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. **November 9, 2017** **Room 1734**

1. ROLL CALL

2. APPROVAL OF MINUTES

A. October 12, 2017

3. UNFINISHED BUSINESS/REQUEST FOR DEFERRALS

4. DIRECTOR'S REPORT

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

5. AGREEMENTS/ACTION ITEMS

A. Construction Contingency Increase for the 7382 – Digester and Thickener Facilities Upgrade Project at the San Jose – Santa Clara Regional Wastewater Facility

Staff Recommendations:

(a) Approve a $15,000,000 increase to the construction contingency amount of $13,490,625 for a revised total contingency amount of $28,490,625 and increasing the contract not-to-exceed amount from $121,415,625 to a total revised contract amount not-to-exceed $136,415,625 for the 7382 – Digester and Thickeners Facilities Upgrade Project.

(b) Adopt the following 2017-2018 Appropriation Ordinance Amendments in the San José – Santa Clara Treatment Plant Capital Fund:
   (1) Decrease the Yard Piping and Road Improvements appropriation to the Environmental Services Department by $8,000,000;
   (2) Decrease the Aeration Tanks and Blower Rehabilitation appropriation to the Environmental Services Department by $7,000,000;
   (3) Increase the Digester and Thickener Facilities Upgrade appropriation to the Environmental Services Department by $15,000,000.

This item is scheduled for consideration by the City Council on November 28, 2017.

B. Report on Bids and Award of Contract for 8687 – Repairs of Water Services and Mains: 2017

Staff Recommendations:

(1) Report on bids and award of contract for the 8687 – Repairs of Water Services and Mains: 2017 project to the lowest responsive bidder, San Jose Water Company, for the initial term of November 2017 through November 2020, in an amount not to exceed $1,617,407.

(2) Adopt a resolution authorizing the City Manager to exercise one option to extend the contract for an additional one-year term after the expiration of the initial term in an amount not to exceed $539,136, and a second option to extend the term of the contract for an additional one-year term after the first option year in an amount not to exceed $539,136, for a total maximum contract amount of $2,695,678 if both option years are exercised.

This item is scheduled for consideration by the City Council on November 14, 2017.

6. OTHER BUSINESS/CORRESPONDENCE

A. Approval of Early Work Package 2 for the Design and Construction of the Cogeneration Facility at the San Jose – Santa Clara Regional Wastewater Facility dated October 17, 2017

7. STATUS OF ITEMS PREVIOUSLY RECOMMENDED FOR APPROVAL BY TPAC

A. San Jose – Santa Clara Regional Wastewater Facility Capital Improvement Program Semiannual Status Report

Staff Recommendation: Accept the semiannual status report on the San José – Santa Clara Regional Wastewater Facility Capital Improvement Program for the period of January 2017 through June 2017.

The proposed recommendation was approved by the City Council on October 31, 2017.

B. Construction Impacts to San Jose – Santa Clara Regional Wastewater Facility

Staff Recommendation: Accept this report about the construction impacts to Operation and Maintenance at the San José – Santa Clara Regional Wastewater Facility.

The proposed recommendation was approved by the City Council on October 31, 2017.

C. Wastewater Flow Pattern Changes at the San Jose – Santa Clara Regional Wastewater Facility

Staff Recommendation: Accept this report about the influent and effluent flow pattern changes at the San José – Santa Clara Regional Wastewater Facility.

The proposed recommendation was approved by the City Council on October 31, 2017.

D. Shoreline Levee Project

Staff Recommendation: Accept this status report on the construction of the Shoreline Levee and progress on discussions with the Santa Clara Valley Water District on the transfer of Pond A18.

The proposed recommendation was approved by the City Council on October 31, 2017.

E. Wildlife Habitat at the San Jose – Santa Clara Regional Wastewater Facility

Staff Recommendation: Accept this report highlighting the established wildlife at the San José – Santa Clara Regional Wastewater Facility, and ongoing habitat management activities for the Western Burrowing Owl.

The proposed recommendation was approved by the City Council on October 31, 2017.

F. Amendment to the Master Consultant Agreement with Stantec Consulting Services Inc. (formerly MWH Americas, Inc.) for Program Management Services for the San Jose – Santa Clara Regional Wastewater Facility Capital Improvement Program

Staff Recommendation: Approve an Amended and Restated Master Consultant Agreement with Stantec Consulting Services Inc. (formerly MWH Americas, Inc.) for program management services for the San José – Santa Clara Regional Wastewater Facility Capital Improvement Program, increasing the not to exceed agreement amount from $39,000,000 to a revised not to exceed agreement amount of $78,000,000; and extending the term of the agreement from September 30, 2018 to June 30, 2023.

This item was recommended by TPAC on September 14, 2017, and was approved by the City Council on October 17, 2017.

8. REPORTS

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

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

9. MISCELLANEOUS

A. The next monthly TPAC Meeting is on **January 11, 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 Melrose Cacal, Environmental Services (408) 975-2547.

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

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

MINUTES OF THE
SAN JOSÉ/SANTA CLARA
TREATMENT PLANT ADVISORY COMMITTEE
San José City Hall, T-1734
Thursday, October 12, 2017 at 4:00 p.m.

1. ROLL CALL

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

Committee Members: Sylvia Arenas (alternate), Debi Davis, Dev Davis, John Gatto, Marsha Grilli, David Sykes, Kathy Watanabe (alternate), Steven Leonardis

Absent: Chair Sam Liccardo, Vice Chair Pat Kolstad, and Committee Member Lan Diep

2. APPROVAL OF MINUTES

A. September 14, 2017
Item 2.A. was approved to note and file.
Ayes – 7 (Arenas, Debi Davis, Dev Davis, Gatto, Grilli, Sykes, Watanabe)
Nayes – 0
Absent – 1 (Leonardis)

3. UNFINISHED BUSINESS/REQUEST FOR DEFERRALS

4. DIRECTOR'S REPORT

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

There were no items to report.

5. AGREEMENTS/ACTION ITEMS

A. Actions Related to the Establishment of an Interim Financing Program to Finance Capital Improvements at the San Jose – Santa Clara Regional Wastewater Facility

Staff Recommendations: It is recommended that the City Council:

a. Adopt a resolution providing for the allocation of Wastewater System Revenues, the pledge of Wastewater Net System Revenues, and establishing covenants to secure the payment of obligations payable from Wastewater Net System Revenue and repealing prior inconsistent resolutions.
b. Adopt a resolution approving the issuance by the City of San José Financing Authority of its Subordinate Wastewater Revenue Notes from time to time in an aggregate principal amount not to exceed $300,000,000 outstanding at any one time for the purpose of financing Wastewater System and Treatment Plant Projects for the City of San José and/or refunding Prior Obligations issued or incurred for such purpose, approving and authorizing the execution and delivery

of a Credit Agreement and a Fee Letter Agreement with Wells Fargo Bank, National Association, and a Subordinate Installment Purchase Contract, and authorizing other related actions in connection therewith.

The proposed recommendation was adopted by the City Council and Financing Authority Board on October 3, 2017.

Committee Member Gatto asked what the terms are for the interim financing program. Director Julia Cooper clarified that it is a three year term with Wells Fargo Bank with a Sub 2 interest rate. The annual fee would cost approximately $760,000 on a 25 basis point. The City could enter into a renewal with Wells Fargo or with another bank at the end of the three year term.

Committee Member Gatto disagreed with the statement in the memo that the Tributary Agencies did not want to participate in the program and instead expressed strong concerns that the Tributary Agencies were not provided information about the financing terms and given the chance to participate. Director Kerrie Romanow stated that the Tributary Agencies had been provided a chance to participate, and this was noted in a memo from 2015.

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

Ayes – 6 (Arenas, Debi Davis, Dev Davis, Grilli, Sykes, Watanabe)
Nayes – 2 (Gatto, Leonardis)
Absent – 0

B. <u>San Jose – Santa Clara Regional Wastewater Facility Capital Improvement Program Semiannual Status Report</u>

Staff Recommendation: Accept the semiannual status report on the San José – Santa Clara Regional Wastewater Facility Capital Improvement Program for the period of January 2017 through June 2017.

This item was approved by the Transportation and Environment Committee on October 2, 2017 and is scheduled for consideration by the City Council on October 24, 2017.

Deputy Director Julia Nguyen and Principal Engineer John Cannon presented.

On a motion made by Committee Member Leonardis and a second by Committee Member Grilli, TPAC recommended approval of staff's recommendation for Item 5.B.

Ayes – 8 (Arenas, Debi Davis, Dev Davis, Grilli, Gatto, Leonardis, Sykes,Watanabe)
Nayes – 0
Absent – 0

C. Construction Impacts to San Jose – Santa Clara Regional Wastewater Facility

Staff Recommendation: Accept this report about the construction impacts to Operation and Maintenance at the San José – Santa Clara Regional Wastewater Facility.

This item was approved by the Transportation and Environment Committee on October 2, 2017 and is scheduled for consideration by the City Council on October 24, 2017.

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

Ayes – 6 (Arenas, Debi Davis, Dev Davis, Grilli, Sykes, Watanabe)
Nayes – 2 (Gatto, Leonardis)
Absent – 0

D. Wastewater Flow Pattern Changes at the San Jose – Santa Clara Regional Wastewater Facility

Staff Recommendation: Accept this report about the wastewater influent and effluent flow pattern changes at the San Jose – Santa Clara Regional Wastewater Facility.

This item was approved by the Transportation and Environment Committee on October 2, 2017 and is scheduled for consideration by the City Council on October 24, 2017.

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

Ayes – 6 (Arenas, Debi Davis, Dev Davis, Grilli, Sykes, Watanabe)
Nayes – 2 (Gatto, Leonardis)
Absent – 0

E. Shoreline Levee Update

Staff Recommendation: Accept this status report on the consideration of discussions with the Santa Clara Valley Water District on the transfer of Pond A18.

This item was approved by the Transportation and Environment Committee on October 2, 2017 and is scheduled for consideration by the City Council on October 24, 2017.

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

Ayes – 6 (Arenas, Debi Davis, Dev Davis, Grilli, Sykes, Watanabe)
Nayes – 2 (Gatto, Leonardis)
Absent – 0

F. Wildlife Habitat at the San José – Santa Clara Regional Wastewater Facility

Staff Recommendation: Accept this report highlighting the established wildlife habitat at the San José – Santa Clara Regional Wastewater Facility, and ongoing habitat management activities for the Western Burrowing Owl.

This item was approved by the Transportation and Environment Committee on October 2, 2017 and is scheduled for consideration by the City Council on October 24, 2017.

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

Ayes – 6 (Arenas, Debi Davis, Dev Davis, Grilli, Sykes, Watanabe)
Nayes – 2 (Gatto, Leonardis)
Absent – 0

6. OTHER BUSINESS/CORRESPONDENCE

7. STATUS OF ITEMS PREVIOUSLY RECOMMENDED FOR APPROVAL BY TPAC

A. Amendment to the Master Consultant Agreement with Stantec Consulting Services Inc. (formerly MWH Americas, Inc.) for Program Management Services for the San Jose – Santa Clara Regional Wastewater Facility Capital Improvement Program

Staff Recommendation: Approve an Amended and Restated Master Consultant Agreement with Stantec Consulting Services Inc. (formerly MWH Americas, Inc.) for program management services for the San José – Santa Clara Regional Wastewater Facility Capital Improvement Program, increasing the not to exceed agreement amount from $39,000,000 to a revised not to exceed agreement amount of $78,000,000; and extending the term of the agreement from September 30, 2018 to June 30, 2023.

This item was re-scheduled to the October 17, 2017 City Council Meeting.

B. Approval of Citywide Insurance Renewals

Staff Recommendation: Adopt a Resolution authorizing the Director of Finance to:

(a) Select and purchase City property and liability insurance policies for the period October 1, 2017 to October 1, 2018, at a total cost not to exceed $1,850,000, including a 12.6% contingency for additional property or assets scheduled, with the following insurance carriers:
(1) American Home Assurance Company for Property & Casualty Insurance, including Boiler & Machinery.
(2) Old Republic Aerospace, Phoenix Aviation Managers, for Airport Owners and Operators Liability including War Risks & Extended Perils Coverage (Primary and Excess) and Police Aircraft Hull & Liability including War Risks & Extended Perils.
(3) The Travelers Indemnity Company of CT for Automobile Liability, or other insurance carriers that the City is currently in negotiations with, (Airport fleet vehicles including Shuttle Buses, Regional Wastewater Facility fleet vehicles, and Airport Shuttle Bus physical damage).
(4) QBE Specialty Insurance Company for Secondary Employment Law Enforcement Professional Liability.
(5) National Union Fire Insurance Company of Pittsburg, PA for Life/Accidental Death and Dismemberment Policy for the Police Air Support Unit.
(6) Berkley Regional Insurance Company for Government Fidelity/Crime Coverage.
(7) Hudson Insurance Company, for Fiduciary Liability Coverage for the VEBA Health Savings Trust.

The proposed recommendation was approved by the City Council on September 19, 2017.

C. Purchase of California Carbon Allowances

Staff Recommendation: Approve the Agreement between the City of San José and Vitol, Inc., which is approved by the California Air Resources Board for the purchase of California Carbon Allowances for the San José – Santa Clara Regional Wastewater Facility, as part of the California Cap-and-Trade Program, for an amount of $303,437.60

The proposed recommendation was approved by the City Council on September 26, 2017.

D. Audit of Environmental Services Department Consulting Services

Staff Recommendation: Accept the audit report on Environmental Services Department Consulting Services.

The proposed recommendation was approved by the City Council on October 3, 2017. City staff will provide a six month status update to the Transportation and Environment Committee and City Council.

Item 7.A. was approved to note and file.

Ayes – 8 (Arenas, Debi Davis, Dev Davis, Gatto, Grilli, Leonardis, Sykes, Watanabe)
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 $1.08 million of services between $100,000 and $270,000.

