COUNCIL AGENDA: 6/12/18
FILE: 18-826
ITEM: 7.3

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow
Margaret McCahan
Matt Cano

SUBJECT: **SEE BELOW**

DATE: May 30, 2018

Approved D:DSyL Date 5/31/18

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 $25,000,000 increase to the construction contingency amount of $28,490,625 for a revised total contingency amount of $53,490,625 and increasing the contract not-to-exceed amount from $136,415,625 to a total revised contract amount not-to-exceed $161,415,625 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 Aeration Tanks and Blower Rehabilitation appropriation to the Environmental Services Department by $18,000,000;
   (2) Decrease the Urgent and Unscheduled Treatment Plant Rehabilitation appropriation to the Environmental Services Department by $4,500,000;
   (3) Decrease the Advanced Facility Control and Meter Replacement appropriation to the Environmental Services Department by $4,000,000; and
   (4) Increase the Digester and Thickener Facilities Upgrade appropriation to the Environmental Services Department by $26,500,000.

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 Jose-Santa Clara Regional Wastewater Facility (RWF). Approval of the appropriation ordinance amendments is necessary to increase the construction contingency and will provide sufficient funding for additional project delivery costs to complete the work.

EXECUTIVE SUMMARY

In May 2016[1], 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 45% complete.

Since the start of construction, the Project has encountered significant unforeseen issues that have significantly delayed the schedule and increased costs. In November 2017[2], City Council approved a $15.0 million increase to the construction contingency to address a multitude of unknown conditions, utility relocations, major repairs to deteriorated piping, and delays to the Project caused by changes in regulatory conditions resulting in an increase in the contract time by 140 working days. This increased the total Project contingency to $28,490,625 and increased the contract not-to-exceed amount to $136,415,625 and extended the project completion date to April 27, 2020.

At the time of the contingency increase, staff informed City Council that a future project contingency increase would be required to resolve seismic design and hazardous materials issues that were being evaluated. Staff has investigated the extent and impact of these issues, has identified an action plan to resolve both issues, and is now able to recommend solutions that can be implemented to resolve each issue and minimize disruption to the work already completed as part of construction.

Brown and Caldwell (Designer) has developed a solution that addresses all seismic conditions and Walsh Construction Company II, LLC (Contractor) has provided the City with the associated construction cost to implement the additional work. Staff has also been actively working with the United States Environmental Protection Agency (EPA) Region 9 to agree to a Polychlorinated Biphenyls (PCB) mitigation plan. All requirements of this plan have been provided to the Contractor and the associated costs have been identified.

This memorandum describes the challenges that have been experienced on the Project associated with these two issues, as well as the additional costs and delays that are anticipated to be incurred in order to complete the Project. An overall cost impact of $25.0 million and a delay of 276 working days to the construction contract has been identified related to these two issues. Funding is also requested for an additional 28 days of "schedule contingency" in the event further delays are encountered on the Project. The additional delay will also require a $1.5 million increase in City staff and other associated project delivery costs to cover the extended contract period.

Approval of the recommended contingency increase of $25.0 million and appropriation adjustments of $26.5 million will allow the Project to proceed towards completion in 2021.

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[1] May 24, 2016: http://sanjose.granicus.com/MetaViewer.php?view_id=&event_id=2137&meta_id=573928
[2] November 28, 2016: https://sanjose.legistar.com/LegislationDetail.aspx?ID=3213847&GUID=0FA9A966-5DA0-4FC3-B8F6-1B1D07A7373A

BACKGROUND

The two staff reports linked above in the Executive Summary, and attached to this report in Attachments A and B, provide significant and detailed information about the Project need and scope, and the previous Council authorizations for the design and construction of the Project.

The following discussion provides an update on construction progress since the last staff report and provides details regarding the seismic design and PCB removal that are causing additional delays and costs to the Project.

Overall Construction Progress

The City issued the Notice to Proceed for construction on June 22, 2016 with an original contract duration of 790 work days. The duration of the Project has been extended by 140 working days to reflect delays associated with unknown conditions as approved by the City Council in November 2017. The scheduled completion date reflecting this extension is April 27, 2020.

Overall, construction of the original Project scope is approximately 45% complete. Work completed to date includes the majority of the main pipe rack footings/columns, foundation work for the new screenings building, including sludge tanks and odor control system foundations, demolition of the digester tanks, dissolved air flotation thickener (DAFT) demolition and new structural work.

Additionally, major change order work associated with a temporary pumping system, repair of deteriorated 78-inch primary effluent piping, and construction of a new junction structure is in progress. This work would have been completed as part of the future Yard Piping Project however the severity of the deterioration and the need to connect to this pipe required that the work be completed under a change order to the Digester Project. All materials have been procured and the installation of the 100 million gallons per day (MGD) temporary reroute has been successfully completed. Repair work on the deteriorated 78-inch pipe started in May 2018 and will be completed during the dry season.

A total of 39 change orders have been approved to date, totaling $22,957,113 for various items of work. This represents approximately 81% of the approved contingency amount of $28,490,625. Additional change orders totaling $3,033,169 or 10% 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, work related to the replacement of major structures (new junction structure and 78-inch pipe), procurement of temporary pumping system to enable construction of these new structures, and costs associated with 140 working days of delay for the Project.

Seismic Design Issues

The Project involves the complete rehabilitation of four digester tanks, each approximately 40 feet tall and 110 feet in diameter. Due to the age of these structures, major structural

modifications were developed as part of the original design for the Project. During the review of contract submittals, and prior to construction of the structural modifications, the Designer notified the City that the design did not fully account for all of the forces that would occur during a major seismic event. The City was notified of this finding in July 2017, and at this time notified the Contractor that all structural work around the digesters was to be stopped until further notice.

Since that time, the Designer has completed a detailed structural analysis of the seismic forces and evaluated multiple corrective actions that could be implemented. The recommended solution includes a more substantial foundation around the base of each digester tank and some mechanical modifications. The Designer has fully developed engineering plans, coordinated details with the Contractor and provided guidance for geotechnical issues associated with the excavations. These changes will result in additional costs of approximately $14.33 million (excluding delays) as described later in this memorandum.

Hazardous Materials

During the Project planning phase in 2014, a preliminary hazardous materials survey identified the presence of hazardous materials (asbestos, lead-containing paint, and PCBs in the caulk outside the base of the digester tanks) that were incorporated in the contract documents and in the bid pricing submitted by the Contractor. The original survey was limited in scope as not all parts of the operational facility could be accessed and additional testing was to be completed during construction. This additional testing took place in late 2016 and identified PCB-laden caulk in expansion joints in the interior of the digester and DAFT tanks. PCBs were found in high-enough concentrations to warrant an EPA remediation plan. In August 2017, the City notified the Contractor to stop all excavation in the impacted areas.

PCBs were commonly used in construction building materials prior to 1979 when it was banned and subjected to federal regulations (the Toxics Substances Control Act or TSCA at 40 CFR 761.61). TSCA addresses the production, importation, use, and disposal of specific chemicals including PCBs, asbestos, radon and lead-based paint. In the specific case of PCBs, TSCA prohibits its manufacture, controls the phase-out of their existing uses, and sees to their safe disposal. The presence of PCBs at any concentration is considered an unauthorized use under TSCA and any impacted material at concentrations above 50 ppm must be removed until levels below one ppm are achieved.

