CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

SAN JOSÉ/SANTA CLARA TREATMENT PLANT ADVISORY COMMITTEE

CHUCK REED, CHAIR
PETE McHUGH, MEMBER
KEVIN MOORE, MEMBER
JAMIE MATTHEWS, MEMBER
MADISON NGUYEN, MEMBER
KEN YEAGER, MEMBER
JOHN GATTO, MEMBER
ED SHIKADA, MEMBER
KANSEN CHU, MEMBER

AMENDED
AGENDA/TPAC

4:30p.m. **March 8, 2012** **Room T-1734**

1. ROLL CALL

2. MINUTES

A. February 9, 2012

3. UNFINISHED BUSINESS

4. CORRESPONDENCE

A. Status Update: San Jose/Santa Clara Water Pollution Control Plant Energy Reliability Update

5. REPORTS

A. Open Purchase Orders Greater Than $100,000
The attached monthly Procurement and Contract Activity Report summarizes the purchase and contracting of goods with an estimated value between $100,000 and $1 million and of services between $100,000 and $250,000.

6. AGREEMENTS

A. Acton Item - TPAC Recommendation for approval:

The following action is scheduled to be considered by the San José City Council on March 13, 2012:

Adopt a resolution authorizing the City Manager to:

1. Negotiate and execute a Master Service Agreement with BLP Engineers, Inc. for technical lead and quality assurance/control support for the Digester Rehabilitation Program at the San José/Santa Clara Water

Pollution Control Plant for an amount not to exceed $2,200,000 for an initial term commencing upon approval of the agreement and continuing through June 30, 2014

2. Execute up to three additional one-year options and to increase the compensation in an amount not to exceed $1,100,000 for each additional one-year term, subject to the annual appropriation of funds by the City Council

B. Acton Item - TPAC Recommendation for approval:

The following action is scheduled to be considered by the San José City Council on March 13, 2012:

Adopt a resolution authorizing the City Manager to:

1. Execute the Sixth Amendment to the Environmental Enforcement Data Management System (EEDMS) Agreement with enfoTech & Consulting, Inc. to extend the term of the agreement by twelve months from January 31, 2012 to January 31, 2013 and increase the maximum compensation by $45,025 for a revised not-to-exceed amount of $1,426,623 in order to complete the upgrade of the existing EEDMS to a web-based system and to add additional features and functionality.

2. Add $6,754 to the previous contingency amount of $72,750 for a total contingency amount not to exceed $79,504 to cover any unanticipated changes to the system upgrade, report development, system maintenance, and support.

3. Execute amendments to extend the term of the agreement beyond January 31, 2013 as required in the event that additional time is needed to complete the project.

7. STATUS OF ITEMS PREVIOUSLY RECOMMENDED FOR APPROVAL BY TPAC

A. Acton Item - TPAC Recommendation for approval:

The following action was approved by the San José City Council on February 14, 2012:

Report on bids and award of contract for Installation of Potable and Non-Potable Water Services and Mains: 2012-2013 to the lowest responsive bidder, San Jose Water Company, for the estimated term of April 2012 through June 2013, in an amount not to exceed $645,955.64.

B. Acton Item - TPAC Recommendation for approval:

The following action item was approved by the San José City Council on February 14, 2012:

Adopt a resolution authorizing the City Manager to:

1. Execute a Master Service Agreement with Cameron International Corporation, dba Process & Compression Systems (Cameron) located in Houston, Texas for the sole source purchase of Electrical Generator Engines (EGE or "Generator") catalogue parts, repair, refurbishment of engine components and related services as may be required, for a not-to-exceed amount of $3,000,000 over a three year period from January 2012 to January 2015.
2. Execute one-year options to extend the agreement to provide ongoing maintenance and support after the initial three year term, subject to the annual appropriation of funds.
3. Execute open purchase orders as required under the terms and conditions of the Master Agreement, subject to the appropriation of funds.

C. Acton Item - TPAC Recommendation for approval:

The following action item is scheduled to be considered by the Transportation and Environment Committee on February 6, 2012 and was approved by the San José City Council on February 14, 2012:

1. Accept this report on the capital project delivery approach for implementing the Plant CIP;
2. Direct staff to proceed with a Request for Information solicitation to determine market interest in Design Build, Design Build Operate, and Design Build Own Operate project delivery options for capital improvements using technology new to the City; and
3. Cross-reference this item to the February 14, 2012 Council meeting for consideration.

D. Acton Item - TPAC Recommendation for approval:

The following action item is scheduled to be considered by the Transportation and Environment Committee on February 6, 2012 and was approved by the San José City Council on February 14, 2012:

1. Accept the update on the San Jose/Santa Clara Water Pollution Control Plant's Pretreatment Program; and
2. Recommend the full Council approve a Director initiated ordinance amending Sections 15.14.270, 15.14.405, 15.14.465, 15.14.545, 15.14.575, 15.14.590, 15.14.695, and 15.14.745 of Chapter 15.14 of Title 15 of the San José Municipal Code to (1) update definitions for 'diluting waters,' 'significant change,' and 'zero discharger categorical user;' (2) allow issuance of permits to discharge stormwater to the sanitary sewer system; and (3) clarify requirements for reports submitted to the City from regulated facilities, as described in Title 40 of the Code of Federal Regulations (40 CFR).

8. MISCELLANEOUS

A. The next TPAC meeting will be April 12, 2012, at 4:30 p.m. City Hall, City Manager's Office, 17th Floor, Room 1734.

9. OPEN FORUM

10. ADJOURNMENT

NOTE: If you have any changes or questions, please contact Monica Perras, Environmental Services, 408-975-2515.
To request an accommodation or alternative format for City-sponsored meetings, events or printed materials, please call Monica Perras at (408) 975-2515 or (408) 294-9337 (TTY) as soon as possible, but at least three business days before the meeting/event.

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

DRAFT

MINUTES OF THE SAN JOSE/SANTA CLARA TREATMENT PLANT ADVISORY COMMITTEE

City Hall, City Manager's Office, 17th Floor, Room 1734
Thursday, February 9, 2012 at 4:30 p.m.

1. ROLL CALL

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

Committee members: Pete McHugh, Jamie Matthews, Kevin Moore (late arrival), Ed Shikada, Ken Yeager, Chuck Reed

Staff present: Monica Perras, Beth Gonzales, Rene Eyerly, Mollie Dent, Kerrie Romanow, Jon Newby, Harry Freitas, Linda Charfauros, Bhavani Yerrapotu, Andrew Hitchcock, Mark Giovannetti.