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

Ayes – 8 (Arenas, Debi Davis, Dev Davis, Gatto, Grilli, Leonardis, Sykes, Watanabe)
Nayes – 0
Absent – 0

9. MISCELLANEOUS

A. The next monthly TPAC Meeting is **November 9, 2017** at 4:00 p.m., City Hall, Room 1734.

10. OPEN FORUM

11. ADJOURNMENT

A. The Treatment Plant Advisory Committee adjourned at 4:21 p.m.

Sam Liccardo, Chair
TREATMENT PLANT ADVISORY COMMITTEE

San José-Santa Clara Regional Wastewater Facility

Capital Improvement Program
Monthly Status Report: September 2017

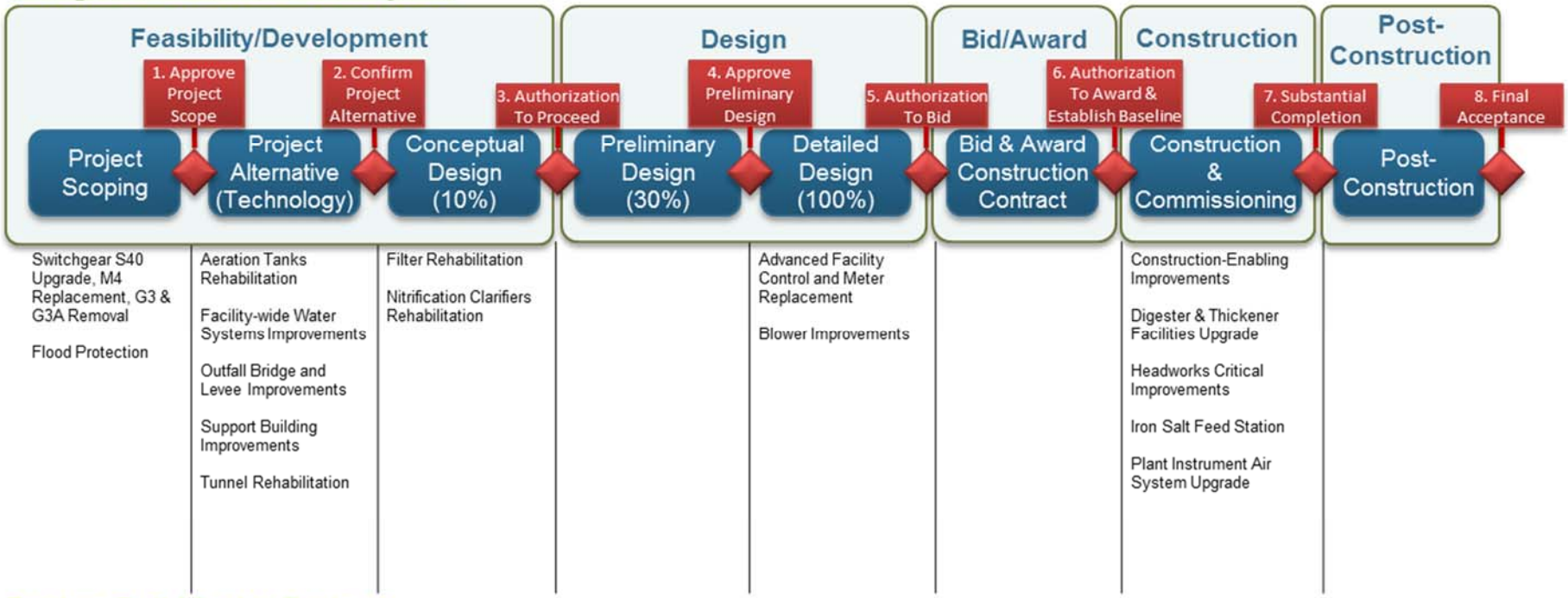
November 2, 2017

This report summarizes the progress and accomplishments of the Capital Improvement Program (CIP) for the San José-Santa Clara Regional Wastewater Facility (RWF) for September 2017.

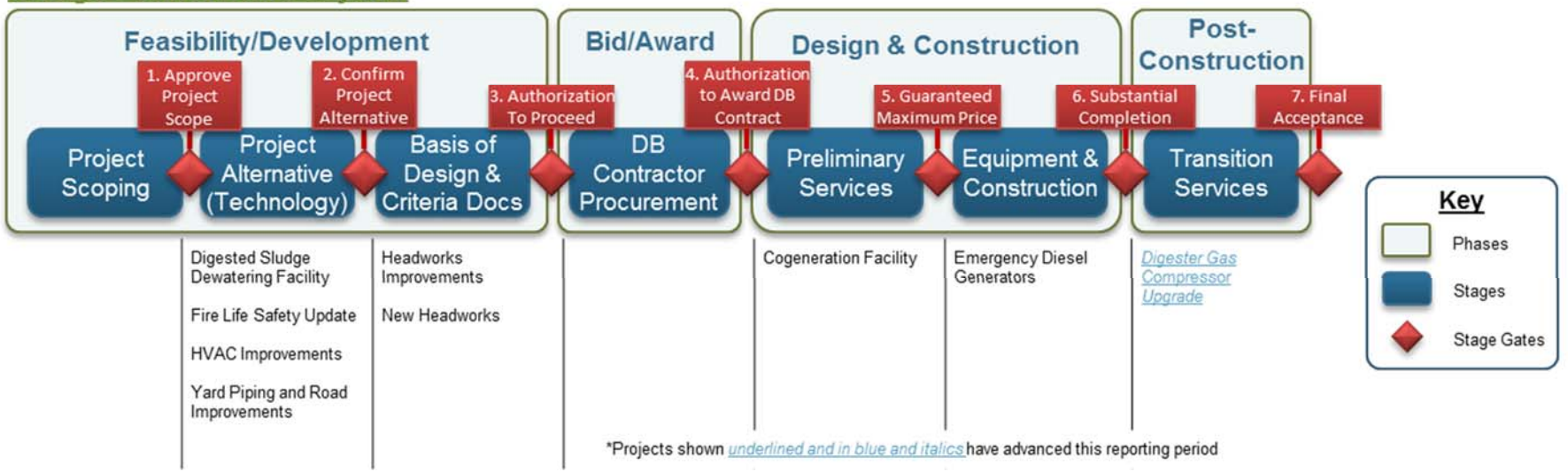
Report Contents

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

September 2017

In September, 18 CIP projects continued to progress through the feasibility/development, design, and bid/award stages of the project delivery model (PDM). Of particular note, the Fire Life Safety Upgrades Project held its kickoff meeting and will commence condition assessment work in November. Alternatives analysis work continued on the Aeration Tanks Rehabilitation, Digested Sludge Dewatering Facility, and Facility-wide Water Systems Improvements projects, with the Aeration Tanks Rehabilitation Project in particular completing field work condition assessments and finalizing several technical memoranda this month. Conceptual design commenced this month on the Filter Rehabilitation and Nitrification Clarifiers Rehabilitation projects. Both projects are scheduled to reach the 30 percent design submittal stage in summer 2018. Design also continued on the Advanced Facility Control and Meter Replacement, Blower Improvements, and Cogeneration Facility projects, with the 60 percent design submittal received this month for the Blowers Improvements Project, and the 90 percent design submittal received for the Advanced Facility Control and Meter Replacement Project. The Cogeneration Facility Project team received approval to proceed with Early Work Package 2 (EWP2), covering site work for the engine generators. The team now awaits an Authority to Construct (ATC) from the Bay Area Air Quality Management District (BAAQMD) to begin construction. The City also advertised a Request for Pre-Qualification of Bidders for the first phase of the Advanced Facility Control and Meter Replacement Project and re-advertised a Request for Qualification (RFQ) for the Yard Piping and Road Improvements Project owner's advisor.

In addition, seven CIP projects under construction all made good progress in September. Resolution of final outstanding work items continued on the Digester Gas Compressor Upgrade and the Emergency Diesel Generators projects; both projects are now fully operational. The Digester Gas Compressor Project successfully advanced through the Substantial Completion stage gate this month. Mobilization and preparation of equipment submittals continued on the Headworks Critical Improvements Project, while construction activities continued on the Construction-Enabling Improvements, Digester and Thickener Facilities Upgrade, Iron Salt Feed Station, and Plant Instrument Air System Upgrade projects. On the Digester and Thickener Facilities Upgrade Project, the contractor completed a major tie-in for the digester gas pipework bypass and continued to address the many unforeseen conditions that have been encountered during construction. The project team completed design submittal approvals for the temporary bypass pumping design to allow repair of the badly corroded 78-inch primary effluent pipeline and associated concrete chambers. Additional construction contingency will be needed to be added before the end of the calendar year to complete the repairs, Staff plan to recommend a contingency increase to the Treatment Plant Advisory Committee (TPAC) and City Council (Council) for approval in November. The team also continued to evaluate a design issue affecting the digester tanks' seismic retrofit.

TPAC and the Transportation and Environment (T&E) Committee took action on the following items presented this month:

- TPAC approved an amendment to the existing Master Consultant Agreement (MCA) with Stantec (formerly MWH) for program management services to increase the not-to-exceed amount from $39 million to $78 million and extend the term through June 2023 to align with the 10-year CIP;
- T&E and TPAC accepted the final audit report entitled Audit of Environmental Services Department Consulting Services: Agreements Require Additional Oversight (September 2017); and
- T&E accepted the Semiannual CIP Status Report (January-June 2017).

All of the above items will be presented to Council for approval in October.

Look Ahead

The following key activities are forecast for October/November:

- Staff will initiate the Storm Drain System Improvements Project. This project will upgrade the RWF's storm water drainage system to meet the City's 10-year design standards to prevent storm water flooding in and around the RWF's operational area.
- Condition assessment work will begin for the Fire Life Safety Upgrades and HVAC Improvements projects.
- The City will advertise the prequalification document for the Blower Improvements Project construction contract.
- The Emergency Diesel Generator Project will seek approval to advance through the Substantial Completion stage gate.
- The City will issue a Request for Proposal (RFP) for design-build services for the Headworks Improvements and New Headworks projects.
- Staff will recommend Council establish an interim financing program to fund CIP projects at the RWF, amend the Stantec MCA for program management services, and increase the construction contingency for the Digester and Thickener Facilities Upgrade Project.

Program Highlight – Project Photograph Collection and Management

The CIP has 25 active projects that are or will be conducting condition assessments, process shutdowns, inspections, construction, and other important activities. Photographic documentation of infrastructure throughout project delivery provides a record for CIP project teams and Operations and Maintenance staff (O&M). Currently, project teams manually load project photographs into folders on the CIP Portal collaboration site and the City's internal network server. Staff who are searching for a specific RWF area or component must sift through large file directories that contain only limited information, such as the photograph filename, capture date, and upload date. The current filing approach limits the ability to store key details making it difficult to locate specific photographs, determine the significance of a specific photograph, or store the photographers' observations.

The CIP is currently piloting AutoForm, which is a field data capture tool that integrates directly with the CIP Portal on SharePoint. With AutoForm, project teams can use mobile iOS devices (e.g. iPhones and iPads) to capture photos and a wide array of additional information, known as metadata. Metadata fields include date, geographical location, subject of photograph, condition of subject, and hazards identified, with the option for additional customized fields. AutoForm sends this information directly from the user's device to a secure online project database accessible through the CIP Portal.

AutoForm Pilot

In May 2017, the program controls team commenced working with the Yard Piping and Road Improvements and Tunnel Rehabilitation project teams to pilot-test AutoForm during the first phases of their condition assessments. The project teams have successfully collected photographs and detailed metadata using custom forms developed by the program management consultant (Stantec). The project teams are now working with Stantec to develop additional ways to present the collected information in the CIP Portal such as by using interactive maps.

Stantec has also been working closely with the City's Geographic Information Systems (GIS) team to develop a process for integrating photographs into the existing CIP Portal GIS Map Viewer. This integration will place all project photographs in a central location visible to City staff with access to the CIP Portal. CIP staff will be able to search for images using the map interface and will be able to search for photos based on the metadata recorded with the image. This metadata will include photo date, project, and other important characteristics captured by the project team.

AutoForm is now available for use by all CIP project teams to collect photographs and associated project metadata.

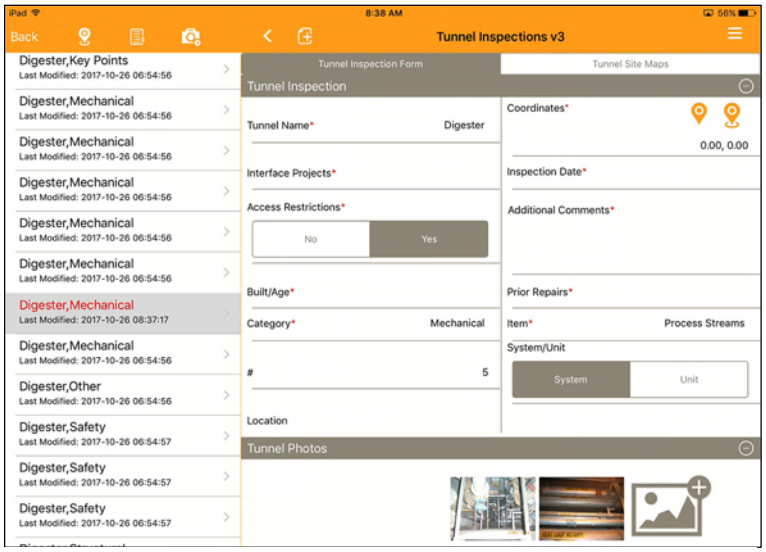


Figure 1: Example Tunnel Inspection AutoForm

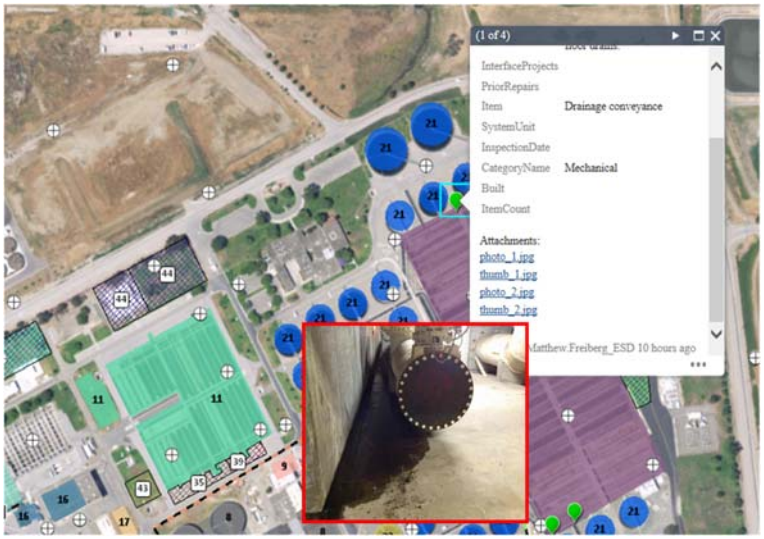


Figure 2: Sample Map Displaying AutoForm Data

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% 5/5 [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	◆	→	60% 3/5	◆	→
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	●	→	86% 6/7	▲	→
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	$249M	$162M	●	↑	$296M[3]	●	↑
Measurement: CIP FY17-18 committed costs. Target: Committed cost meets or exceeds 70% of planned Budget. 70% of $356M = $249M. Therefore Green: >=$249M; Amber: $196M to $249M; Red: < $196M							
Procurement	80%	NA 0/0	●	→	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[4]	80%	100% 4/4 [5]	●	↑	100% 15/15	●	→
Measurement: Number of planned positions filled for the fiscal year. Target: Green: >=80%; Amber: 70% to 79%; Red: < 70%							

