2015-16**
	Adopted	**Adopted**	**Base**	**Proposed**
Analyst II C	0.30	0.30	0.30	0.30
Assoc Construction Insp	0.70	0.70	0.70	0.70
Assoc Engineer	2.15	2.15	2.15	2.15
Assoc Engineering Tech	1.00	1.10	1.10	1.10
Cross Connection Spec	0.30	0.30	0.30	0.30
Deputy Dir			0.20	0.20
Division Manager	0.20	0.20	0.00	0.00
Electrician	0.15			
Engineer II	0.20	0.20	0.20	0.20
Engineerg Technician II	0.40	0.40	0.40	0.40
Environment Serv Prog Mgr	1.00	1.00	1.00	1.00
Environment Serv Spec	2.75	1.00	1.00	1.00
Groundsworker	0.05	0.05	0.05	0.05
Industrial Electrician	0.70	0.80	0.80	0.80
Instrument Control Supvr	0.10	0.10	0.10	0.10
Instrument Control Technician	0.50	0.50	0.50	0.50
Maintenance Superintend	0.25	0.15	0.15	0.15
Maintenance Supervisor	0.20	0.20	0.20	0.20
Plant Mechanic	0.25			
Prin Construction Inspect	0.30	0.30	0.30	0.30
Senior Industrial Electrician	0.10	0.20	0.20	0.20
Senr Construction Insp	0.30	0.30	0.30	0.30
Senr Electrician	0.10			
Senr Engineer	0.40	0.40	0.40	0.40
Senr Engineering Tech	1.00	1.00	1.00	1.00
Senr Instrument Control Tech	0.20	0.20	0.20	0.20
Senr Maintenance Worker	0.05	0.05	0.05	0.05
Senr Water Systems Tech	0.15	0.15	0.15	0.15
Supervg Environ Serv Spec	1.00	1.00	1.00	1.00
Wastewater Maintenance Supt		0.10	0.10	0.10
Wastewater Mechanic I		0.15	0.15	0.15
Wastewater Mechanic II		0.10	0.10	0.10
Water Meter Reader	0.15	0.15	0.15	0.15
Water Systems Technician	0.45	0.50	0.50	0.50
Total Full-Time Positions	15.40	13.75	13.75	13.75

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

DETAILED PROGRAM BUDGET				
	2013-14	2014-15	2015-16	2015-16
Detail/Category	Actual	Adopted	Base	Proposed
Salaries-Reg-Full Time	879,485	1,155,881	1,182,893	1,182,893
Compensated Absence	5,170			
Salaries-Reg-Part Time	74,763			
Salaries - Overtime	21,849	12,217	12,217	12,217
Benefits: Retirement Contrib	494,146	738,481	764,747	764,747
Other Fringe Benefits	159,943	223,024	205,570	205,570
Sub Total	**$ 1,635,356**	**$ 2,129,603**	**$ 2,165,427**	**$ 2,165,427**
Utilities: Electricity	$ 657,395	$ 700,000	$ 700,000	$ 700,000
Supplies and Materials	117,132	80,575	80,575	80,575
Stores Fund - Stores				
Comm Expnse: Telephne-Telegrph	4,635	10,700	10,700	10,700
Comm Expnse: Postage	459	2,000	2,000	2,000
Print/Adv-Outside Vendors	896	11,720	11,720	11,720
Utilities: Other	5,580	500	500	500
Rent: Equipment & Vehicles	44	3,000	3,000	3,000
Trans/Travel: In County	280	3,500	3,500	3,500
Trans/Travel: Out of County	1,845	5,200	5,200	5,200
Trans/Travel: Out of State	684	7,000	7,000	7,000
Training	5,182	9,000	9,000	9,000
Mileage Reimbursement	4,178	2,400	2,400	2,400
Vehicle Operating Costs	15,952	38,000	27,000	27,000
Dues & Subscriptions	67,108	41,000	41,000	41,000
Computer Data Processing	5,339	16,200	16,200	16,200
Prof & Consultant Svcs	733,390	1,278,768	1,278,768	1,278,768
PW Capital Support Charge	2,165			
Capital Outlay				
Machnry/Equimt: Machinery	151,597			
Sub Total	**$ 1,773,861**	**$ 2,209,563**	**$ 2,198,563**	**$ 2,198,563**
Combined Totals	**$ 3,409,217**	**$ 4,339,166**	**$ 4,363,990**	**$ 4,363,990**

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

PROGRAM: MGMT & ADMINISTRATIVE SERVICES
RESPONSIBLE MANAGER: LINDA CHARFAUROS

PROGRAM PURPOSE AND DESCRIPTION

Provides support services including: financial and accounting services, human resources, information technology services, contract administration, grant administration, capital improvements and operating budget management.

PERSONNEL SUMMARY				
Full Time Positions	**2013-14**	**2014-15**	**2015-16**	**2015-16**
	Adopted	**Adopted**	**Base**	**Proposed**
Account Clerk II	0.66	0.66	0.66	0.66
Accountant II	0.66	1.66	1.66	1.66
Accounting Tech	1.32	1.32	1.32	1.32
Administrative Assist C	0.66	0.66	0.66	0.66
Administrative Officer	0.66	0.66	0.66	0.66
Analyst II C	2.64	2.64	2.64	2.64
Assist DirU	0.66	0.66	0.66	0.66
Dir Environmental Serv U	0.66	0.66	0.66	0.66
Division Manger	0.83	0.83	0.83	0.83
Information Sys Analyst	1.24	1.28	1.25	1.25
Network Technician II	1.36	1.34	1.36	1.36
Office Specialist II	1.98	1.32	1.32	1.32
Prin Accountant	0.66	0.66	0.66	0.66
Prin Office Specialist	1.32	1.32	1.32	1.32
Program Manager I			0.66	0.66
Senr Account Clerk	2.64	2.64	2.64	2.64
Senr Accountant	2.64	2.64	2.64	2.64
Senr Analyst	1.98	1.98	2.64	2.64
Senior Process & Syst Specialist	0.68	0.67	0.68	0.68
Staff Specialist	0.66	0.66	0.66	0.66
Staff Technician	1.32	1.32	1.32	1.32
Supervg Applicat Analyst	0.66	0.52	0.65	0.65
Systems Apps Progmr II	1.37	1.40	1.25	1.25
Total Full-Time Positions	27.26	27.50	28.80	28.80