Others present: Chris de Groot (City of Santa Clara), Kathleen Phalen (City of Milpitas), Teresa Alvarado (Santa Clara Valley Water District), Robert Reid (West Valley Sanitation), Jim Foley (McCarthy Ranch),John Ryan(CH2MHILL), Madison Casserly (Kennedy/Jenks Consultants), Sharona Rozario, Joe Rios (City of San Jose), David Wall (San Jose Resident).

2. APPROVAL OF MINUTES

A. January 12, 2012
David Wall presented a speaker card on this item.
The minutes for January 12, 1012 were approved to note and file.

3. UNFINISHED BUSINESS

4. CORRESPONDENCE

5. REPORTS

A. Open Purchase Orders Greater Than $100,000
The attached monthly Procurement and Contract Activity Report summarizes the purchase and contracting of goods with an estimated value between $100,000 and $1 million and of services between $100,000 and $250,000.
Item 5.A was approved unanimously.
Committee Member Kevin Moore arrives.

6. AGREEMENTS

A. Acton Item - TPAC Recommendation for approval:

The following action item is scheduled to be considered by the San José City Council on February 14, 2012:

Report on bids and award of contract for Installation of Potable and Non-Potable Water Services and Mains: 2012-2013 to the lowest responsive bidder, San Jose Water Company, for the estimated term of April 2012 through June 2013, in an amount not to exceed $645,955.64.
Item 6.A was approved unanimously.

B. Acton Item - TPAC Recommendation for approval:

The following action item is scheduled to be considered by the San José City Council on February 14, 2012:

Adopt a resolution authorizing the City Manager to:

1. Execute a Master Service Agreement with Cameron International Corporation, dba Process & Compression Systems (Cameron) located in Houston, Texas for the sole source purchase of Electrical Generator Engines (EGE or "Generator") catalogue parts, repair, refurbishment of engine components and related services as may be required, for a not-to-exceed amount of $3,000,000 over a three year period from January 2012 to January 2015.
2. Execute one-year options to extend the agreement to provide ongoing maintenance and support after the initial three year term, subject to the annual appropriation of funds.
3. Execute open purchase orders as required under the terms and conditions of the Master Agreement, subject to the appropriation of funds.

Item 6.B.1-3 was approved unanimously.

C. Acton Item - TPAC Recommendation for approval:

The following action item is scheduled to be considered by the Transportation and Environment Committee on February 6, 2012 and will be considered by the San José City Council on February 14, 2012:

1. Accept this report on the capital project delivery approach for implementing the Plant CIP;
   David Wall presented a speaker card on this item.
2. Direct staff to proceed with a Request for Information solicitation to determine market interest in Design Build, Design Build Operate, and Design Build Own Operate project delivery options for capital improvements using technology new to the City; and
3. Cross-reference this item to the February 14, 2012 Council meeting for consideration.

   Jim Foley presented a speaker card on this item.
   Item 6.C.1-3 was approved unanimously.

D. Acton Item - TPAC Recommendation for approval:

The following action item is scheduled to be considered by the Transportation and Environment Committee on February 6, 2012 and will be considered by the San José City Council on February 14, 2012:

1. Accept the update on the San Jose/Santa Clara Water Pollution Control Plant's Pretreatment Program; and
2. Recommend the full Council approve a Director initiated ordinance amending Sections 15.14.270, 15.14.405, 15.14.465, 15.14.545, 15.14.575, 15.14.590, 15.14.695, and 15.14.745 of Chapter 15.14 of Title 15 of the San José Municipal Code to (1) update definitions for 'diluting waters,' 'significant change,' and 'zero discharger categorical user;' (2) allow issuance of permits to discharge stormwater to the sanitary sewer system; and (3) clarify requirements for reports submitted to the City from regulated facilities, as described in Title 40 of the Code of Federal Regulations (40 CFR).
   David Wall presented a speaker card on this item.
   Item 6.D.1&2 was approved unanimously.

7. STATUS OF ITEMS PREVIOUSLY APPROVED BY TPAC

The items that were approved by the San José City Council on January 10, 2012 were accepted to note and file.

8. MISCELLANEOUS

A. The next TPAC meeting will be March 8, 2012, at 4:30p.m., City Hall, City Manager's Office, 17th Floor, Room 1734.

PUBLIC COMMENT

A. David Wall presented a speaker card on digesters.

10. ADJOURNMENT

A. The Treatment Plant Advisory Committee adjourned at 4:45 p.m.

Chuck Reed, Chair
Treatment Plant Advisory Committee

Item 4.A

T&E COMMITTEE: 03-05-12
ITEM: (d) (5)

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: TRANSPORTATION & ENVIRONMENT COMMITTEE

FROM: Kerrie Romanow

SUBJECT: SEE BELOW

DATE: February 15, 2012

Approved _____ Date 2/24/12

SUBJECT: **SAN JOSE/SANTA CLARA WATER POLLUTION CONTROL PLANT – ENERGY AND RELIABILITY UPDATE**

RECOMMENDATION

Accept the status report on the condition of the San Jose/Santa Clara Water Pollution Control Plant's energy generation infrastructure.

OUTCOME

Acceptance of the report will update the Committee on the state of energy generation infrastructure at the San Jose/Santa Clara Water Pollution Control Plant (Plant) and issues associated with the reliable operations of the Plant.

BACKGROUND

The City operates one of the largest treatment plants in California, serving approximately 1.4 million people in a 300 square mile area of the South Bay. The Plant was originally built in 1956 with primary treatment capabilities to remove solids and oil/grease before discharging the waste water into the bay. The facility was upgraded to add a secondary treatment system to remove dissolved and suspended biological matter in 1962 and an advanced tertiary treatment system to further disinfect the wastewater in 1979. Currently, the Plant has a rated capacity to treat up to 167 million gallons per day (mgd) of average daily flow of wastewater.