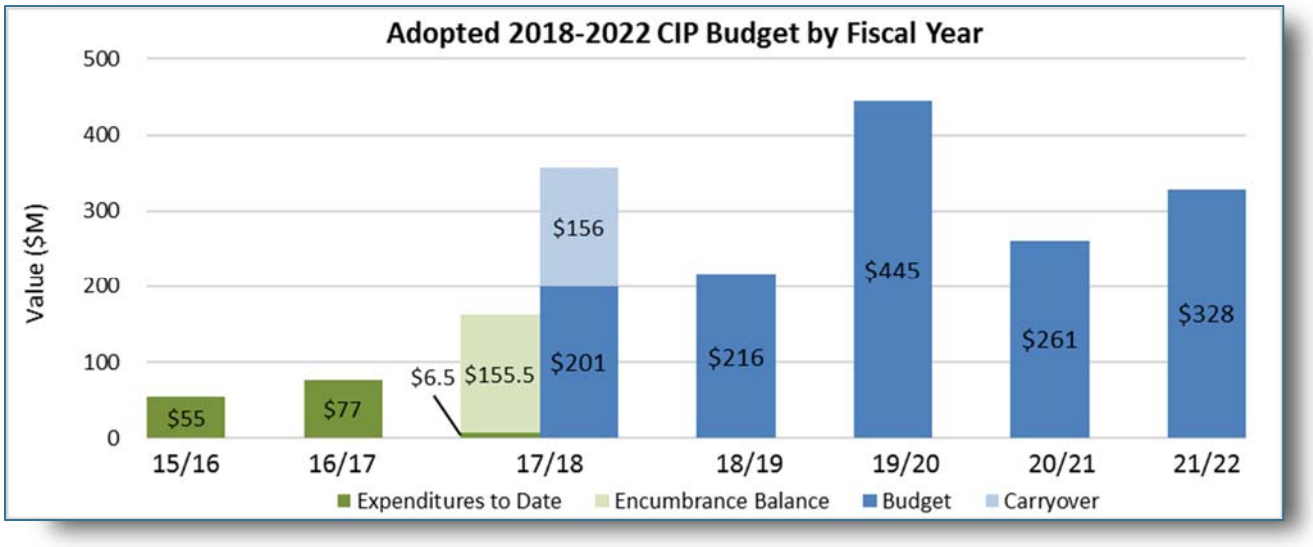
Notes

1. The Cogeneration Facility Project passed the interim stage gate for Early Work Package 2 for engine generator site work. The Digester Gas Compressor Upgrade Project passed the substantial completion stage gate.
2. The baseline Beneficial Use date and the baseline budget for each project are established at construction contract award and execution.
3. The fiscal year end expenditure has increased due to the inclusion of anticipated expenditures for program management, Owner Controlled Insurance Program, debt services repayments, and the Distributed Control System Upgrade Project encumbrance.
4. The staffing KPI represents CIP recruitments planned for the fiscal year and is measured quarterly. This KPI measurement does not account for staff turnover throughout the fiscal year.
5. The KPI was updated for the first quarter. The program hired a division manager, two associate engineers, and a senior engineering technician.

Program Cost Performance Summary

This section summarizes CIP cost performance for all construction projects and non-construction activities for fiscal year (FY) 17-18 and for the 2018-2022 CIP.

Adopted 2018-2022 CIP Expenditure and Encumbrances



Notes

Budget: $200.5M; Carryover: $155.9M; Rounded total budget: $356M.

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.

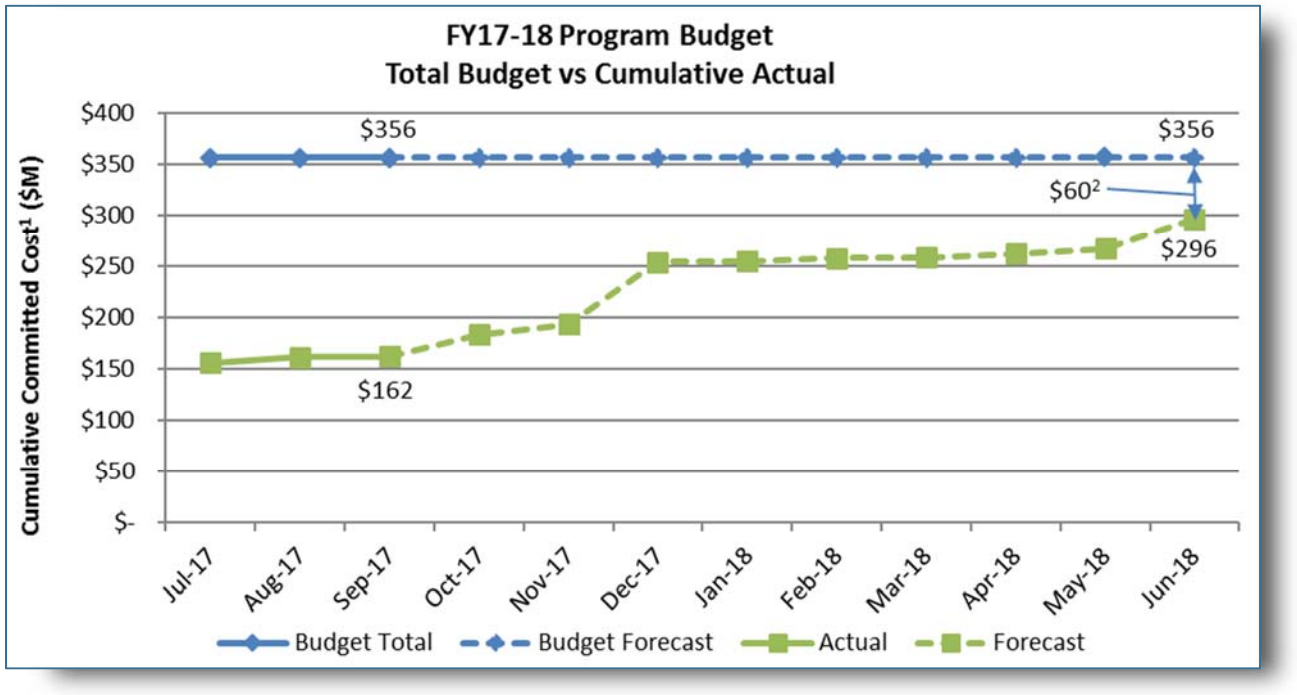
Encumbrance balance: The amount of the remaining encumbrance committed after payments.

Budget: Adopted 2018-2022 CIP Budget, which is new funding plus rebudgeted funds in FY17-18.

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

This budget comprises the FY17-18 budget of $200.5 million, plus carryover of $155.9 million. The budget excludes Reserves, Ending Fund Balance, 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 predicted lower personal services expenses than budgeted.
    e. The FY17-18 budget includes three recurring appropriations (Preliminary Engineering, Equipment Replacement, and Plant Infrastructure Improvements) totaling approximately $3.66 million. These appropriations are included in the budget for implementing minor capital improvement projects that may be needed during the fiscal year. In September 2017, $95,000 was encumbered under Preliminary Engineering for on-call environmental services. No other major expenditures or encumbrances are planned against these appropriations at this point.

Project Performance Summary

There are currently seven active projects in the construction or post-construction phases, with an additional 18 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, using CPMS data as a source.

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	Construction	Jul 2017[3]	●	◆
3. Iron Salt Feed Station	Construction	Nov 2017	●	●
4. Construction-Enabling Improvements	Construction	Dec 2017	●	◆
5. Plant Instrument Air System Upgrade	Construction	May 2018	●	●
6. Headworks Critical Improvements	Construction	Jun 2018	●	●
7. Digester and Thickener Facilities Upgrade	Construction	Aug 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 12.
3. Actual Beneficial Use date.

Project Performance – Pre-Baselined Projects

Project Name	Phase	Estimated Beneficial Use Date1
1. Cogeneration Facility	Design & Construction	Aug 2019
2. Blower Improvements	Design	Oct 2020
3. Adv. Facility Control & Meter Replacement	Design	Dec 2022
4. Outfall Bridge and Levee Improvements	Feasibility/Development	Dec 2020
5. Headworks Improvements	Feasibility/Development	May 2021
6. Flood Protection	Feasibility/Development	Aug 2021
7. Switchgear S40 Upgrade, M4 Replacement, G3 & G3A Removal	Feasibility/Development	Apr 2022
8. Digested Sludge Dewatering Facility	Feasibility/Development	Jul 2022
9. New Headworks	Feasibility/Development	Sep 2022
10. Fire Life Safety Upgrades	Feasibility/Development	Sep 2022
11. Filter Rehabilitation	Feasibility/Development	Oct 2022
12. HVAC Improvements	Feasibility/Development	Nov 2022
13. Facility-wide Water Systems Improvements	Feasibility/Development	Mar 2023
14. Nitrification Clarifiers Rehabilitation	Feasibility/Development	Dec 2023
15. Aeration Tanks Rehabilitation	Feasibility/Development	Aug 2025
16. Tunnel Rehabilitation	Feasibility/Development	Aug 2026
17. Support Building Improvements	Feasibility/Development	Dec 2026
18. 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 installed draft tubes for mixing in the interior of the digesters; wrapped the post-tensioning cables to prevent deterioration while the seismic uplift solution is developed and implemented; continued to work on the dissolved air floatation tank walls; installed lateral footings for the pipe rack; and poured the top deck of the thickener sludge equalization tanks.
- Walsh completed connections on the now operational digester gas bypass system.
- The project team also finalized the bypass pumping design submittal for the 78-inch settled sewage pipeline repairs. In the next couple months, the design consultant Brown and Caldwell will submit the pressurization flow design.

Digested Sludge Dewatering Facility

- The project team submitted the preliminary California Environmental Quality Act (CEQA) application to the City Planning Department and is preparing the RFQ for the design-build entity, which is anticipated to advertised in November.

Facilities Package

Cogeneration Facility

- The project team presented EWP2 (engine generator site work) to CIP leadership for approval and held a workshop on the 60 percent design. The project team is also independently evaluating the cost model provided by Design Builder CH2M in preparation for negotiating the Guaranteed Maximum Price (GMP), which is anticipated to complete in December.

Facility-wide Water Systems Improvements

- Design consultant Kennedy/Jenks (KJ) submitted their Condition Assessment Report. Next, KJ will complete the hydraulic analysis by the end of December.

Fire Life Safety Upgrades

- The project team held a kick-off meeting with design consultant K/J. Condition assessment work will begin in November.

Yard Piping and Road Improvements

- The City cancelled the previous procurement and advertised a new RFQ for owner's advisor services. Statements of Qualifications (SOQs) are due back by the end of October.

Liquids Package

Advanced Facility Control and Meter Replacement

- Design consultant Black & Veatch submitted the 90 percent design package for review and will submit the 90 percent opinion of probable construction costs (OPCC) next month.
- The City advertised a Request for Pre-Qualification of Bidders for the first phase of the project. SOQs are due back by the end of October.

Aeration Tanks Rehabilitation

- Design consultant Brown and Caldwell completed the field work for the aeration tanks condition assessment; submitted several final technical memorandums including the process narrative, design criteria, off-gas testing, and primary clarifier stress testing; and held workshops with CIP and O&M staff for process modeling and wastewater characterization. The condition assessment is anticipated to be completed in January 2018.

Blower Improvements

- Design consultant Brown and Caldwell submitted the 60 percent design package, including plans and specifications, construction schedule, and OPCC. The project team reviewed the design submittal, returned comments, and attended the 60 percent design workshop. During the next two months, the consultant will continue to develop the 90 percent plans while the program management consultant performs an independent review of the OPCC. The 90 percent design is anticipated to be completed by December.

Filter Rehabilitation

- The project team and design consultant K/J held a kickoff meeting for the conceptual design with, as well as a focus group meeting with O&M staff and subject matter experts to discuss construction sequencing constraints.

Headworks Improvements and New Headworks

- Owner's advisor CDM Smith revised the OPCC for the Project Definition Report in response to the independent review by the program management consultant. Next month, the City will finalize the Request for Proposals (RFP) for a design-build entity to advertise in November.

Iron Salt Feed Station

- Contractor Anderson Pacific started functional testing and system operation and maintenance training activities. Next, they will begin performance and operation testing and equipment training.

Nitrification Clarifiers Rehabilitation

- The project team held a kickoff meeting for the conceptual design. The conceptual design is anticipated to be completed in February 2018.

Power and Energy

Digester Gas Compressor Upgrade

- The project team successfully passed the substantial completion stage gate and anticipates issuing a Notice of Completion and Acceptance in November.

Plant Instrument Air System Upgrade

- Contractor Anderson Pacific completed the concrete block walls for the new compressor building, and submitted the roof steel design to the City Building Department for review. Construction is 40 percent complete.

