COUNCIL AGENDA: 11/15/11
ITEM: 6.2

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Julia H. Cooper
Hans F. Larsen

SUBJECT: **"SMART" LED STREETLIGHT SYSTEM**

DATE: October 24, 2011

Approved

Date 10/31/11

COUNCIL DISTRICT: Citywide

RECOMMENDATION

(a) Accept staff report on Request for Proposal (RFP) for the purchase of a "smart" light emitting diode (LED) streetlight wireless communication monitoring and control system ("System"); and

(b) Adopt a resolution authorizing the City Manager to:

1. Execute an agreement with Schréder Lighting, LLC (Illinois) for the purchase of "smart" LED streetlight wireless communication monitoring and control system, including all hardware, software, professional services, three years of software maintenance and support, shipping, and applicable sales tax for an amount not to exceed $2,087,000, with an initial expiration date of November 15, 2014; and

2. Execute a software license and maintenance agreement with Schréder Lighting, LLC (Illinois) at no additional cost to City during the initial term for use of the OWLET Nightshift software application with the purchase of the "smart" LED streetlight wireless communication monitoring and control system; and

3. Negotiate and execute change orders or amendments to the agreement to cover any unanticipated design or implementation changes or to purchase additional luminaries and accessories for both the initial term of the agreement and option years, subject to the appropriation of funds; and

4. Execute up to three, one-year options to extend the software license and maintenance agreement as required to provide ongoing software maintenance and support of the system, subject to the appropriation of funds.

OUTCOME

Execution of this agreement will enable the conversion of existing Low Pressure Sodium (LPS) lights to "smart" LED streetlights to provide effective street lighting using emerging technologies and minimizes operating and maintenance cost while advancing the San José Green Vision. Approximately 2,100 LPS streetlights will be replaced with LED streetlights equipped with a wireless monitoring and communications system. As additional funding becomes available, additional LED streetlights may be purchased during the term of the agreement to replace other existing LPS streetlights in the City.

BACKGROUND

In October 2007, the City of San José adopted San José's Green Vision, a comprehensive strategy to reduce the carbon footprint of the City by more than 50% in 15 years. The Green Vision included the replacement of all City streetlights (approximately 62,000) with smart, zero-emission (lights powered exclusively by renewable energy) lighting by 2022. This would be achieved by applying emerging LED and control technologies to provide the right level of lighting where needed, to monitor energy consumption, and to reduce operating and maintenance costs.

In February 2011, Council approved the Public Streetlight Design Guide which sets forth guidelines for replacing existing and installing new streetlights with white light source for public roadways and adjusting lighting levels commensurate with roadway or pedestrian activity levels during certain hours of the night.

As a recognized leader in smart streetlight technology, San José has been invited to participate in national and international dialogue on advancing streetlight technologies. The City serves as the Chair of a technical task force on remote monitoring and adaptive controls organized by the U.S. Department of Energy's Municipal Solid-State Street Lighting Consortium. The City has also been asked to serve as the Lead Agency in the Bay Area Next Generation Streetlight Initiative, under which the City would lead the product procurement process for a regional group purchase, and to establish attractive financing and purchase terms to encourage or accelerate the adoption of LED lighting by public agencies.

The City has been actively engaged with the California City-County Street Light Association to encourage PG&E to establish a new meter rate for streetlights. Under this effort, the City was selected to participate in a three-year pilot program for PG&E's Network Controlled Dimmable Streetlights, giving participating cities credit for dimming streetlights currently on non-metered rate and the opportunity to test and evaluate newly emerging control system technologies as well as methods for PG&E to provide billing adjustments. The pilot program approved by the California Public Utilities Commission in late September 2011 will help create a new tariff for

dimmable streetlights through PG&E's 2014 General Rate Case Phase 2, a necessary action to realize cost savings based on actual energy used.

To date, the City has received $908,000 in Community Development Block Grant (CDBG) and $2,000,000 in American Recovery and Reinvestment Act (ARRA) grant funds to advance LED and lighting control technologies. These grant funds will enable the replacement of approximately 2,100 LPS streetlights with "smart" programmable light emitting diode (LED) streetlights along arterial and collector streets where the greatest lighting efficiency and energy savings can be achieved. It is estimated that these conversions will result in an estimated annual energy cost savings of $70,000 with a reduction of energy use by approximately 500,000kWh/yr and green house gas emissions by over 300 metric tons of CO_2.

ANALYSIS

On February 10, 2011, the Finance Department released a Request for Proposal (RFP) for a "Smart" LED Streetlight Wireless Communication Monitoring & Control System on the City's e-procurement system. A total of 33 companies viewed the RFP and four proposals were received by the April, 18, 2011, proposal submission deadline.

