

**Advanced Metering Infrastructure  
AMI-RFP  
Request for Proposal Evaluation Report**

**8/15/17**

## **Background**

On June 1, 2015, City Council passed Resolution 6013 that directed the City Manager to prepare a feasibility study to evaluate the benefits and costs of advanced metering infrastructure (“AMI”) for both the electric and water utilities. The Power & Light Department retained West Monroe Partners to develop a Business Case Study including a Benefit/Cost Analysis. The AMI Business Case Study started September 1, 2015 and the results were submitted to City Council on February 8, 2016. The results showed a net positive benefit to the City.

On October 3, 2016, City Council approved a contract with West Monroe Partners for the development of blueprint methodology and the creation of a Project Blueprint that would further define and de-risk the AMI Deployment Project. Through numerous detailed workshops, working sessions and AMI vendor presentations, West Monroe was able to collect information and provide an update to the Business Case Analysis (“BCA”) developed for the City of Independence. The revised analysis showed a significant improvement in the benefit to cost ratio from the previous study. This was due to a switch in strategy to proceed with a “Software as a Service” (“SaaS”) solution. These results of the Blueprint process were presented to City Council on March 13, 2017 and approval was given to proceed with a Request for Proposal for Advanced Metering Infrastructure.

## **Request for Proposal**

On April 3, 2017, a Request for Proposal for Advanced Metering Infrastructure was issued.

The RFP was posted as follows:

- 1) Posted on the City’s website.
- 2) Notification was provided to 418 potential suppliers of this equipment and service by Public Purchase, the City’s internet-based, e-procurement system, of which 158 downloaded the bid documents.

The scope of the RFP included Advanced Meter Infrastructure (AMI) system services for Electric and Water utilities and a communications infrastructure to meet the City’s AMI strategic goals. It also specified services for the design and installation of the AMI system and all other supporting systems, using a Software as a Service (SaaS) solution for software applications provided by the Vendor. Additionally, it specified that the Vendors also provide a Managed Services solution that, when combined with the SaaS solution, would allow the City to pay monthly fees for AMI services for a fixed number of years to the Managed Service Provider (MSP).

The following table was provided within the AMI RFP and Respondents were informed that they would be evaluated and ranked based upon the content of their submission in accordance with the stated criteria.

**Table 1**  
**RFP Evaluation Criteria**

Criteria	Sub-Criteria	Sub-Criteria Weight	Criteria Weight
Price	Base Proposal Price	100%	20%
Qualifications and Expertise	Leadership	20%	10%
	Financial Stability	30%	
	Similar Project Experience	25%	
	Project Team Experience	15%	
	Customer User Group / Existing Customers	10%	
	<b>Total Qualifications and Expertise</b>	<b>100%</b>	
References	Number of Relevant References	70%	5%
	Quality and Responsiveness to Utility	10%	
	Successful Past Deployments	20%	
	<b>Total References</b>	<b>100%</b>	
Response to Requirements	Project Management	5%	65%
	Electric Meters	15%	
	Water Meters	15%	
	Installation of Electric and Water Meters	15%	
	AMI Telecommunication Network and AMI Head End	15%	
	MDMS and Customer ePortal	15%	
	System Integration	5%	
	Security and Infrastructure Requirements	5%	
	Acceptance Testing and Training	5%	
	Service Level Agreements	5%	
	<b>Total Response to Requirements</b>	<b>100%</b>	

The Technical Requirements Section represented the largest component (65%). This was weighted the highest because the functionality of the solution acquired by the City is the most crucial aspect to consider. It must work as specified or savings will not be captured and expected value will not be achieved. The Technical Requirements section of the RFP contained

17 different categories with over 980 compliance requirements. Each respondent was asked to indicate compliance with these requirements as part of their RFP response.

On May 31, 2017, the RFP closed and seven Vendors had submitted proposals. Proposals were received from Itron, HD Supply (Sensus), Honeywell, Landis+Gyr, Aclara, Graybar (Silver Springs Network), and Smart Energy Systems (SES).

