SAN JOSÉ/SANTA CLARA TREATMENT PLANT ADVISORY COMMITTEE

VACANT, CHAIR	PAT KOLSTAD, MEMBER
SAM LICCARDO, VICE CHAIR	JERRY MARSALLI, MEMBER
PIERLUIGI OLIVERIO, MEMBER	STEVEN LEONARDIS, MEMBER
DAVID SYKES, MEMBER	JOHN GATTO, MEMBER
MANH NGUYEN, MEMBER	JOSE ESTEVES, MEMBER

AMENDED AGENDA/TPAC

4:00 p.m. **April 14, 2016** **Room 1734**

1. ROLL CALL

2. APPROVAL OF MINUTES

A. March 10, 2016

3. UNFINISHED BUSINESS/REQUEST FOR DEFERRALS

A. Election of the Chair and Vice-Chair

4. DIRECTOR'S REPORT

A. Directors Report (verbal)
- American Planning Association National Achievement Award for Plant Master Plan
- Update on the Digester and Facilities Upgrade project
- Monthly Progress Report

5. AGREEMENTS/ACTION ITEMS

A. Approval of a Design-Build Contract with CH2M Hill Engineers, Inc. for the Cogeneration Facility at the San José- Santa Clara Regional Wastewater Facility

Staff Recommendations:

(a) Approve the design-build contract with CH2M HILL Engineers, Inc. for the Cogeneration Facility at the San José-Santa Clara Regional Wastewater Facility in an amount not-to-exceed $5,655,000 for the performance of preliminary design services under the contract.

(b) Approve a design contingency in the amount of $565,000 for City-approved changes to the scope of preliminary design services.

(c) Adopt a resolution authorizing the City Manager or his designee to:

(1) Negotiate and execute a definitive contract amendment with CH2M HILL to: (1) set a base guaranteed maximum price or lump sum amount in accordance with the contract, in an amount not-to-exceed $82,884,000 for the design-build work to be performed following the preliminary

design services; (2) set a schedule for completion and acceptance of the design-build work required by the contract; (3) define the technical specifications and guaranteed performance capabilities for the Cogeneration Facility; (4) establish any additional professional services required by the City for transitioning the Cogeneration Facility to City control after acceptance , and the fee to be charged therefore; (5) establish the insurance requirements for the design-build work; and (6) subject to review and approval by the City Attorney's Office, amend other terms and conditions of the contract that are necessary to accomplish the foregoing;

(2) Negotiate and execute separate agreements and/or amendments to the contract to allow CH2M HILL to proceed with discrete portions of the design-build work prior to the City's execution of the definitive contract amendment in an amount not to exceed $30,000,000, which amounts will be subject to the base guaranteed maximum price;

(d) Approve a construction contingency in the amount of $8,288,000 to pay for adjustments to the base guaranteed maximum price or if applicable, the lump sum amount, in accordance with the contract and to pay for the transition services after acceptance of the Cogeneration Facility.

(e) Adopt a resolution authorizing the City Manager or his designee to:

(1) Execute change orders in excess of $100,000 up to the amount of the design contingency for changes to the scope of the preliminary design services, and up to the amount of the construction contingency for adjustments to the base guaranteed maximum price or lump sum amount during the performance of the design-build work;

(2) Negotiate and execute the necessary regulatory permits and public utility agreements in excess of $100,000 for the permitting, design, construction and inspection of utility connections associated with the new Cogeneration Facility, up to an aggregate amount of $600,000.

This item is scheduled for consideration by the City Council on April 26, 2016.

B. Master Consultant Agreement with HDR Engineering, Inc. for Engineering Services for the 7731 – Nitrification Clarifiers Rehabilitation Project at the San José- Santa Clara Regional Wastewater Facility

Staff recommendation:

(a) Approve a master consultant agreement with HDR Engineering, Inc. to provide engineering services for the 7731 – Nitrification Clarifiers Rehabilitation Project at the San José-Santa Clara Regional Wastewater Facility from the date of execution through December 31, 2023, in a total amount not to exceed $5,000,000, subject to the appropriation of funds.

This item is scheduled for consideration by City Council on May 3, 2016.

C. Report on Request for Proposal for a Design and Construction Management System

Staff Recommendation:

(a) Accept the report on the Request for Proposal for the purchase and implementation of a Design Construction Management System for the Capital Improvement Program at the San José- Santa Clara Regional Wastewater Facility, and adoption of a resolution authorizing the City Manager to:
   (1) Negotiate and execute an Agreement with Bentley Systems, Inc. (Exton, PA) for the purchase and implementation of a Design and Construction Management System, including software subscription, implementation, configuration, testing, training, and related professional services, taxes, maintenance and support for an initial five-year term commencing on or about May 1, 2016 and ending on or about July 31, 2021, with a maximum compensation not-to-exceed $342,700 for the initial five-year term, subject to the appropriation of funds; and
   (2) Execute change orders to cover any additional requirements for a not-to-exceed contingency amount of $100,000, subject to the appropriation of funds; and
   (3) Execute one-year options to extend the term of the Agreement to provide ongoing software subscription, hosting, and technical support services after the initial five-year term, subject to the appropriation of funds.
   (4) Negotiate and execute an Agreement with Aconex (San Bruno, CA), the second ranked proposer, in the event staff is unable to finalize negotiations with Bentley Systems, Inc. within 60 days of Council approval.

This item is scheduled for consideration by the City Council on April 26, 2016.

D. Review of the Emergency Action for the Replacement of the Pond A18 Northern Gate Structure and Termination of the Action

Staff Recommendations:
(a) Review of the emergency action for the replacement of the Pond A18 northern gate structure at the San José-Santa Clara Regional Wastewater Facility; and
(b) Adopt a resolution terminating the emergency declaration for the replacement of the Pond A18's northern gate structure.

This item is scheduled for consideration by the City Council on April 26, 2016.

E. San José- Santa Clara Regional Wastewater Facility Capital Improvement Program Semi-Annual Status Report

Staff Recommendation:
(a) Accept the semi-annual status progress report on the San José-Santa Clara Regional Wastewater Facility Program for the period July through December 2015.

This item is scheduled for consideration by the City Council on April 26, 2016.

F. Audit of South Bay Water Recycling

Staff Recommendation:

(a) Accept the Audit Report on the efficiency and effectiveness of South Bay Water Recycling.

This item is scheduled for consideration by the City Council on April 26, 2016.

6. OTHER BUSINESS/CORRESPONDENCE

A. Discussion and direction on guiding principles for mediation of all outstanding disputes including the administrative claim, request for records, and potential amendments to the Master Agreements.

B. Letter from Director Romanow to the Tributary Agencies dated April 7, 2016

C. Letter from the Tributary Agencies dated February 26, 2016 to TPAC

7. STATUS OF ITEMS PREVIOUSLY RECOMMENDED FOR APPROVAL BY TPAC

A. Election of the Chair

This item was deferred to the April 14, 2016 TPAC meeting, and was amended to include nominations for the Vice-Chair.

B. Confirmation of hearing date and procedures for Administrative Claim Hearing

TPAC confirmed the hearing date and procedures for the Administrative Claim Hearing during the March 10, 2016 TPAC meeting.

C. Construction Contingency Increase and Contract Change Order Authorization for the 7076 – Influent Magnetic Meter and Valve Replacement for Nitrification Clarifiers A-5 and A-6 Project at the San José- Santa Clara Regional Wastewater Facility

Staff Recommendations:

(a) Approve a $92,970 increase to the construction contingency amount of $27,030 for a revised total contingency in the amount of $120,000 and increase the original contract not-to-exceed amount from $297, 330 to a total revised contract amount not-to-exceed $390,300.

(b) Adopt a resolution authorizing the Director of Public Works to negotiate and execute Contract Change No. 4 with JMB Construction, Inc. for the 7076 – Influent Magnetic Meter and Valve Replacement for Nitrification Clarifiers A-5 and A-6 Project extending the project completion date from

February 17, 2014 to May 27, 2014 to May 27, 2016 for a total of 561 working days beyond the original contract completion date of February 7, 2014.

This item was approved by the City Council on March 15, 2016.

D. 2015- 2016 Budget Adjustments for the San José- Santa Clara Regional Wastewater Facility Capital Improvement Project

Staff Recommendations:

(a) Adopt the following 2015-2016 Appropriation Ordinance and Funding Sources Resolution Amendments in the San Jose- Santa Clara Treatment Plant Capital Fund:
   (1) Decrease the estimate for Earned Revenue by $4,219,000;
   (2) Decrease the Transfer to the Clean Water Financing Authority Debt Service 2015-2016 by $1,556,000; and
   (3) Decrease the Unrestricted Fund Balance by $3,643,000.

(b) Adopt the following 2015-2016 Appropriation Ordinance Amendments in the Sewer Service and Use Charge Fund:
   (1) Decrease the Transfer to the San Jose/Santa Clara Treatment Plant Capital Fund on or before June 30 by $980,000; and
   (2) Increase the Unrestricted Fund Balance by $980,000.

This item was adopted by the City Council on March 22, 2016.

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 monthly TPAC Meeting is May 19, 2016, at 4:30 p.m., City Hall, Room 1734. Please note that this is on the third Thursday of the month.

10. OPEN FORUM

11. ADJOURNMENT

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

To request an accommodation or alternative format for City-sponsored meetings, events or printed materials, please contact Melrose Cacal (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 JOSÉ/SANTA CLARA
TREATMENT PLANT ADVISORY COMMITTEE
City Hall, Council Chambers
Thursday, March 10, 2016 at 4:30 p.m.

1. ROLL CALL

Minutes of the Treatment Plant Advisory Committee convened this date at 4:31 p.m. Roll call was taken with the following members in attendance:

Committee Members: Jose Esteves, John Gatto, Steven Leonardis, Sam Liccardo, Dave Sykes, Manh Nguyen, Pierluigi Oliverio

2. APPROVAL OF MINUTES

A. February 11, 2016
Item 2.A. was approved to note and file.
Ayes – 5 (Esteves, Gatto, Leonardis, Liccardo, Sykes)
Nays – 0
Absent – 4 (Kolstad, Marsalli, Nguyen, Oliverio)

3. UNFINISHED BUSINESS/REQUEST FOR DEFERRALS

4. DIRECTORS REPORT

A. Directors Report (verbal)
Monthly progress report

There were no items to report.

5. AGREEMENTS/ACTION ITEMS

A. **Election of the Chair**

Vice Chair Liccardo made a suggestion to defer this item for one month due to the absences of City of Santa Clara representatives and due to the fact that TPAC is currently short one chair. Committee Member Gatto also suggested nominating a vice-chair at the April TPAC meeting.

On a motion made by Committee Member Esteves and a second by Committee Member Leonardis, TPAC approved to nominate a chair and vice-chair at the April TPAC Meeting.

Ayes – 5 (Esteves, Gatto, Leonardis, Liccardo, Sykes)
Nayes – 0
Absent – 4 (Kolstad, Marsalli, Nguyen, Oliverio)

B. **Confirmation of hearing date and procedures for Administrative Claim Hearing**

Assistant Director Ashwini Kantak indicated that the administrative claim hearing moved to March 24, 2016 from 1:30-3:30 PM in the Council Chambers.

San Jose Senior Deputy City Attorney Rosa Tsongtaatarii confirmed an agreement reached with counsel for the Tributary Agencies regarding the hearing procedures:
(1) Each party would be allotted 20 minutes for presentations, which would be followed by a 10 minute rebuttal. The Tributary Agencies will present first.
(2) The remaining time would be allocated to answer questions from the Treatment Plant Advisory Committee members without counting towards each party's allotted time.

Committee Member Gatto inquired what the possible outcomes would be from the hearing. Ms. Tsongtaatarii clarified that a report would be issued by TPAC, and that the agencies who disagreed with the report would have the opportunity to express their disagreement. The legislative bodies of the respective agencies that remain in dispute may call a joint meeting.

C. Construction Contingency Increase and Contract Change Order Authorization for the "7076 – Influent Magnetic Meter and Valve Replacement for Nitrification Clarifiers A-5 and A-6 Project" at the San Jose- Santa Clara Regional Wastewater Facility

Staff Recommendation:
(a) Approve a $92,970 increase to the construction contingency amount of $27,030 for a revised total contingency in the amount of $120,000 and increase the original contract not-to-exceed amount from $297,330 to a total revised contract amount not-to-exceed $390,300.
(b) Adopt a resolution authorizing the Director of Public Works to negotiate and execute Contract Change No. 4 with JMB Construction, Inc. for the 9076 – Influent Magnetic Meter and Valve Replacement for Nitrification Clarifiers A-5 and A-6 Project extending the project completion date from February 17, 2014 to May 27, 2016 for a total of 561 working days beyond the original contract completion date of February 7, 2014.

This item is scheduled for consideration by the City Council on March 15, 2016.

TPAC discussed the circumstances giving rise to a need to increase the contingency. On a motion by Committee Member Gatto and a second by Committee Member Leonardis, TPAC recommended approval of the Staff Recommendations for Item 5.C.

Ayes – 7 (Esteves, Gatto, Leonardis, Liccardo, Nguyen, Oliverio, Sykes)
Nayes –0
Absent – 2 (Kolstad, Marsalli)

D. 2015-2016 Budget Adjustments for the San José- Santa Clara Regional Wastewater Facility Capital Improvement Program

Staff Recommendations:

(a) Adopt the following 2015-2016 Appropriation Ordinance and Funding Sources Resolution Amendments in the San José-Santa Clara Treatment Plant Capital Fund:
   (1) Decrease the estimate for Earned Revenue by $4,219,000:
   (2) Decrease the Transfer to the Clean Water Financing Authority Debt Service 2015-2016 by $1,556,000; and
   (3) Decrease the Unrestricted Ending Fund Balance by $3,643,000.

(b) Adopt the following 2015-2016 Appropriation Ordinance Amendments in the Sewer Service and Use Charge Fund:
   (1) Decrease the Transfer to the San José/Santa Clara Treatment Plant Capital Fund on or before June 30 by $980,000; and
   (2) Increase the Unrestricted Fund Balance by $980,000.

David Wall spoke on this item.

Several Committee Members discussed proposals on this matter:
TPAC representatives from the Tributary Agencies requested that this item be deferred because it involved a project for which they are asserting a claim that will not be heard by TPAC until March 24, 2016.

Ms. Tsongtaatarii clarified that procedurally the Master Agreement requires the budget be reviewed by TPAC for its advisory recommendation before it is considered by the San Jose City Council. In this case, the adopted budget was based on assumptions that the Tributary Agencies would fund their portion of the capital budget with short term financing, commercial paper. Since that did not occur, the budget now needs to be corrected. Secondly, the Tributary Agencies allocation can now be revised to reflect treatment parameters because engineer design has since been completed for the project. This was the basis of the Tributary Agency's claim, and San Jose is trying to comply with the Master Agreement. The Tributary Agencies do not need to recommend moving forward with the budget adjustment, and their claim could still be asserted before TPAC at the administrative hearing.

Britt Strottman, legal counsel representing the Tributary Agencies, proposed that TPAC should not recommend approval of a mid-year budget action because to do so would circumvent the claim process. Moreover, the Master Agreement required that the Tributary Agencies should be billed for the difference between the payment and actual expenditures in the third quarter of 2017.

Assistant Director Kantak noted that the third quarter reconciliation for the prior fiscal year is a separate process provided under the Master Agreement to reconcile actual expenditures with payments based on adopted budget. Adjustments to the budget have been made in the past. The Master Agreement requires that the invoice be based on the budget and does not preclude adjustments to the budget.

Director Kerrie Romanow and Assistant Director Ashwini Kantak explained that delaying the Digester project could result in significant consequences (i.e. higher costs for the project and an increased risk of failure at the facility). Moreover, the current budget is based on capital cost allocations for a facility-wide project. In order to invoice for the Digester project in the fourth quarter billing, based on parameter allocations, the budget would need be amended to reflect the correct allocation amounts. The billing would occur on April 1st with payments and award of contact occurring in May.

An initial motion was made by Committee Member Gatto with a second by Committee Member Esteves to defer the item until the claim can be heard by TPAC.

Vice Chair Liccardo indicated he would vote against the motion.

Committee Member Oliverio made a motion to move forward with Staff's Recommendation for Item 5.D., and was seconded by Committee Member Nguyen. The motion to defer failed by a 3-4 vote.

The motion to approve staff recommendations passed by a 4-3 vote:

Ayes – 4 (Liccardo, Nguyen, Oliverio, Sykes)
Nayes – 3 (Esteves, Gatto, Leonardis)
Absent – 2 (Kolstad, Marsalli)

6. OTHER BUSINESS/CORRESPONDENCE

A. Letter from Mayor Liccardo to the Tributary Agencies

B. Letter from the Tributary Agencies to TPAC

There were no further questions or comments by TPAC regarding these letters.
A letter dated February 26, 2016 was distributed by the Tributary Agencies. Since TPAC did not review the letter prior to meeting and was not scheduled as an agenda item, Vice-Chair Liccardo and Committee Member Gatto suggested referencing the letter in the minutes of this meeting.

7. STATUS OF ITEMS PREVIOUSLY RECOMMENDED FOR APPROVAL BY TPAC

A. Master Agreement Claim Hearing Process

Staff Recommendations:
(a) Adopt the hearing procedures.
(b) Schedule a hearing date by March 25, 2016.

The proposed recommendations were approved by Council on January 26, 2016.

B. Report on Bids and Award of Contract for the 6970 – Fiber Optic Connection Project at the San José- Santa Clara Regional Wastewater Facility

Staff Recommendation: Report on bids and award of a construction contract for the 6970 – Fiber Optic Connection Project to the low bidder, All Phase Excavating and Construction, Inc., in the amount of $240,000 and approval of a 15 percent contingency in the amount of $36,000.

The proposed recommendation was approved by Council on February 23, 2016.

David Wall spoke on these items.

All items under Section 7 were approved to note and file.

Ayes – 6 (Esteves, Gatto, Liccardo, Nguyen, Oliverio, Sykes)
Nayes – 0
Absent – 3 (Kolstad, Liccardo, Marsalli)

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 of services between $100,000 and $270,000.

David Wall spoke on this item.

Item 8.A. was approved to note and file.

Ayes – 6 (Esteves, Gatto, Leonardis, Nguyen, Oliverio, Sykes)
Nayes – 0
Absent – 3 (Kolstad, Liccardo, Marsalli)

9. MISCELLANEOUS

A. The next TPAC meeting is April 14, 2016, at 4:30 p.m., City Hall, Room 1734.

B. Committee Member Leonardis and Ashwini Kantak reminded TPAC that the Administrative Claim Hearing is on March 24, 2016 in the Council Chambers from 1:30-3:30 P.M.

10. OPEN FORUM

A. David Wall spoke.

11. ADJOURNMENT

A. The Treatment Plant Advisory Committee adjourned at 5:19 p.m.

Sam Liccardo, Vice-Chair
TREATMENT PLANT ADVISORY COMMITTEE

San José-Santa Clara Regional Wastewater Facility

Capital Improvement Program
Monthly Status Report: February 2016

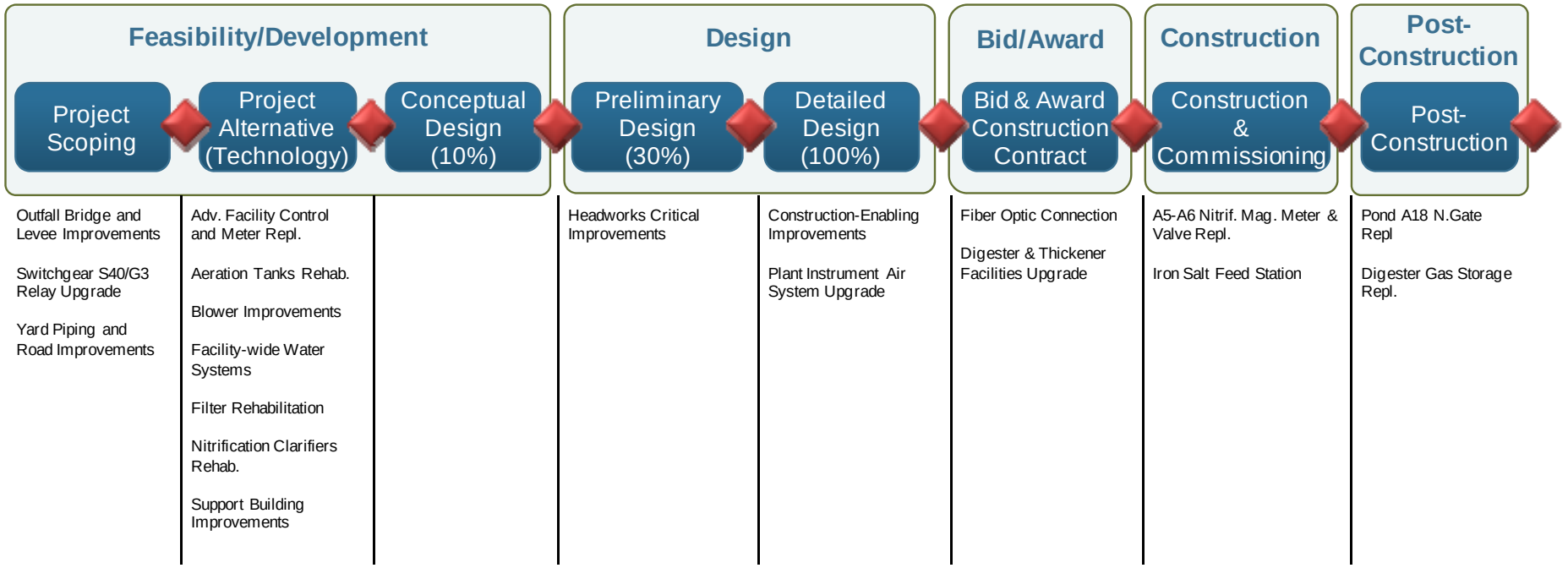
April 7, 2016

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 (RWF) for February 2016.

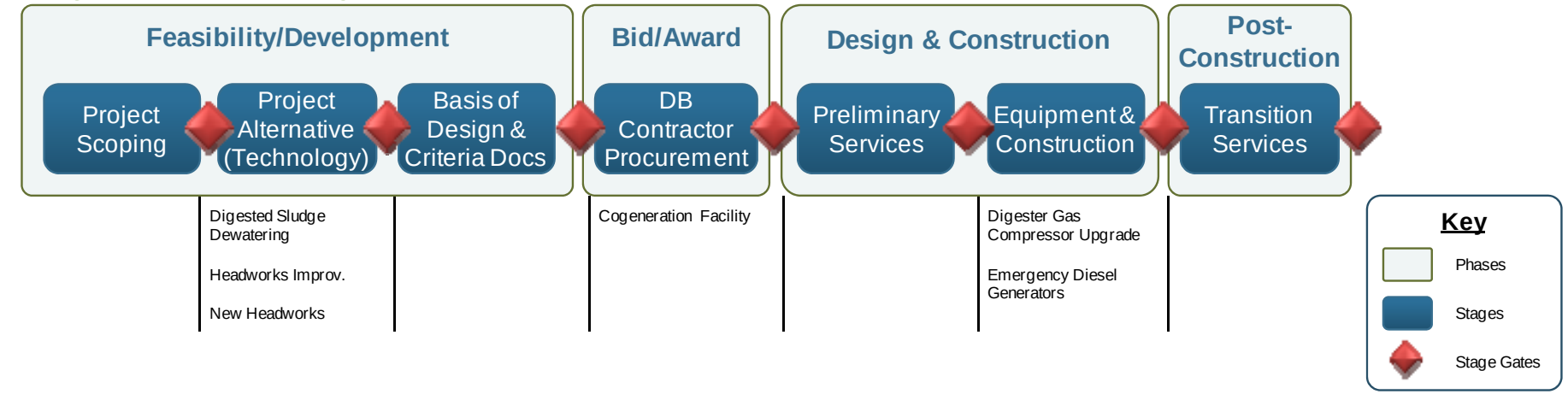
Report Contents

Project Delivery Model

Design-Bid-Build Active Projects



Design-Build Active Projects



*Projects shown in ***bold and italics*** have advanced this reporting period

Program Summary

February 2016

In February, the CIP progressed on multiple fronts, including the successful advancement of the Construction-Enabling Project through the "Authorization To Bid" Project Delivery Model (PDM) stage gate process.

In addition, CIP staff:

- Advertised a Request for Qualifications (RFQ) for Program-wide Audit Consultant Services to provide ongoing construction audit and other audit services, including audits of consultant and contractor progress payments;
- Advertised a Request for Proposal (RFP) for Broker, Administrative, and Claims Management Services for an Owner-Controlled Insurance Program (OCIP); and
- Received Statement of Qualifications (SOQ) from five consultants for the recently advertised Facility-wide Water Systems Improvement Project.

Staff presented recommendations to the Treatment Plant Advisory Committee (TPAC) and City Council (Council) this month to award a $240,000 construction contract to All Phase Excavating and Construction Inc., for the Fiber Optic Connection Project. This project will complete the final phase of the fiber optic cable connection between the RWF and the City of San José's (City) fiber optic network. Staff also made a presentation on the CIP to Council at a February 8 Special Study Session.

The Construction-Enabling Improvements Project and the Plant Instrument Air System Upgrade Project both reached the 100 percent design review milestone this month. The Construction-Enabling Project successfully passed though the Authorization to Bid Stage Gate and is scheduled to be advertised for construction in March 2016. The Plant Instrument Air System project is scheduled to pass through the Authorization to Bid Stage Gate and advertise for construction in April.

A second pre-construction meeting and site visit was held for the Digester and Thickener Facilities Upgrade Project following the issuance of construction bids in January. Staff continued to work this month to answer bidders' questions and award a number of contract addenda in advance of the scheduled March bid opening.

In addition, construction continued on a number of CIP projects, including Emergency Diesel Generators and Digester Gas Compressor Upgrade.

Look Ahead

In March, staff will continue to move forward with efforts related to consultant procurements, including the Nitrification Clarifiers Rehabilitation Project; the Aeration Tank and Blower Rehabilitation Project; the Facility Wide Water Systems Improvements Project; and the Advanced Facility Control and Meter Replacement Project. Procurements for a number of programmatic services will also continue to advance, including for General Engineering Services; Design and Construction Management Software (DCMS); Value Engineering and Peer Review Services; Construction Management and Inspection Services; and Audit Services. Two RFQs are scheduled to be issued next month: System Integrator Services Pre-Qualification for future CIP projects, and Digested Sludge Dewatering Facility Owner's Advisor.

Staff will present recommendations on a number of projects to TPAC and Council in March and April, including on the Cogeneration Facility (design-build award); DCMS (purchase and implementation of system); Nitrification Clarifiers Rehabilitation Project (consultant award); A5/A6 Nitrification Magnetic Meter and Valve Replacement (construction contingency increase); Construction-Enabling Project (right-of-way dedication); Pond A18 Northern Gate Structure (end of emergency declaration); and the RWF Semiannual Status Report.

The Digester and Thickener Facilities Upgrade Project construction bids will be opened on March 17.

In addition, all CIP project managers and project engineers will continue formal staff training in March with the second of two sessions planned on Risk Management. In April, a special session will focus on council memo preparation and communications.

Program Highlight – Project Delivery Model

The Project Delivery Model (PDM) was established to ensure consistent CIP project delivery. It consists of the following key components, as shown in Figure 1 below:

- **Life Cycle**: A series of discrete phases and stages laid out in chronological order.
- **Project Stages**: Each stage is broken down into individual activities with key deliverables and supporting procedures and templates listed.
- **Governance Framework**: Approval gates between stages that confirm project alignment with CIP mission, vision and goals.

The PDM was initially developed as part of CIP startup in early 2014 for both design-bid-build (DBB) and low-bid design-build (DB) delivery methods as shown below.

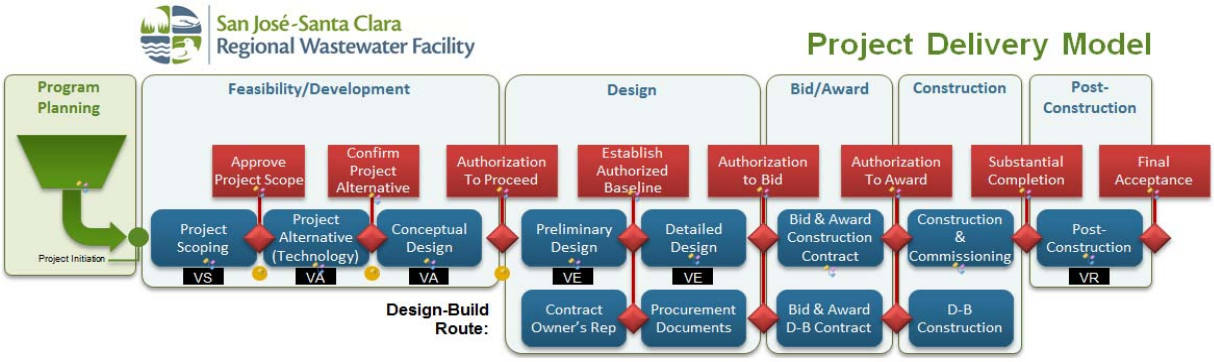


Figure 1 – Original Project Delivery Model released February 2014

As part of the CIP's continuous improvement approach, staff reviewed and updated the PDM in late 2015 after two years of use on DBB and DB projects. Changes included updating content and creating a separate, progressive DB life cycle. A revised PDM was released in January 2016, as shown below.