The demands for energy at the Plant are highlighted below:

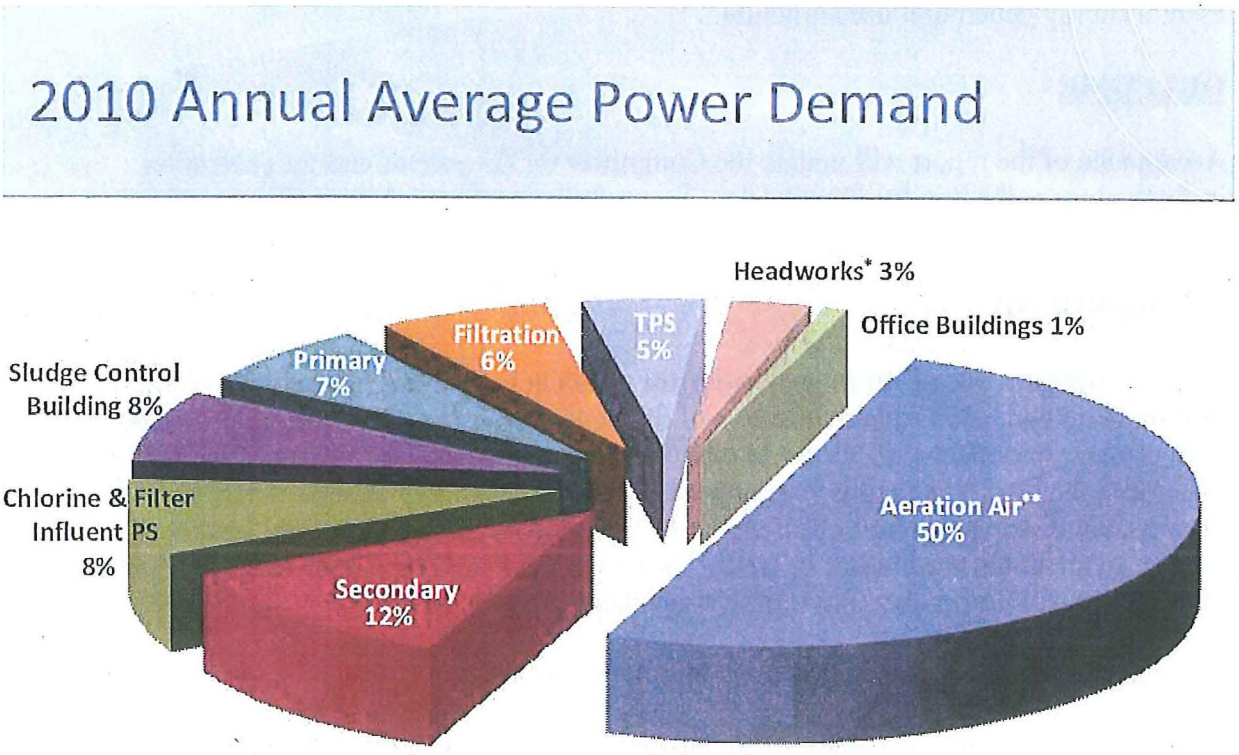
- Aeration of the secondary treatment and nitrification systems. In this process air is needed to allow aerobic bacteria to grow, multiply, and consume pollutants in the wastewater. The energy to supply the process air accounts for 50% of the Plant's energy demand. The process air demand for the secondary treatment area can be produced with a combination of gas driven and/or electric driven blowers.

- Electricity for pumping liquid and sludge to various Plant processes and for control systems and auxiliary building.

- Heat to warm sludge in the digester tanks to a required temperature for the anaerobic bacteria to digest the biological waste in the sludge. Sludge is solids that separate from the wastewater and are collected in the digester tanks. Heat is also used for space heating and cooling of the buildings in the Plant.

The Plant uses a blend of biogas from the eleven active digester tanks (digester gas), purchased landfill (methane) gas from the adjacent Newby Island Sanitary Landfill, and natural gas purchased from PG&E to support the needs described above. The Plant currently self generates up to 75% of the energy needed.

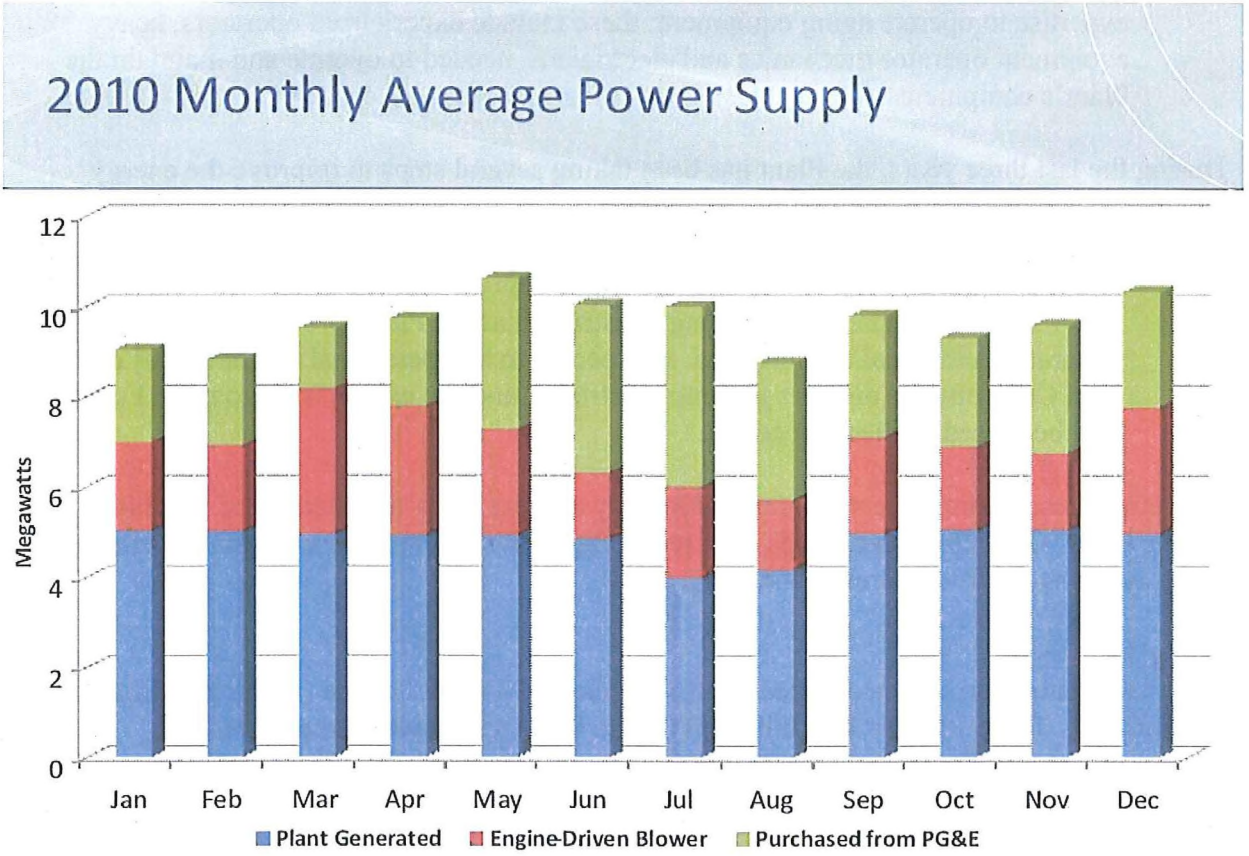
This blend of digester gas, landfill gas, and natural gas is used to drive six Blower Engines (BE) that provide process air for aeration in secondary treatment. The energy used by the BE's would be equivalent of four megawatt (MW) of electrical power. A megawatt of electricity can power up to 200 houses.



