



June 10, 2014

HONORABLE MAYOR AND CITY COUNCIL

City of Long Beach  
California

RECOMMENDATION:

1. Adopt Specifications No. RFP GO14-014 and authorize the City Manager to execute contracts and any amendments thereto with Sensus USA, Inc., of Raleigh, NC, Harris Utilities, of Ottawa, Ontario, Canada, Utility Partners of America, of Greenville, SC, and Utiliworks Consulting, of Baton Rouge, LA, in an aggregate amount of \$20,085,466, plus a 10 percent contingency in the amount of \$2,008,547, for a total aggregate amount not to exceed \$22,094,013;
2. Authorize the City Manager to enter into a Memorandum of Understanding with Laborers' International Union of North America, Local 1309, to provide a Long Beach-focused resident hiring and training program in connection with installation services associated with this project;
3. Authorize the City Manager to initiate the process with the City Attorney and City Treasurer to obtain financing for project costs of approximately \$20 million in support of the Advanced Metering Infrastructure project, and return to City Council for approval to issue bonds;
4. Increase appropriations in the Gas Fund (EF 301) in the Long Beach Gas and Oil Department (GO) by \$22,094,013 to allow for the implementation of the Advanced Metering Infrastructure project; and
5. Increase appropriations in the General Services Fund (IS 385) in the Technology Services Department (TS) by \$467,500 for integration services with the new utility customer information system, and the purchase and installation of hardware and software to support the project. (Citywide)

## DISCUSSION

The Long Beach Gas and Oil Department (LBGO) provides natural gas utility service to nearly 150,000 customer accounts in the cities of Long Beach and Signal Hill. The City currently contracts with Corix to conduct 1.8 million manual readings of LBGO's gas meters at a cost of \$1.4 million annually. With manual meter reading, every month, a Corix employee must drive to the customer's locale and then physically locate and read the gas meter. In most cases, a Corix employee must enter a customer's yard to gain access to visually read the meter's dials. The meter read information is then downloaded at the end of the day to be transmitted to the billing system.

However, the natural gas industry is quickly transitioning away from these traditional manually-read gas meters toward devices known as "smart" meters. This is accomplished through the installation of an Advanced Metering Infrastructure (AMI) system. AMI is an integrated network of smart meters, communication collectors, and data management systems that enable seamless communication between utilities and their customers. No longer is it necessary to make a vehicle trip to a customer's location to visually read a meter to determine consumption data. Real-time interval usage updates are read accurately and uploaded electronically.

AMI is now a best practice in the utility industry. The Department of Energy estimates over 65 million smart meters will be installed by 2015. In California, every natural gas utility has already completed or is in the process of converting to AMI. By automating the meter reading process, utilities are seeing new operational efficiencies and cost savings, while customers are able to receive accurate hourly consumption information to help them better understand their usage patterns.

Listed below are a few of the primary benefits:

- **Increased Cost Savings** - Elimination of \$1.4 million in annual manual meter reading costs
- **Greenhouse Gas Reductions** - Reduced greenhouse gas emissions by eliminating 160,000 vehicle trips annually
- **Meter Reading and Billing Accuracy** - Improved meter reading accuracy, eliminating the need for estimated bills or meter re-reads
- **Customer Privacy and Security** - No more need to access customers' yards to manually read meters, currently a major complaint from residents
- **Energy Conservation** - Customers can better understand their energy usage patterns and adjust their usage accordingly
- **Load Management** - Data on system load patterns allows the utility to "right size" its pipeline system for better supply reliability and planning purposes

- **Leak Detection** - Gas leaks can be recognized and addressed more quickly, increasing customer safety and minimizing leakage costs

Staff has completed a comprehensive Request for Proposal (RFP) solicitation and evaluation process for an AMI system. Representatives from LBGO, Technology Services, Financial Management, Long Beach Water, and Signal Hill Water participated at different points of the RFP evaluation and information gathering process.