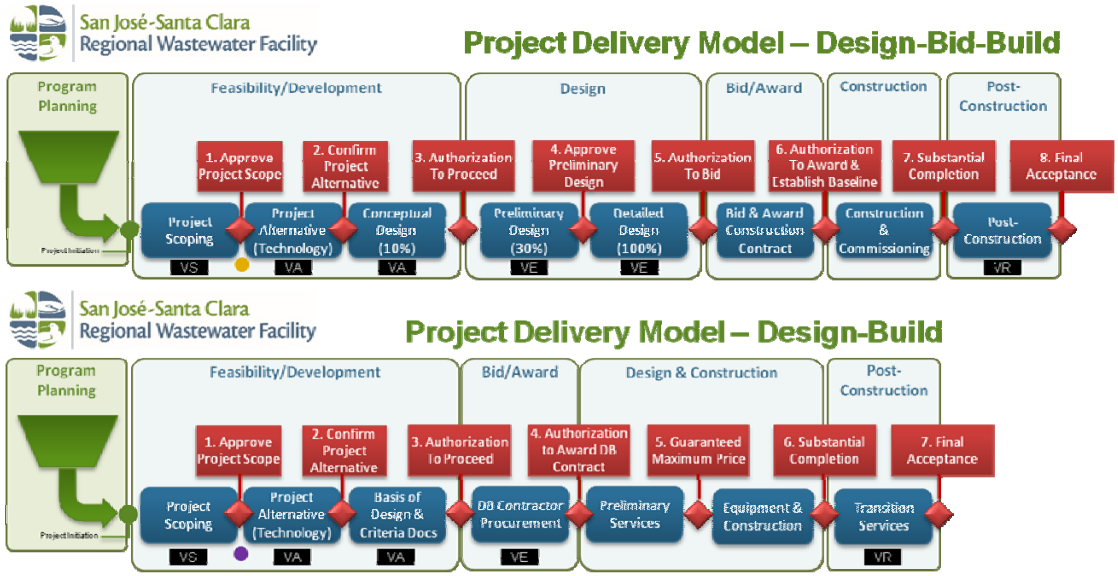


Figure 2 – Updated Project Delivery Model released January 2016

The PDM continues to be a key CIP tool that is followed on all projects and used on a daily basis to facilitate project delivery conversations and reporting. Copies of the PDM are displayed in all meeting rooms and in many staff workspaces at the RWF Environmental Services Building, reflecting widespread adoption and use.

Program Performance Summary

Eight key performance indicators (KPIs) have been established to measure the overall success of the CIP. Each KPI represents a metric that will be monitored on a regular frequency. Through the life of the CIP, KPIs will be selected and measured that best reflect the current maturity of the program.

Program Key Performance Indicators – Fiscal Year 2015-2016

KPI	Target	Fiscal Year to Date			Fiscal Year End		
		Actual	Status	Trend	Forecast	Status	Trend
Stage Gates	80%	100% (16/16)[1]			100% (28/28)		
Measurement: Percentage of initiated projects and studies that successfully pass each stage gate. Criteria: Red: < 70%; Amber: 70% to 80%; Green: >=80%							
Schedule	85%	33% (1/3)			25% (1/4)		
Measurement: Percentage of CIP projects delivered within 2 months of approved baseline Beneficial Use Milestone. Criteria: Red: < 75%; Amber: 75% to 85%; Green: >=85%							
Budget	90%	100% (4/4)			83% (5/6)		
Measurement: Percentage of CIP projects that are completed within the approved baseline budget. Criteria: Red: < 80%; Amber: 80% to 89%; Green: >=90%							
Expenditure	$153M	$75M			$188M		
Measurement: CIP Fiscal Year 15/16 committed costs. Committed cost meets or exceeds 70% of planned Budget (70% of $219M = $153M)							
Procurement	80%	86% (12/14)[2]			100% (16/16)		
Measurement: Number of consultant and contractor procurements for initiated projects and program-wide services advertised compared to planned for the fiscal year. Criteria: Red: < 70%; Amber: 70% to 79%; Green: >=80%							
Safety	0	0			0		
Measurement: Number of OSHA reportable incidents associated with CIP construction for the fiscal year. Criteria: Red: > 2; Amber: 1 to 2; Green: zero incidents							
Environmental	0	0			0		
Measurement: Number of permit violations caused by CIP construction for the fiscal year. Criteria: Red: > 2; Amber: 1 to 2; Green: zero incidents							
Staffing	80%	86% (6/7)[3]			86% (25/29)		
Measurement: Number of planned positions filled for the fiscal year. Criteria: Red: < 70%; Amber: 70% to 79%; Green: >=80%							

Notes

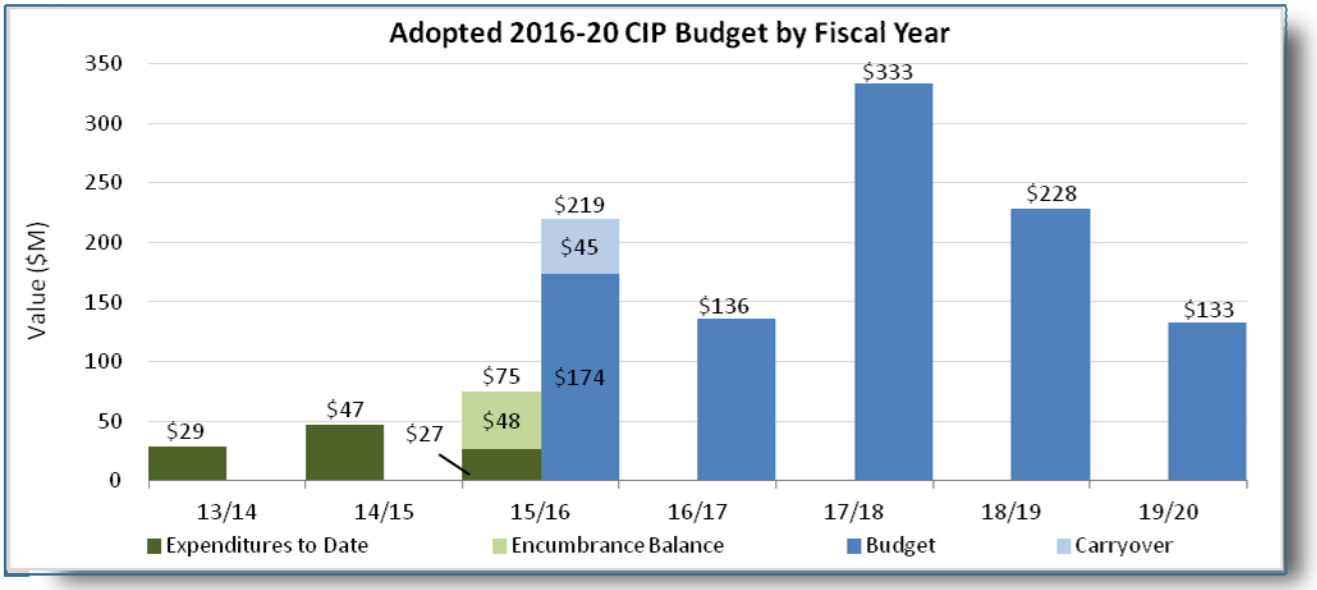
1. For the Stage Gate KPI Fiscal Year to Date (YTD), the number of completed stage gates increased from 15 to 16 with the Construction-Enabling Improvements Project successfully completing its stage gate.
2. The Procurement KPI Year to Date has increased from 10 to 12 as procurements were advertised in February for the Program-Wide Audit Consultant Services; and the Broker, Administrative, and Claims Management Services for an OCIP.
3. The City Staffing level KPI for planned recruitments for positions that are vacant at the start of the fiscal year is measured quarterly; all other KPIs are measured monthly. KPI measurement does not account for staff turnover throughout the fiscal year.

Program Cost Performance Summary

This section provides a summary of CIP cost performance for all construction projects and non-construction activities for FY15-16 and the 2016-2020 CIP.

Adopted 2016-2020 CIP Expenditure and Encumbrances

To accommodate the proposed increase in expenditures and encumbrances over the next five years, the City is implementing a long-term financial strategy to fund needed, major capital improvements while minimizing the impact to ratepayers. FY13-14 and FY14-15 expenditures have been adjusted to reflect the CIP portion of the Treatment Plant Capital Fund, Fund 512, excluding South Bay Water and Urgent and Unscheduled Cost ($2.6M and $1.5M, respectively).



Notes

Expenditure: Actual cost expended, either by check to a vendor or through the City's financial system for expenses such as payroll or non-personal expenses that do not require a contract.

Encumbrance: Financial commitments, such as purchase orders or contracts, which are committed to a vendor, consultant, or contractor. The encumbrance reserves the funding within the appropriation and project.

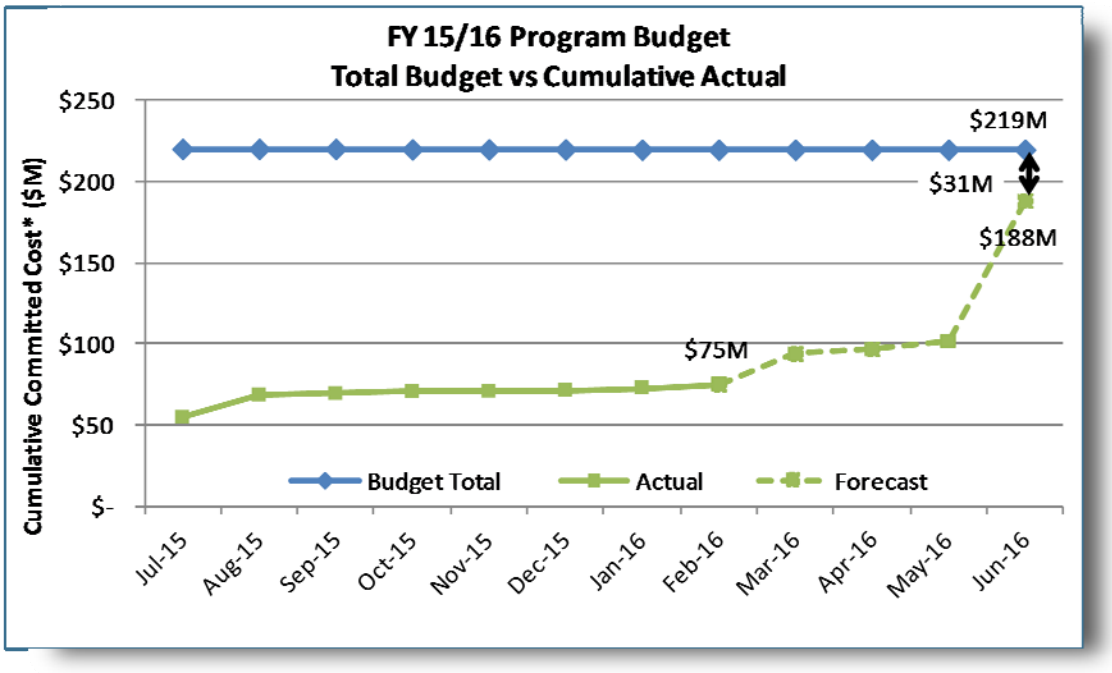
Encumbrance Balance: The amount of the remaining encumbrance committed after payments.

Budget: Adopted FY 2016-2020 Budget. This is new funding plus rebudgeted funds.

Carryover: Encumbrance balances at the end of a fiscal year become carryover funding. This is different from rebudgets, in that it is done automatically to utilize funding that was previously committed, but not yet paid.

Fiscal Year 2015-2016 Program Budget Performance

The fiscal year program budget is $219 million. This budget represents the 2015-2016 budget of $174 million plus carryover of $45 million. The budget excludes Reserves, Ending Fund Balance, South Bay Water Recycling, Public Art, and Urgent and Unscheduled Rehabilitation items.



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

Project Performance Summary

There are currently six active projects in the construction or post-construction phase, with a further 19 projects in feasibility/development, design, or bid and award phases (see PDM graphic, page 2). 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 Staff System (CPMS). Green/red icons are included in the table below to indicate whether these projects 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]
Pond A18 Northern Gate Structure	Post-Construction	Aug 2015[3]	*N/A*[4]	*N/A*[4]
Digester Gas Storage Replacement	Post-Construction	Nov 2015[3]		
A5-A6 Nitrification Mag. Meter & Valve Replacement	Construction	May 2016		
Digester Gas Compressor Upgrade	Construction	Sep 2016		
Emergency Diesel Generators	Construction	Dec 2016[5]		 [5]
Iron Salt Feed Station	Construction	Mar 2017		

KEY:

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

Notes

1. Beneficial Use is defined as work that is sufficiently complete, in accordance with contract documents, that it can be used or occupied by the City. 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 12.
3. Actual Beneficial Use date.
4. Due to the emergency nature of the Pond A18 Northern Gate Replacement project, cost and schedule performance measurement criteria have not been applied.
5. The Emergency Diesel Generators Project Beneficial Use date was adjusted in January from August 2016 to December 2016.

Project Performance – Pre-Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date[1]
Fiber Optic Connection	Bid & Award	Nov 2016
Cogeneration Facility	Bid & Award	Apr 2019
Digester & Thickener Facilities Upgrade	Bid & Award	Jun 2019
Construction-Enabling Improvements	Design	Dec 2016
Headworks Critical Improvements	Design	Aug 2017
Plant Instrument Air System Upgrade	Design	Jan 2018
Blower Improvements	Feasibility/Development	Jan 2019
Adv. Facility Control & Meter Replacement	Feasibility/Development	May 2020
Switchgear S40 Upgrade, M4 Replacement, G3 & G3A Removal	Feasibility/Development	Sept 2020
Headworks Improvements	Feasibility/Development	April 2021
Outfall Bridge and Levee Improvements	Feasibility/Development	Nov 2021
Digested Sludge Dewatering Facility	Feasibility/Development	Dec 2021
Facility Wide Water Systems Improvements	Feasibility/Development	Feb 2022
Filter Rehabilitation	Feasibility/Development	Mar 2022
New Headworks	Feasibility/Development	Aug 2022
Nitrification Clarifiers Rehabilitation	Feasibility/Development	Aug 2022
Yard Piping and Road Improvements	Feasibility/Development	Aug 2022
Aeration Tanks Rehabilitation	Feasibility/Development	Sept 2023
Support Building Improvements	Feasibility/Development	Jan 2027

Notes

1. Beneficial Use is defined as work that is sufficiently complete, in accordance with contract documents, that it can be used or occupied by the City. Beneficial Use dates are being reviewed as part of project schedule reviews.

Significant Accomplishments

The projects below are described under different "packages." In the CIP, packages are groups of projects organized within the same treatment process area.

Biosolids Package

Digester and Thickener Facilities Upgrade

- The City responded to bid questions and issued necessary addenda.
- The City conducted a second, non-mandatory site visit in order to allow the eight prequalified contractors additional time to inspect the existing facilities.

Digested Sludge Dewatering Facility

- The project team completed the final RFQ documents for the Owner's Advisor role this month. The City anticipates the procurement will commence next month.

Facilities Package

Construction-Enabling Improvements

- The project team successfully advanced the project through the Authorization to Bid Stage Gate.

Facility Wide Water Systems Improvements

- The consultant selection process is underway. Staff received five SOQs from interested firms and began the evaluation process to select the consultant for this project. The selection process is expected to be completed in late March. Award is targeted for June.

Cogeneration Facility

- The City concluded negotiations with the design-builder. The staff report recommending approval of the contract is scheduled for consideration by TPAC and the Council in April.

Fiber Optic Connection

- TPAC and Council approved the contract with the low bidder in the amount of $240,000. The contract has been sent to the contractor for execution.

Liquids Package

Iron Salt Feed Station

- The project team finalized a contract with the consultant for Engineering Support During Construction services.
- The project team finalized the contract with a special inspection services consultant.

Aeration Tanks and Blower Rehabilitation

- The City executed a service order for the Blower Improvements Condition Assessment and Conceptual Design.
- The project team held a kickoff meeting on Blower Improvements Condition Assessment and Conceptual Design.
- Staff received Aeration Tank and Blower Rehabilitation Project SOQs and held a technical evaluation panel meeting.

Nitrification Clarifier

- The project team completed negotiations on the Not to Exceed (NTE) budget for the master consultant agreement.

Power and Energy

Digester Gas Compressor Upgrade

- The project team continued to work on the outdoor cooling equipment and 480V Motor Control Center.

Emergency Diesel Generators

- The generator manufacturer successfully completed the factory acceptance test.

Explanation of Project Performance Issues

A5-A6 Nitrification Magnetic 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 cost more to modify the electrical system than to order and install compatible actuators. Operations and Maintenance (O&M) staff requested that the actuators match the custom actuators used in the other 14 clarifiers. The City pursued various options to resolve the issue and received a proposal from the contractor to install new actuators based on a revised specification. A counterproposal was provided to the contractor in December. Discussions between senior management from both sides have been productive. A negotiated agreement to resolve all outstanding contract issues was concluded in January. A change order was issued on January 27 for the contractor to purchase replacement custom actuators, with lead time of between 12 to 14 weeks. Council approval of additional required funding is expected in March. Contractor mobilization, actuator installation, wiring, troubleshooting, and punch list signoff will take a minimum of three weeks. Beneficial Use is forecast for late May 2016.

Digester Gas Storage Replacement

During a comprehensive review of the gas storage tank design submitted by design consultant Brown and Caldwell, it was noted that the removable piston legs used in the subcontractor's proposed design did not meet design standards and could cause problems with the tank's intended use. The contractor was granted a three-month, no-cost time extension to September 28 to complete design modifications to the gas holder support structure. Several owner-requested changes were evaluated during the pre-startup period, resulting in three additional change orders. All work requiring welding or other spark-producing activities was completed prior to the introduction of gas. The tank successfully passed its required leakage test and was commissioned in November 2015. The tank is in use, the project is within budget, and final contract closeout activities are expected to be completed by April 2016.

Emergency Diesel Generator

The schedule for completion is delayed approximately three months due to the following three factors:

1. Caterpillar, the supplier of the Emergency Diesel Generator system, encountered delays in developing the controls that interface with the existing Facility controls.

2. Additional time required for Pacific Gas & Electric to approve and witness test the installation and commissioning of the Emergency Diesel Generator equipment.

3. The commissioning sequence for the existing facility cogeneration engines EG-1, EG-2 and EG-3 changed. The controls for the existing cogeneration generators are being modified to load-share with the new emergency diesel generators. To minimize impacts from having an existing cogeneration unit out of service, these units can only be modified after the new generators have been commissioned. This sequence change has extended the project completion date.

Project Profile – Headworks

At the RWF, the headworks facilities provide the first step of processing, also called preliminary treatment. Preliminary treatment removes inorganic material such as sticks, stones, grit, and sand from the influent wastewater stream to protect and reduce wear on the downstream process equipment, and to enhance process performance.

Of the RWF's two separate headworks facilities, the original Headworks 1 includes screens; grit removal through an aerated grit chamber, detritor systems, screenings and grit handling facilities; and pumping facilities. Headworks 1 has been in operation for more than 50 years and has a rated capacity of 271 million gallons per day (MGD). Commissioned in 2008, Headworks 2 includes screens; vortex grit removal units; screenings and grit handling facilities; and a pump station. Headworks 2 has a rated capacity of 160 MGD. It was built to supplement Headworks 1 in response to a 1998 storm that resulted in an estimated peak wet-weather flow of 330 MGD.

The CIP headworks improvements have been divided into the following three projects, listed in order of their scheduled completion dates:

Headworks Critical Improvements Project - To address urgent reliability and safety concerns, this project will include repair and replacement of existing gates, screens, and control power to Headworks 2.

Headworks Improvements Project - This project will improve the reliability of Headworks 2 and rehabilitate Headworks 1 to enable it to remain in operation until the completion of the New Headworks Project. The Headworks Improvements Project will also include short-term structural repairs to Headworks 1 and the installation of infrastructure needed to reroute flows from Headworks 1 to Headworks 2 in preparation for the decommissioning of Headworks 1.

New Headworks Project - This project will include the design and construction of a new headworks facility, including a new pump station, screens, grit removal, piping and other appurtenances to replace the aging Headworks 1. The New Headworks Project will also include the decommissioning of Headworks 1.

Due to the straightforward nature of the Headworks Critical Improvements Project, the traditional design-bid-build method has been selected as the project delivery method. The other two projects will use the progressive design-build method of delivery to transfer performance risk; provide a single point of responsibility for both design and construction; and increase the potential for innovative solutions to complex issues.

CDM Smith has been selected as Engineer for the Headworks Critical Improvements Project and as Owner's Representative for the other two projects. Notice to Proceed for all three projects is scheduled for March 2016, which will allow the preliminary design work to commence on the Headworks Critical Improvement Project and evaluation of project alternatives to commence on the other headworks projects.

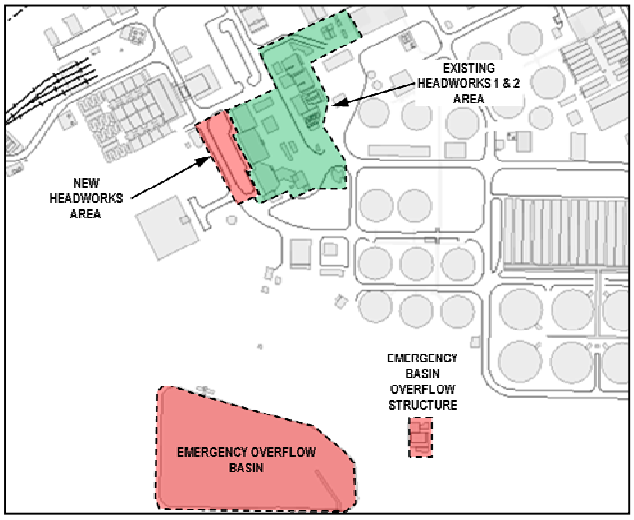


Figure 3: Headworks Projects Site Location

Figure 4: Headworks 1 Bar Screens

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Regional Wastewater Facility Treatment – Current Treatment Process Flow Diagram

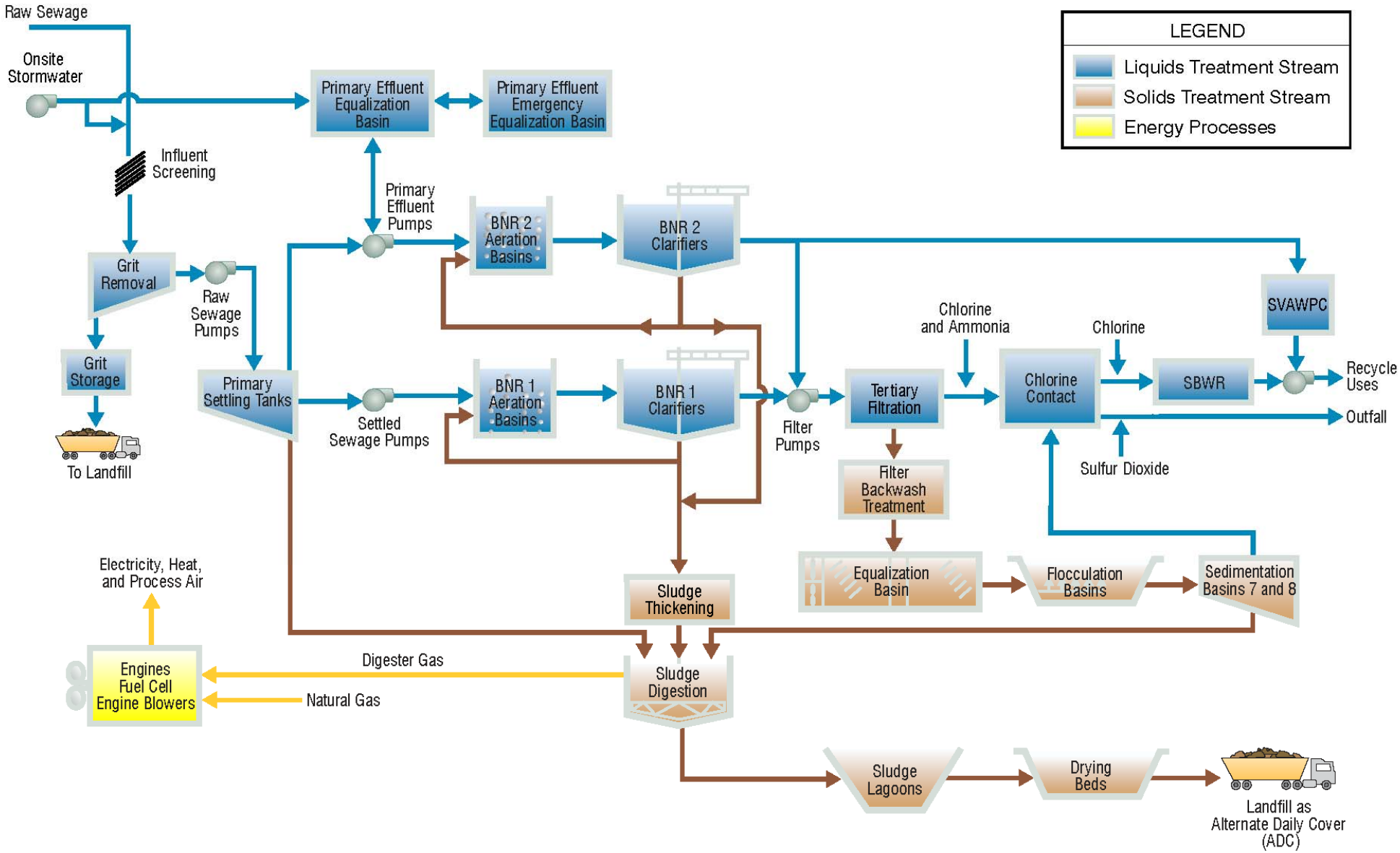

Figure 5 — Current Treatment Process Flow Diagram

Regional Wastewater Facility Treatment – Proposed Treatment Process Flow Diagram

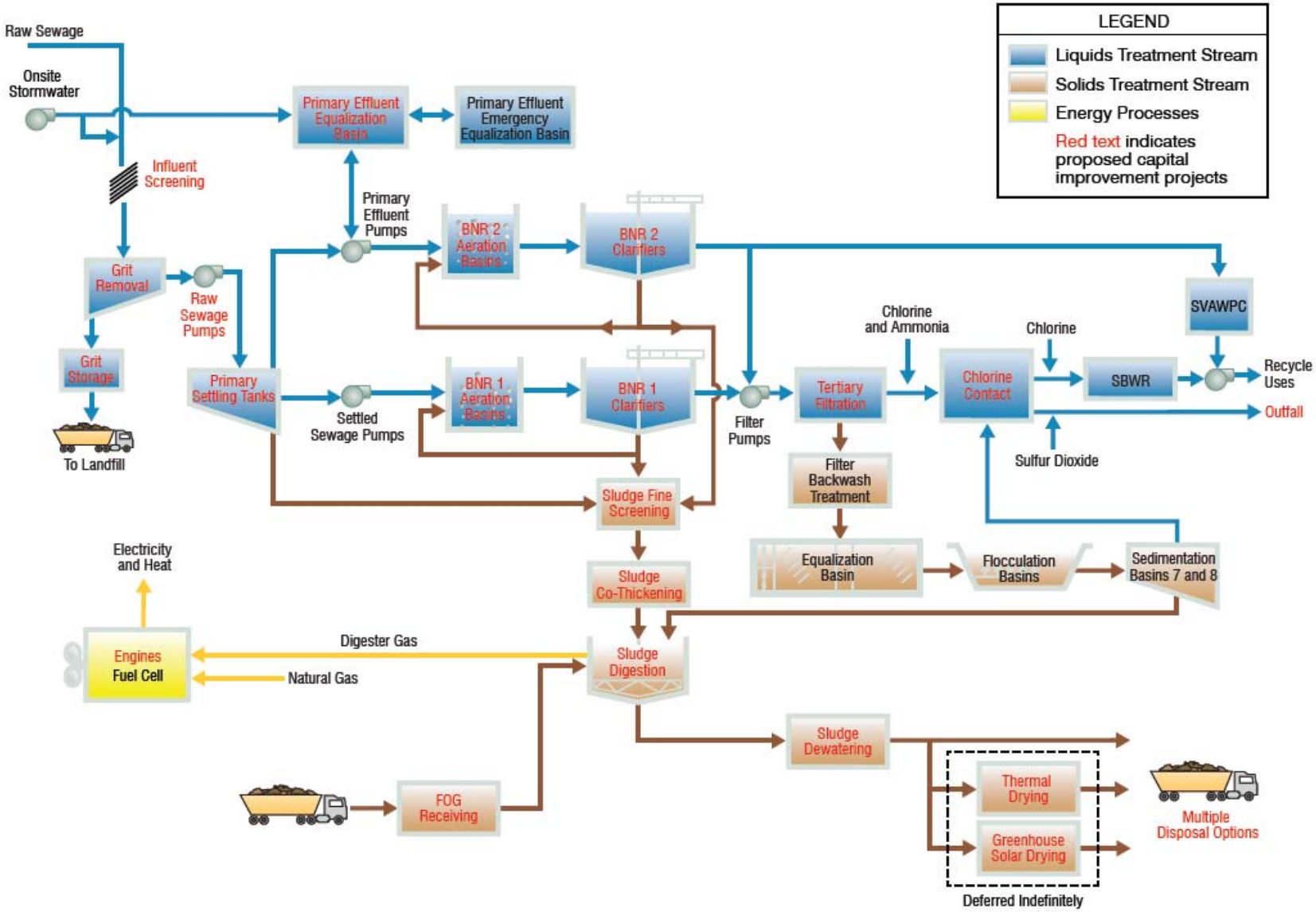

Figure 6 — Proposed Treatment Process Flow Diagram

Active Construction Projects – Aerial Plan

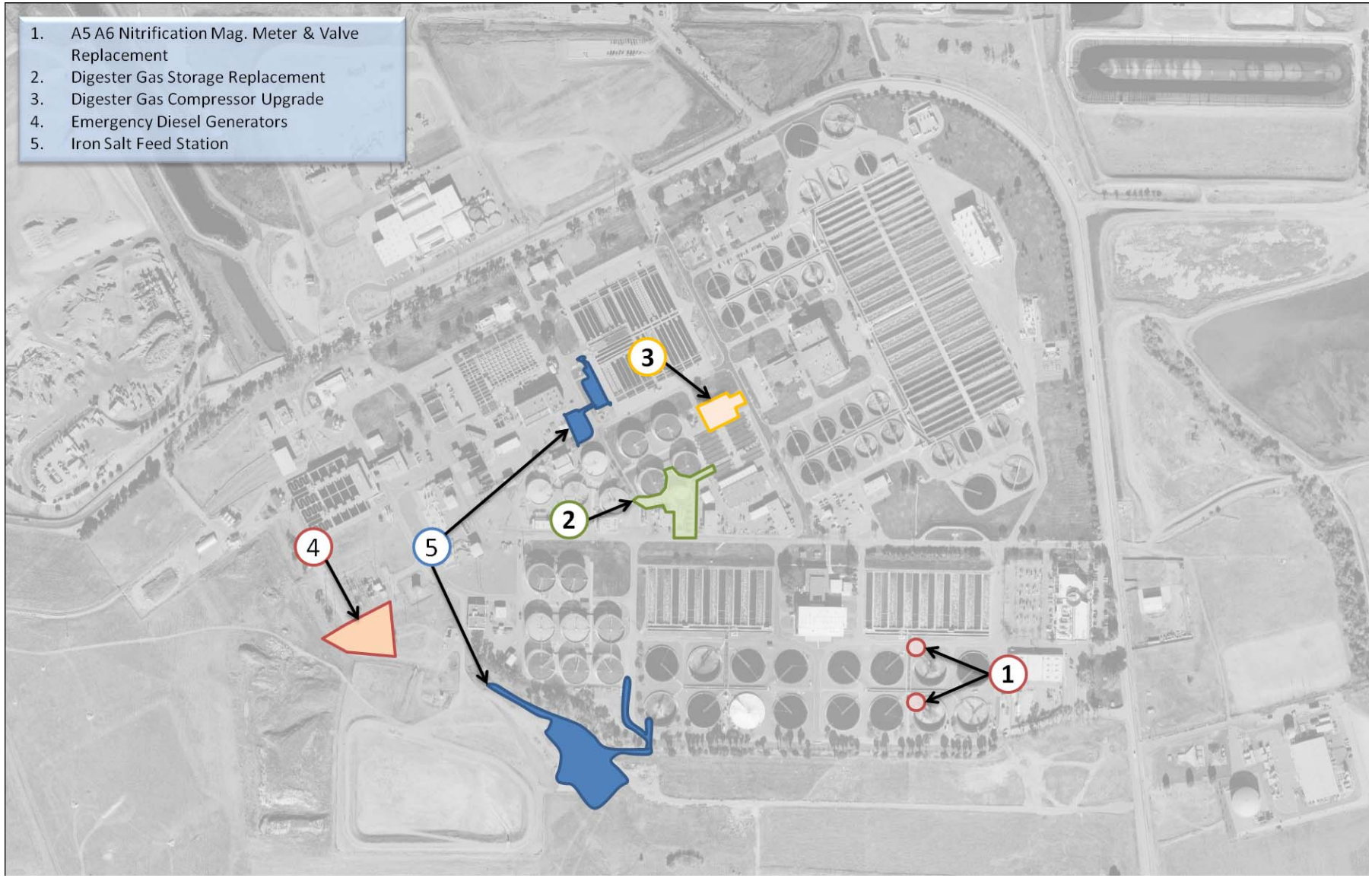

Figure 7—Active Construction Projects

COUNCIL AGENDA: 4/26/16
ITEM:

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Barry Ng
Kerrie Romanow

SUBJECT: SEE BELOW

DATE: April 7, 2016

Approved D-DSyL

Date 4/7/16

SUBJECT: APPROVAL OF A DESIGN-BUILD CONTRACT WITH CH2M HILL ENGINEERS, INC., FOR THE COGENERATION FACILITY AT THE SAN JOSE-SANTA CLARA REGIONAL WASTEWATER FACILITY

RECOMMENDATION

1. Approve the design-build contract with CH2M HILL Engineers, Inc. (CH2M HILL) for the Cogeneration Facility at the San José-Santa Clara Regional Wastewater Facility in an amount not to exceed $5,655,000 for the performance of preliminary design services under the contract.