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

DETAILED PROGRAM BUDGET				
	2013-14	2013-14	2014-15	2014-15
Detail/Category	**Actual**	**Adopted**	**Base**	**Proposed**
Salaries-Reg-Full Time	3,010,175	2,250,482	2,411,610	2,411,610
Salaries-Reg-Part Time	14,692			
Salaries - Overtime	37,175	12,143	12,143	12,143
Other Personnel	14,632			
Benefits: Retirement Contrib	1,183,409	1,470,859	1,621,192	1,621,192
Other Fringe Benefits	284,039	329,974	334,578	334,578
Sub Total	**$ 4,544,122**	**$ 4,063,458**	**$ 4,379,523**	**$ 4,379,523**
Supplies and Materials	64,307	33,780	34,490	34,490
Comm Expnse: Telephne-Telegrph	27,983	30,716	30,722	30,722
Comm Expnse: Postage	6,212	15,180	15,180	15,180
Print/Adv-Outside Vendors	460	4,463	4,471	4,471
Rent: Equipment & Vehicles	17,616	20,537	20,548	20,548
Trans/Travel: In County	483	1,320	1,228	1,228
Trans/Travel: Out of County	2,404	2,640	2,640	2,640
Trans/Travel: Out of State	7,466	1,980	1,980	1,980
Training	9,636	27,611	28,421	28,421
Mileage Reimbursement	766	1,757	1,763	1,763
Vehicle Operating Costs	4,970			
Dues & Subscriptions	1,476	8,089	8,091	8,091
Computer Data Processing	18,391	78,856	80,980	80,980
Prof & Consultant Svcs	9,867	90,238	90,238	90,238
Sub Total	**$ 172,038**	**$ 317,167**	**$ 320,752**	**$ 320,752**
Combined Totals	**$ 4,716,160**	**$ 4,380,625**	**$ 4,700,275**	**$ 4,700,275**

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

PROGRAM: CIP-ENGINEERING SVCS
RESPONSIBLE MANAGER: JULIA NGUYEN

PROGRAM PURPOSE AND DESCRIPTION

This program provides services for both capital project planning, design and construction of major projects as well as process engineering services within the Water Pollution Control Plant. With the adoption of the Plant Master Plan in 2013, which identified over $2.1 billion in long-term capital projects over the next thirty years, the group's primary responsibility is to deliver the projects to address critical aging infrastructure, future regulatory requirements, and improved performance needs. Additional responsibilities include troubleshooting and improving the treatment process, primarily through research and development projects, to ensure efficient and cost effective operations of the Plant.

PERSONNEL SUMMARY				
Full Time Positions	**2013-14**	**2014-15**	**2015-16**	**2015-16**
	Adopted	**Adopted**	**Base**	**Proposed**
Analyst II C	1.00	1.00	1.00	1.30
Assoc Engineer	6.30	4.80	4.10	6.40
Assoc Engineering Tech	0.30	0.60	0.60	1.50
Deputy DirU	1.00	1.00	1.00	1.00
Division Manager	1.00	1.00	1.00	1.00
Engineer II			0.00	0.60
Office Specialist II	1.00	1.00	1.00	1.00
Principal Engineer	1.00	1.50	1.30	1.30
Sanitary Engineer	3.60	3.00	2.10	3.50
Senr Construction Insp	0.40	0.40	0.40	0.00
Senr Engineer	2.50	2.00	1.80	4.50
Senr Engineering Tech	0.40	0.30	0.30	1.20
Staff Specialist	1.00	1.00	1.00	1.30
Supervg Environ Serv Spe			0.00	0.30
Total Full-Time Positions	19.50	17.60	15.60	24.90

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

DETAILED PROGRAM BUDGET				
	2013-14	2014-15	2015-16	2015-16
Detail/Category	**Actual**	**Adopted**	**Base**	**Proposed**
Salaries-Reg-Full Time	1,122,433	1,557,669	1,475,700	2,006,712
Compensated Absence	15,157			
Salaries-Reg-Part Time	(540)			
Salaries - Overtime	2,131			
Benefits: Retirement Contrib	557,047	740,649	646,570	879,230
Other Fringe Benefits	166,080	235,792	232,673	316,397
Sub Total	**$ 1,862,308**	**$ 2,534,110**	**$ 2,354,942**	**$ 3,202,339**
Supplies and Materials	18,534	29,881	29,881	53,881
Stores Fund - Stores				
Comm Expnse: Telephne	20,529	3,500	3,500	3,500
Comm Expnse: Postage	7	1,000	1,000	1,000
Print/Adv-Outside Vendors	4,398	12,000	5,000	5,000
Rent: Land & Buildings				
Rent: Equipment & Vehicles	10,812	29,000	29,000	29,000
Trans/Travel: In County	3,197	1,500	3,500	3,500
Trans/Travel: Out of County	4,073	3,000	5,000	5,000
Trans/Travel: Out of State	6,932	8,500	9,000	9,000
Training	6,188	17,750	12,750	36,750
Mileage Reimbursement	1,035	1,500	2,000	2,000
Vehicle Operating Costs		5,000	5,000	5,000
Dues & Subscriptions	2,719	5,000	5,000	5,000
Computer Data Processing	43,408	18,000	24,000	60,000
Prof & Consultant Svcs	15,212	850,000	850,000	850,000
PW CAP Support Charge	6,348			
Sub Total	**$ 143,391**	**$ 985,631**	**$ 984,631**	**$ 1,068,631**
Combined Totals	**$ 2,005,699**	**$ 3,519,741**	**$ 3,339,573**	**$ 4,270,970**

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

PROGRAM: ENVIRONMENTAL COMPLIANCE /SAFETY
RESPONSIBLE MANAGER: RENE EYERLY

PROGRAM PURPOSE AND DESCRIPTION

Provides general regulatory compliance (NPDES, Title V, OSHA, etc.) and environmental health and safety support (EH&S) to the Plant and the rest of the department, as needed, through a variety of programs as required by local, State, and Federal regulations. The desired outcome is to protect environmental and public health, create a safe working environment for employees, and maintain compliance with all local, State, and Federal regulations pertaining to environmental compliance and occupational safety.