A two-phase process was established to ensure that the most technologically mature and reliable system was selected. In the first phase, interested lighting firms were invited to submit their LED streetlight products for pre-approval by a technical team of City evaluators. This process established a list of qualified LED luminaires meeting both technical specifications and physical inspections. A list of pre-approved LED luminaires was posted on the City's e-procurement system for all prospective proposers to view. In the second RFP phase, interested firms were invited to submit proposals for a fully integrated system consisting of a wireless monitoring and control demonstration system that included any of the pre-approved luminaires. Proposers were required to submit with their proposal a demonstration system in order to evaluate system functionality and compatibility.

The City received four proposals by the April 18, 2011, submittal deadline as follows:

- Schréder Lighting, LLC (Elk Grove Village, IL)
- US Solar & Wind Synergies, LLC (Felton, CA)
- Virticus (Portland, OR)
- Wesco Distribution (Santa Clara, CA)

Proposals were reviewed to determine if minimum qualifications were met. This evaluation consisted of pass/fail assessment. Two proposals were deemed non-responsive for not meeting minimum qualifications:

- US Solar & Wind Synergies' proposal did not include the following information: 1) three references, 2) utilizing a pre-approved luminaire as part of their proposed system, and 3) submitting a complete wireless communication monitoring & control demonstration system for review by the evaluation team.

- Virticus did not provide a proposal certification form or a cost proposal.

Evaluation Team: A five-member evaluation team with representatives from the City's Departments of Transportation and Public Works independently evaluated and scored the proposals.

Technical Evaluation (80%): The technical evaluation consisted of a thorough review of each company's written proposal/system for demonstrated experience implementing systems similar in complexity to the City's requirements, project approach, and system functionality/interface that required integrating Proposers' control systems with different third party LED luminaires and existing City technology for optimal system operation.

***Cost Proposals (20%)*:** Cost proposals were opened and scored at the conclusion of the technical proposal evaluation.

Oral Interview/System Demonstrations: Both Schréder Lighting, LLC and Wesco Distribution were invited to participate in oral presentations to demonstrate their knowledge and understanding of the City's requirements; introduce key personnel that would be assigned to the project, and to present a comprehensive demonstration of their system. At the conclusion of the oral presentations, the scores were adjusted.

Best and Final Offer (BAFO): A Best and Final Offer (BAFO) was issued to clarify the City's specifications and requirements, and obtain best and final pricing.

Wesco Distribution's BAFO was deemed not responsive and disqualified from further consideration because their solution failed to meet two key requirements: 1) they were unable to offer the required on-premise system, and 2) they were unable to provide a metering chip that would allow the system to automatically log energy consumption on each light. Data logging of energy consumption is a condition set by PG&E to adjust the energy bill based on actual energy usage. This functionality is essential in order for the City to participate in the PG&E Pilot Program for Network Controlled Dimmable Streetlights.

Schréder Lighting, LLC's BAFO proposal addressed all of the City's requirements.

Local and Small Business Preference: This project is fully funded by grants from the federal government. The terms of the grant prohibit the application of local preferences.

Protest Period: The RFP process included a ten-day protest period in accordance with the City's purchasing rules. No protests were received.

Recommendation Summary: Staff recommends award of contract to Schréder Lighting LLC. Schréder demonstrated a superior understanding of the City's requirements, and their proposed solution meets or exceeds all of the City's requirements as summarized below:

- Superior system management to determine system output to minimize energy consumption and maximize the potential of the lights.
- Knowledge and experience with system interface that is essential to the optimal system operation and ease of use for the end-user.
- The only solution compliant with the +/- 2% energy measurement accuracy requirement through a metering chip.
- Superior data collection and reporting capability that conforms to PG&E reporting requirements.
- Able to consolidate converted controlled streetlights with existing City streetlight inventory (non-controlled) thereby minimizing database management resources.
- A comprehensive training program that covers all aspects of the operation, configuration, and troubleshooting.

Summary of Agreement: Contractor has agreed, subject to Council approval, to enter into an agreement with the City under the City's standard terms and conditions for a complete LED streetlight wireless control and monitoring system. The system will be made up of three main components consisting of the LED luminaries, OWLET Nightshift System, and wireless communication. The initial term of the proposed agreement is for three years with the option for the City to extend the agreement for up to three additional years. The agreement will include an initial purchase of approximately 2,100 LED luminaries equipped with the OWLET Nightshift System plus three years of software maintenance and support. Pricing is fixed for the duration of the initial period, and payments are contingent upon the successful completion of key project milestones.

The agreement also allows the City to purchase additional luminaries and accessories through the change order process and provides the flexibility to purchase luminaries manufactured by different lighting companies that were pre-approved during the evaluation process, such as, Leotek, Phillips, and Beta LED. Pricing for the first 2,100 LEDs and any additional LEDs purchased during the initial term is fixed and pricing for options years may be adjusted based on the Producer Price Index (PPI) for Industrial Commodities, published by the U.S. Department of Labor. The agreement also includes a detailed scope of work defining the wireless communication monitoring and control system and LED luminaire specifications, all tasks to be performed, a delivery and compensation schedule, inspection, acceptance testing, training, five-year warranty on parts and one-year warranty on labor for field failures.