2. Approve a design contingency in the amount of $565,000 for City-approved changes to the scope of preliminary design services.

3. Adopt a resolution authorizing the City Manager or his designee to:

   (a) Negotiate and execute a definitive contract amendment with CH2M HILL to: (1) set a base guaranteed maximum price or lump sum amount in accordance with the contract, in an amount not-to-exceed $82,884,000 for the design-build work to be performed following the preliminary design services; (2) set a schedule for completion and acceptance of the design-build work required by the contract; (3) define the technical specifications and guaranteed performance capabilities for the Cogeneration Facility; (4) establish any additional professional services required by the City for transitioning the Cogeneration Facility to City control after acceptance , and the fee to be charged therefore; (5) establish the insurance requirements for the design-build work; and (6) subject to review and approval by the City Attorney's Office, amend other terms and conditions of the contract that are necessary to accomplish the foregoing;

   (b) Negotiate and execute separate agreements and/or amendments to the contract to allow CH2M HILL to proceed with discrete portions of the design-build work prior to the City's execution of the definitive contract amendment in an amount not to exceed $30,000,000, which amounts will be subject to the base guaranteed maximum price;

4. Approve a construction contingency in the amount of $8,288,000 to pay for adjustments to the base guaranteed maximum price or if applicable, the lump sum amount, in accordance with the contract and to pay for the transition services after acceptance of the Cogeneration Facility.

5. Adopt a resolution authorizing the City Manager or his designee to:

   (a) Execute change orders in excess of $100,000 up to the amount of the design contingency for changes to the scope of the preliminary design services, and up to the amount of the construction contingency for adjustments to the base guaranteed maximum price or lump sum amount during the performance of the design-build work;

   (b) Negotiate and execute the necessary regulatory permits and public utility agreements in excess of $100,000 for the permitting, design, construction and inspection of utility connections associated with the new Cogeneration Facility, up to an aggregate amount of $600,000.

OUTCOME

Approval of staff's recommendations will allow for the design, construction, commissioning and acceptance of the Cogeneration Facility pursuant to the design-build contract. The design and construction contingencies will provide funding for additional work and unforeseen conditions that may be necessary for the proper completion of the Cogeneration Facility.

EXECUTIVE SUMMARY

Power generation facilities at the San José-Santa Clara Regional Wastewater Facility[1] (RWF) range from 20 to over 60 years of age and are becoming increasingly unreliable. In 2012, the City completed a comprehensive study of the RWF's power generation equipment and concluded that the existing cogeneration equipment needs to be replaced in order to provide reliable and efficient on-site power and heat, while reducing air emissions.

The Cogeneration Facility will consist of a new building to house advanced generation internal combustion engines, electrical switchgear, heat recovery systems, and control system and monitoring system with connectivity to the RWF's Distributed Control System. In addition, the Cogeneration Facility Project ("Project") scope includes a new digester gas treatment system, various appurtenances to support the engines and building, digester gas pipeline and natural gas pipeline, and civil work including parking areas and utilities (water, communications, stormwater and sanitary sewer lines).

[1] The legal, official name of the facility remains San José/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.

On December 1, 2015, City Council authorized staff to negotiate a design-build contract ("Contract") with CH2M HILL Engineers, Inc. ("CH2M HILL") for the Project. Negotiations are complete and staff is presenting the Contract for City Council approval.

The Contract is based on the Progressive Design-Build project delivery method, which involves two distinct phases. Phase 1 is for the performance of preliminary design services ("Base Preliminary Services"). Phase 2 is the final design and construction work required by the Contract ("Design-Build Work") and professional services required by the City for transitioning the Cogeneration Facility to City control after acceptance ("Transition Services").

The City and CH2M HILL will work collaboratively during Phase 1 to develop the 60% design of the Cogeneration Facility and begin a process to negotiate and execute a contract amendment ("Definitive Contract Amendment"). CH2M HILL will provide the City with a proposal for the Definitive Contract Amendment that will establish a Base Guaranteed Maximum Price ("Base GMP") for the cost of the Design-Build Work required by the Contract and CH2M HILL's general conditions fee and profit (collectively, "Design-Build Price"). The Definitive Project Amendment also will establish other critical components of the Project, such as schedule and performance guarantees. In addition, professional services and fees required by the City for transitioning the Cogeneration Facility to City control after acceptance ("Transition Services") will be negotiated as part of the Definitive Project Amendment. If the parties agree to a Definitive Contract Amendment, Phase 2 of the Project will be CH2M HILL's performance of the Design-Build Work and Transition Services.

The Contract allows the parties to agree to separate agreements and/or amendments to the Contract to allow CH2M HILL to proceed with discrete portions of the Design-Build Work prior to the City's execution of the Definitive Contract Amendment ("Early Work Packages"). Early Work Packages are expected to include procurement of the engine generators and other long-lead items for which advance work by CH2M HILL will shorten the Project schedule.

The currently estimated cost for Preliminary Services, Design-Build Work, and design and construction contingency is $97,392,000. Including project delivery, the total project costs can be broken down into the following areas:

Design (Base Preliminary Services)	$ 5,655,000
Design Contingency (Additional Preliminary Services) (10%)	$ 565,000
Construction/ Design-Build Work (Base GMP)	$ 82,884,000
Construction Contingency (Base GMP Adjustment) (10%)	$ 8,288,000
Total Design and Construction	$ 97,392,000
Project Delivery	$ 9,411,000
Total Project Cost	$ 106,803,000

The Contract is a guaranteed maximum price contract, meaning that the City will pay CH2M HILL on a defined cost-reimbursable basis subject to a maximum limit (i.e., the guaranteed

maximum price), above which the City is not obligated to pay for services that are not otherwise subject to reimbursement under the Contract.

BACKGROUND

In 2012, the City completed an Energy Management Strategic Plan that assessed the RWF's existing and future power demands and condition of the existing energy systems. The study identified existing, aging cogeneration equipment as a critical issue that would need to be addressed in order to maintain onsite production of a reliable supply of power and heat. Cogeneration equipment at the RWF consists of internal combustion engines which utilize available digester gas (produced on-site by the anaerobic digestion process) to produce a significant portion of the RWF's power requirements, as well as producing heat required by the anaerobic digestion tanks.

Existing cogeneration equipment at the RWF ranges from 20 to 60 years of age, and has been subject to breakdowns of increasing frequency and severity. The limited ability to acquire parts for aging equipment is equally a critical consideration. As a result, the 2012 study recommended replacement of the existing cogeneration equipment in order to provide reliable on-site power and heat.

In 2013, the City engaged the consulting firm Black and Veatch Corporation to prepare the Cogeneration Facility Project Definition Report ("PDR"), which serves as the guide document for the development of a basis of design for the new Cogeneration Facility. The PDR analyzed fuel sources, quantity and quality, as well as existing engine efficiencies and availability. The report also analyzed the uses of power and heat and the distribution system for delivering these resources around the RWF. The report also developed net-present-value analyses of various technologies and energy utilization scenarios, and provided the results of numerous workshops and discussions with Capital Improvement Program ("CIP") engineering staff and Operations and Maintenance ("O&M") staff.

As described in the PDR, the new Cogeneration Facility will consist of advanced generation internal combustion engines selected based on their low capital cost, high electrical efficiency, and high availability of high-grade heat for the anaerobic digesters. The new engines will replace all existing RWF cogeneration equipment with the exception of the recently installed Fuel Cell. Power output from the new Cogeneration engines and the existing Fuel Cell is expected to meet projected RWF power and heat demands through 2036. In addition, the Project scope includes a digester gas treatment system, control system and monitoring system with connectivity to the RWF's Distributed Control System, electrical switchgear, various appurtenances to support the engines and building, digester gas pipeline and natural gas pipeline, heat recovery systems, and civil work including parking areas and utilities (water, stormwater and sanitary sewer lines). The Project scope has gone through a rigorous decision making process to ensure that the Project includes appropriate technology and systems to efficiently generate power and heat for the RWF for the next generation. The Project scope and objectives were presented to the Treatment Plant Advisory Committee on November 14, 2013.

Also initiated in 2013 was the project-specific environmental review process under CEQA. On May 22, 2014, the City's Planning Department issued a Notice of Determination for a Mitigated Negative Declaration for the Project.

A cost effectiveness evaluation (triple bottom line plus analysis) of the Project was conducted in early 2014. The evaluation examined three options on a quantitative basis: 1) constructing the Project as defined in the PDR; 2) constructing a facility that only utilizes the existing biogas yet purchase additional power and natural gas for power and heat to meet RWF requirements; and 3) build no project. Constructing the Project was recommended; even though it has the highest initial capital cost because it was determined to have the highest value based on the Program and Plant Master Plan goals. This includes energy self-sufficiency (not depending on an external power source), maximizing use of digester gas for generating power and capturing heat from engines to meet heat requirements, and reducing natural gas usage that may set off cap and trade triggers.

On October 7, 2014, the City Council adopted Resolution No. 77180, approving the use of the design-build project delivery method for the Cogeneration Facility pursuant to State Law. The City is proceeding with the delivery of the Project pursuant to State Law instead of the City's Charter and design-build ordinance given the regional nature of the RWF which serves a number of different agencies and jurisdictions. Staff recommended using the design-build delivery method to complete the Project because of the potential for expedited project delivery, improved project coordination, potential cost savings, design innovation and efficiencies, and single point of contracting responsibility.

On April 23, 2015, the City issued a Request for Qualifications for design-build firms to propose on the Project. Proposals were received and three firms were shortlisted for interviews. On December 1, 2015, City Council approved the final ranking of firms proposing on the Request for Proposals ("RFP") for the Project and authorized staff to enter into negotiations with the top-ranked firm, CH2M HILL, to develop the contract for the Project. CH2M HILL has engaged locally based C. Overaa & Company as the key contractor partner for the Project.

ANALYSIS

Contract Negotiation Strategy

A draft Contract was included in the RFP. This form of agreement was developed by staff, the City Attorney's Office, and the City's outside legal counsel firm Hawkins, Delafield and Wood. Upon approval of the proposer rankings, the City formed a team to negotiate the Contract with CH2M HILL. The team implemented a negotiation strategy that sought to achieve the following goals:

- Develop a fixed and fair fee consistent with industry standards that ensures the City receives services commensurate with cost;

- Achieve scope, schedule and budget requirements;
- Allow for collaboration and project innovation to maximize value to the City;
- Equitably allocate risk and reward;
- Maximize transparency of cost;
- Develop the business and legal terms of a design-build contract to be used for other design-build projects at the RWF;
- Provide opportunities for small/local/disadvantaged business participation.

To achieve these goals, the negotiating team used contract design-build professionals and outside legal counsel who specialize in the procurement and delivery of complex, wastewater construction projects. The team developed self-imposed milestones to ensure that negotiations were progressing on schedule. The negotiation team regularly briefed the Director of Public Works, the Director of Environmental Services and the City Manager's Office of progress throughout the process. The negotiation team also assisted in the drafting of the Contract.

Contract

The Contract involves two distinct phases: Phase 1 (Preliminary Services) includes the initial design phase that will develop the 60% design of the Cogeneration Facility. At that time, the City and CH2M HILL will negotiate and execute the Definitive Contract Amendment. Phase 2 of the Project will be CH2M HILL's performance of the Design-Build Work and Transition Services as defined in the Definitive Contract Amendment. The terms of the Contract apply to both phases.

Among other conditions or requirements, the contract includes the costs for Base Preliminary Services (design and pre-construction), General Conditions Fee, and a Design-Builder Fee, which are described further below. The Contract also contains provisions setting out a proposed schedule for design development and sequencing of projects, as well as the appropriate performance bonds, payment bonds, and insurance. The Contract allows the City to establish the contract price as early in the process as is agreeable to the parties, thus permitting the City to begin exercising control over the budget earlier.

After Contract approval, staff and the design-build firm will engage in an on-going design effort with design documents to be delivered at 30% and 60% (and possibly 100% completion). The City will have the option at each design submittal to accept and negotiate a GMP or lump sum amount.

After submitting its 60% design, CH2M HILL is obligated to make a good faith proposal to the City in the form of the Definitive Contract Amendment. If the parties reach agreement on the Definitive Contract Amendment, CH2M HILL proceeds to final design and construction in accordance with the established Project schedule. If the City and CH2M HILL cannot reach agreement at any stage of the negotiations, the City can terminate the Contract with CH2M HILL and initiate a new procurement for the remaining design and construction work.

The Contract includes provisions for Transition Services. Following Project acceptance, CH2M HILL may provide services generally consisting of monitoring and advising on the City's operations and maintenance of the Cogeneration Facility for up to a two-year period. Establishment of the Transition Services and the fee to be charged will be negotiated as part of the Definitive Contract Amendment. Payment for the Transition Services will be made from the construction contingency.

Contract Terms and Conditions

The Table of Contents for the Contract is attached as Attachment A. Key elements of the Contract are as follows:

1. Base Preliminary Services – Base Preliminary Services were negotiated to permit design of the Project to proceed immediately after contract award. The negotiated not-to-exceed amount for the Base Preliminary Services includes complete design to the 60% level and CH2M HILL's proposal for the Definitive Contract Amendment.

2. Early Work Packages – The Contract allows the City to issue Early Work Packages before the parties execute the Definitive Contract Amendment. Early Work Packages are expected to include procurement of the internal combustion engines and other long-lead items for which advance work by CH2M HILL will shorten the Project schedule, and may also include design services to advance design from 60% to 100%. The cost of the Early Work Packages is currently estimated to be $30,000,000, and are included in the Base GMP. Early Work Packages will require separate agreements and/or amendments to the Contract, and will contain appropriate terms and conditions for CH2M HILL's performance of the work and obligations should the parties fail to agree to the Definitive Contract Amendment.

3. Definitive Contract Amendment – The Design-Build Work to be performed following the completion of the Preliminary Services will be defined in the Definitive Contract Amendment. The Definitive Contract Amendment will: (1) set a Base GMP for the Design-Build Price, including Early Work Packages; (2) set a schedule for completion of the Design-Build Work; (3) define the technical specifications and guaranteed performance capabilities for the Facility, (4) establish the Transition Services and the fee to be charged therefore; (5) establish the insurance requirements for the Design-Build Work; and (6) amend other terms and conditions of the Contract necessary to accomplish the foregoing. The parties may, at the City's discretion, agree to convert the Base GMP into a lump sum price, subject to the not-to-exceed Project costs authorized by the City Council.

   Should the parties fail to agree to the Definitive Contract Amendment, the City is under no obligation to proceed with any further work by CH2M HILL, except in accordance with Early Work Packages. The parties may, however, negotiate to enter a separate agreement for CH2M HILL to fully complete the design and/or provide other services so

the City could solicit bids for the construction of the Project by separate contractors using the design-bid-build delivery method.

4. GMP – The Contract sets forth a process to allow the City and CH2M HILL to negotiate a Base GMP for the Design-Build Work. The Base GMP includes all costs for the performance of the Design-Build Work, and may not be adjusted except for specified reasons such as uncontrollable circumstances, changes to the Contract's technical specifications, and City-directed changes.

5. Shared Savings – If the Design-Build Price comes in under the GMP, the Contract entitles CH2M HILL to a 15% share of the difference. The City will retain the remaining 85% of this amount. This serves as an incentive to keep costs down and manage Design-Builder Contingency use appropriately.

6. Liquidated Damages – The Contract includes liquidated damages for delay. The daily amount for liquidated damages will be negotiated as part of the Definitive Contract Amendment.

7. Fees – As part of its proposal, CH2M HILL was required to provide certain maximum fees as a percentage of the cost of the Design-Build Work that it would charge the City for the performance of the Contract. CH2M HILL submitted the following fees:

Fee	**Percent of Cost of the Design-Build Work**
General Conditions Fee	7.7
Design-Builder Fee	7.8

Staff believes these fees are very competitive with the current construction market conditions and complexity of this Project. Typical fees for projects of this size and complexity range from 6% - 10% for the General Conditions Fee, and 8% - 12% for the Design-Builder Fee.

8. Dispute Resolution – Consistent with the City's Dispute Avoidance and Dispute Resolution Policy (S.J.M.C. Chapter 14.06), the Contract provides that either the City or CH2M HILL may voluntarily initiate a request for non-binding mediation in the event that other partnering opportunities available under the Contract are unsuccessful. Mediation is not mandatory and either the City or CH2M HILL may elect to proceed with litigation in the event a dispute cannot be resolved by the project team. Because the nature of design-build contracts is collaborative, significant disputes are less likely to occur, and it is anticipated that mediation and/or litigation is highly unlikely and would only happen if all other cooperative efforts by the Project team fail.

Project Contingencies

The Project includes two City-controlled Contingencies: (1) a design contingency to cover costs for City-approved changes to the scope of Base Preliminary Services ("Additional Preliminary Services"), and (2) a construction contingency ("Base GMP Adjustment") to cover unanticipated costs of the Design-Build Work that are not CH2M HILL's responsibility under the Contract. The construction contingency covers typical construction issues such as differing site conditions, force majeure events and City-directed change orders. Expenditure of the City-controlled contingency will require a change order to be negotiated and executed by the City Manager or his designee.

The Contract provides for a "Design-Builder Contingency." The Design-Builder Contingency will be negotiated by the parties and established as part of the Definitive Contract Amendment. It covers unforeseen costs of the Design-Build Work that neither CH2M HILL's design manager nor the contractor could predict when the Base GMP was established. CH2M HILL is entitled to receive payment from the Design-Builder Contingency with the City's right to monitor and verify the use of the funds. The Design-Builder Contingency is contained within the Base GMP and Base GMP Adjustment and is typically 4% to 10% of the construction costs, depending on when the Base GMP was established. CH2M HILL will be responsible for costs in excess of this contingency unless the Contract otherwise entitles it to compensation. Moreover, as discussed above, CH2M HILL will be entitled to a 15% share of the amounts not expended from the Design-Builder Contingency.

Budget and Scope

The original Project scope was based on the construction of a new Cogeneration Facility that would tie into existing utilities. The preliminary estimate of $65,000,000 for design and construction was prepared in 2013 based on the project scope as contained in the PDR. Supplemental project work was identified during the procurement period. In addition, the design-builder recommended scope modifications and innovations to meet project requirements or to lower the life-cycle cost of the Cogeneration Facility. Both supplemental project work and design-builder scope modifications are described below.

The supplemental project work includes new boilers, chiller replacement, additional utility work, and systems to permit future use of landfill gas (collectively "Supplemental Project Work"). This work was considered under other CIP projects, yet staff determined this work included system-related components necessary for the operation of the RWF and the Cogeneration Facility and, therefore, completing this work under this contract will speed up the delivery of the Cogeneration Facility and reduce project delivery costs. As a result, staff recommends that Supplemental Project Work be incorporated into the Contract. A portion of this work was budgeted in a future year of the Support Building Improvements Project and an adjustment to that project budget has been made in the 2017-2021 Proposed CIP. The estimated construction cost for the Supplemental Project Work is $6,800,000.

In addition to the project elements identified in the PDR and the Supplemental Project Work, CH2M HILL's proposal identified the need for relocated utilities, additional equipment, and facility and site requirements. In addition, CH2M HILL proposed project innovations that may

reduce maintenance and operating costs but may add to the initial capital investment. This work (collectively called "Proposal Scope Changes") was not anticipated in the preliminary estimate. However City staff agree that these items may be desirable for the optimal operation and functionality of the Cogeneration Facility and should be analyzed during the detailed design process. The estimated construction cost for Proposal Scope Changes is $8,700,000.

It is important to note that the Supplemental Project Work and Proposal Scope Changes are optional but are recommended because of potential life-cycle savings, operational efficiency and flexibility and further reduction of greenhouse gas emissions. CH2M HILL will conduct a full evaluation of the effectiveness and value of these options before these items of work are authorized by the City in the Definitive Contract Amendment.

On January 5, 2016, staff conducted a Project estimate workshop with CH2M HILL to review the preliminary estimate, project scope and costs for Supplemental Project Work and Proposal Scope Changes. Accounting for the commensurate increase in design and contractor fees for the additional work, the cost for design and construction of the Cogeneration Facility is estimated to be $88,539,000. Including the contingencies, the total Contract costs may be broken down into the following areas:

Design (Base Preliminary Services)	$ 5,655,000
Construction/ Design-Build Work (Base GMP)	$ 82,884,000
Total Design and Construction	$ 88,539,000
Design Contingency (Additional Preliminary Services) (10%)	$ 565,000
Construction Contingency (Base GMP Adjustment) (10%)	$ 8,288,000
Contract Not-to-Exceed Total	$ 97,392,000

The benefit of design-build is being able to initiate early discussions with the design-builder regarding project costs before entering into a contract. The design-builder provided a higher level estimate based on a more thorough design review than previously developed estimates. In addition, given that design has not yet started, the construction estimate should be considered conservative.

There is significant opportunity during the design process to "value engineer" the project, evaluate life-cycle costs, and validate scope and cost elements. In addition, the design-build process allows the contractor to participate in the design development and review process to further add value to the project. At the time of the Definitive Contract Amendment, there will be an opportunity to evaluate construction costs through a transparent, open-book process. The City has retained consultants for this Project to assist in validating the proposed costs in order to arrive at a fair and competitive price to construct the Cogeneration Facility.

Including project delivery costs of $9,411,000 the total costs for the project is estimated to be $106,803,000. Project delivery costs include staff, program and supporting consultants, air quality permit fees and PG&E fees. The recommended delegation of authority provides staff the ability to manage all financial transactions within the approved budget while keeping the project on schedule. As described in the Policy Alternatives section of this memorandum, lowering the

authorization level and returning to City Council for approval of early work packages and contract amendments will reduce the continuity of the design/procure/construct effort, and therefore reduce the effectiveness of the design-build process. Both City staff and CH2M HILL will continuously forecast and monitor the costs and schedule of the project. Monthly status reports issued by the RWF CIP will provide opportunity for City Council and public review of cost and schedule.

Schedule

The Contract currently contains estimated and non-binding schedules for design and construction showing a scheduled acceptance date of March 2019 and a scheduled final completion date of July 2019. The firm final completion date will be established as part of the Definitive Contract Amendment.

The completion of this Project is strongly tied to the completion of the Digesters and Thickener Facilities Upgrade Project, and the Blower Improvements Project. The Cogeneration Facility requires completion of the above-ground pipe rack, new digester gas line and hot water supply/return lines from the Digesters and Thickener Facilities Upgrade Project. In return, the new anaerobic digesters require the heat recovered from the new engines in the Cogeneration Facility. The Blower Improvements Project must upgrade existing electric blowers in order to decommission older engine-driven blowers that no longer can operate when the Cogeneration Facility project is completed due to permit requirements. Completing any one of these projects later than the others will require temporary systems in order to keep the RWF operating. All three projects are currently scheduled for completion in spring 2019.

Insurance

During the Preliminary Services period, CH2M HILL will provide the insurance coverages set forth in the Contract. The Contract allows the City to transition the Project to an Owner Controlled Insurance Program (OCIP) that staff intends to bring to City Council for approval separately. The OCIP will apply to all RWF CIP projects. In the event the OCIP is not in place prior to commencement of construction or if City Council does not approve the OCIP, CH2M HILL will provide the insurance set forth in the Contract and negotiated as part of the Definitive Contract Amendment, the price of which will be reflected in the Base GMP.

Subcontracting and Self-Performance

CH2M HILL has submitted a draft subcontracting plan that strives to use local and small business to the maximum extent possible and includes outreach to small, local and disadvantaged business, as required by State Statute authorizing the use of design-build, and Clean Water State Revolving Fund ("SRF") requirements CH2M HILL will prepare a final subcontracting plan for City approval and include a list of named subcontractors at the time of the Definitive Contract Amendment.

As identified in its proposal, CH2M HILL has named C. Overaa & Company (Overaa) as General Contractor for the Project. Both CH2M HILL and Overaa intend to self-perform approximately 25% of the construction work. The balance of the work will be competitively bid out by CH2M HILL and Overaa in accordance with contract requirements. CH2M HILL's subcontracting plan will outline all work items to be self-performed and work to be bid out and awarded to subcontractors. Notwithstanding proposals to self-perform work, the Contract allows the City to require CH2M HILL to competitively bid out any or all of the work in compliance with applicable law.

Skilled/Trained Workforce and Labor Peace Plan

Part of the RFP process to select a design-builder was the evaluation of the proposer's strategy for local subcontracting, commitment to providing a skilled and trained workforce, and labor peace plan. A representative of the Santa Clara and San Benito Counties Building and Construction Trades Council was member of the interview panel that selected CH2M HILL and Overaa as the top ranked design-build team.

Ensuring a skilled and available workforce will be critical to successfully delivering the Project. CH2M HILL and Overaa possess a large skilled labor pool that will be key to ensuring on time project delivery with the highest levels of quality and craftsmanship. Overaa maintains agreements with California registered apprenticeship programs and have successfully placed apprentices from various programs on their jobs. State design-build authority, under which this project will be performed, mandates certain apprenticeship requirements that will be adhered to under the Contract.

Avoiding labor disputes and disruptions is another significant factor in delivering the Project in a timely manner. This Project requires local prevailing wages, and Davis/Bacon requirements have been written into the Contract. Overaa is signatory to both the Carpenters and Laborers Unions, has close working relationships with local union halls, and been an active union leader in local labor management for decades. A Project Labor Agreement is not required under the Contract however the CH2M HILL and Overaa team is committed to preventing labor disputes, conflicts and work stoppages on this Project.

State Revolving Fund (SRF)

Staff is pursuing a SRF loan to finance the Project and met with the State Water Resources Control Board in January to discuss the timing of deliverables and approvals necessary to secure SRF funding. Resolutions that must be included as part of the SRF loan application for the Project are expected to be brought to the City Council for approval in May 2016.

EVALUATION AND FOLLOW-UP

If the parties are unable to reach agreement on the Definitive Contract Amendment, staff will return to City Council with a recommended course of action. A progress report on this and other

RWF capital projects will be made to the Transportation and Environment Committee and the City Council on a semiannual basis. Monthly progress reports of the RWF CIP will also be submitted to the Treatment Plant Advisory Committee (TPAC) and posted on the City's website.

POLICY ALTERNATIVES

Alternative #1: Approve the Contract and authorize Preliminary Services, but do not authorize the City Manager to amend the Contract for early work packages or the Base GMP.
Pros: Allows design to progress to the 60% stage and calculation of the Base GMP.
Cons: Requires a further City Council approval of the Base GMP which does not allow a seamless transition from design into construction.
Reason for not recommending: Schedule maintenance is a major concern, and the completion of this project with the Digester and Thickener Facilities Upgrade Project and the Blower Improvements Project must occur at the same time in Spring of 2019. The Project could not take advantage of the significant benefit of early procurement of long lead-time items such as generators and switchgear. Stopping the design-build process awaiting TPAC and City Council action will add three months to the overall project schedule. Additionally, the CH2M HILL team will have to disband while City Council approval is being sought, adding project delivery risk, cost and coordination complexity to the project.

Alternative #2: Approve the Contract and authorize Preliminary Services and early work packages, but do not authorize the City Manager to amend the Contract for the Base GMP.
Pros: Allows design to progress to the 60% stage and calculation of the Base GMP. Allows the schedule advantage of early equipment procurement.
Cons: Requires a further City Council approval of the Base GMP which does not allow a seamless transition from design into construction.
Reason for not recommending: Similar to the reasons for not recommending Alternative #1 above, the schedule advantages of design build cannot be fully realized without a seamless transition from design through early work packages through Base GMP negotiations and into construction.