To better understand system benefits and potential implementation hurdles, the review team conducted many face-to-face discussions with the leading vendors, participated in in-depth product demonstrations by the vendors, conducted reference checks, and made several site visits to area utilities that are currently utilizing the various products so as to verify capabilities with actual utility users.

A Request for Proposals (RFP) was advertised in the Press-Telegram on December 17, 2013, and 5,296 potential bidders specializing in Advanced Metering Infrastructure (AMI) systems for Natural Gas and Water meters were notified of the RFP opportunity. Of those potential proposers, 55 downloaded the bid via the City's electronic bid system. The RFP document was made available from the Purchasing Division located on the seventh floor of City Hall, and the Division's website at [www.longbeach.gov/purchasing](http://www.longbeach.gov/purchasing). An RFP announcement was also included in the Purchasing Division's weekly update of Open Bid Opportunities, which is sent to 30 local, minority, and women's business groups. Five proposals were received on January 27, 2014. Of those five proposers, none were Minority-owned Business Enterprises (MBEs), Women-owned Business Enterprises (WBEs), Small Business Enterprises (SBEs), and none were Long Beach businesses (Local).

Staff also undertook a thorough analysis of costs and benefits to determine the financial feasibility of an AMI project. Three key elements support its implementation: 1) the elimination of the \$1.4 million in annual contract meter reading costs, 2) the significant reduction of greenhouse gas emissions by eliminating 160,000 vehicle trips annually, and 3) improved customer engagement through reliable, real-time consumption information.

The implementation of the AMI system includes four main cost components: The AMI network, the Meter Data Management software, the actual gas meter retrofits/installations, and the project integration/implementation management. Several implementation options were analyzed through the RFP process, including contracting with a "Prime Vendor" to produce a turn-key project incorporating all four of these components. However, to minimize cost expenditures and maximize direct accountability, staff recommends entering into separate vendor contracts with the vendors outlined below. The evaluation panel reviewed vendor responses based on criteria detailed in the RFP including: company background, AMI technology/equipment/services, gas and water metering equipment, meter data analytical software, demonstrated competence, program management, and cost reasonableness. These recommended vendors were chosen based upon the RFP criteria, verification of references for services performed for other utilities and municipal agencies, and site visits of operational AMI systems (see Attachment A):

- **Sensus USA, Inc. - AMI Network:** With operations and service facilities on five continents, Sensus is a global leader in utility infrastructure systems with 100 years of experience. Sensus has developed a wireless meter communications system specifically to meet the needs of natural gas utilities. Its SmartPoint transceivers broadcast at two watts of power which cover more geographical area requiring many fewer data collectors than other AMI network systems, translating into significant cost savings. Sensus has provided similar systems for a number of gas and water utilities.
- **Harris Utilities - Meter Data Management Software:** With more than 35 years of experience, Harris Utilities will implement its MeterSense and Customer Connect software systems. Designed to make meter read data usable, these systems provide analytical evaluation tools for staff and integrate customer consumption with our billing system and web portal.
- **Utility Partners of America - Meter Retrofits/Installations:** Specializing in installing smart meters for gas, water, and electric utilities, Utility Partners has successfully installed millions of meters throughout the United States and Canada. It is currently supporting Southern California Gas Company's (SoCalGas) AMI deployment for its 6 million meters throughout Southern California. Utility Partners will retrofit or replace existing LBGO gas meters in a manner that maximizes logistical scheduling and deployment efficiencies.
- **Utiliworks Consulting - Project Integration/Implementation Management:** When the California Public Utilities Commission needed an expert review of the smart meter applications of two of its largest utilities (Pacific Gas and Electric and San Diego Gas and Electric), Utiliworks Consulting was selected. Utiliworks will provide LBGO with experienced oversight of the AMI project to ensure a successful implementation within budget and in a seamless manner for both the customer and LBGO over an expected implementation period of three years.

