SAN JOSÉ/SANTA CLARA TREATMENT PLANT ADVISORY COMMITTEE

SAM LICCARDO, CHAIR
PAT KOLSTAD, VICE CHAIR
LAN DIEP, MEMBER
DAVID SYKES, MEMBER
DEV DAVIS, MEMBER
MARSHA GRILLI, MEMBER
DEBI DAVIS, MEMBER
STEVEN LEONARDIS, MEMBER
JOHN GATTO, MEMBER

AMENDED AGENDA/TPAC

4:00 p.m. March 8, 2018 Room 1734

1. ROLL CALL

2. APPROVAL OF MINUTES

A. February 8, 2018

3. UNFINISHED BUSINESS/REQUEST FOR DEFERRALS

4. DIRECTOR'S REPORT

A. Director's Report (verbal)
- Monthly Progress Report

5. AGREEMENTS/ACTION ITEMS

A. Actions Related to the Purchase Order for Weed Abatement Services

Staff Recommendation:
1. Execute a Purchase Order with Long's Custom Discing, Inc. (San Jose, CA) for weed abatement services at the San Jose/Santa Clara Regional Wastewater Facility buffer lands for an initial twelve-month period, starting on or about March 14, 2018 and ending on or about March 13, 2019, for an amount not-to-exceed $166,300.
2. Execute up to four one-year options to extend the term of the Purchase Order, with the last option year ending on or about March 13, 2023, subject to the annual appropriation of funds

This item is scheduled for consideration by the City Council on March 13, 2018

B. Master Service Agreements with HydroScience Engineers, Inc., and with MNS Engineers, Inc. for Consultant Engineering Services for the South Bay Water Recycling Program

Staff Recommendation:

Approve master service agreements for consultant engineering services with HydroScience Engineers, Inc. and MNS Engineers, Inc. for a term through June 30, 2020 for a total maximum compensation of $750,000.

This item is scheduled for consideration by the City Council on March 20, 2018

6. OTHER BUSINESS/CORRESPONDENCE

A. Information Memo on Biosolids Transition at the San José- Santa Clara Regional Wastewater Facility

B. Update on Construction Contingency Use for Capital Improvement Projects at the Regional Wastewater Facility

7. STATUS OF ITEMS PREVIOUSLY RECOMMENDED FOR APPROVAL BY TPAC

A. Second Amendment to the Master Service Agreement with HydroScience Engineers, Inc. for Regional Wastewater Facility

Staff Recommendation:
Adopt a resolution authorizing the City Manager to execute a Second Amendment to the Master Service Agreement with HydroScience Engineers, Inc. to extend the term of the Agreement through December 31, 2018.

The proposed recommendation was approved by the City Council on February 13, 2018.

8. REPORTS

9. MISCELLANEOUS

A. The next monthly TPAC Meeting is on **April 12, 2018, at 4:00 p.m.**, City Hall, Room 1734.

10. OPEN FORUM

11. ADJOURNMENT

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

To request an accommodation or alternative format for City-sponsored meetings, events or printed materials, please contact Eva Roa (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
San José City Hall, T-1734
Thursday, February 8, 2018 at 4:00 p.m.

1. ROLL CALL

Minutes of the Treatment Plant Advisory Committee convened this date at 4:01p.m. Roll call was taken with the following members in attendance:

Committee Members: Debi Davis, Dev Davis, Lan Diep, John Gatto, Marsha Grilli, Pat Kolstad, Steven Leonardis, Sam Liccardo, Dave Sykes

2. APPROVAL OF MINUTES

A. November 9, 2017
Item 2.A. was approved to note and file.
Ayes – 7 (Debi Davis, Dev Davis, Diep, Gatto, Grilli, Leonardis, Sykes)
Nayes – 0
Abstain – 2 (Kolstad, Liccardo)

B. January 11, 2018
Item 2.B. was approved to note and file.
Ayes – 8 (Debi Davis, Dev Davis, Diep, Gatto, Kolstad, Leonardis, Liccardo, Sykes)
Nayes – 0
Abstain – 1 (Grilli)

3. UNFINISHED BUSINESS/REQUEST FOR DEFERRALS

4. DIRECTOR'S REPORT

A. Director's Report (verbal)
- Monthly Progress Report
  Director Romanow noted the inclusion of the monthly progress report in the packet.

5. AGREEMENTS/ACTION ITEMS

A. Second Amendment to the Master Service Agreement with HydroScience Engineers, Inc. for Regional Wastewater Facility

Staff Recommendations:
Adopt a resolution authorizing the City Manager to execute a Second Amendment to the Master Service Agreement with HydroScience Engineers, Inc to extend the term of the Agreement through December 31, 2018.

This item is scheduled for consideration by the City Council on January 23, 2018.

On a motion made by Committee Member Dev Davis and a second by Committee Member Debi Davis, TPAC recommended approval of staff's recommendation for Item 5.A.

Ayes – 9 (Debi Davis, Dev Davis, Diep, Gatto, Grilli, Kolstad, Leonardis, Liccardo, Sykes)
Nayes – 0
Absent – 0

6. OTHER BUSINESS/CORRESPONDENCE

A. Information Memo regarding Early Work Package 2 for Construction of Civil Site Work and Foundations for the Cogeneration Facility at the San José-Santa Clara Regional Wastewater Facility

Item 6.A. was approved to note and file.

Ayes – 9 (Debi Davis, Dev Davis, Diep, Gatto, Grilli, Kolstad, Leonardis, Liccardo, Sykes)
Nayes – 0
Absent – 0

7. STATUS OF ITEMS PREVIOUSLY RECOMMENDED FOR APPROVAL BY TPAC

A. First Amendment to the Master Agreement with Signet Testing Laboratories, Inc. for Special Inspection and Materials Testing Services for the San José – Santa Clara Regional Wastewater Facility Capital Improvement Program

Staff Recommendation:
Approve the First Amendment to the Master Agreement with Signet Testing Laboratories, Inc., for special inspection and materials testing services for various capital improvement projects at the San José-Santa Clara Regional Wastewater Facility to increase the amount of compensation by $200,000, for a total agreement not to exceed $700,000.

The proposed recommendation was approved by the City Council on January 23, 2018.

B. Adoption of Mitigated Negative Declaration for the San José-Santa Clara Regional Wastewater Facility Pond A18 South Gate Levee Repair Project

Staff Recommendation:
Adopt a resolution adopting the Mitigated Negative Declaration and the corresponding Mitigation Monitoring and Reporting Program prepared for the San José-Santa Clara Regional Wastewater Facility Pond A18 South Gate Levee Repair Project (File No. PP17-047) as having been completed in compliance with

the California Environmental Quality Act reflecting the City of San José's independent judgement and analysis.

The proposed recommendation was approved by the City Council on January 23, 2018.

Items 7.A., 7.B. were approved to note and file.

Ayes – 9 (Debi Davis, Dev Davis, Diep, Gatto, Grilli, Kolstad, Leonardis, Liccardo, Sykes)
Nayes – 0
Absent – 0

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 $1.17 million and of services between $100,000 and $290,000.

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

Ayes – 9 (Debi Davis, Dev Davis, Diep, Gatto, Grilli, Kolstad, Leonardis, Liccardo, Sykes)
Nayes – 0
Absent – 0

9. MISCELLANEOUS

A. The next monthly TPAC Meeting is **March 8, 2018** at 4:00 p.m., City Hall, Room 1734.

10. OPEN FORUM

11. ADJOURNMENT

A. The Treatment Plant Advisory Committee adjourned at 4:04 p.m.

Sam Liccardo, Chair
TREATMENT PLANT ADVISORY COMMITTEE

San José-Santa Clara Regional Wastewater Facility

Capital Improvement Program
Monthly Status Report: January 2018

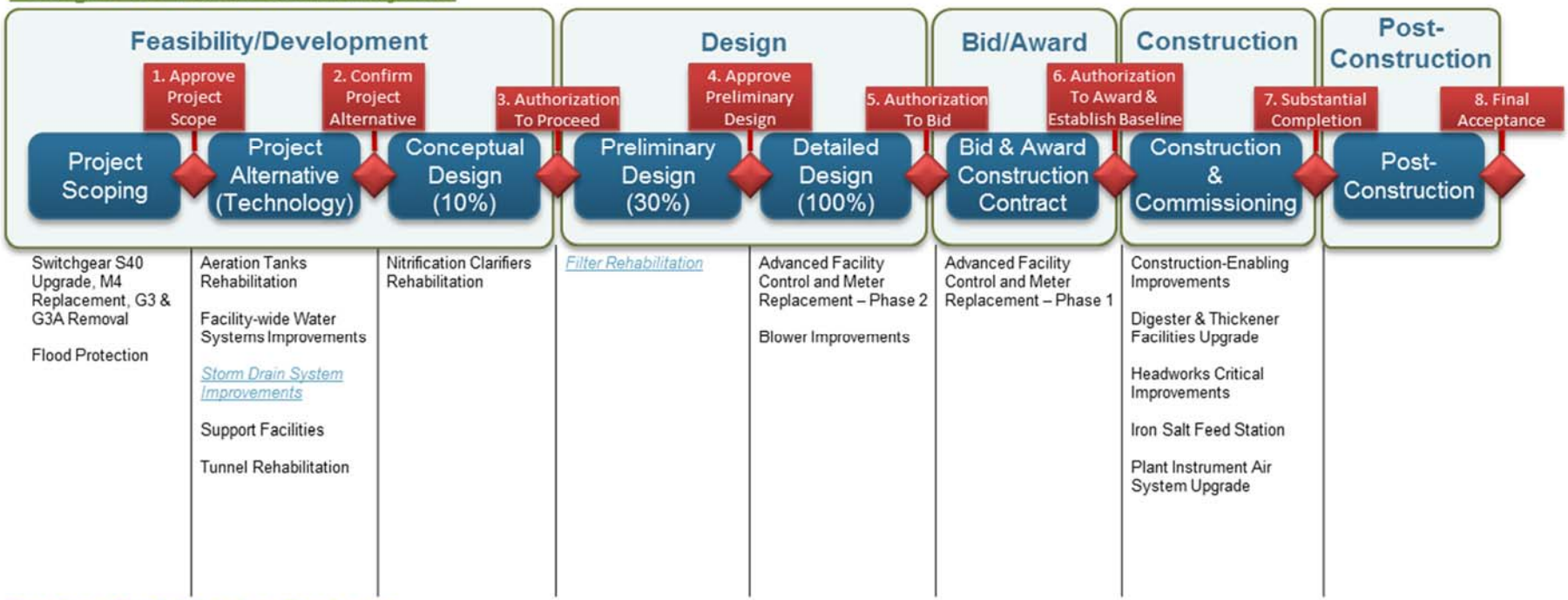
March 1, 2018

This report summarizes the progress and accomplishments of the Capital Improvement Program (CIP) for the San José-Santa Clara Regional Wastewater Facility (RWF) for January 2018.

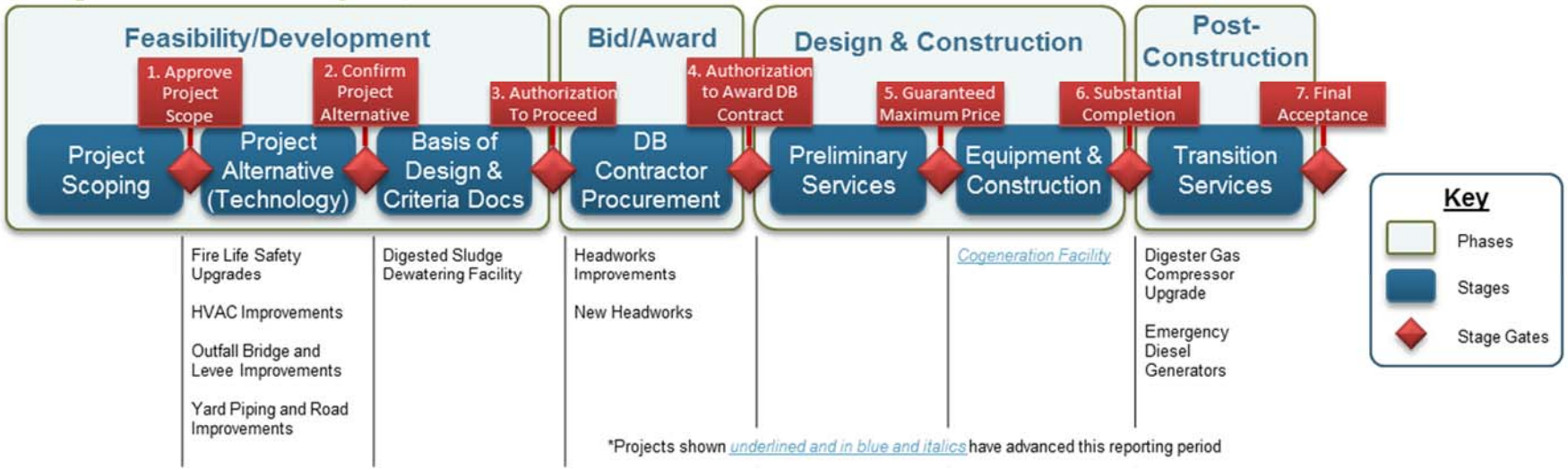
Report Contents

Project Delivery Model

Design-Bid-Build Active Projects



Design-Build Active Projects



*Projects shown underlined and in blue and italics have advanced this reporting period

Program Summary

January 2018

Twenty CIP projects continued to progress through the feasibility/development, design, and bid/award stages of the project delivery model (PDM) in January. Of particular note, three projects successfully moved through stage gate approval:

- The Storm Drain System Improvements Project advanced through the Approve Project Scope stage gate. This project will upgrade the RWF's storm water drainage system to meet the City's 10-year design standards and prevent localized flooding in and around the RWF. The project is highlighted on page 13 of this report.
- The Filter Rehabilitation Project advanced through the Authorization To Proceed (10 percent Conceptual Design) stage gate. This project will rehabilitate and extend the useful life of the filtration treatment process at the RWF. Key improvements will include valve replacement, switchgear and control upgrades, filter media replacement, a new air scour backwash system, and concrete repairs to the chlorinated effluent channel.
- The Cogeneration Facility Project advanced through the design-build Guaranteed Maximum Price (GMP) stage gate. This project will provide 12.5 megawatts (MW) of new internal combustion engine capacity to replace the existing generation equipment that have been in operation for more than 50 years and are reaching the end of their useful life. The new cogeneration facility will meet all RWF energy needs and provide cleaner and more efficient electricity and heat generation through the use of digester biogas and natural gas when it is completed in 2019.