PUBLIC OUTREACH

This memorandum will be posted on the City's website for the April 26, 2016, City Council meeting. TPAC will consider staff's recommendation at the April 14, 2016 meeting.

The City is in the process of applying for and intends to use the Clean Water State Revolving Fund Program to finance the Project, which requires CH2M HILL to seek the use of disadvantaged business enterprises (e.g., minority businesses, women businesses, small businesses) to satisfy its equipment, supplies, construction, and service procurement.

COORDINATION

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

FISCAL/POLICY ALIGNMENT

This Project is consistent with the City Council-approved budget strategy to address rehabilitation and replacement of critical infrastructure and equipment at the RWF and to improve operational efficiency.

On June 2, 2015, the City Council approved the RWF Ten-Year Funding Strategy, which directed staff to pursue SRF loans for RWF capital projects to the maximum extent possible. Staff began the SRF loan application process in August 2015. The City's ability to secure the loan depends on approval of amendments to the master agreements between the City of San José, City of Santa Clara, and the tributary agencies to extend the term of the master agreements to cover the duration of the SRF loans.

COST SUMMARY/IMPLICATIONS

1. AMOUNT OF RECOMMENDATION: $88,539,000

2. COST ELEMENTS

Project Delivery	$ 9,411,000
Design (Base Preliminary Services)	5,655,000
Design Contingency (Additional Preliminary Services) (10%)	565,000
Construction / Design-Build Work (Base GMP)	82,884,000
Construction Contingency (Base GMP Adjustment) (10%)	8,288,000
TOTAL PROJECT COSTS*	**$106,803,000**
Prior Year Expenditures	2,226,000
REMAINING PROJECT COSTS	**$104,577,000**

* The 2017-2021 Proposed CIP is anticipated to include $31,986,000 in 2016-2017, $56,083,000 in 2017-2018, and $1,092,000 in 2018-2019 for project delivery, construction (including final design), and city/consultant construction contingency costs. Future funding is subject to appropriation and, if needed, will be included in the development of future year budgets during the annual budget process.

3. SOURCE OF FUNDING: San José-Santa Clara Treatment Plant Capital Fund (512)

4. OPERATING COSTS: The Project will replace existing engine generators that currently operate inefficiently and require a high level of O&M costs. Although a new gas treatment system will introduce new maintenance costs, staff anticipates a net reduction in O&M costs

due to the replacement of existing electrical and mechanical equipment with new equipment. The annual reduction could be in the $1 million to $3 million range, depending on the design and inclusion of supplemental work. A significant reduction in purchased electricity is expected, and an expected decrease in the purchase cost of natural gas due to significantly higher engine efficiencies. The Contract requires a life-cycle cost analysis for the conceptual design, at which time the anticipated O&M costs will be further defined.

BUDGET REFERENCE

Fund #	Appn #	Appn. Name	Total Appn	2015-2016 Adopted Capital Budget Page	Last Budget Action (Date, Ord. No.)
512	7454	Energy Generation Improvements	$16,600,000	V – 183	06/23/2015 Ord. No. 29589

Services performed by CH2M HILL under this Contract will be authorized by Preliminary Services Task Notice to Proceed. An appropriation is not required for execution of this Design-Build Contract, but is required for each contract action authorized under this Contract. The appropriation listed above is included in the 2015-2016 Adopted Capital Budget and may be used for Preliminary Services tasks issued in 2015-2016. Future funding is subject to appropriation and, if needed, will be included in the development of future year budgets during the annual budget process.

CEQA

Mitigated Negative Declaration (MND), File No. PP14-005. The MND states that the proposed Project will not have significant effects on the environment because mitigation measures have been made a part of the Project.

/s/
BARRY NG
Director of Public Works

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

For questions, please contact John Cannon, Principal Engineer, Department of Public Works, at (408) 635-4006.

ATTACHMENT A – CONTRACT TABLE OF CONTENTS

The Table of Contents anticipated as of the Contract Date is below.

DESIGN-BUILD CONTRACT
FOR THE COGENERATION FACILITY
AT THE
SAN JOSE – SANTA CLARA
REGIONAL WASTEWATER FACILITY

between

THE CITY OF SAN JOSE, CALIFORNIA,

as administering agency of
The Regional Wastewater Facility

and

CH2M HILL ENGINEERS, INC.

Dated

April __, 2016

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APPENDICES

COUNCIL AGENDA: 05/03/16
ITEM:

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow

SUBJECT: SEE BELOW

DATE: April 4, 2016

Approved D-OSyL Date 4/7/16

SUBJECT: AGREEMENT WITH HDR ENGINEERING, INC. FOR ENGINEERING SERVICES FOR THE 7731-NITRIFICATION CLARIFIERS REHABILITATION PROJECT AT THE SAN JOSE-SANTA CLARA REGIONAL WASTEWATER FACILITY

RECOMMENDATION

Approve a Master Consultant Agreement with HDR Engineering, Inc. to provide engineering services for the 7731 – Nitrification Clarifiers Rehabilitation Project at the San José-Santa Clara Regional Wastewater Facility from the date of execution through December 31, 2023, in a total amount not to exceed $5,000,000, subject to the appropriation of funds.

OUTCOME

Approval of the master consultant agreement with HDR Engineering, Inc. (HDR) provides the City with the ability to obtain professional services required for preliminary engineering, design, and engineering services during construction of the Nitrification Clarifiers Rehabilitation Project (Project) at the San José-Santa Clara Regional Wastewater Facility[1] (RWF). Approval of this master consultant agreement will not result in any physical changes to the environment, as the City Council will need to take additional actions before construction on the Project commences.

BACKGROUND

Description of Existing Secondary Treatment Process

The RWF has 26 clarifiers associated with the secondary aeration basins (BNR1) and 16 clarifiers associated with the nitrification aeration basins (BNR2). These clarifiers, together with the aeration basins, form the biological treatment process and function to remove organics from the wastewater.

[1] *The legal, official name of the facility remains San José-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.*

The 16 BNR2 clarifiers are divided into Battery A and Battery B. Each Battery has eight clarifiers, A-1 through A-8 and B-1 through B-8, respectively. Clarifiers A-1 through A-6 and B-1 through B-6 were built in the late 1970s. Clarifiers A-7, A-8, B-7, and B-8 were constructed in mid 1980s. Each clarifier is a circular reinforced tank measuring 140 feet in diameter and approximately 16 feet deep. Major mechanical components include sludge collection mechanism, scum skimmer system, weir plates and scum baffle, spray water system, and return activated sludge (RAS) and drain valves. In addition, two motor control centers (MCC) provide power to the nitrification clarifiers.

2011 Nitrification Clarifiers Condition Assessment Report

In November 2009, the City retained AECOM to perform a condition assessment of the nitrification clarifiers to: 1) assess the condition of the nitrification clarifiers, 2) estimate remaining useful life, and 3) identify improvements needed to ensure reliable operation for the next 30 years. The assessment included a preliminary physical inspection of all 16 clarifiers and a more detailed inspection of four selected clarifiers. The condition assessment work was completed in 2011.

The Nitrification Clarifiers Condition Assessment Final Report (Report) recommended both short-term (critical) improvements and long-term improvements. Short-term improvements included replacement of guard rails on exterior clarifier walls, stair and landing at scum box, railings and pipe supports in meter vaults, groundwater relief valves and valve actuators, and two motor replacement centers. Structural repair work was also recommended including grouting and coating on base slab, repairing cracks in walls, interior launder walls, and meter vaults. The Report also recommended a number of long-term improvements to be implemented over the next 5 to 15 year timeframe which remain to be confirmed as part of this Project.

Nitrification Clarifier Rehabilitation Project Description

The Project will rehabilitate 16 nitrification clarifiers to ensure continued operational reliability and regulatory compliance for the next 30 years. It is anticipated that additional condition assessment work will be needed to assess certain structures and pipelines that were not previously inspected at as part of the 2009 condition assessment study. For example, the return activated sludge (RAS) piping and valves as well as the mixed liquor channels will need to be assessed to determine condition and rehabilitation/replacement needs. Key construction elements to be included under the Project scope include but are not limited to: structural repair of clarifiers and meter vaults, replacement of major mechanical components (e.g., clarifier center column and mechanism, piping, sludge collection mechanisms, scum skimmer systems, water spray system, ground water relief valves, pipes, valves, actuators, meters), electrical, instrumentation and controls upgrades including replacing two motor control centers, and miscellaneous site improvements (e.g. lighting, landscaping, etc.). The Project will also evaluate modifying process hydraulics from "dynamic" to "passive" control for improved process performance.

The planning level construction estimate for the above work is $33,500,000 which will be refined as the Project advances through feasibility/development, preliminary design, and detailed

design stages. The Project will be delivered using the conventional design-bid-build project delivery method. Since the construction involves rehabilitation of existing structures and facilities and repeatable design elements, there is limited opportunity to take advantage of innovative solutions often associated with alternative project delivery methods. Design is estimated to be completed by spring 2018 with beneficial use anticipated by summer 2022.

ANALYSIS

On September 25, 2015, the City issued a Request for Qualifications (RFQ) seeking preliminary engineering, design, engineering services during construction, and post-construction services for the Project. A non-mandatory pre-proposal conference and site tour was held on October 16, 2015. A total of seven engineering firms attended the event.

Three Statement of Qualifications (SOQs) were received by the November 6, 2015 from the following firms:

- AECOM Technical Services, Inc. (AECOM)
- Brown and Caldwell, Inc. (B&C)
- HDR Engineering, Inc. (HDR)

A Technical Evaluation Panel (TEP) consisting of two representatives from the Environmental Services Department RWF CIP and O&M divisions, and a peer reviewer from East Bay Municipal Utility District (EBMUD), evaluated the SOQs in accordance with the procedures set forth the RFQ. Each panel member evaluated the SOQ using a consistent scoring matrix based on the following evaluation criteria: firm experience, experience and expertise of key staff, project approach, cost, and Local/Small Business Enterprise (LBE/SBE) status. Each firm received a total score comprised of their SOQ score, LBE/SEB status, and interview score (if applicable) as shown below:

Description	Weight
Proposal Responsiveness	Pass/Fail
Expertise	10%
Experience	20%
Project Approach	20%
Cost	10%
Local Business Enterprise (LBE)	5%
Small Business Enterprise (SBE)	5%
Interview	30%
TOTAL	**100%**

The final ranking and scores for each firm were as follows:

Rank	Firm	Expertise	Experience	Approach	Cost	LBE	SBE	Interview	Total
1	HDR	9.0	17.3	16.3	8.8	5.0	0.0	24.8	**81.2**
2	B&C	7.7	17.7	15.8	8.7	5.0	0.0	25.2	**80.1**
3	AECOM*	5.7	12.7	13.0	10.0	5.0	0.0	N/A	**46.4**

* AECOM was not selected to proceed to the interviews.

In accordance with City policy, 10 percent of the total evaluation points were reserved for local and small business enterprise status. All three of the firms qualified for the LBE status. None of the firms qualified for the SBE status.

Award Recommendation

Staff recommends awarding a Master Consultant Agreement (MCA) in an amount not to exceed $5,000,000 to the top-ranked firm, HDR Engineering, Inc. HDR is nationally recognized for their expertise in wastewater engineering, and more specifically, with wastewater clarifier rehabilitation. The HDR team demonstrated strong project management and clarifier rehabilitation design experience. The firm also demonstrated organizational depth and breadth with a large pool of technical support staff resources available to draw from in California. They also provided examples of having worked on projects of similar size and scope.

Professional services to be provided under this agreement include project management, CEQA support, preliminary engineering, detailed design, bid/award support, and engineering services during construction, and start up and commissioning assistance. Optional services include SRF loan application assistance, value engineering participation, and other items of work as may be requested by the City and authorized by service orders.

The agreement NTE amount of $5,000,000 represents approximately 15 percent of the estimated construction cost (or $33,500,000) which staff considers appropriate for the work involved and is consistent with industry standard. HDR will be compensated based on actual hourly wages times a multiplier of 3.13. The multiplier covers overhead (e.g., fringe benefits, payroll taxes, group insurance, building/rental expenses), associated project cost (e.g., routine printing and copying, computer equipment use, network and telecommunications expenses), and profit.

The term of agreement will be from the date of execution through December 31, 2023.

EVALUATION AND FOLLOW-UP

No additional follow-up action with the City Council is expected at this time. All service orders issued under this master consultant agreement will be reported to the Treatment Plant Advisory Committee (TPAC) on the monthly summary of procurement and contract activity. A progress report on this and other RWF capital projects will be made to the Transportation and Environment Committee and the City Council on a semiannual basis. Monthly progress reports

of the RWF Capital Improvement Program (CIP) will also be submitted to TPAC and posted on the City's website.

Since the current action is for award of a master consultant agreement for professional engineering services only, staff will return to City Council with a construction contract award recommendation after the final design and bidding phases of the Project are complete.

POLICY ALTERNATIVES

Alternative #1: Direct City Staff to perform the work using in-house resources.
Pros: Staff would have opportunity to work on a large clarifier rehabilitation design project.
Cons: Lack of in-house technical and design expertise to support this project.
Reason for not recommending: This large and complex project requires the use of design professionals with experience and expertise in performing condition assessment work, preparing bid documents, and construction estimates. The work also involves multiple engineering disciplines (i.e., structural, mechanical, electrical, instrumentation & controls).

PUBLIC OUTREACH

This memorandum will be posted on the City's website for the May 3, 2016 City Council meeting agenda. This item is scheduled to be heard at the TPAC meeting April 14, 2016.

COORDINATION

This memorandum has been coordinated with the City Manager's Budget Office, the City Attorney's Office, and the Department of Planning, Building and Code Enforcement.

FISCAL/POLICY ALIGNMENT

This Project is consistent with the City Council-approved budget strategy to focus on rehabilitating aging RWF infrastructure, improve efficiency and reduce operating costs. This Project is also consistent with the budget strategy principle of focusing on protecting our vital core services.

COST SUMMARY/IMPLICATIONS

1. AMOUNT OF RECOMMENDATION: $5,000,000

2. COST ELEMENTS OF MASTER AGREEMENT:

Feasibility/Development/Conceptual Design (10%)	1,100,000
Preliminary Design (30%)	368,200
Detailed Design (60-90-100%)	1,768,700
Bid & Award	63,100
Engineering Services During Construction	1,500,000
Optional Services	200,000
TOTAL AGREEMENT AMOUNT	**$ 5,000,000**

3. SOURCE OF FUNDING: 512 - San José-Santa Clara Treatment Plant Capital Fund.

4. FISCAL IMPACT: This Project is funded through the San José-Santa Clara Treatment Plant Capital Fund and will have no impact on the San José-Santa Clara Treatment Plant Operating Fund (Fund 513).

BUDGET REFERENCE

The table below identifies the fund and appropriation to fund the master consultant agreement recommended as part of this memorandum.

Fund #	Appn. #	Appn. Name	Total Appn.	2015-2016 Adopted Capital Budget Page	Last Budget Action (Date, Ord. No.)
512	7074	Nitrification Clarifier Rehabilitation	$1,300,000	V-176	06/23/2015 Ord. No. 29589

Services performed by HDR under this agreement will be authorized by service orders. An appropriation is not required for execution of the master consultant agreement, but is required for each service order authorized under this agreement. The appropriation listed above is included in the 2015-2016 Adopted Capital Budget and may be used for service orders issued in 2015-2016. Future funding is subject to appropriation and, if needed, will be included in the development of future year budgets during the annual budget process.

CEQA

Statutory Exempt, File No. PP10-066(d), Section 15262, Feasibility and Planning Studies with respect to the scope of work that is limited to this action. Any future activities resulting in a change to the physical environment would require approval of CEQA review.

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

For questions, please contact Ashwini Kantak, Assistant Director, Environmental Services Department, at 408-975-2553.

COUNCIL AGENDA: 4/26/16
ITEM:

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Julia H. Cooper
Kerrie Romanow

SUBJECT: SEE BELOW

DATE: April 7, 2016

Approved D·DSyL Date 4/7/16

SUBJECT: REPORT ON REQUEST FOR PROPOSAL FOR A DESIGN AND CONSTRUCTION MANAGEMENT SYSTEM

RECOMMENDATION

Accept the report on the Request for Proposal ("RFP") for the purchase and implementation of a Design and Construction Management System for the Capital Improvement Program at the San José-Santa Clara Regional Wastewater Facility, and adopt a resolution authorizing the City Manager to:

1. Negotiate and execute an Agreement with Bentley Systems, Inc. (Exton, PA) for the purchase and implementation of a Design and Construction Management System, including software subscription, implementation, configuration, testing, training, and related professional services, taxes, maintenance and support for an initial five-year term commencing on or about May 1, 2016 and ending on or about July 31, 2021, with a maximum compensation not-to-exceed $342,700 for the initial five-year term, subject to the appropriation of funds;

2. Execute change orders to cover any additional requirements for a not-to-exceed contingency amount of $100,000, subject to the appropriation of funds;

3. Execute one-year options to extend the term of the Agreement to provide ongoing software subscription, hosting, and technical support services after the initial five-year term, subject to the appropriation of funds; and

4. Negotiate and execute an Agreement with Aconex (San Bruno, CA), the second ranked proposer, in the event staff is unable to finalize negotiations with Bentley Systems, Inc. within 60 days of Council approval.

OUTCOME

Provide a new hosted cloud-based software as a service ("SaaS") solution for Design and Construction Management System ("DCMS" or "System"). The System is critical to improve collaboration and gain real-time visibility into risks and costs of projects in the Capital Improvement Program ("CIP") at the San José-Santa Clara Regional Wastewater Facility[1] ("RWF"). The new System will enable CIP staff to improve its contract administration, workflow and reporting capabilities when planning, designing, constructing and managing projects.

BACKGROUND

The CIP, which aims to rebuild and modernize the RWF, is valued at approximate $1,400,000,000 for the first 10 years and consists of 33 projects. Of the 33 CIP projects, 28 projects are currently anticipated to start construction within the next nine years. With such a significant increase in construction, traditional methods of contract administration are not practical without specialized systems and tools in place to properly support and deliver these projects.

A DCMS will allow CIP staff to manage all significant contract communications, document distribution, workflows and other processes securely and electronically. A DCMS will facilitate coordination during the review and approval of documents submitted by project consultants and contractors such as large design deliverables, requests for information, submittals, change orders and payments requisitions. A DCMS will also allow CIP staff to easily access, exchange and track the latest project information, such as schedules and costs.

In 2013, staff retained MWH Americas, Inc. ("MWH") for consultant services to provide assistance and support in managing the CIP at the RWF, including assisting with preparation of scope of work and requirements for a DCMS RFP.

ANALYSIS

In 2015, the Finance Department released a RFP for a Design and Construction Management System through the City's e-procurement system. A total of 186 companies viewed the RFP, and 13 proposals were received as listed below.

- Aconex (San Bruno, CA)
- ATSER Systems (Houston, TX)
- Bentley Systems (Exton, PA)

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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.*

- CIPPlanner (San Ramon, CA)
- DDLN (Castro Valley, CA)
- EcoSys (Broomfield, CO)
- Field Automated Communication (San Francisco, CA)
- IBM (Sacramento, CA)
- InfoTech (Gainesville, FL)
- Kristine Fallon Associates (Chicago, Illinois)
- PMWeb (Wakefield, MA)
- Submittal Exchange/Textura (West Des Moines, IA)
- ValuD (Addison, TX)

Responsiveness: One proposer, Kristine Fallon Associates, was eliminated from further consideration due to a conflict of interest with the SaaS solution they proposed and the City's consultant, MWH, who was involved in the RFP development and provided subject-matter expertise throughout the evaluation process.

Evaluation (Team): The 12 remaining responsive proposals were evaluated by a three-member team that represented the CIP and Management Information Systems groups from the Environmental Services and Public Works Departments. Each team member independently evaluated and scored the proposals.

Oral Presentations: Of the responsive 12 proposers, the five that scored the highest on the proposal evaluation (Bentley Systems, Aconex, CIPPlanner, InfoTech, and Submittal Exchange) were invited to participate in software demonstrations.

Best and Final Offer ("BAFO"): Additionally, the five finalists were required to provide an updated cost proposal for their system solution that was based on a per subscription cost model. CIPPlanner opted not to submit the required BAFO and was removed from further consideration.

The final scores for the four responsive finalists are summarized below:

Evaluation Criteria	Bentley Systems	Aconex	Submittal Exchange	InfoTech
Experience (25 points)	25	24	20	18
Technical (25 points)	24	25	23	21
Project Approach (30 points)	28	30	26	24
Cost (10 points)	10	6	9	9
Local & Small Business Preference (10 points)	0	0	0	0
FINAL SCORE	**87**	**85**	**78**	**72**

Local and Small Business Preference: In accordance with City policy, 10 percent of the total possible evaluation points were reserved for local and small business preference. None of the finalists requested consideration for the preference.

Protest: The City's RFP process included a 10 day protest period that commenced when the City issued the Notice of Intended Award. No protests were received.

Award Recommendation: Staff recommends the award of contract to Bentley Systems, Incorporated ("Bentley") as the best value solution per the evaluation criteria set forth in the RFP. Bentley's proposal scored the highest overall, met or exceeded all of the RFP specifications, had a competitive cost proposal, and their solution was found to have the following key attributes:

- Extensive experience with local Bay Area city, county, state, and federal agencies in capital programs, with particular expertise in water and wastewater management.
- The SaaS solution (EADOC) includes unlimited data storage, transactions, and user accounts, with a full data-encryption environment and security model to protect the CIP's information and limit system access to only authorized users.
- The solution provides a tailored and intuitive user interface for field personnel (inspectors).
- The solution includes design and construction document management, contract administration, fully integrated project cost and schedule management, robust dashboards, reporting and search tools, along with an industry-leading workflow engine that will allow CIP staff to work more collaboratively with consultants and contractors.
- The solution includes drawing review and redlining capabilities to streamline the submittal review process.

Reference checks were conducted with the East Bay Municipal Utility District, the Santa Clara Valley Water District, and the City of Los Angeles. References checked positive.

Summary of Agreement: Staff is requesting authority to negotiate and execute an agreement with Bentley that will include fixed subscription pricing for each year of the initial five-year term, professional services for business requirements definition, configuration, implementation, training, testing, and final acceptance, reimbursement for project-related travel expenses, and supplemental services for integration and other enhancements as required. The Agreement includes a detailed scope of services, a preliminary project schedule, a Software Subscription Agreement, a Service Level Agreement, a compensation schedule with payments tied to the successful completion of key project milestones, and a retainage amount that will be released after final system acceptance.

Increases in the cost of yearly subscriptions after the initial five-year term must be justified by the vendor, approved by the City, and are subject to the appropriation of funds.

EVALUATION AND FOLLOW-UP

This memorandum will not require any follow-up from staff.

PUBLIC OUTREACH

This item will be posted on the City's website for the April 26, 2016 City Council Agenda. This memorandum will also be considered at the Treatment Plant Advisory Committee meeting on April 14, 2016.

COORDINATION

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

FISCAL/POLICY ALIGNMENT

This action is consistent with the City's 2015-2016 Operating Budget City Service Areas Delivery Framework for Performance Driven Government for Operational Services: 1) front line service delivery, 2) make improvements, and 3) Strategic Support's Effective Use of Technology. The DCMS project is also consistent with the Council-approved budget strategy to focus on rehabilitating aging RWF infrastructure, improve efficiency and reduce operating costs.

COST SUMMARY/IMPLICATIONS

The following outlines the elements of the contract and other project-related costs.

1. AMOUNT OF RECOMMENDATION (5-year term): $342,700

2. COST ELEMENTS:

- Software Subscription ($48,000 per year)	$240,000
- Implementation	75,319
- Training	17,381
- Travel Reimbursement	10,000
Subtotal	$342,700
Contingency	$100,000
Total Not-to-Exceed	$442,700

3. SOURCE OF FUNDING: 512 – San José-Santa Clara Treatment Plant Capital Fund

4. FISCAL IMPACT: After the initial five-year term, ongoing subscription and technical support costs must be justified by the vendor, approved by the City, and are subject to the appropriation of funds.

BUDGET REFERENCE

The table below identifies the fund and appropriations proposed to fund the contract and contingency costs recommended as part of this memorandum.

Fund #	Appn. # / RC #	Appn. Name	Total Appn.	Amt. for Contract	2015-2016 Adopted Capital Budget Page	Last Budget Action (Date, Ord. No.)
512	7481 / 171620	Program Management	$10,065,000	$250,700 *	V-199	06/23/2015 Ord. No. 29589
Total Current Funding Available						

* The Amount for Contract reflects the funding that will be utilized in 2015-2016 and includes $48,000 for the Year-1 subscription; $75,319 for implementation; $17,381 for training; and $10,000 for travel reimbursement. Additionally, contingency in the amount of $100,000, will also be encumbered. Future year costs will be programmed into the Proposed 2017-2021 Capital Budget and are subject to City Council approval.

CEQA

Not a Project, File No. PP10-066 (a) Agreements and Contracts.

/s/
JULIA H. COOPER
Director of Finance

/s/ Ashwini Kantak for
KERRIE ROMANOW
Director, Environmental Services Department

For questions, please contact Mark Giovannetti, Deputy Director of Finance at (408) 535-7052.

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

COUNCIL AGENDA: 04/26/16
ITEM:

CITY COUNCIL ACTION REQUEST

Department(s): Public Works, Environmental Services	**CEQA:** Exempt, File No. PP15-015, CEQA Guidelines Section 15302, Replacement or Reconstruction.	**Coordination:** CAO	**Dept. Approval:** /s/ Jon Cicirelli /s/ Ashwini Kantak
Council District(s): City-wide			**CMO Approval:** D. DeSyl

SUBJECT: EMERGENCY ACTION FOR THE REPLACEMENT OF THE POND A18 NORTHERN GATE STRUCTURE AND TERMINATION OF THE ACTION

RECOMMENDATION:

1. Review of the emergency action for the replacement of the Pond A18 northern gate structure at the San José-Santa Clara Regional Wastewater Facility; and
2. Adopt a resolution terminating the emergency declaration for the replacement of the Pond A18's northern gate structure.

BASIS FOR RECOMMENDATION:

On March 3, 2015, the City Council adopted Resolution No. 77296 declaring and finding that emergency replacement of the Pond A18's northern gate structure was necessary to address critical structural failure and to avoid the potentially significant impacts of breaching the levee system. The Resolution also delegated 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 $1,000,000.

On March 30, 2015, the Director of Public Works conducted a competitive procurement and awarded a construction contract to Galindo Construction, in the amount of $588,420 on March 30, 2015. Work commenced on April 15, 2015. The gate structure was removed and replaced and the pond returned to normal flow operations on August 31, 2015. Design modifications and significant unforeseen buried obstructions resulted in $227,719 of change orders and a final total contract value of $816,139. Final punch-list work, project documentation, and cleanup has been completed. The final payment will be made to the contractor by mid-May.

Public Contract Code Section 22050(c)(3) requires that the governing body terminate the emergency action as soon as conditions warrant. Now that the work is complete and the risk of levee failure has been averted, approval of the recommendation will end the emergency action.

COST AND FUNDING SOURCE:

COST OF PROJECT:	
Project Delivery	$122,276
Construction	588,420
Contingency	227,719
TOTAL PROJECT COSTS	**$938,415**
Expenditures to Date:	936,415
REMAINING PROJECT COSTS	**$2,000***

* Remaining project costs are for staff project closeout.

SOURCE OF FUNDING: 512 – San José-Santa Clara Treatment Plant Capital Fund, 7395 – Urgent and Unscheduled Treatment Rehabilitation Fund.

FOR QUESTIONS CONTACT: John Cannon, Principal Engineer, (408) 535-8340

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: TRANSPORTATION AND ENVIRONMENT COMMITTEE

FROM: Kerrie Romanow
Barry Ng

SUBJECT: SEE BELOW

DATE: March 23, 2016

Approved D. DSyL Date 3/24/16

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 for the period July through December 2015.

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 Improvement Program (CIP) 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 2015-2016.

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 $2,100,000,000 to be implemented at the San José-Santa Clara Regional Wastewater Facility[1] (RWF) over the next 30 years. A validation process was completed in early 2014 to update and prioritize the recommended PMP projects as well as additional gap projects into 33 construction packages to be initiated in the next 10 years. Beginning in Fiscal Year 2014-2015, the validation process was used to inform the five-year CIP and ten-year funding strategy. The 2016-2020 adopted CIP includes funding in the amount of $1,007,000,000, of which approximately $709,000,000 is for construction projects. To provide visibility and

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

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 created to provide more frequent and time-relevant updates. The first CIP monthly status report was issued to TPAC in April 2014 and a total of 23 monthly reports have been 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 2015 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 2015, significant progress were made in several program areas including:

A. *Ten-Year CIP Funding Strategy*
On June 2, 2015, Council approved the staff report and recommendations related to the RWF Ten-Year CIP Funding Strategy (which TPAC unanimously approved on May 14, 2015). An update on the Ten-Year Funding Strategy was recommended by TPAC on December 10, 2015 and approved by Council on January 12, 2016. The staff reports are available online at:
http://sanjose.granicus.com/MetaViewer.php?view_id=&event_id=732&meta_id=516433
http://sanjose.granicus.com/MetaViewer.php?view_id=&event_id=2118&meta_id=550326

While all tributary agencies indicated interest in short term financing in August and September 2015, at the time of the writing of this report, the agencies have not provided the interim commitments requested, through execution of the Amended and Restated Master Agreement by February 1, 2016. As a result, San José and Santa Clara are continuing the SRF loan application process for the Digester and Thickener Facilities Upgrade Project (loan application approval is expected in spring 2016), and will adjust the loan amount to only reflect participation from the co-owners, at the time of the final loan approval.

B. *Odor and Corrosion Control Strategy*
In October 2015, Council adopted the Odor Control Implementation Plan, which will enable staff to proceed with a phased implementation approach for completing odor control improvements at the RWF, corresponding to specific odor fence lines. Council directed staff to implement odor control improvements for three projects: East Primary Rehabilitation, Seismic Retrofit, and Odor Control; Headworks Improvements and New Headworks; and Digester and Thickener Facilities Upgrade. Council deferred odor control improvements for the Digested Sludge Dewatering Facility until non-sewer

ratepayer funding sources could be identified to pay for the improvements. Additionally, Council deferred consideration of optional odor control improvements until the decommissioning of the lagoons and drying beds has been completed, and the extent of public access at Pond 18 and the proposed shoreline levee has been determined.