This blended biogas is also used to drive up to six Electrical Generator Engines (EGE's) that can normally generate up to six MW. The Plants total electrical demand can range up to eight MW if the Blower Engines are operating or eleven MW if the electric motor driven blowers are used. Electricity purchased from PG&E is used to meet any demand not supplied by the Plant

generation. During normal operating conditions, the Plant purchases about two to three MW of electricity from PG&E.

All of the gas engines are equipped with heat recovery systems to recover the waste heat from the engine exhaust, and this reclaimed heat energy is reused at the Plant. Natural gas-fired auxiliary boilers provide supplemental heating when necessary.



The Plant Master Plan developed over the last three years has identified long-term improvements to meet the Plant's future energy needs and set a goal to move towards being energy self sufficient. An Energy Management Strategic Plan (EMSP) is being developed to implement the recommendations in the Master Plan. The EMSP will define a transitional plan, determine a timetable for the Plant improvements needed to meet the Plant's supply and demand projections for the next 30 years and develop life cycle cost analysis for different scenarios of improvements.

ANALYSIS

Over the last few years the Plant has faced significant challenges related to the energy generation and reliable operations which are highlighted below:.

- *Aging Equipment:* The Plant's generators, mechanical and electrical process air compressor and gas compressors range in ages between 17-58 years. This older

equipment is breaking down with increasing frequency, well beyond forecast levels. These unpredictable failures can create longer down time, if the parts are not available in the City's or vendor's inventory, and the parts for older equipment are increasingly harder to secure.

- *Electrical Self-Sufficiency:* When the Plant loses power from PG&E , the Plant needs additional in-house energy generation to continually maintain critical operations.
- *Skilled Staff:* Recent attrition at the Plant has reduced available staff with necessary expertise to operate aging equipment; these include experienced operators, heavy equipment operator mechanics and electricians, needed to operate and maintain the Plant's equipment.

During the last three years, the Plant has been taking several steps to improve the energy generation and distribution reliability, including:

- $20,000,000 for an Electrical Reliability Improvements project to replace old equipment and reconfiguring the distribution system to improve reliability.
- A 1.4 Mega-watt Fuel Cell is being constructed at the Plant, providing much needed generating electrical capacity and is expected to be operational in March 2012. The Fuel Cell converts digester gas into electricity, and the excess heat from the Fuel Cell will be reused in Plant processes.

However, these improvements do not sufficiently address all of the energy and reliability needs for the Plant. The remainder of this staff report highlights the various areas of concern and steps being taken by Staff to address them.

Aging Equipment
The Plant generation is concentrated in two building: Pump & Engine (P&E) Building and Building 40. Table 1 below lists the Plant Onsite Electrical Power Generation.

Table 1 Onsite Electrical Power Generation Capacity
San José/Santa Clara Water Pollution Control Plant Master Plan
City of San José

Tag	Description	Location	Capacity (KW)	Year Built	Fuel Source	Operational Status
E-1	Engine-generator	P&E Building	800	1953	Blended Gas	Retired
E-2	Engine-generator	P&E Building	800	1953	Blended Gas	Functional
E-3	Engine-generator	P&E Building	800	1953	Blended Gas	Functional
E-5	Engine-generator	P&E Building	1,750	1962	Blended Gas	Functional
E-6	Engine-generator	P&E Building	1,750	1962	Blended Gas	Retired
EG-1	Engine-generator	Building 40	2,800	1994	Blended Gas	Functional
EG-2	Engine-generator	Building 40	2,800	1983	Blended Gas	Functional
EG-3	Engine-generator	Building 40	2,800	1983	Blended Gas	Non-functional

P&E Building

The operational units in the P&E Building of two 800 KW units (E-2 & E-3) and one 1,750 KW unit (E-5) have a total generation capacity of 3.35 MW. This 3.35 MW is not a reliable source of generation because of engine age and older technology controls that do not adjust for stable load and voltage management when connected with the Building 40 generators and separated from PG&E. In addition, these remaining three engines require significant on-going maintenance and repair due to their age.

Building 40

Two of the three engine generators in Building 40 are operated at all times. The third unit is usually in "stand-by" mode and provides redundancy in case of engine maintenance and overhaul, which can take up to eight months to complete. In June 2010, the EG-3 unit failed and sustained damage in the valve train. The damaged components were expected to require four to five months for new parts to be manufactured. Additionally, several piston assemblies in EG-3 need to be replaced or rebuilt.

Cameron Compression Systems (Cameron®) is the Original Equipment Manufacturer (OEM) for the line of engines at the Plant. All of our current engine models are out of production. Cameron® stocks selected known parts subject to normal wear and failure. Other parts that do not require frequent replacement such as crankshafts, cylinder heads, pistons, camshafts etc. are subject to long lead time to manufacture. There have been occasions when the OEM could not supply a replacement part. In such cases, staff has procured used reconditioned parts or have them made by another supplier. Alternate supplier parts have had issues with much shorter life spans and frequent malfunctions. Staff recommendation (Sole Source Purchase of Electrical Generator Engine Parts and Related Services from Cameron International Corporation) was brought forward for Council's consideration on February 14, 2012 to proceed with a contract with Cameron®. With this agreement now underway and with the new parts procured, EG-3 is anticipated to be back online by end of 2012.