Alternatives analysis continued on the Aeration Tanks Rehabilitation, Facility-wide Water Systems Improvements, Fire Life Safety Upgrades, and HVAC Improvements projects. Conceptual design also continued on the Nitrification Clarifiers Rehabilitation Project. Detailed design progressed on the Blower Improvements Project, which is expected to complete 90 percent design in March 2018. The Cogeneration Facility Project team continued to develop the detailed design and began mobilizing for the early sitework scheduled to begin in February 2018. The Digested Sludge Dewatering Project team continued work on the Project Definition Report in advance of advertising a Request for Qualifications (RFQ) for design-build services in March 2018. Additionally, the City continued evaluating proposals received for design-build services for the Headworks Improvements and New Headworks projects and will hold interviews with three proposers in February 2018.

The Advanced Facility Control & Meter Replacement – Phase 1 Project team advertised the construction contract and held a pre-bid meeting and site visit. All four prequalified contractors attended. The project will replace critical process equipment, including flow meters, sensors, valves, and actuators, in the Secondary (BNR1) Battery B and Nitrification (BNR2) Battery B areas. This will result in increased equipment and data reliability, and improved operations and efficiency.

Five projects continued to progress through the construction phase. The Construction-Enabling Improvements Project contractor delivered and began installing four new construction management trailers. The Headworks Critical Improvements Project contractor began installing the second of two new bar screens and completed the majority of the electrical improvements. The Iron Salt Feed Station Project contractor continued commissioning the new ferric dosing and polymer dosing stations. The Plant Instrument Air System Upgrade Project contractor began installing the new mechanical and electrical compressor system equipment. The Digester and Thickener Facilities Upgrade Project contractor continued construction of the new screening building, elevated pipe rack, and dissolved air flotation tanks, and began installing the temporary pumping bypass system to allow replacement of the corroded, 78-inch settled sewage pipeline during the dry season. The City and design consultant continued to work through the seismic redesign and polychlorinated biphenyls (PCBs) risk-based mitigation plan, which will be directed as future contract change orders.

The City Council (Council) and Treatment Plant Advisory Committee (TPAC) approved staff's recommendation to amend an existing Master Services Agreement (MSA) for special inspection and materials testing services for continued support on the Digester and Thickener Facilities Upgrade Project through summer 2018.

Look Ahead

The following key activities are forecast for February/March 2018:

- Two projects will seek approval to advance through the Approve Project Scope stage gate: (1) Flood Protection; and (2) Switchgear S40 Upgrade, M4 Replacement, G3 and G3A Removal;
- The Nitrification Clarifier Rehabilitation Project team will seek approval to advance through the Authorization To Proceed (10 percent Conceptual Design) stage gate;
- The City will issue an RFQ for design-build services for the Digested Sludge Dewatering Facility Project;
- The City will open construction bids for the Advanced Facility Control & Meter Replacement – Phase 1 Project;
- The Bay Area Air Quality Management District (BAAQMD) is expected to issue the air permit for the Cogeneration Facility Project. Construction work will commence on Early Work Package 2 (early site work);
- The Iron Salt Feed Station Project is expected to reach Beneficial Use; and
- The Blower Improvements Project is expected to advertise a construction contractor prequalification package.

Program Highlight – CIP Recruitment Efforts

In June 2015, Council approved 24 new positions to support the ramp up in capital project delivery at the RWF. Positions added included all levels of engineers and engineering technicians, as well as administrative positions, to support three main functional groups within the CIP division: 1) program management, 2) design/project delivery, and 3) process engineering.

To ensure that the new positions (along with several other existing vacancies within the CIP division) could be quickly filled, staff worked with the City's Human Resources (HR) personnel to implement a robust recruitment strategy that included prioritizing the CIP recruitments, assigning a dedicated HR analyst to co-locate at the RWF to assist with recruitments during the initial ramp up, and participating in various career fairs and outreach events. Filling so many positions had its challenges given the robust competition for wastewater and engineering professionals but perseverance has resulted in a significant number of new hires and internal promotions over the past three years.

Figure 1: Water-Wastewater Career Fair March 2017

Part of this success can be attributed to CIP staff's proactive approach to recruitments by participating in various college, technical association and industry career fairs. College and technical association career fairs provide a great opportunity for City staff to interact directly with students and professionals, and share information on the CIP as well as current or upcoming job opportunities. CIP staff attending these events provide personal insight into the interesting and challenging projects at the RWF and reinforce the message that the City is a desirable and exciting place to work.

Figure 2: California Water Environment Association Career Fair 2017

For instance, this winter two CIP engineers represented the City at a Structural Engineering, Sustainable Design, and Construction Management Career Event at Stanford University. Many attendees had academic experience with wastewater treatment, drinking water treatment, and sustainable design, and they were excited to hear how the CIP division could provide opportunities to gain experience working with many top engineering design and construction firms delivering large and technically complex projects at one of the largest advanced wastewater treatment plants west of the Mississippi River.

Last fiscal year, the CIP successfully hired or promoted 23 employees and is on target to fill another 15 positions this fiscal year. In just three years, the CIP has grown from just under 20 employees to over 50. Beyond filling positions, the CIP is also focused on retaining good talent.

The program management consultant team has played a key role in supporting staff retention efforts by leading initiatives such as monthly project managers training, implementing an informal mentoring program, and team integration activities. Seasoned professionals from the Stantec and Carollo team have also extended their services to include coaching and technical development of CIP staff. For instance, job shadowing has been used to successfully transition City staff into a number of positions previously filled by consultant staff. Going forward, the CIP division will continue to place a strong focus on recruitment and retention efforts.

Program Performance Summary

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

Program Key Performance Indicators – Fiscal Year 2017-2018

KPI	Target	Fiscal Year to Date			Fiscal Year End		
		Actual	Status	Trend	Forecast	Status	Trend
Stage Gates	80%	100% 12/12[1]	●	→	100% 22/22	●	→
Measurement: Percentage of initiated projects and studies that successfully pass each stage gate on their first attempt. Target: Green: >= 80%; Amber: 70% to 80%; Red: < 70%							
Schedule	90%	0% 0/1	◆	→	40% 2/5	◆	→
Measurement: Percentage of CIP projects delivered within 2 months of approved baseline Beneficial Use Milestone.[2] Target: Green: >= 90%; Amber: 75% to 89%; Red: < 75%							
Budget	90%	100% 1/1	●	→	83% 5/6[3]	▲	↓
Measurement: Percentage of CIP projects that are accepted by the City within the approved baseline budget.[2] Target: Green: >= 90%; Amber: 75% to 89%; Red: < 75%							
Expenditure	$248M	$190M	●	↑	$297M[4]	●	↓
Measurement: CIP FY17-18 committed costs. Target: Committed cost meets or exceeds 70% of planned Budget. 70% of $354M = $248M. Therefore Green: >=$248M; Amber: $194M to $248M; Red: < $194M							
Procurement	80%	100% 2/2[5]	●	→	100% 4/4	●	→
Measurement: Number of consultant and contractor procurements advertised compared to planned for the fiscal year. Target: Green: >= 80%; Amber: 70% to 79%; Red: < 70%							
Safety	0	0	●	→	0	●	→
Measurement: Number of OSHA reportable incidents associated with CIP delivery for the fiscal year. Criteria: Green: zero incidents; Amber: 1 to 2; Red: > 2							
Environmental	0	0	●	→	0	●	→
Measurement: Number of permit violations caused by CIP delivery for the fiscal year. Target: Green: zero incidents; Amber: 1 to 2; Red: > 2							
Staffing[6]	80%	100% 12/12	●	→	100% 15/15	●	→
Measurement: Number of planned positions filled for the fiscal year. Target: Green: >= 80%; Amber: 70% to 79%; Red: < 70%							

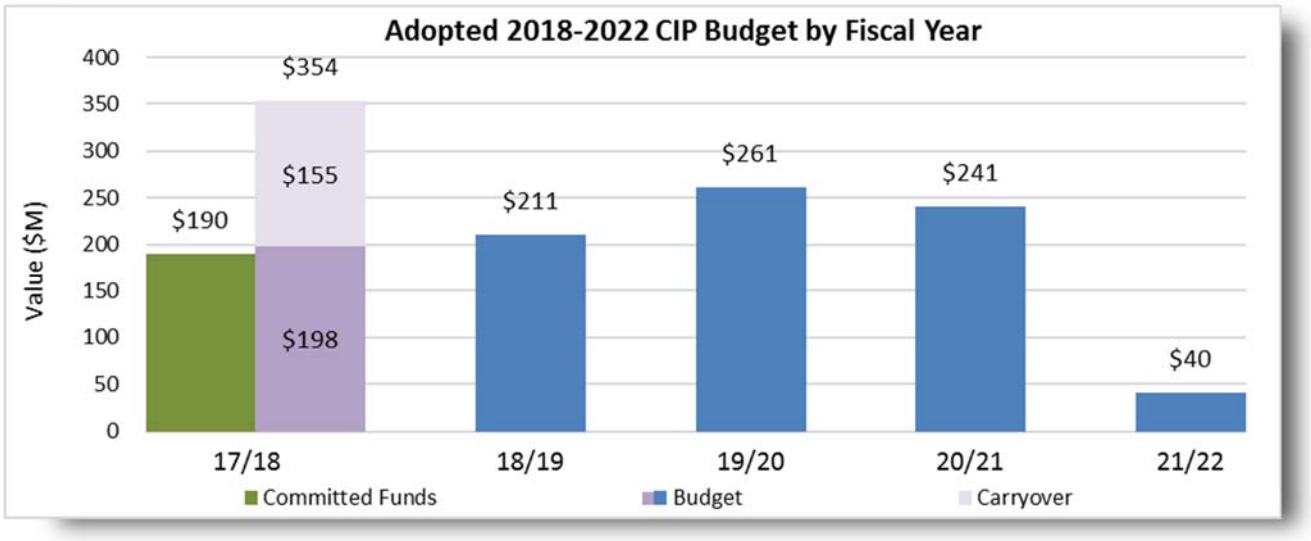
Notes

1. The Cogeneration Facility, Storm Drain System Improvements, and Filter Rehabilitation projects successfully completed the Guaranteed Maximum Price, Approve Project Scope, and Authorization to Proceed stage gates, respectively.
2. The baseline Beneficial Use date and the baseline budget for each project are established at construction contract award and execution.
3. The Iron Salt Feed Station Project team no longer anticipates achieving project acceptance this fiscal year and has been removed from this fiscal year's Budget KPI.
4. The Expenditure KPI fiscal year end anticipated committed costs were reduced slightly due to close out of several service orders (i.e. liquidating unused balances).
5. The City advertised the construction contract for the Advanced Facility Control and Meter Replacement Phase 1 Project.
6. Measured quarterly, the staffing KPI represents CIP recruitments planned for the fiscal year. This KPI measurement does not account for staff turnover throughout the fiscal year.

Program Budget Performance Summary

This section summarizes the cumulative monthly budget performance for fiscal year (FY) 17-18 based on the 2018-2022 CIP.

Adopted 2018-2022 CIP Expenditure and Encumbrances



Notes

Committed Funds: Total of expenditures and encumbrances.

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.

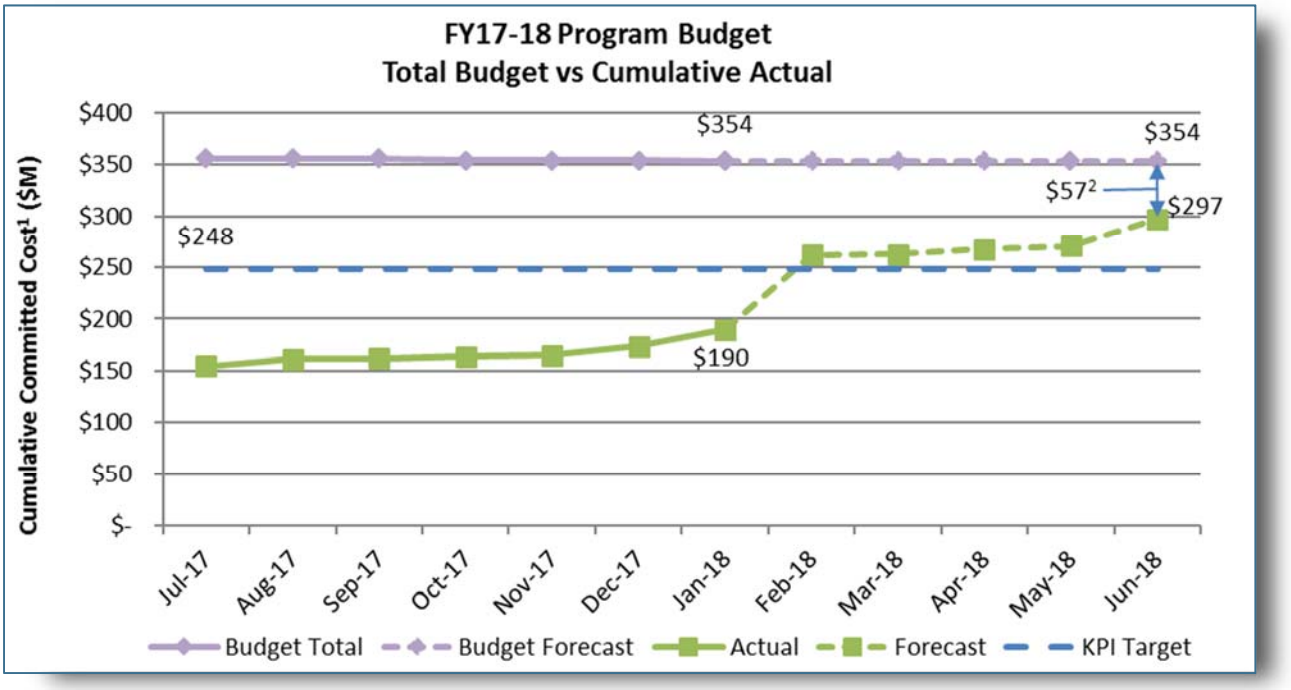
Encumbrance**:** Financial commitments such as purchase orders or contracts that are committed to a vendor, consultant, or contractor**.** An encumbrance reserves the funding within the appropriation and project.