C. *Programmatic Studies*

Between July and December 2015, staff completed five studies (Architectural Guidelines, Automation Master Plan and Process Control Approach, Odor and Corrosion Control, Yard Piping Condition Assessment Plan, and Traffic Circulation and Impacts) and continued work on the Flood Protection study, which is expected to be completed by spring 2016. The programmatic studies will provide foundational information and design criteria needed to design and construct projects at the RWF.

D. *Procurements*

Between July and December 2015, staff advertised four Requests for Qualifications (RFQs) for program-wide consultant services, including 1) Construction Management and Inspection Services, 2) Design and Construction Management Software, 3) General Engineering Services, and 4) Value Engineering and Peer Review Services. Project-specific procurements are discussed further below.

Other notable achievements during this reporting period include:

- Staff obtained a dedicated analyst to assist with the recruitment process for 23 new full-time positions that was approved by City Council in June 2015. The approved positions include all levels of engineers and engineering technicians, as well as an analyst and staff specialist, that will support three functional groups within the RWF CIP division: 1) program management, 2) design/project delivery, and 3) process engineering. Between July and December, staff successfully filled five positions, including two senior engineers, two associate engineers, and one analyst.
- In August, the CIP received the 2015 organizational excellence award from the California Association of Sanitation Agencies (CASA) for its work on the startup and validation stage of the program.
- On November 4, 2015, staff held the third annual open house for prospective vendors to increase awareness of upcoming CIP procurements. Approximately 80 consultants, contractors, and material and equipment suppliers attended.

On the project delivery front, 27 active projects progressed through various phases of the project delivery model as further discussed below:

A. *Construction Activity Highlights*

During the first half of the fiscal year, seven projects totaling more than $31,000,000 were in active construction (see Attachment A). Two of the seven projects are being delivered using the low-bid design-build project delivery method, with the remaining five projects being delivered using the conventional design-bid-build project delivery method.

Key construction activities highlighted for this period include:

- Digester Gas Compressor Upgrade (Low-Bid Design-Build) – delivery and installation of cooling towers; assembly of electrical boxes/pull boxes; installation of electrical switchgear boxes; grouting and sealing of interior and exterior walls. Through December, construction is 42 percent complete.
- Digester Gas Storage Replacement – substantial construction completion was reached in November. The new 50,000 cubic foot digester gas storage tank successfully passed its 45-day commissioning test in December 2015. The project is anticipated to be accepted in spring 2016.
- Emergency Diesel Generators (Low-Bid Design-Build) – access road was completed and passed inspection/testing; PG&E interconnection agreement was fully executed in October; civil work continued including trenching, placement of new electrical conduits and concrete pad for two fuel tanks, and footing for the new storage building; 100 percent design drawings nearing completion for PG&E and code review; factory acceptance testing of generators scheduled for spring 2016. Through December, construction is 12 percent complete.
- Three other projects reached substantial completion (Handrail Replacement – Phase V, Pond A18 Northern Gate Structure Replacement, and Training Trailer Replacement), and three projects were accepted (Fire Main Replacement – Phase III, Handrail Replacement – Phase V, and Training Trailer Replacement).

There were no reported or recorded safety incidents or claims filed during this construction reporting period.

B. *Design Activity Highlights*

Seven projects were under active design, including the two low-bid design-build projects mentioned above. Key design activities highlighted for this period include:

- Digester and Thickener Facilities Upgrade – In August, the pre-qualification for contractors was advertised. In September, the design consultant submitted the 90 percent design documents for review. Staff returned comments in October and the design consultant completed the 100 percent design documents in December. In October, staff pre-qualified nine contractors to bid on the project.

  In November, staff submitted the SRF loan application package for the Digester & Thickener Facilities Upgrade Project. Council also adopted three resolutions required as part of the loan application process. Staff anticipates receiving confirmation of the loan approval from the State Water Resource Board in spring 2016 and will return to Council to execute the SRF Financing Agreement if the loan application is approved. As stated earlier, the final loan amount will be adjusted to reflect participation by San José and Santa Clara; as well as to reflect construction costs based on the lowest responsive bid. In accordance with the Master Agreements, staff will also be bringing forward a budget action in

March 2016 to adjust allocations by parameter for this project, based on 100 percent design as well as a March 2016 report from Carollo Engineers.

- Iron Salt Feed Station – In July, staff provided comments on the 90 percent design to the design consultant. The 100 percent design was completed in August. The project bid set was approved and advertised in September and opened bids in October. Six bids were received. A recommendation to award the project went to TPAC and Council in January 2016. Since the Carollo Engineers report on allocation methodology had not been completed at the time of award of this project, adjustments to parameter allocations for this project will be done at the completion of the project.
- Plant Instrument Air System Upgrade – In September, the 50 percent design was completed. The final design submittal is anticipated in spring 2016.
- Construction-Enabling Improvements – Staff completed conceptual design in August, 30 percent design in October, and 60 percent design in December. Final design and bidding is expected in spring 2016.
- Fiber Optic Connection – The project was advertised in July and the City received two bids. A recommendation to award the project went to TPAC and Council in February 2016.

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*

Fifteen projects were in active planning and feasibility development. Scoping work began on four of the projects.

Key planning/feasibility development activities highlighted for this period include:

- Consultant procurement activities continued for seven projects, including 1) Advanced Facility Control and Meter Replacement, 2) Blower Improvements and Aeration Tanks Rehabilitation, 3) Digested Sludge Dewatering Facility, 4) Facility-wide Water Systems Improvements, 5) Filter Rehabilitation, 6) Headworks, and 7) Nitrification Clarifiers Rehabilitation.
- Cogeneration Facility – In July, staff issued a Request for Proposals for design-builders. In August, Council approved an agreement for technical support services and staff began the SRF application process. In October, staff identified the top-ranked design-build firm. In December, Council approved the final proposer ranking and authorized the City Manager to negotiate the design-build contract. Following Council approval, staff began negotiations. Staff also initiated the SRF loan application process for this project.

- In December, Council awarded a consultant agreement for owner's representative and construction management services for Headworks and a consultant agreement for design services for Filter Rehabilitation.

Significant activity is expected to continue in the upcoming six-month period including:

- Complete negotiations with the top-ranked design-build firm and obtain Council approval of a design-build contract for the Cogeneration Facility
- Obtain Council approval of three resolutions required to be submitted with the Financial Security Package as part of the SRF loan application for the Cogeneration Project
- Obtain Council approval to award consultant agreements for design services for Advanced Facility Control and Meter Replacement, Facility-wide Water System Improvements, and Nitrification Clarifiers Improvements projects
- Advertise and obtain Council approval to award construction contracts for the Construction-Enabling Improvements, Digester and Thickener Facilities Upgrade, and Fiber Optic Connection projects
- Continue design and/or design-build work on four projects: Plant Instrument Air, Headworks Critical Improvements, Digester Gas Compressor Upgrade, and Emergency Diesel Generators
- Obtain brokerage services for an Owner Controlled Insurance Program
- Continue to develop the five-year CIP staffing and transition plan
- Continue recruitment activities to fill capital program vacancies
- Continue to work with the City of Santa Clara and tributary agencies to implement the Ten-Year Funding Strategy as previously directed by TPAC and Council

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 April 4, 2016 Transportation and Environment 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
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 - July – December 2015

Attachment A – Projects in Active Construction - July – December 2015

	Project Name	Contractor	Amount of Award	Date of Award	Est. Beneficial Use
1	7076 – Influent Magnetic Meter and Valve Replacement for Nitrification Clarifiers A5 & A6	JMB Construction, Inc.	Base Contract: $270,300 Contingency: $27,030	5/21/13	Summer 2016
2	6835 - Handrail Replacement – Phase V	Rodan Builders	Base Contract: $1,254,630 Contingency: $125,463	6/18/13	Summer 2015[1]
3	7157 - Digester Gas Storage Replacement	Anderson Pacific Engineering Construction, Inc.	Base Contract: $1,825,100 Contingency: $182,510	4/22/14	Winter 2015[2]
4	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	Fall 2016
5	7249 -Training Trailer Replacement	Newton Construction & Management, Inc.	Base Contract: $513,874 Contingency: $51,400	5/20/14	Summer 2015[3]
6	7394 – Emergency Diesel Generator (D-B Low Bid)	Anderson Pacific Engineering Construction, Inc.	Base Contract: $15,310,000 Contingency: $1,531,000	6/17/14	Winter 2016
7	7969 – Pond A18 Northern Gate Structure Replacement	Galindo Construction, Inc.	Base Contract: $588,420 Contingency: $176,500	3/30/15	Summer 2015[4]

1. Handrail Replacement – Phase V reached Beneficial Use on August 31, 2015.
2. Digester Gas Storage Replacement reached Beneficial Use on November 24, 2015
3. Training Trailer Replacement reached Beneficial Use on July 10, 2015.
4. Pond A18 Northern Gate Structure Replacement reached Beneficial Use on August 31, 2015

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Office of the City Auditor

Report to the City Council
City of San José

SOUTH BAY WATER RECYCLING: BETTER INFORMATION AND RENEGOTIATION OF CONTRACTUAL OBLIGATIONS WILL INCREASE TRANSPARENCY AND AID PROGRAM SUCCESS

Report 16-05
March 2016

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

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

March 28, 2016

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

South Bay Water Recycling: Better Information and Renegotiation of Contractual Obligations Will Increase Transparency and Aid Program Success

For the past fifteen years, San José has operated a water recycling program as part of its operation of the San José Regional Wastewater Facility. The recycled water program, South Bay Water Recycling, started as and remains a wastewater diversion program, but now also serves as a useful part of the region's water supply, providing non-potable water to over 700 large-scale water users. This past fiscal year, for the first time, the Wastewater Facility was able to earn more in operating revenue from the sale of recycled water than it expended on operating costs for its South Bay Water Recycling program. It is expected that South Bay will be able to break-even on its operating costs into the foreseeable future.

Finding 1: Improvements to South Bay Expense Tracking Will Improve Program Managers' Ability to Effectively Operate the Water Recycling Program

Over the past several years, South Bay program managers have worked to improve expense tracking for South Bay. Previously, South Bay expenses had not been rigorously separated from other Wastewater Facility expenses. San José has a Strategic Plan performance goal of covering all South Bay operating expenses with sales revenues, and a Green Vision goal of using all wastewater for beneficial purposes. Because of these goals and to make informed business decisions, South Bay's managers need easy access to comprehensive financial information about South Bay's revenues and expenses throughout the year. Further, San José has entered in to an agreement with the Santa Clara Valley Water District that requires audited financial statements and other financial information concerning recycled water costs and revenues to be exchanged each year.

South Bay expense tracking is currently time-intensive, requiring manual entries of financial information into the South Bay expense tracking spreadsheet that program management maintains. If South Bay were accounted for separately from other aspects of the Wastewater Facility, in separately budgeted funds, it would be significantly easier to obtain timely and accurate financial information which would aid managers.

Finding 2: Contractual Obligations with the Water District Limit South Bay's Ability to Cover Capital Costs

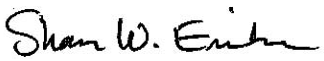
To date, South Bay capital costs have totaled roughly $250 million. The Wastewater Facility (whose primary source of revenue is from sanitary sewer ratepayers in San José, Santa Clara, and neighboring jurisdictions) provided more than two-thirds of that construction cost because of the Facility's need to reduce its flows to the bay. San José, Santa Clara, and the tributary agencies are obligated to pay an average of $9 million per year until 2021 when the debt is paid off.

In 2010, the City of San José entered into an agreement with the Water District to build the Advanced Facility; a facility on Wastewater Facility land that would test operations of advanced water purification (wastewater that has been purified to the point that it exceeds drinking water standards) and could further augment the South Bay water supply. The Wastewater Facility provided $11 million in funding and in-kind services to build the facility, and the City agreed to contract terms that share recycled water net revenue with the Water District.

The ongoing cost sharing formula limits South Bay's ability to use operating revenues to offset debt service payments or fund infrastructure needs. We recommend that the Integration Agreement be renegotiated to ensure sufficient funding of South Bay capital needs.

This report includes four recommendations. We will present this report at the April 4, 2016 meeting of the Transportation and Environment Committee. We would like to thank the Environmental Services Department and the City Attorney's Office for their time and insight during the audit process. The Administration's response will be distributed under separate cover.

Respectfully submitted,



Sharon W. Erickson
City Auditor

finaltr
SE:lg

Audit Staff: Jazmin LeBlanc
Ani Antanesyan

cc: Norberto Dueñas
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Jeff Provenzano
Dave Sykes
Rosa Tsongtaatarii
Rick Doyle
Michele Young
Darlene Van der Zon
Laura Burke

This report is also available online at www.sanjoseca.gov/audits

Table of Contents

Table of Exhibits

Abbreviations

Advanced Facility	*Silicon Valley Advanced Water Purification Center*
Discharge Permit	*National Pollutant Discharge Elimination System*
FMS	*City's Financial Management System*
Integration Agreement	*Recycled Water Facilities and Programs Integration Agreement between the City of San José and the Santa Clara Valley Water District*
Ratepayers	*Sanitary Sewer Ratepayers from the City of San José*
Silver Creek Agreement	*Agreement between the City of San José and the Santa Clara Valley Water District Relating to Management and Operation of the South Bay Water Recycling System, Including the Silver Creek Pipeline*
South Bay	*South Bay Water Recycling*
Strategic Plan	*South Bay Water Recycling Strategic and Master Planning Report (Volumes I and II)*
Wastewater Facility	*San José-Santa Clara Regional Wastewater Facility*
Water District	*Santa Clara Valley Water District*
Tributary Agencies	*Wastewater Facility Tributary Agencies*

Units of Measurement

This report uses both acre-feet (A/F) and million gallons per day (MGD). When referring to daily volumes, millions of gallons per day are used; and when referring to yearly volumes, acre-feet are used. For a sense of scale 1 million gallons would fill about 1.52 Olympic sized swimming pools and 1 acre-foot would fill about half of an Olympic sized swimming pool.

Introduction

The mission of the City Auditor's Office is to independently assess and report on City operations and services. The audit function is an essential element of San José's public accountability and our audit reports provide the City Council, City management, and the general public with independent and objective information regarding the economy, efficiency, and effectiveness of City operations and services.

In accordance with the City Auditor's Fiscal Year (FY) 2015-16 Audit Work Plan, we have completed an audit of South Bay Water Recycling which is a program administered by the City of San José (City). The purpose of our audit was to analyze the cost recovery of South Bay.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We limited our work to those areas specified in the *Audit Objective, Scope, and Methodology* section of this audit report.

We thank the Environmental Services Department; City Manager's Budget Office and City Attorney's Office for their time, information, insight, and cooperation during the audit process.

Background

The City of San José, together with the City of Santa Clara,[1] owns and operates a regional wastewater treatment facility known as the San José-Santa Clara Regional Wastewater Facility[2] (Wastewater Facility). This facility manages the wastewater from San José and Santa Clara as well as six other local cities, towns, and unincorporated areas which are represented by five tributary agencies – the City of Milpitas, West Valley Sanitation District, Cupertino Sanitary District, County Sanitation District 2-3 and the Burbank Sanitary District.[3]

[1] The City of Santa Clara is roughly a 20 percent owner of Wastewater Facility and the City of San José is majority owner and operator.

[2] Formerly known as the San José-Santa Clara Regional Water Pollution Control Plant; it is located in North San José.

[3] The cities of Milpitas, Campbell, Cupertino, Los Gatos, Saratoga, and Monte Sereno.

The Wastewater Facility is regulated by a National Pollutant Discharge Elimination System permit (Discharge Permit). The Discharge Permit program is a federal permit program under the Clean Water Act that is administered in the Bay Area by the San Francisco Bay Regional Water Quality Control Board (Regional Board).

Wastewater enters the facility exactly as one may imagine — as raw sewage. As Exhibit 1 shows, three major steps are involved in treating raw sewage to an acceptable water quality level to protect the habitat of vulnerable plants and animals in the San Francisco Bay.

Exhibit 1: Water Treatment Steps at the Wastewater Facility

The first step pulls large items such as baby wipes and other debris out of the mix and sends them to the landfill. The next step, **primary filtration**, uses sedimentation tanks to allow suspended particles of sewage to settle out of the water. That sediment is allowed to further dry out and is used as landfill cover.

Secondary filtration is up next, which moves wastewater through a series of tanks that add either aerobic or anaerobic bacteria or nitrogen to allow more suspended matter to settle out of the water. This is the end of the process for many wastewater treatment facilities, but in San José, wastewater goes through another treatment step.

San José's **tertiary step** filters wastewater through sand, gravel and coal to remove almost all of the remaining solids in the water. Once water reaches the bottom of these filtration tanks the water is slowly moved through a **serpentine chlorine contact tank** to kill remaining pathogens through disinfection. Finally, water is dechlorinated and sent into the south end of the San Francisco Bay.

Source: Auditor's Office; Environmental Services Department

In 1990, the amount of water discharged during the dry season[4] was found by the State Water Resources Control Board to be impacting the South Bay marsh environment, changing it from a saltwater marsh to a freshwater marsh and negatively impacting two endangered species – the California Clapper Rail and the Salt Water Harvest Mouse. To address this problem, the Wastewater Facility created a plan which was incorporated into its Discharge Permit – to discharge no more than 120 million gallons per day to protect the marshland and the habitat of local plants and animals.[5]

The City established a multi-part plan to limit dry weather discharge from the Wastewater Facility and address salt marsh conversion, including:

- Purchasing about 380 acres of land to restore to saltwater marsh to mitigate past land conversion;
- Implementing indoor water conservation programs to reduce the amount of sewage entering the Wastewater Facility; and
- Creating a recycled water program, called South Bay Water Recycling (South Bay) to reuse a portion of effluent for irrigation, landscaping, and industrial uses.[6]

In part due to these efforts, average dry weather flow from the Wastewater Facility to the San Francisco Bay decreased from 130 million gallons per day in 1997 (the year South Bay began operations) to only 70 million gallons per day in 2015.

[4] Wastewater facilities typically monitor flow using "dry weather flows." They do this in order to accurately capture sewer use only and not inadvertently include stormwater as well. All flow data presented in this report uses dry weather flow. San José calculates dry weather flow as any three consecutive months from May 1 through October 31 of each calendar year. Average dry weather flow is the measurement that the Wastewater Facility uses to meet Discharge Permit requirements.

[5] The recycled water process modification was implemented in response to a 1990 State Water Resources Control Board order directing the Regional Board to limit flows from the Wastewater Facility to 120 MGD or to flows that would not further impact endangered species. At the time that the State Board order was issued, the Wastewater Facility was discharging an average dry weather flow of 120 MGD, and the State Board found that the 47 MGD increase in flow during the period from 1970 to 1985 had resulted in the loss of approximately 220 acres of salt marsh habitat.

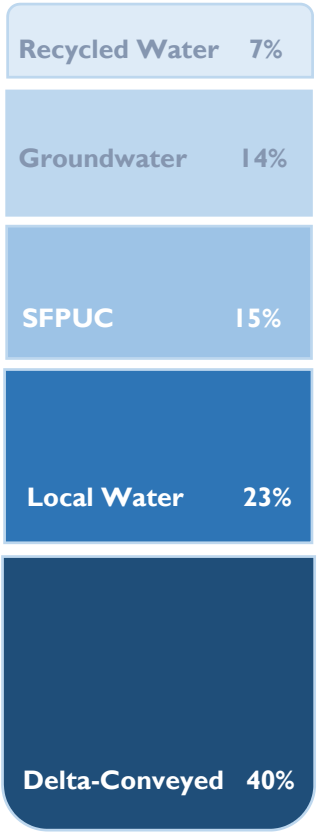
[6] The tasks outlined in the plan were incorporated into the Discharge Permit in lieu of a flow cap in 1993, including requirements that the City begin operation of non-potable water reclamation projects to divert up to 21 MGD by November 1, 1997 (South Bay Phase I); and begin operation of a 24-30 MGD expanded project area by December 31, 2000 (South Bay Phase II). In 1996, after estimating the cost of South Bay Phase II as proposed in the San José Action Plan at $350 million, the City proposed revising the Action Plan to replace South Bay Phase II with a series of projects that were projected to reduce effluent flows up to 60 MGD at an estimated cost of $150 million. This revised plan, which continued to include the requirement that the City "continue to develop a project to use reclaimed water for potable water supply" was accepted and incorporated into the Discharge Permit in 1997. This process was further modified in 2014, when an advanced water purification facility (Advanced Facility) began operation adjacent to the Wastewater Facility to further treat about one-third of the South Bay water.

Recycled Water and Water Supply

California's recent drought has had a big impact on the South Bay. Recycled water has become an important local source of water; its use has grown dramatically and is expected to continue to grow. By 2010, recycled water accounted for over four percent of the water supply in the region served by the Santa Clara Valley Water District (Water District), with South Bay currently being the largest supplier of recycled water in Santa Clara County.

By 2035, the Water District plans to nearly double recycled water use to at least seven percent of the water supply in the area that it serves, as Exhibit 2 shows to the right.[7] Toward that end, the Water District is funding recycled water projects with the Wastewater Facility as well as projects in Gilroy and Sunnyvale.

Exhibit 2: Projected Water Supplies in 2035



Source: Water Master Plan 2012

Within the area served by the Water District, including San José, drinking water comes from several sources:

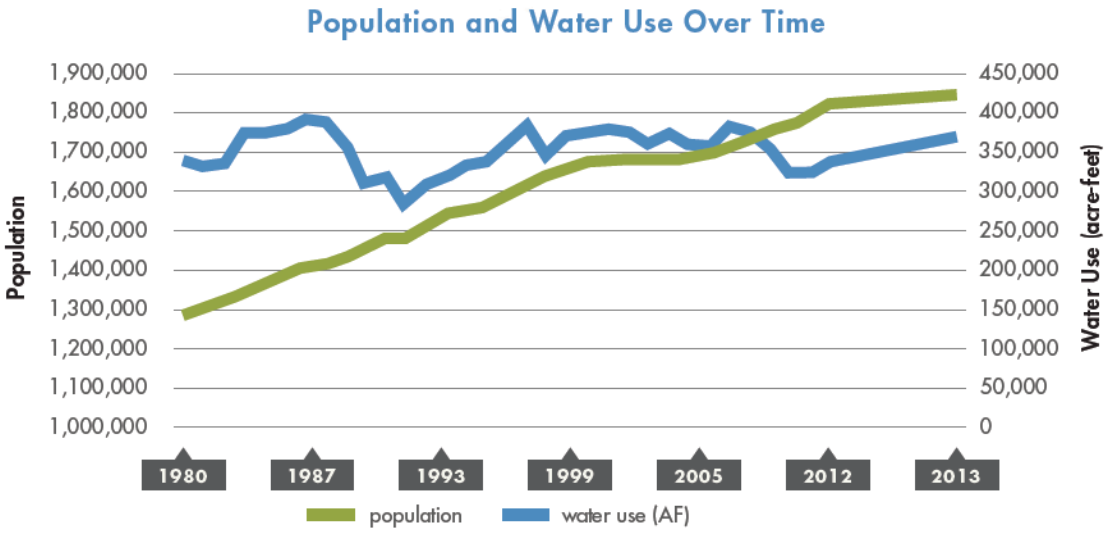
- groundwater,
- local reservoirs and other surface water sources (such as streams), and
- water imported from the Sierras through the Hetch Hetchy Reservoir and the California Delta.

There are environmental consequences to using these sources. Water suppliers around the State are looking for alternatives to augment these sources and protect groundwater supplies. As described below, potential options for reducing reliance on imported and local water sources include **conservation**, **desalinization** and **wastewater recycling**.

Conservation has had a great impact in the area's water use as Exhibit 3 indicates. While the Bay Area's population has grown over 25 percent since 1992, total water use has remained relatively flat. In 2015, San José residents were asked to reduce water usage by 30 percent over the summer and residents met that goal. Conservation is a powerful strategy; by 2030, the Water District expects that demand will be 20 percent lower through conservation than it would otherwise be but still short of wholly meeting the gap between needed and available water.

[7] Note, the percentages by water type have been rounded and converted from A/F, therefore, may not add to 100%.

Exhibit 3: Historic Population and Water Use in the Water District's Region



Source: Water District Water Conservation 2012-13 Annual Report

Desalinization is also an option that many California communities are contemplating; it is the process of removing dissolved salts and minerals from water (typically brackish or ocean water) through filtration or distillation. Desalinization typically is expensive, requiring high energy inputs to obtain drinkable water, nonetheless, it is an option when other sources are not available.

Wastewater Recycling is an option that treats wastewater to the point that it can be used for potable or non-potable purposes. South Bay is an example of a program that meets non-potable treatment requirements, which means that the water can be used for purposes including landscaping, irrigation and industrial uses such as for cooling towers.

South Bay water has historically met state requirements for recycled water by modifying the tertiary (final) steps of the wastewater treatment process at the Wastewater Facility. However, since 2014, South Bay has blended its processed water with water from a Water District operated advanced water purification facility (Advanced Facility). The South Bay process modifies the normal Wastewater Facility process by speeding up the final filtration through sand and activated carbon and the chlorine added at the end of the usual process is not removed for South Bay water. The Wastewater Facility houses six tertiary filtration tanks and generally uses two of them for South Bay. For more details on the regulatory agencies and allowed uses of recycled water and types of recycled water production see Appendix B.

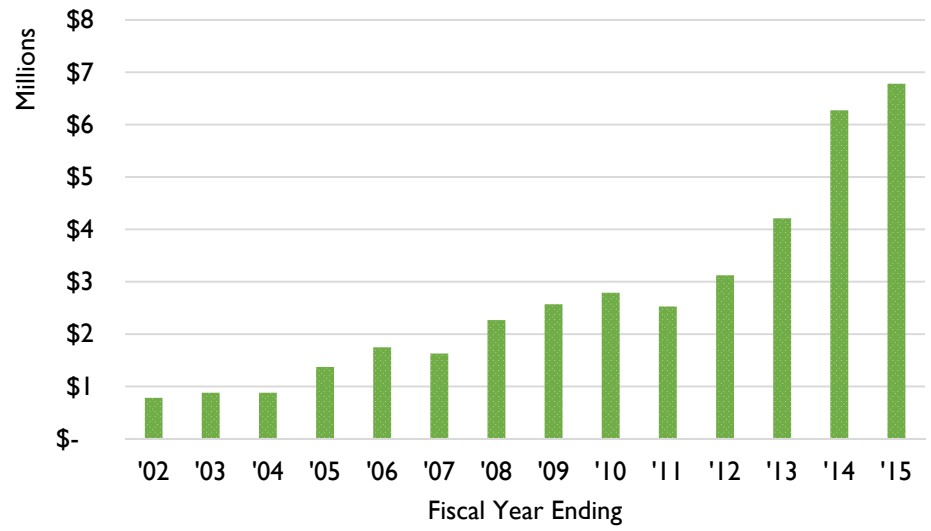
Exhibit 4 below, shows an overview of the Wastewater Facility, South Bay and the Advanced Facility.

Exhibit 4: Aerial Flow Map of Wastewater Facility, South Bay and Advanced Facility

Source: Google Earth Pro

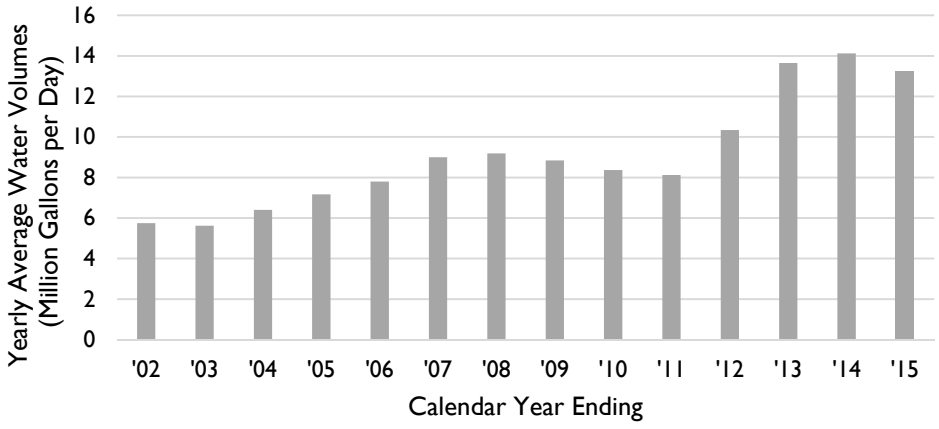
After filtration and chlorination, South Bay water is brought to a pumping station where it blends with Advanced Facility water and is pumped through a network of purple pipes to water retailers in San José, Santa Clara, and Milpitas. These retailers supply over 740 customers throughout the region. Exhibit 5 shows recycled water sales revenue since FY 2001-02 and Exhibit 6 shows historical recycled water volumes.

Exhibit 5: South Bay Historical Recycled Water Sales Revenue



Source: Environmental Services Department

Exhibit 6: South Bay Historical Recycled Water Volumes[8]



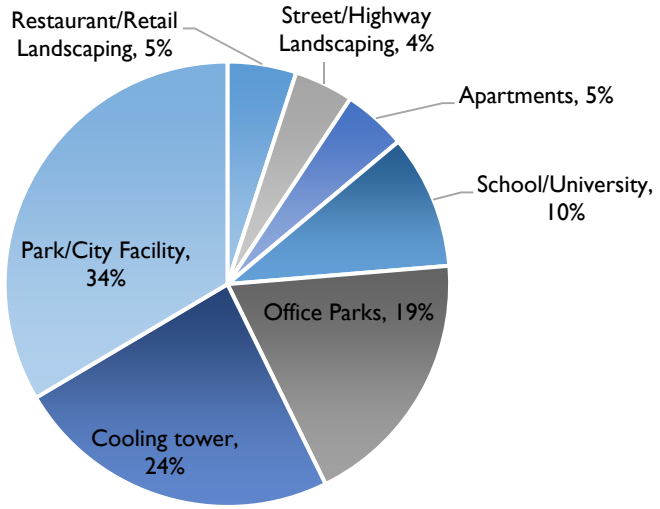
Source: Environmental Services Department

[8] Note, starting from March 2014, the volumes include Advanced Facility purified water blended with South Bay water.