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 winter season, contractor Teichert Construction was unable to perform site work for several weeks from October through April. Teichert has been granted 47 extra work days for weather-related delays. Teichert has also been granted additional time for the removal and replacement of asphalt pavement in damaged areas of Zanker Road; installing traffic-rated pull boxes for the streetlight system; installing underground conduits for the fiber optic system; and additional changes.

Delays in the fabrication and delivery of the portable trailers required for the project continue to impact the schedule. The trailer to be used for badging and training was delivered in August; however, the quad trailer to be used for CM personnel is still under fabrication. Teichert now estimates that the CM quad trailer will be delivered in November. Installation and furnishing of the CM trailer, plus final inspection, should take another four to six weeks, placing the Beneficial Use date in December 2017. The City notified Teichert that the number of contract work days has been exceeded and that liquidated damages were in effect. By the end of this reporting month, liquidated damages have reached $82,000.

Digester and Thickener Facilities Upgrade

Numerous unforeseen conditions are impacting the project schedule. The conditions, detailed below, are resulting in an estimated delay to the Beneficial Use date of four months. The project team continues to evaluate the schedule delays.

- Major corrosion of an existing, below-ground 78-inch settled sewage (SES) pipeline and junction structure was encountered 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 this month, and the digester gas bypass is now in service.
- Digester structural design is being revised for seismic safety. Revised design details will result in schedule delays and increased coordination with ongoing construction.

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 October. This schedule delay was primarily due to the following factors:

- The compressor skids needed 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.

Emergency Diesel Generator

This project reached Beneficial Use July 7; final acceptance is scheduled for October. 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, has taken longer than expected to develop the controls and network switches that interface with existing RWF controls. Caterpillar and Peterson Control have completed all outstanding items and are in the process of obtaining O&M final signoff.
- Additional time was required for PG&E to review the third-party report on the protective devices testing and to 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 the first two 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 was completed in July and is now in the post-construction phase for completion of remaining minor outstanding items.

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Project Profile – Plant Instrument Air System Upgrade

The RWF's pneumatic operations and valve and instrument controls utilize a high-pressure instrument air supply system. The system is comprised of three water-cooled air compressors located in the basement of the Secondary Blower Building. This below-ground location makes the system vulnerable to flooding and power loss. Additionally, the system's cooling water will become unavailable once the Cogeneration Facility Project is commissioned in the next few years.

The project will replace the existing water-cooled air compressors with three new air-cooled air compressors in an above-ground facility location, shown in Figure 4. The new facility will eliminate dependency on an external cooling source and being above-ground will greatly reduce the impact of flooding on their operation, thereby improving overall system reliability. The new system will also be able to be powered from either the existing electrical distribution center in the Secondary Blower Building or the electrical distribution center in the Sludge Control Building.

Figure 3: Partially Constructed Building

The project is being delivered using the traditional design-bid-build approach. The project scope was fully defined in February 2015, with the 100 percent design completed by CH2M Hill in April 2016. Council awarded the construction contract to Anderson Pacific Engineering Construction, Inc. in August 2016 with total project costs of $4.6 million.

The project is currently under construction. The floor and concrete walls for the new compressor building are completed (see Figure 3); work on the roof will begin next. This project is expected to achieve Beneficial Use by April 2018.

Figure 4: Project Location

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Regional Wastewater Facility Treatment – Current Treatment Process Flow Diagram

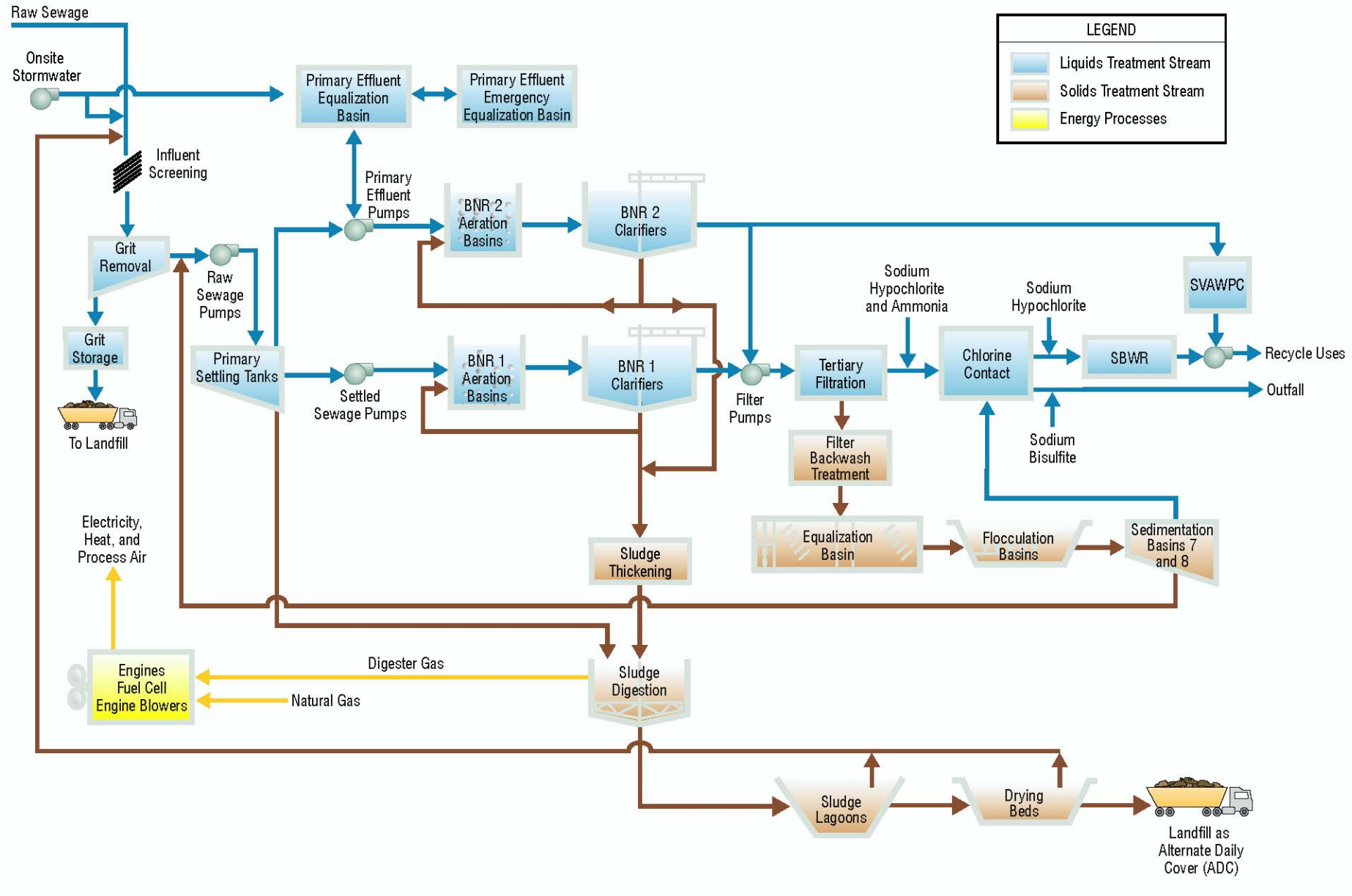


Figure 5 – Current Treatment Process Flow Diagram

Regional Wastewater Facility Treatment – Proposed Treatment Process Flow Diagram

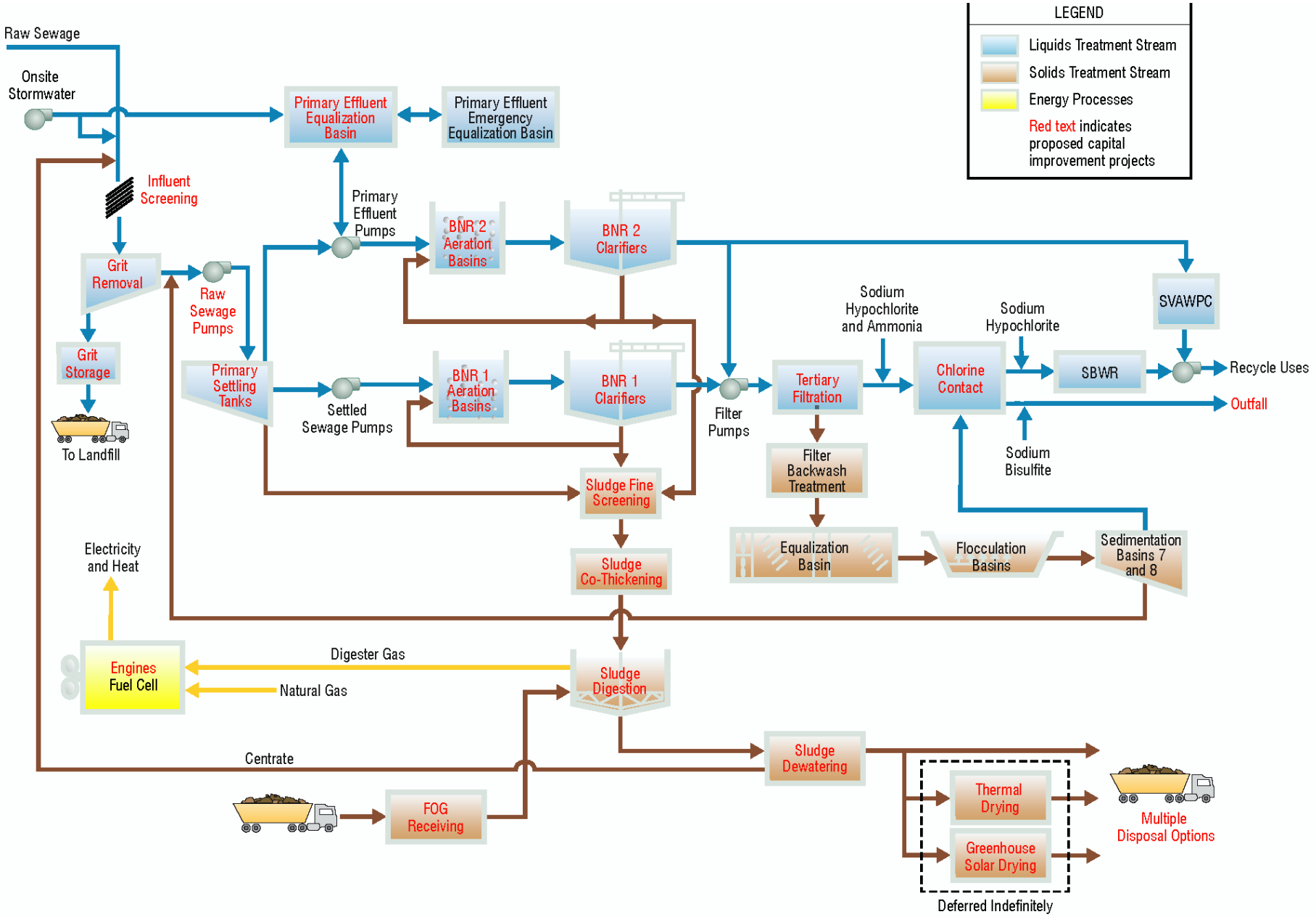


Figure 6 – Proposed Treatment Process Flow Diagram

Active Construction Projects – Aerial Plan

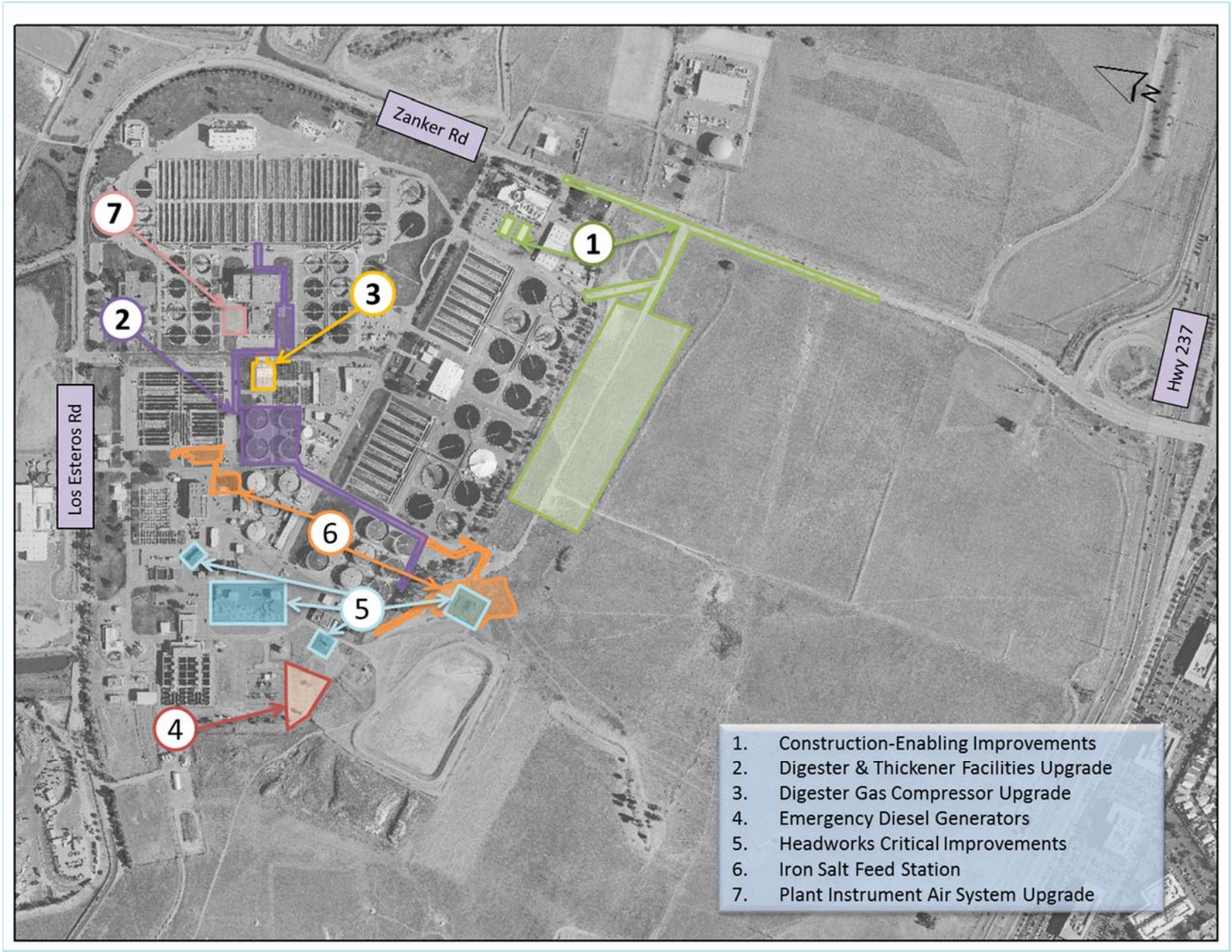


Figure 7 – Active Construction Projects

COUNCIL AGENDA: 11/28/17
ITEM:

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow
Barry Ng
Jennifer A. Maguire

SUBJECT: SEE BELOW

DATE: November 2, 2017

Approved Julie E. Myers Date 11/2/17

SUBJECT: CONSTRUCTION CONTINGENCY INCREASE FOR THE 7382-DIGESTER AND THICKENER FACILITIES UPGRADE PROJECT AT THE SAN JOSE-SANTA CLARA REGIONAL WASTEWATER FACILITY

RECOMMENDATION

(a) Approve a $15,000,000 increase to the construction contingency amount of $13,490,625 for a revised total contingency amount of $28,490,625 and increasing the contract not-to-exceed amount from $121,415,625 to a total revised contract amount not-to-exceed $136,415,625 for the 7382 – Digester and Thickener Facilities Upgrade Project.