Staff notified the EPA of the PCBs findings and met with Region 9 (Pacific Southwest) staff in San Francisco in September 2017. The purpose of this meeting was to present the initial findings and agree how to proceed with a handling/management plan and ultimately obtain EPA approval of the plan. The necessary remediation measures to address the PCB removal will result in additional costs of approximately $1.5 million (excluding delays) as described later in this memorandum.

ANALYSIS

This section discusses the process followed to resolve issues involving structural changes and the presence of PCBs in the digesters and the associated delays that have been incurred to address this work, which was not part of the original scope of the Project

Seismic Design Issues

As previously described, structural changes to the digesters were required to fully address all seismic forces that would occur during a major seismic event, following the notification by the Designer that the initial design was insufficient. Since these changes were being implemented during construction, one of the main goals was to identify a solution that could be executed with the least disruption to construction and utilizing all materials and construction activities already completed.

The recommended structural modification includes a more robust foundation to adequately account for all seismic forces and changes to the operational level inside the digesters. The modified foundation will consist of a concrete ring beam constructed around the circumference each of the digesters. This concrete block will be approximately 8-feet wide, 12-feet deep and 360-feet around the base of each tank. In total, the additional foundation construction around the four digesters will require approximately 6,000 cubic yards of concrete and 750,000 pounds of reinforcing steel.

All proposed structural modifications were reviewed by City staff and structural subject matter experts provided by the City's program management consultant, Stantec Consulting Services, Inc. Proposed changes were also fully discussed with the Contractor and construction management staff to optimize constructability and implementation. The Designer also completed an independent review by a third-party structural firm, Bayez and Patel.

The Contractor has priced the additional structural work at $13.6 million. This includes all excavation and structural work, the protection of the already installed post-tensioning cables around each tank, and all required piping and mechanical modifications. An additional $730,000 has been issued in change orders to keep the contractor working and to prevent re-work while the seismic design issues were being resolved.

Staff is currently in discussion with the Designer on how the resulting costs arising from the structural design deficiencies will be recovered by the City. Discussion of these issues will likely take some time, so staff recommends increasing the project construction contingency now in order to make funds available to issue the necessary change orders and finalize the construction. The terms of any proposed resolution with the Designer regarding the structural design deficiencies will be brought forward for Council consideration during the course of the negotiations with the Designer.

Hazardous Materials

The preliminary discussion with the EPA identified concerns about potential leaching of PCBs into adjoining materials (such as concrete) and in the case of caulk exposed at the surface, and migration into adjacent soils and groundwater. To confirm the extent of leaching and migration within the Project boundaries, the EPA required an extensive sampling program to fully identify the limits of potential contamination. To minimize schedule impacts to the Project, the City agreed to file a preliminary application to cover the clean-up approach for soils around the digester area, in order to allow the Contractor to proceed with excavation as quickly as possible. This was called the Phase 1 application. A final risk-based approval application to address both soil and concrete was to be submitted at a later time (Phase 2). The Phase 1 application was submitted to the EPA in November 2017 after extensive sampling and analysis of the soil adjacent to the digesters was completed. Further sampling was completed and the City received final approval from the EPA in February 2018.

The Phase 2 application was submitted in April 2018, and is expected to be approved by July 2018. This document incorporated the soils clean-up plan submitted as part of Phase 1 and the plan for management of impacted concrete. This represents the complete request for management of PCB remediation waste associated with the Project. The City also notified other State Agencies, specifically the Regional Water Quality Control Board (RWQCB) and Department of Toxic Substance Control (DTSC).

The Contractor will follow the conditions established in the EPA approval and all work will be completed by remediation contractors with appropriate training, certifications and equipment for working with PCB impacted materials, following OSHA, state and facility required health and safety procedures. All non-disposable equipment utilized during PCB remediation will be decontaminated and tested in accordance with TSCA regulations before being removed from the site. Off-site transportation and disposal options are based on PCB concentrations, and costs correspondingly rise as PCB levels rise. All contaminated soils were taken to Kettleman Hills landfill in the Central Valley. The total cost provided by the Contractor for the PCB soil cleanup is $1,514,297.

Some of the costs associated with the management of impacted concrete have already been covered by the existing project contingency. Additional costs expected include the preparation of concrete impacted surfaces for the application of specialty coatings and potential disposal costs for other areas that could be discovered during the excavation.

Delay Costs

The combination of the structural modification and PCB remediation issues has significantly delayed the Project, since all excavation around the digester tanks had to be stopped until a satisfactory structural design solution was developed and the City received EPA approval of the plan to handle and mitigate PCBs. The Contractor submitted a revised construction schedule in March 2018, for all activities and their impact on the critical path for the Project. The City and Contractor have agreed that the total impact to the Project schedule, up through the

end of March 2018, is 276 working days, at a cost of approximately $23,000 per day, which results in a total delay cost of approximately $6.4 million. This delay may be considered compensable under the contract since the Contractor could not have reasonably foreseen these issues. The City Standard Specifications allows payment, at the City's sole discretion, when the contractor sustains additional costs that "...could not have been avoided by the judicious handling of forces, equipment and plant." The $25.0 million additional construction contingency requested in this memorandum is inclusive of the delay costs incurred by the Contractor while these issues are being resolved, and an additional 28 days of "schedule contingency" in the event further delays are encountered on the Project. Construction excavation has resumed and additional schedule analysis is being conducted to attempt to compress scheduled work activities to reduce delays to less than 276 days.

Recommended Contingency Increase

The combination of issues described above represent a total of approximately $25.0 million of extra work that was not anticipated at the time of award of the construction contract. The total amount of contingency increase requested in this memorandum is summarized in Table 1 below:

Table 1 – Approved/Pending Change Orders and Forecasted Needs

Reason for Change Order	Approved and Pending CCOs	Forecasted Need	Total
Underground Utility Conflicts, Unforeseen Conditions, Design Changes, Unexpected Regulatory Requirements	$7,601,252		$7,601,252
Delay Costs	2,991,240	$7,000,000	9,991,240
Deteriorated Pipe Conditions	14,222,563		14,222,563
Seismic Design Issues	729,948	13,600,000	14,329,948
Hazardous Materials	445,279	1,514,297	1,959,576
Future Potential Changes		5,386,046	5,386,046
Total	**$25,990,282**	**$27,500,343**	**$53,490,625**
Approved Contingency			$28,490,625
Additional Contingency Required			**$25,000,000**

Staff therefore recommends increasing the construction contingency for the Project by $25.0 million to allow for the timely completion of the above-described work, so the Project can proceed to a proper and full completion. Since the Project is only 45% complete, staff recommends maintaining a contingency balance of $5.4 million to cover future potential changes to the Project work.

In addition to the increase in construction costs, additional funding will be necessary to cover other activities related to the coordination, sampling and analysis of soils and concrete, as well as future coordination to finalize the application process and follow up requirements with the EPA. This represents an additional cost of approximately $1.5 million in City Staff, technical consultant fees, field personnel collecting samples, lab analysis costs, inspection, documentation,

etc. Project management and construction management costs have also risen due to the extended completion date for the Project and the significant additional work required to resolve the structural design and PCB remediation issues. The total amount recommended is $26.5 million.