South Bay Recycled Water Usage

In FY 2014-15, approximately 61 percent of recycled water was used for irrigation, and about 39 percent was used for industrial purposes (less than 1 percent of all recycled water use was used for agricultural purposes). As Exhibit 7 shows many types of customers used South Bay water.

Exhibit 7: Types of South Bay End Users



Source: Environmental Services Department

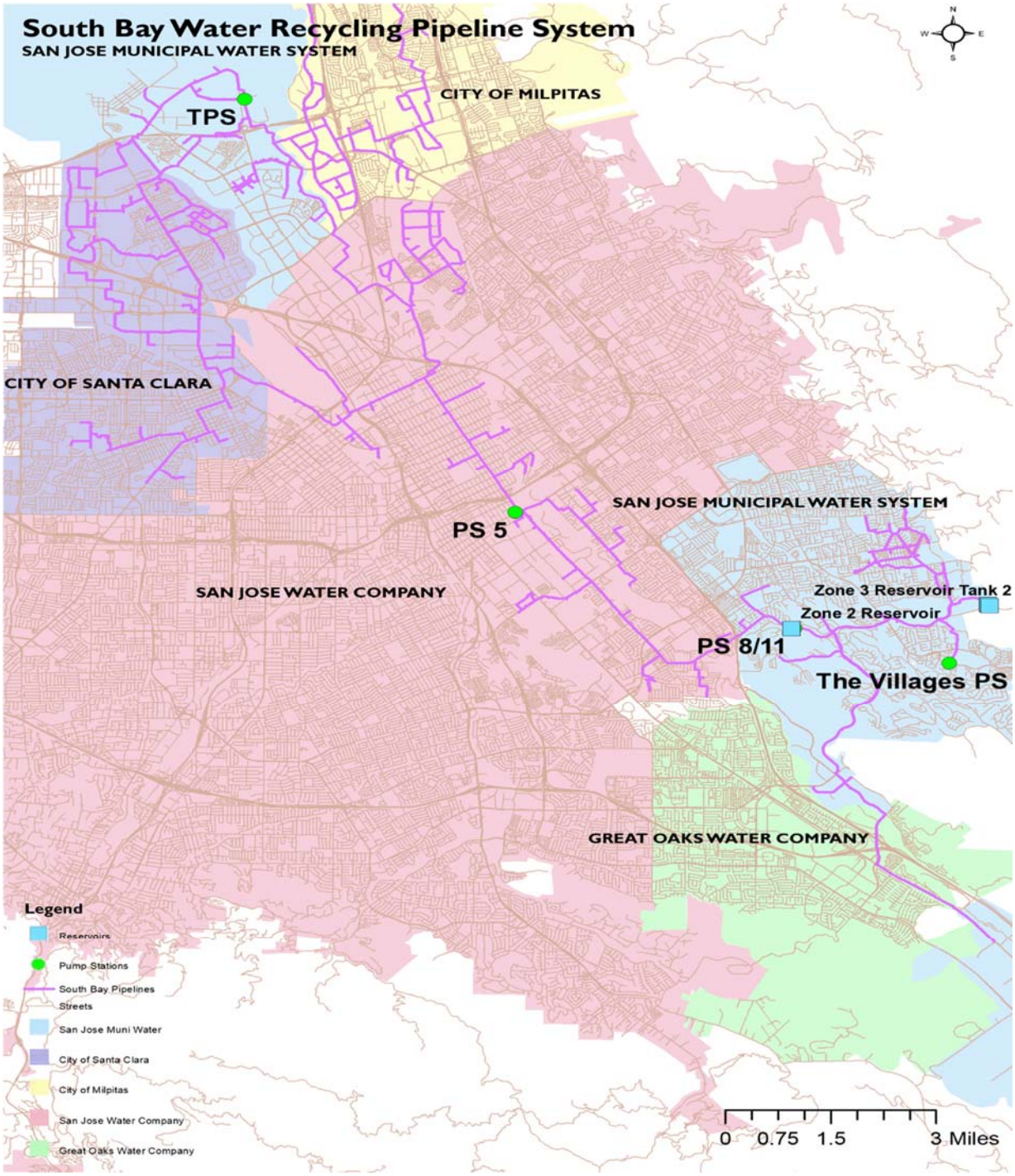
South Bay now has quite a large footprint in San José and the surrounding areas with 140 miles of distribution pipes, 5 pump stations[9] and 3 reservoirs.[10] The majority of the infrastructure was constructed in the mid-1990s and expanded in the mid-2000s. South Bay's maximum capacity at its main transmission pump station (TPS) is 40 million gallons per day, reaching as high as 48 million gallons per day with all duty and standby pumps operational; however, storage capacity is only about 9.5 million gallons.

South Bay water is sold wholesale by the Wastewater Facility to four water retailers: San Jose Municipal Water, San Jose Water Company, City of Milpitas Water and Sewer, and City of Santa Clara Water and Sewer Utility. In FY 2014-15, recycled water demand was about 11,000 acre-feet (A/F) from all retailers. The map below shows the extent of recycled water pipes, the major retailers in the area, South Bay's pump stations, and reservoirs.

[9] Transmission Pump Station; Pump Stations 5, 8, 11 (PS 5, 8, 11); Villages Pump Station (VPS).

[10] Zone 2 has one reservoir (Yerba Buena) and Zone 3 has two – the Evergreen reservoirs.

Exhibit 8: Map of the South Bay Water Recycling Distribution System[11]



Source: Auditor created through ArcGIS

[11] Great Oaks Water Company is not a recycled water retailer but is included in the map because it serves a portion of San José. PS 8, PS 11 and Zone 2 Reservoir are co-located on Yerba Buena Road, therefore, there is only one symbol on the map for all features. PS is a pump station, and TPS is the transmission pump station located adjacent to the Wastewater Facility in north San José.

Strategic Plan and Long Range Goals

In 2012, representatives of the City, Water District, the City of Santa Clara and the tributary agencies formed a committee to identify short and long-term goals for recycled water in the region.[12] The result of the collaboration was a South Bay Water Recycling Strategic and Master Planning Report (Strategic Plan) prepared by RMC Water and Environment engineering company, published in December 2014 by the City and the Water District. The Strategic Plan identified the following guidelines for South Bay to help set future goals:

Near Term (2015-2020)

- Recognize there is no longer a wastewater-driven need to expand South Bay
- Achieve cost recovery as soon as practical
- Maintain the system as a reliable supply to support existing customers

Long Term (2020-2035)

- Alternatives balance the needs of wastewater management and water supply perspectives
- Costs should be shared proportionally across all who benefit
- Master Planning will provide basis for identifying alternative governance frameworks and associated funding strategies for non-potable and potable reuse

Source: Strategic Plan

The Strategic Plan identifies long-term (between 2020 and 2035) recycled water reuse projects at an estimated cost of $243 million for non-potable reuse projects, and an additional $522 million for potable reuse projects. These projects are not anticipated to be funded by the Wastewater Facility or South Bay; the projects are being driven by the Water District. The Wastewater Facility would provide source water for the projects.

The City's capital improvement program for 2016-2020, which can be found in the City's Adopted Capital Budget, includes approximately $4.7 million for system reliability projects identified in the Strategic Plan's near term capital projects. These projects are proposed to be funded through sources other than sewer rate funds.

[12] The SBWR Task Advisory Steering Committee

South Bay Program Goals

San José has a Green Vision goal to recycle or beneficially reuse 100 percent of San José's wastewater by 2022. Currently about 14 percent of wastewater leaving the Wastewater Facility is being beneficially reused by recycled water customers.[13] San José also has a Strategic Plan performance goal to achieve cost recovery as soon as practical.

South Bay's Operational and Governance Structure

Operators, Owners and Tributaries to South Bay

South Bay is operated by the City of San José as the administering agency for the Wastewater Facility and authorized by the San José City Council. The Wastewater Facility co-owners, San José and Santa Clara, first entered into a Sewage Treatment Plant Agreement in 1959 for operating and ownership rights of the Wastewater Facility. Six other cities and towns now use the Wastewater Facility to treat their wastewater through agreements between San José and Santa Clara and the five tributary agencies. Each tributary agency has its own capacity shares in the Wastewater Facility and pays for capital costs based on those shares.[14] Under the tributary agency wastewater agreements, operating costs are paid based on volume and strength of flow, not capacity. Since South Bay was established as a Discharge Permit requirement and treats wastewater from all tributary agencies, it is considered a part of the Wastewater Facility and is required to be funded under the Wastewater Facility's agreements.

Governance of South Bay

The Treatment Plant Advisory Committee (TPAC), serves as an advisory body to all stakeholders on the operation, maintenance, repair and improvement of the Wastewater Facility (including South Bay) and the development and administration of related programs and policies. TPAC has members from both the cities of San José and Santa Clara as well as three of the five tributary agencies. Aside from TPAC, the Joint Recycled Water Policy Advisory Committee comprised of Water District representatives and members of San José and Santa Clara city councils, advises the parties on policy matters relating to the production, distribution and use of recycled water from South Bay.[15]

[13] The remaining treated water is discharged to the South Bay where it provides some beneficial value to the many plant and animal species that rely on fresh water being added to the South Bay. Many natural fresh water sources (mostly creeks) have been diverted or lost volume over time so treated water provides a reasonable replacement.

[14] Tributary agencies are allowed to discharge no more than allowed in their Master Agreement and are monitored based on four parameters (flow, biochemical oxygen demand, suspended solids, and ammonia.)

[15] The Committee was formed as part of the Integration Agreement.

South Bay's Organizational Structure and Management Oversight

The Environmental Services Department (ESD) of the City of San José operates the Wastewater Facility and the South Bay program. It has over 500 employees out of which 7 positions are dedicated for South Bay. ESD operates six core services: Natural and Energy Resources Protection, Portable Water Delivery, Recycled Water Management, Recycling and Garbage Services, Stormwater Management, and Wastewater Management. Internally, the Department accounts for its operations in 9 programs: Administrative Services, Environmental Compliance, Office of Sustainability, Technical Services, Integrated Waste Management, Water Resources, Watershed Protection, Communications, and Water Pollution Control.

South Bay Water Recycling is situated in ESD's Water Resources program (Program 6); the seven dedicated positions include a program manager, engineers, technicians, a supervisor and an environmental services specialist. The Water Resources Program includes South Bay Water Recycling and the San José Municipal Water System. South Bay Water Recycling activities are also supported by staff from other programs as needed.

Audit Objective, Scope, and Methodology

The objective of our audit was to assess the cost-recovery status of South Bay Water Recycling. We sought to understand the relevant management controls over South Bay and have performed the following to achieve the audit objective:

- We reviewed the South Bay Water Recycling Strategic and Master Planning Report Volumes I and II to identify South Bay's future goals and how they fit into the regional water reuse goals. We also reviewed the City's Green Vision Report to identify recycled water policy goals.
- We reviewed federal, state and local laws and regulations concerning recycled water, particularly its quality standards and allowed uses.
- We reviewed historical City Council, Treatment Plant Advisory Committee as well as Joint Recycled Water Advisory Committee agendas and informational memoranda to identify key policy decisions, fiscal impact analyses and the original purpose of South Bay.
- We reviewed Wastewater Facility User Agreements to identify the structure of agreements between the City and Santa Clara and the tributary agencies.
- We reviewed the Discharge Permit as well as South Bay's Permit (Order No. 95-117) to understand diversion and water quality requirements of South Bay.
- We reviewed best practices for developing indirect potable reuse projects and brine disposal options.

- We interviewed ESD staff to understand current cost-tracking practices of South Bay, its cost recovery methodology and its budgeting.
- We analyzed the estimated program costs for South Bay for the past three fiscal years for comprehensiveness, reasonableness and accuracy. We reviewed debt service schedules, as well as official statements for bonds and loans.
- We reviewed historical budget documents for the Wastewater Facility Capital Fund to identify South Bay capital projects.
- We reviewed and analyzed fund revenue reports for FY 2014-15 using the City's Financial Management System software to understand sources and uses for funds related to South Bay.
- We reviewed historical ESD budgeted labor distribution reports to analyze how South Bay has been budgeting staff time.
- We evaluated contract terms, specifically, pertaining to the Integration Agreement, the Silver Creek Pipeline Agreement and the 1998 Reimbursement Agreement, all between City and the Water District to identify historical funding support provided by the Water District for South Bay and current revenue-sharing terms for recycled water.
- We analyzed historical influent, effluent, South Bay non-blended and blended water, and Advanced Facility product water as well as brine volumes.
- We reviewed and analyzed trends in the City's wholesale recycled water rates, and utilized projected groundwater rates provided by the Water District to analyze net revenues and the sustainability of capital project development.
- We reviewed FY 2014-15 recycled water sales data to identify total sales and major types of customers.
- We reviewed grant documents from program inception to date to identify federal and state shares in South Bay.
- We reviewed and compiled revenue source reports from FMS to identify Water District and total ratepayer contributions to South Bay.
- We reviewed financial information concerning the Advanced Facility's construction and operating costs provided by Water District staff.
- We interviewed staff from the Budget and Attorney's Offices to understand financial and legal implications of contracts and pricing structures related to South Bay.

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Finding I Improvements to South Bay Expense Tracking Will Improve Program Managers' Ability to Effectively Operate the Water Recycling Program

Summary

Over the past several years, South Bay program managers have worked to improve expense tracking for South Bay. Previously, South Bay expenses had not been rigorously monitored as distinct from other Wastewater Facility expenses. San José has a Strategic Plan performance goal of covering all South Bay operating expenses with sales revenues, and a Green Vision goal of using all wastewater for beneficial purposes. Because of these goals and to make informed business decisions, South Bay's managers need easy access to comprehensive financial information about South Bay's revenues and expenses throughout the year. Further, San José has entered into an agreement with the Santa Clara Valley Water District that requires audited financial statements and other financial information concerning recycled water costs and revenues to be exchanged each year.

South Bay expense tracking is currently time-intensive, requiring manual entries of financial information into the South Bay expense tracking spreadsheet that program management maintains. If South Bay were accounted for separately from other aspects of the Wastewater Facility, in separate budgeted funds, it would be significantly easier to obtain timely and accurate financial information which would aid managers.

ESD Should Budget for South Bay in Separate Operating and Capital Funds

South Bay Capital and Operating Costs Are Intermingled Within Wastewater Facility Funds

South Bay revenues and expenditures have been included in two Wastewater Facility funds: Fund 512 for capital expenditures and Fund 513 for operating expenditures. The biggest revenue sources for both of these funds are service and use charges of San José's sanitary sewer system (transferred from Fund 541) with funds from Santa Clara and tributary agencies making up the second largest revenue source, and recycled water sales making up the third largest revenue source.

It is difficult to isolate South Bay's costs within the complicated fund flows, which hamper transparency. Some South Bay expenses can be identified with knowledge of specific appropriations. For instance, Fund 512 (San José/Santa Clara Treatment Plant Capital Fund) shows a South Bay Master Plan Grant on the source-side and South Bay capital costs on the use-side. Even though South Bay capital costs have, historically, been more clearly itemized within Fund 512 than its operational costs within Fund 513 (San José/Santa Clara Treatment Plant Operating Fund), it still

takes considerable time for one without program knowledge to understand the true capital costs of South Bay since it is not housed in its own separate fund.

Fund 513 shows recycled water sales in its funding sources. However, most South Bay expenses are intermingled within Fund 513 with all other Wastewater Facility expenses. It takes considerable skill, time and program knowledge to follow the flow of South Bay's funds in the City's budget. Although a memo fund for South Bay exists (along with two other memo funds that have tracked program grants), it has not been active in recent years. Furthermore, memo funds are primarily intended for internal accounting purposes only and do not appear in the City's external financial statements or budget documents and thus do not publish information directly to the public and other program stakeholders.

ESD staff are making progress on comprehensively budgeting for South Bay. The efforts they have already made and the recommendations we identify in this report will enable the City to have the detailed financial information necessary for program managers to maintain success.

Cost Tracking Is Time Consuming and Has Changed Over Time

Because costs are intermingled with other Wastewater Facility expenses and are not clearly identified, South Bay staff have to sift through myriad financial reports, and converse with management to understand South Bay's estimated costs – all in a time-consuming and confusing manner, susceptible to minor errors, due to manual entry and undocumented changes to cost accounting.

South Bay's primary program analyst spends at least **eight hours** per month (about 5 percent of their time) creating the spreadsheets that track South Bay costs. If South Bay established separate funds, the amount of time required to create automated expense reports that track the same information would likely occur within minutes, freeing up additional time for South Bay's analyst to focus on data analysis rather than data gathering.

Financial Information Requirements in in the Integration Agreement with the Water District

Now that the Advanced Facility is operational, the Integration Agreement[16] stipulates that South Bay and the Water District exchange audited financial

[16] The Recycled Water Facilities and Programs Integration Agreement between the City of San José and the Santa Clara Valley Water District

statements and other financial information each year.[17] Tracking expenses in separate funds would facilitate this requirement by making it easier to track expenses.

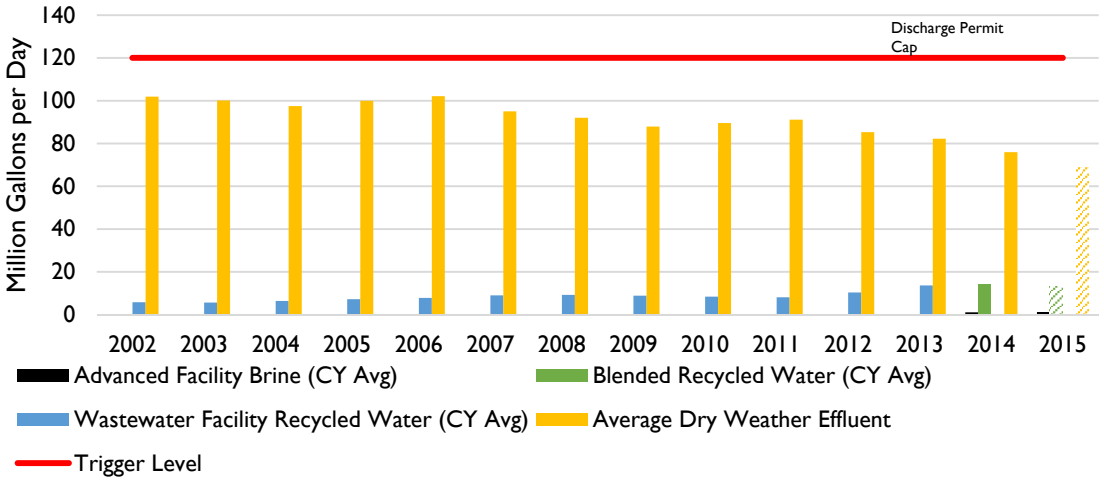
The South Bay Program Has Multiple Stakeholders Who Have an Interest in Easy Access to Program Cost Information

South Bay was established and funded as part of the sewage treatment process because of the Discharge Permit's diversion requirement. If the South Bay program evolves to facilitate other goals (e.g. replenishing groundwater or other potable uses), any incremental cost to the program would need to be clearly identified for all stakeholders. This would also be made easier through tracking in separate funds.

Decreasing Effluent Flows and South Bay's Mission in Transition

As Exhibit 9 shows below, average dry weather flows from the Wastewater Facility to the San Francisco Bay have been decreasing since their peak in 2006. In fact, in CY 2014, average dry weather flow to the Bay was only about 75 million gallons per day, well below the 120 million gallon average dry weather flow targeted in the Discharge Permit. CY 2015 is expected to be even lower.

Exhibit 9: Historical Water Levels for the Wastewater Facility and South Bay[18]



Source: Auditor analysis of ESD data

[17] The Integration Agreement states that no later than January 15th of each year, beginning with the year after the Advanced Facility becomes operational, the Wastewater Facility and Water District shall exchange audited financial statements for the immediately preceding fiscal year which cover the operations subject to the Integration Agreement; provided, however, that if audited financial statements are not available, unaudited statements shall be provided by January 15th and audited statements shall be provided as soon as available. In addition, the Integration Agreement states that commencing in the first full fiscal year after the AWTF (Advanced Facility) becomes operational; the Wastewater Facility and the Water District shall exchange Statements of Net Operating Costs within thirty days after the exchange of audited financial statements that year.

[18] CY 2014 includes Advanced Facility purified water and brine and CY 2015 includes data until September.

The Discharge Permit requires the maintenance of a recycled water diversion program, which means that South Bay is a part of the Wastewater Facility, but the changing landscape of recycled water in the region also needs to be considered.

South Bay's Future as a Water Supplier

The climatic changes and growing population in the regional landscape have made recycled water an important part of the regional water supply. Its drought-resistant qualities have been recognized and demand is growing. These points have triggered a strategic change for South Bay, as it has evolved from *solely* being a diversion program to becoming a part of the regional water supply. Going forward, as it will likely be able to cover its own operational costs with water sales, there will be less need to rely on sanitary sewer ratepayers for program funding.

Accounting for South Bay's operations through funds that are distinct from other Wastewater Facility funds, will allow South Bay managers to make informed and strategic decisions about the impacts of demand changes and new reuse programs as they relate to future program costs and opportunities.

Recommendation #1: The Department of Environmental Services should work with the Budget Office and Finance Department to establish operating and capital funds for South Bay separate from other Wastewater Facility operating and capital funds.

South Bay Needs a Comprehensive Chart of Accounts and Operating Expense Methodology

We worked with ESD staff to understand the last three years of South Bay operating expenses. ESD staff were able to easily provide capital expenditures and operating revenues for our review, but struggled to provide clear evidence for how operating expenditures for South Bay are identified separately from other Wastewater Facility operating expenses. Instead, ESD staff maintained a complicated spreadsheet that parsed particular expenses from the City's financial management system (FMS) and other expense reports. As described below, the methodology used in any given year changed without clear documentation.

By following the methodologies that ESD described for each fiscal year, South Bay appears to have achieved operational cost recovery in FY 2014-15, with roughly $925,000 in net revenues. However, through our efforts to understand South Bay expenditures we identified several important methodology improvements to fully capture all costs. These improvements will aid staff in creating separate funds and will give program managers assurance of true program costs when making decisions.

A Comprehensive Chart of Accounts and Documented Operating Cost Methodology Is Needed

As the Background section of this report explains, ESD tracks costs by Program; so we reviewed each of the nine ESD Programs to determine whether any costs attributable to South Bay were missed when staff compiled the South Bay spreadsheets for FY 2014-15. What we found was:

- ESD general administration costs (Program 1): There were no direct staff charges to South Bay, instead, staff used a percentage of total Program 1 charges to attribute to South Bay. This has typically been around 5 percent of the program's total cost for each year, but there is not written justification for this percentage and anecdotally, ESD staff believe the percentage may not be high enough. We recommend implementing a more rigorously determined estimation or switching to direct charges.
- Compliance (Program 2): This program had direct charge codes since 2013-14, however, staff show costs in this program only since 2014-15. We recommend attributing to South Bay all applicable Program 2 costs.
- Sustainability (Program 3): A small amount (approximately $2000) of direct charges in 2013-14 were not included in ESD's cost tracking sheets, otherwise, this program's tracking appears sufficient.
- Technical Services (Program 4): This program provides IT assistance to ESD staff but has never attributed any charge to South Bay. It seems unlikely that South Bay staff have never needed any tech support assistance and as such, we recommend that ESD create a written explanation as to future South Bay charges.
- Integrated Waste Management (Program 5): This Program has also never charged to South Bay but that is expected; this is ESD's Program for operating garbage and recycling services.
- Recycled Water (Program 6): This is generally used for South Bay administrative staff costs and the methodology seemed clear.
- Watershed Protection (Program 7): In 2014-15, this $8 million Program did not have direct charges to the South Bay program. According to ESD staff, future laboratory services costs will be housed here. Again, there should be a clear, written explanation.
- Marketing and Communication (Program 8): This program has the ability to directly charge South Bay; however, we found that in 2013-14 there were direct charges (about $25,000) in ESD's financial management reports that were not included in the ESD spreadsheet of South Bay expenses. We recommend written explanation of whether or not there would be marketing or communications charges.
- Wastewater Facility (Program 9): There are more than 120 different functional charge codes for this Program – only 10 are considered in the

South Bay cost capture. Additionally, certain costs, such as those for Management, Computer Room and Disinfection only show personal costs and exclude non-personal ones. We recommend a clear, written explanation as to which non-personal charges should or should not be included for certain functions and whether any other codes should also be attributed to South Bay.

Further, we identified a relatively new pension benefit code that had been inadvertently left out of all the Program costs. If this code had been included in ESD's South Bay spreadsheet for 2014-15, it would have added an additional $15,000 of cost to the program.

Although we did not find inappropriate charges to the South Bay program, nor did we find that ESD made accounting errors in tracking Wastewater Operations, what we found was that ESD staff did not rigorously tease out all South Bay expenses to their cost tracking spreadsheet. The improvements in cost tracking we identified should aid program managers in compiling expenses to present in their audited financial statements and should provide assurance over costs.

Keeping the above itemized methodology improvements in mind, we reviewed ESD's spreadsheets for the past three fiscal years and summarized their cost estimates in the following exhibit. Exhibit 10 shows ESD's estimate of South Bay revenues, operating, and capital expenses over the past three years.

Exhibit 10[19]: ESD's Estimated Operating Costs and Revenues for South Bay Water Recycling for Fiscal Years 2012-13 Through 2014-15 as of January 29, 2016 (Unaudited)[20]

ESD Program	Operating Expenses	FY 2012-13	FY 2013-14	FY 2014-15
Program 1	Administrative Services[21]	$200,000	$250,000	$200,000
Program 2 and 3	Environmental Compliance and Office of Sustainability[22]	$75,000	$50,000	$25,000
Program 6	Water Resources - Recycled Water Management	$1,700,000	$2,000,000	$1,700,000
	Water Resources - San José Municipal Water Support for Recycled Water Management	$950,000	$2,000,000	$1,300,000
Program 8	Communications[23]	$150,000	$25,000	$0
Program 9	Water Pollution Control[24]	$2,175,000	$1,775,000	$1,700,000
	Overhead Allocation[25]	$525,000	$600,000	$475,000
	Capital Planning and Engineering[26]	$400,000	$600,000	$425,000
	Total Operating Expenses	**$6,175,000**	**$6,675,000**	**$5,850,000**
	Operating Revenues			
	Recycled Water Sales	$4,200,000	$6,275,000	$6,800,000
	Total Operating Revenues	**$4,200,000**	**$6,275,000**	**$6,800,000**
	Net Operating Revenue or Loss	**-$1,975,000**	**-$400,000**	**$925,000**

Source: Environmental Services Department; City's Financial Management System (FMS)

[19] These numbers are rounded to the nearest $25,000 and will not necessarily match with the financial statements prepared for the Integration Agreement, as recommended changes from this audit are not reflected in the table. Because the numbers are rounded, the columns will not necessarily sum. Additionally, this table does not match with the City's Operating Budget core service expenditure for Recycled Water Management, which captures expenses from Program 6.

[20] The personal costs above are based on both full direct staff charges and estimated charges. We adjusted the costs, where possible, to reflect year-end actuals according to the City's Financial Management System (FMS) software.

[21] Administrative Services costs for South Bay are based on an estimated percentage of staff time spent on South Bay out of total ESD Administrative Services staff time; FY 2012-13: 6 percent, FY 2013-14: 5 percent, FY 2014-15: 5 percent.

[22] Not all programs had charges in all years.

[23] The original costs provided by ESD staff did not account for Communications costs for FY 2013-14; we included them in this analysis.

[24] Water Pollution Control includes estimated and direct charges.

[25] Overhead Allocation figures as presented by ESD.

[26] Capital Planning and Engineering figures as presented by ESD.

See Appendix A for an in-depth look at the current practices and suggested improvements for South Bay's cost-tracking.

Recent Efforts to Improve South Bay's Chart of Accounts

Recently, ESD has made strides to improve South Bay cost tracking in order to meet requirements in the Integration Agreement with the Water District and aid in program management decision making.[27] The recent effort has focused on improving the existing chart of accounts and adding new charge codes where none existed in order to more comprehensively track staff time spent on South Bay operations. Some aspects of the new system are already in place and ESD expects to implement them soon. These changes have improved South Bay's cost tracking; however, additional improvements are needed to fully and accurately identify program costs.

Recommendation #2: To improve South Bay's operating and capital accounting, the Department of Environmental Services should:

a) **Establish South Bay staff time allocations for all ESD programs with corresponding charge codes and ensure that they are incorporated in the budgeting process and consistently used by staff.**

b) **Establish clearly documented cost methodologies for South Bay that include all costs associated with the program and as detailed in Appendix A of this report.**

Recommendation #3: ESD should prepare annual financial statements for South Bay, to be audited by the City's external financial auditor.

[27] In the recent years, ESD staff have mainly been focused on tracking program costs to satisfy the Integration Agreement requirement which requires specific elements, excluding current debt-service, in determining cost-recovery for South Bay.

Finding 2 Contractual Obligations with the Water District Limit South Bay's Ability to Cover Capital Costs

Summary

To date, South Bay capital costs have totaled roughly $250 million. The Wastewater Facility (whose primary source of revenue is from sanitary sewer ratepayers in San José, Santa Clara, and neighboring jurisdictions) provided more than two-thirds of that construction cost because of the Facility's need to reduce its flows to the bay. San José, Santa Clara, and the tributary agencies are obligated to pay an average of $9 million per year from revenues of the Wastewater Facility until 2021 when the debt is paid off.

In 2010, the City, on behalf of the Wastewater Facility, entered into an agreement (the Integration Agreement) with the Water District to build the Advanced Facility – a facility on Wastewater Facility land that would test operations of advanced water purification (wastewater that has been purified to the point that it exceeds drinking water standards) and further augment the South Bay water supply with water that would reduce the salinity of the recycled water supply.[28] The Wastewater Facility provided $11 million in funding and in-kind services to build the facility, and agreed to contract terms that use recycled water net revenue to offset Water District net operating costs for the Advanced Facility.