Furthermore, in the city of Signal Hill, LBGO provides the natural gas utility service, while the City of Signal Hill provides the water utility service to Signal Hill residents and businesses. LBGO staff met with the City of Signal Hill's executive management to discuss the AMI project for LBGO's gas meters and they expressed full support of its implementation. Having been invited to participate in the AMI RFP discussions and analysis, the City of Signal Hill has expressed interest in potentially including its water meters as part of LBGO's AMI network. Details are still being discussed and, if an agreement is reached to include the City of Signal Hill's water meters, LBGO staff will return to Council with additional recommendations as needed.

At this point in time, Long Beach Water's executive management has declined to participate in the LBGO AMI project due to concerns of technological limitations for water meters as well as cost impacts to its customers. This decision would not preclude Long Beach Water from utilizing the LBGO AMI system in the future if it so desires.

This matter was reviewed by Deputy City Attorney Rich Anthony on May 20, 2014 and by Budget Management Officer Victoria Bell on May 21, 2014.

## SUSTAINABILITY

With the implementation of the AMI system, the City will achieve a number of environmental and sustainable benefits. It will significantly reduce the volume of carbon emissions by virtually eliminating all manual meter reading of gas meters in Long Beach and Signal Hill, estimated to generate 160,000 annual vehicle trips. In addition, by constant system monitoring of interval consumption data, customer service call efficiency is improved by reducing unnecessary vehicle routing to respond to leak detection, area odors, tampering and other lost commodity scenarios. Moreover, AMI systems raise awareness of energy usage through customer access to more timely and detailed consumption data which helps customers make informed decisions about conservation.

## LOCAL BUSINESS OUTREACH

In an effort to align with our outreach goal, Long Beach businesses are encouraged to submit bids for City contracts. The Purchasing Division also assists businesses with registering on the Bids Online database to download RFP specifications. Through outreach, 541 Long Beach vendors were notified to submit proposals, of which 2 downloaded and none submitted a proposal. The Purchasing Division is committed to continuing to perform outreach to local vendors to expand the bidder pool.

## LOCAL JOBS

Staff recommends the City enter into a Memorandum of Understanding with Laborers' International Union of North America (LIUNA) Local 1309 to promote recruitment, training, placement and support of a local (Long Beach and Signal Hill) labor force. It is anticipated 25-30 temporary employees for installation will be needed for AMI deployment (lasting approximately 20 months). Staff believes LIUNA provides the best opportunity to ensure jobs stay local.

## TIMING CONSIDERATIONS

City Council action to adopt Specifications No. RFP GO14-014 and award contracts concurrently is requested on June 10, 2014 to move forward with installation of a new AMI system. The entire project implementation is estimated to take 33 months (see Attachment B).

The City's current contract with Corix for manual meter reading services will not be impacted, as Corix will continue to read, through the contract's termination date of July 31, 2015, all of Long Beach Water Department's water meters, as well as virtually all of LBGO's gas meters, as it is anticipated that, by that date, LBGO will have only begun the Proof of Concept test deployment of AMI for about 1 percent of its gas meters. At that point, the City will most likely renew a contract with Corix (or a replacement vendor), to provide manual meter reading services for Long Beach Water meters and any LBGO's gas meters as needed through full AMI deployment in 2017.

FISCAL IMPACT

To realize approximately 7 percent savings in overall project costs, staff is recommending separate vendor contracts as detailed below (additional information in Attachment C). The total project is estimated to cost \$22.1 million, including a 10 percent contingency. Agreements with the vendors shall limit the City's obligations to make payments contingent upon the amount of funds available. In the unlikely event that future funding is not available, LBGO will direct the vendor(s) to suspend or cancel work yet to be performed.