Digester Compressors

The digester gas compressors are a critical part of the energy generations systems as they increase the gas pressure to the level needed by the gas engines. The gas compression system at the Plant consists of three 250 horsepower (HP) units installed in 1964 and one 450 HP unit installed in 1985. One of the 250 HP units failed in 2004 and was not repaired because at the time staff determined the other units provided sufficient reliability, which is no longer the case. The current operational 450 HP and two of the 250 HP units are sufficient to handle the digester gas production from the Plant. Lately, the 48-year old, 250 HP units have experienced frequent breakdowns requiring significant attention. In the case of failure of one of the 250 HP compressors, the Plant would not have adequate compressor capacity to pump digester gas. Such a failure would require a "flaring" of the digester (burning the digester gas to atmosphere). This would result in significant amounts of wasted renewable energy which could lead to a violation

of the Title V Operating Permit issued by the Bay Area Air Quality Management District. There are major fines associated with Title V Permit violations and in some cases they may exceed $10,000 a day.

The EMSP has recommended adding a new 450 HP compressor to improve the Plant reliability. This project is currently programmed into the 2012-2013 Capital Improvement Program (CIP) and is being brought forward for Council consideration as part of the proposed CIP budget year.

Electrical Self-Sufficiency

Currently, Building 40 has only two engines operational (EG-1 & EG-2), with no back-up units available, except for the P&E Building generators, which due to their age, are unreliable. In the event of a power loss of PG&E, and due to the issues with load balancing with existing engines, the Plant may not have sufficient generation to maintain the Plant's critical loads. The critical power is the minimum power needed for the Plant to maintain its generation and the ability to pump wastewater to its emergency basins is about 5 MW. Without sufficient generating power, the Plant could have untreated sewage flood the Plant grounds and flows into the Bay as quickly as within 20 minutes of power failure, depending on the Plant operating conditions.

With EG-1 & EG-2 engines operational, the Plant will have the generation needed to meet its critical power demand in the event of a power loss of PG&E. The newest of these engines is 18 years old and still has some projected remaining functionality. The older of these is about 28 years old and needs significant attention and ongoing maintenance as mentioned earlier. An additional challenge with this configuration of running the Plant solely on Building 40 generators is the instability of these types of engines to "shock" loads in "island mode" (separated from PG&E). In other words, when a large electrical load such as a pump motor is started, the additional demand has a tendency to "trip" off one or more of the generators. In such instances, it is almost impossible to bring this generator back online without additional power supply from an external source needed for the start-up, which would be unavailable in the event of power loss from PG&E.

To address this issue, in the short term the EMSP has proposed that the Plant add diesel generators. When the Plant is operating in the "island mode" (separated from PG&E), the Plant generation and the Plant electrical loads will be matched. The diesel generators will be more responsive to the load changes (such as, starting a large pump motor) than the existing Plant gas engine generators and the Fuel Cell.

In addition, the Plant Master Plan has recommended adding three new 4.6MW gas turbines for installation in 2015, 2020 and 2028 and to coincide with the increase in the projected digester methane gas production. Staff is currently evaluating these recommendation timelines as part of the EMSP and will develop both a short term and long term implementation plan to address the immediate issues and long term generation goals of the Plant. These short term implementations will be programmed into Package 1 projects as presented in the report on the Plant's CIP to the

Transportation and Environment Committee on February 6, 2012. The long term implementation projects will be programmed into Package 2.

Skilled Staff

In the last several years, the Plant has seen a significant loss in staff critical to the operation and maintenance of the Plant due to retirement and other attritions. At the present time, of the 175 critical positions at the Plant, 41 are currently vacant. The Plant is having difficulty in attracting qualified individuals with the skills needed to fill these open positions. Specifically, for the heavy equipment operator positions (staff that operate the generation equipment), the attrition rate is over 50%.

The loss of those experienced personnel is most acute during emergency conditions when primary equipment breaks down or a loss of PG&E power occurs. Some of the remaining staff do not have the experience to react as quickly to mitigate these type of emergency events as the more senior staff, which results in increased risk to critical Plant operations.

To address the attrition, staff is developing infrastructure solutions that would simplify the operations of the generation equipment. In addition Staff has also embarked on a comprehensive documentation and training program to help staff get skilled in response to such situations. Further, the classifications for the Operator Series have been modified to reward those employees who obtain additional certifications above the minimum required.

CONCLUSION

In summary, the power generation infrastructure at the Plant is critical to the reliable operations of the Plant. Power generation is currently facing some challenges with operation due to aging infrastructure and obsolescence of existing equipment. Staff is addressing these challenges through the implementation measures such as the construction of a 1.4 MW Fuel Cell, establishing on-call maintenance contracts with existing equipment manufacturers and acquiring emergency generator equipment. Staff is also completing the planning phase for the long term capital project implementation of upgrading all generation equipment at the Plant. These Projects and implementation plan will be presented as part of upcoming CIP for the Plant.

EVALUATION AND FOLLOW-UP

The Committee, Council, and Treatment Plant Advisory Committee will receive regular updates on progress made on achieving electrical reliability at the Plant through regular CIP updates

PUBLIC OUTREACH/INTEREST

☐ **Criterion 1**: Requires Council action on the use of public funds equal to $1 million or greater. **(Required: Website Posting)**

❑ **Criterion 2:** Adoption of a new or revised policy that may have implications for public health, safety, quality of life, or financial/economic vitality of the City. **(Required: E-mail and Website Posting)**

❑ **Criterion 3:** Consideration of proposed changes to service delivery, programs, staffing that may have impacts to community services and have been identified by staff, Council or a Community group that requires special outreach. **(Required: E-mail, Website Posting, Community Meetings, Notice in appropriate newspapers)**

This report does not meet the criteria above.

COORDINATION

This report has been coordinated with the City Attorney's Office, Office of Employee Relations, and will be presented to the Treatment Plant Advisory Committee at its March 8, 2012 meeting.

CEQA

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

/s/
KERRIE ROMANOW
Acting Director, Environmental Services

For questions, please contact Bhavani Yerrapotu, Deputy Director at 945-5321.