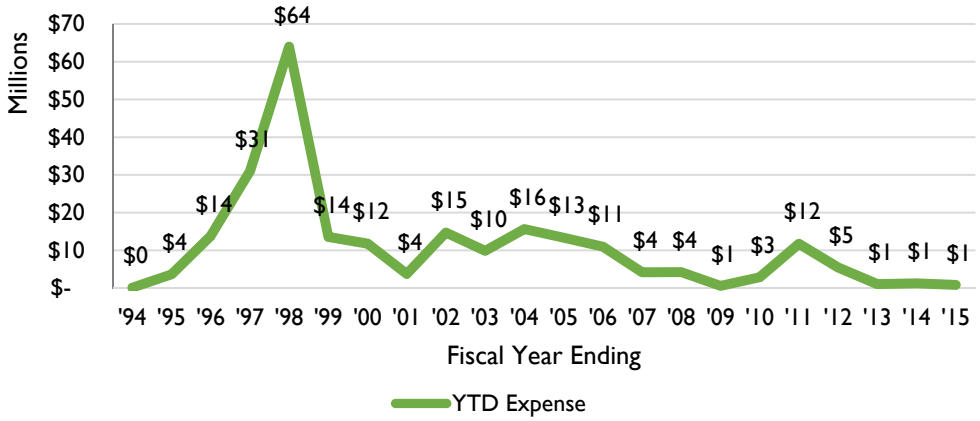
The cost sharing formula in the Integration Agreement requires San José to make payment of approximately two-thirds of South Bay's net revenues to the Water District FY 2014-15 Advance Facility operations and requires future payments that will limit South Bay's ability to use operating revenues to offset debt service payments or fund infrastructure needs. We recommend that the Integration Agreement be renegotiated to ensure sufficient funding of South Bay capital needs.

Funding Structure of South Bay

To date, the South Bay capital costs have totaled roughly $250 million. Exhibit 11 shows these costs by fiscal year.

[28] The Advanced Facility also served the purpose of offsetting some Wastewater Facility treatment costs by reducing the amount of water going through tertiary treatment.

Exhibit 11: South Bay Capital Costs from FY 1993-94 to FY 2014-15



Source: Auditor analysis of budget information

These costs have been housed in Wastewater Facility Capital Fund 512 and have been borne through multiple sources including:

- State and federal grants ($60 million to date);[29]
- Subsidies by the Water District (about $17 million to date);[30]
- Wastewater Facility connection fees; and
- Sanitary sewer ratepayers represented by the cities of San José, Santa Clara, and the tributary agencies. [31]

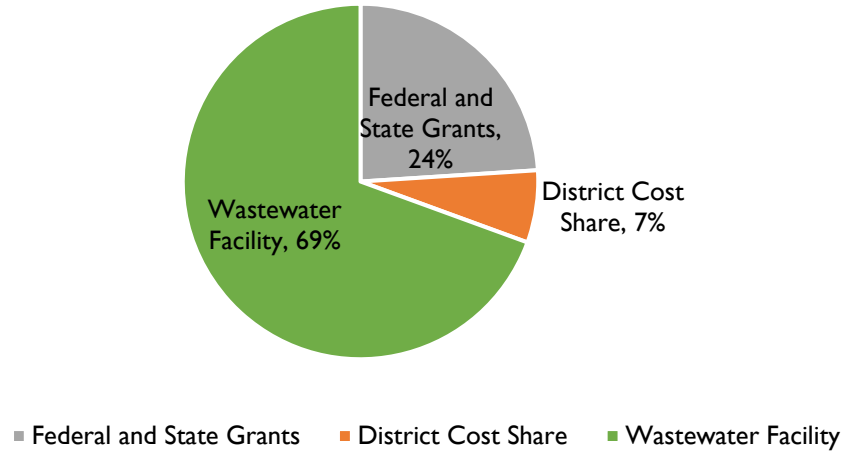
Exhibit 12 shows the breakdown of various stakeholders in South Bay's capital costs over the life of South Bay program.

[29] Federal grants include those provided by the U.S. Bureau of Reclamation; a state grant was provided by the California State Water Resources Control Board.

[30] Includes contributions as presented in Exhibit 14 of this report. Note, the Water District costs have been gathered from, both, Operating and Capital funds of the Wastewater Facility and do not include Water District funding for the Advanced Facility.

[31] The San José sanitary sewer ratepayers and tributary agencies account for the biggest revenue source for the City's investment in South Bay.

Exhibit 12: Various Stakeholders in South Bay Through FY 2014-15[32]



Source: Auditor analysis of budget information and Water District Data

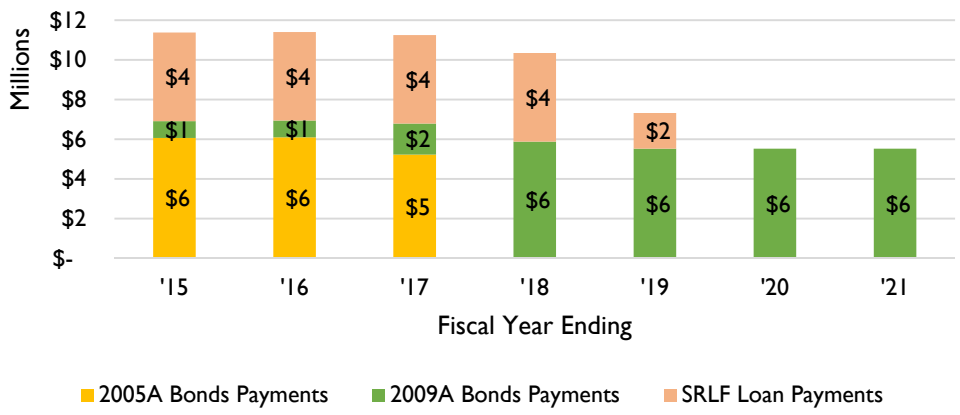
Debt Service Continues Through 2021

Sanitary sewer ratepayers from San José, Santa Clara, and all of the tributary agencies have paid for initial capital costs of South Bay through Sewer Revenue Bonds, loans, and cash contributions. Currently, there are two active bond series – 2005A and 2009A, which were issued by the San José-Santa Clara Clean Water Financing Authority and a loan from the State Revolving Loan Fund.[33] Exhibit 13 below shows debt service obligations through FY 2020-21. San José, Santa Clara, and tributary agencies are obligated to pay an average of $9 million per year from revenues of the Wastewater Facility until 2021 when the debt is paid off.

[32] The Wastewater Facility investment includes all capital costs to date for South Bay including the $11 million contribution to the Advanced Facility.

[33] The 2005A series proceeds were in the amount of $54,020,000, the 2009A series proceeds were in the amount of $21,420,000, and the State Revolving Fund Loan was in the initial amount of $73,566,018.

Exhibit 13: Sewer Revenue Bond and State Revolving Fund Loan Annual Debt Service



Source: Auditor analysis of Budget information

Collaboration with the Water District

The City of San José and the Water District have collaborated on recycled water initiatives since the early 1990s, although each have a unique perspective on water reuse. The City's primary water recycling objective has been to maintain the South Bay system as a wastewater diversion program; the Water District's primary objective has been to expand sustainable local water supplies.

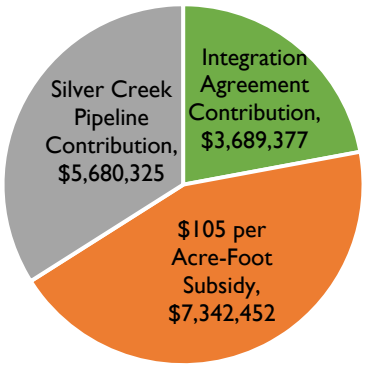
Until FY 2009-10, the Water District helped support the City's recycled water initiatives by subsidizing recycled water delivered by the South Bay system.[34] In FY 2005-06, the Water District also provided the City with roughly $5.7 million for the Silver Creek pipeline, in support of expanding the South Bay system.[35] Most recently, the Water District, with the help of the City of San José, built the Advanced Facility and provided roughly $3.7 million of support payments for South Bay while the Advanced Facility was being built, and the Wastewater Facility contributed $11 million ($8.5 million in cash and $2.5 million in kind) toward the construction of the Advanced Facility.

[34] This support totaled approximately $7.3 million from 1998 through 2009 and was based upon South Bay water sales. The terms of the subsidy are available in more detail in the *South Bay Water Recycling Reimbursement Agreement for Development and Utilization of Nonpotable Recycled Water* between the Santa Clara Valley Water District and City of San José (commonly referred to as the 1998 Reimbursement Agreement).

[35] The terms of the reimbursement are available in more detail in the *Agreement between the City of San José and the Santa Clara Valley Water District Relating to Management and Operation of the South Bay Water Recycling System, Including the Silver Creek Pipeline.*

Exhibit 14 shows contributions by the Water District in supporting South Bay, about $17 million to date; this graph does not include its funding of the Advanced Facility.

Exhibit 14: Water District Operating and Capital Contributions Toward South Bay[36]



Source: Auditor analysis of Budget information

The Advanced Facility Increased the Capacity of South Bay

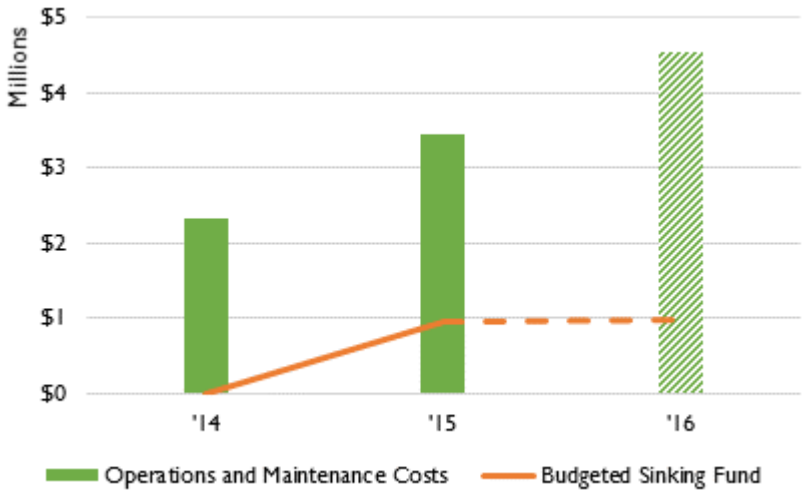
In March 2010, the City of San José and the Water District signed the Integration Agreement to partner on an advanced treatment facility for recycling water. The Water District wanted to construct the facility to evaluate its treatment capacity of producing highly purified water with an aim to construct similar facilities in the future for potable reuse projects. The Advanced Facility's water is not used for potable reuse, it is blended with existing South Bay recycled water (reducing salinity) and delivered to South Bay customers for non-potable uses. Construction of the facility began in October 2010 and the facility began operations in March 2014.

During peak summer months (months when demand for landscaping and irrigation are highest), the Advanced Facility processes roughly 7 million gallons of wastewater per day; less in rainier months. Exhibit 15 shows the operational and maintenance costs of the Advanced Facility; it is projected that the District will spend about $3.5 million to operate the facility in FY 2015-16 and will place about $1 million in a sinking fund for replacement of treatment equipment.[37] The Water District has spent about $75 million to date on the Advanced Facility, including about $14 million in state and federal grant funds.

[36] Note, the $105 per acre-foot subsidy has been received in Wastewater Facility Operating Fund 513, while the other two categories of contributions have been housed in Wastewater Facility Capital Fund 512.

[37] Under the Integration Agreement, the sinking fund contribution cannot exceed $810,000 per year, as adjusted for inflation from 2010.

Exhibit 15: Estimated Operational and Maintenance Costs for the Advanced Facility for FY 2014-16[38]



Source: Auditor analysis of Advanced Facility financial information

Advanced Facility Water Treatment Process

As Exhibit 16 shows below, the Advanced Facility takes wastewater that has completed the secondary treatment process at the Wastewater Facility and runs it through a three part process before sending it to the South Bay transmission pump station to mix with South Bay water. As described on the Water District's website, the process is as follows:

[38] Note FY 2013-14 was the start-up year for the facility, with testing beginning in January 2014 and the facility serving South Bay in March 2014. FY 2014-15 was the first full- year of operation (actual cost). Cost for FY 2015-16 show the Water District adopted budgeted costs.

Exhibit 16: Advanced Water Purification Processes at the Advanced Facility

MICROFILTRATION

Wastewater is forced through filtration membrane modules made up of thousands of hollow fibers, similar to straws. These fibers have very fine pores in the sides that are about 1/300th the width of human hair. As the water is drawn through the pores into the center of the fibers, solids, bacteria, protozoa and some viruses are filtered out of the water.

REVERSE OSMOSIS

Water is forced under high pressure through membrane sheets with holes so small that a water molecule is almost the only substance that can pass through. The process removes constituents such as salts, viruses and most contaminants of emerging concern, such as pharmaceuticals, personal care products and pesticides.

ULTRAVIOLET LIGHT

The water is sent through chambers that emit strong ultraviolet light to break down any remaining trace organic compounds. Ultraviolet light is a powerful disinfection process that creates water of very high quality. The technique often sterilizes medicines, food and fruit juices.

Source: Auditor's Office summary of Water District information

Advanced Facility Costs and Benefits

The Wastewater Facility contributed to the construction costs of the Advanced Facility by providing a combination of services and cash totaling $11 million from the Wastewater Facility Capital Fund 512 (see Appendix E for details about Fund 512). The City also provided a $10 per year ground lease for the Advanced Facility; agreed to provide secondary effluent at no charge to the District; and to allow the District to discharge its waste product (brine) from the Advanced Facility at the Wastewater Facility.[39]

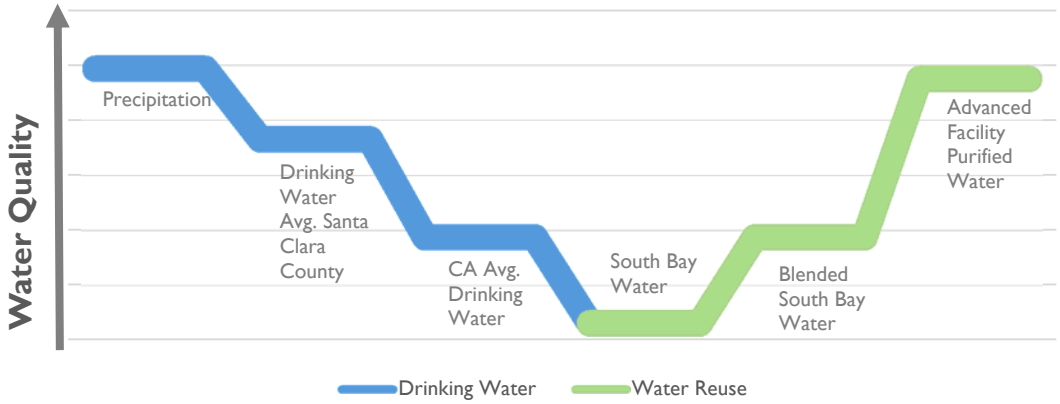
South Bay receives up to 8 million gallons per day of highly purified water to blend with its recycled water. This makes the entire "blend" of water purer. In the environmental assessment, the purpose of the Advanced Facility was to: expand existing water service, increase the marketability of existing recycled

[39] There are no charges because there have been no violations to date.

water, and serve as a demonstration project for the Water District to determine whether or not to enter into the potable water reuse market. The assessment noted that the project would also reduce the salinity of the recycled water supply which would be beneficial to the underlying groundwater in locations where recycled water was applied.

As Exhibit 17 shows, South Bay water quality improved with the addition of blended Advanced Facility water and the addition benefits both recycled water customers and sewer ratepayers.

Exhibit 17: Levels of Quality for Drinking Water and Recycled Water Based on Total Dissolved Solids (TDS)[40] Found in Water



Source: Auditor analysis of State Water Resources Control Board and Water District Data

Revenue Sharing Terms of the Integration Agreement

The Integration Agreement outlines the terms and conditions of operating the Advanced Facility and South Bay. A major part of the Integration Agreement outlines terms for cost-sharing between the two parties with a purpose of equalizing costs borne by the City and the Water District for operating and maintaining both facilities. The Integration Agreement stipulates that:

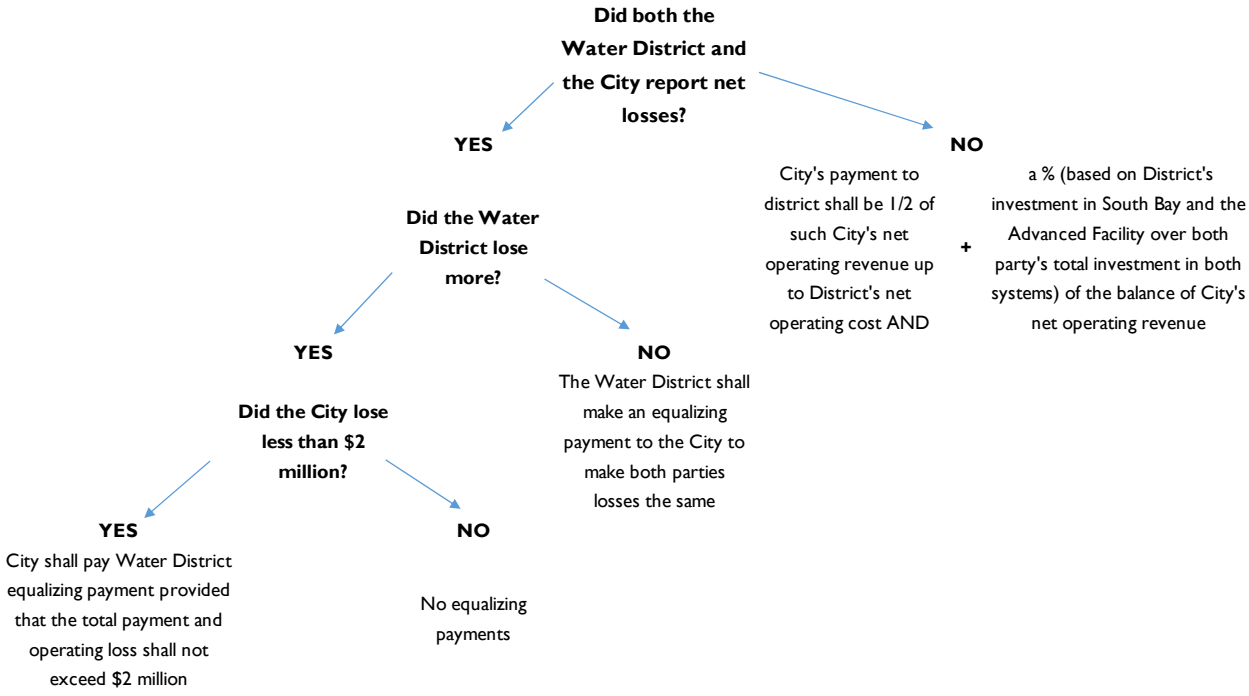
- The Water District will operate the Advanced Facility for 40 years by purifying up to 12 MGD of Wastewater Facility secondary effluent, and in return, provide the City with up to 8 MGD of highly purified water.

[40] One measurement of water quality is to identify the salinity content – the amount of dissolved particles and ions in water. TDS is a measure of all dissolved substances in water, including organic and suspended particles that can pass through a very small filter; it is measured in a laboratory and reported as mg/L. The following are the approximate TDS in mg/L found in the water categories in Exhibit 17: Precipitation (10); Drinking Water Avg. Santa Clara County (215); CA Avg. Drinking Water (500); None Blended South Bay Water (750); Blended South Bay Water (500) and Advanced Facility Water (40).

- The Water District would make payments of $1 million per year to the City to support expanding usage of South Bay water up until the Advanced Facility commenced operations; this resulted in four years of payments totaling about $3.7 million.
- The City and the District share the operating cost of the Advanced Facility based on revenue from South Bay recycled water sales.[41]

Exhibit 18 below is a simplified outline of the cost sharing terms of the Integration Agreement.

Exhibit 18: Integration Agreement Net Revenue/Loss Cost Sharing Terms of Recycled Water Sales of South Bay



Source: Auditor analysis of Integration Agreement terms

[41] Beginning in the first full fiscal year after the Advanced Facility became operational, the City became obligated to make operational support payments to the District if the City's net operating costs for South Bay were less than $2 million and less than the District's operating costs for the Advanced Facility. The amount of such payments are capped at $2 million minus the City's net operating costs. Once the City had net operating revenue, the City became obligated to pay the District half of net operating revenue up to District's net operating costs, plus an additional payment equal to the percentage of net operating revenue that is represented by the value of the District's investment in South Bay and the Advanced Facility divided by the value of the Parties total investment in South Bay and the Advanced Facility. Unless the Integration Agreement is amended, the District will never report revenue, as it cannot sell the purified water produced by the Advanced Facility, but South Bay's net financial position can result in a net operating loss or revenue depending on the given year.

The Integration Agreement's Current Revenue-Sharing Terms Limit South Bay's Use of Recycled Water Revenue to Offset Debt Service Payments or Meet Future Capital Needs

Sewer ratepayers (from San José, Santa Clara, and the tributary agencies) were the parties that paid the majority of capital costs for South Bay,[42] however unless the Integration Agreement terms are renegotiated, a significant share of South Bay revenue which may have been available to offset debt service costs and invest in capital improvements, will instead be used to support the Water District's operation of the Advanced Facility.

$60 Million in Identified Capital Improvement Needs

In the short term, the Agreement limits the ability to use recycled water revenue to offset the cost of Strategic Plan reliability projects. Although the City's Capital Improvement Program's (CIP) Budget for 2016-2020 for South Bay has identified only about $4.7 million in reliability projects to be funded, the Strategic Plan identified a broader plan of about $50 to $60 million for reliability projects to be completed in the next five years, with the most expensive project being a storage tank or reservoir totaling at least $40 million. (See Appendix C for more details).

The Impact of Revenue-Sharing on South Bay's Projected CIP

We created two scenarios to assess the Integration Agreement's impact on South Bay's ability to fund on-going operations and infrastructure improvement projects. The scenarios are built under similar assumptions as the wholesale recycled water rate models provided in the appendices of the Strategic Plan, but also consider the Integration Agreement's revenue sharing requirements, and focus on the Strategic Plan's list of system reliability improvements. It is our understanding that the purpose of these projects is to maintain existing system productivity – not system expansion – and thus fall within the original intent of the South Bay program. The scenarios use projected groundwater rates provided by the Water District (other assumptions pertaining to the scenarios can be found in Appendix D and footnotes to Scenario I).[43]

As shown below, the current cost-sharing terms of the Integration Agreement mean that even if South Bay increased its recycled water rates, it likely will not be able to accumulate sufficient net revenue to fully offset its projected $60

[42] It is important to note that South Bay was already meeting the water quality requirements of California Code of Regulations Title 22, Division 4, Chapter 4, Section 60335 and diverting approximately 14 million gallons of wastewater per day before partnering on the Advanced Facility.

[43] Water District Report, Protection and Augmentation of Water Supplies, 2015-16

million capital improvement costs, nor any unanticipated costs or debt repayment.

Scenario I: Rate Structure Stays the Same

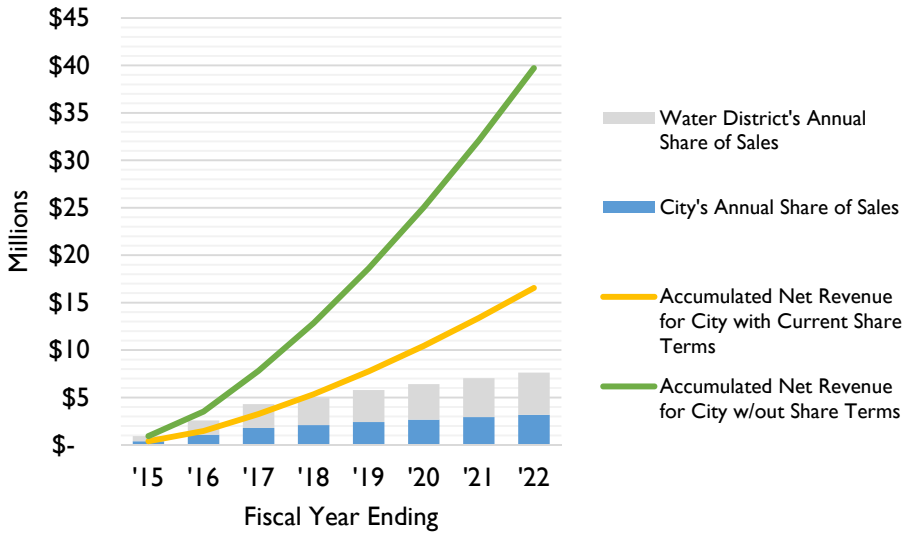
Scenario 1 (shown in Exhibit 19 below) depicts projected *annual* and *accumulated* net revenues of recycled water sales for the City and Water District and maintains the current **$105 per acre foot of discount** on groundwater rates (as of January 4, 2016). The *annual* share of sales are represented through the bars on the graph which under the current terms of the Integration Agreement favor the Water District.

The *accumulated* net revenues, shown through the two lines below, show how much the City can accumulate with the current cost share terms of the Integration Agreement and without. As can be seen, the City would accumulate more net revenue without the Integration Agreement terms.[44]

Under the terms of the Integration Agreement, the Water District will receive a payment that substantially reduces accumulated net revenues. As is shown below, ESD would only be able to offset its Strategic Plan five year CIP with recycled water revenue in the next few years, if the Integration Agreement shares are **not taken into account** (e.g. the City renegotiates the terms of revenue-sharing with the Water District). Otherwise, given the conditions of this scenario, the City would only realize about $17 million in net revenue by FY 2021-22, which will not be enough to fully offset Strategic Plan reliability improvements.

[44] Demand for recycled water is kept steady from FY 2014-15 to FY 2021-22 (at 11,000 A/F per year). In 2002, the City and the Water District entered into the Silver Creek Pipeline Agreement (*Agreement between the City of San José and the Santa Clara Valley Water District Relating to Management and Operation of the South Bay Water Recycling System, Including the Silver Creek Pipeline*) which was a plan to provide 5 million gallons of tertiary water to the Water District for Water District to use in a South San José groundwater recharge program. Should this program begin operations, it would have a big effect on recycled water volumes, and likely revenue as well.

Exhibit 19: Projected Annual Recycled Water Sales and Resulting Accumulated Net Revenue with a $105 per Acre-Foot Discount[45]



Source: Auditor analysis of Strategic Plan, Water District and ESD data

Scenario II: Increase in Water Rates

Scenario II holds the same variables as Scenario I, but assumes higher rates for recycled water (instead of the $105 per acre-foot discount, it projects a lower **$50 discount per acre foot starting** in FY 2016-17). In this scenario, we assume no loss in customers from changing recycled water prices.

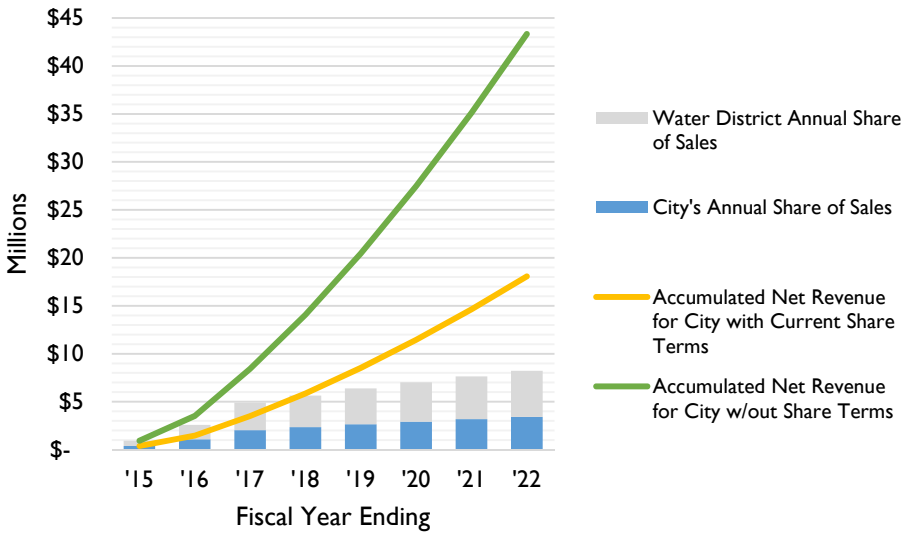
However, even this rate increase would not sufficiently fully offset identified reliability improvements. In this scenario, the City would only realize approximately $18 million in accumulated net revenue by FY 2021-22 – still not

[45] The scenarios shown in Exhibit 19 and 20 assume the following (those with an * are also built into the rate models presented in the Strategic Plan):

- Projected North County Groundwater Rates provided by the Water District with a $105 per acre-foot discount applied.
- Estimated South Bay operational costs starting at $5.9 million for FY 2014-15 and projected into the future with a 3% inflation rate*.
- Accumulated net revenues based on recycled water sales.
- The Zone 1 Storage Tank is considered a reliability project as hydraulic modeling suggests that increased storage is needed in Zone 1 (the zone with the highest demand) to provide an operable system during high demand periods (e.g. minimize the chance of empty storage tanks, dropping system pressures, etc.).
- The net-revenue share percentages for the City and the Water District are based on Exhibit C of the Integration Agreement. We have assumed that after splitting net-revenue up to the District's net operating cost, the Water District receives 16.66% of City's net remaining revenue. Therefore, we have assumed that the Water District's total share of net revenue is 58.33% and the City's share is 41.67%.

enough to fully offset identified reliability improvement costs without renegotiating the Integration Agreement's revenue sharing terms.

Exhibit 20: Projected Annual Recycled Water Sales and Resulting Accumulated Net Revenue with a $50 per Acre-Foot Discount



Source: Auditor analysis of Strategic Plan, Water District and ESD data

As both scenarios above show, the City needs to renegotiate the terms of the Integration Agreement with the Water District in order to establish terms that will allow South Bay to operate at operational and capital cost recovery through recycled water sales.

South Bay Should Secure a Cost of Service Study and Develop a Simple Rate Model

Historically, South Bay has indexed its wholesale recycled water rates to the Water District's untreated groundwater rate, regardless of actual costs, and as of FY 2014-15, it provided an equal, $105-per acre-foot discount for all water use types (irrigation, agricultural and industrial).[46]

A cost of service study would be valuable to determine revenue needs for maintaining South Bay's functionality as a water system with minimal reliance on sewer ratepayers.

[46] Prior to FY 2014-15, industrial and agricultural users received a larger discount than irrigations users. However, starting in FY 2015-16, the discount to all water use types was equalized to $105 per acre-foot.

Currently, South Bay does not have a rate setting model. And as can be seen from the scenario analyses above, any analysis of rate options is exacerbated by the stringent revenue-sharing terms that restrict its timely capital improvement project development.