The FY17-18 Budget is $238 million, which consists of $198 million in new funds and $40 million in rebudgets. For purposes of this monthly report, the adopted FY17-18 budget is adjusted from $238 million to $198 million due to excluding certain appropriations that are not measured as part of the expenditure KPI. Excluded appropriations include Urgent and Unscheduled Treatment Plant Rehabilitation, SBWR Extension, Debt Service Repayment for Plant Capital Improvement Projects (San José only debt service), Public Art, State Revolving Fund Loan Repayment, City Hall Debt Service Fund, Clean Water Financing Authority Debt Service Payment Fund, Equipment Replacement Reserve, and Ending Fund Balance. Similar adjustments have been made to the budgets for FY18-19 through FY 21-22. In October, the Fall-Clean up action increased the FY17-18 budget by $3 million.

Carryover: Encumbrance balances at the end of a fiscal year become carryover funding. Carryover is different from rebudgeted funds in that it automatically utilizes funding that was previously committed, but not yet paid.

Fiscal Year 2017-2018 Program Budget Performance

The FY17-18 budget is comprised of approximately $198 million in new funds plus encumbrance carryover of $155 million for a total of $354 million. This excludes Reserves, Ending Fund Balance, Debt Service, South Bay Water Recycling, Public Art, and Urgent and Unscheduled Rehabilitation items.



Notes

1. Committed costs are expenditures and encumbrance balances, including carryover (encumbrance balances from the previous fiscal year).
2. The variance between budget and expenditures can be primarily attributed to the following factors:
    a. The following construction contracts are now expected to be awarded in FY18-19:
        i. Blower Improvements Project
        ii. Fire Life Safety Upgrades Project
    b. The following consultant service orders are now expected to be executed in FY18-19:
        i. Filter Rehabilitation Project – detailed design work
        ii. Facility-wide Water Systems Improvements Project - preliminary and detailed design work
        iii. Tunnel Rehabilitation Project – feasibility/development work
    c. Several other minor encumbrances for consultant services are either lower than budgeted or are anticipated to be awarded in FY18-19.
    d. Several authorized positions remain vacant, resulting in lower predicted personal services expenses than budgeted.
    e. The FY17-18 budget includes three recurring appropriations (Preliminary Engineering, Equipment Replacement, and Plant Infrastructure Improvements) that total approximately $3.66 million. These appropriations are included in the budget to implement minor capital improvement projects that may be needed during the fiscal year. No major expenditures or encumbrances are currently planned against these appropriations.

Project Performance Summary

There are currently seven active projects in the construction or post-construction phases, with an additional 20 projects in feasibility/development, design, bid and award, or design and construction (design-build projects) phases (see PDM, page 2). All active projects are listed in the tables below. Projects in the construction phase have established cost and schedule baselines and are monitored using the City's Capital Project Management System (CPMS). Green/red icons are included in the table below to indicate whether these projects are on budget and schedule.

Project Performance – Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date[1]	Cost Performance[2]	Schedule Performance[2]
1. Digester Gas Compressor Upgrade	Post-Construction	Apr 2017[3]	◆	◆
2. Emergency Diesel Generators	Post-Construction	Jul 2017[3]	●	◆
3. Iron Salt Feed Station	Construction	Mar 2018	●	◆
4. Construction-Enabling Improvements	Construction	Mar 2018	●	◆
5. Plant Instrument Air System Upgrade	Construction	May 2018	●	●
6. Headworks Critical Improvements	Construction	Jun 2018	●	●
7. Digester and Thickener Facilities Upgrade	Construction	Sep 2020	◆	◆

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 reviewed as part of project schedule reviews.
2. An explanation of cost and schedule variances on specific projects identified in this table is provided on page 11 and 12.
3. Actual Beneficial Use date.

Project Performance – Pre-Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date1
1. Cogeneration Facility	Design & Construction	Jan 2020
2. Advanced Facility Control & Meter Replacement Phase 1	Bid and Award	Dec 2020
3. Headworks Improvements	Bid and Award	Sep 2022
4. New Headworks	Bid and Award	Sep 2022
5. Blower Improvements	Design	Nov 2021
6. Filter Rehabilitation	Design	Oct 2022
7. Advanced Facility Control & Meter Replacement Phase 2	Design	Apr 2023
8. Outfall Bridge and Levee Improvements	Feasibility/Development	Feb 2021
9. Flood Protection	Feasibility/Development	Jan 2022
10. Switchgear S40 Upgrade, M4 Replacement, G3 & G3A Removal	Feasibility/Development	May 2022
11. Storm Drain System Improvements	Feasibility/Development	Jul 2022
12. Digested Sludge Dewatering Facility	Feasibility/Development	Sep 2022
13. Fire Life Safety Upgrades	Feasibility/Development	Sep 2022
14. HVAC Improvements	Feasibility/Development	Mar 2023
15. Facility-wide Water Systems Improvements	Feasibility/Development	May 2023
16. Nitrification Clarifiers Rehabilitation	Feasibility/Development	Dec 2023
17. Aeration Tanks Rehabilitation	Feasibility/Development	Aug 2025
18. Support Facilities	Feasibility/Development	Dec 2026
19. Tunnel Rehabilitation	Feasibility/Development	Dec 2026
20. Yard Piping and Road 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 reviewed as part of project schedule reviews.

Significant Accomplishments

Biosolids Package

Digester Thickener and Facilities Upgrade

- Contractor Walsh Construction began installing the settled sewage pipeline bypass piping and equipment and continued constructing the gas piping system supports.
- The digester excavation plan for PCB handling and disposal was prepared and approved.

Digested Sludge Dewatering Facility

- The project team held workshops with the Owner's Advisor and Operation and Maintenance (O&M) staff to discuss requirements and constraints to be included in the Project Definition Report for the design-build entity procurement.

Facilities Package

Cogeneration Facility

- The project team negotiated the GMP with the design-builder and is finalizing the terms and conditions of the Definitive Contract Amendment (DCA), which is anticipated to be approved by the City Manager in March 2018.
- Staff successfully passed the Guaranteed Maximum Price stage gate to approve the GMP and DCA and authorize the project to move forward. Preparations are underway for the beginning of construction activities for Early Work Package 2 (Utilities and Foundations).

Construction-Enabling Improvements

- Contractor Teichert Construction delivered and began installing the construction management trailers.

Storm Drain System Improvements

- The project successfully advanced through the Approve Project Scope stage gate and the team will begin negotiating with a design consultant to perform condition assessment, project alternatives, and conceptual design work.

Liquids Package

Advanced Facility Control and Meter Replacement – Phase 1

- The City advertised the construction contract and held a pre-bid meeting. The bid opening is planned for February 8.

Aeration Tanks Rehabilitation

- The project team reviewed the condition assessment report from design consultant Brown and Caldwell (B&C).
- B&C held a workshop with the project team and stakeholders to prioritize rehabilitation objectives. Next month, the team will hold a workshop to select the preferred alternative for meeting future discharge requirements.

Filter Rehabilitation

- Design consultant Kennedy Jenks (KJ) finalized the conceptual design report.
- The project successfully passed the Authorization to Proceed stage gate; KJ will begin preliminary design in February.

Headworks Critical Improvements

- Contractor Overaa Construction began installing the second of two bar screens planned to be replaced, and completed the majority of the electrical disconnect switch improvements associated with the project. Next month, the contractor is scheduled to begin the functional test for the first bar screen and complete installation of the second screen.

Headworks Improvements and New Headworks

- The project team received, reviewed, and evaluated proposals from three design-build entities. Next month, the team will interview the design-build teams and prepare final rankings followed by negotiations with the top-ranked firm.

Iron Salt Feed Station

- The City's building official completed a final inspection and signed off on the project. Next month, the contractor will complete the seven-day operational test for the ferric chloride station and begin commissioning the station. They will also install temporary polymer injection piping to allow final testing of the polymer station.

Power and Energy Package

Plant Instrument Air System Upgrade

- Contractor Anderson Pacific completed mounting all the equipment onto pads in the new Compressor Building. The contractor has begun installing the piping to connect the equipment.

Explanation of Project Performance Issues

Construction-Enabling Improvements

This project was originally scheduled to be substantially complete by mid-February 2017. Due to the extremely wet 2016-17 winter season, contractor Teichert Construction was unable to perform site work for several weeks from October 2016 through April 2017. Teichert has been granted 47 extra work days for weather-related delays. Teichert has also been granted additional time to remove and replace asphalt pavement in damaged areas of Zanker Road; install traffic-rated pull boxes for the streetlight system; install underground conduits for the fiber optic system; and make additional changes.

Delays in the fabrication and delivery of portable trailers required for the project continue to impact the schedule. The trailer to be used for badging and training was delivered in August; trailers to be used for construction management personnel were delivered in mid-January. Installation of the foundations and utilities for these trailers is underway. Teichert estimates that it could take several more weeks to obtain required materials, which could result in another six to nine weeks to complete the installation and setup of the trailers. These delays would place the Beneficial Use date in March 2018. The City notified Teichert that the number of contract work days has been exceeded and that liquidated damages are in effect. By the end of this reporting month, liquidated damages were $161,000.

Digester and Thickener Facilities Upgrade

This project is over budget due to numerous unforeseen conditions, seismic design modifications, and hazardous material issues that are currently being investigated.

Unforeseen conditions are also impacting the project schedule. These conditions, detailed below, are resulting in an estimated five-month delay to the Beneficial Use date:

- Contractor Walsh Construction encountered major corrosion of an existing, below-ground 78-inch settled sewage pipeline and junction structure during construction. This corrosion has impacted the dissolved air floatation tank piping connections, two new pressurization flow boxes, and utility relocation work. All repairs have been postponed until the 2018 dry season, when a bypass pumping system can be safely installed to allow repair work to continue. Pricing and submittal review of bypass pumps and piping is in progress.
- An unidentified, 36-inch biochemical oxygen demand pipe was discovered during preparation of the foundation for the new sludge screen building. The contractor removed this pipe and relocated several unforeseen digester and landfill gas drain vaults and associated piping.
- Multiple unforeseen utility conflicts with water, natural gas, digester gas, landfill gas, storm drain, and sanitary sewer pipelines have impacted progress. These conflicts have caused numerous utility pipe, conduit, and duct bank relocations across the site, and have also impacted the new digester gas pipe rack footings, causing rerouting and other design changes.
- Digester gas bypass work was delayed approximately six months due to BAAQMD venting restrictions. Work on digester gas bypass connections was completed and the digester gas bypass is now in service.

The following additional outstanding issues are currently being evaluated and are expected to result in additional costs and delays:

- Digester structural design is being revised for seismic safety. The revised design details will result in schedule delays and increased coordination with ongoing construction.
- Planned excavations for digesters five through eight are on hold until testing of soils and concrete for PCBs is completed and results show clearance of hazardous material contamination around the surrounding work areas. Currently, the project team has submitted for testing soil and concrete samples and is in the process of determining disposal location options. The consultant is preparing a hazardous material survey report that will summarize the overall results of all sampling completed for the project.

Digester Gas Compressor Upgrade

This project is over budget by approximately 3 percent due to higher than anticipated project delivery costs associated with increased construction inspection requirements and an extended project timeline.

The contractor achieved Beneficial Use in April 2017; final acceptance is scheduled for early 2018. This schedule delay was primarily due to the following factors:

- The compressor skids were required to be reclassified from Class 1, Division 2 to Class 1, Division 1. This issue was resolved in May 2015.
- BAAQMD delayed approval of the digester gas flaring during the tie-in of the new gas piping. This issue was resolved in November 2016.
- Functional testing of the automation system took longer than anticipated. Multiple competing process shutdowns with other projects contributed to the delay.
- Final project acceptance is delayed due to an outstanding submittal of the record drawing.