PERSONNEL SUMMARY				
Full Time Positions	**2013-14**	**2014-15**	**2015-16**	**2015-16**
	Adopted	**Adopted**	**Base**	**Proposed**
Assoc Engineer	0.30	0.30	0.30	0.30
Assoc Environ Serv Spec	0.96	1.00	1.00	1.00
Biologist	2.70	2.73	1.82	1.82
Environment Compl Officer	0.40	0.63	0.63	0.63
Environment Serv Prog Mgr	0.90	0.91	0.91	0.91
Environment Serv Spec	2.25	3.26	4.26	4.26
Senr Analyst	0.60	1.00		
Senr Engineer	1.00	1.00	1.00	1.00
Supervg Environ Serv Spec	0.90	0.91	0.91	0.91
Total Full-Time Positions	10.01	11.74	10.83	10.83

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

DETAILED PROGRAM BUDGET				
	2013-14	2014-15	2015-16	2015-16
Detail/Category	Actual	Adopted	Base	Proposed
Salaries-Reg-Full Time	848,829	1,012,345	941,129	941,129
Salaries-Reg-Part Time	16,504			
Salaries - Overtime				
Benefits: Retirement Contrib	418,645	546,022	585,947	585,947
Other Fringe Benefits	131,423	176,386	161,264	161,264
Sub Total	**$ 1,415,401**	**$ 1,734,753**	**$ 1,688,340**	**$ 1,688,340**
Supplies and Materials	10,349	25,575	25,575	25,575
Stores Fund - Stores				
Comm Expnse: Telephne-Telegrph	5,318	231	231	231
Comm Expnse: Postage	953	268	268	268
Print/Adv-Outside Vendors	1,832	225	225	225
Duplicating-Stores Fund				
Rent: Land & Buildings		210	210	210
Rent: Equipment & Vehicles	305	65	65	65
Trans/Travel: In County	398	518	518	518
Trans/Travel: Out of County	3,017	1,765	1,765	1,765
Trans/Travel: Out of State	7	3,685	3,685	3,685
Training	3,571	4,664	4,664	4,664
Mileage Reimbursement	4,122	939	939	939
Vehicle Operating Costs	1,902			
Dues & Subscriptions	4,035	51,318	51,318	51,318
Computer Data Processing	15,038	1,638	1,638	1,638
Prof & Consultant Svcs	167,295	315,836	219,836	219,836
Taxes	1,510			
Sub Total	**$ 219,653**	**$ 406,937**	**$ 310,937**	**$ 310,937**
Combined Totals	**$ 1,635,054**	**$ 2,141,690**	**$ 1,999,277**	**$ 1,999,277**

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

PROGRAM: OFFICE OF SUSTAINABILITY
RESPONSIBLE MANAGER: RENE EYERLY

PROGRAM PURPOSE AND DESCRIPTION

Provides support and technical expertise to the Water Pollution Control Plant to advance efforts related to renewable energy, zero waste, and wastewater reuse. In addition, staff focuses on supporting programs related to energy and water efficiency at the Plant, renewable energy technologies, and greenhouse gas emissions.

PERSONNEL SUMMARY				
Full Time Positions	**2013-14**	**2014-15**	**2015-16**	**2015-16**
	Actual	**Adopted**	**Base**	**Proposed**
Environment Serv Prog Mgr		0.42	0.42	0.42
Environment Serv Spec	1.74	2.12	2.42	2.42
Environmntl Sustainability Mgr	0.37	0.42	0.42	0.42
Supervg Environ Serv Spec	2.24	1.69	1.69	1.65
Total Full-Time Positions	4.35	4.65	4.95	4.91

DETAILED PROGRAM BUDGET				
	2013-14	**2014-15**	**2015-16**	**2015-16**
Detail/Category	**Actual**	**Adopted**	**Base**	**Proposed**
Salaries-Reg-Full Time	355,195	435,186	452,650	448,067
Salaries-Reg-Part Time	12,208			
Salaries - Overtime	7,476			
Benefits: Retirement Contrib	204,349	279,495	249,744	247,215
Other Fringe Benefits	35,706	51,483	41,102	40,686
Sub Total	**$ 614,933**	**$ 766,164**	**$ 743,496**	**$ 735,968**
Supplies and Materials	563	4,105	4,105	4,105
Stores Fund - Stores				
Comm Expnse: Telephne-Telegrph	369	323	323	323
Comm Expnse: Postage	300	350	350	350
Print/Adv-Outside Vendors	43	710	710	710
Duplicating-Stores Fund				
Trans/Travel: In County	198	672	672	672
Trans/Travel: Out of County	581	1,139	1,139	1,139
Trans/Travel: Out of State	16			
Training	785	4,145	4,145	4,145
Mileage Reimbursement	591	742	742	742
Vehicle Operating Costs		2,000	2,000	2,000
Dues & Subscriptions	4,918	12,600	12,600	12,600
Computer Data Processing	32	24,320	24,320	24,320
Prof & Consultant Svcs	67,164	72,320	72,320	72,320
Sub Total	**$ 75,561**	**$ 123,426**	**$ 123,426**	**$ 123,426**
Combined Totals	**$ 690,494**	**$ 889,590**	**$ 866,922**	**$ 859,394**

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

PROGRAM: COMMUNICATIONS
RESPONSIBLE MANAGER: JENNIE LOFT

PROGRAM PURPOSE AND DESCRIPTION

This program manages the media relations and public outreach needs for the San Jose/Santa Clara Water Pollution Control Plant, the wastewater pre-treatment, pollution prevention, and recycled water programs. This includes responding to media inquiries and seeking media coverage; developing and maintaining best management practice materials including information to regulated businesses; publicizing and conducting community events to collect pharmaceuticals, mercury thermometers, and fats/oils/grease; supporting outreach efforts and providing information to recycled water customers.