EVALUATION AND FOLLOW-UP

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 April 2, 2018. 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.

PUBLIC OUTREACH

This memorandum will be posted on the City's Council Agenda website for the June 12, 2018, City Council meeting.

COORDINATION

This Project and memorandum have been coordinated with the City Attorney's Office.

COMMISSION RECOMMENDATION/INPUT

This memorandum is scheduled to be heard at the June 4, 2018, Special TPAC meeting.

FISCAL/POLICY ALIGNMENT

This Project is consistent with the 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:	$26,500,000
2.	COST OF PROJECT	
	Original Construction Contract Amount	$107,925,000
	Original Contingency (12.5%)	$13,490,625
	Original Total Contract Amount	**$121,415,625**
	Contingency Increase #1 (13.9%)	$15,000,000
	Contingency Increase #2 (23.2%)	$25,000,000
	Total Contract Amount	**$161,415,625**

Current Project Delivery	$27,171,199
Additional Project Delivery	$1,500,000
Total Project Costs	**$190,086,824**

3. SOURCE OF FUNDING: 512 – San José-Santa Clara Treatment Plant Capital Fund. 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 $26,500,000. 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:
   - Aeration Tanks and Blower Rehabilitation ($18,000,000): Construction award for the Blower Improvements Project is now anticipated in mid 2018-2019. New funds have been programmed in the Proposed 2019-2023 Capital Improvement Program (CIP) for these costs.
   - Urgent and Unscheduled Treatment Plant Rehabilitation ($4,500,000): The appropriation provides funding to respond to urgent, unplanned capital work. With approximately two weeks left in the fiscal year, staff recommends reallocating these funds to the Project.
   - Advanced Facility Control and Meter Replacement ($4,000,000): On May 22, 2018, the City Council awarded the construction contract for the first phase of the Project to the low bidder, whose bid was approximately $4,600,000 below the Engineer's Estimate.

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). This allocation differs from the allocations associated with the offsetting projects listed above. The cost for the Aeration Tanks and Blower Rehabilitation project is allocated 20 percent to flow, 60 percent to BOD, and 20 percent to ammonia (NH_3). The cost for the Urgent and Unscheduled Treatment Plant Rehabilitation and Advanced Facility Control and Meter Replacement appropriations is allocated between the four billable parameters relative to a rolling weighted average distribution of all RWF assets. 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	17,813,200	18,369,800	556,600
City of Santa Clara	4,162,400	4,292,500	130,100
West Valley Sanitation District	1,588,600	1,449,600	(139,000)
Cupertino Sanitation District	1,033,200	854,900	(178,300)
City of Milpitas	1,709,000	1,384,400	(324,600)
County Sanitation District 2-3	126,800	104,900	(21,900)
Burbank Sanitary District	66,800	43,900	(22,900)
Total	**26,500,000**	**26,500,000**	**-**

The updated cost allocations for the Project result in an increase of approximately $556,600 to the proportional share of Project costs for San José and approximately $130,100 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 budgetary revenue contributions may be brought forward to the City Council at a future later in the 2018-2019 fiscal year based on these updated cost allocations.

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	$17,260,000	$26,500,000	282	11/28/2017, 30035
512	7677	Aeration Tanks and Blower Rehabilitation	$33,234,000	($18,000,000)	280	11/28/2017, 30035
512	7395	Urgent and Unscheduled Treatment Plant Rehabilitation	$6,500,000	($4,500,000)	303	6/20/2017, 29962
512	7224	Advanced Facility Control and Meter Replacement	$13,248,000	($4,000,000)	279	10/17/2017, 30014

CEQA

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

/s/
KERRIE ROMANOW
Director, Environmental Services Department

Margaret McCahan
MARGARET McCAHAN
Budget Director

/s/
MATT CANO
Director of Public Works

Attachment A: Council Memo Dated May 11, 2016. Report on Bids and Award of Construction Contract Recommendation for 7382 - Digester and Thickener Facilities Upgrade Project at The San Jose-Santa Clara Regional Wastewater Facility

Attachment B: Council Memo Dated October 23, 201. Construction Contingency Increase for the 7382-Digester and Thickener Facilities Upgrade Project at the San Jose-Santa Clara Regional Wastewater Facility

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

Attachment A

COUNCIL AGENDA: 05/24/16
ITEM: 7.1

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow
Berry Ng
Jennifer A. Maguire

SUBJECT: SEE BELOW

DATE: May 11, 2016

Approved D. DSyL

Date 5/12/16

SUBJECT: REPORT ON BIDS AND AWARD OF CONSTRUCTION CONTRACT FOR 7382 – DIGESTER AND THICKENER FACILITIES UPGRADE PROJECT AT THE SAN JOSE-SANTA CLARA REGIONAL WASTEWATER FACILITY

RECOMMENDATION

(a) Adopt a Resolution

(1) Approving the Digester and Thickener Facilities Upgrade Project Initial Study/Mitigated Negative Declaration and related Mitigation Monitoring and Reporting Program (File No. PP15-055).

(2) Reporting on bids and award of construction contract for the 7382- Digester and Thickener Facilities Upgrade project to the low bidder, Walsh Construction Company II, LLC, to include the base bid less Revocable Item No. 5, in the amount of $107,925,000, and approve a 12.5 percent construction contingency in the amount of $13,490,625.

(3) Authorizing the Director of Public Works to execute one or more change orders in excess of $100,000 for the duration of the Digester and Thickener Facilities Upgrade project, not to exceed the total contingency amount approved for the project.

(b) Adopt the following 2015-2016 Appropriation Ordinance Amendments in the San José-Santa Clara Treatment Plant Capital Fund:

(1) Decrease the Energy Generation Improvements appropriation to the Environmental Services Department by $6,000,000;
(2) Decrease the SBWR System Reliability and Infrastructure Replacement appropriation to the Environmental Services Department by $4,692,000;
(3) Decrease the Tunnel Rehabilitation appropriation to the Environmental Services Department by $600,000;
(4) Decrease the Ending Fund Balance – Unrestricted appropriation by $17,253,000; and

(5) Increase the Digester and Thickener Facilities Upgrade appropriation to the Environmental Services Department by $28,545,000.

OUTCOME

Award of this construction contract will allow for the construction of the Digester and Thickener Facilities Upgrade project (Project), improving reliability at the San José-Santa Clara Regional Wastewater Facility[1] (RWF). Approval of a 12.5 percent contingency will provide funding for any unanticipated work necessary for the proper completion of the Project. Adoption of a resolution approving the Initial Study/Mitigated Negative Declaration and implementing the Mitigation Monitoring and Reporting Program for the Project will ensure all environmental mitigation and monitoring measures will be carried out. Adoption of a resolution authorizing the Director of Public Works to execute change orders up to the contingency amount will allow for timely implementation of any changes required in the project for completion as scheduled in fall 2019.