Function	Vendor	Base	Contingency	Total
AMI Network	Sensus USA, Inc.	\$ 11,521,309	\$ 1,152,131	\$ 12,673,440
Meter Data Management Software	Harris Utilities	\$ 869,440	\$ 86,944	\$ 956,384
Meter Retrofit	Utility Partners of America	\$ 6,004,317	\$ 600,432	\$ 6,604,749
Project Implementation	Utiliworks	\$ 1,265,400	\$ 126,540	\$ 1,391,940
CC&B Integration and Server Hardware/Software	Technology Services Department	\$ 425,000	\$ 42,500	\$ 467,500
<b>TOTAL</b>		<b>\$ 20,085,466</b>	<b>\$ 2,008,547</b>	<b>\$ 22,094,013</b>

The AMI project will be funded entirely by the Gas Fund using current Gas Fund reserves designated for the project and through the issuance of Gas Revenue Bonds. Debt service on the bonds would be paid using a combination of the \$1.4 million in annual savings achieved by eliminating the gas portion of the manual meter reading contract with Corix and Gas Fund revenues.

Initial project phasing includes:

- July – September 2014 = Contracting/Planning (\$500,000)
- October 2014 – May 2015 = Proof of Concept/Software Integration (\$3,000,000)
- June 2015 – April 2017 = Full Deployment (\$18,600,000)

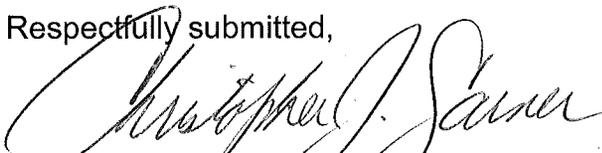
Council approval is requested to initiate the process to issue bonds to finance up to \$20 million in project costs. LBGO staff will work with the City Treasurer to develop a sustainable full funding package. The actual sizing of the bond will be dependent upon the timing of cash disbursements for project milestones. Staff will return to City Council at a future date with full terms and conditions for final approval.

As the project funding is currently unbudgeted, appropriation increases are included in the recommended action. An appropriation increase is requested in the Gas Fund (EF 301) in the Long Beach Gas and Oil Department (GO) in the amount of \$22,094,013. An appropriation increase is also requested in the General Services Fund (IS 385) in the Technology Services Department (TS) in the amount of \$467,500.

SUGGESTED ACTION:

Approve recommendation.

Respectfully submitted,



CHRISTOPHER J. GARNER  
DIRECTOR OF LONG BEACH GAS AND OIL

*for*   
JOHN GROSS  
DIRECTOR OF FINANCIAL MANAGEMENT

  
CURTIS TANI  
DIRECTOR OF TECHNOLOGY SERVICES

Attachments

APPROVED:



PATRICK H. WEST  
CITY MANAGER

## Attachment A

### Evaluation Criteria and Review

**RFP – GO 14-014 - Evaluation Criteria:** the following information is detailed in the RFP document concerning vendor selection criteria: company background, AMI technology/equipment/services, gas and water metering equipment, meter data analytical software, demonstrated competence, program management, references, site visits, and cost reasonableness. The RFP also provided the opportunity for sub-contractors (component vendors) to submit proposals specifically for certain elements of the overall project. Harris Utilities and UPA were the only two subcontractors that responded. The evaluation panel selected Sensus as the prime vendor that best matched the selection criteria. Some vendor differences are detailed below:

<b>Vendor</b>	<b>Evaluation</b>
<p><b>Sensus – Flexnet AMI System</b></p> <p><u>Subcontractors</u> Harris Utilities = MDM UPA = Installation</p>	<p>Recommended based on best overall approach, company stability, advanced R&amp;D in smart meter technology, digital water meters, and cost.</p> <ul style="list-style-type: none"> <li>• Sensus utilizes licensed transmission frequencies.</li> <li>• Has a flexible network that can easily accommodate gas and water meter application, including remote disconnect.</li> <li>• Easily supports LB Gas, Signal Hill Water and potential future inclusion of LB Water.</li> <li>• Seamless integration with supporting MDM vendor.</li> <li>• Least expensive proposal for both initial implementation and long-term maintenance.</li> </ul>
<p><b>Aclara – Star Network</b></p> <p><u>Subcontractors</u> Aclara = iiDeas MDM UPA = Installation</p>	<p>Semi-finalist based on technology and past successful projects.</p> <ul style="list-style-type: none"> <li>• Aclara was the most expensive proposal.</li> <li>• Lacked R&amp;D development in updated smart meter technology.</li> <li>• Does not provide two-way communication with meters, limiting future deployment flexibility.</li> <li>• Future company stability in question given recent sale by ESCO Technologies.</li> </ul>
<p><b>Itron – Choice Connect Network</b></p> <p><u>Subcontractors</u> Harris Utilities = MDM Corix = Installation</p>	<ul style="list-style-type: none"> <li>• Itron does not use licensed transmission frequencies, which can result in transmission interference.</li> <li>• Lacked R&amp;D investment in water smart meter development.</li> <li>• Significantly greater number of data collection towers required for the network, increasing maintenance costs.</li> </ul>

## Attachment A

# Representative AMI Implementations

### SENSUS USA, INC. CUSTOMERS

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- **Nevada Energy (NV Energy)**  
Product: FlexNet Electricity and Gas Network  
1.4M Electric, 156,000 Gas Meters/Endpoints
- **Atmos Energy**  
Product: FlexNet Gas AMI Network  
209,000 SmartPoints installed to date, 3.2 million planned
- **Alliant Energy**  
Product: FlexNet Gas and Electric AMI Network  
200,000 Gas Meters/SmartPoints installed
- **Eastern Municipal Water District (EMWD)**  
Product: FlexNet Water AMI Network  
150,000 total meters; 40,000 AMR, 20,000 FlexNet AMI
- **City of Norco, California**  
Product: FlexNet Water AMI Network  
8,000 Water Meters/SmartPoints
- **Redwood City, CA**  
Product: FlexNet Water AMI Network  
17,000 Water Meters/SmartPoints, 90% complete
- **Dublin/San Ramon Services District**  
Product: FlexNet Water AMI Network  
17,000 Water Meters/SmartPoints, 98% complete
- **Albuquerque Bernalillo County Water Utility Authority**  
Product: FlexNet Water AMI Network  
50,000 FlexNet Water SmartPoints
- **Philadelphia Electric Company (PECO)**  
Product: FlexNet Gas and Electric AMI Network, Gas Meters, Endpoints, Electric Meters
- **Knoxville Utility Board (KUB)**  
Product: FlexNet Gas, Water and Electric Network  
95,000 Gas, 80,000 Water, 195,000 Electric meters
- **Energy Services of Pensacola (ESP)**  
Product: FlexNet Gas Meters/SmartPoints  
50,000 deployed
- **Danville, VA**  
Product: FlexNet Gas, Water and Electric Network  
43,000 Electric, 18,000 Water, 17,000 Gas deployed

### HARRIS (METERSENSE) CUSTOMERS

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- **Orangeburg SC Department of Public Utilities**  
Product: MeterSense MDM Deployment  
63,000 Electric, Water Gas meters
- **Albuquerque Bernalillo County Water Utility Authority**  
Product: MeterSense Deployment/Implementation  
203,000 Water meters
- **City of Medicine Hat (AB)**  
Product: MeterSense Deployment/Implementation  
61,000 Electric, Water, Gas meters
- **Loudoun Water**  
Product: MeterSense Deployment/Implementation  
60,000 Water meters
- **City of Arlington, TX**  
Product: MeterSense Deployment/Implementation  
96,000 Water meters