PERSONNEL SUMMARY				
Full Time Positions	**2013-14**	**2014-15**	**2015-16**	**2015-16**
	Adopted	**Adopted**	**Base**	**Proposed**
Analyst II C	0.37	0.35	0.35	0.35
Marketing/Public Outrch Mgr	0.37	0.35		
Marketing/Public Outrch Rep I				
Marketing/Public Outrch Rep II	1.85	2.25		
Program Manager II	0.37	0.35		
Public Information Rep II			1.90	1.90
Public Information Mgr			0.35	0.35
Senr Public Information Rep			0.70	0.70
Staff Specialist	0.37	0.35	0.35	0.35
Total Full-Time Positions	3.33	3.65	3.65	3.65

DETAILED PROGRAM BUDGET				
	2013-14	**2014-15**	**2015-16**	**2015-16**
Detail/Category	**Actual**	**Adopted**	**Base**	**Proposed**
Salaries-Reg-Full Time	261,830	294,833	286,746	286,746
Salaries-Reg-Part Time	5,247			
Salaries - Overtime	1,546			
Benefits: Retirement Contrib	111,195	132,932	143,123	143,123
Other Fringe Benefits	37,306	38,334	40,338	40,338
Sub Total	**$ 417,124**	**$ 466,099**	**$ 470,207**	**$ 470,207**
Supplies and Materials	6,973	24,579	24,967	24,967
Comm Expnse: Telephne-Telegrph	670	229	229	229
Comm Expnse: Postage	435	14,000	14,000	14,000
Print/Adv-Outside Vendors	1,121	130,200	129,700	129,700
Rent: Land & Buildings	2,177			
Trans/Travel: In County	135	477	477	477
Trans/Travel: Out of County	448	108	108	108
Trans/Travel: Out of State	68			
Training	359	2,531	2,418	2,418
Mileage Reibursement	195			
Dues & Subscriptions	1,473	425	425	425
Computer Data Processing	18	2,185	1,435	1,435
Prof & Consultant Svcs	127,873	122,000	122,000	122,000
Sub Total	**$ 141,946**	**$ 296,734**	**$ 295,759**	**$ 295,759**
Combined Totals	**$ 559,071**	**$ 762,833**	**$ 765,966**	**$ 765,966**

San José/Santa Clara Water Pollution Control Plant

Environmental Services Department

Performance Measures-Treatment Plant

Performance Measures

	2013-2014 Actual	2014-2015 Target	2014-2015 Estimated	2015-2016 Target
Millions of gallons per day discharged to the Bay during average dry weather season State order: 120 mgd or less*	82 mgd	<120 mgd	82 mgd	<120 mgd
% of time pollutant discharge requirements are met or surpassed	100%	100%	100%	100%
# of requirement violations				
-Pollutant discharge	0	0	0	0
-Air emissions	0	0	0	0
% of significant industrial facilities in consistent compliance with federal pretreatment requirements	93%	90%	93%	90%
Cost per million gallons treated	$1,323	$1,300	$1,331	$1,371

Changes to Performance Measures from 2014-2015 Adopted Budget: No

* Average dry weather season is defined as the lowest three-month continuous average between May and October, which during the fiscal year reporting period is July-September.

Activity and Workload Highlights

	2013-2014 Actual	2014-2015 Forecast	2014-2015 Estimated	2015-2016 Forecast
Average millions of gallons per day treated	103	107	101.4	102.3
Total population in service area*	1,419,404	1,405,300	1,423,736	1,444,238

Changes to Activity & Workload Highlights from 2014-2015 Adopted Budget: No

* The San José/Santa Clara Water Pollution Control Plant (Plant) is a regional wastewater treatment facility serving eight South Bay cities and four sanitation districts including: San José, Santa Clara, Milpitas, Cupertino Sanitation District (Cupertino), West Valley Sanitation District (Campbell, Los Gatos, Monte Sereno and Saratoga), County Sanitation Districts 2-3 (unincorporated), and Burbank Sanitary District (unincorporated).

Performance Measures-Recycled Water

Performance Measures

	2013-2014 Actual	2014-2015 Target	2014-2015 Estimated	2015-2016 Target
Millions of gallons of recycled water delivered annually	5,106	5,000	5,000	5,000
% of time recycled water quality standards are met or surpassed	100%	100%	100%	100%
% of wastewater influent recycled for beneficial purposes during the dry weather period*	18%	15%	15%	15%
Cost per million gallons of recycled water delivered	$1,180	$1,830	$1,300	$1,768
% of recycled water customers rating service as good or excellent based on reliability, water quality, and responsiveness**	85%	85%	N/A**	85%

Changes to Performance Measures from 2014-2015 Adopted Budget: No

* Dry weather period is defined as the lowest continuous three-month average rainfall between May and October, which during the fiscal year reporting period is July-September.
** No survey was conducted in 2014-2015. Data for this measure was collected from a new biannual survey last conducted in early 2014, and those results are reflected in the 2013-2014 Actual column.
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Activity and Workload Highlights

	2013-2014 Actual	2014-2015 Forecast	2014-2015 Estimated	2015-2016 Forecast
Total number of South Bay Water Recycling customers	759	775	785	800

Changes to Activity & Workload Highlights from 2014-2015 Adopted Budget: No

Performance Measures- Conservation

Performance Measures

	2013-2014 Actual	2014-2015 Target	2014-2015 Estimated	2015-2016 Target
(Energy) % of energy used at the Water Pollution Control Plant that is renewable*	38%	40%	39%*	39%

Changes to Performance Measures from 2014-2015 Adopted Budget: No

* The 2014-2015 Estimated and 2015-2016 Target are based on improved data interpretation and a more accurate calculation approach for deriving percent of renewable energy used at the Water Pollution Control Plant.

