CITY OF BEVERLY HILLS

PUBLIC WORKS SERVICES DEPARTMENT

MEMORANDUM

TO: PUBLIC WORKS COMMISSION

FROM: Chad Lynn, Assistant Director of Public Works Services

Michelle Tse, Planning and Research Analyst MST

DATE: April 18, 2016

SUBJECT: UPDATE ON ENERGY SAVING AND SUSTAINABILITY PROJECTS

ATTACHMENT:
1. City Council Formal Meeting Report Dated August 18, 2015
2. Energy Conservation Project – Status Summary

This item was originally agendized for the March 10, 2016, Public Works Commission meeting.

In 2009, the City adopted the "Beverly Hills Sustainable City Plan" which identifies specific goals, objectives and policies that aim to place the City of Beverly Hills in an optimal position of achieving greater sustainability. This Plan set a framework for policy and program development for City-wide implementation based on nine specific goals and objectives. Keeping in line with the Plan's Energy Goal Number 3, staff has explored multiple ways to increase efficiency, lower utility costs and reduce energy consumption.

In September 2013, the City entered into a 'No Fee' agreement with Climatec Building Technologies Group DBA Climatec, LLC (Climatec) to perform an Energy and Water Efficiency Study. The purpose of entering into the no fee agreement with Climatec, LLC was to provide the City with water and energy auditing and consulting services to identify specific facility and equipment improvements to make the City more sustainable and energy efficient.

In April 2014, Climatec started evaluating the City's water and energy usage. Staff worked closely with Climatec to complete infrastructure surveys and engaged multiple departments to develop recommendations for projects that would meet the City's goal of reaching optimal energy efficiency and deliver long-term energy savings.

In July 2014, Climatec began a detailed energy audit and completed the findings and recommendations for staff consideration in December 2014. Climatec had provided significant investment in the surveying and engineering work over the past two years to develop and provide specific recommended projects which will meet the City's needs and achieve both improved efficiency and guaranteed savings in an amount equal to or greater than the cost of such projects. These services were provided at no cost, and with no expectation of future compensation.

At the April 21, 2015, City Council Study Session, staff submitted a progress report on energy efficient projects and the results of the Energy and Water Efficiency study as an informational item. The summary of projects and recommendations totaled approximately $2.9 million in one-time capital costs and result in energy savings estimated at $5.5 million over the life of the new

equipment. Based on the information provided at the April 21, 2015, Study Session, staff requested that Climatec develop a detailed scope of work, engineering documents and project specifications associated with completing the proposed energy efficiency projects at facilities City-wide. Climatec responded to the request by submitting a proposal for upgrading systems, implementing maintenance improvements and installing newer, more efficient technology guaranteeing greater utility and operational savings under a self-funding, guaranteed savings program.

Climatec has shown that their proposed scope of measures and facilities improvements with a cost of $2.9 million within the first 9 years of the operation of the equipment will result in a combined estimated energy savings to the City of $5.5 million. Additionally, Climatec provides a financial guarantee under this agreement that energy savings are guaranteed to pay for 100% of the value of the improvements or Climatec will compensate the City for the shortfall.

Over the last two years, Climatec's audit team evaluated the utility usage at 40 sites as well as City-wide lighting systems (street lights, traffic signage and park lighting) and domestic water well pumping sites. Climatec gathered utility billing information, performed a baseline utility use analysis on electric, gas and water meters and tested lighting and temperature control systems to develop their recommendations and findings. The sites included in the audit include:

- Civic Center
- Rexford Dr. Library
- City Hall
- Public Works Maintenance Facility
- 336 N Foothill Dr. Annex • Police
- Department Headquarters
- Fire Department
- Headquarters • City-wide Parking Facilities
- Fire Stations #1 & #3
- City Parks
- Public Works Office Building
- City Medians
- Greystone Mansion

Some of the key program upgrades or replacement measures that Climatec has proposed Include:

- Interior & Exterior Lighting
- Fixtures
- Motion Sensor
- Detection Lighting Controls
- Battery Energy Storage
- Systems
- Police Department HVAC Controls
- Parking Garage
- Carbon Monoxide Monitoring and Exhaust Fan Controls
- La Cienega Tennis Center HVAC Units
- Weather Based
- Smart Irrigation Controls

- High Flow Event Flow
- Sensor I Master
- Valve
- Systems
- Engineering and Pilot
- testing of LED Street Lighting Fixtures
- Optional work that includes: Smart Irrigation Controls at 39 sites City-wide

The attached document provides information about the current status on various projects (Attachment 2).

For additional information, a copy of the August 18, 2015, City Council Formal Session report is included for reference. An electronic copy of this Formal Session report and related attachments are posted via the City's website at www.beverlyhills.org.