Item 5.A

City Manager's Contract Approval Summary

For Procurement and Contract Activity between $100,000 and $1 Million for Goods and $100,000 and $250,000 for Services

February 1 - February 28, 2012

Description of Contract Activity [1]	Fiscal Year	Req#/ RFP#	PO#	Vendor/Consultant	Original $ Amount	Start Date	End Date	Additional $ Amount	Total $ Amount	Comments
NEW:										
PO:SERVICES:FIBER OPTIC NETWORK EXPANSION	FY11-12	15360		ROSENDIN	$245,000					
TEMP LABORERS - ASSIST OPERATORS	FY11-12	14807	46654	TRENDTEC	$97,600	7/1/11	6/30/12	$97,600	$195,200	
ONGOING:										
OVERHAUL OF TPS & FLOWAY PUMPS	FY11-12	14065	46966	MARTECH, INC (MECHANICAL ANALYSIS REPAIR INC)	$200,000	2/1/12	1/31/13			
TRACTORS - AERATOR MODIFICATIONS	FY11-12	15317		PETERSON TRACTOR CO	$900,000					

[1] This report captures in process contract activity (Requisition Number or RFP Number) and completed contract activity (Purchase Order Number, Contract Term, and Contract Amount)

Item 6.A.1-2

COUNCIL AGENDA: 03-13-12
ITEM:

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Kerrie Romanow

SUBJECT: **SEE BELOW**

DATE: February 21, 2012

Approved

Date 2/27/12

SUBJECT: MASTER AGREEMENT WITH BLP ENGINEERS, INC. FOR TECHNICAL LEAD AND QUALITY ASSURANCE/CONTROL SUPPORT FOR THE DIGESTER REHABILITATION PROGRAM AT THE SAN JOSE/SANTA CLARA WATER POLLUTION CONTROL PLANT

RECOMMENDATION

Adopt a resolution authorizing the City Manager to:

(a) Negotiate and execute a Master Service Agreement with BLP Engineers, Inc. for technical lead and quality assurance/control support for the Digester Rehabilitation Program at the San José/Santa Clara Water Pollution Control Plant for an amount not to exceed $2,200,000 for an initial term commencing upon approval of the agreement and continuing through June 30, 2014

(b) Execute up to three additional one-year options and to increase the compensation in an amount not to exceed $1,100,000 for each additional one-year term, subject to the annual appropriation of funds by Council.

OUTCOME

Approval of this master agreement provides the City with the ability to obtain a technical lead and quality assurance/control support for the Digester Rehabilitation Program at the San José/Santa Clara Water Pollution Control Plant (Plant) on an as-needed basis.

BACKGROUND

Since 2007, the Plant has been engaged in a comprehensive master planning effort to identify the short-term and long-term capital improvement investments needed to address the Plant's aging infrastructure and reduced reliability due to facility conditions. Several key process units,

including the Plant's anaerobic digesters, digester gas pipeline conveyance system, dissolved air flotation thickeners (DAFT) and related support facilities, have been identified as priorities for rehabilitation due to capacity, safety and performance issues.

In 2008, the City initiated a Digester Rehabilitation Program focused on process optimization and modernization of sixteen existing anaerobic digesters for solids stabilization, dewatering, drying and final disposal and/or re-use. The goals include co-digestion of sludge, scum and fats, oils, and grease, better mixing and gas production, energy recovery and odor control. The firm of Brown & Caldwell was retained to develop a comprehensive pre-design study and implementation plan for the Digester Rehabilitation Program. The study concluded in October 2011, resulting in final recommendations to upgrade a total of ten digesters with new covers and mixing systems along with other signification upgrades to the digester gas manifold and tunnels, DAFT units, and digester heating systems. Due to operating constraints, the rehabilitation work will need to be completed in three phases: Phase 1 – initial four digesters; Phase 2 – additional four digesters; and Phase 3 – the remaining 2 digesters.

An Implementation Plan has been prepared for the Digester Rehabilitation Program and identifies seven major construction elements:

1. Digester Gas Manifold and Tunnel Improvements
2. Digester Cover and Mixing Upgrades
3. Digester Mixing Equipment 1
4. Digester Mixing Equipment 2
5. DAFT Final Upgrades
6. Digester Heating Upgrades
7. Struvite Control Chemical Feed

The City is in the process of engaging two consultant firms, Black & Veatch and Brown & Caldwell, through existing master agreements, to prepare construction bid documents for the Phase 1 work. Black & Veatch will be responsible for designing the digester gas manifold and tunnel improvements, and Brown & Caldwell will be responsible for designing the digester cover and mixing system improvements, along with the DAFT modifications and heating system upgrades. The result will be two concurrently designed bid packages with the possibility that the designs may be combined into one bid package. Design and bidding services are estimated to take two years following issuance of a Notice to Proceed, which is tentatively scheduled for April 2012.

Given the size and disruptive nature of the project and the need for significant emphasis on the safety related to the lone digester gas pipeline that carries methane gas, coordination required between the various aspects of the projects and current Plant operations, staff identified the need for an engineering consulting firm to provide technical leadership and QA/QC support services for the Digester Rehabilitation Program. Implementation of this program will require coordination with multiple stakeholders including the design consultants; Plant engineering and operations and maintenance staff; and other Plant or City projects such as the on-going Plant Master Plan to ensure projects will be implemented for the long-term needs of the Plant.

For the initial term of the agreement, the technical lead consultant will be responsible for overseeing the Phase 1 work, from the design of the projects up to and including the bidding phase. Any necessary support services during construction and commissioning phases will be developed at a later date in the City's sole discretion subject under the additional option years. Specific tasks to be completed by this consultant include:

- Coordination and facilitation of internal and external project meetings and workshops to review roles, responsibilities, and communications protocol, discuss fundamental design decisions and criteria, set standards and conventions for project design documents, and review schedule and budget commitments, technical review workshops at the 10-30-60-90 percent design stages, and monthly progress meetings with City's two design consultants.
- Technical review of major design submittals, detailed design review at 10-30-60-90-100 percent submittals covering multiple disciplines including general/civil, process/mechanical, structural/demolition, building/mechanical, electric/power, process equipment and sizing, controls systems and strategies. Review of construction cost estimate at 10-30-60-90-100 percent submittals. Coordination of common technical requirements and design interfaces between the two design bid packages, identification and resolution of potential conflicts. Coordination and review of the Process Hazard Analysis at the 30 percent design stage.
- Evaluation of technical issues and piloting assistance/field studies related to: digester mixing alternative, Struvite resistant material, gas compressors and DAFT upgrades and heat exchanger capacity.
- Equipment evaluation, selection, and procurement and review of the pre-purchase contract documents to be developed by City's design consultants at the 60 percent design stage; assist City with negotiation of the sole source purchase agreements where appropriate including evaluation of warranty options; coordinate and monitor pre-purchase equipment delivery schedule; in coordination with City's design consultants, inspect and confirm delivered product for compliance with pre-purchase contract documents; in coordination with City staff and design consultants, develop proper equipment storage plan until installation.