EXECUTIVE SUMMARY

The RWF biosolids process facilities include 16 anaerobic digesters, 16 Dissolved Air Flotation Thickener (DAFT) units, and an extensive biogas collection system routed through an underground tunnel system. These facilities are aged with units ranging between 30 and 60 years of continuous operation, some of which have been taken out of service and the remaining of which are in need of rehabilitation in order to maintain reliable biosolids processing capacity. Due to the physical configuration and ventilation conditions at the tunnels, they are considered as hazardous areas under the National Fire Protection Associations (NFPA) standard for Fire Protection in Wastewater Treatment and Collection Facilities (NFPA 820). As such, the location of the gas piping and other flammables in the tunnels presents certain safety concerns. The existing digester gas manifold also has leaky joints, is undersized for predicted gas production, and has no redundancy for operational flexibility or maintenance activities.

Key construction elements included with this construction contract include rehabilitation of four digesters (digesters 5 to 8) to operate as a Temperature-Phased Anaerobic Digestion (TPAD), six DAFT units (units 1 to 6) 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.

Due to the cost and complexity of this Project, potential bidders were required to be pre-qualified before being invited to submit bids on the Project. Nine highly qualified general contractors were selected to bid on the Project. A total of five bids were subsequently received; all bids were higher than the Engineer's Estimate of $85,000,000. The low bid, submitted by Walsh

[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.*

Construction Company II, LLC of Concord, CA, in the amount of $109,925,000 is 29 percent higher than the Engineer's Estimate. The other four bids range from 37 percent to 53 percent above the Engineer's Estimate.

A combination of the high volume of construction work being performed in the Bay Area, the resulting shortage of skilled labor, and some higher material costs are the primary reasons for the higher bid. Considering these factors, staff considers the bid reasonable for the work involved.

Staff recommends award of a construction contract to the low bidder, Walsh Construction Company II, LLC, in the amount of $107,925,000 (which represents the low bid less revocable item 5, which is estimated at $2,000,000); approval of a 12.5 percent construction contingency in the amount of $13,490,625; and adoption of a resolution authorizing the Director of Public Works to execute one or more change orders in excess of $100,000 for the duration of the Project, not to exceed the total contingency amount approved for the Project. Staff also recommends a number of budget appropriation actions to enable award of the construction contract and San José's portion of the construction contingency.

BACKGROUND

Description of Existing Digestion System

The anaerobic digestion process is a critical element of the RWF's biosolids processing and functions to stabilize biosolids and generate biogas to help meet the RWF's energy needs. Key components of the digestion process include the anaerobic digesters, digester gas system (e.g. gas storage, piping, piping appurtenances, waste gas flares), and dissolved air flotation thickeners (DAFT).

The RWF has 16 anaerobic digesters of varying sizes and design that were built in six stages between 1954 and 1983. Each digester is 100 to 110 feet in diameter and varies in height from 32 to 40 feet tall. The digesters have been in continuous operations for more than 30 to 60 years and are in need of significant rehabilitation. Rehabilitation of the digesters and associated gas systems was previously identified as a high priority project in the 2007 Infrastructure Condition Assessment Report completed by CH2M Hill. Currently, six digesters (Digesters 2, 4, and 5 to 8) are permanently out of service due to structural damage and mechanical failures. The remaining 10 digesters are operational, with a minimum of eight units required for daily operations and two units as back-up to allow yearly scheduled cleaning and maintenance. Digesters 1 to 4, which are the oldest digesters at the RWF, cannot be rehabilitated to meet current seismic code and will be permanently disconnected once this Project is completed. (See Attachment A for project location map).

The digester gas system collects biogas produced from the anaerobic digestion process and transports, stores, and manages the gas for utilization. The majority of the piping associated with the digester gas system is located in underground tunnels. Due to the physical configuration and ventilation conditions at the tunnels, they are considered as hazardous areas under the National

Fire Protection Associations (NFPA) standard for Fire Protection in Wastewater Treatment and Collection Facilities (NFPA 820). As such, the location of the gas piping in the tunnels presents certain safety concerns. The existing digester gas manifold also has leaky joints, is undersized for predicted gas production, and has no redundancy for operational flexibility or maintenance activities.

Biogas, produced as part of the anaerobic digestion process, is compressed and blended with natural gas purchased from PG&E and used as fuel for the RWF's cogeneration engines and engine-driven blowers. Any excess biogas is burned by the waste gas flares. The RWF has two flares: a smaller ground flare and a high-capacity open flare. The existing flare is over 30 years old; a condition assessment performed in 2015 revealed signs of corrosion and deterioration.

The RWF also has 16 DAFT units that work to thicken waste-activated sludge from the secondary treatment process. The DAFT units are in poor condition and in need of rehabilitation.

Project Description

This Project is the first phase of a comprehensive upgrade to the biosolids processing facilities at the RWF. The scope of work includes rehabilitation of four digesters (digesters 5 to 8), retrofit of six DAFT units (units 1 to 6) including odor control, a new primary sludge screening facility, two new electrical buildings and associated electrical equipment, a new elevated gas piping system and gas flare system, and miscellaneous civil works. It is anticipated that a total of nine digesters and eight DAFT units will ultimately be needed to serve future loads and allow for redundancy. The additional five digesters and two DAFT units to be rehabilitated will be completed as part of separate project in the future.

The digester rehabilitation work will include new covers and mixing systems; structural repairs and seismic retrofits; heating system and gas collection conveyance system upgrades; and electrical, instrumentation, and control systems upgrades. The four rehabilitated digesters will operate at a higher temperature (thermophilic) as the first phase of the TPAD process, improving biogas production and pathogen destruction. Digesters 9 to 16 will operate as the second phase at a lower temperature (mesophilic), which is the current mode of operation of the system.

The retrofit of six DAFT units will allow for the co-thickening of primary and secondary sludge. This reconfiguration, along with the modernization of associated process equipment, will result in the reduction of the ultimate number of units required to be kept in operation. Modifications to the existing DAFT system include upgrades to existing piping, tanks, mechanical equipment and electrical and instrumentation components to allow for the new operation scheme. The upgraded units will be provided with covers and odor control system. A new primary sludge screening facility will be provided to remove debris prior to introducing sludge to the DAFT and digestion process, easing maintenance for equipment associated with these processes and cleaning of the structures.

An external, elevated pipe network will collect biogas from the entire digester campus, allowing the removal of biogas piping the tunnels as well as the relocation of flammable material piping from the tunnels. The completion of this Project will be the first step toward "declassifying" the tunnels and eliminating hazardous environment conditions. The elevated pipe will also connect to a new gas flare and to the rehabilitated existing flare.

Additional work will include site work and paving, construction of two electrical rooms, concrete flow distribution boxes, relocation of utilities and a sampling station, and provision of a new storage fuel tank.

This project is being delivered using a traditional design bid build delivery method. Several factors contributed to this decision. At the time of design initiation of this project in October 2013, State authority to use an alternate delivery method was only offered through a limited pilot program. Furthermore, this project includes many complex interfaces that need to be designed to a high level of detail. Given the extensive level of rehabilitation of existing infrastructure in a 24/7 facility there were also limited opportunities for design innovation and schedule acceleration, both of which are key benefits of design build. Taking these factors into consideration it was determined that the traditional design bid build delivery was more suitable for this project. However, given the magnitude and criticality of the project staff recognized the importance of having well qualified contractors through the low bid process and selected a pool of contractors through a robust pre-qualification process.