Best practices show that effective rate models contain variables that balance economic, equity and environmental perspectives in order to arrive at an optimal pricing strategy. A study on rate models identifies that an effective utility rate model should consider the following questions, as applicable:

- Do revenues cover costs?
- Does it consider the structure of cost allocation of uses and users?
- Does the price structure encourage conservation?
- Are revenues stable?
- Is the pricing model understandable and does it provide a clear price signal?
- Is the pricing model fair and equitable to all users and does it consider the extent of cross subsidies?

With only four customers, ESD staff should be able to create a simple rate model. There may be a business case to discount prices to ensure that rates are always less than groundwater or imported water costs to encourage use, but this should not preclude ESD from considering actual unit costs in their rate-setting process. In addition, system expansions, upgrades, or sharing of resources (e.g. wastewater) with the Water District or any other organization should be considered from a cost-benefit perspective with costs and program goals considered.

Recommendation #4: To sustain South Bay's operating and capital cost recovery status in the future, ESD should:

a) Renegotiate the revenue sharing terms of the Integration Agreement to allow the City to access South Bay revenue to fund South Bay's projected capital costs sooner than is projected to occur under the Agreement as currently written.

b) Secure a recycled water wholesale cost of service study that can be used to maximize the ability to maintain cost recovery for South Bay.

Conclusion

For the past fifteen years, San José has operated a water recycling program through the San José Regional Wastewater Facility. That program started as a wastewater diversion program but has grown into a part of the region's water supply, providing non-potable water to over 700 large scale water users and has generated net revenue for the first time in its history. San José needs to set up better accounting structures including separate funds for the program in order to ease decision making for managers and provide clarity around revenues and expenses for stakeholders. Additionally, San José needs to renegotiate the Integration Agreement improve access to funding for capital needs in the near future.

RECOMMENDATIONS

Recommendation #1: The Department of Environmental Services should work with the Budget Office and Finance Department to establish operating and capital funds for South Bay separate from other Wastewater Facility operating and capital funds.

Recommendation #2: To improve South Bay's operating and capital accounting, the Department of Environmental Services should:

a) Establish South Bay staff time allocations for all ESD programs with corresponding charge codes and ensure that they are incorporated in the budgeting process and consistently used by staff.

b) Establish clearly documented cost methodologies for South Bay that include all costs associated with the program and as detailed in Appendix A of this report.

Recommendation #3: ESD should prepare annual financial statements for South Bay, to be audited by the City's external financial auditor.

Recommendation #4: To sustain South Bay's operational and capital cost recovery status in the future, ESD should:

a) Renegotiate the revenue sharing terms of the Integration Agreement to allow the City to access South Bay revenue to fund South Bay's projected capital costs sooner than is projected to occur under the Agreement as currently written.

b) Secure a recycled water wholesale cost of service study that can be used to maximize the ability to maintain cost recovery for South Bay.

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APPENDIX A

Current Cost-Tracking Practices of South Bay and Recommendations

Throughout its history, South Bay's expenses have been paid through Wastewater Facility funds. South Bay recycled water revenue and capital costs have been clearly tracked. This appendix provides more detail on how South Bay expenses have been or should be tracked to improve access to more detailed financial information.

Staff Time Costs

To identify program personal costs, ESD staff use a cost tracking methodology that is based on using existing South Bay direct and estimated staff time charges. Staff time that is estimated does not have a clearly documented methodology; ESD staff have gathered the estimated charges based on conversations with program managers. The charge codes that do exist for the South Bay program are based on both manual time charges and automatic charges.[1]

To minimize estimations for South Bay expenses, ESD staff should implement South Bay specific time allocation codes for all programs that have staff working on South Bay. This includes creating new time allocation codes for Program 1 – Administrative Services, Program 7 – Watershed Protection and the Operational/Management portion of Program 9 – Water Pollution Control, as currently, there are no South Bay codes for staff in those programs. As the first part of Finding 1 details, the latter do not have South Bay specific budgeted time allocations in the Labor Distribution Report (LDR). Our audit recommends budgeting these programs in the LDR with South Bay time allocations, and enforcing accurate time charging for employees that log their time on a daily basis. On the other hand, budgeted South Bay time allocations should be used to track staff time costs for management level positions that do not require daily time logging.

The rest of ESD programs that relate to South Bay, Programs 2, 3, 6, 8 and 9 currently have South Bay specific time codes, but staff should closely analyze usage of these codes to see if any should be improved. Accurate time code usage should be enforced by program management to better reflect program costs.

Other Costs

Other South Bay major expense categories are: (1) power and air; (2) chemicals used to treat the recycled water to quality standards; and (3) lab services that monitor the quality of the water. All of these costs are housed in Program 9 (the Water Pollution Control category). To identify South Bay's portion out of total Wastewater Facility costs, ESD staff have used estimates based on water and electricity processing volumes. For instance, South Bay's estimated power and air usage out of total Facility costs, is based on the amount of non-renewable electricity that the main transmission pump station for South Bay water uses as a percentage of total Plant power usage. Instead of tracking these costs based on estimates of South Bay from total costs of the Wastewater Facility, ESD staff should implement new charge codes or use existing ones to account for these costs, as applicable.

[1] Staff time that is automatically charged is based on a budgeted allocation amount that is decided annually.

Overhead Allocation

In developing the Budget for an upcoming fiscal year, the Budget Office calculates departmental overhead allocations at the beginning of the year based on budgeted salaries and factoring in the overhead rate provided by the Finance Department for a given budgeted fund. Because South Bay does not have its own separate fund, Finance does not calculate a separate overhead rate for South Bay, so ESD staff have been calculating the South Bay overhead allocation themselves in order to fully allocate South Bay program costs.

The methodology[2] that ESD staff have used to determine South Bay's overhead allocation incorporates personal costs from budgeted salary reports by specific categories called core services[3] and as well as actual personal costs of Program 9 that pertain to South Bay.

The current overhead calculation methodology hinges on including budgeted salaries for the core service Recycled Water Management (housed in Program 6), actual salaries for maintenance and operations staff at the Wastewater Facility (housed in Program 9 – Water Pollution Control), and applying the overhead rate for the Wastewater Facility. For lack of clearly budgeted staff time at the Wastewater Facility, ESD staff use *actual* staff salaries for operations and maintenance staff in the overhead calculation for South Bay. This is a deviation from the methodology used by the Finance Department. We recommend ESD staff ensure that overhead allocation for South Bay uses the same methodology as the allocation to the Wastewater Facility until such time as the separate funds are established. At that point, the Budget Office would allocate South Bay's overhead while the Finance department will calculate its overhead rate.

Treatment of Capital Costs According to the Integration Agreement and for the City's Purposes in the Future

A specific line item called, Capital Planning and Engineering is required to be explicitly categorized as part of South Bay's operating costs according to the Integration Agreement terms. The South Bay cost compilation spreadsheets, presented to us by ESD staff, tracked this category; however, the methodology behind the calculation was not clearly documented. For instance, one of the costs (among others) in this Capital Planning and Engineering category was the Strategic Planning appropriation. A different percentage of this appropriation was pulled into the category each year with no documentation as to the cost methodology.

Furthermore, it is the intention of this audit that as separate funds are created to house South Bay operational and capital costs. As such, we recommend that the cost methodology arrived at by ESD staff, be clearly and thoroughly documented (since it may include expenses from two separate funds).

[2] Note, the overhead allocation methodology for FY 2012-13 only used budgeted amounts, not actual staff charges.

[3] The City organizes the services it provides to residents into core services. The City's Environmental Services Department is divided into six core services: Natural and Energy Resources Protection, Potable Water Delivery, Recycled Water Management, Recycling and Garbage Services, Stormwater Management and Wastewater Management. The Budget Office annually reports budgeted amounts for all of the core services.

ESD Should Account for Employee Benefit Costs for South Bay

Our audit found that the three year financial tracking did not include personal costs related to employee post-employment benefits (OPEB) – a substantial expense that should have been included in the transactional category called Net Other Pension Employee Benefits. This is an example of how the elements constituting as part of South Bay's expenses were still a work in progress. The OPEB cost omission from South Bay's accounting structure is an example of why separately budgeting and reporting for South Bay is of utmost importance for transparency and public accountability.

Future South Bay Costs Related to the Advanced Facility

Currently, South Bay does not charge the Advanced Facility for return water[4] or brine,[5] because these costs are incidental and do not require any further treatment. Although both of these processes are under control, in that they do not create additional costs for the Wastewater Facility, should they become costly in the future or violate any toxicity limits of discharge water – they should be charged to the Water District according to stipulations found in the Integration Agreement.

[4] The return water travels from its microfiltration filters back to the Wastewater Facility's beginning stages of treatment.

[5] The Advanced Facility channels its brine to the same discharge point that is used by the Wastewater Facility. Prior to discharge, water quality is monitored by staff at the Wastewater Facility to identify any violations of the Discharge Permit.

APPENDIX B
Recycled Water Regulations

Recycled Water Regulations

In California, the following state agencies are involved with regulating recycled water in the following ways:

California Department of Public Health

It is charged with the protection of public health and drinking water supplies and with the development of uniform water recycling criteria appropriate to particular uses of water. Regional water quality control boards rely on its expertise for the establishment of permit conditions needed to protect human health.

State Water Resources Control Board

It is charged with establishing general policies governing the permitting of recycled water projects consistent with its role of protecting water quality and sustaining water supplies. The Board exercises general oversight over recycled water projects, including review of Regional Water Board permitting practices, and leads the effort of meeting state recycled water use goals. It is also charged by statute with developing a general permit for irrigation uses of recycled water.

Regional Water Quality Control Boards are the regional counterparts to the State Water Board; the City of San José recycled water projects are governed by the San Francisco Bay Regional Water Quality Control Board. These Regional Boards are charged with protection of surface and groundwater resources and with the issuance of permits that implement Department of Public Health recommendations, the State's Recycled Water Policy, applicable law and encouraging the use of recycled water. South Bay's current permit, Order No. 95-117, was granted by the Regional Board in 1995.

California Department of Water Resources

It is charged with reviewing and, (every five years,) updating the California Water Plan, including evaluating the quantity of recycled water presently being used and planning for the potential future uses of recycled water.
California regulates recycled water through its Code of Regulations, specifically, Titles 17 and 22.

Recycled Water Quality Levels

Highly purified: The Advanced Facility meets this quality standard which uses advanced treatment types to purify the water including microfiltration, reverse osmosis, and UV light treatment. Water meeting this quality level can be used as potable water, although it is not used that way at the Advanced Facility.

Disinfected tertiary: South Bay water meets this quality standard which using oxidation, filtration and disinfection to treat water. Water meeting this quality level can be used for many purposes including irrigation, landscaping, golf courses, cooling towers and flushing toilets.

Disinfected secondary: Many wastewater treatment facilities stop at this treatment level (although ESD's Wastewater Facility purifies further) which uses oxidation and disinfection to treat water. Water meeting this quality level can be used for many purposes including cemetery and freeway landscaping.

APPENDIX C
Strategic Plan Capital Improvements

South Bay's 5-Year CIP as Identified in the Strategic Plan

The Strategic Plan lays out a five year CIP to maintain reliability for the South Bay system which would cost between $45 and $60 million to fund, as shown in the exhibit below.

	Estimated Cost Range	
Project Name	*Minimum Amount Needed*	*Maximum Amount Needed*
Increase Production Capacity		
TPS Capacity Upgrade	$1,000,000	$1,300,000
Filter Flux Rate	$75,000	$75,000
Free Chlorine Disinfection Studies/Implementation	$500,000	$1,000,000
Improve Distribution System Stability		
Upgrade Pump Station 5 Bypass	$300,000	$500,000
Zone 1 Storage	$40,000,000	$50,000,000
Restore/Rehabilitate Existing Condition-Related Deficiencies		
PS 5 VFDs	$60,000	$60,000
Other Condition Assessment Projects (2014-2015 Projects)	$2,000,000	$2,000,000
Valve Exercising Program	$100,000/year	$500,000
PS 5 and PS8/11 Electrical Room HVAC Replacement	$150,000	$250,000
Update Control Strategies/Equipment to Improve Operational Efficiency		
Filter Backwash Automation	$100,000	$500,000
Distribution System Automation	$650,000	$2,150,000
Automate Zone Bypass Valve at Pump Station 8/11	$50,000	$50,000
Provide Operations Support		
Update SBWR Systems Operations Manual	$100,000	$200,000
TOTAL COST OF CIP	$45,085,000	$58,585,000

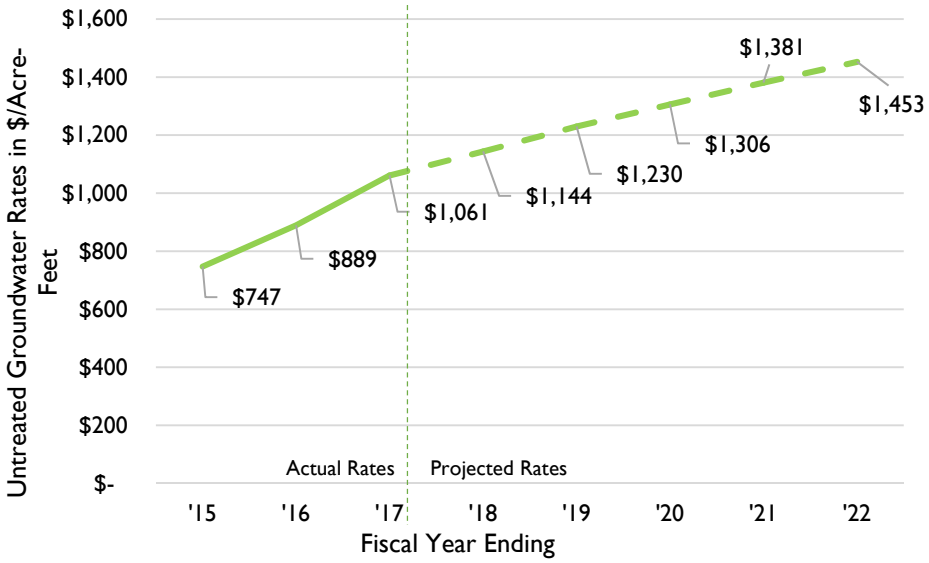
Source: Strategic Plan

APPENDIX D

Projected Water Supply Wholesale Rates

The Water District establishes rate projections of various types of water (e.g. treated water, untreated groundwater, etc.) for a ten year period. South Bay wholesale recycled water rates, have historically, been indexed to the Water District's groundwater rates. Since FY 2011-12, the rates increased at about 9% per year, until FY 2015-16 saw an increase of 19%. The exhibit below shows Water District provided groundwater rate projections[1] from FY 2016-17 to FY 2021-22. The two scenarios in this report utilize these projected rates.

Water District's Projected Untreated Groundwater Rates ($/AF)



Source: Water District projections

[1] The rate projections are taken from the Water District's Protection and Augmentation of Water Supplies Report 2015-16. It should be noted, that preliminary projections for FY 2016-17 are slightly higher.

APPENDIX E
Funding Sources

Historically, South Bay has been funded through several Wastewater Facility funds:

Sewer Service and Use Charge Fund 541

The Sewer Service and Use Charge Fund accounts for Sewer Service and Use Charges used for the financing, construction, operation, and maintenance of the City's sewage collection system and for San José's share of the Wastewater Facility. Revenues for this fund come from fees for San José's Sewer Service and Use Charge levied and paid by residential, commercial, and industrial users of the sanitary sewers and interest earnings.[1]

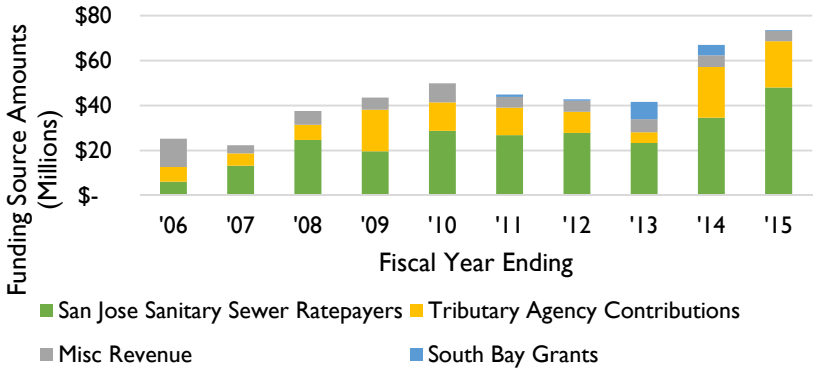
San José – Santa Clara Treatment Plant Operating Fund 513

The San José - Santa Clara Treatment Plant Operating Fund accounts for the revenues and expenditures required for operation and maintenance of the Wastewater Facility including the South Bay Water Recycling System and associated regulatory compliance activities. This fund is governed by the March 30, 1959 Sewage Treatment Plant Master Agreement between the City of San José and the City of Santa Clara and Master Agreements with each of the Plant tributary agencies. The fund balance of this fund is based on each participating agency's proportional share of the operations and maintenance budget as apportioned to treatment parameters and as recommended by the TPAC and approved by the City of San José, the administering agency. Sources of funds include transfers from Fund 541, contributions from participating tributary agencies, and interest earnings.

San Jose – Santa Clara Treatment Plant Capital Fund 512

The Wastewater Facility Capital Fund (Fund 512) is used to provide funding for all capital programs of the Wastewater Facility, including South Bay. As the exhibit below shows, the biggest sources of revenue for Fund 512 have been sanitary sewer ratepayer and tributary agency contributions, which have averaged about 80 percent of total revenues for the past decade. Other sources of miscellaneous revenue have included Wastewater Facility connection fees, Water District contributions to South Bay, interest revenue, etc.

Historical Sources of Funds for Wastewater Facility Capital Fund 512[2]



Source: Auditor analysis of FMS

[1] Proposition 218, officially titled the "Right to Vote on Taxes Act" was approved by California voters on November 5, 1996. It contains many parts, but as it relates to this audit, Proposition 218 requires that property-related fees and charges have a direct relationship to property-ownership. Proposition 218 applies to sanitary sewer use and charge fees that have, since South Bay's inception, been used, in part, to cover operational and capital costs of the program, on the basis that property owners were deriving a direct benefit by the City's compliance with the Discharge Permit requirements for operating and maintaining a water diversion program.

[2] Note, the category South Bay Grants in this exhibit only lists those capital grants that were received in Fund 512; it does not include all grants for the South Bay program.

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: SHARON ERICKSON
CITY AUDITOR

FROM: Kerrie Romanow

SUBJECT: RESPONSE TO THE 2016 AUDIT OF SOUTH BAY WATER RECYCLING

DATE: March 30, 2016

Approved D. D Sykl Date 4/1/16

BACKGROUND

The South Bay Water Recycling Program (SBWR) was established in 1997 as part of the San José-Santa Clara Regional Wastewater Facility[1] treatment process to divert effluent from the San Francisco Bay in compliance with the National Pollutant Discharge Elimination System (NPDES) requirements. While SBWR was established and remains as a wastewater compliance program, it also contributes to our regional water supply. To proactively prepare for future local water needs, the City in conjunction with the Santa Clara Valley Water District (District), completed a two-year Strategic Plan that explored the long term goals for SBWR and wastewater effluent in general. These goals are long-term and require additional analysis and environmental review before they can be implemented.

The Advanced Treatment Facility (AWT), a joint project with the District, became operational in FY15-16 and provides high quality product water that is blended with recycled water to provide a higher quality recycled water to SBWR customers. To minimize the cost of operating SBWR for sewer ratepayers, the Administration has reduced staffing and expenses, prioritized SBWR infrastructure activities, and managed rate increases to achieve operational cost recovery for the first time in FY 2014/15.

As part of the joint effort with the District, the Administration improved financial tracking procedures for SBWR, and revised operational cost management, and rate strategies to appropriately capture costs associated with SBWR. This 2016 audit provides a valuable review of the program status and opportunities for continuous improvement.

[1] The legal, official name of the facility remains San José/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.

RECOMMENDATIONS AND RESPONSE

Recommendation #1: The Department of Environmental Services should work with the Budget Office and Finance Department to establish operating and capital funds for South Bay separate from other Wastewater Facility operating and capital funds.

Administration Response: The administration generally agrees with this recommendation. Prior to the Audit, the Administration was in the process of implementing new accounting practices that will enable program staff and key stakeholders to review the specific portions of Fund 513 that is attributable to SBWR. However, it is important to retain a clear linkage to the wastewater fund, as SBWR will remain a key asset of the RWF, operated by the City as the administering agency of the RWF, and required by the NPDES permit to treat and discharge wastewater effluent.

Yellow - The Administration will evaluate the feasibility of establishing a separate fund that would allow for the program to remain as part of the RWF for accounting and budget purposes.

Recommendation #2: To improve South Bay's operating and capital accounting, the Department of Environmental Services should:

a) Establish South Bay staff time allocations for all ESD programs with corresponding charge codes and ensure that they are incorporated in the budgeting process and consistently used by staff.
b) Establish clearly documented cost methodologies for South Bay that include all costs associated with the program and as detailed in Appendix A of this report.

Administration Response: The Administration agrees that updated methodologies and staff accounting practices are valuable for consistent and accurate cost accounting. The Administration is already implementing revised staff allocation codes and timecard procedures to assure that staff inputs to the South Bay Water Recycling program are accurately tracked. The Administration will revise the existing cost methodology procedures document to include the updated staff codes and procedures.

The Administration agrees with the recommendation to create new charge codes in Appendix A, but would like to clarify that there is a distinction between accurately calculating costs, and automating reports for easy access. The creation of new charge codes will only allow for automation of the reports, while the Administration will also apply management reviewed methodologies to accurately calculate the South Bay Water costs of service.

Green- The program can implement this recommendation within one year.

Recommendation #3: ESD should prepare annual financial statements for South Bay, to be audited by the City's external financial auditor.

Administration Response: The administration agrees with this recommendation. The revised accounting procedures currently being implemented will facilitate external financial audits of South Bay Water Recycling. All wastewater funds are currently audited annually by an external auditor.

Green- The program can implement this recommendation within one year.

Recommendation #4: To sustain South Bay's operational and capital cost recovery status in the future, ESD should:

a) Re-negotiate the revenue sharing terms of the Integration Agreement to allow the City to access South Bay revenue to fund South Bay's projected capital costs sooner than is projected to occur under the Agreement as currently written.

b) Secure a recycled water wholesale cost of service study that can be used to maximize the ability to maintain cost recovery for South Bay.

Administration Response (Part a): The Administration requires more information on this recommendation. The Integration Agreement establishes the Advanced Water Treatment facility as part of SBWR as it treats water that is distributed by SBWR. By showing only the share of net revenue as oppose to gross revenue, the Audit Report does not reflect the true current value of the Integration Agreement to SBWR. SBWR currently retains 100 percent of the revenue necessary to pay SBWR operating costs. The City receives all of the purified water from the Advanced Facility but pays only 60 percent of Net Revenue to offset the operational costs of the Advanced Facility. The City also receives 40 percent of the net revenue from recycled water sales.

The cost share formula between the City and the District for the cost to operate the AWT does limit, in the near term, the City's ability to retain some of the revenue for capital costs. The Administration cannot respond directly to the scenarios presented in this Audit Report because the Administration has not had the opportunity to fully review the District's statement of Advanced Facility operation costs for 2014-2015; project future operating costs; and perform the calculation of investment value of SBWR and AWT for any given year required by the Integration Agreement to apportion the cost share. The above factors and the results of the cost of service study would need to be considered before the Administration could develop a scenario that can accurately project these costs and values into the future. The scenarios also assume stagnant recycled water demand of 11,000 AFY, which conflicts with the demand projections of up to 15,000 AFY estimated by the local water retailers during the Strategic Master Plan.

In addition, with increases in recycled water rates, the cost share formula should enable the City to retain a greater portion of the revenue for capital investment to maintain SBWR. This additional revenue would align with the capital investment in reliability projects which are not anticipated to occur for another five (5) years due to the need for further study and environmental review. The costs associated with potential expansion of SBWR, as identified in the Strategic

Plan, would be funded from sources other than recycled water wholesale revenue or sewer ratepayer revenues.

The Administration is currently reviewing multiple agreements related to SBWR with the Santa Clara Valley Water District and will consider re-negotiation of the Integration Agreement in conjunction with these other agreements.

Yellow- The recommendation would require integration into a multi-faceted negotiation with the Santa Clara Valley Water District. It is unclear at this time, how this objective will align with the negotiation of existing and agreements with the Water District. The recommendation provides information that the Administration will take into consideration.

Administration Response (Part b): The Administration disagrees with the Audit Report conclusion that SBWR does not currently have a rate model. SBWR currently uses the same "model" used by most other recycled water wholesalers, which sets the recycled water rates below potable water cost (ground water) or costs of service, whichever is less. The wholesale rates for all retailers are the same as stipulated in the wholesale water supply contracts with the retailers. The Administration also notes that the rate model "Questions" cited in the Audit Report, e.g. conservation, are not applicable to recycled water.

The administration agrees with the recommendation to conduct a cost of service study. A cost of service study will provide a useful tool in analyzing program costs and determining the optimum strategy for setting wholesale rates.

Green- The program can implement this recommendation within two years.

CONCLUSION

The Program agrees that clarified and consistent methodologies, as well as review of key agreements, are valuable for South Bay Water Recycling as a wastewater initiative that integrates State regulations, stakeholder interests and agreement requirements. The program looks forward to on-going follow up with the auditor's office in the implementation of these recommendations.

/s/
KERRIE ROMANOW
Director, Environmental Services

For questions, please contact Jeff Provenzano, Deputy Director, Environmental Services, at (408) 277-3671.

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Environmental Services Department

April 7, 2016

Dear Tributary Agencies,

We received the letter dated March 30, 2016 from Tributary Agency staff requesting that Master Agreement negotiations be agendized for discussion at TPAC. However, City of San José staff have communicated both formally and informally to Tributary Agency staff and their Counsel of our desire to move forward with negotiations on Master Agreements. Most recently on March 25, 2016, the day after the Administrative Hearing, we reached out to Britt Strottman requesting to discuss the start of negotiations. While this communication was referenced in the Tributary Agency staff letter, we have not received any follow-up.

In addition to the recent communication on March 25, San Jose has communicated our willingness to engage in negotiations through memoranda and discussions at the November and January TAC and TPAC meetings and by way of letter from Mayor Liccardo on February 12, 2016.

As previously discussed, on February 9, 2016 the San José City Council authorized additional resources to support Master Agreement negotiations. We would greatly appreciate your input and help to move this effort forward. To further support this effort and engagement, I have agendized the topic for discussion at the April 14, 2016 TPAC meeting but we are prepared to begin discussions as soon as you are.

We look forward to beginning negotiations so we can resolve any outstanding disputes in an expeditious manner.

Sincerely,

Kerrie Romanow
Director, Environmental Services

CC: Jose Esteves, Mayor, City of Milpitas
Members of the Treatment Plant Advisory Committee
City Council, City of Milpitas
Board of Directors, Cupertino Sanitary District
Board of Directors, West Valley Sanitation District
Board of Directors, County Sanitation Districts Nos. 2-3
Board of Directors, Burbank Sanitary District

200 E. Santa Clara Street, 10th Floor, San José, CA 95113-1905 *tel* (408) 535-8550 *fax* (408) 292-6212
www.sanjoseca.gov

February 26, 2016

Mayor Sam Liccardo
200 East Santa Clara Street, 18th Floor
San Jose, CA 95113

Re: Letter to Tributary Agencies dated February 12, 2016

Dear Mayor Liccardo,

We write in response to your letter of February 12, 2016. While the Tributary Agencies welcome an open dialogue and look forward to a resolution to our differences with the City of San Jose, we feel it wouldn't be in the best interest of our ratepayers to withdraw the claim filed with the Treatment Plant Advisory Committee (TPAC), as you requested. The claim was filed as part of the dispute resolution process outlined in the Master Agreement, the purpose of which is to resolve differences through our preferred method of mediation -- not litigation, as you suggest.

Moreover, the Tributary Agencies filed a Public Records Request in January to better understand funding disclosures and proper allocation of revenue regarding the treatment plant. We filed a second Public Records Act on February 19 to clarify the first request, narrow its focus and seek additional records.

The vote at the January TPAC meeting referenced in your letter required the Tributary Agencies to partly fund outside counsel for the City of San Jose if and when negotiations began with the agencies over the Master Agreement. Surely you can understand why the agencies found it unacceptable to help the City pay for counsel to negotiate against the agencies themselves.

The Tributary Agencies remain concerned that San Jose City staff is routinely misrepresenting our willingness to negotiate in good faith to resolve our differences with the City. The fact that the dispute resolution process called for in the Master Agreement is now being characterized as an intent to litigate further illustrates staff's inability or unwillingness to grasp the issues at hand. Again, the Tributary Agencies look forward to resolving our differences with the City. Per the Master Agreement, we also look forward to presenting our arguments during the scheduled TPAC public hearing in March.

Sincerely,

City of Milpitas

Nina Hawk, Public Works Director
nhawk@ci.milpitas.ca.gov
phone: (408) 586-2603

West Valley Sanitation District

Jon Newby, District Manager and Engineer

Burbank Sanitary District

Richard Tanaka, District Manager

Cupertino Sanitary District

Richard Tanaka, District Manager

County Sanitation District 2-3

Richard Tanaka, District Manager

CC:
San Jose City Council
Santa Clara City Council
West Valley Sanitation District
Milpitas City Council
Cupertino Sanitary District Board
County Sanitation District Nos. 2-3
Burbank Sanitary District Board
Technical Advisory Committee

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

MARCH 1, 2016 - MARCH 31, 2016

Description of Contract Activity [1]	Fiscal Year	Req#/ RFP#	PO#	Vendor/Consultant	Original $ Amount	Start Date	End Date	Additional $ Amount	Total $ Amount	Comments
OEM ENTERPRISE & COOPER BESSEMER ENGINE PARTS AND REPAIRS AT THE VENDORS FACILITY	15-16	22114	52454	GE OIL & GAS COMPRESSION	$200,000	2/1/2016	1/31/2017			
HEADWORKS CRITICAL IMPROVEMENTS	15-16		AC27269	CDM SMITH INC	$387,305	3/8/2016	10/10/2017			SERVICE ORDER #1 (MASTER AGREEMENT TERM 12/21/15-12/31/22)

[1] This report captures completed contract activity (Purchase Order Number, Contract Term, and Contract Amount)