ANALYSIS

Staff began a qualification-based consultant selection process with a Request for Qualifications (RFQ), which was advertised on BidSync in November 2011. Three companies responded to the RFQ and submitted a Statement of Qualifications (SOQ). A panel consisting of representatives from the Environmental Services Department, the City of Sunnyvale and the West Valley Sanitation District evaluated the SOQs. The same panel also conducted oral interviews with all three firms.

The overall selection criteria were: the proposing firm's program approach; the project manager's qualifications and experience; the technical lead's qualifications experience; the specialty subconsultants' experience; the proposing firm's technology implementation and

testing experience; the proposing firm's communications skills; and Local/Small Business Enterprise (LBE/SBE) status.

The individual evaluations from the SOQ screening, oral interview, and LBE/SBE status were compiled using a scoring system based upon a maximum of 100 points of which 54 points maximum were assigned to the submitted SOQ, 36 points maximum to the oral interview, and 10 points to the LBE/SBE status. The total point scores and the resulting rankings of each firm are summarized below:

Consulting Firm	Score	Rank
BLP Engineers, Inc.	87.7*	1
Whitley Burchett & Associates	62.7	2
PSOMAS	56.3	3

* Includes ten points for LBE/SBE preference.

All work to be provided under the master agreement will be negotiated and authorized on a service order basis band will conform to the scope of work described under the background section of this memorandum. City may choose to seek additional services related to project management and project controls and support during construction, based on the need and how many concurrent construction projects would be happening at the same time as the Digester Rehabilitation project.

EVALUATION AND FOLLOW-UP

This master agreement will provide staff with the ability to engage the services of the consultant on an as-needed basis, thereby enabling a cost effective and timely delivery of the Digester Rehabilitation Program. No additional follow-up action with the Council is expected at this time.

PUBLIC OUTREACH

✓ **Criterion 1**: Requires Council action on the use of public funds equal to $1 million or greater. **(Required: Website Posting)**

☐ **Criterion 2:** Adoption of a new or revised policy that may have implications for public health, safety, quality of life, or financial/economic vitality of the City. **(Required: E-mail and Website Posting)**

☐ **Criterion 3:** Consideration of proposed changes to service delivery, programs, staffing that may have impacts to community services and have been identified by staff, Council or

a Community group that requires special outreach. **(Required: E-mail, Website Posting, Community Meetings, Notice in appropriate newspapers)**

COORDINATION

This project and memorandum have been coordinated with Risk Management, Equality Assurance, the City Manager's Budget Office, and the City Attorney's Office. As part of the "contracting-in" evaluation, this project was approved for outsourcing by the City's Contracting-In Committee due to the lack of technical skills required to implement this project within the City. This item is scheduled to be heard at the March 8, 2012 Treatment Plant Advisory Committee meeting.

FISCAL/POLICY ALIGNMENT

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

COST IMPLICATIONS

1. AMOUNT OF RECOMMENDATION: $2,200,000

2. COST ELEMENTS OF MASTER AGREEMENT: The master agreement's consultant services are reimbursed based on an hourly rate schedule in the master agreement for the involved consultant personnel.

3. SOURCE OF FUNDING: 512 – San José/Santa Clara Treatment Plant Capital Fund. Funds will be encumbered, as needed, from the Digester Rehabilitation appropriation when service orders are developed. All encumbrances will be subject to the appropriation of funds.

BUDGET REFERENCE

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

Fund #	Appn. #	Appn. Name	RC #	Total Appn.	Amt. for Master Agreement	2011-2012 Adopted Capital Budget Page	Last Budget Action (Date, Ord. No.)
Current Funding Available							
512	4127	Digester Rehabilitation	144943	$12,820,000	$2,200,000	V-163	6/21/2011; Ord. No. 28928

CEQA

Statutorily Exempt, File No. PP10-066 (d), CEQA Guidelines Section 15262, Feasibility and Planning Studies.

/s/
KERRIE ROMANOW
Acting Director, Environmental Services Department

For questions, please contact Bhavani Yerrapotu, Deputy Director, Environmental Services Department, at (408) 945-5321.

REPLACEMENT

COUNCIL AGENDA: 3-13-12
ITEM: 2.7

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Item 6.B.1-3

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Julia H. Cooper

SUBJECT: SEE BELOW

DATE: February 28, 2012

Approved

Date 2/29/12

SUBJECT: SIXTH AMENDMENT TO THE AGREEMENT BETWEEN THE CITY OF SAN JOSE AND ENFOTECH & CONSULTING, INC.

REPLACEMENT

REASON FOR REPLACEMENT

This replacement memo updates the compensation for services to be provided by enfoTech & Consulting, Inc., under the recommended amendment. This memo also reflects updated information regarding system launch date.

RECOMMENDATION

Adopt a resolution authorizing the City Manager to:

(a) Execute the Sixth Amendment to the Environmental Enforcement Data Management System Agreement with enfoTech & Consulting, Inc. to extend the term of the agreement by twelve months from January 31, 2012 to January 31, 2013 and increase the maximum compensation by $45,025 for a revised not-to-exceed amount of $1,426,623 in order to complete the upgrade of the existing Environmental Enforcement Data Management System to a web-based system and to add additional features and functionality.

(b) Add $6,754 to the previous contingency amount of $72,750 for a total contingency amount not to exceed $79,504 to cover any unanticipated changes to the system upgrade, report development, system maintenance and support.

(c) Execute amendments to extend the term of the agreement beyond January 31, 2013, as required in the event that additional time is needed to complete the project.

OUTCOME

Complete implementation of an upgraded operating platform and added functionality to manage data for Environmental Services Department (ESD) inspection programs. The added functionality will provide operations and management reports to support program administration and oversight.

BACKGROUND

EEDMS is used to manage data for several regulatory programs driven by the Federal Environmental Protection Agency (EPA) requirements and the State National Pollution Discharge Elimination System (NPDES) permits for sanitary and storm water discharge. The system is used by 60 staff and provides for data management for a wide array of programs including storm water inspections for industrial, commercial and construction sites; illegal discharge complaint response; food service facility inspections; permitting for dentists using mercury amalgam; and pretreatment program implementation for industrial wastewater dischargers.