ATTACHMENT 1

AGENDA REPORT

Meeting Date: August 18, 2015

Item Number: E-2

To: Honorable Mayor & City Council

From: Chad Lynn, Assistant Director of Public Works Services
Desarae Jones, Management Analyst, Public Works Services

Subject: RESOLUTION OF THE COUNCIL OF THE CITY OF BEVERLY HILLS ADOPTING CERTAIN FINDINGS AND AUTHORIZING EXECUTION OF AN ENERGY SERVICE CONTRACT WITH CLIMATEC, LLC PURSUANT TO GOVERNMENT CODE SECTION 4217.10 ET SEQ; AND

APPROVAL OF AN AGREEMENT BETWEEN THE CITY OF BEVERLY HILLS AND CLIMATEC, LLC FOR ENERGY PERFORMANCE SERVICES; AND

APPROVAL OF CLIMATEC MEASUREMENT AND VERIFICATION AGREEMENT FOR THE CITY OF BEVERLY HILLS; AND

APPROVAL OF A PURCHASE ORDER IN THE NOT TO EXCEED AMOUNT OF $3,495,621 TO CLIMATEC LLC FOR THESE SERVICES.

Attachments:

1. **Resolution**
2. **Energy Performance Agreement**
3. **Measurement and Verification Agreement**
4. **Staff Report – April 21, 2015 Study Session (report only)**
5. **Climatec, Inc. Energy Audit Report**
6. **Climatec, Inc. Project References**
7. **California Government Code Section 4217.10 – 4217.18**

RECOMMENDATION

Staff recommends that the City Council move to approve the Resolution adopting certain findings and authorizing the contract with Climatec, LLC, for energy performance services; approve the agreement with Climatec, LLC for these services; approve the agreement for measurement and verification which outlines the financing guarantee to implement recommendations and complete projects related to energy conservation at various City facilities; and authorize the City Manager to execute each of the agreements with Climatec, LLC. Staff also recommends that City Council move to approve a Purchase Order in the not-to-exceed amount of $3,495,621for the Energy Performance Agreement. The proposed cost of the energy performance improvement projects will result in total energy savings for the City is estimated at $5.5 million over fifteen years.

INTRODUCTION

In 2009, the City adopted the "Beverly Hills Sustainable City Plan" which identifies specific goals, objectives, and policies that aim to place the City of Beverly Hills in an optimal position of achieving greater sustainability. This Plan set a framework for policy and program development for city-wide implementation based on nine specific goals and objectives. Keeping in line with the Plan's Energy Goal Number 3, staff has explored multiple ways to increase efficiency, lower utility costs, and reduce energy consumption.

In September 2013, the City entered into a 'No Fee' agreement with Climatec Building Technologies Group DBA Climatec, LLC (Climatec) to perform an Energy and Water Efficiency Study. The purpose of entering into the no fee agreement with Climatec, LLC was to provide the City with water and energy auditing and consulting services to identify specific facility and equipment improvements to make the City more sustainable and energy efficient.

In April 2014, Climatec started evaluating the City's water and energy usage. Staff worked closely with Climatec to complete infrastructure surveys and engaged multiple departments to develop recommendations for projects that would meet the City's goal of reaching optimal energy efficiency and deliver long-term energy savings. In July 2014, Climatec began a detailed energy audit, and completed the findings and recommendations for staff consideration in December 2014.

Climatec has provided significant investment in the surveying and engineering work over the past two years to develop and provide specific recommended projects which will meet the City's needs and achieve both improved efficiency and guaranteed savings in an amount equal to or greater than the cost of such projects. These services were provided at no cost, and with no expectation of future compensation.

At the April 21, 2015 Study Session, staff submitted a progress report on energy efficient projects and the results of the Energy and Water Efficiency study as an informational item. The summary of projects and recommendations total approximately $2.9 million in one-time capital costs and result in energy savings estimated at $5.5 million over the life of the new equipment. Staff indicated that a formal contract based on these recommendations would be brought forward for Council consideration; the Agreements recommended for approval are to complete the projects within the next year at facilities city-wide and guarantee the savings over the next fifteen years.

DISCUSSION

Based on the information provided at the April 21 2015 Study Session, staff requested that Climatec, develop a detailed scope of work, engineering documents and project specifications associated with completing the proposed energy efficiency projects at facilities city-wide. Climatec responded to the request by submitting a proposal for upgrading systems, implementing maintenance improvements and installing newer, more efficient technology guaranteeing greater utility and operational savings under a self-funding, guaranteed savings program.

California Government Code Section 4217.10 et seq. authorizes the City to enter into an agreement for the specified findings regarding energy cost savings. Based on the scope of work, the City finds that this is in the best interest of the City and that the anticipated costs of the work will be less than the anticipated cost to the City for utility costs absent these projects. Climatec has shown that their proposed scope of measures and facilities improvements with a cost of $2.9 million will result in a combined estimated energy savings to the City of $5.5 million. Pursuant the California Government Code Section 4217.10, staff is recommending that the City Council move to approve the Resolution adopting the findings and authorizing the execution of an agreement with Climatec, LLC.