Activity and Workload Highlights

	2013-2014 Actual	2014-2015 Forecast	2014-2015 Estimated	2015-2016 Forecast
City-Wide Renewable Energy Generation	24%	N/A	24%	24%

Changes to Activity & Workload Highlights from 2014-2015 Adopted Budget: Yes[1]

* PG&E data that is used to calculate energy usage will not be available until mid-2015. As such, this data is not incorporated into the 2014-2015 estimate.

[1] Changes to Activity and Workload Highlights from 2014-2015 Adopted Budget:

+ Renewable Energy Generation is a new Activity Highlight for the 2015-2016 Proposed Budget. This activity measures the progress the City is making in achieving 100% electrical power sourced from clean, renewable resources. This activity is also reported in the City's Annual Green Vision Report.

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: TRANSPORTATION AND ENVIRONMENT COMMITTEE

FROM: Kerrie Romanow
Barry Ng

SUBJECT: SEE BELOW

DATE: 04-16-15

Approved D-DSyL Date 4/21/15

SUBJECT: SAN JOSE-SANTA CLARA REGIONAL WASTEWATER FACILITY CAPITAL IMPROVEMENT PROGRAM SEMIANNUAL STATUS REPORT

RECOMMENDATION

Accept the semiannual status progress report on the San José-Santa Clara Regional Wastewater Facility Capital Improvement Program (CIP) for the period July through December 2014.

OUTCOME

The purpose of this semiannual status report is to provide the Transportation and Environment Committee (T&E), the Treatment Plant Advisory Committee (TPAC), and Council with a progress update on capital program implementation at the San José-Santa Clara Regional Wastewater Facility, and more specifically, to highlight key accomplishments achieved during the first half of fiscal year 2014-2015.

BACKGROUND

The San José and Santa Clara City Councils adopted the Plant Master Plan (PMP) in November and December 2013, respectively. The PMP identified more than 100 capital improvement projects totaling over $2.1 billion to be implemented at the San José-Santa Clara Regional Wastewater Facility (RWF) over the next 30 years. A validation process was completed in early 2014 to update and prioritize the recommended PMP projects into 33 construction packages to be initiated in the next ten years. The validation process was used to inform the five-year CIP and ten-year funding strategy. The 2015-2019 adopted CIP includes funding in the amount of $926 million, of which approximately $702 million is for construction projects. To provide visibility and accountability for this significant CIP effort, staff began providing formal semiannual status reports to the T&E, TPAC, and Council in spring 2013.

The first Semiannual Status Report was published in April 2013 and focused on progress and activities from July through December 2012. Three subsequent semiannual reports were

published in October 2013, April 2014, and October 2014, respectively. With the establishment of the MWH/Carollo consultant program management team, a new monthly CIP status report was established to provide more frequent and time-relevant updates. The first CIP monthly status report was issued to TPAC in April 2014 with a total of 11 monthly reports issued to date. This semiannual status report is provided to T&E, TPAC, and Council to highlight key program and project accomplishments achieved for the period July through December 2014 and serves to complement the monthly reports. Copies of the monthly reports are available online at http://www.sanjoseca.gov/Archive.aspx?AMID=190.

ANALYSIS

For the period July through December 2014, significant progress was made in several program areas including:

A. *Development of a Preliminary Ten-Year CIP Funding Strategy*
Staff continued its work on a ten-year funding strategy to support implementation of the 33 construction packages identified through the project validation effort. A special session was held with the Technical Advisory Committee (TAC), which includes staff representing the City of Santa Clara and Tributary Agencies, on September 22, 2014 to discuss guiding principles, approach for the ten-year funding strategy including policy considerations and financing best practices, and key assumptions and next steps for development and implementation of the funding strategy. In October, staff also met with the State Water Resources Control Board to discuss the use of the Clean Water State Revolving Funds as a potential funding source.

B. *Biosolids Transition Strategy*
The proposed transition from the current open air sludge lagoons and drying bed operations to a new enclosed mechanical dewatering and thermal drying process is one of the most technically significant and costly process and operational changes recommended by the PMP. At the April 10, 2014 Biosolids Study Session, staff presented preliminary information on the Biosolids Transition Strategy and was directed by TPAC to continue its work to further evaluate the impact on operations and maintenance costs, explore options for producing Class A biosolids instead of Class B biosolids and expandability of the facility in the future, and evaluate the impacts of odors. A special TPAC meeting was held on November 20, 2014 to summarize the outcome of a market research analysis to determine market interest in the processing and/or disposition of Class A and/or Class B biosolids, discuss options for producing Class A biosolids, present business case analysis, including site alternatives and cost implications for the biosolids transition. On December 2, 2014, Council approved two of seven staff recommendations as related to the Biosolids Transition with direction to bring back all other recommendations in spring 2015.

C. *RWF Odor Control Study Approval of an Odor Control Strategy*
Staff commissioned an Odor and Corrosion Control Study in August 2014 to validate the odor control goals assumed in the PMP, establish the odor fence line at which the odor

goal is to be met, build upon previous sampling efforts to inform the baseline odor dispersion model, and develop a detailed odor control implementation plan. The odor control strategy for the RWF was presented to the TPAC on November 13, 2014 and approved by Council on December 2, 2014, respectively.

D. *Project Delivery and Procurement Strategy*
Staff continued to explore the viability of alternative project delivery methods including following developments at the State legislature level on Senate Bill 785 (Wolk) which will consolidate various design-build authorities for special districts, local and state agencies, and authorize the use of design-build, using either a low bid or best value selection method, for projects over $1,000,000. The intent is to provide maximum flexibility and efficiency in project delivery method and professional services procurements. Staff also organized a Vendor Open House in September that offered a tour of the RWF and outlined the upcoming projects and contracting opportunities. Over 80 vendors attended the event.