(b) Adopt the following 2017-2018 Appropriation Ordinance Amendments in the San José- Santa Clara Treatment Plant Capital Fund:
   (1) Decrease the Yard Piping and Road Improvements appropriation to the Environmental Services Department by $8,000,000;
   (2) Decrease the Aeration Tanks and Blower Rehabilitation appropriation to the Environmental Services Department by $7,000,000; and
   (3) Increase the Digester and Thickener Facilities Upgrade appropriation to the Environmental Services Department by $15,000,000.

OUTCOME

Approval of the recommended construction contingency increase will provide funding for the significant unanticipated work necessary for the proper completion of the 7382-Digester and Thickener Facilities Upgrade Project (Project) at the San José-Santa Clara Regional Wastewater Facility[1] (RWF).

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

EXECUTIVE SUMMARY

In May 2016, the City Council awarded a contract for the construction of the 7382-Digester and Thickener Facilities Upgrade Project for $107,925,000, with a construction contingency of $13,490,625. Construction began in July 2016 and is approximately 35% complete. The Project has experienced significant construction challenges and is currently behind schedule. Delays occurred in most of the categories shown in the table below, however many of them can be considered concurrent. The total final negotiated delay impact to date is 140 working days. Approved and pending Contract Change Orders (CCOs) to address these challenges have consumed approximately $11.59 million (86%) of the approved contingency. The primary causes of delay and contingency use to date are:

Cause of Contract Change	Approved and Pending CCOs to Date
Underground utility conflicts and unforeseen conditions	$2,506,434
Design changes	$2,583,313
Unexpected regulatory requirements	$1,472,171
Deteriorated pipe conditions	$3,583,320
Seismic design issues	$1,000,000
Hazardous materials mitigation	$445,279
TOTAL	$11,590,517

This memorandum describes the challenges and delays that have been experienced on the Project to date, and the much higher than expected use of contingency at this early stage of construction. Major issues have arisen that will delay the project further and add significant costs to complete the project so that the improvements can function properly. The most significant unforeseen issues are deteriorated pipe conditions, seismic design issues, and hazardous materials mitigation. The deteriorated pipe repairs will require over $14 million in additional funding. Evaluation of the seismic design and hazardous materials issues is underway and will require a future project contingency increase to resolve once the details are developed.

Approval of the recommended contingency increase will allow the project to proceed towards completion in the summer of 2020. The restored contingency balance will provide the funds necessary to complete known changes to the work and future unforeseen project conditions, except for future costs related to seismic design and hazardous materials mitigation issues that are currently being investigated. Staff will return to the Treatment Plant Advisory Committee (TPAC) and the City Council within six months with recommendations for further contingency increases related to seismic design work and hazardous materials mitigation.

BACKGROUND

On May 24, 2016 (Item 7.1), the City Council awarded a construction contract for the 7382-Digester and Thickener Facilities Upgrade Project (Project) to the low bidder, Walsh Construction Company II, LLC, ("Contractor") in the amount of $107,925,000 and approved a 12.5% construction contingency in the amount of $13,490,625. Key construction elements included in this construction contract are rehabilitation of four digesters to operate as a Temperature-Phased Anaerobic Digestion (TPAD), six Dissolved Air Flotation Thickener (DAFT) units to operate as co-thickening units, a new primary sludge screening facility, two new electrical buildings and associated electrical equipment, an external elevated gas piping system and gas flare system, and miscellaneous civil works. See Attachment A for a project site map.

The City issued the Notice to Proceed for construction on June 22, 2016 with an original contract duration of 790 working days. Construction is approximately 35% complete to date and includes the installation of 79 concrete footings and columns for the elevated pipe rack, demolition of DAFT tank exterior walls and internal equipment, utility relocation and connections, digester tank cleaning, and removal of the 100-foot diameter tank roofs, original post-tensioned cables and exterior concrete. New concrete work includes floor and drains in the bottom of the tanks, column supports for the new roof, foundation and walls for the new fine-screening building, and relocating/removing facilities in the tunnels to make way for new pipe installation.

A 15% construction contingency is typically set aside for all RWF projects to address unknown site conditions and other unanticipated issues. Since this project was over $100 million and bids were significantly over the Engineer's Estimate, staff proposed a 12.5% construction contingency to manage risk while managing the project budget. As construction has progressed on this complex and widespread project, it has become clear that the construction contingency is not adequate.

A total of 24 change orders have been issued to date, totaling $6,395,551 for various items of work. This represents approximately 47% of the approved contingency amount of $13,490,625. Additional change orders totaling $5,194,966, or 39% of the approved contingency, are pending or under review. These change orders are related to unforeseen site conditions, including utility conflicts, removal of additional hazardous materials, compliance with additional environmental requirements, and several significant design changes that were not part of the original scope of the Project. Attachment B summarizes the paid and pending change orders to date.

ANALYSIS

This Project is one of the most complex and extensive capital projects in the RWF's ten-year capital program, spreading over the majority of the RWF operational area, including work in underground tunnels and galleries, connections to major process piping and underground structures. All construction is being completed while maintaining all operational aspects of the facility and complying with all environmental permits.

The Project has faced numerous unforeseen challenges since the beginning of construction. To date, the Project is delayed by 140 days and has used approximately 86% of the approved contingency through approved or pending change orders (See Attachment B). Many of these issues are typical of large, complex construction projects, however the magnitude of these issues on this Project have consumed a disproportionate amount of contingency at this early stage of construction.

Underground Utility Conflicts and Unforeseen Conditions

Upgrades to the existing facility and location of new structures were based on available record drawings and information at the time of design. Over 100 potholes (excavations performed to verify buried utility locations) were completed during the design phase to try to confirm the location of major utilities. However, once excavation started, it became apparent that the number and types of buried utilities far exceeded what was shown on existing record drawings and what was verified in the field. These findings are not limited to one area, but common across the entire Project site. In many cases City staff and the Contractor had to resolve these conflicts by confirming and removing abandoned pipes and relocating active pipes and duct banks. In other cases, the design consultant, Brown and Caldwell, had to redesign portions of the Project to avoid some of the more critical utilities and large electrical duct banks.

Unforeseen conditions are often encountered during construction, usually requiring a design change from what was specified in the contract documents. A partial list of the unforeseen conditions encountered on this Project include:

- Uneven floors in the digester tanks, requiring adjustment of the columns and mixing equipment;
- Tanks that were believed to be round, were slightly misshapen, requiring modifications to the circular roof design;
- Rebar congestion that resulted in rerouting of conduit and anchors;
- A concrete ledge around the tops of the digester tanks, that required sawcutting to accommodate the numerous seismic cables;
- Specified equipment that did not fit the actual field conditions, and required modifications to work properly; and
- Unexpected steel mesh in the digester tank exterior, requiring significant extra effort to remove.

This additional work has resulted in approximately $2.5 million in executed and pending change orders. Excavation and demolition for the Project is largely complete, so the cost to manage future unknowns related to underground utilities and unforeseen conditions are anticipated to not exceed $1,000,000.

Design Changes

As construction has progressed there have been multiple areas where the original design has required modification. These changes are due primarily due to insufficient design details

necessary to construct the work, incompatible equipment specifications, improper equipment sizing, conflicts with existing structures/utilities, and incomplete process and instrumentation diagrams. Design changes are a normal occurrence in all projects; however, changes due to design errors and omissions have occurred at a higher rate than expected for this stage of construction. Changes to date amount to $2.58 million. Future design changes, not related to the seismic issue described below, are estimated to not exceed $2.0 million.

Unexpected Regulatory Requirements

Another major unforeseen situation on the Project was the approach to the removal of the gas piping from the tunnels. Initially, gas bypass work was planned to be constructed with minimal temporary piping, and carried out with controlled atmospheric venting of digester gas. This was understood to be in compliance with the RWF's existing air permit from the Bay Area Air Quality Management District (BAAQMD), and current best-practice. Work was initially planned to be completed on January 27, 2017. However, negotiations with the BAAQMD resulted in the agency making a different interpretation of the permit conditions and instructing the City to implement a system that sent all gas through the existing permitted abatement devices. This new approach involved building a complete gas bypass system that connected all functional digesters to the existing flare to avoid venting of gas. This solution has proven difficult to implement due to the size and complexity of the existing system, which must be kept on-line while the bypass work is taking place. The new system has been designed and authorized under a change order at the additional cost of over $1.4 million.

Delay Damages

The combination of issues described above has significantly delayed the Project. The City completed a time impact analysis (TIA), reviewing all activities and their impact on the critical path for the Project. As a result, City staff and the Contractor have agreed that the impact to the project schedule through the end of September is equivalent to 140 working days. This 140-day delay may be considered compensable under the contract since the Contractor could not have reasonably foreseen the issues encountered in the project that have led to delay. The City and Contractor are currently negotiating the amount which is estimated to be approximately $3.2 million. It is considered a best-practice to negotiate and settle undisputed delays and associated costs at the time they are identified. Waiting until the end of the project often leads to disagreements about how and when the delays occurred, and who is at fault. This often results in claims and litigation. Staff recommends a $3.2 million increase to the Project contingency to pay for delay damages incurred to date and avoid future claims associated with those delays.

The range of issues listed above are typical of most large projects, especially when it involves rehabilitation work at an old facility. The City Council-approved contingency was set aside to manage these challenges as they arise, however this Project has encountered an inordinate amount of challenges requiring a higher than expected use of the Project contingency in the early stages of construction.

The issues described below, however, are not typical of large projects and will have a major impact on the overall Project budget and schedule. By far the most significant issues encountered to date are due to deteriorated pipe conditions, seismic design issues, and hazardous material mitigation that were unforeseen at the time of award of the construction contract.

Deteriorated Pipe Conditions

In November 2016, the Contractor completed a visual inspection of a 78-inch primary effluent pipe in preparation to make a necessary connection to this line. During the inspection, the pipe and adjacent junction structure were found to have been severely corroded due to hydrogen sulfide gas eating away at the inside top of the concrete pipe and disintegrating the rebar. This situation raised serious concerns about its condition and of the other adjacent pipes (a 96-inch and 87-inch by 136-inch elliptical pipes). In February 2017, the Contractor performed a detailed inspection of nearly 1,200 linear feet of pipe using laser scanning and closed-circuit TV. Examination of the pipes showed they indeed were in poor to severely corroded condition (See Attachment C).

The Project must make a connection to these pipes to bring the rehabilitated digesters on line. It is also important to note that the Contractor cannot proceed safely with construction of other aspects of the Project due to the risk of damage to these pipes and junction structure unless repairs are made to them first. At some point, the Project will effectively be on hold until this issue is addressed. Given the timing and the criticality of the repairs, staff began considering alternatives to repair these structures, including an analysis of a range of design lives and associated costs. Short term solutions included providing a concrete cap over the pipe or a welded steel pipe liner that would allow for minimal repairs to be completed within the Project and have the final repairs completed by a future project. Longer term repairs included replacement of structures or structural slip-lining.

Since there is no redundant system to carry this flow, any repair to the pipes and structures requires that they be taken out of service and bypassed. A bypass pumping system is needed to send the flow, normally conveyed by the 78" pipe, directly to the aeration tanks. The bypass system itself is a major undertaking, as it needs to be sized to manage 100 million gallons per day (MGD), or nearly 60% of the rated flow capacity through the RWF. To minimize the impacts to operations and to mitigate risks associated with the failure of the pumping system, construction activities and the associated bypass are limited to the dry weather period (May to October).

Typically, bypass pumping equipment would be rented for the duration of construction and would usually run on diesel. City staff evaluated options for renting pumps and piping to provide the required 100 MGD capacity and it was found to be nearly equivalent to the cost of purchasing the equipment. The estimated purchase price of this bypass system is $5 million. Purchasing the system would be adequate to provide bypass capacity to rehabilitate three additional sections of large pipes (two segments of 96-inch and 87-inch by 136-inch elliptical pipe) which are planned to be done as part of a future project, potentially saving the City up to $3 million by avoiding future bypass rentals.

Because both the short-term and long-term repairs require a complete bypass system, staff concluded that the long-term repairs would provide the best value since the bypass system necessary to repair the 78-inch pipe and junction structure would only be required once. The pipe repair work is estimated to cost $9.4 million. Given the significance of the damage to the 78-inch pipe and junction structure, the immediate need to connect to these facilities and the associated costs, staff recommends increasing the construction contingency for the Project to complete the repairs in a timely manner. All bypass materials and equipment need to be on-site and installed by April 2018, in order to test and fine-tune the operation and promptly start repairs by May 2018 in order to complete all work within the upcoming dry season.