Pre-Qualification of Contractors

Council Resolution No. 71816, adopted on November 4, 2003, provides a policy for pre-qualifying contractors based on a project's complexity and construction value of more than $10,000,000. Due to the complexity and large construction value of the Project, a rigorous pre-qualification process was completed to develop a list of qualified bidders. The pre-qualification process considered factors such as experience, financial ability, safety history, etc.

A Request for Pre-Qualifications of Bidders was advertised on September 14, 2015. The City received pre-qualification packages from nine potential contractors on October 7, 2015. Staff evaluated the submissions and determined that all nine contractors met the pre-qualification requirements. Of the nine pre-qualified contractors who were invited to submit bids, five submitted bids.

ANALYSIS

Bids were opened on March 17, 2016 with the following results:

Contractor	Base Bid Amount	Variance Amount	Over/ (Under) Percent
Engineer's Estimate	**$85,000,000**		
Walsh Construction Company II, LLC	$109,925,000	$24,925,000	29%
Overaa & Co.	$116,427,000	$31,427,000	37%
Skanska USA Civil West California District, Inc.	$121,370,000	$36,370,000	43%
Keiwit Infrastructure	$122,118,000	$37,1183,000	44%
PCL Construction, Inc.	$129,971,463	$44,971,463	53%

Eight out of the nine prequalified bidders attended two non-mandatory pre-bid meetings and site walks for this Project on January 28, 2016 and February 25, 2016. A total of five bids were subsequently received; all bids were higher than the Engineer's Estimate. The low bid, submitted by Walsh Construction Company II, LLC of Concord, CA in the amount of $109,925,000 is 29 percent higher than the Engineer's Estimate. The other four bids range from 37 percent to 53 percent above the Engineer's Estimate.

The Engineer's Estimate prepared by the design consultant was based on construction costs experienced over the last several years for similar municipal wastewater projects as well as quotes obtained from equipment and material vendors. However, the San Francisco Bay Area is currently experiencing a high volume of construction, with billions of dollars of construction projects underway in the San José/Santa Clara vicinity, including a number of large commercial projects (e.g., new campuses and upgrades for companies such as Google, Apple, and projects at Stanford University, among others). Typically, commercial projects do not impact the municipal wastewater market, since the pool of general contractors is different for the two sectors. However, specialty subcontractors that work in both markets, such as electrical, instrumentation and control, heating, ventilation, and air conditioning (HVAC), etc., are in high demand, resulting in an increase of the pricing for this type of work.

The design consultant and staff have confirmed with contractors that the cost estimate for equipment and concrete work was in the range of their pricing and that the major differences could be primarily attributed to the increase in pricing from multiple subcontractors as well as the volatile conditions in the local labor market. Due to the high volume of work in the area, there appears to be a shortage of local craft laborers working and reportedly empty union halls, forcing the general contractors to add a premium over and above the latest prevailing wage rates to account for importing non-local craft laborers and potential slower productivity due to an unknown labor force.

A combination of the high volume of work in the area, the shortage of skilled laborers, demand for specialty subcontractors, and some higher material costs are believed to have contributed to

the higher bid. Despite the significantly high bids staff is recommending proceeding with the Project at this time. Rehabilitation of the digesters and gas handling systems has been identified as a high priority capital improvement project due to the condition of the infrastructure as well as safety concerns. Delaying the Project will increase the risk of digester and gas piping failures, with higher operations and maintenance costs and possibly safety and permit violations. It is also uncertain if future construction prices will be lower, since construction activity in San José and the surrounding area has not shown imminent signs of slowing down and the criticality of this Project does not allow for a long delay in re-bidding the Project.

The base bid amount includes work related to five bid revocable items, identified in the bid form as item (3), the cost for providing all system integration and programming ($800,000); item (5), the allowance for relocation of utilities ($2,000,000); item (6), the cost of new diesel storage tank ($184,000); item (7), the cost of a new heat loop steam converter and condensate return system ($512,000); and item (8), the cost of new digester gas flares ($1,060,000).
Staff recommends award of contract to the low bidder for the base bid less revocable item (5), in accordance to Special Provisions 3-1.01D, for a total of $107,925,000. Staff believes that this item can be revoked without affecting the project and that relocation of unforeseen utilities can be covered, if necessary, by change orders using the project contingency.

Staff has also benchmarked the construction cost for the anaerobic digestion portion with 12 wastewater agencies that have completed similar projects in the last few years. Because the projects present variations in total digester capacity, overall scope, site conditions, construction completion date and geographical location, a direct comparison cannot be readily made. However, costs per unit of digester volume (gallons of capacity) can be used as a key indicator. The comparison completed by staff showed that other agencies had construction costs in the range of $3 to $13 dollars per gallon of treatment provided. The associated cost per gallon of treatment, based on the recommended bid, is equivalent to $4.50 per gallon, therefore in the lower end of the spectrum of cost for comparable agencies.

Project delivery cost for the project is equivalent to 24.50 percent of the construction cost and includes professional consultant services, and City staff cost for project management and construction management. This is in line with costs experienced by other similar wastewater programs.

In addition of the base bid scope of work, there was one Add Alternate bid item to demolish existing piping in some areas of the tunnels and some yard piping ($420,000). Due to the high bid result, staff is not recommending award of the Add Alternate. Demolishing of piping in tunnels and yard piping is not critical to the Project and can be addressed as part of future capital projects.

Council Policy provides for a standard contingency of ten percent on public projects involving utilities and building projects. However, on this project a contingency of a 12.5 percent is being requested to account for the challenge of maintaining continuous operations at the RWF during construction, in addition to complex project interfaces with existing electrical and process

control facilities, potential utility conflicts, and other concurrent capital improvement projects underway.

Staff also recommends delegating authority to the Director of Public Works to execute one or more change orders in excess of $100,000 for the duration of the Project. This is not to exceed the total contingency amount approved for the Project, and is subject to other applicable limitations on the authority of the Director in the San José Municipal Code. Approval of these recommendations will provide staff with the flexibility to efficiently and effectively respond to and provide the funding for any unanticipated work necessary for the proper completion of the Project.

Funding Strategy

Funding for the Project appropriation in 2015-2016 is insufficient for this award. Budget actions are recommended to increase the total appropriation budget by $28,545,000 to award the construction contract and the City's portion of the construction contingency.

To offset this increase and minimize impacts to ratepayers and the tributary agencies, staff recommends decreasing existing project appropriations and the Unrestricted Ending Fund Balance for the San José- Santa Clara Treatment Plant Capital Fund, as outlined below.

