



CITY COUNCIL STAFF REPORT

DATE: FEBRUARY 18, 2015

SUBJECT: APPROVAL OF A BUDGET RESOLUTION IN THE AMOUNT OF \$162,936 AND APPROVAL OF CHANGE ORDER NO. 8 IN THE AMOUNT OF \$775,271 WITH OPTERRA ENERGY SYSTEMS FOR THE CITYWIDE ENERGY PROJECT

FROM: David H. Ready, City Manager

BY: Special Projects Coordinator

SUMMARY

The proposed action requests City Council approval of Change Order No. 8 in the amount of \$775,271 with Opterra Energy Systems to upgrade and/or replace older mechanical electrical equipment at the Airport and other municipal buildings. The additional work is warranted and is beyond the original scope of the project.

RECOMMENDATION:

1. Adopt Resolution No. _____, "A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALM SPRINGS, CALIFORNIA, AMENDING THE BUDGET FOR FISCAL YEAR 2014-15 TO UPGRADE AND/OR REPLACE OLDER MECHANICAL ELECTRICAL EQUIPMENT AT VARIOUS MUNICIPAL FACILITIES AS PART OF THE CITYWIDE ENERGY PROJECT."
2. Approve Change Order No. 8 in the amount of \$775,271 with Opterra Energy Services, Inc., to upgrade and/or replace older mechanical electrical equipment at the Airport and other Municipal Facilities and extend the contract thru July 31, 2015.
3. Authorize the City Manager to execute all necessary documents to implement the Change Order.

STAFF ANALYSIS:

Opterra Energy Services, Inc (formerly Chevron Energy Systems) was hired by the City to rebuild its aging cogeneration infrastructure as well as implement a City wide energy conservation effort thru infrastructure improvements at City Facilities. On several

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occasions staff has brought forward change orders to the Opterra contract to implement further improvements to aging infrastructure as well as to implement efficiencies in our systems and maintenance efforts. As staff has toured the facilities that are tied to the Municipal Cogeneration plant with Opterra, additional maintenance, safety and efficiency improvements have been identified for both the Airport Terminal building as well as other Civic Center structures. This report will detail the specific concerns discovered and recommended solutions to alleviate the issues.

AIRPORT:

1. Connectivity to City Hall: Recently the City Council approved a Change Order with Opterra to install new fiber optic cables in existing conduits between the various buildings at the Civic Center. The work has begun and during that effort it was determined that better connectivity between the Airport and City Hall was desirable, thus a direct run between the two structures rather than routing thru the Police Department, is proposed at **\$11,537**.
2. Bono Terminal Boiler: In 1998, the expansion of the airport through construction of the new Bono Concourse Terminal required installation of its own heating and cooling system, as the Municipal Co-Gen facility did not have the appropriate capacity to serve the additional building square footage represented by the new terminal. At that time, however, a new boiler for the Bono Concourse Terminal was omitted during construction as a cost saving measure. As a result, during winter months there is insufficient heating of the Bono Concourse Terminal, and over the last year a temporary boiler has been rented to provide sufficient heating. However, after completion of improvements to the Municipal Co-Gen facility, there still remains a need to provide a permanent heating source for the Bono Concourse Terminal, and staff recommends that a new boiler be installed, as originally envisioned during construction, taking the price advantage of Opterra's current contract working on various systems at the Airport. The cost for furnishing and installing a new boiler is **\$34,861**.
3. Airport Terminal Control Valve Replacement: Independent of any work that Opterra was carrying out, the Airport commissioned an evaluation of its overall mechanical systems that determined many of the mechanical control valves in the heating and air condition system (there are over 100) were not functioning, were broken and need replacement. Recently the City Council approved a Change Order with Opterra to install a totally new control system for the mechanical equipment throughout the Airport Terminal to remotely open and close the control valves in the existing heating and air conditioning system. However, the new control system being installed is ineffective given the non-functioning control valves it will be monitoring, as a result the overall system will not reach the maximum energy efficiency anticipated. The cost to remove and replace all of the mechanical valves through the Airport terminal is **\$398,000**.

OTHER CITY FACILITIES:

1. Makeup Water Valves: Each of the buildings connected to the Municipal Co-Gen facility has a water makeup line that allows water into the system. Currently, when the Municipal Co-Gen facility is not operating, each municipal building operates independently for heating and cooling, and if the makeup water valve is not manually closed, water feeds back into the Municipal Co-Gen system causing the chilled water storage tank to overflow and heat up, wasting water and creating water treatment issues in the Co-Gen systems. This operational issue was unknown to staff or Opterra during development of the Citywide Energy Project, and represents a challenge to ensure the maximum overall energy efficiency of it. Therefore, staff recommends that the project include installation of automatic shut off valves for the water makeup lines that connect to each municipal facility, at a cost of **\$25,576**.
2. Co-Gen Standby Generator Yard: The Municipal Co-Gen facility previously had an old standby generator that provided sufficient power for interior lighting and computers systems during those times when the Co-Gen facility was not operating or when the SCE utility grid is down (which happens frequently). Although replacement of the standby generator was not included in Opterra's original scope of work, Opterra has voluntarily purchased a new standby generator for the Municipal Co-Gen facility. However, the standby generator requires a new exterior fenced yard and pad located on the east side of the building. Opterra has proposed to construct the new exterior yard, pad, and masonry block walls to match the existing exterior walls of the Municipal Co-Gen facility at a cost of **\$10,717**.
3. Demuth Park Pressure Reducing Valves: Demuth Park's reclaimed water irrigation system is driven by very large pumps from the wastewater treatment plant. When those pumps switch on, quite often the pressure surge causes the irrigation lines to break in the park. The irrigation system is quite old, and the frequent rupture of irrigation lines requires constant attention by Parks Maintenance staff, and results in loss of significant volumes of reclaimed water in the park. Staff recommends that new pressure regulating valves be installed to eliminate the pressure surges that are caused by the pumping of reclaimed water into the irrigation system, which will ensure the water saving measures implemented at Demuth Park are realized, at a cost of **\$14,638**.
4. City Hall Main Electrical Switch Board: As Opterra has initiated work to connect new electrical systems for the energy management system through the City Hall building, Opterra identified electrical problems with the main electrical panel. With age, the use of substitute parts over time, and the fact that electrical codes have significantly changed over the decades since the existing main electrical panel was installed, the panel is no longer code compliant and has certain safety issues with connecting an entirely new electrical energy management system. Staff recommends that the main electric panel be replaced at a cost of **\$94,976**.

5. Airport Fire Station #2 Electrical Switch Board: As Opterra has initiated work to connect new electrical systems for the energy management system at Airport Fire Station #2, Opterra identified electrical problems with the main electrical panel. With age, the use of substitute parts over time, and the fact that electrical codes have significantly changed over the decades since the existing main electrical panel was installed, the panel is no longer code compliant and has certain safety issues with connecting an entirely new electrical energy management system. Staff recommends that the main electric panel be replaced at a cost of **\$67,960**.

6. City Yard A/C Controls: The City Yard building does not currently have a computerized control system to regulate its heating and cooling systems. It is important to note that the City Yard does not receive its heating and cooling from the Municipal Co-Gen facility, and has its own boilers and chillers for heating and cooling; however, the City Yard does receive its electrical power from the Municipal Co-Gen facility. The lack of an energy management system to control the independent heating and cooling systems at the City Yard is an inefficient way of operating the facility, and staff recommends that the City take advantage of Opterra's work in installing similar systems at the other facilities that receive heating and cooling direction from the Municipal Co-Gen facility. Otherwise, after implementation of this project, all municipal buildings with the exception of the City Yard, will have modernized energy management systems. The cost of a new energy management control system at the City Yard is **\$107,516**. Although this cost was not anticipated, it is significantly less than the cost that would be incurred to obtain a mechanical and electrical consultant to develop the independent system, and the subsequent bidding and installation of the system through a typical "design-bid-build" approach. Opterra will be developing and installing the energy management control system for the City Yard on a design-build approach, using the same technologies deployed through the Civic Center facilities, allowing the Facilities Director to control all facilities allowing for the maximum energy efficiencies available.

7. City Hall Rooftop Package A/C Unit Controls: The original wing of City Hall comprised of the City Council Chamber and Administration Wing has independent air conditioning units on the roof that provide supplemental cooling to those areas. The original scope of the project did not include connecting the control system to these independent roof-mounted units, and staff recommends that the new energy management control system being implemented at City Hall extend and connect to these units to ensure that they operate in concert with the rest of the energy management system at a cost of **\$9,490**.

None of the above items are part of the original Opterra (Chevron) scope of work. These items are deferred mechanical and facility maintenance items that have not been programmed due to reduced or frozen facility maintenance budgets over the last several years. However, there are significant cost efficiencies in pursuing replacement of these mechanical systems given the work currently underway by Opterra, given their special expertise to install all of the above work at the same time they are in the buildings

during their contract work. Staff has carried out its due diligence on proposed pricing by checking actual part prices, comparing previous pricing for control work on other buildings as well price checking with local contractors. To bid this work separately would require development of actual designs, preparation of bid documents and the bid process, all of which would add cost and run the timeline out on the completion of the work.

Contract time would be extended from May 31, 2015, through July 31, 2015, with approval of this change order. The extra time is required to install all the Airport improvements.