Current estimates for the bypass pumping system and pipe repairs are approximately $14.3 million. To date, a total of $1.4 million has been issued via change order to allow for the procurement of long lead-time items, such as concrete piping and electrical equipment. An additional $2.2 million to purchase pumps and begin fabrication of the bypass system is under negotiation with the contractor and is pending approval. An additional $10.7 million (for a total of $14.3 million) is required to complete the demolition and replacement of the deteriorated pipe and the junction structure. The Contractor is very concerned about the potential for further damage to adjacent pipes, or that the bypass system somehow causes damage to other RWF facilities. The $14.3 million includes approximately $1 million in risk pricing for this work. Given the uncertain condition of the underground utilities, staff agrees that it is prudent to compensate the Contractor to assume this risk.

Repair of this line was originally planned as a first phase of a separate capital project, Yard Piping and Road Improvements Project (Yard Piping), with construction scheduled to begin 2020. Funding for this bypass and repair work is proposed to be funded primarily from the current Yard Piping appropriation as discussed in the Cost Summary/Implications section below. In the event the City Council does not approve the recommendations contained in this memorandum, the purchased materials will be stored for use at a later date when the Yard Piping design-builder has been procured.

Issues with Unknown Impacts

Seismic Design Issues

The second most significant challenge to the Project has been the identification of structural issues related to seismic design of the digester tanks. The existing tank walls are not adequately connected to the foundation to resist seismic uplift forces as required by current building codes. The issue and resolution options are currently being evaluated to understand the implications on the timing, cost, and functionality of the Project. Although options are currently being evaluated as the facts are developing, staff has determined that these structural changes are the result of inadequate design. The design consultant is in the process of developing a solution that can be implemented with the minimum disruption to the Project, however the cost and schedule delays will be significant.

The full impact of these changes is unknown at this time. To date, $400,000 has been approved through a change order to temporarily wrap the post-tensioning cables on the digester tanks to prevent degradation due to harmful ultraviolet light. Another $600,000 is pending approval to procure and install stress plates at new tank wall penetrations. This memorandum requests the addition of $1 million to restore the contingency used to address the initial costs of this change. Within the next six months, once the full costs and delay impacts are known, staff anticipates returning to the City Council with funding recommendations to address this issue.

Staff is in the process of identifying the necessary actions to resolve the design issues and discussing with the design consultant how associated costs will be determined. It is staff's position that responsibility for the design issues will reside with the design consultant, however, resolving the issues will likely take some time. Staff is tracking all costs associated with the design issues and staff will bring forward to the City Council recommendations regarding the responsibility for these costs.

Hazardous Materials Mitigation

In 2014, a hazardous materials survey was performed during the planning phase of the Project with the purpose of identifying potentially hazardous materials that could be disturbed during construction. The survey was completed in accordance with the requirements of Cal/OSHA and BAAQMD. The results of the survey were incorporated in the contract documents and the handling, removal and disposal of these materials was included in the bid pricing submitted by the contractor. The survey identified the presence of asbestos in piping insulation, gaskets and roof sealants, lead-containing paint, and Polychlorinated Biphenyls (PCBs) in the caulk outside the base of the digester tanks. As construction progressed, lead paint and PCBs were found in additional areas outside the scope of the hazardous materials survey that were only accessible after construction began. Approximately $445,000 has been approved in change orders to date to address hazardous materials issues.

Staff is currently in discussions with the U.S. Environmental Protection Agency to develop a PCB management strategy for the rest of the Project. Additional testing and removal of PCBs will be required as the Project progresses, which will likely cause delays and additional removal and disposal costs. Additional remediation costs are expected and staff will return to Council with a strategy for funding and implementing the work.

Lessons Learned

The quantity and scale of the unforeseen issues on this Project have created serious challenges to the Project team and the Contractor. One way to minimize these issues in the future is to improve the existing utility mapping and record drawings of underground facilities at the RWF. The RWF-GIS group is documenting all utilities exposed by the Contractor to help ensure that the locations of utilities are accurately being reflected in their maps. Upon completion of this Project, all record drawings and "as-builts" will be transmitted to the City in electronic format for easy use on other projects.

Another way to mitigate unforeseen issues is to perform more detailed condition assessments of facilities that may be impacted by future construction. This will require significant analysis and process shutdowns, well in advance of construction, however the investment in time and effort will in all likelihood far outweigh the potential cost and schedule impacts of discovering these issues during construction. Projects in the planning phase are currently re-evaluating the scope of condition assessment work to ensure enough effort is being done to evaluate the impacted facilities.

Recommended Contingency Increase

The combination of issues described above represent a total of approximately $15 million of extra work that was not anticipated at the time of award of the construction contract. The full extent of the seismic design issue as well as PCB remediation work are unknown at this time and will be brought forward for City Council consideration once they are known. The criticality of this Project requires that the additional work identified at this time be addressed immediately. The total amount of contingency increase requested in this memorandum is summarized in the following Table 1:

Table 1 – Approved/Pending Change Orders and Forecasted Needs

Reason for Change Orders	Approved and Pending Change Orders	Forecasted Need	Total
Underground utility conflicts, unforeseen conditions	$2,506,434	$1,000,000	$3,506,434
Design changes	2,583,313	2,000,000	4,583,313
Unexpected regulatory requirements	1,472,171	0	1,472,171
Delay Damages	0	3,200,000	3,200,000
Deteriorated pipe conditions	3,583,320	10,700,000	14,283,320
Seismic design issues (partial funding)*	1,000,000	TBD	1,000,000
Hazardous materials (partial funding)*	445,279	TBD	445,279
Total	**$11,590,517**	**$16,900,000**	**$28,490,517**
Approved Contingency			**$13,490,625**
Additional Contingency Required			**$14,999,892**

* Final costs for hazardous materials and seismic design issues are not known at this time.

EVALUATION AND FOLLOW-UP

The final cost and delay impacts of the seismic design changes and hazardous material remediation described above are unknown at this time. Staff anticipates returning to the City Council with funding recommendations for these costs once they are known, likely within the next six months.

A progress report on this and other RWF capital projects is presented on a semiannual basis to the Transportation and Environment Committee, most recently on October 2, 2017. Monthly progress reports of the RWF Capital Improvement Program (CIP) are submitted to the Treatment Plant Advisory Committee (TPAC) and posted on the City's website.

POLICY ALTERNATIVES

Alternative 1: Bid the pipe repair work as a separate project.
Pros: Potentially gets better bids for the work
Cons: Delays the work until a complete design package can be developed, bids solicited and received, and mobilization of the contractor. Also creates significant coordination and interface challenges with the existing contract.
Reason for not recommending: The 78-inch SES line repairs are critical since the deterioration of the pipe places it at risk of imminent failure that could result in upwards of 100 MGD of primary effluent spilling into the San Francisco Bay. There is no time to put a complete bid package together without significantly delaying the current contract, at significant additional cost. There is also the logistical concern of having multiple contractors working on the same facilities at the same time; the likelihood of interference, safety concerns and conflicts further delaying the completion of the work and adding cost. Staff recognizes that contemplating a significant amount of work under a change order scenario may not result in the best pricing of the work, however there is little choice but to work with the existing contractor to perform the work quickly and efficiently, thus keeping the delays to a minimum and driving the Project to completion. Additionally, the multitude of other issues, especially the seismic design and hazardous materials issues, would not be adequately addressed, jeopardizing the ability of the Project to be completed and function as intended.

PUBLIC OUTREACH

This memorandum will be posted on the City's Council Agenda website for the November 28, 2017, City Council meeting.

COORDINATION

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

COMMISSION RECOMMENDATION/INPUT

This item is scheduled to be heard at the November 9, 2017, TPAC meeting. A supplemental memorandum with the committee's recommendation will be included in an amended November 28, 2017, City Council meeting agenda.

FISCAL/POLICY ALIGNMENT

This Project is consistent with the City Council-approved focus on improving wastewater treatment efficiency, protecting vital core services, and meeting air permit discharge requirements.

COST SUMMARY/IMPLICATIONS

1. AMOUNT OF RECOMMENDATION: $15,000,000

2. COST OF CONTRACT

Original Construction Contract Amount	$107,925,000
Original Contingency (12.5%)	$13,490,625
Original Total Contract Amount	**$121,415,625**
Contingency Increase (13.9%)	$15,000,000
Total Contract Amount	**$136,415,625**

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

4. PROJECT COST ALLOCATION: In accordance with the recommendations set forth in the Capital Project Cost Allocations Technical Memorandum (Carollo Engineers, March 2016), the cost for the Project is allocated 40 percent to biochemical oxygen demand (BOD) and 60 percent to total suspended solids (TSS). The cost for the Yard Piping Project is allocated between the four billable parameters relative to a rolling weighted average distribution of all RWF assets. The cost for the Blower Improvements Project is allocated 20 percent to flow, 60 percent to BOD, and 20 percent to ammonia (NH_3). This results in revised cost allocations for San José, Santa Clara, and the Tributary Agencies as outlined in the table below.

Agency Name	Original Cost Allocation	Updated Cost Allocation	Change
City of San José	9,994,860	10,398,000	403,140
City of Santa Clara	2,335,500	2,429,700	94,200
West Valley Sanitation District	927,190	820,500	(106,690)
City of Milpitas	606,290	483,900	(122,390)
Cupertino Sanitation District	1,024,270	783,600	(240,670)
County Sanitation District 2-3	74,710	59,400	(15,310)
Burbank Sanitary District	37,180	24,9000	(12,280)
Total	**15,000,000**	**15,000,000**	**-**

The updated cost allocations for the Project result in an increase of approximately $403,060 to the proportional share of Project costs for San José and approximately $94,200 for Santa Clara, with a corresponding decrease in the proportional share of Project costs for the

Tributary Agencies. The 2017-2018 Adopted Capital Budget has sufficient Ending Fund Balance to offset the expected decrease in revenue to support the recommended cost allocation adjustments for San José. Adjustments to the 2017-2018 budgetary revenue contributions may be brought forward to the City Council at a future date based on these updated cost allocations.

5. FISCAL IMPACT: Funding in the Project appropriation in 2017-2018 is insufficient to increase the contingency. Budget actions are recommended in this memorandum to increase the total appropriation budget by $15,000,000. To offset this increase and minimize impacts to ratepayers of San José and Santa Clara, as well as the tributary agencies, staff recommends decreasing existing project appropriations as outlined below:
   - Yard Piping and Road Improvements ($8,000,000): Repair of the 78-inch pipe was originally scoped and programmed as part of the Yard Piping project, so the scope of this project will be decreased, as this work will now be done under the Digester Project.
   - Aeration Tanks and Blower Rehabilitation ($7,000,000): Construction award for the Blower Improvements Project is now anticipated in early 2018-2019. New funds will need to be programmed for these costs in the 2019-2023 Capital Improvement Program (CIP), and are therefore subject to appropriation in that process.

   In developing the 2019-2023 Proposed CIP, staff will explore options to potentially defer one or more projects to balance the overall five-year capital budget.

BUDGET REFERENCE

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

Fund #	Appn #	Appn Name	Current Total Appn	Rec. Budget Action	2017-2018 Adopted Capital Budget (Page)	Last Budget Action (Date, Ord. No.)
512	4127	Digester and Thickener Facilities Upgrade	$1,861,000	$15,000,000	282	6/20/2017, 29962
512	7396	Yard Piping and Road Improvements	$11,716,000	($8,000,000)	299	6/20/2017, 29962
512	7677	Aeration Tanks and Blower Rehabilitation	$40,222,000	($7,000,000)	280	6/20/2017, 29962

CEQA

San José-Santa Clara Regional Wastewater Facility Digester and Thickener Facilities Upgrade Project Mitigated Negative Declaration, File No. PP15-055.

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

/s/
BARRY NG
Director of Public Works

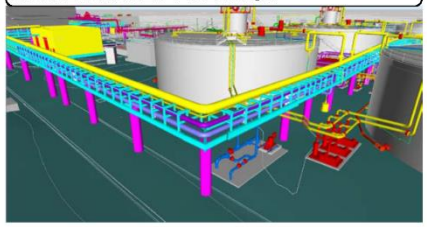
JENNIFER A. MAGUIRE
Senior Deputy City Manager/
Budget Director

Attachment A – Site Location Map
Attachment B – Table of Approved and Pending Change Orders
Attachment C – Photographs of pipe corrosion damage

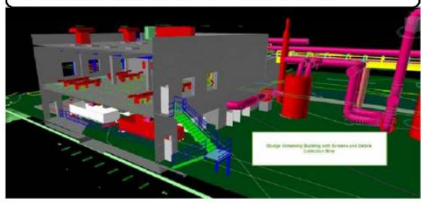
For questions, please contact Ashwini Kantak, Assistant Director, Environmental Services Department at (408) 975-2553.