On April 15, 2003, Council approved an agreement with enfoTech & Consulting, Inc. (enfoTech), in the amount of $1,063,399 to implement the Environmental Enforcement Data Management System (EEDMS) project using their proprietary software, PACS 2000. This selection was the result of a competitive Request for Proposal (RFP) process. The system was accepted by the City and became operational in 2005. The original contract has since been amended five times. The first amendment extended the contract period for completion of the complex customization and testing requirements and to include two one-year maintenance options. The second, third and fourth amendments added additional maintenance periods and extended the term of the agreement without increasing compensation.

On June 22, 2010, Council approved the fifth amendment increasing compensation by $318,199 in order to upgrade the system to the web-based EEDMS 2.0. In addition, five one-year maintenance options were approved and the agreement term was extended to January 31, 2012. The largest segment of work remaining is completion of the operations and management report development for the new system. These reports are critical for the administration and oversight of the various inspection programs and contain information ranging from inspector work progress to violation summaries. They are also used to compile data for regulatory reports submitted by ESD to the Regional Water Quality Control Board and the EPA on an annual and semi-annual basis. ESD originally intended internal staff to conduct the report development work and did not include this in the scope of the previous amendment to the agreement. Staff has completed several reports; however, due to the volume of reports and the need to redirect ESD technical resources to other critical projects, a substantial number of reports will remain outstanding. Therefore the scope is being amended for enfoTech to develop the reports that are

critical for ESD to properly oversee and manage inspection programs and realize the full benefit of the EEDMS System.

ANALYSIS

With this amendment, enfoTech will complete development of up to 45 reports. Most of these reports currently exist in EEDMS 1.0, but may require modifications to meet changing program needs. Other reports are new reports required to meet the needs of new program elements. In addition, enfoTech would update or provide new database programming to automate processes associated with various reports. Complexity is added to this task because the data structure in EEDMS 2.0 is different from the structure of the current database. enfoTech would work with ESD staff to ensure that the finished reports run correctly and include the appropriate data. Completion of various reports is important to the robust testing of the system as such reports demonstrate that program data is being stored and compiled accurately. ESD anticipates that this approach will result in the work being completed sooner and at less cost than completing the reports in-house, which would require diverting ESD's technology staff away from other critical projects.

The additional funding and extended term will allow time to complete the system upgrade, system acceptance, additional customizations, and report development. ESD anticipates launching the new system in March 2012. Following the system launch, a 60 day system acceptance period will begin. During this acceptance period, ESD may identify database issues that necessitate additional system modifications. Such modifications will be added to the scope through change orders and will be paid for with contingency funds. This additional work, if required, will require additional time. The term extension will also allow time to complete report development.

enfoTech is uniquely suited to conduct the scope of work described above because of their familiarity with the ESD database and business processes. As the developer of EEDMS 1.0 and EEDMS 2.0, enfoTech is intimately familiar with the data structure of both systems. They have also become familiar with ESD business practices.

enfoTech has agreed to a 10% reduction to hourly rates for staff assigned to conduct report development.

EVALUATION AND FOLLOW-UP

The project is currently within budget and on schedule with a projected completion by January 2013. No additional follow up actions with Council are expected at this time.

POLICY ALTERNATIVES

Alternative #1: Complete the project as currently scoped with City staff developing various custom reports.

Pros: Cost avoidance to purchase the consultant services to develop management reports.
Cons: The City will not be able to properly manage and oversee inspection program activities until the necessary reports are completed. Additionally, other technology projects such as the laboratory information system upgrade will be delayed.
Reason for Not Recommending: This alternative is not viable because the reports are a critical element of proper inspection program management. The City must maintain proper program oversight and management to comply with regulatory requirements.

PUBLIC OUTREACH/INTEREST

- ❑ **Criterion 1**: Requires Council action on the use of public funds equal to $1 million or greater. **(Required: Website Posting)**
- ❑ **Criterion 2:** Adoption of a new or revised policy that may have implications for public health, safety, quality of life, or financial/economic vitality of the City. **(Required: E-mail and Website Posting)**
- ❑ **Criterion 3:** Consideration of proposed changes to service delivery, programs, staffing that may have impacts to community services and have been identified by staff, Council, or a Community group that requires special outreach. **(Required: E-mail, Website Posting, Community Meetings, Notice in appropriate newspapers)**

Although this item does not meet any of the above criteria, this memorandum will be posted on the Council Agenda for March 13, 2012.

COORDINATION

This item is scheduled to be heard at the March 8, 2012 Treatment Plant Advisory Committee meeting. In addition, this memorandum has been coordinated with the Environmental Services Department, Information Technology Department, the City Manager's Budget Office and the City Attorney's Office.

FISCAL/POLICY ALIGNMENT

This action is consistent with the following General Budget Principle: "We must continue to streamline, innovate, and simplify our operations so that we can deliver services at a higher

quality level, with better flexibility, at a lower cost" and the Strategic Initiative "Make San José a Tech-Savvy City; lead the way in using technology to improve daily life."

COST SUMMARY/IMPLICATIONS

1. AMOUNT OF RECOMMENDATION (Sixth Amendment):		$45,025
2. COST ELEMENTS OF AGREEMENT		
	Agreement	$1,063,399
	*Fifth Amendment	318,199
	Proposed Sixth Amendment	45,025
	Subtotal	**1,426,623**
	*The first, second, third, and fourth amendments did not add compensation to the original Agreement.	
	Maintenance Options	**71,420**
	Prior Contingency	72,750
	Proposed Additional Contingency	6,754
	Subtotal	**79,419**
	Total Cost	**$1,577,462**
	Prior Year Expenditures	1,387,130
	REMAINING PROJECT COSTS	**$190,332**
3. SOURCE OF FUNDING:	513 – San José/Santa Clara Treatment Plant Operating Fund, and	
	446 – Storm Sewer Operating Fund	
4. FISCAL IMPACT:	a) This project has been reviewed and staff has determined that it will have no impact on the General Fund Operating Budget.	

BUDGET REFERENCE

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

Fund #	Appn #	Appn. Name	Total Appn.	Amount for Contract	2011-2012 Adopted Budget (Page)	Last Budget Action (Date, Ord. No.)
446	0762	ESD Non-personal/ Equip.	$5,251,421	$22,512.50	XI-85	06/21/11, 28928
513	0762	ESD Non-personal/ Equip.	25,548,275	22,512.50	XI-78	06/21/11, 28928
Amount of Recommendation				$45,025		

CEQA

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

/s/
ARN ANDREWS FOR JULIA H. COOPER
Acting Assistant Director for the Acting Director of Finance

For questions please contact Mark Giovannetti, Purchasing Division Manager, at (408) 535-7052.