## **Short List Evaluation**

The AMI Evaluation Committee was formed and consisted of the following members:

- Power and Light Department Acting Director
- Water Department Director
- Water Pollution Control Department Deputy Director
- Power & Light Department Utility Project Development Manager
- Water Department Distribution Engineering Manager
- Power & Light Department Systems Program Supervisor
- Power & Light Department Communications Supervisor

The Evaluation Committee had an initial meeting to review the proposals and determine the Short List evaluation process. After completion of this review, it was determined that Smart Energy Systems (SES) failed to complete Technical Requirements worksheet and the Pricing worksheet. Based on this, the Committee agreed that SES was a non-responsive bidder and was removed from further consideration. The Evaluation Committee then determined that the remaining six Vendors should be evaluated and initially scored to determine which Vendors would be considered for a Short List. It was agreed that West Monroe Partners along with the assistance of the AMI Project Manager would preliminarily rank the respondents based upon a detailed review of the proposal submittals as applied to the established evaluation criteria. The Analysis Report from West Monroe Partners with a detailed description of the process can be found in Appendix A of this report.

In summary, the report highlighted two Vendors that were recommended to be short listed for further evaluation and to conduct on site demonstrations. These two Vendors were Honeywell, with a total score of 93.41% and HD Supply, with a score of 93.22%. Other Vendors scored in the low 80% range or even less. The table below summarizes the total scores of all six of the eligible Vendors.

**Table 2**  
**Advanced Metering Infrastructure - AMI RFP**  
**Shortlist Evaluation Results**

<u>Company</u>	<u>Total Points</u>
1. Honeywell	93.41
2. HD Supply	93.22
3. Itron	83.14
4. Landis+Gyr	81.84 (See Note 1)
5. Graybar	80.59
6. Aclara	78.79 (See Note 2)

Notes:

1. After final short list evaluation, Landis+Gyr was considered a non-responsive bidder because they did not include prevailing wage rates for labor in their proposal, which was a requirement.
2. After final short list evaluation, Aclara was considered a non-responsive bidder because they did not bid the street light controllers, which was a requirement.

The Short List scoring and Evaluation Report was presented to the Evaluation Committee for review. The Committee agreed with the findings in the report and recommended that HD Supply and Honeywell be considered for in-house presentations and further evaluation.

**Vendor Presentations and Final RFP Evaluation**

HD Supply presented July 11, 2017 and Honeywell presented July 13, 2017. It was noted that each of the AMI Vendor demonstrations were well attended by both the City staff and the Vendor representatives. During the presentations, each Vendor detailed specific areas of their proposal and through subsequent conversations received a better understanding of the City's overall requirements. This enabled each Vendor to better clarify their responses to the Technical Requirements and also allowed them to consider pricing adjustments based upon a better understanding of the City's preferred solution.

After the presentations were complete, the Committee made the determination to remove the Street Light Controller Option from further consideration. The cost for this did not fall in line with the perceived benefits for this solution.

Detailed notes on each Vendor’s presentation can be found in Appendix B of this report. At the conclusion of the presentations, each Vendor was asked to update and resubmit the technical compliance requirements document and pricing spreadsheet for further evaluation.

Table 3 below is a summary of the revised Technical Compliance by category that each Vendor submitted and was confirmed by West Monroe Partners and the AMI Project Manager. Table 4 is a summary of the revised pricing from each Vendor.

**Table 3**  
**Advanced Metering Infrastructure**  
**Technical Requirements Compliance Summary**

Category	Total Possible Requirements	HD Supply Compliance		Honeywell Compliance	
Project Management	17	17	100%	17	100%
Electric Meters	203	193	95%	196	97%
Water Meters	61	58	95%	58	95%
Electric Meter Install	38	38	100%	36	95%
Water Meter Install	33	33	100%	31	94%
AMI Telecom	60	56	93%	59	98%
AMI Head End	206	191	93%	195	95%
MDMS	152	152	100%	151	99%
ePortal	67	64	96%	63	94%
PrePay	38	38	100%	38	100%
Streetlight Controllers	10	10	100%	9	90%
System Integration	13	12	92%	13	100%
Security and Infrastructure	51	51	100%	51	100%
Acceptance Testing	3	3	100%	3	100%
Training	5	5	100%	5	100%
Customer Engagement	16	15	94%	16	100%
Service Level Agreements	16	14	88%	16	100%