Digester and Thickener Facilities Upgrade
Project Site Map

NEW ELEVATED PIPE RACK

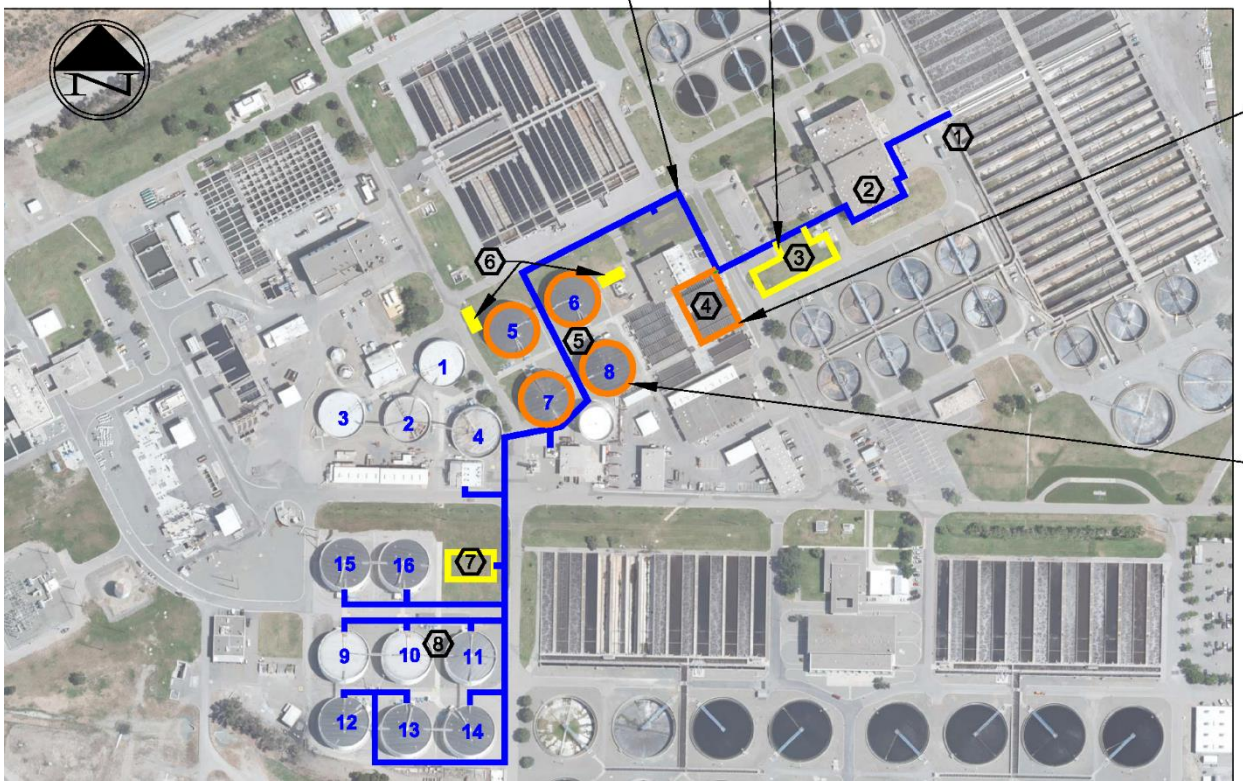


NEW SLUDGE SCREEN, ODOR CONTROL, STEAM CONVERTERS, AND POLYMER STORAGE/BLENDING FACILITIES

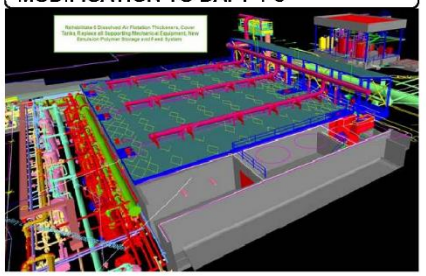


PROJECT SITE AREAS

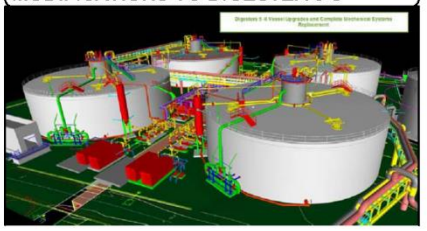
1. TIE-IN TO EXISTING LINES
2. SECONDARY BLOWER BUILDING
3. NEW SLUDGE SCREENING FACILITY
4. DAFT AND DAFT GALLERY
5. DIGESTER 5-8 AREA
6. MOTOR CONTROL CENTER
7. NEW GAS FLARE
8. REMOTE DIGESTER (9-16)



MODIFICATION TO DAFT 1-6



MODIFICATIONS TO DIGESTER 5-8



ATTACHMENT A

Digester and Thickener Facilities Upgrade

Approved and Pending Change Orders to Date and Forecasted Needs

Reason for Change Orders	Approved Change Orders	Pending or Under Review	Forecasted Need	Total
Underground utility conflicts, unforeseen conditions	1,795,480	710,954	1,000,000	3,506,434
Design changes	1,282,621	1,300,692	2,000,000	4,583,313
Unexpected regulatory requirements	1,472,171	0	0	1,472,171
Delay Damages	0	0	3,200,000	3,200,000
Deteriorated pipe conditions	1,400,000	2,183,320	10,700,000	14,283,320
Seismic design issues	0	1,000,000	TBD	1,000,000
Hazardous materials	445,279	0	TBD	445,279
Total	6,395,551	5,194,966	16,900,000	28,490,517
Approved Contingency				13,490,625
Additional Contingency Required				14,999,892

ATTACHMENT B

Digester and Thickener Facilities Upgrade
78” Pipe Corrosion and Structural Damage

ATTACHMENT C

COUNCIL AGENDA: 11/14/17
FILE: 17-308
ITEM:

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow

SUBJECT: **SEE BELOW**

DATE: October 23, 2017

Approved [signature] Date 11-2-17

SUBJECT: REPORT ON BIDS AND AWARD OF CONTRACT FOR 8687 – REPAIRS OF WATER SERVICES AND MAINS: 2017

RECOMMENDATION

1. Report on bids and award of contract for the 8687 - Repairs of Water Services and Mains: 2017 project to the lowest responsive bidder, San Jose Water Company, for the initial term of November 2017 through November 2020, in an amount not to exceed $1,617,407.

2. Adopt a resolution authorizing the City Manager to exercise one option to extend the contract for an additional one-year term after the expiration of the initial term in an amount not to exceed $539,136, and a second option to extend the term of the contract for an additional one-year term after the first option year in an amount not to exceed $539,136, for a total maximum contract amount of $2,695,678 if both option years are exercised.

OUTCOME

The award of the contract for the 8687 - Repairs of Water Services and Mains: 2017 project will enable the repair of existing water mains and services, which will provide a reliable source of water to San José Municipal Water System customers.

BACKGROUND

The San José Municipal Water System (Muni Water) is currently using the "Repairs and Installation of Water Mains and Services: 2013" contract to perform: 1) needed repairs on existing water infrastructure, such as repair of a water main break: and 2) the new installation of small services and appurtenances to the water system, such as the installation of a water service lateral or fire hydrant. The current contract, which provides that all repairs and new installations shall be made by one contractor for the duration of the contract, will expire in November 2017.

To accommodate work after expiration of the current contract, staff elected to separate the repair work from the installation work into two separate contracts. The work was separated into two different contracts to encourage bids from contractors who may not have the capacity and/or capability to accommodate both repair and new installation work.

The repair work under this contract consists of repairing water mains, service laterals, hydrants, and other existing infrastructure, which includes furnishing and repairing all pipes, valves, fittings, and other appurtenances as necessary to complete repairs. The contractor will be required to respond to emergency repairs (main breaks, etc.) within two hours and to effect permanent repairs within a designated time frame. The contract will be used on an as-needed basis, and the contractor will be paid based on the actual labor, equipment, and material costs of the work completed as calculated based on the bid unit prices, up to the maximum contract amount.

ANALYSIS

The Project was advertised for bid and a total of one (1) bid were received and opened on Thursday, September 14, 2017 with the following results:

Contractor	City	Bid Amount	Variance Over/(Under)	
			Amount	Percent
Engineer's Estimate	--	**$1,552,507**	--	--
San Jose Water Company	San José, CA	$1,617,407	$64,900	4.2%

Staff determined that the low bid submitted by San Jose Water Company contained an irregularity. The irregularity was set forth in line item #15 of the City's bid document entitled "Schedule of Quantities." Line item #15 was labeled "Emergency Repair Response Labor Mark-up for items #1 - #14." Items #1-#14 include line items for labor, such as foreperson and equipment operator.

With respect to line item #15 of the Schedule of Quantities, bidders were instructed to: (1) write down the percent markup in the unit/quantity column, which represented the percent mark-up value as bid by the consultant; and (2) then multiply the percent markup by $450,000. The percent markup multiplied by $450,000 total was then supposed to be shown in the bid unit

price/total column, to provide an estimation of the labor mark-up to be paid based on an estimated labor cost of $450,000; the actual amount to be paid for the labor mark-up under the contract will depend on the actual labor costs incurred by the contractor.

San Jose Water Company wrote down a 2% markup in the unit/quantity column. However, rather than multiplying the 2% times $450,000 - which would have resulted in San Jose Water Company inserting $9,000 in the unit/quantity column - San Jose Water Company multiplied 2% times the total dollar amount that they bid for line items #1-#14 ($527,017) and inserted the resulting $10,540.34 in the unit/quantity column.

Although San Jose Water Company's bid contains an irregularity created by an incorrect calculation, staff has determined that the irregularity is waivable under Section 2-1.06 of the City's Standard Specifications because San Jose Water Company's failure to use the $450,000 figure does not impact the actual cost San Jose Water Company will charge the City to perform any actual emergency repair work. San Jose Water Company bid a 2% markup on the cost of labor and that is the markup the City will pay San Jose Water Company for actual work performed.

The contract is for an initial three-year term (2017-2020) with a maximum compensation of $1,617,407. The first year (2017-2018) amount of $539,136 is already included in the 2017-2018 Adopted Capital Budget. For the remaining two years of the original term, $539,136 will be incorporated each year into the annual budget process for that year. At the end of the initial three-year term, the City will have the option of extending the contract for an additional one-year period and then a second option to extend the contract for an additional one-year period following the first extension. Each option year will be subject to the same terms and conditions of the initial term and subject to appropriation of funds, except that for each option year an adjustment can be made to the total contract compensation to add an amount not to exceed $539,136 subject to available funding in approved Capital and Operating Budgets. Staff is requesting that the City Council adopt a resolution delegating authority to the City Manager to exercise each option. If the City elects to extend the term of the contract for either one or both option years, the term extension(s) and maximum compensation will be documented in a contract change order.

The three-year initial term will provide a definite period of service continuity to customers and a potential savings in administrative costs as compared to the administrative costs of annually soliciting and awarding a new contract. The potential option years will allow staff to consider the bidding climate, budget availability, and contract scope of services to determine whether to continue with the current contract and its terms, or to prepare a new contract for bid.

Staff recommends that the City Council award the contract to the low bidder, San Jose Water Company, whose bid has been reviewed, analyzed, and found acceptable. San Jose Water Company is a corporation organized under the laws of the State of New Jersey, and has the appropriate contractor's license as required in the Project Specifications.

EVALUATION AND FOLLOW-UP

The project is currently within budget and on schedule. No additional follow-up actions with the City Council are expected at this time.

PUBLIC OUTREACH

To solicit contractors, this project was advertised in the *San José Post Record* and the complete bid package and project information was made available on *BidSync*. This memo will be posted to the City's website for the November 14, 2017 City Council meeting.

COORDINATION

This project has 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 November 9, 2017 Treatment Plant Advisory Committee (TPAC) meeting. A supplemental memo with the committee's recommendation will be included in an amended November 14, 2017 City Council meeting agenda.

FISCAL/POLICY ALIGNMENT

This recommendation meets the general principles of the 2017 Mayor's June Budge Message of providing essential public services while valuing financial sustainability and cost recovery.

COST SUMMARY/IMPLICATIONS

1. AMOUNT OF RECOMMENDATION: $1,617,407

2. COST ELEMENTS OF CONTRACT:

Project Delivery	$75,000
Construction	$1,617,407
TOTAL REMAINING PROJECT COSTS	$1,692,407

3. SOURCE OF FUNDING: 500 – Water Utility Capital Fund
515 – Water Utility Fund
513 – San José-Santa Clara Treatment Plant Operating Fund

4. FISCAL IMPACT: There are no cost implications to the General Fund as a result of this action.

BUDGET REFERENCE

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

Fund #	Appn #	Appn Name	Total Appn	Amt for Contract*	2017-2018 Adopted Budget Page	Last Budget Action (Date, Ord. No.)
500	5876	System Maintenance/ Repairs	$740,000	$389,136	Capital – 356	06/20/17 Ord No. 29962
513	0762	Non-Personal/ Equipment	$34,173,019	$100,000	Operating – 1037	06/20/17 Ord No. 29962
515	0762	Non-Personal/ Equipment	$32,952,516	$50,000	Operating – 1053	06/20/17 Ord No. 29962

*The total contract amount is for $1,617,407. However, $539,136 will be funded from existing appropriations in the 2017-2018 Adopted Capital and Operating Budgets. The remainder of the contract will be anticipated in the development of the 2018-2019 and 2019-2020 Capital and Operating Budget processes, subject to the appropriation of funds.

CEQA

Exempt, File No. PP17-050, CEQA Guidelines Section 15301, Existing Facilities; Section 15302 Replace or Reconstruction.

/s/
KERRIE ROMANOW
Director, Environmental Services

For questions, please contact Jeff Provenzano, Deputy Director, Environmental Services Department, at (408) 277-3288.

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: David Sykes

FROM: Kerrie Romanow
Barry Ng

SUBJECT: SEE BELOW

DATE: October 17, 2017

Approved D-D Sykes

Date 10/23/17

SUBJECT: APPROVAL OF EARLY WORK PACKAGE 2 FOR THE DESIGN AND CONSTRUCTION OF THE COGENERATION FACILITY AT THE SAN JOSE-SANTA CLARA REGIONAL WASTEWATER FACILITY

RECOMMENDATION

Approve the Early Work Package 2 (EWP 2) Amendment to the Design Build Contract (Contract) with CH2M HILL Engineers, Inc. (CH2M) for civil site preparation and foundation work for the Cogeneration Facility at the San José-Santa Clara Regional Wastewater Facility[1] (RWF) in an amount not to exceed $3,951,611 including a Design-Builder contingency in the amount of $223,676.

OUTCOME

City Manager's approval of the EWP 2 Amendment will allow for the civil site preparation and foundation construction work under the Contract for the Cogeneration Facility Project (Project). The early civil site work and foundation construction provide schedule certainty for these critical elements of the Project. In the event the City and CH2M are unable to agree on a Guaranteed Maximum Price (GMP) to complete the overall Project, the EWP 2 Amendment provides a concrete equipment pad where the engine generators may be delivered and securely stored until a different entity can complete the remainder of the project.

BACKGROUND

In 2012, the City completed an Energy Management Strategic Plan that assessed the RWF's existing and future power demands and condition of the existing energy systems. The study

[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.

identified existing, aging cogeneration equipment as a critical issue that would need to be addressed to maintain onsite production of a reliable supply of power and heat. In 2013, the City engaged the consulting firm Black & Veatch Corporation (Black & Veatch) to prepare the Cogeneration Facility Project Definition Report (PDR), which served as the guiding document for the development of a basis of design for the new Cogeneration Facility.