Staff reviewed Climatec's Energy and Water Efficiency Study and proposal of work and after consideration and analysis of the findings and recommendations by the affected departments and various subject matter experts, staff is recommending that the City enter into two agreements to complete these improvements; an Energy Performance Agreement and a Measurement and Verification Agreement with Climatec, LLC.

The Energy Performance Agreement is a one-year construction agreement that specifies the scope of work related to installation and upgrades of equipment and facilities city-wide with a cost to the City of $3,277,843, with optional services related to greater water conservation for $217,778.

The Measurement and Verification Agreement with Climatec serves to monitor and assess energy savings after project completion. The average annual energy savings Climatec has estimated, based on their proposed scope of services, is $366,225. With the proposed upgrades and projects, the City will see an estimated cost recovery of $2.9 million (initial cost of the project) in energy savings within 9 years. Additionally, Climatec provides a financial guarantee under this agreement that energy savings are guaranteed to pay for 100% of the value of the improvements or Climatec will compensate the City for the shortfall.

The Measurement and Verification Agreement is an optional agreement that has an annual service charge of $6,500 commencing in the second year. The first year of the annual service charge has been waived for the City. The scope of work provides for audit services that guarantee measured savings resulting in the City reaching at least $2.9 million in energy cost savings within the first 9 years of the operation of the equipment. Within 15 years (or the life of the equipment) Climatec is estimating that the City will realize an estimated $5.5 million in energy savings. This Agreement can be terminated with 60-days' notice, at any time at the discretion of the City, however termination of this agreement also results in termination of the savings guarantee.

Climatec has achieved over $330 million in guaranteed savings with 84 public agencies nationwide in the last six years. Climatec, through the Measurement and Verification process, assesses energy savings annually, for municipalities and public agencies and has realized average energy savings above 120% of the guaranteed amount for each project.

Municipal customers include: Fountain Valley, Laguna Beach, Escondido, Seal Beach, La Palma, Bellflower, Yuma and San Joaquin County, projects of similar scope are included in Attachment 6, Project References. In addition to guaranteed direct budget relief, in the form of reduced utility costs, these projects are drastically improving environmental sustainability by reducing CO2 and other harmful emissions and setting an example for environmental stewardship.

Over the last two years, Climatec's audit team evaluated the utility usage at 40 sites as well as City-wide lighting systems (street lights, traffic signage and park lighting) and domestic water well pumping sites. Climatec gathered utility billing information, performed a baseline utility use analysis on electric, gas and water meters, and tested lighting and temperature control systems to develop their recommendations and findings. The sites included in the audit include:

- Civic Center
- City Hall
- 336 N Foothill Dr. Annex
- Fire Department Headquarters
- Fire Stations #1 & #3
- Public Works Office Building
- Greystone Mansion
- Rexford Dr. Library
- Public Works Maintenance Facility
- Police Department Headquarters
- City-wide Parking Facilities
- City Parks
- City Medians

Some of the key program upgrades or replacement measures that Climatec has proposed include:

- Interior & Exterior Lighting Fixtures
- Motion Sensor Detection Lighting Controls
- Battery Energy Storage Systems
- Police Department HVAC Controls
- Parking Garage Carbon Monoxide Monitoring and Exhaust Fan Controls
- La Cienega Tennis Center HVAC Units
- Weather Based Smart Irrigation Controls
- High Flow Event Flow Sensor / Master Valve Systems
- Engineering and Pilot testing of LED Street Lighting Fixtures
- Optional work that includes: Smart Irrigation Controls at 39 sites City-wide

The City spends $2.6 million annually on electrical service with Southern California Edison. The largest amount of the electric budget goes to the Civic Center facilities and parking facilities, accounting for roughly 49 percent of energy consumption. Climatec is proposing to complete projects to directly reduce energy consumption in these major facilities. Climatec's utility analysis found that City facilities account for usage of approximately 89 million gallons per year. The majority of water consumption is a result of irrigation for parks. With the adoption of Stage D Water Conservation measures, water efficient upgrades such as irrigation controls are key components of the work that Climatec is proposing.

The optional work that Climatec has proposed includes upgrading hardware for irrigation controls at 39 sites city-wide that will provide accurate monitoring and control of watering schedules, resulting in immediate water and energy savings for the City. The irrigation controls will be centralized and feature an automatic adjustable schedule based on current weather conditions and meeting water-savings targets. Staff recommends that the City approve the optional scope of work due to additional water savings of 1.1 million gallons per year.