Emergency Diesel Generators

This project reached Beneficial Use in July 2017; final acceptance is anticipated by spring of 2018. The schedule shows a project completion delay of approximately one year from the Notice to Proceed (NTP) completion date. The City granted a schedule addition of 189 working days through the change order process due to additional scope. The project has extended beyond the original schedule due to the following factors:

- Caterpillar, the supplier of the emergency diesel generator system, took longer than expected to develop the controls and network switches that interface with existing RWF controls. Caterpillar has completed their outstanding items. Peterson Control is in the process of completing their outstanding items and obtaining O&M final signoff.
- Additional time was required for PG&E to review the third-party protective devices testing report and schedule the witness test for the new emergency diesel generators. PG&E has now completed this work.
- A no-cost time extension change order was required to split the commissioning sequence into two phases and ensure RWF backup power during engine modification work. The contractor completed both phases of the project, including modifications to the existing EG1 engine; an eight-hour load test for the four new generators; installation of the fueling and diesel exhaust fluid systems; and upgrades to the existing EG2 and EG3 engines and M4 switchgear.

The project is now in the post-construction phase and will be accepted once negotiations regarding liquidated damages have been completed..

Iron Salt Feed Station

The Iron Salt Feed Station Project construction has been delayed by six months due to a combination of heavy winter rain in 2016-17 and longer than anticipated time to fabricate the double containment pipeline and leak detection system. In addition, operational testing and commissioning of the new equipment has taken longer than anticipated to complete due to the need to adjust the process control program. Staff anticipate that the project will reach Beneficial Use in March 2018.

Project Profile – Storm Drain System Improvements

The RWF is located within a Federal Emergency Management Agency (FEMA) flood zone and is vulnerable to both regional and localized flooding. Given the significant capital investment underway to rehabilitate and upgrade the RWF, CIP staff commissioned and completed a Flood Protection Study in December 2015. The goal of the study was to better understand the impacts associated with regional flooding and rainfall runoff and to identify alternatives for protecting the RWF from flooding and ensuring employee safety and access. Figure 3 illustrates an example of localized flooding during a heavy rainfall event in 2014.

Figure 3: Localized Flooding at the RWF in December 2014

As part of the study, a model of the stormwater system (Figure 4) was developed to assess the performance of the existing storm drain collection system based on the following recommended Level of Service (LOS) criteria for the RWF:

- 10-Year 24-Hour storm with no surface flooding; and
- 100-Year 24-Hour storm with all flow to stay within the street (no flooding of buildings)

The study identified a total of 32 deficiencies with the existing storm drain system; each was assigned a priority rating of low, medium, or high. The deficiencies included undersized pipes (or insufficient hydraulic capacity) and insufficient pumping capacities, Pipe blockages were also identified as an issue, likely caused by sediment/other build up and structural failures. The 32 deficiencies were grouped into a list of recommended capital improvements and planning level cost estimates were developed. Based on the study, the estimated construction cost for the recommended improvements totaled $7.4 million (in 2015 dollars).

The Storm Drain Systems Improvement Project will address stormwater system deficiencies identified in the study. The study recommended upsizing approximately 6,500 linear feet of existing storm piping; upgrading three of the five stormwater pump stations; improving pipe routing efficiency; and rehabilitating various catch basins, manholes, subcatchments, junction structures, and discharge points.

The project will be delivered using the design-bid-build method. Condition assessment and conceptual design are anticipated to be completed by March 2019, final design is expected to be finished by summer 2020, and Beneficial Use is anticipated by summer 2022. The current construction cost estimate is approximately $9 million accounting for escalation.