E. *Advancement of Nine Programmatic Studies*
Six new service orders were awarded totaling approximately $4 million to advance nine programmatic studies: 1) Design and Criteria Basis, 2) Aeration and Biosolids Assessment, 3) Odor and Corrosion Control Study, 4) Automation Master Plan and Process Control Approach, 5) Yard Piping Condition Assessment Plan, 6) Facility-wide Heating and Cooling Demands, 7) Facility-wide Process Risk Assessment, 8) Asset Management Strategy and Approach, and 9) Architectural Guidelines. Most of this work is expected to be completed by summer 2015.

In addition, 25 active projects progressed through various phases of the project delivery model as further discussed below:

A. *Construction Activity Highlights*

The fiscal year kicked off with eight projects totaling more than $34 million entering into active construction. Two of the eight projects are being delivered using design-build low bid project delivery method, with the remaining six projects being delivered utilizing conventional design-bid-build project delivery method. Projects under active construction are summarized in Attachment A.

Key construction activities highlighted for this period include:

- Digester Gas Storage Replacement – contractor mobilization, approval of major equipment submittals, approval of foundation design, demolition of existing foundation and installation of new foundation, permitting approval and gas holder fabrication.
- Digester Gas Compressor Upgrades – submittal review of the gas compressor equipment package, early site work including relocation of the utility conflicts, and start of construction to install 42 drilled piers.

- Two projects reached substantial completion and two projects were formally accepted.

As significant construction activity gets underway, the program continues to promote a safety culture that helps ensure all staff and contractor personnel work in a safe manner. There were no reported or recorded safety incidents or claims filed during this reporting period.

B. *Design Activity Highlights*

Four projects were under active design. Two of the four projects are being designed utilizing design-builder services, with the other two remaining projects being designed using traditional professional consultant design services.

Key design activities highlighted for this period include:

- Digester and Thickener Facilities Upgrade – This project design involves rehabilitation of four digesters, including new covers and mixing systems; structural repairs and seismic retrofits; heating system and gas collection conveyance system upgrades; and retrofit of six Dissolved Air Flotation Thickeners (DAFT) units. Staff accepted the conceptual design report in July. In October, the design consultant submitted the draft preliminary design report (30%) for review. The project team conducted design review workshops in November and December. In addition, in December, the project team received approval from City Council to proceed with temperature-phased anaerobic digestion (TPAD).
- Iron Salt Feed Station – This project design includes two new chemical dosing stations for iron salt and polymer addition to ensure the Facility can continue to meet its air permit requirements as related to the emission of toxic gases (i.e., hydrogen sulfide gas from the digestion process). The project also has the added benefit of improved solids settling performance in the primary treatment process and energy efficiency in secondary biological treatment process. Staff accepted the conceptual design report in September and the preliminary design report (30%) was completed in December.
- Digester Gas Compressor Upgrades – Numerous coordination meetings and design workshops were held between City staff and the design-builder to establish design requirements for the new gas compressor building foundation and layout.
- Emergency Diesel Generators – A full-day partnering workshop was held between City staff and design-build team to establish project goals, expectations, communications, and issues resolution protocol. Submittal review for the generator set also got underway, including early consultation and coordination with PG&E.

As significant design work gets underway, the program continues to work on developing comprehensive strategies, approaches, and tools for guiding the design development of current and future projects with the aim of establishing baselines, achieving consistency across different designers/design-builders, ensuring project interfaces are considered, incorporating operational flexibility, and considering current and future demands.

C. *Planning/Feasibility Development Highlights*
Eight projects were in active planning and feasibility development. Scoping began on six of the projects, as well as two additional programmatic studies in support of the Site Improvement Guidelines study.

Key planning/feasibility development activities highlighted for this period include:

- Procurement of consultant services began for four projects, including 1) Cogeneration Facility, 2) Headworks, 3) Facility-wide Water Systems Improvements, and 4) Nitrification Clarifier Rehabilitation.
- Cogeneration Facility – In October 2014, the City Council approved the use of the progressive design-build delivery method for the project. In addition, staff issued a Request for Prequalification of design-builders for the Cogeneration Facility project in November 2014.

Significant activity is expected to continue in the upcoming six-month period including:

- Complete the funding analysis for the capital program and obtain TPAC and Council approval on the Ten-Year Funding Strategy by May 2015
- Obtain TPAC and Council approval on the remaining biosolids transition strategy recommendations and present preliminary odor study results in Spring 2015
- Obtain TPAC and Council approval for the project delivery and procurement strategy in March 2015
- Continue work on and/or complete the programmatic studies
- Continue to develop a five-year staffing and transition plan
- Complete recruitment to fill several capital program vacancies
- Reach beneficial use on six active construction projects
- Continue design and/or design-build work on six projects

EVALUATION AND FOLLOW-UP

No follow up action is required at this time. Staff will continue to provide regular updates to T&E, TPAC and Council to inform of significant changes or issues (particularly as related to rate impacts) as the program implementation progresses. In addition to semiannual presentations, monthly progress reports will continue to be sent to TPAC.

PUBLIC OUTREACH/INTEREST

This memorandum will be posted on the City's website for the May 4, 2015 Transportation and Environmental Committee agenda.

COORDINATION

This report has been coordinated with the City Manager's Budget Office.

CEQA

Not a Project, File No. PP10-069(a), Staff Reports / Assessments / Annual Reports / Informational Memos that involve no approvals of any City Actions.

/s/Ashwini Kantak for
KERRIE ROMANOW
Director, Environmental Services

/s/
BARRY NG
Interim Director, Public Works

For questions please contact Ashwini Kantak, Assistant Director of Environmental Services, at (408) 975-2553.