On October 7, 2014, the City Council adopted Resolution No. 77180, approving the use of the design-build project delivery method for the Cogeneration Facility pursuant to State Law. Staff recommended using the design-build delivery method to complete the Project because of the potential for expedited project delivery, improved project coordination, potential cost savings, design innovation and efficiencies, and single point of contracting responsibility.

On April 26, 2016, the City Council adopted Resolution No. 77729 and 77730 authorizing the Contract with CH2M in an amount not to exceed $5,656,000 for Preliminary Services, and authorizing the City Manager or his designee to negotiate and execute certain amendments and change orders related to the Contract, subject to budgetary constraints and appropriation of funds, including:

- Negotiate and execute a Definitive Contract Amendment to the Contract with CH2M with a GMP amount not to exceed $82,884,000 for the design-build work to be performed following the preliminary design services;

- Approve a Design-Build Contingency in the amount of $8,288,000; and

- Negotiate and execute separate agreements and/or amendments to the Contract to allow CH2M to proceed with discrete portions of the design-build work (i.e., Early Work Packages) prior to the City's execution of the Definitive Contract Amendment in a total amount not to exceed $30,000,000, which amounts will be subject to the not to exceed GMP.

The Contract is a GMP contract, meaning that the City will pay CH2M on a defined cost-reimbursable basis subject to a maximum limit (i.e., the GMP), above which the City is not obligated to pay for services that are not otherwise subject to reimbursement under the Contract. The Contract's structure is generally outlined below:

1. The Contract provides for a fixed fee for the Preliminary Services, which includes a 30% and 60% design submittal and CH2M's Definitive Contract Amendment proposal (as described below).

2. After submitting its 60% design, CH2M is obligated to make a good faith proposal to the City in the form of the Definitive Contract Amendment which will include: (1) a Base GMP for the Design-Build Price, including Early Work Packages; (2) a schedule for completion of the Design-Build Work; (3) the technical specifications and guaranteed

performance capabilities for the Facility, (4) the Transition Services and the fee to be charged therefore; (5) the insurance requirements for the Design-Build Work; and (6) amendment of other terms and conditions of the Contract necessary to accomplish the foregoing.

3. The Contract allows the parties to agree to separate agreements and/or amendments to the Contract to allow CH2M to proceed with discrete portions of the Design-Build Work ("Early Work Packages") prior to the City's execution of the Definitive Contract Amendment. Early Work Packages are expected to include: (1) procurement of the engine generators and gas treatment system (EWP 1 Amendment, as described below); (2) civil site preparation and foundation work (EWP 2); (3) design services to advance design from 60% to 100% (EWP 3).

4. If the parties reach agreement on the Definitive Contract Amendment, CH2M proceeds to final design and construction in accordance with the established Project schedule.

5. Should the parties fail to agree to the Definitive Contract Amendment, the City is under no obligation to proceed with any further work by CH2M, except as has been authorized by the Early Work Packages. The parties may, however, negotiate a separate agreement for CH2M to advance design to the 100% level so the City could solicit bids for the construction of the Project by a different entity.

On May 24, 2017, the City Manager approved EWP 1 Amendment to the Contract for procurement of engine generators and gas treatment equipment for the Project in an amount not to exceed $24,411,351, including a Design-Builder contingency in the amount of $966,084 and optional work in the amount of $762,045. The early procurement of engine generators and gas treatment system equipment provides price and schedule certainty for this critical, long-lead time equipment. The engine generators are currently being manufactured and are expected to arrive on site in April 2018.

ANALYSIS

CH2M is proceeding with design of the Project as part of Preliminary Services under the Contract. In consultation with City staff, CH2M led the process to develop a scope of work and pricing for the civil site preparation and foundation construction work for the Project. CH2M worked with their key subcontractor and teaming partner, C. Overaa & Co. (Overaa) to develop bid packages, obtain competitive bids from subcontractors and vendors, price work to be self-performed, and develop a cost model for this Early Work Package 2. Those efforts, and parallel design efforts under the Preliminary Services contract, resulted in a technical and cost submittal package for EWP 2 from CH2M, as required by the Design-Build Contract.

The EWP 2 technical and cost submittal from CH2M was reviewed by City staff and the City's Technical Support Services consultant, Black & Veatch, to assess the suitability of the proposed scope of work, evaluate the adequacy of the plans and specifications, and validate the proposed pricing in CH2M's cost model. The EWP 2 Amendment is priced as a GMP contract, meaning that the City will pay CH2M on a defined cost-reimbursable basis subject to a maximum limit (i.e., the GMP). The EWP 2 work will be covered by the City's Owner Controlled Insurance Program (OCIP) which was recently established for the RWF Capital Improvement Program (CIP).

Project Risks

The approval of the EWP 2 Amendment does come with some risk to the City. In the unlikely event the City and CH2M cannot agree to a GMP, and terminate the design-build contract for convenience, the City has the option to direct CH2M to complete the scope of work under EWP 2 Amendment. The decision on whether to complete the work under EWP 2 will be directly influenced by the City's decision regarding termination of EWP 1 for engine generators and gas treatment equipment.

For example, if the City decides to terminate the Design-Build Contract within the next few months, the City could elect to cancel the orders for the engine generators and gas purification system under EWP 1. In that case, the City would likely cancel EWP 2 work as well. If this were to occur, the City would be responsible for paying the compensation owed for design-build work performed as of the termination date plus reasonable costs incurred by CH2M for EWP 1 and EWP 2 as a result of the convenience termination.

If, however, the City decides to terminate the contract after the engines have been manufactured, the City would likely elect to complete the purchase of the equipment and transfer it to a new contractor to be procured later. In this instance, the City could decide to have CH2M complete the work under EWP 2, so that the concrete pad would be available for secure storage of the engine generators on-site until the project could be completed by a different entity.

To reiterate, it is unlikely that the City will terminate the agreement, but it is a possibility that has been factored into both the main Contract and EWP Amendments. Either of the termination options carries risk, and the EWP Amendments have been written to provide clarity, flexibility, and protection should either of these options be exercised. Staff believes that the EWP Amendments have been structured in a way to mitigate these risks to the extent possible. Of course, the overall goal of the project team is to remain on track, agree to an overall GMP, execute the Definitive Contract Amendment, and proceed to project completion.

The commencement of the foundation and underground work described in EWP 2 requires an Authority to Construct permit (ATC) from the Bay Area Air Quality Management District (BAAQMD). The ATC covers installation of the engine-generators and other emissions-generating equipment on the project. The permit application has been submitted, passed

preliminary review and is under final review by the BAAQMD. Staff will wait for the ATC to be issued before authorizing the commencement of construction work in EWP 2. Staff expects the ATC to be approved in the coming weeks.

EVALUATION AND FOLLOW-UP

The design effort has been on-going and CH2M has recently delivered updated 60% design documents. These are currently under review by staff. After submitting the 60% design, CH2M is obligated to make a good faith submittal to the City for a GMP to finalize the design and complete construction, commissioning and acceptance testing of the facility. This submittal is expected in November 2017. If the City accepts the submittal, the terms and conditions thereof would be incorporated into the Design-Build Contract through the Definitive Contract Amendment. If the parties are unable to reach agreement on the Definitive Contract Amendment, staff will return to City Council with a recommended course of action. This could include terminating the agreement with CH2M, completing the design, and bidding out the project. A progress report on this project will be made to the Transportation Environment Committee and the City Council on a semiannual basis. Monthly progress reports of the RWF CIP will also be submitted to the Treatment Plant Advisory Committee and posted on the City's website.

POLICY ALTERNATIVE

Alternative #1: Do not authorize Early Work Package 2 and wait to perform the work after the Project GMP and Definitive Contract Amendment have been negotiated.
Pros: Defers underground construction until design has been further developed.
Cons: Risks of not meeting completion date, potential cost increase due to market escalation, and potential increased costs for off-site storage of engine generators.
Reason for not recommending: The Project would not be able to take advantage of the significant schedule and cost benefits of early construction if this alternative were selected. Schedule maintenance is a major concern, and the engines authorized under EWP1 are currently being manufactured and are expected to arrive on site in April 2018. If the foundations are not completed under EWP2, the City will incur the added cost of $300,000 to offload the engines at a storage facility, pay monthly storage fees, then reload the engines and deliver them to the construction site when the foundations are ready, three months later. Also, existing cogeneration equipment at the RWF ranges from 20 to 60 years of age, and has been subject to breakdowns of increasing frequency and severity. This is made worse by delaying the completion of the Project. Finally, delaying the construction until after GMP will likely result in cost increases of nearly $350,000 per month due to construction cost escalation.

COORDINATION

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

FISCAL/POLICY ALIGNMENT

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

COST SUMMARY/IMPLICATIONS

The City will pay CH2M on a defined cost-reimbursable basis subject to a maximum limit (i.e., the GMP), above which the City is not obligated to pay for services that are not otherwise subject to reimbursement under the Contract. The EWP 2 Base GMP not to exceed price for the civil site preparation and foundation construction package is as follows:

Construction Subcontractor Costs	$ 2,819,105
Third Party Professional Services	$ 75,000
Design-Builder Labor & Materials	$ 197,486
Permitting and Permits	$ 25,000
Bonds & Insurance	$ 115,841
Subtotal: Design-Build Costs	$ 3,232,432
General Conditions Fee (7.7% of All Design-Build Costs)	$ 248,897
Design-Builder Fee (7.8% of Costs Excl. Bonds & Insurance)	$ 246,606
Cumulative Subtotal: Base Design-Build Price	$ 3,727,935
Design-Builder Contingency	$ 223,676
EWP 2 Base Design-Builder GMP not to exceed	$ 3,951,611

BUDGET REFERENCE

Fund #	Appn #	Appn. Name	Total Appn.	2017-2018 Proposed Capital Budget Page	Last Budget Action (Date, Ord. No.)
512	7454	Energy Generation Improvements	$71,369,000	268	06/20/2017 Ord No. 29962

The 2017-2018 CIP Budget was adopted by Council on June 20, 2017.

Services performed by CH2M HILL under this Contract Amendment will be authorized by a Notice to Proceed. There is sufficient funding in the appropriation for EWP 2 in the adopted budget for 2017-2018. Future funding is subject to appropriation and, if needed, will be included in the development of future year budgets during the annual budget process.

CEQA

Mitigated Negative Declaration (MND), File No. PP14-005

The MND states that the proposed Project will not have significant effects on the environment, because mitigation measures have been made a part of the Project.

/s/
BARRY NG
Director, Public Works

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

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

City Manager's Contract Approval Summary

For Procurement and Contract Activity between $100,000 and $1.08 Million for Goods and $100,000 and $270,000 for Services

OCT 1-OCT 30, 2017

Description of Contract Activity [1]	Fiscal Year	Req#/ RFP#	PO#	Vendor/Consultant	Original $ Amount	Start Date	End Date	Additional $ Amount	Total $ Amount	Comments
ENTERPRISE ENGINE PARTS	17-18	25337	55020	RECIPROCATING INTELLIGENCE	100,000	10/13/2017	10/12/2018			
BUYOUT EXISTING 4-WIDE 48'X60' MODULAR OFFICE TRAILER	17-18	25374	80187	DESIGN SPACE MODULAR BLDG	190,504	10/16/2017	4/30/2018			
SERVICE ORDER NO. 12 FOURTH AMENDMENT - PROGRAM MANAGEMENT SERVICES	17-18		AC 25704	STANTEC CONSULTING SERVICES, INC	12,432,328	6/26/2015	12/31/2017	1,124,582	13,556,910	MASTER AGREEMENT TERM 9/24/13-9/30/18, $39M
SERVICE ORDER NO. 13 FOURTH AMENDMENT - PACKAGE MANAGER SERVICES	17-18		AC 25704	STANTEC CONSULTING SERVICES, INC	2,266,708	6/26/2015	12/31/2017	173,213	2,439,921	MASTER AGREEMENT TERM 9/24/13-9/30/18, $39M
SERVICE ORDER NO. 15 FOURTH AMENDMENT - PROJECT MANAGEMENT AND ENGINEERING SUPPORT SERVICES FOR HEADWORKS	17-18		AC 25704	STANTEC CONSULTING SERVICES, INC	1,734,448	6/26/2015	12/31/2017	250,696	1,985,144	MASTER AGREEMENT TERM 9/24/13-9/30/18, $39M
SERVICE ORDER NO. 17 FOURTH AMENDMENT - SUBJECT MATTER EXPERT SERVICES	17-18		AC 25704	STANTEC CONSULTING SERVICES, INC	1,670,542	6/26/2015	12/31/2017	19,976	1,690,518	MASTER AGREEMENT TERM 9/24/13-9/30/18, $39M
SERVICE ORDER NO. 18 THIRD AMENDMENT - PROJECT MANAGEMENT AND ENGINEERING SUPPORT SERVICES FOR AERATION TANKS AND BLOWER REHABILITATION	17-18		AC 25704	STANTEC CONSULTING SERVICES, INC	1,261,733	6/26/2015	12/31/2017	175,043	1,436,776	MASTER AGREEMENT TERM 9/24/13-9/30/18, $39M
SERVICE ORDER NO. 20 THIRD AMENDMENT - PROJECT MANAGEMENT AND ENGINEERING SUPPORT SERVICES FOR DIGESTED SLUDGE DEWATERING FACILITY	17-18		AC 25704	STANTEC CONSULTING SERVICES, INC	1,350,319	6/26/2015	12/31/2017	121,624	1,471,943	MASTER AGREEMENT TERM 9/24/13-9/30/18, $39M
SERVICE ORDER NO. 23 SECOND AMENDMENT - PROJECT MANAGEMENT SERVICES FOR COGENERATION FACILITY	17-18		AC 25704	STANTEC CONSULTING SERVICES, INC	456,929	12/15/2016	12/31/2017	150,924	607,853	MASTER AGREEMENT TERM 9/24/13-9/30/18, $39M

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