The Energy Audit Report for the City of Beverly Hills (Attachment 5) outlines Climatec's summary of building and facility system recommendations in the areas of lighting, building automation systems, heating & air-conditioning, battery storage and irrigation systems. Climatec estimates that these recommendations will provide the following benefits to the City:

- Decrease operating expenses by approximately $315,000 in the first year, with an average savings of $366,225 annually over the life of the projects.
- Lower the City's greenhouse gas emissions by 2.7 million pounds per year.
- Save 9.6 million gallons of water annually, optional scope of services decreases water usage by an additional 1.1 million gallons per year.

In addition to the benefits listed above, Climatec has calculated the following annual green environmental equivalents:

- 33,356 trees planted
- 126,544 gallons of gasoline saved
- 233 cars removed from the road
- 167 homes powered
- 49,779 people provided drinking water

Pursuant to Council approval of the Resolution, Energy Performance Agreement, Purchase Order, and Measurement & Verification Agreement, staff will then issue a notice to proceed to commence the Energy Performance project. Subject to City approval, project implementation is anticipated to take 6-9 months to complete. At the project Kick-Off meeting, Climatec will present a specific project schedule including start dates, duration and locations for each recommended savings measure. Equipment specifications and submittals will be reviewed by staff prior to installation.

Staff will develop a project implementation schedule that addresses Council's priorities with respect to water and energy conservation. Staff has identified two major components of the implementation that will begin first and foremost; the upgrades specific to water efficiency and lighting. The other energy savings improvements, such as HVAC upgrades will be implemented following the other measures. Understanding that construction schedules can change and need to be fluid, staff will have input on the schedule throughout the project duration.

FISCAL IMPACT

The total not-to-exceed value of the Energy Performance Agreement is based on a fixed price of $2,979,858 for the services, $217,778 for the optional irrigation controls, and a contingency in the amount of $297,985 for a total value of $3,495,621. Funding for this work is budgeted in the fiscal year 2015-16 General Fund and Parking Services Fund Capital Improvement Program (CIP) budgets.

On-going costs for the project implementation include the Measurement and Verification (M&V) Agreement. There is no cost to the City for the services in fiscal year 2015-16. Each year, commencing fiscal year 2016-17, or year 2 of the Measurement and Verification Agreement, the total annual cost to the City is $6,500. Beginning year 4 of the agreement, the annual cost of $6,500 will be increased based on the Consumer Price Index or 2%, whichever is greater. Estimated total cost for these services over the life of the agreement based on a 2% escalation is $101,922. Costs for these services are available in the annual operating budget.

Staff has calculated the total estimated project savings and incorporated the cost of the Measurement & Verification services in the table below:

Annual Savings Adjusted after M&V Costs		Cumulative Savings	
Year 0	$ 55,150	$	55,150
Year 1	**$ 314,796**	**$**	**369,946**
Year 2	$ 318,923	$	688,869
Year 3	$ 329,913	$	1,018,782
Year 4	$ 341,147	$	1,359,929
Year 5	$ 352,766	$	1,712,695
Year 6	$ 355,086	$	2,067,782
Year 7	$ 359,515	$	2,427,297
Year 8	$ 365,721	$	2,793,018
Year 9	**$ 373,444**	**$**	**3,166,462**
Year 10	$ 382,477	$	3,548,939
Year 11	$ 381,358	$	3,930,297
Year 12	$ 394,820	$	4,325,117
Year 13	$ 408,756	$	4,733,872
Year 14	$ 423,180	$	5,157,052
Year 15	$ 438,113	$	5,595,166
Total Life of Project	$		5,595,166

For fiscal year 2015-16, the total estimated energy cost savings is $315,000. The total actual project cost of $3,197,636, not including contingency funds, will be entirely recovered by the cost savings and utility reductions created by the implementation of the recommended measures within nine years. The resulting project savings, adjusted to reflect on-going costs of measurement and verification, is estimated to be $5,595,166, within fifteen years.

George Chavez
Approved By

ATTACHMENT 2

Energy Conservation Projects - Status Summary as of April 12, 2016

IRRIGATION	Irrigation controllers are installed in all locations, except the medians on Wilshire Blvd and Whittier. Overall, installation is 90% complete. Testing and inspection has begun on the irrigation system and will continue for the next two weeks.
CARBON MONOXIDE SENSORS	Installation in all garages is complete. Testing and inspection has begun and will continue for the next two weeks.
LED LIGHT INSTATLLATION	Light installation at the Public Works Utility Shop is complete. Installation at Police Dept. is 80% complete. Installation in the garages is pending acceptance of a sample installation at 221 S. Crescent garage. This test mock-up was complete and currently under review by the City.
HVAC	The submittals for HVAC equipment is currently under review. Installation is scheduled for May 2016.
CIVIC CENTER WATER TANK	Draining of water from the tank is being coordinated with the Cooling Tower project. We are exploring the re-use of the water for the City.