### UTILITY PARTNERS OF AMERICA CUSTOMERS

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- **Sempra Energy – SoCal Gas Company (Greater Los Angeles, CA Area)**  
Project: Selected to provide installation support services in support of a project that includes retrofitting and replacing more than 6,000,000 gas meters over a 5-year time frame
- **Tallahassee Gas & Water (Tallahassee, FL)**  
Project: Installation of approximately 26,000 gas modules and approximately 45,500 water modules for the City of Tallahassee, FL.
- **ONEOK, Inc. – OK Natural Gas & Texas Gas Service (various locations OK, TX)**  
Project: The project consisted of 117,796 gas meter exchanges, 86,274 residential gas meter retrofits, and 2,237 commercial gas meter retrofits
- **Sacramento Municipal Utility District (Sacramento, CA)**  
Project: Replaced approximately 600,000 electric meters
- **Albuquerque Bernalillo County Water Utility Authority (Albuquerque, NM)**  
Project: UPA installed Sensus FlexNet AMI modules on 52,000 residential and commercial water meters, reprogrammed registers and exchanged meters over three phases
- **Orlando Utility Commission (Orlando, FL)**  
Project: Multi-year contract - Replace 5,000 water meters annually, test and repair 4,000 residential back flow preventers annually, also contracted to replace 155,000 residential and small commercial electric meters
- **City of Glendale (Glendale, CA)**  
Project: Replaced 85,000 electric meters, exchanged or retrofitted 33,000 water meters, and installed a network of more than 200 Tropos radios and AC/solar powered data collection devices on street light poles, utility poles, towers, and buildings

### UTILIWORKS CONSULTING CUSTOMERS

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- **City of Highland**  
Project: AMI/Smart Grid Assessment  
21,000 Water, 14,500 Gas, 35,000 Electric meters
- **City of Orangeburg**  
Project: AMI/Smart Grid Implementation  
23,000 Water, 9,500 Gas, 27,000 Electric meters
- **City of Chanute**  
Project: Smart Grid/AMI Assessment  
4,561 Water, 4,428 Gas, 5,749 Electric meters
- **City of Wilson**  
Project: AMI/Smart Grid Implementation  
21,000 Water, 14,500 Gas, 35,000 Electric meters
- **City of San Marcos**  
Project: AMI Program Management Services  
20,826 Electric, 9,754 Water meters
- **Albuquerque Bernalillo County Water Utility Authority**  
Project: Procurement and Design  
172,000 Water Meters



# Attachment C

## LBGO AMI System Cost Summary Gas Meter Reading Automation

Vendors

**SENSUS** - Flexnet AMI

**Harris** - Meter Sense MDM

**Utility Partners of America** - Installation

**Utiliworks** - Project Implementation

**COSTS\***

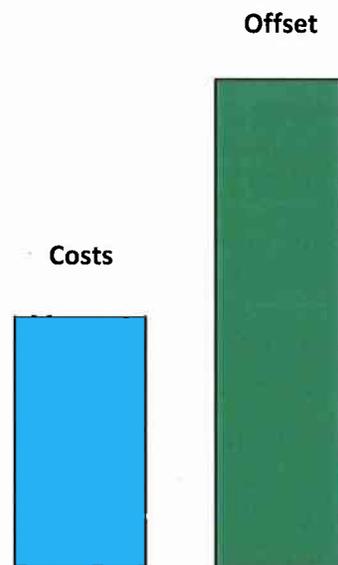
AMI Network	1,148,321
Gas Endpoints	6,737,830
Gas Endpoints Installation	1,870,013
MDM Software + Customer Portal	956,384
Gas Meters CIP	4,924,789
GAS Meter Instalation	4,734,736
Professional Services	1,721,940

**Total \$ 22,094,013**

**COST OFFSET**

AMI Revenue	12,752,200
Eliminate Meter Reading Contract	34,953,418
Off-Set for Future Meter Work	8,781,387

**Total \$ 56,487,005**



**20-YEAR NPV COMPARISON\***

Costs	23,689,801
Cost Offset	42,442,320

**Benefit \$ 18,752,519**

**Additional Benefits**

- Reduced Environmental Impacts
- Improved CIP Planning
- Improved anti-theft and leak detection
- Increased Customer Privacy
- Better Demand Side Management

**Assumptions\***

- NPV = 20-year term
- 4.05% discount rate
- 3% CPI
- Implementation 32 months
- Costs include 10% contingency