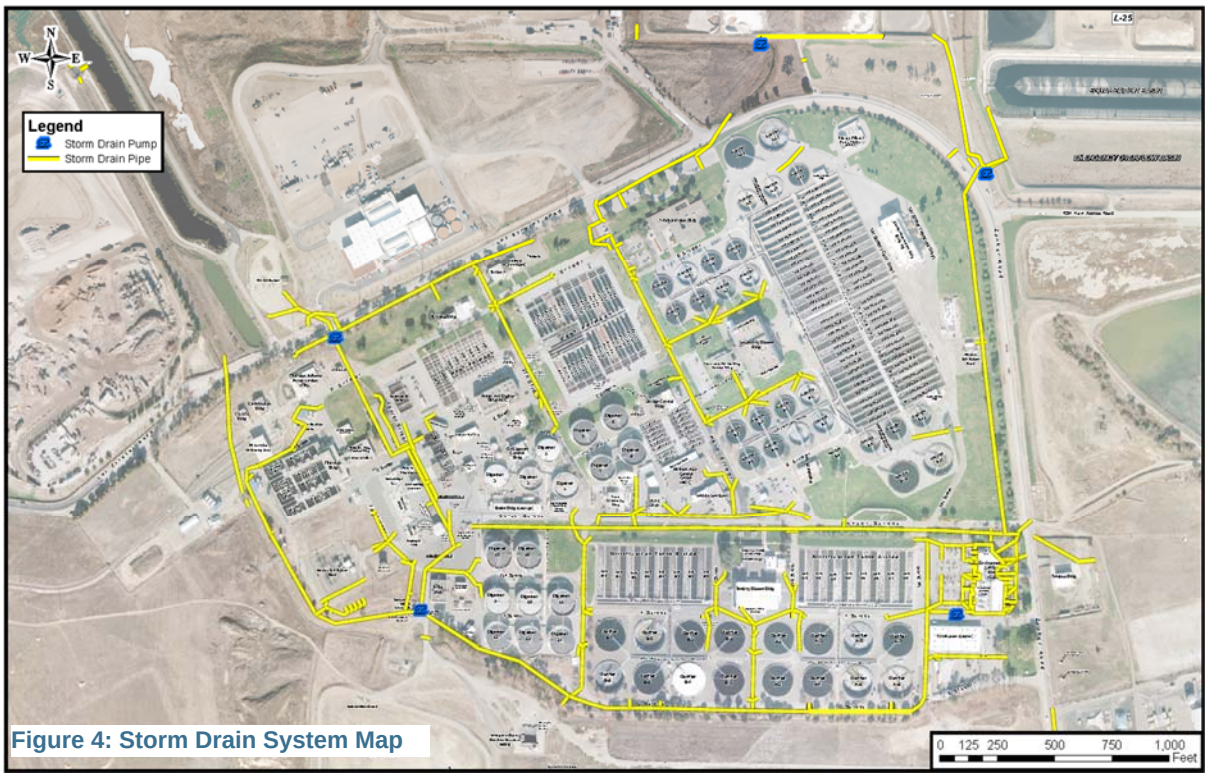


Figure 4: Storm Drain System Map

Regional Wastewater Facility Treatment – Current Treatment Process Flow Diagram

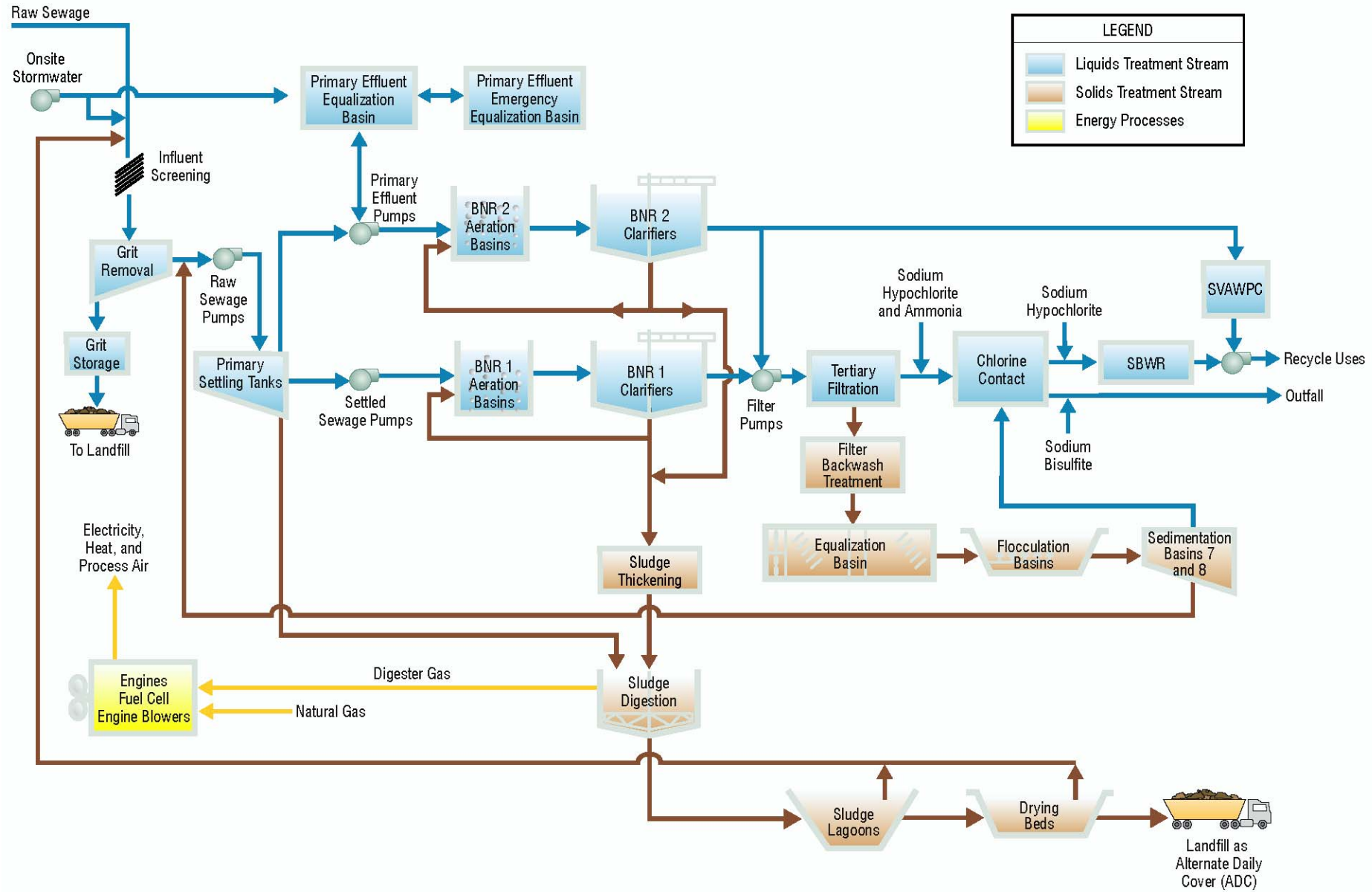


Figure 5 – Current Treatment Process Flow Diagram

Regional Wastewater Facility Treatment – Proposed Treatment Process Flow Diagram

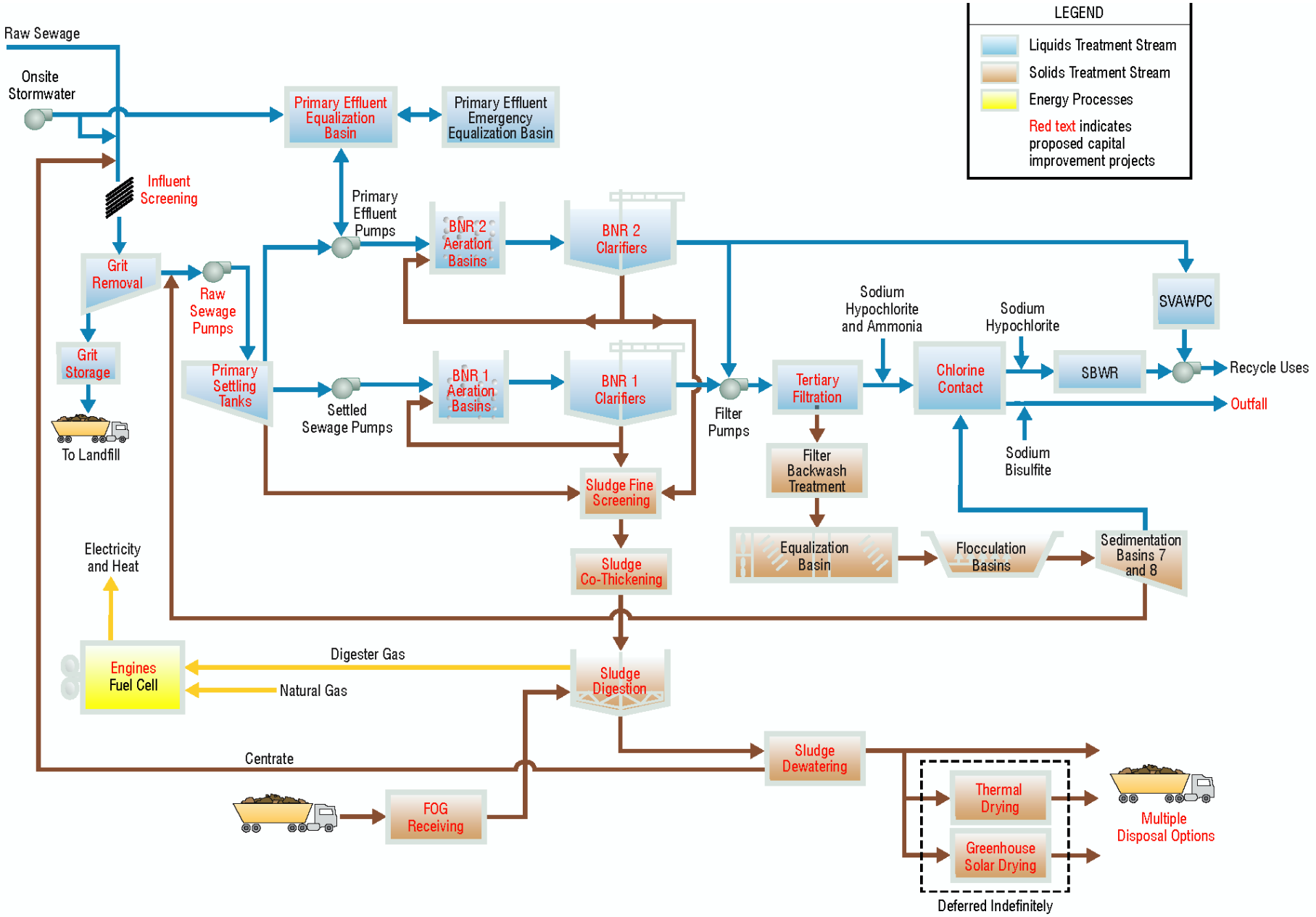


Figure 6 – Proposed Treatment Process Flow Diagram

Active Construction Projects – Aerial Plan

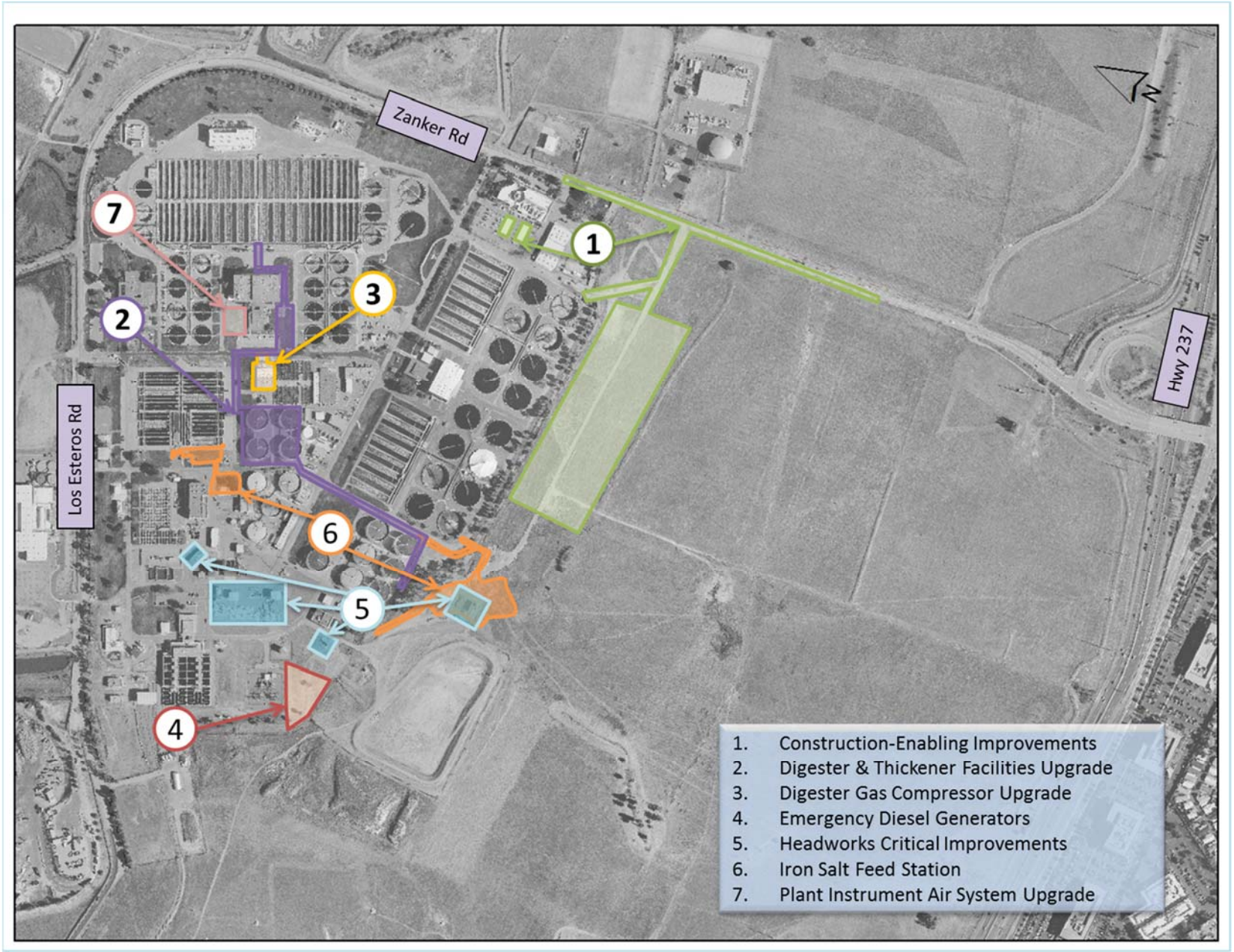


Figure 7 – Active Construction Projects

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

COUNCIL AGENDA: 03/13/18
FILE: 18-291
ITEM:

CITY COUNCIL ACTION REQUEST			
Department(s): Finance	**CEQA:** Exempt, File No. PP13-097, CEQA Guidelines Section 15301, Existing Facilities	**Coordination:** Environmental Services Department, Office of Equality Assurance, City Attorney's Office, City Manager's Budget Office	**Dept. Approval:** /s/ Julia H. Cooper
Council District(s): Citywide			**CMO Approval:** 2/26/18

SUBJECT: ACTIONS RELATED TO THE PURCHASE ORDER FOR WEED ABATEMENT SERVICES

RECOMMENDATION:

Adopt a resolution for the City Manager to:

1. Execute a Purchase Order with Long's Custom Discing, Inc. (San José, CA) for weed abatement services at the San José/Santa Clara Regional Wastewater Facility buffer lands for an initial twelve-month period, starting on or about March 14, 2018 and ending on or about March 13, 2019, for an amount not-to-exceed $166,300.

2. Execute up to four one-year options to extend the term of the Purchase Order, with the last option year ending on or about March 13, 2023, subject to the annual appropriation of funds.

Desired Outcome: Ensure proper management of buffer lands at the San José/Santa Clara Regional Wastewater Facility.

BASIS FOR RECOMMENDATION:

Mowing is required for fire abatement and to improve over 200 acres of owl habitat for burrowing owls at the Regional Wastewater Facility buffer lands.

A competitive Request for Bid (RFB) was facilitated by the Finance Department to procure weed abatement services. Two bids were received from Long's Custom Discing, Inc. (San José, CA) and New Image Landscape (Fremont, CA). Staff recommends award to Long's Custom Discing, Inc. as the lowest responsive and responsible bidders pursuant to the formal bidding procedures of the San José Municipal Code, Section 4.12.310B.

Input from a Board or Commission: The Treatment Plant Advisory Committee is scheduled to consider this item on March 8, 2018.

Office of Equality Assurance: Living Wage or Prevailing Wage, whichever is higher, is applicable to work under this purchase order.

This Council item is consistent with the 2017-2018 Adopted Operating Budget Service Delivery Framework for the Strategic Support City Service Area; "to provide environmental leadership through policy development, program design, and reliable utility services resulting in a "clean and sustainable" air, land, and energy.

COST AND FUNDING SOURCE:

Fund #	Appn #	Appn. Name*	Total Appn	Amt. for Recommendation	2017-2018 Adopted Operating Budget Page	Last Budget Action (Date, Ord. No)
513	0762	ESD Non-Personal Services/Equipment	$34,082,102	$166,300	572	10/17/2017 30014

FOR QUESTIONS CONTACT: Mark Giovannetti, Deputy Director, Finance at 408-535-7052

COUNCIL AGENDA: 03/20/18
FILE: 18-305
ITEM:

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow

SUBJECT: SEE BELOW

DATE: February 26, 2018

Approved Date 2/26/18

COUNCIL DISTRICT: 1, 2, 3, 4, 6, 7, 8

SUBJECT: MASTER SERVICE AGREEMENTS WITH HYDROSCIENCE ENGINEERS, INC., AND WITH MNS ENGINEERS, INC. FOR CONSULTANT ENGINEERING SERVICES FOR THE SOUTH BAY WATER RECYCLING PROGRAM

RECOMMENDATION

Approve Master Service Agreements for consultant engineering services with HydroScience Engineers, Inc. and MNS Engineers, Inc. for a term through June 30, 2020 for a total maximum compensation of $750,000.

OUTCOME

The recommended action will enable the Environmental Services Department, South Bay Water Recycling (SBWR) Program to move forward with implementing necessary Operations and Maintenance (O&M) projects.

BACKGROUND

The SBWR Program in the Environmental Services Department is responsible for the production and distribution of recycled water in the south bay serving customers and residents in the cities of San José, Santa Clara, and Milpitas. SBWR began its operation in 1998 by diverting treated wastewater from the San José-Santa Clara Regional Wastewater Facility. Currently, the SBWR system has five pump stations and over 150 miles of pipeline servicing more than 800 end-users of recycled water.

SBWR has numerous O&M projects in need of implementation to maintain its system operations and reliability. The projects come from three primary sources of general repairs/replacement due to normal equipment replacement cycles, projects as identified in the 2010 SBWR Condition Assessment Report, and projects as identified in the 2014 SBWR Strategic and Master Plan. The current workload exceeds the capacity of existing staff and additional engineering resources are necessary to manage the workload.

ANALYSIS

The City released the Request for Proposal (RFP) for consultant engineering services on October 3rd, 2017. A three-member panel evaluated the two proposals. Both prospective consultants participated in oral interviews. The results from the written and oral reviews were combined, and the local and small business preference points were not a factor in the final points. The table below provides a summary of the evaluation by category.

		Expertise	Experience	Approach	Local Business Preference	Small Business Preference	**Total**
1	HydroScience Engineers, Inc.	35	34	9	5	0	**83**
2	MNS Engineers, Inc.	32	32	8	5	0	**77**

Due to the high scores of both consultant firms as well as the desire to implement numerous projects in the next three years, staff recommends City Council to award an agreement to each of the two consultant firms with $450,000 to HydroScience Engineers and $300,000 to MNS Engineers for engineering consulting services.

The Scope of Services under the Master Services Agreement will involve a variety of engineering services activities related to SBWR O&M projects. Specific service orders will be issued to implement these projects. Staff will negotiate costs with the consultants on individual project proposals on a flat fee, or not-to-exceed time and materials basis. Staff will determine the award of the individual service orders based on the overall expertise, total cost, and availability of the required expert personnel on the consultant's team.

EVALUATION AND FOLLOW-UP

No additional follow up action with the City Council is expected at this time.

POLICY ALTERNATIVES

Alternative #1: An alternative approach to accomplish this effort would be for all the work to be performed by City staff in lieu of the proposed partnerships with the outside professional engineering consulting firms.
Pros: The work would be done by City staff.
Cons: In-house staff does not possess the capacity of all the required technical capability and specialized equipment across the broad range of expertise anticipated for the wide array of operations and maintenance related projects. A significant amount of the anticipated work will require engineering oversight in various technical specialties.
Reason for not recommending: The City would need to hire additional staff with the knowledge, expertise, and/or certification in a variety of engineering areas. Specialized equipment would be needed to be obtained or leased to perform these duties and staff would need to be trained and certified to use the equipment.

Alternative #2: An alternative approach to accomplish this effort would be to perform a separate RFP process for each of the needed projects.
Pros: The RFP selection process would focus on the specific needs of each project instead of the broader scope of work specified in the consultant services RFP.
Cons: The RFP selection process typically takes six months or more to complete and involves a large amount of staff work to develop a specific project scope, solicit responses, evaluate consultants, negotiate contracts, and obtain City Council approval, if necessary. The majority of the O&M projects require a more timely response due to the critical nature of various unit operations and processes at the Facility. Significant delays would occur in completing the necessary O&M projects.
Reason for not recommending: This approach would limit the City's flexibility and response time for handling the projects, possibly leading to equipment and process failures critical to safe and reliable operations of the SBWR facilities.

PUBLIC OUTREACH

This memorandum will be posted on the Treatment Plant Advisory Committee (TPAC) website for the March 8, 2018 meeting and the City Council Agenda website for the March 20, 2018 meeting.

COORDINATION

This project and memorandum have been coordinated with the Finance Department (Risk Management), the City Manager's Budget Office, and the City Attorney's Office.

COMMISSION RECOMMENDATION/INPUT

This item is scheduled to be heard at the March 8, 2018 Treatment Plant Advisory Committee (TPAC) meeting. A supplemental memo with the committee's recommendation will be included in the amended March 20, 2018 City Council meeting agenda.

COST SUMMARY/IMPLICATIONS

1. AMOUNT OF RECOMMENDATION: $750,000

2. COST ELEMENTS OF AGREEMENT:

Consultant Engineering Services	Per Service Order
Labor Rates	Under Negotiation
TOTAL AGREEMENT:	$750,000

3. SOURCE OF FUNDING:
   Fund 513 – San José-Santa Clara Treatment Plant Operating Fund

BUDGET REFERENCE

The table below identifies the fund and appropriation proposed to fund the contracts recommended as part of this memorandum.

Fund #	Appn. #	Appn. Name	Total Appn.	Amount for Agreement	2017-2018 Adopted Operating Budget Page	Last Budget Action (Date, Ord. No.)
513	0762	Non-Personal/ Equipment	$34,082,102	$750,000	1037	10/17/2017, Ord. No. 30014

Funding for service orders in 2017-2018 is available in the 2017-2018 Adopted Operating Budget. Costs to be incurred in future fiscal years are subject to appropriation and, if needed, will be included in the development of future year budgets during the annual budget process.

CEQA

Exempt, File No. PP18-004.

/s/
KERRIE ROMANOW
Director, Environmental Services

For questions please contact Jeff Provenzano, Deputy Director, Water Resources Division, at (408) 277-3288.