FISCAL IMPACT:

The total cost of the additional work included in Change Order No. 8 is \$775,271 which can be funded by the Airport fund and the existing budget for the project, with the exception of replacement of the existing electrical main panels at the City Hall and Fire Station #2, which requires the City Council's adoption of a Budget Resolution appropriating \$162,936 from the General Fund. A summary of the proposed changes and funding sources are as follows:

<u>Project</u>	<u>Cost</u>	<u>Funding Source</u>
Airport Connectivity/City Hall	\$ 11,537	416-6501-56144
Bono Terminal Boiler	\$ 34,861	416-6501-56158
Terminal Control Valves	<u>\$398,000</u>	416-6501-56173
Sub Total	<u>\$444,398</u>	
Makeup Water Valves	\$ 25,576	550-5812-54073
Co-Gen Standby Generator	\$ 10,717	550-5812-54073
Demuth Valves	<u>\$ 14,638</u>	550-5812-54073
Sub Total	<u>\$ 50,931</u>	
City Hall Electrical Gear	\$ 94,976	001-1100-52500
Fire Station 2 Electrical Gear	<u>\$ 67,960</u>	001-1100-52500
Sub Total	<u>\$162,936</u>	
City Yard A/C Controls	\$107,516	520-5641-43240/48700
City Hall Roof Units Controls	<u>\$ 9,490</u>	520-5641-48700
Subtotal	<u>\$117,006</u>	
Grand Total Change Order #8	\$775,271	

With the City Council's adoption of the proposed Budget Resolution, sufficient funding is available in the following accounts:

416-6501-56144; \$11,534
416-6501-56158; \$34,861
416-6501-56173; \$398,000
550-5812-54073; \$50,931
520-5641-43240; \$50,000
520-5641-48700; \$67,006
001-1100-52500; \$162,936

SUBMITTED:



Allen F. Smoot,
Special Projects Coordinator



Marcus L. Fuller, MPA, P.E., P.L.S.
Assistant City Manager/City Engineer

Approved by:



David H. Ready, Esq., Ph.D.
City Manager

Attachments:

1. Change Order

CHANGE ORDER NO. 8

PROJECT TITLE: City Wide Energy Conservation Measures Project
CONTRACT: Energy Services Contract (CU 1361)
CONTRACT NO.: A6375
CONTRACT DATE: July 29, 2013
CONTRACTOR: Opterra Energy Services

The following changes are hereby made to the Contract:

#	Item	Cost (Credit)
1.	PCO#12: Bono Concourse boiler installation.	\$ 34,861
2.	PCO#33R: Airport chilled and hot water control valve.	\$398,000
3.	PCO#34: DDC controls add at City Yard building.	\$107,516
4.	PCO#35: Makeup water DDC valves add.	\$ 25,576
5.	PCO#36: 12 strand fiber optics rung, City Hall to Airport	\$ 11,537
6.	PCO#37A: Relocate standby generator.	\$ 10,717
7.	PCO#38: Add pressure reducing valves to Demuth irrigation.	\$ 14,638
8.	PCO#39: Upgrade City Hall electrical panel.	\$ 67,960
9.	PCO#40: Fire Station #2 electrical panel upgrade.	\$ 94,976
10.	PCO#41: DDC controls to City Hall Rooftop units.	\$ 9,490
		\$775,271

Justification:

Item #1: Add boiler to provide emergency backup heat for the Bono Concourse.
Item #2: Replace hot and cold water control valves as per independent study conducted for the airport.
Item #3: Add controls to the City Yard buildings so all Civic Center buildings are on same control system.
Item #4: Add make up control valves at remote cogen buildings to reduce overfilling of cold water storage tank.
Item #5: A fiber optics run to increase connectivity between City Hall and Airport.
Item #6: Relocate standby generator to allow for more adequate maintenance work area around the generator.
Item #7: Add pressure reducing valves on irrigation at Demuth to reduce line breakage from water hammer effect.
Item #8: Upgrade original old electrical panel at City Hall to improve safety.
Item #9: Upgrade original old electrical panel at Fire Station #2.
Item #10: Add controls to rooftop package a/c units so all equipment is under similar controls.

CHANGE TO CONTRACT AMOUNT

Original Contract Amount:	\$17,507,842
Current Contract Amount, as adjusted by previous Change Orders:	\$18,260,280
The Contract Amount due to this Change Order will be changed by:	\$ 775,271 add
Contract Amount due to this Change Order will be:	\$19,035,551

CHANGE TO CONTRACT TIME

The Contract Time is hereby extended until July 31, 2015.

Approvals Required:

To be effective, this Change Order must be approved by both Opterra ES and City, unless otherwise permitted under the terms of the Contract.

Recommended by _____ date _____
City's Representative

Ordered by _____ date _____
City Manager

ATTEST: _____ date _____
City Clerk

Accepted by _____ date _____
Opterra Energy Services

Opterra ES acknowledges and agrees, on behalf of Opterra ES, all subcontractors and all suppliers, that, except as provided above, the stipulated compensation provided for in this Change Order includes payment for all work contained in this Change Order, plus all payments for interruption of schedules, incremental extended overhead costs, acceleration costs, delay and all impact, ripple effect or cumulative impact on all other work arising out of, or related to, the work that is the subject of this Change Order. In addition, Opterra ES agrees that this Change Order comprises the total compensation due Opterra ES, and all subcontractors and all suppliers, for the work or change defined in this Change Order, including all impacts arising out of or related to this Change Order, including all impacts arising out of or related to this Change Order, except for the additional time-related issues noted above, if required.