Attachments:
Attachment A – Projects in Active Construction

Attachment A – Projects in Active Construction

Project Name	Contractor	Amount of Award	Date of Award	Est. Beneficial Use
7157 - Digester Gas Storage Replacement	Anderson Pacific Engineering Construction, Inc.	Base Contract: $1,825,100 Contingency: $182,510	4/22/14	Summer 2015
6998 - Fire Main Replacement Ph III	Stoloski & Gonzalez, Inc.	Base Contract: $1,572,870 Contingency: $157,290	4/22/14	Spring 2015
7407 - BNR2 Clarifiers Guardrail Replacement	Tucker Construction, Inc.	Base Contract: $320,792 Contingency: $32,100	4/22/14	Spring 2015
7100 - Digester Gas Compressor Upgrade (D-B Low Bid)	Anderson Pacific Engineering Construction, Inc.	Base Contract: $11,316,000 Contingency: $1,136,000	5/20/14	Summer 2016
7249 -Training Trailer	Newton Construction & Management, Inc.	Base Contract: $513,874 Contingency: $51,400	5/20/14	Spring 2015
7474 – RWF Street Treatment Ph III	O'Grady Paving, Inc.	Base Contract: $388,859 Contingency: $39,000	6/17/14	Fall 2014
6833 – Filtration Building B2/B3 Pipe & Valve Replacement	Anderson Pacific Engineering Construction, Inc.	Base Contract: $158,900 Contingency: $31,780	6/17/14	Spring 2015
7394 – Emergency Diesel Generator (D-B Low Bid)	Anderson Pacific Engineering Construction, Inc.	Base Contract: $15,310,000 Contingency: $1,510,000	6/17/14	Summer 2016

COUNCIL AGENDA: 5/19/2015
ITEM:

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Richard Doyle
City Attorney

SUBJECT: **Approval of an Amendment for Legal Services Agreement for Regional Wastewater Facility Capital Program**

DATE: May 5, 2015

RECOMMENDATION

Approve a First Amendment to the legal services contract with Hawkins, Delafield & Wood LLP, to increase the amount of compensation for the initial one-year term in the amount of $220,000 for a total initial term amount not to exceed $400,000 and to increase the amount of compensation for each of the two one-year option terms from $160,000 to $300,000, subject to appropriation of funds by City Council, for a total contract amount not to exceed $1,000,000 to support the San José-Santa Clara Regional Wastewater Facility capital improvement program.

OUTCOME

The outcome of the recommended action will be to increase the potential maximum compensation for Hawkins, Delafield & Wood LLP, which is providing the City with extensive legal support services for the type of construction projects being undertaken as part of the San José-Santa Clara Regional Wastewater Facility ("Facility") capital improvement program. Hawkins, Delafield & Wood LLP is in the process of developing project specific procurement documents which will enable the City to develop a bank of forms, documents and information that can be used to support the capital improvement program in the future.

BACKGROUND

The Facility is owned jointly by the cities of San José and Santa Clara. The ownership agreement designates San José as having primary responsibility for administering, operating and maintaining the Facility. It expressly states that San José has the power to "make, award and enter into contracts with third parties for the construction, improvement, replacement, expansion, or repair" of the Facility.

Over the years, San José and Santa Clara have entered into a variety of separate agreements to provide wastewater treatment services to the cities of Milpitas, Cupertino, Campbell, Los Gatos, Monte Sereno and Saratoga, and to unincorporated areas of the

Santa Clara County. Currently, the Facility provides tertiary treatment of up to 167 million gallons of wastewater a day to approximately 1.4 million residents and about 17,000 commercial/industrial sewer connections. It operates 24 hours a day, 7 days a week.

The Facility uses a five-year capital improvement program to plan and identify capital improvements projects. Historically, the total cost of the capital improvement projects identified in the five-year capital improvement program has ranged from 50 to 150 million dollars.

The Facility is now over 50 years old and is in need of significant capital improvements. Following an extensive master planning and program validation effort, the Facility is undertaking a major capital improvement program involving an increased level of capital investment to fund significant infrastructure rehabilitation projects. The program is anticipated to increase the five-year capital improvement program to upwards of one billion.

The Office of the City Attorney provides legal support services to City staff administering the Facility. Given the large volume of construction work planned for the Facility in a relatively short period of time, and the size and complexity of that work, City staff requested the City Attorney's Office to engage outside legal counsel with an expertise in primarily the following areas to work with the City Attorney's Office in:

1. Advising the City with the analysis of the various alternative methods available to it for delivering major public works construction projects, including design-build projects; and

2. Advising the City on implementing, administering and managing major public works construction projects undertaken at the Facility using various project delivery methods, including design-build projects.

ANALYSIS

Following a request for qualifications process held earlier in 2014, on November 24, 2014, the City entered into a contract for legal services with Hawkins, Delafield & Wood LLP to provide the above-referenced services following a request for qualifications process held earlier in 2014. Compensation and the term of the original agreement were as follows:

- The initial term of the contract is one year (calendar year commencing on Dec. 2, 2014 and ending on Dec. 1, 2015), with maximum compensation not to exceed $180,000.00.

- There are two one-year options to extend the term of the agreement, with the maximum compensation for each option year not to exceed $160,000.

- The City Attorney is authorized to exercise each of the options subject to the appropriation of funds.

As explained below, due to an increase in the amount of legal services requested by the City and provided by Hawkins Delafield in the first months of the contract, the compensation and term of the proposed First Amendment for continued support of the San José-Santa Clara Regional Wastewater Facility capital improvement program, as described below, is recommended to be increased as follows:

- The initial term of the contract is one year (calendar year commencing on Dec. 2, 2014 and ending on Dec. 1, 2015), with maximum compensation not to exceed $400,000.00.

- There are two one-year options to extend the term of the agreement, with the maximum compensation for each option year not to exceed $300,000.

- The City Attorney is authorized to exercise each of the options subject to the appropriation of funds by the Council.

Hawkins, Delafield & Wood LLP has provided comprehensive and in depth legal services which includes, among other items, the drafting and review of the request for qualifications, request for proposals, and the progressive design-build contract for the City's Cogeneration Facility project (collectively "procurement documents"). The new Cogeneration Facility will house a set of new advanced internal combustion engines and will be designed to meet current and future energy demands at the Facility. The new engines will replace all existing Facility engines with the exception of the recently installed Fuel Cell. In addition, the Cogeneration Facility project scope includes a new digester gas treatment system, control system and monitoring system with connectivity to the Facility's Distributed Control System (DCS), electrical switchgear, various additional appurtenances in support of the engines and building, a new digester gas pipeline and natural gas pipeline, new heat recovery systems, and civil work including parking areas and utilities. Due to the extensive and comprehensive nature of the documents necessary to meet federal, state and local requirements, the law firm has had to spend considerable time reviewing regulations and drafting documents with input from the staff of Public Works and the City Attorney. As a result, the funds initially allocated for the entire first year of the contract have been expended in the early part of the year.