- Energy Generation Improvements appropriation ($6,000,000): the equipment pre-purchase for the Cogeneration Facility project is now anticipated in 2016-2017. New funds have been programmed for these costs as part of the 2017-2021 Proposed Capital Improvement Program (CIP).
- South Bay Water Recycling (SBWR) System Reliability and Infrastructure Replacement appropriation ($4,692,000): this was originally appropriated to pay for the cost to maintain and rehabilitate the SBWR program's existing facilities. After further evaluation, staff has determined that the maintenance and rehabilitation work can be deferred to a future year, and paid for from the sale of recycled water revenue through the San José-Santa Clara Treatment Plant Operating Fund.
- Tunnel Rehabilitation appropriation ($600,000): this project has not started due to a lack of staff resources and has been deferred; funds have been programmed for these costs in 2017-2018 as part of the 2017-2021 Proposed CIP.
- Unrestricted Ending Fund Balance ($17,253,000): the proposed action allocates $17.3 million of the $42.8 million Unrestricted Ending Fund Balance to cover a portion of the increased costs. It is anticipated that $7.7 million of this amount will be replenished in 2016-2017 from the liquidation of prior year carryover encumbrances in 2015-2016 that will be recognized as part of the 2015-2016 Annual Report process this fall. This amount contains contributions from the tributary agencies for prior year projects that will be trued up during the 2015-2016 CAFR reconciliation process prior to January 2017. The remaining $9.6 million being recommended for appropriation from this fund balance will cover the contingency costs for San José only; contingency costs for Santa Clara and the tributary agencies have been programmed in 2016-2017 as part of the 2017-2021 Proposed CIP. While this action would only cover 70.8 percent of the $13,490,625 recommended in this memorandum for project contingency and is not at the full, ideal

contingency level normally included with award of construction projects, the balance of the full contingency level is incorporated in the 2016-2017 Proposed Capital Budget, which is currently scheduled for adoption by the City Council on June 21, 2016.

Concurrently, staff is pursuing a Clean Water State Revolving Fund (SRF) loan to finance the Project through the State Water Resources Control Board (Board). The loan application was finalized in December 2015; both the technical and environmental packages for the Project have been approved and the financial security package is currently under review by the Board. Staff anticipates that the process will be completed by summer 2016 and that the Board, contingent on the availability of funds, will proceed to issue an initial agreement for up to approximately $119,000,000 that will be used to cover costs related to planning, design, administration, and construction of the Project. At this time, the Board has not expressed concerns regarding availability of funds for this Project; however, this may change in the future since several other large water and wastewater projects/programs in California are also underway and competing for the same low interest SRF loan program.

Since bids received for the project were higher than originally expected, the City will have the opportunity to amend the original application and submit a final budget approval package to receive a finalized agreement for a revised amount, contingent on the availability of funds. The final amount may also be adjusted to reflect participation from only the co-owners of the RWF (i.e., San Jose and Santa Clara), pending the outcome of ongoing discussions with the tributary agencies.

EVALUATION AND FOLLOW-UP

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

If the SRF application is successful, staff anticipates returning to Council in August 2016 to seek approval to enter into a financing agreement for the Project.

The City Council is also currently scheduled on June 21, 2016 to adopt the 2016-2017 Proposed Capital Budget, which includes funding for several projects as referenced in this memorandum, including the remaining Project contingency from Santa Clara and the tributary agencies.

POLICY ALTERNATIVES

Alternative 1: **Direct City staff to reject all bids and re-bid the Project**
Pros: Re-bidding the Project may result in a more favorable bid result.
Cons: Re-bidding the Project will delay the construction schedule, increase project delivery costs, and may result in a higher bid.

Reason for not recommending: Re-bidding a project does not always result in lower bids. The five bids received showed good interest from the construction industry. All of the bids were fairly close, which indicates a competitive bidding climate. Rebidding the Project will require additional consultant and staff costs and delay the construction schedule for at least three to six months (or longer, if new pre-qualification of contractors is needed). In addition, the construction market in the San José area may tighten further, potentially increasing costs substantially. Some or all of the highly qualified bidders may decide not to pursue the Project.

Alternative 2: **Direct City staff to modify the scope and re-bid the Project**
Pros: Modifying the scope and re-bidding the Project may reduce cost in the short term.
Cons: This alternative will delay the construction schedule, increase the Project's delivery costs, and not fulfill the original Project needs.
Reason for not recommending: Modifying the scope to remove some construction elements would require rejecting all bids and incurring additional consultant and staff costs to redesign and rebid the Project, adding at least 12 to 14 months to the construction schedule. The removed items of work would be still need to be completed as part of the future phase of work at a potentially higher cost due to escalation and result in an incomplete Project. In addition, considering the tight labor market and abundance of construction work in the San José area, costs may increase substantially, reducing the potential savings to the City.

Alternative 3: **Direct City staff to postpone the Project and rebid under a more favorable construction bidding climate**
Pros: Postponing the Project and waiting to rebid under a more favorable construction bidding climate may result in a more favorable bid result.
Cons: The digesters and gas handling facilities are an essential part of the solids treatment process. The facilities are aged and have been in continuous operation for more than 30 to 60 years. Six out of 16 digesters are currently permanently out of service due to condition. The remaining ten digesters represent the minimum number of units required for day-to-day operations (eight units in service plus 2 redundant units). Based on age and condition, the risk and consequence of failure of the remaining units is high.
Reasons for not recommending: Rehabilitation of the digesters and gas handling systems has been identified as a high priority capital improvement project due condition as well as safety concerns associated with the gas piping in the tunnels. Delaying the project will increase the risk of digester and gas piping failures, with higher operations and maintenance costs and possibly safety and permit violations. In addition, the Project's delivery costs would be significantly increased, due to additional staff and consultant efforts to re-design and re-bid the project in the future. It is also uncertain if future construction prices will be lower, since the market in the San José area may continue to be highly competitive and other municipal agencies in the vicinity will start implementing other scheduled water and wastewater projects, increasing demand substantially, and therefore construction costs.

PUBLIC OUTREACH

This Project was advertised on BidSync on January 13, 2016. This memorandum will be posted on the City's Council Agenda website for the May 24, 2016 City Council meeting.

COORDINATION

This Project and memorandum have been coordinated with the Departments of Planning, Building and Code Enforcement, Fire, and Finance, and the City Attorney's Office. This memorandum is scheduled to be heard at the May 19, 2016 TPAC meeting.

FISCAL/POLICY ALIGNMENT

This Project is consistent with the 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/COST OF PROJECT: $107,925,000

Project Delivery	$26,474,054*
Construction	$107,925,000
Contingency (12.5%)	$13,490,625
Total Project Costs	**$147,889,679**
Prior Year Expenditures	$8,196,395
Remaining Project Costs	**$139,693,284**

** Project delivery includes $15,793,433 for professional consultant services (feasibility/development, design, and engineering services during construction), $133,586 for project management during feasibility and development, $879,114 for project management during design, $78,468 for bid and award, $9,066,631 for construction management (including special inspections), and $522,822 for project management during post construction and project closeout. The estimated project delivery cost is 24.5% of the construction cost, which is in line with project delivery costs for capital projects at other wastewater facilities.*

2. COST ELEMENTS OF AGREEMENT/CONTRACT:

This is a lump sum contract.	$107,925,000

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

4. OPERATING COSTS: The annual costs to operate and maintain the upgraded and new Project facilities are estimated to be approximately $6,760,000 for the initial operation year in 2019-2020. This is an increase of about $1,500,000 over the current annual operations and maintenance costs to run the existing digester and thickener facilities, and includes polymer, power, equipment repair/maintenance, digester cleaning, screenings hauling, and labor costs. A portion of this cost could be offset by the increase in biogas production.

5. PROJECT COST ALLOCATION: In accordance with the recommendations set forth in the 2015-2016 Budget Adjustments for the San José-Santa Clara Regional Wastewater Facility Capital Improvement Program memorandum, as approved by the City Council on March 22, 2016, the cost for this project will be allocated 40 percent to biochemical oxygen demand (BOD) and 60 percent to total suspended solids (TSS).