**Table 4**  
**Advanced Metering Infrastructure**  
**Final Pricing Summary After Presentations**

Project Area	Honeywell Total Cost	HD Supply Total Cost*
<b>Project Management</b>	<b>\$523,440</b>	<b>\$183,556</b>
Labor	\$523,440	\$183,556
<b>Electric Meters</b>	<b>\$5,729,230</b>	<b>\$4,208,085</b>
Hardware	\$5,729,230	\$4,208,085
<b>Electric Meter Installation</b>	<b>\$2,327,883</b>	<b>\$1,980,862</b>
Labor	\$2,327,883	\$1,980,862
<b>Water Meters</b>	<b>\$9,281,850</b>	<b>\$7,481,845</b>
Hardware	\$9,281,850	\$7,481,845
<b>Water Meter Installation</b>	<b>\$5,703,209</b>	<b>\$4,642,291</b>
Labor	\$4,660,271	\$4,622,291
Hardware	\$1,042,938	\$20,000
<b>AMI Telecommunication Network</b>	<b>\$1,186,895</b>	<b>\$1,484,267</b>
Labor	\$744,050	\$310,135
Hardware	\$442,845	\$372,941
Software	\$0	\$801,191
<b>AMI Head End</b>	<b>\$2,720</b>	<b>\$174,872</b>
Labor	\$2,720	\$174,872
<b>System Integration</b>	<b>\$0</b>	<b>\$132,000</b>
Labor	\$0	\$132,000
<b>Acceptance Testing</b>	<b>\$20,400</b>	<b>\$38,500</b>
Labor	\$20,400	\$38,500
<b>Training</b>	<b>\$0</b>	<b>\$108,510</b>
Labor	\$0	\$103,333
Hardware	\$0	\$5,176
<b>Customer Engagement</b>	<b>\$17,250</b>	<b>\$39,487</b>
Labor	\$17,250	\$39,487
<b>TOTAL CAPITAL COSTS</b>	<b>\$24,856,627</b>	<b>\$20,474,274</b>
Other	\$63,750	\$0

SaaS and Managed Services Solution Operating Expenses	Total SaaS & MSP Expenses for 10-Years	Total SaaS & MSP Expenses for 10-Years
MDMS	<b>\$7,211,531</b>	<b>\$3,067,472</b>
Customer ePortal	<b>\$0</b>	<b>\$346,078</b>
AMI Head End	<b>\$69,405</b>	<b>\$2,217,257</b>
Pre-Pay Portal	<b>\$2,793,293</b>	<b>\$2,854,941</b>
<b>TOTAL OPERATING EXPENSES</b>	<b>\$10,074,229</b>	<b>\$8,485,749</b>

<b>TOTAL PROJECT COST FOR 10 YEARS</b>	<b>\$34,930,856</b>	<b>\$28,960,023</b>
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\* HD Supply Pricing Based on AccuStream Water Meters



The updated compliance information and pricing updates were presented to the Evaluation Committee for consideration. Each member of the Committee was then asked to review this information and the overall RFP submittal from each Vendor and provide a final evaluation score. Table 5 below is a summary of the scoring by each Committee Member.

**Table 5**  
**Advanced Metering Infrastructure**  
**Request for Proposal RFP-AMI**  
**Final Evaluation Summary**

<u>Evaluator</u>	<u>Company Name</u>	
	<u>HD Supply</u>	<u>Honeywell</u>
<b>P&amp;L Acting Director</b>	<b>96.96</b>	<b>93.04</b>
<b>Water Dept Director</b>	<b>96.06</b>	<b>91.89</b>
<b>WPC Deputy Director</b>	<b>97.06</b>	<b>92.39</b>
<b>Utility Project Dev Manager</b>	<b>96.99</b>	<b>92.94</b>
<b>Water Dept Eng Manager</b>	<b>95.36</b>	<b>91.44</b>
<b>Systems Program Supervisor</b>	<b>97.7</b>	<b>87.85</b>
<b>Communications Supervisor</b>	<b>97.06</b>	<b>93.04</b>
<b>Average Score</b>	<b>96.74</b>	<b>91.80</b>

Based on the final scoring, the Evaluation Committee then instructed the Purchasing Department to request a best and final offer from HD Supply. The Committee wanted to see a best and final price based on two different water meter options, the accuStream water meter and the iPERL water meter. The accuStream water meter is a oscillating piston positive displacement meter. The iPERL meter is the most accurate water meter on the market. It is an electromagnetic meter that contains no moving parts and beter enables leak monitoring, reverse flow, empty pipe, and tampering detection.