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: TREATMENT PLANT ADVISORY COMMITTEE

FROM: Kerrie Romanow

SUBJECT: **SEE BELOW**

DATE: February 28, 2018

Approved D. DSyL Date 3/2/18

INFORMATION

SUBJECT: INFORMATION MEMO ON BIOSOLIDS TRANSITION AT THE SAN JOSÉ-SANTA CLARA REGIONAL WASTEWATER FACILITY

BACKGROUND

At the November 9, 2017 meeting, the Treatment Plant Advisory Committee (TPAC) requested staff to agendize the biosolids transition at the San José-Santa Clara Regional Wastewater Facility[1] (RWF) for discussion at a future TPAC meeting. TPAC inquired about the purpose of the Dewatering Facility Project and implementation timing, especially considering a recent decision by the City of San Jose's Planning Commission to allow the Newby Island Landfill to increase its height and continue operating through 2041. One of the drivers for the biosolids transition as identified in the Plant Master Plan (PMP) was the anticipated closure of the Newby Island Landfill by 2025, along with other considerations such as positioning the RWF to have multiple disposition options for its biosolids and to be able to respond to future regulatory requirements.

This memo provides information on the biosolids transition including a review of the current solids treatment process; key milestones leading up to approval of the Biosolids Transition Strategy by TPAC and Council in May and June 2015, respectively; and a discussion on changes that have occurred since approval of the Biosolids Transition Strategy, including the Newby Island Landfill operating extension and recent developments related to solid waste regulations that may limit and/or remove the ability of wastewater agencies to continue sending biosolids to landfills within the State of California.

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[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.*

Description of Current Solids Treatment Process and Biosolids Management Practices

Wastewater treatment at the RWF is accomplished by using a series of physical, biological, and chemical processes to treat the liquids stream and the solids stream. The current treatment process generates approximately 85 tons of biosolids per day, which must be disposed of or beneficially reused. Biosolids resulting from the current solids treatment process are beneficially reused as alternate daily cover (ADC) at the Newby Island Landfill. In addition, methane gas, a by-product of the solids digestion process, is captured and used in internal combination engines to generate electrical power and heat for daily RWF operations.

Separated solids (or sludge) is thickened and processed through anaerobic digesters for 15 to 30 days to reduce pathogen content, sludge volume, and create biogas for beneficial reuse. The digested sludge is then pumped to open air lagoons and drying beds for further sludge volume reduction, treatment, and stabilization over a four-year cycle. On an annual basis, a portion of the dried biosolids are hauled off-site to the Newby Island landfill for use as ADC. This operation uses more than 750 acres of land and the treatment process takes approximately four years to complete from start to finish to achieve Class A biosolids. Because the lagoons and drying beds make up a large, uncovered footprint, the process has the potential for odor generation – this was confirmed through an odor study completed in 2015 which showed odor impacts to the adjacent Milpitas community based on the adopted odor goal of 5 dilution to threshold (5 D/T) at the established fence line.

Key Factors and Milestones Leading Up to Approval of the Biosolids Transition Strategy

Plant Master Plan (2008 -2013)

In 2008, the Environmental Serviced Department (ESD) embarked on a master planning process to rehabilitate and upgrade the wastewater treatment facilities at the RWF, to explore potential process changes, and guide compatible uses for the Plant buffer lands. The PMP incorporated guiding principles prepared by the City of Milpitas (Milpitas Guiding Principles[2]) and considered input from the City of Santa Clara, Tributary Agencies, community stakeholder groups, and the public. Extensive community engagement process was used to develop overarching environmental, economic, social, and operational goals for the RWF. In November 2013, TPAC recommended and Council approved the adoption of PMP and certified the final Environmental Impact Report. In December 2013, Santa Clara's City Council took similar actions.
One area of focus for the master planning process was biosolids management since treating wastewater at the RWF produces about 85 dry tons of solids each day. This current system is land-intensive and has historically been linked to odors in the area. Because of these issues and the anticipated closure of Newby Island Landfill in 2025, the adopted PMP recommended a new Biosolids Management Program (BMP) involving a variety of enclosed, odor controlled treatment processes with the resulting treated biosolids to be hauled off-site for processing and

[2] Link to the Milpitas Guiding Principles http://www.ci.milpitas.ca.gov/_pdfs/council/2011/011811/item_09.pdf

various beneficial reuse applications. The BMP also assumed a mix of Class A and Class B biosolids. Class A and Class B designations for biosolids relate to the level of pathogen reduction in the end product. Class B biosolids are considered stabilized sufficiently to reduce odors and attraction of vectors that could transmit pathogens and diseases. Class A biosolids are essentially pathogen free.

Recommendations related to the Biosolids Management Program per the adopted PMP include:

- Rehabilitation of the existing thickening facilities and mesophilic digesters and an evaluation of whether a different type of digestion process should be implemented
- Mechanical dewatering for all biosolids in an enclosed, odor-controlled facility to concentrate digested biosolids which reduces the volume and weight of material requiring transport to off-site processing and beneficial re-use locations
- Drying a portion of the dewatered biosolids using both thermal drying in an enclosed facility (20% of the biosolids) utilizing waste heat from a planned cogeneration facility and solar drying in enclosed greenhouses (10% of the biosolids)
- Decommissioning the existing open sludge lagoons and drying beds
- Additional processing and beneficial re-use at off-site composting facilities, land application sites and landfills

The adopted PMP also specified the following goals for the biosolids transition:

- Reduce odors in the community
- Position the RWF to have multiple and diversified disposition options
- Reduce the footprint of the biosolids processing area from 750 acres to about 160 acres to enable other land uses
- Create flexibility to respond to future regulatory changes governing the disposal of treated biosolids at landfills as well as changing market conditions related to beneficial reuse of treated biosolids.

Implementation of the BMP as envisioned by the adopted PMP assumed using a phased approach to implement new mechanical dewatering facilities, thermal drying facilities, and greenhouse drying facilities by 2023 and 2033, respectively; and to retire the lagoons and drying beds by 2025 (which included an assumption to use contract dewatering).

2011 Council Direction to Accelerate the Biosolids Transition

In response to community and stakeholder concerns (including those identified in Milpitas Guiding Principles) about odors emanating from the lagoons and drying beds, TPAC recommended (in May 2011) and Council directed (in September 2011) staff to accelerate the biosolids transition effort specifically calling for the RWF to cease discharging biosolids to the lagoons by 2018 followed by emptying of the lagoons and drying beds by 2024. This direction assumed the use of alternative project delivery methods (i.e., design-build and/or design-build-

operate) to achieve schedule acceleration, contract dewatering resulting in significant operating cost to the RWF, and foregoing field verification of dewatering process technologies.

After receiving this direction, staff retained Brown and Caldwell to initiate an in-depth study and implementation strategy for the biosolids transition, including conducting market surveys to assess the demand for biosolids, market interest and available capacities for accepting the large volume of biosolids generated by the RWF, cost paid by other agencies for off-site processing and disposition of biosolids, and private interest in the development of off-site biosolids processing facilities. Several other concurrent activities ensued during development of the Biosolids Transition Strategy, including a validation of the PMP projects, adoption of an Odor Control Strategy, completion of an Odor and Corrosion Control Study and Odor Implementation Plan for the RWF. These items are further discussed below.

2014 PMP Validation

In early 2014, the City completed a detailed project validation review process of all projects recommended in the adopted PMP, including those projects associated with the biosolids transition:

- Co-thickening of various sludge streams to increase digester feed concentration and include covers, ventilation, and odor control facilities for the system
- Addition of fine screening of sludge to reduce the maintenance effort required for all downstream biosolids treatment processes
- Rehabilitation of up to 10 anaerobic digesters, including upgrades to the gas mixing system, gas piping system, etc.
- Mechanical dewatering for all biosolids in an enclosed, odor-controlled facility
- Drying a portion of the dewatered biosolids using both thermal drying and solar drying in enclosed greenhouses
- Decommissioning of the existing open-air sludge lagoons and solar drying beds
- Pursuing multiple disposition options for beneficial re-use of biosolids at off-site facilities (i.e., composting, land application, soil amendment, ADC)
- Providing 180-day sludge lagoon storage

With the exception of one project, the validation effort confirmed the need to implement all of the projects recommended by the adopted PMP as related to the biosolids transition. The exception was to replace the PMP recommendation to build in 180-day sludge lagoon storage with a recommendation to build an enclosed four-day storage facility, which is more in line with best practices at other wastewater facilities.

Biosolids Transition Strategy, Odor Control Strategy and Implementation Plan (2014 - 2015)

On April 10, 2014, staff presented preliminary information on the Biosolids Transition Strategy to TPAC at a Biosolids Study Session. The Study Session provided an opportunity for TPAC and other stakeholders to provide input on the transition strategy. Discussion topics included a

summary of recommendations from the adopted PMP, an overview of biosolids management approaches, and various disposition options including potential options specific to the RWF. Staff also outlined steps to solicit interest from the open market and the methodology for conducting business case evaluations in order to bring back recommendations to TPAC and Council in fall 2014. Feedback from TPAC at the Study Session included consideration of odor impacts, expandability of the facility in the future, possibility of producing Class A biosolids instead of Class B biosolids, and impact on operation and maintenance costs.

Following the April 10, 2014 Study Session, staff returned to present a status update on the Biosolids Transition Strategy to the Transportation & Environment Committee (T&E), TPAC (special meeting), and Council on October 22, 2014, November 20, 2014, and December 2, 2014, respectively.

The outcome of these meetings included approval to proceed with temperature phased anaerobic digestion (TPAD) upgrades and deferral of thermal and greenhouse drying facilities, and direction to staff to return with additional odor and cost information for transitioning out of the lagoons and drying beds to help inform decision making on both the incremental cost benefit for various alternatives and timing of the biosolids transition, particularly with regards to then pending actions by the San Jose Planning Commission to allow the Newby Island Landfill to extend its height and continue operations beyond 2025 to 2041. Staff also recommended performing additional analysis on other potential siting locations for the new Dewatering Facility within the RWF's main operational footprint. Staff was also asked to bring back potential alternatives, if any, that would retain the use of the current lagoon and drying bed process and still meet the desired odor goal. Staff was directed by Council to perform the additional analyses and to bring back the remaining recommendations in spring 2015.

The staff report can be found at: http://sanjoseca.gov/DocumentCenter/View/37716

On May 14, 2015 and June 2, 2015, TPAC recommended and Council and approved the final Biosolids Transition Strategy Report. The approved biosolids transition strategy recommendations include:

- Proceed with implementation of the Digested Sludge Dewatering Facility and the Lagoon and Drying Bed Retirement projects
- Locate the Digested Sludge Dewatering Facility at a selected site across Zanker Road
- Direct staff to bring back recommendations on the size and makeup of the Biosolids Management Team (BMT) for City Council consideration as part of the annual budget process for 2016-2017
- Implement any future on-site processing facilities considering conditions at the time including starting small with pilots, demonstrations, and phasing and potentially participating in regional facilities and emerging technologies

In conjunction with making a recommendation to proceed with constructing a new dewatering facility sized to process 100 percent of sludge volume generated by the digestion process and decommissioning of the lagoons and drying beds, staff also recommended a new timeline for implementation these projects to allow for proper planning, environmental clearance, permitting,

procurement, design, construction, start-up and commissioning. The revised schedule, which was recommended by TPAC and approved by Council, shows a completion date of 2022 for the new dewatering facility and decommissioning of the existing lagoons and drying beds by 2027. In comparison, the adopted PMP assumed a completion timeline of 2023 for the first phase of the dewatering facility, and 2025 for decommissioning of the lagoons and drying beds.

The staff report can be found at:
http://sanjose.granicus.com/MetaViewer.php?view_id=&event_id=732&meta_id=516437

In parallel, an Odor Control Strategy was developed to establish an odor fence line and odor goals for the RWF. The Odor Control Strategy for the RWF was presented at the November 20, 2014 TPAC special meeting. TPAC recommended and Council approved the Odor Control Strategy at the December 2, 2014 City Council meeting. The staff report can be found at: http://sanjoseca.gov/DocumentCenter/View/37729.

After this, an Odor Implementation Plan was presented at the October 8, 2015 TPAC meeting. TPAC recommended and Council approved the Odor Implementation Plan at the October 27, 2015 City Council meeting. The staff report can be found at:
http://sanjose.granicus.com/MetaViewer.php?view_id=&event_id=1470&meta_id=539026

As part of the approval of the Odor Control Implementation Plan, staff was directed to defer odor control improvements for the Digested Sludge Dewatering Facility project because it was not necessary to mitigate on-site impacts at the southern odor fence line. However, for construction efficiency, ductwork elements necessary for building ventilation and the future odor control system would be included as part of the new dewatering facility. Construction of the actual odor scrubber system would be deferred until funding for this improvement could be identified, possibly as part of future development. The estimated capital cost related to odor control improvements for the dewatering facility is $6.59 M (2015 dollars), of which the odor control scrubber technology is the majority portion.

ANALYSIS

This section provides an update on the key biosolids transition projects (Digester and Thickener Facilities Upgrades Project, Digested Sludge Dewatering Facility Project, Lagoons and Drying Bed Decommissioning Project, and implementation of the Biosolids Management Team) since the June 2015 City Council direction. In addition, it summarizes changes and updates to existing conditions as well as current and future legislation that may affect the biosolids transition.

Updates on Key Biosolids Transition Projects

Digester and Thickener Facilities Upgrade Project (2013 to present)

The Digesters and Thickener Facilities Upgrade Project is currently under construction and expected to be substantially complete by fall 2020. This project will improve the anaerobic

digestion, digester gas conveyance system, and dissolved air flotation thickening systems. It also includes the construction of a new primary sludge screening facility. Based on the recommendations of the Biosolids Transition Strategy, this project will rehabilitate four existing mesophilic digesters facilities to operate as a TPAD system for improved biogas production and pathogen destruction as well as position the RWF to produce Class A biosolids (with the addition of batch tanks in the future) when there is increased market demand for Class A biosolids.