BUDGET REFERENCE

The table below identifies the fund and appropriations proposed to fund the contract recommended as part of this memorandum and remaining project costs, including project delivery, construction, and contingency costs. Additional funding sources have been identified to cover the costs above the original budgeted estimate for this Project.

Fund #	Appn #	Appn Name	Current Total Appn	Rec. Budget Action	Amount for Contract	2015-2016 Adopted Capital Budget (Page)	Last Budget Action (Date, Ord. No.)
Remaining Project Costs			**$139,693,284**				
512	4127	Digester and Thickener Facilities Upgrade	$90,258,000	$28,545,000	$107,925,000	V-180	10/20/2015 Ord. No. 29636
Total Current Funding Available			**90,258,000**				
New Funding to be Appropriated				**$28,545,000**			
TOTAL FUNDING				**$118,803,000***			
Source of New Funding							
512	8999	Unrestricted Ending Fund Balance	$42,826,803	($17,253,000)	N/A	V-170	03/22/2016 Ord. No. 29709
512	7454	Energy Generation Improvements	16,600,000	($6,000,000)	N/A	V-183	06/23/2015 Ord. No. 29589
512	7455	SBWR System Reliability and Infrastructure Replacement	$4,692,000	($4,692,000)	N/A	V-197	06/23/2015 Ord. No. 29589
512	7698	Tunnel Rehabilitation	$700,000	($600,000)	N/A	V-194	01/26/2016 Ord. No. 29680
		Total		**($28,545,000)**			

* The remaining project funding of $20.9 million is included in the Proposed 2017-2021 Capital Improvement Program.

CEQA

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

An Initial Study (IS) and Mitigated Negative Declaration (MND) were prepared by the Director of Planning, Building and Code Enforcement for the project. The documents were circulated for public review from August 28, 2015, to September 28, 2015. One comment letter was received from the State Water Resources Control Board on the IS/MND.

The Initial Study identified two potentially significant impacts to biological resources and cultural resources resulting from the project. The mitigation measures identified in the IS/MND would reduce these two project impacts to a less-than-significant level. The entire MND and IS are available for review online at: https://www.sanjoseca.gov/index.aspx?NID=4989

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

/s/
BARRY NG
Director of Public Works

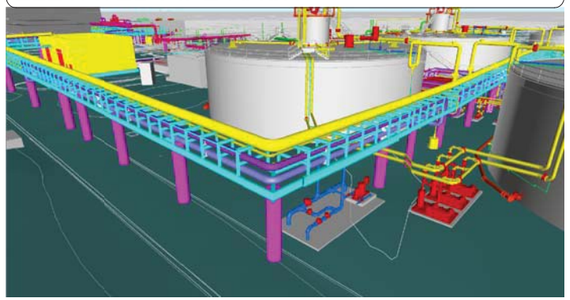
JENNIFER A. MAGUIRE
Senior Deputy City Manager/
Budget Director

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

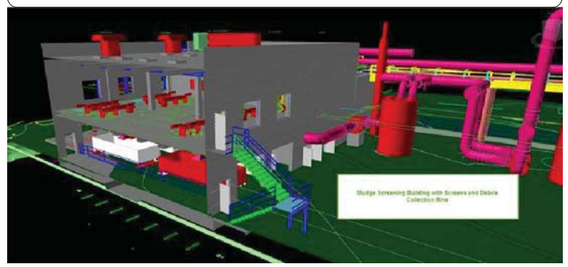
Attachment A – Digester and Thickener Facilities Upgrade Project Map

ATTACHMENT A - DIGESTER AND THICKENER FACILITIES UPGRADE PROJECT MAP

ELEVATED PIPE RACK



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

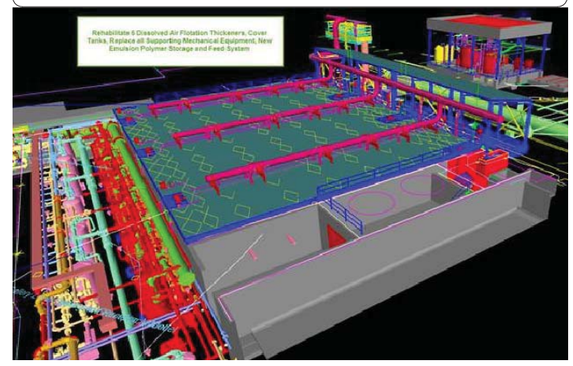


PROJECT SITE AREAS

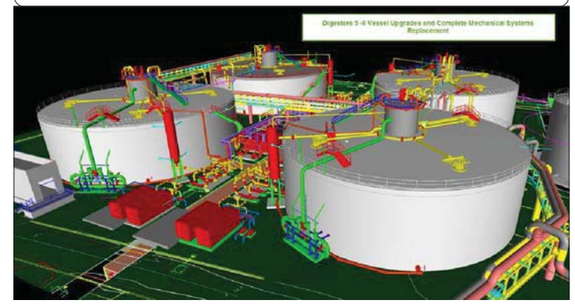
1. SECONDARY BLOWER BUILDING (TIE-IN TO EXISTING LINES)
2. SECONDARY BLOWER BUILDING
3. NEW AREA73
4. DAFT AND DAFT GALLERY
5. DIGESTER 5-8 AREA
6. MOTOR CONTROL CENTER
7. NEW GAS FLARE
8. REMOTE DIGESTER (9-16)

DIESEL STORAGE TANK

MODIFICATION OF DAFT 1-6



MODIFICATIONS OF DIGESTER 5-8



Attachment B

COUNCIL AGENDA: 11/28/17
ITEM: 7.1 (17-309)

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 [signature] 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

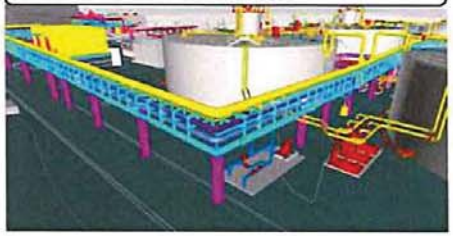
JENNIFER A. MAGUIRE
Senior Deputy City Manager/
Budget Director