Table 6 below is a summary of the best and final pricing received from HD Supply.

In summary, the best and final offer from HD Supply included an overall reduction in Capital Costs by \$209,749 and a reduction of \$1,185,741 in SaaS and Managed Services Operating Expenses over a 10 year period. The Capital Cost adder for the iPERL water meter option was \$2,134,233.

Based on this information, the Evaluation Committee with input from the Water Department choose to proceed with the iPERL water meter option based on the improved benefits over the life of the meters.

The Evaluation Committee determined that HD Supply provided the most reliable and cost effective solution based on the established evaluation criteria and recommended this Vendor for award.

**Table 6**  
**Advanced Metering Infrastructure**  
**HD Supply - Best and Final Offer**

Project Area	Total Cost w/AccuStream Water	Total Cost w/iPERL Water Meters
<b>Project Management</b>	<b>\$164,000</b>	<b>\$164,000</b>
Labor	\$164,000	\$164,000
<b>Electric Meters</b>	<b>\$4,145,718</b>	<b>\$4,145,718</b>
Hardware	\$4,145,718	\$4,145,718
<b>Electric Meter Installation</b>	<b>\$1,980,862</b>	<b>\$1,980,862</b>
Labor	\$1,980,862	\$1,980,862
<b>Water Meters</b>	<b>\$7,410,701</b>	<b>\$9,544,934</b>
Hardware	\$7,410,701	\$9,544,934
<b>Water Meter Installation</b>	<b>\$4,642,291</b>	<b>\$4,642,291</b>
Labor	\$4,622,291	\$4,622,291
Hardware	\$20,000	\$20,000
<b>AMI Telecommunication Network</b>	<b>\$1,484,267</b>	<b>\$1,484,267</b>
Labor	\$310,135	\$310,135
Hardware	\$372,941	\$372,941
Software	\$801,191	\$801,191
<b>AMI Head End</b>	<b>\$155,128</b>	<b>\$155,128</b>
Labor	\$155,128	\$155,128
<b>System Integration</b>	<b>\$126,500</b>	<b>\$126,500</b>
Labor	\$126,500	\$126,500
<b>Acceptance Testing</b>	<b>\$33,000</b>	<b>\$33,000</b>
Labor	\$33,000	\$33,000
<b>Training</b>	<b>\$90,369</b>	<b>\$90,369</b>
Labor	\$85,192	\$85,192
Hardware	\$5,176	\$5,176
<b>Customer Engagement</b>	<b>\$31,590</b>	<b>\$31,590</b>
Labor	\$31,590	\$31,590
<b>TOTAL CAPITAL COSTS</b>	<b>\$20,264,425</b>	<b>\$22,398,659</b>

SaaS and Managed Services Solution Operating Expenses	Total SaaS & MSP Expenses for 10-Years	Total SaaS & MSP Expenses for 10-Years
<b>MDMS</b>	<b>\$2,527,204</b>	<b>\$2,527,204</b>
<b>Customer ePortal</b>	<b>\$263,889</b>	<b>\$263,889</b>
<b>AMI Head End</b>	<b>\$2,079,966</b>	<b>\$2,079,966</b>
<b>Pre-Pay Portal</b>	<b>\$2,428,950</b>	<b>\$2,428,950</b>
<b>Streetlight Desktop</b>	<b>\$0</b>	<b>\$0</b>
<b>TOTAL OPERATING EXPENSES</b>	<b>\$7,300,008</b>	<b>\$7,300,008</b>

<b>TOTAL PROJECT COST FOR 10 YEARS</b>	<b>\$27,564,433</b>	<b>\$29,698,667</b>
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**Appendix A**  
**AMI Shortlist Analysis Report**

## Analysis of AMI RFP Responses

### Executive Summary

The evaluation process of seven submitted Responses. One Vendor, **Smart Energy Systems (SES)**, failed to complete either of the required worksheets, Attachment 7 Requirements worksheet and Attachment 3 Pricing worksheet. SES responded to the customer engagement portion of the request. The City of Independence requires a single Prime Vendor for the entire AMI implementation; therefore, the response from SES is not eligible for consideration.