Digested Sludge Dewatering Facility Project (2015 to present)

Per the June 2015 Council direction, staff initiated the Digested Sludge Dewatering Facility Project, which will be delivered using a progressive design-build delivery method. The staff memo for this delivery method selection can be found in Attachment B.

In 2016, the City selected Brown and Caldwell to serve as the Owner's Advisor (OA). The staff report can be found at:
http://sanjose.granicus.com/MetaViewer.php?view_id=&event_id=2159&meta_id=597108

The OA has prepared technical memoranda evaluating alternatives and is preparing a Project Definition Report and CEQA documents. Staff is also currently preparing a Request for Qualifications for procurement of a Design Build (DB) entity, and anticipates advertising in spring 2018. Staff anticipates bringing forward a recommendation for selection of a DB entity to Council for approval in early 2019, followed by beginning of design phase. Construction is anticipated to begin in mid-2020, and substantial completion is expected by late 2022.

Lagoons and Drying Bed Decommissioning Project (2015 to present)

After Council approval in June 2015, staff conducted project scoping for the lagoon and drying beds decommissioning project, and recommended that O&M perform sludge removal and land maintenance of the decommissioned lagoon and drying beds until a future land use has been identified for that area. Future land use considerations will be looked at as part of the next major update to the PMP, which is anticipated to initiate in the 2023-2024 timeframe. Staff also recommended reducing the capital improvement scope to only construction of access ramps for lagoons. This re-scoping effort is anticipated to substantially reduce the project construction cost and annual O&M cost. Decommissioning of the lagoons and drying beds is expected to be completed by 2027.

Implementation of Biosolids Management Team (2016 to present)

After Council approval in June 2015, staff conducted surveys of six other peer large municipal agencies on the roles and responsibilities, makeup, and qualifications of their BMTs, as well as identified types and durations of typical biosolids contracts at these agencies. Staff has submitted a budget proposal to add an Environmental Service Program Manager position in FY 2018-19 to develop and lead the BMT; additional support positions be recommended in future years. This position add was initially planned for FY 2016-17, but was deferred to FY 2018-19 based upon the updated implementation schedule.

Over the next few months, staff will be further refining the implementation plan for the biosolids transition including developing a comprehensive contracting strategy and updating the previously identified dispositions options and market analysis in light of recently passed legislation related to biosolids disposition (discussed in the following section).

Changes to Existing Conditions and Future Regulations affecting Biosolids Transition

Extension of Newby Island Landfill Operation (2016 to present)

The City's contract with Newby Island Landfill expires in December 2020. During the development of the PMP and the Biosolids Transition Strategy, the potential closure of the adjacent Newby Island Landfill in 2025 was one of the drivers of the biosolids transition. In December 2016, the City of San José Planning Commission approved a plan to allow the landfill to increase in height and continue operation through 2041. A synopsis of the Planning Commission's action items can be found at:
http://www.sanjoseca.gov/DocumentCenter/View/63168

While the Newby Island Landfill operation has been extended, recent legislation could potentially limit the disposal of biosolids (considered an organic) to landfills (further discussed below).

Increased Focus on RWF Odors by BAAQMD (2015 to present)

The Bay Area Air Quality Management District (BAAQMD) has increased its focus on monitoring odors from the RWF biosolids operation, and is working closely with RWF staff when biosolids are hauled to Newby Island Landfill. BAAQMD has also placed strict requirements on other RWF Projects including Iron Salt Feed Station, Cogeneration Facility, and Digester and Thickener Facility Upgrades for fugitive emissions, particulates, and hydrogen sulfide emissions.

Regulatory Drivers affecting Biosolids Disposition (2016 to present)

Legislation recently enacted in California has introduced uncertainty for Publicly Owned Treatment Works (POTWs), including the RWF, on the long-term viability of disposition of biosolids as ADC at landfills which is, at present, the sole biosolids disposition practiced at the RWF. The key legislation impacting the disposition of biosolids at RWF is Senate Bill SB 1383 (2016) that sets a goal of diverting 50% of organic waste from landfills by 2020, and mandates diverting 75% of organic waste from landfills by 2025. Biosolids, such as those produced at the RWF, are included within the definition of organics to be diverted from landfills.

The text for Senate Bill 1383 can be found here:
https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=2t01520160SB1383

CalRecyle and California Air Resources Board (CARB) have developed draft regulatory text to enact this legislation, and are considering the complete diversion of biosolids from landfills (including ADC) to reduce organic waste to landfills. Once finalized, this legislation could preclude the RWF from continuing to dispose of its biosolids at Newby Island Landfill (or any other California landfill) as soon as 2020. Regardless of the Newby Island Landfill extension, there is no guarantee that Newby Island Landfill will continue to accept the RWF's biosolids once the regulation is enacted.

Construction of the new Digested Sludge Dewatering Facility will position the RWF to have diversified and multiple disposition options for its biosolids. Dewatered cake is a desirable end-product based on previously completed market surveys and will ensure that the RWF has biosolids disposition options in compliance with the pending SB 1383 regulations. It is noted that the dewatering facility is not slated be operational until 2022, with the lagoon and drying bed sludge disposition continuing through 2027.

In November 2017, CalRecycle and CARB recently sought informal input from stakeholders, and the City provided comments to seek a waiver for RWF biosolids from being considered as organic material due to their low moisture and organic content and low potential to generate SLCPs. The intent of seeking this waiver is to allow the RWF sufficient time to come into compliance with the new regulations while the new dewatering facility is being constructed. Formal regulatory review on SB 1383 is expected to take place throughout 2018, with adoption of regulation in early 2019 and implementation in early 2020. The City is actively providing input to CalRecycle and CARB on this draft regulatory text.

Conclusion

This biosolids transition is driven by goals identified in the previously approved Biosolids Transition Strategy and the adopted Plant Master Plan. These include reducing odors in the community; positioning the RWF to have multiple and diversified disposition options for its biosolids with the potential closure of Newby Island Landfill; reducing the footprint of the biosolids processing area and enabling other land uses; and creating flexibility to respond to future regulatory changes governing the disposal of treated biosolids at landfills as well as changing market conditions related to beneficial reuse of treated biosolids.

While the Newby Island Landfill operation has been extended to 2041, it is still prudent for the RWF to have multiple diversified disposition options for biosolids. Reducing odors and enabling other land uses for the lagoon and drying bed area are still valid goals for the RWF. Furthermore, with imminent future regulation based on SB 1383, it is possible that the current biosolids disposition practiced at the RWF would not be in compliance as early as 2020.

The current RWF biosolids have a very limited disposition market due to its low moisture content. The adopted PMP had previously identified only one non-landfill disposition option (i.e., land application) for the RWF's dried biosolids; however, this option was deemed not viable due to limited receiving capacity and the need for special permits. Other possibilities, such

as hauling sludge directly from the digesters would require third-party contract dewatering and hauling, which is very cost-prohibitive due to the large volume of sludge generated by the RWF. A biosolids end-product with 20 to 30 percent moisture content, which can be achieved through dewatering, is most suitable for the biosolids disposition options allowable under SB 1383 (land application, composting, etc.).

Furthermore, the sites with allowable biosolids disposition (composting, land application etc.) under SB 1383 for future dewatered cake have limited capacity in the San Francisco bay area, and there is a potential for increased competition for this capacity from other POTWs. The RWF would benefit from continued implementation of the BMT at the earliest to allow for planning and negotiation of disposition contracts with these sites.

In summary, although the drivers for the biosolids transition may have changed slightly, they still remain valid and provide a rationale for continuing to implement the biosolids transition plan.

COORDINATION

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

/s/
KERRIE ROMANOW
Director, Environmental Services

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

Attachments:

- Attachment A: Summary of items related to Biosolids Transition and Odor brought to TPAC and San José City Council
- Attachment B: Staff report on Decision to use Progressive Design-Build delivery method for the Digested Sludge Dewatering Facility Project

Attachment A: Summary of items related to Biosolids Transition and Odor brought to TPAC and San José City Council

Item	Date presented to TPAC	Date presented to City Council
Review of the Milpitas Guiding Principles for Plant Master Plan Reconstruction and Land Use Alternatives	December 9, 2010	December 14, 2010
Presentation of Preferred Alternative for the Plant Master Plan including biosolids transition	April 7, 2011	April 19, 2011
Preliminary information regarding odors and planned regional odor assessment study and accelerating schedule for biosolids projects. Supplemental Memo to Council to provide status update on working with stakeholders (City of Milpitas, McCarthy Ranch) in response to TPAC direction	May 19, 2011, August 11, 2011	September 13, 2011
Presentation of a packaged delivery approach for CIP and proposed timeline for Biosolids Transition Program	December 13, 2012	-
Update on packaged delivery approach for CIP and proposed timeline for Biosolids Transition	February 9, 2012	February 14, 2012
Adoption of Plant Master Plan	November 14, 2013	November 19, 2013
Presentation of RWF Odor Control Strategy	November 20, 2014	December 2, 2014
Biosolids Study Session	April 10, 2014	-
Biosolids Transition Strategy	November 20, 2014	December 2, 2014
Updated Biosolids Transition Strategy	May 14, 2015	June 2, 2015
RWF Odor Control Implementation Plan	October 8, 2015	October 27, 2015
Delivery Method for Digested Sludge Dewatering Facility Project	Information Memorandum dated January 19, 2016	Information Memorandum dated January 19, 2016
Approval of Master Consultant Agreement With Brown And Caldwell as Owner's Advisor for Digested Sludge Dewatering Facility Project	October 13, 2016	October 25, 2016

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow
Barry Ng

SUBJECT: SEE BELOW

DATE: January 19, 2016

Approved D-DSyL Date 1/19/16

INFORMATION

SUBJECT: DECISION TO USE THE PROGRESSIVE DESIGN-BUILD DELIVERY METHOD FOR THE DIGESTED SLUDGE DEWATERING FACILITY PROJECT AT THE SAN JOSE-SANTA CLARA REGIONAL WASTEWATER FACILITY

The purpose of this memorandum is to inform City Council of the decision by the Director of Environmental Services and the Director of Public Works to use the progressive design-build method to deliver the Digested Sludge Dewatering Facility Project and provide a summary of the reasoning behind such decision.

BACKGROUND

The San José-Santa Clara Regional Wastewater Facility[1] (RWF) serves a number of jurisdictions. Due to the regional nature of the RWF, projects are subject to State law (as opposed to the City's Charter and Municipal Code). Prior to January 1, 2015, the RWF could only utilize the design-build project delivery method for projects valued over $2,500,000 after obtaining approval from the Governor's Office of Planning and Research; however, on January 1, 2015, Senate Bill 785 (Wolk) took effect and allowed the use of design-build by special districts, local and state agencies for projects valued over $1,000,000 as long as their respective governing bodies approved. Subsequently, on March 24, 2015, City Council adopted Resolution No. 77308 approving the use of low bid design-build and progressive design-build as possible delivery methods for projects in the RWF's Capital Improvement Program (CIP) and delegated authority to the Directors of Environmental Services and Public Works to determine the appropriate delivery method for each project. As stated in the memorandum which recommended the delegation of authority, staff is considering the use of the low bid design-build and progressive design-build delivery methods in addition to the traditional design-bid-build for various projects.

[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.*

Project Description

Digested Sludge Dewatering Facilities at wastewater treatment plants are of high importance as they process digested sludge to reduce the water content in it to allow easier disposal and beneficial reuse of resulting biosolids. The current biosolids treatment process stabilizes the wastewater solids in anaerobic digesters and then transfers the digested sludge to open-air lagoons, for approximately three and a half years, before moving the biosolids to drying beds for another six months. After drying, the Class A biosolids are transported to the adjacent Newby Island landfill for use as an alternative daily cover material.

In 2008, the RWF embarked on a master planning process to rehabilitate and upgrade its facilities and to explore potential process changes. The Plant Master Plan (PMP) used an extensive community engagement process to develop overarching environmental, economic, social, and operational goals for the RWF. To support these goals, the PMP envisioned a comprehensive Biosolids Management Plan (BMP) that would transition from the current open lagoons and drying bed process to an enclosed, mechanical treatment system with the resulting dewatered biosolids hauled off-site. This transition would allow the complete decommissioning of the lagoons and drying beds, thereby opening up the use of approximately 750 acres for open space, land development, and other community purposes. Odors from the open air lagoons and drying beds would be eliminated, as the new dewatering facility will be a completely enclosed building with state-of-the-art odor treatment systems. A mechanical dewatering facility will produce a biosolids product suitable for land application, agricultural fertilizer, and general use in the local community as a soil amendment. The PMP was adopted by the San José City Council in November 2013 and by Santa Clara City Council in December 2013.

In 2014, a Biosolids Transition Strategy was developed to address certain specific issues regarding implementation of the transition from the current biosolids management system to the PMP's recommended system, taking into consideration the changes that have occurred since the technical aspects of the PMP were developed. A mechanical sludge dewatering facility is an integral component of this Transition Strategy. The implementation of the new Digested Sludge Dewatering Facility project was approved at the June 2, 2015, City Council meeting.

This complex project is anticipated to include the installation of mechanical dewatering units, a feed storage tank for biosolids prior to dewatering, polymer storage and dosage facilities, and solids conveyance systems, all housed in a dedicated building. An overhead crane will be provided to remove heavy equipment. A new sludge cake storage facility will be provided as part of this facility and includes necessary conveying, pumping, and tankage. The storage will consist of multiple storage silos or hoppers, with odor control, feeding conveyors, and controls. The building will be an architecturally enhanced structure, and is anticipated to include a process control room, Motor Control Center, heating/ventilating/air conditioning systems, showers, lockers, bathrooms, and a parts storage area. Additional new facilities that are anticipated to be part of the project include a dewatered cake truck load-out facility with weighing scales, conversion of two existing digesters to sludge storage tanks with a new transfer pump station, piping, and upgrades to existing pump stations. Attachment A shows the location of the new Digested Sludge Dewatering facility.