In addition, once the procurement documents are completed, it is anticipated that Hawkins, Delafield & Wood LLP will assist City staff by reviewing the responses to the request for qualifications, request for proposals, and to participate in the negotiations

with the successful design build entity which will design and construct the Cogeneration Facility. The procurement documents will in turn be used by City staff as the foundation for preparing the procurement documents for subsequent design build projects and by the Office of the City Attorney to develop a library of forms, documents, and information that could be used by the City in the future. An example of an upcoming project that will be delivered using design-build is the New Headworks project. Consequently, the two additional options will be exercised by the City Attorney as necessary to complete the proposed work for the Cogeneration Facility as the funds are appropriated by the Council.

COORDINATION

This memorandum has been coordinated with the Department of Public Works, Department of Environmental Services, and the City Manager's Budget Office.

FISCAL/POLICY ALIGNMENT

The recommended action is consistent with the City Council approved budget strategy to focus on rehabilitating aging facility infrastructure, improve efficiency, and reduce operating costs. The recommended action is also consistent with the budget strategy principle of focusing on protecting vital core services.

COST SUMMARY/IMPLICATIONS

1. AMOUNT OF RECOMMENDATION: $220,000

Agreement for Legal Services with Contract with Hawkins Delafield & Wood, LLP	$180,000
First Amendment to Hawkins Delafield & Wood LLP	
TOTAL	$400,000

2. COST ELEMENTS OF LEGAL SERVICES AGREEMENT: The legal services are reimbursed on an hourly rate as set forth in the legal services agreement.

3. SOURCE OF FUNDING: San José/Santa Clara Treatment Plant Capital Fund (512).

4. FISCAL IMPACT: The consultant contract has been reviewed and was determined that it will have no significant adverse impact on the General Fund operating budget.

OPERATING COSTS: Approval of the recommendation will have no significant adverse impact on the General Fund operating budget.

BUDGET REFERENCE

The table below identifies the fund and appropriations proposed to fund the contract(s) recommended as part of this memo and remaining project costs, including project delivery, construction, and contingency costs.*

Fund #	Appn # / RC#	Appn. Name	Current Appn.	Amount for Project	2014-2015 Adopted Capital Budget	Last Budget Action (Date, Ord. #)
Remaining Project Costs						
512	7449 / 181263	New Headworks	$2,880,000	$110,000	V-182	06/17/14 Ord. #29431
512	7454 / 171594	Energy Generation Improvements	$24,922,000	$110,000	V-193	02/24/15 Ord. #29538

* Costs to be incurred in future fiscal years are subject to Council approval of funds.

CEQA

Not a project.

RICHARD DOYLE
City Attorney

By _____
Jennifer Pousho
Sr. Deputy City Attorney

cc: Norberto Dueñas

For questions please contact Jennifer Pousho, Sr. Deputy City Attorney, at 408-535-1900.

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow
Barry Ng

SUBJECT: **POND A18 EMERGENCY REPLACEMENT UPDATE**

DATE: April 28, 2015

Approved D·D Sy C Date 4/29/15

INFORMATION

BACKGROUND

On March 3, 2015, the City Council adopted Resolution No. 77296 declaring and finding that emergency replacement of the San José/Santa Clara Regional Wastewater Facility's (legally and officially named the San José/Santa Clara Water Pollution Control Plant) Pond A18's northern gate structure is necessary to address critical structural failure and to avoid the potentially significant impacts of breaching the levee system. This memorandum provides a biweekly report to Council with a status of the current emergency situation and on the progress of the project.

ANALYSIS

On March 30, the Director of Public Works awarded a construction contract to Galindo Construction in the amount of $588,420 plus a 10% contingency. The contract has been fully executed with all insurance and bonds in place. A pre-construction meeting was held on April 15, where the Notice to Proceed was issued. The contractor will begin mobilizing for the installation of the cofferdams that will isolate the hydraulic gate structure. The contractor is currently working on the structural design so that the specially-treated timber can be ordered by the end of this week. The treated timber has a 60-day lead time which results in a scheduled project completion date of July 24. The contractor is working with the timber supplier to expedite shipment in order to meet a more urgent timeframe.

/s/Ashwini Kantak for
KERRIE ROMANOW
Director of Environmental Services

/s/
BARRY NG
Interim Director of Public Works

For questions, please contact John Cannon, Principal Engineer, Department of Public Works, at 408-535-8340.

City Manager's Contract Approval Summary

For Procurement and Contract Activity between $100,000 and $1.08 Million for Goods and $100,000 and $270,000 for Services

APRIL 1, 2015 - APRIL 30, 2015

Description of Contract Activity [1]	Fiscal Year	Req#/ RFP#	PO#	Vendor/Consultant	Original $ Amount	Start Date	End Date	Additional $ Amount	Total $ Amount	Comments
PIPELINE & TANK CLEANING	14-15	19725	50621	PIPE AND PLANT SOLUTIONS INC	$50,000	7/1/2014	6/30/2015	$69,000	$119,000	
CATHODIC PROTECTION SYSTEM TESTING, MAINTENANCE AND REPAIR WITH THE SOUTH BAY WATER RECYCLING PIPELINE, THE POTABLE MUNICIPAL WATER SYSTEM and RWF AS NEEDED.	14-15	19125	49863	CORRPRO COMPANIES INC	$80,000	7/1/2001	6/30/2015	$90,000	$195,000	80,000 SBWR 20,000 MW 90,000 RWF

[1] This report captures completed contract activity (Purchase Order Number, Contract Term, and Contract Amount)