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

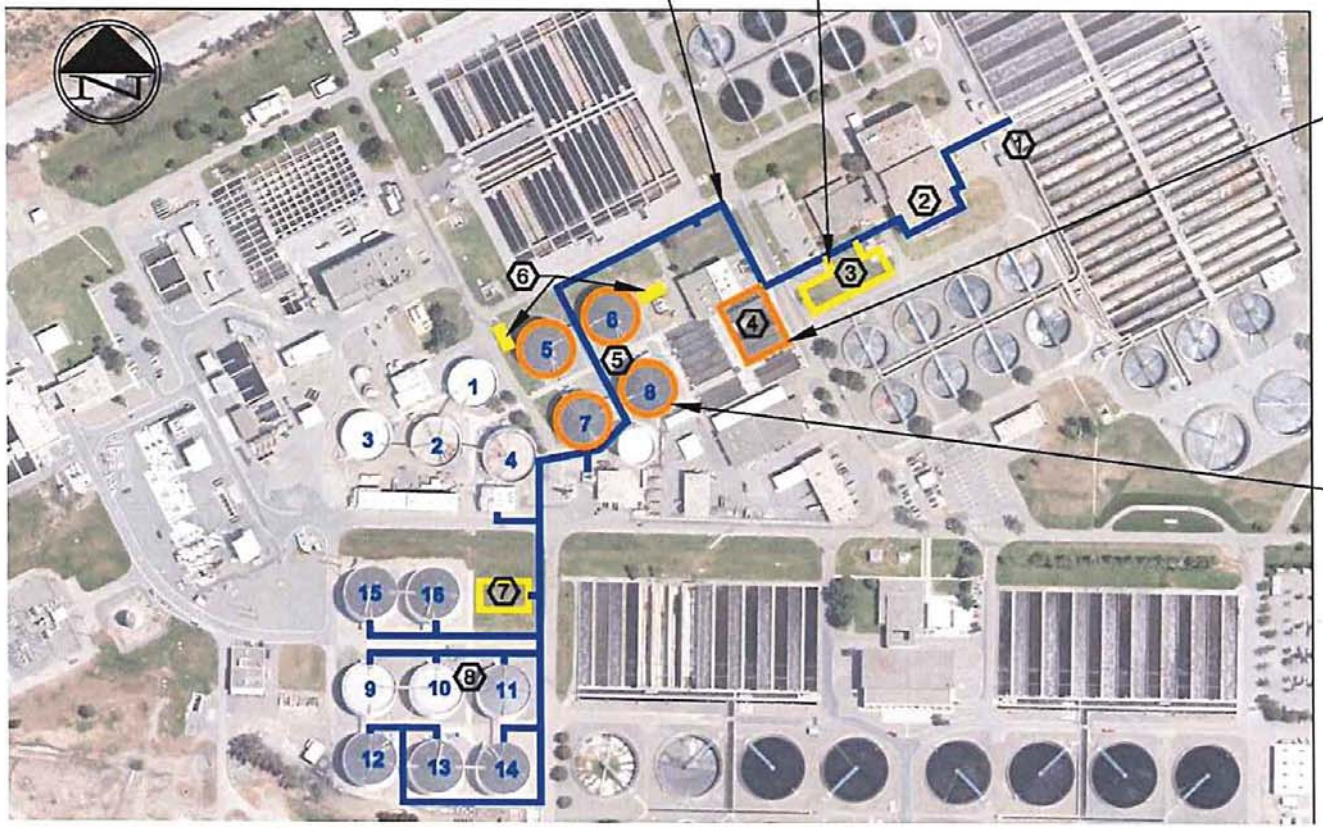
NEW ELEVATED PIPE RACK



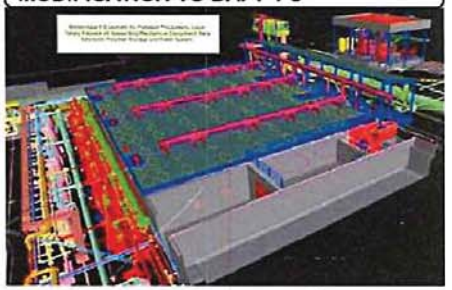
NEW SLUDGE SCREEN, ODOR CONTROL, STEAM CONVERTERS, AND POLYMER STORAGE/BLENDING FACILITIES

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 (9-18)



MODIFICATION TO DAFT 1-6



MODIFICATIONS TO DIGESTER 5-8

ATTACHMENT A

Digester and Thickener Facilities Upgrade

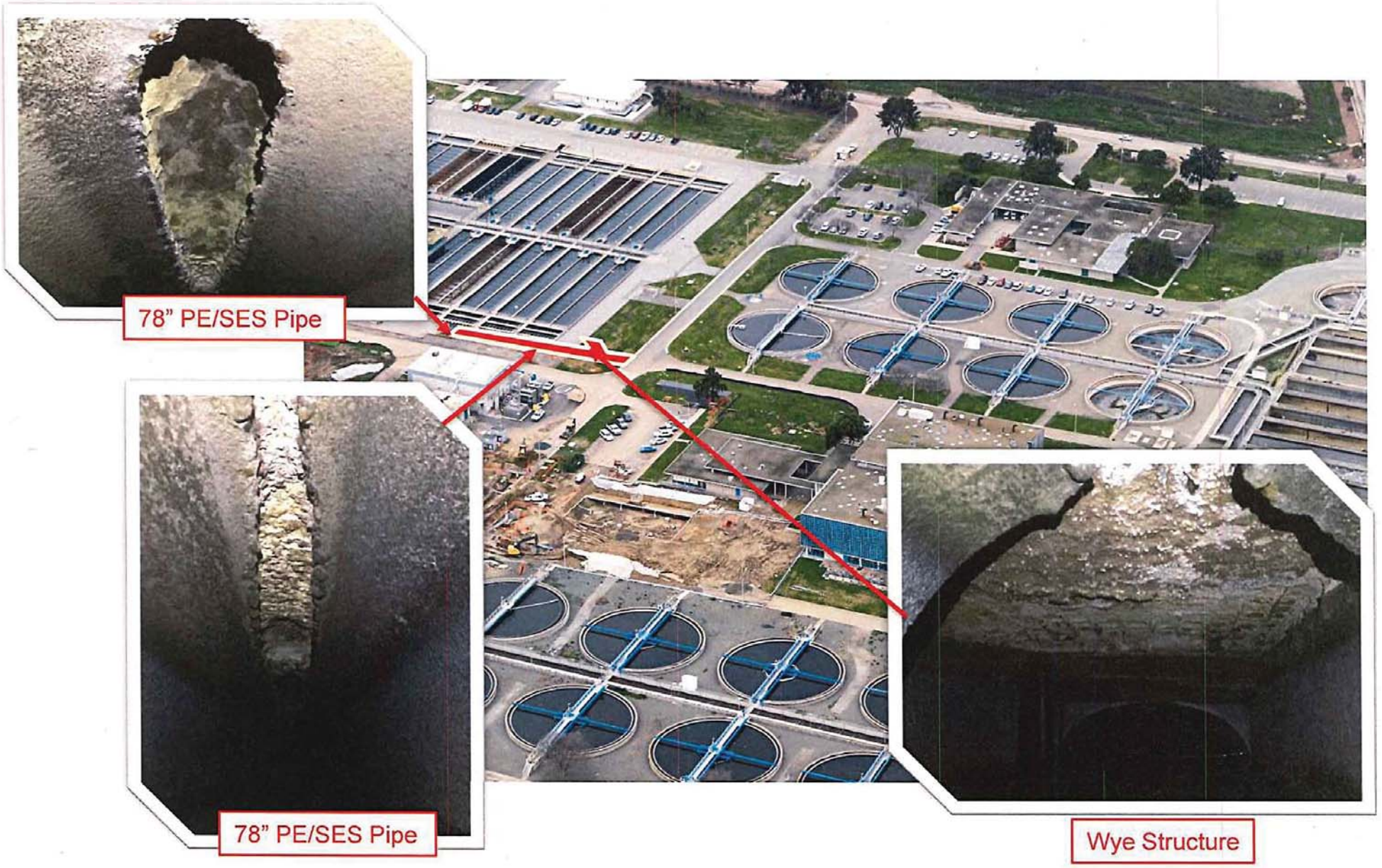
Approved and Pending Change Orders to Date and Forecasted Needs

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