The new Dewatering Facility will be constructed in a "green field" area adjacent to the main operational area of the RWF which will reduce project interface risks, but it remains a high capital value and complex mechanical installation project. The facility will be an enclosed structure, with air ducting and high level odor treatment systems to minimize the release of odors into the surrounding community. The facility will be designed with dedicated operation and maintenance support facilities to allow the RWF staff to monitor and control the various sludge processing, transporting, and load-out facilities. There are a number of interconnections with existing facilities and piping that must be handled carefully whilst the Facility remains on line at all times. In addition, this is an entirely new process, and completely changes how biosolids are handled and treated at the RWF. These factors make it one of the most complex projects being implemented within the CIP.

Project Delivery Methods
Design-bid-build (DBB) is the conventional project delivery method the RWF has used for many years. It is based upon a sequential process of engineering a detailed design, advertising of the design for bidding by contractors, and awarding a construction contract to the lowest responsive and responsible bidder.

Under the progressive design-build (PDB) project delivery method, the design-build entity is selected through a (primarily) qualifications-based process. Once selected, the design-build entity will enter into contract with the City for preliminary services to advance the project design from a conceptual level while simultaneously providing construction cost estimates in an open-book format until the detail design is completed and a Guaranteed Maximum Price (GMP) is agreed upon. It is possible that early equipment procurement can begin before final design details have been developed, but in general, construction of the project does not start until the contract with the design-build entity has been amended to include the GMP.

ANALYSIS

To determine which delivery method was most appropriate, the Digested Sludge Dewatering Facility Project team consisting of RWF operations and maintenance (O&M) and CIP staff (including Program consultants and City engineers) evaluated seven factors before recommending a delivery method to CIP leadership. These seven factors form part of a methodology developed by the CIP to determine the preferred delivery method for any given project and are listed below:

1. Project Size
2. Environmental Review & Permitting
3. Complexity
4. Performance Risk
5. Design Control
6. Optimizing Quality, Scope and Cost
7. Schedule

Staff's recommendation to use the progressive design-build delivery method for the Digested Sludge Dewatering Facility Project is based on an analysis of these seven factors. A discussion of the pertinent information for each factor is included below, with project complexity, design performance risk and potential for quality optimization with cost factors as the main drivers for the recommendation. During the review process, low bid design-build was eliminated from further consideration because of the dynamic between the environmental permitting process, procurement process and the delivery method that would likely result in significant schedule delays (approximately six months to one year). The following analysis is focused on comparing design-bid-build with progressive design-build for delivering the project.

1. *Project Size*
   The Digested Sludge Dewatering Facility Project is currently estimated to cost a total of approximately $86,000,000 (based on latest scope of work) which exceeds the State's $1,000,000 minimum project size requirement for design-build. Due to the large size and complexity of the project, any delivery method is likely to attract a number of capable design and construction teams and no inherent advantage was found in a particular delivery method, based on the size of the project alone.

2. *Environmental Review & Permitting*
   The Digested Sludge Dewatering Facility Project will need to go through the California Environmental Quality Act (CEQA) review and approval process. Furthermore, biological permits may be required before the start of construction of the Project. There was no inherent advantage identified between the design-bid-build and the progressive design-build method as both methods can adequately incorporate environmental review and permitting in the schedule.

3. *Complexity*
   The new Dewatering Facility will be constructed in a "green field" area on the eastern side of the RWF fence line. The location will require multiple piping, electrical, instrumentation, and other utility interconnections with existing facilities and piping, hence the construction for this project is anticipated to be complex. The transporting of digested liquid sludge will require specialized pumping, piping, and cleanout facilities.

   As part of the new Dewatering Facility project, existing tankage and structures will be utilized for conveyance and storage. Many of these tanks are over 50 years old, and may require extensive rehabilitation.

   The process technologies under consideration for the Digested Sludge Dewatering Facility Project are industry-standard; however, these technologies have not been used before at the RWF. O&M staff has limited experience with these technologies, making the Digested Sludge Dewatering Facility Project operationally complex. The conceptual and detailed design of the Facility will require extensive input from operations and maintenance staff to ensure the equipment and systems function as intended.

The overall high complexity characterization of this Project favors the PDB delivery approach since it facilitates additional collaboration processes and efforts between City CIP, O&M staff, and The Design-Build entity.

4. *Performance Risk*
While the Digested Sludge Dewatering equipment is operationally proven and well-understood, there are new technological advances that will be considered in this project's design once these have been proven at other sites. As the digestion process is currently being modified from mesophilic digestion to Temperature Phased Anaerobic Digestion (TPAD), the feed sludge is currently unavailable to allow prediction of the dewatering process performance. There are a number of design performance parameters (cake percent solids, polymer consumption rates, power requirements, non-potable water usage, and odor performance) that are tied to the feed sludge. Design parameters must be sufficiently flexible to allow for a range of performance of each process system.

Given these complexities, constructing the project using the progressive design-build delivery method provides a significant advantage over traditional design-bid-build because the contract will require that the design-build entity be generally responsible for meeting the performance specifications for the project, as established by the City. When the designer and contractor are procured separately, as with design-bid-build, there may be conflicting opinions regarding whose responsibility it is to resolve a project performance issue. This transfer of responsibility under a PDB approach shifts much of the performance risk to the single design-build entity and is an important component of the progressive design-build process. Because the design-build entity will take on much of the performance risk from the City, progressive design-build is the preferred delivery method. In addition, the PDB approach would allow frequent interaction of the design builder with RWF O&M staff, which would help in selection of high-quality dewatering equipment to meet the performance criteria.

5. *Design Control*
Staff prefers to have input throughout the design on equipment, layout and construction sequencing because of the potential major impacts to RWF operations. Both progressive design-build and design-bid-build offer a high level of design control. While both delivery methods provide design control, the PDB approach allows for enhanced interaction with the contractor during the design process. This allows for increased innovation resulting from this interaction, and slightly favors the PDB approach.

6. *Optimizing Quality, Scope and Cost*
Given the importance of the Digested Sludge Dewatering facilities in the treatment process, the type and quality of the specialized equipment installed is extremely important to the successful operations of the RWF. Both progressive design-build and design-bid-build can provide a high level of involvement from City staff when specifying the equipment requirements for the contractor procurement documents. However, the progressive design-build method can be more advantageous in procuring high-quality equipment from reliable manufacturers since contractors selected in the design-bid-build often base their bid on

cheaper or lower quality equipment to win the construction contract. During the design-build process, the equipment is proposed, jointly approved by the design-build entity and the City, priced under the GMP, and then installed.

Construction contracts for design-bid-build are cost competitive and generally based upon lowest bid costs; however, construction cost savings may be equally, if not more, attainable in progressive design-build as a result of the increased collaborated and creativity between the City, designer, and contractor. Claims, disputes and change orders in complex projects also tend to be less prevalent in progressive design-build since the scope of a project is negotiated as part of the development of the GMP. Progressive design-build was considered to be a significantly more advantageous delivery method for optimizing quality, scope and cost for this project.

7. *Schedule*
This project would have to be completed prior to the decommissioning of the lagoons and drying beds to complete the biosolids transition, and there are no other schedule drivers for the project at present. As the DBB and PDB construction schedules for the project are very similar, the schedule factor did not favor any particular delivery method.

Conclusion
The overall evaluation indicates that progressive design-build would be the most advantageous delivery method for the Digested Sludge Dewatering Facility Project as it is expected to reduce the City's risk, potentially lower the volume and cost of change orders, decrease construction delays, increase the likelihood of having high-quality specialized equipment installed, result in more efficient solutions to complex construction sequencing issues, and provide a superior end-product. In addition, the complexity and performance standards of the project will require substantial and timely input from operations and maintenance staff at the RWF collaborating with the Design Build Contractor on optimizing solutions, which is facilitated by the PDB approach. Therefore, staff has chosen the progressive design-build approach as the most appropriate delivery method for the Digested Sludge Dewatering Facility Project.

Staff has completed scoping the Digested Sludge Dewatering Facility Project and is finalizing a Request for Qualifications to procure the services of a consulting firm to evaluate alternatives, and prepare the procurement documents to select a design-build entity. This consulting firm will represent the City (as an owner's representative) and will provide design management and construction management services. Staff will return to Council for approval of both the consultant agreement and contract with the progressive design-build entity for the Digested Sludge Dewatering Facility Project following the respective procurement processes.

COORDINATION

This memo has been coordinated with the Office of the City Attorney.

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

/s/
BARRY NG
Director of Public Works

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

Attachment A: Digested Sludge Dewatering Facility Project Location within the San José-Santa Clara Regional Wastewater Facility

Attachment A: Digested Sludge Dewatering Facility Project Location within the San José-Santa Clara Regional Wastewater Facility

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow

SUBJECT: **SEE BELOW**

DATE: February 20, 2018

Approved [signature] Date 2-21-18

INFORMATION

SUBJECT: UPDATE ON CONSTRUCTION CONTINGENCY USE FOR CAPITAL IMPROVEMENT PROJECTS AT THE REGIONAL WASTEWATER FACILITY

BACKGROUND

On November 28, 2017, City Council (Council) approved an increase to the construction contingency allowance for the Digester and Thickener Facilities Upgrade Project at the San José - Santa Clara Regional Wastewater Facility (RWF). As a follow-up to this action, staff was asked to provide information to Council about the use of construction contingencies on other Capital Improvement Program (CIP) projects at the RWF. This memorandum provides an update referencing all projects completed since July 2013 as part of the current ten-year CIP.

ANALYSIS

A total of 15 CIP projects at the RWF have been completed since July 2013. Of these projects, 12 were completed for less than the original approved construction contingency amount and three required additional contingency increases which was authorized by Council or the Director of Public Works.

Table 1 provides a summary of construction contingency use for the 15 projects.

Table 1
Construction Contingency Use on RWF CIP Projects

	Project Name	Base Contract Amount ($)	Original Approved Contingency ($)	Additional Contingency Increase ($)	Total Approved Contingency ($)	Approved Contingency (as percent of contract)	Actual Amount of Contingency Used ($)	Unused Contingency Balance ($)
1	Dissolved Air Flotation Dissolution Improvements	535,000	80,000	-	80,000	15%	79,355	645
2	DCS Fiber Optics Network Expansion	589,000	58,900	-	58,900	10%	51,633	7,267
3	115KV Circuit Breaker Replacement	344,927	34,493	-	34,493	10%	6,196	28,297
4	RWF Street Treatment Phase-III	336,560	39,000	-	39,000	12%	37,151	1,849
5	Filter Building B2 & B3 Pipe and Valve Replace	158,900	31,780	-	31,780	20%	8,103	23,677
6	Fire Main Replacement - Phase III	1,572,870	157,290	-	157,290	10%	0	157,290
7	BNR2 Clarifier Guardrail Replacement	320,793	32,100	-	32,100	10%	0	32,100
8	Training Trailer Replacement	513,874	51,400	-	51,400	10%	51,001	399
9	Handrail Replacement Phase V	1,145,506	125,463	-	125,463	11%	97,000	28,643
10	Pond A18 Northern Gate Replacement	588,420	58,800	168,919 [1]	227,719	39%	227,390	329
11	Digester Gas Storage Replacement	1,825,100	182,510	-	182,510	10%	166,966	15,544
12	Influent Magnetic Meter & Valve for Nitrification A5 & A6	270,300	27,030	92,970 [2]	120,000	44%	110,128	9,872
13	Fiber Optic Connection	271,692	40,754	-	40,754	15%	13,159	27,595
14	Digester Gas Compressor Upgrade	11,316,000	1,131,600	565,800 [3]	1,697,400	15%	1,614,276	83,124
15	Emergency Diesel Generators	15,310,000	1,531,000	-	1,531,000	10%	906,947	624,053
	Total	**35,098,941**	**3,582,120**	**827,869**	**4,409,989**	**13%**	**3,369,305**	**1,040,684**

Notes
1. Contingency was increased by $117,700 and $51,219 on 8/5/15 and 12/14/15, respectively, by the Director of Public Works
2. Contingency was increased by $92,970 on 3/15/16 by Council
3. Contingency was increased by $565,800 on 6/23/15 by Council

Construction contingency for capital projects are established by Council Resolution No. 71319:

a. 5% of the total contract amount for street, sidewalk or park projects;
b. 10% of the total contract amount for utilities and building projects;
c. 15% of the total contract amount for building renovation projects;
d. Such other amount as may be approved by the City Council for a particular project.

Original construction contingency approved by Council for 12 of the 15 projects ranged from 10 to 20 percent. For the other 3 projects, Council or the Director of Public Works approved additional contingency increases to allow staff to address unforeseen conditions, make necessary equipment changes and address installation complexities, and comply with updated building code/safety requirements. Across the 15 projects, the total approved contingency amount averaged 13 percent, with a net unused contingency balance of $1,040,684.

Up to this point, staff has been typically recommending a 15% construction contingency for RWF CIP projects. However, as the program moves forward with delivering larger and more complex CIP projects, staff may recommend higher contingencies to account for the challenge of maintaining continuous operations at the RWF; dealing with the complex and often unknown or uncertain location of the buried utilities on such a heavily developed site; and the complex project interfaces with other concurrent CIP projects underway. Staff will continue to evaluate and make construction contingency recommendations on a project by project basis.

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

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