The OWLET Nightshift software application is owned by Schréder Lighting, LLC. The City is required to enter into a separate software license and maintenance agreement with Schréder

Lighting, LLC. The proposed software license and maintenance agreement authorizes the City to install the proprietary software application on the City's server and use the application to monitor and communicate with the LED streetlights, generate reports, and meet PG&E strict requirements for the City to receive cost savings from its utility bills for dimming streetlights.

The proposed purchasing agreement described above includes three years of software maintenance and support and staff is requesting authority to extend the software license and maintenance agreement with Schréder Lighting, LLC on an annual basis thereafter, subject to the appropriation of funds. Additionally, the software license and maintenance agreement has a limitation of liability provision limiting the Contractor's liability to $1,000,000. Such provisions are typical in software license agreements and staff believes the $1,000,000 amount is sufficient to cover any potential claims under the license agreement. Staff recommends Council approval of the software license and maintenance agreement.

EVALUATION AND FOLLOW-UP

This memo will not require any follow-up from staff.

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 item meets Criterion 1 and will be posted on the Council Agenda for the November 15, 2011 meeting.

COORDINATION

This memorandum was prepared by the Finance Department in coordination with the Department of Transportation, the City Manager's Budget Office and the City Attorney's Office.

FISCAL/POLICY ALIGNMENT

This project is estimated to reduce the City's energy bill by approximately $70,000 annually and thereby positively impacting the General Fund. This figure does not reflect the additional energy savings derived from dimming the City's streetlights or operational savings achieved by switching to longer-lasting lights. Additionally, the LED streetlights being purchased through this agreement are eligible for rebates as part of the PG&E LED Streetlight Program and the rebate amount is estimated at $135,000.

Council adopted the San José Energy Plan in which energy project cost savings from the first and second year are directed to the Energy Fund. The $70,000 energy savings and $95,000 PG&E energy rebate will be placed in the Energy Fund to support future energy efficient/cost savings projects in compliance with Policy 6.1.9. The remaining $40,000 PG&E energy rebate resulting from the CDBG funded projects is considered an offset to project costs according to CDBG guidelines and therefore the rebate is credited to the CDBG ending fund balance. While a final decision on how these resources will be allocated has yet to be made, it is estimated that these funds could support the purchase of 200 additional LED streetlights. Appropriation actions to the direct savings and rebate to the Energy Fund will be brought forward as part of the 2011-2012 Midyear Budget Review. Ongoing energy savings of approximately $70,000 annually will be recognized beginning in the third year positively impacting the General Fund.

COST SUMMARY/IMPLICATIONS

The following outlines the elements of the contract.

1. AMOUNT OF RECOMMENDATION/CONTRACT:

   Schréder contract (including 3-year software maintenance and support) $2,087,000

2. COST ELEMENTS OF AGREEMENT/CONTRACT:

Description	Cost
2,100 Luminaire Controllers with Meter Chip (including software site license)	$530,000
2,100 LED Luminaires	$1,237,130
Wireless Gateway	$68,000
Temporary Communication from Gateway to Central Software	$3,000
Professional Services	$85,500
Software Maintenance Fee (three year contract)	$11,970
Estimated Sales Tax	$151,400
Total	**$2,087,000**

3. SOURCE OF FUNDING: 306, ARRA – EECBG
441, CDBG – Title II
304, ARRA – CDBG Memo to Fund 441

4. FISCAL IMPACT: This project is estimated to reduce the City's energy bill by approximately $70,000 annually and thereby positively impacting the General Fund. This figure does not reflect the additional energy savings derived from dimming the City's streetlights or operational savings achieved by switching to longer-lasting lights. Additionally, the LED streetlights being purchased through this agreement are eligible for rebates as part of the PG&E LED Streetlight Program and the rebate amount due to the City from PG&E is estimated at $135,000.

BUDGET REFERENCE

The table below identifies the fund and appropriations proposed to fund the contract 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.)
306	3810	Recovery Act – Energy Efficiency and Conservation Block Grant	$6,537,000	$1,386,500	N/A	6/21/2011, Ord No. 28928
304	7152	Recovery Act – Community Development Block Grant Fund	$416,198	$152,000	N/A	6/21/2011, Ord No. 28928
441	7165	LED Streetlight Conversion	$673,366	$548,500	N/A	6/21/2011, Ord No. 28928
Total				**$2,087,000**		

CEQA

PP11-002, January 12, 2010.

NEPA

Exempt-58.34, December 8, 2010.

/s/
JULIA H. COOPER
Acting Director of Finance

/s/
HANS F. LARSEN
Department of Transportation Director

For questions about the RFP process, please contact Mark Giovannetti, Purchasing Division Manager (408) 535-7052.

For questions about the "Smart" LED Streetlight System, please contact Amy Olay, DOT Senior Engineer (408) 975-3283.