The remaining six Vendor's Responses were further evaluated, but there are yet a few questions that will require Vendor's answers. However, Mark Rothmier and Tom Kerestes of West Monroe partners made several "reasonable" assumptions that are outlined in this document.

The highest scoring Vendors are: (1) **Honeywell**, with a total score of 93.41%; and, (2) **HD Supply**, with a score of 93.22%. Other Vendors scored in the low 80% range, with one in the high 70% range.

There are some clarifying questions that will need to be sent to these two top Vendors, and possibly to a few others, but it is not anticipated that the conclusion will change.

### Evaluation Criteria Weighting

The following table was provided within the AMI RFP and Respondents were informed that they would be evaluated and ranked based upon the content of their submission in accordance with the stated criteria.



Criteria	Sub-Criteria	Sub-Criteria Weight	Criteria Weight
Price	Base Proposal Price	100%	20%
Qualifications and Expertise	Leadership	20%	10%
	Financial Stability	30%	
	Similar Project Experience	25%	
	Project Team Experience	15%	
	Customer User Group / Existing Customers	10%	
	<b>Total Qualifications and Expertise</b>	<b>100%</b>	
References	Number of Relevant References	70%	5%
	Quality and Responsiveness to Utility	10%	
	Successful Past Deployments	20%	
	<b>Total References</b>	<b>100%</b>	
Response to Requirements	Project Management	5%	65%
	Electric Meters	15%	
	Water Meters	15%	
	Installation of Electric and Water Meters	15%	
	AMI Telecommunication Network and AMI Head End	15%	
	MDMS and Customer ePortal	15%	
	System Integration	5%	
	Security and Infrastructure Requirements	5%	
	Acceptance Testing and Training	5%	
	Service Level Agreements	5%	
	<b>Total Response to Requirements</b>	<b>100%</b>	

### Price – 20% Weighting

The total price of each Vendor is provided below in the “Response Price” column. The analysis of this section was largely objective in nature, with actual costs provided by the Vendors to use in comparing the various Responses. There were material adjustments (more than \$1M) made to three of the Vendor’s Responses. They are described as follows:

- Itron – supplied a price of \$130 total for the 12,000 streetlight controllers. It was assumed that this was to be the price per streetlight controller, so the amount of (\$130 x 12,000) or \$1,560,000 was added to their Project Total column.
- Aclara – did not respond to the streetlight controller requirement. So, to compare Vendors equally, the same price of \$1,560,000 was added to the Project Total column for Aclara.

- Landis+Gyr – did not use the prevailing wage in their Proposal, but stated what it would be. Therefore, the amount stated to be the prevailing wage amount adder was adjusted to create a new Project Total amount.

Company Name	Response Price	Evaluator Adjustments <sup>1</sup>	Adjustment Price	Project Total	Point Total	Difference
HD Supply	\$32,062,271.00		\$0	\$32,062,271.00	10.00	\$10,315,736.00
Itron	\$31,291,904.28	Added Streetlight Cost	\$1,560,000	\$32,851,904.28	9.62	\$9,526,102.72
Honeywell	\$35,102,928.00		\$0	\$35,102,928.00	8.53	\$7,275,079.00
Aclara	\$35,347,228.37	Added Streetlight Cost	\$1,560,000	\$36,907,228.37	7.65	\$5,470,778.63
Landis+Gyr	\$35,574,740.00	Prevailing Wage	\$6,406,602	\$41,981,341.91	5.19	\$396,665.09
Graybar	\$42,378,007.00			\$42,378,007.00	5.00	\$0.00

The “Point Total” column was created to allow for the lowest Project Total to receive 10 points and the lowest Project Total to receive 5 points. The table to the right shows the total points multiplied by the 20% criteria weighting as specified in the AMI RFP. Note that this assigns 2 points (or 20%) to the lowest priced Vendor, and 1 point (or 10%) to the highest priced Vendor, with others weighted in between.

Company Name	Point Total	20% Criteria Weight
HD Supply	10.00	2.000
Itron	9.62	1.924
Honeywell	8.53	1.706
Aclara	7.65	1.530
Landis+Gyr	5.19	1.038
Graybar	5.00	1.000

### Qualifications and Expertise – 10% Weighting

The second section, representing 10% of the total weighting, is the “Qualifications and Expertise” section. The analysis of this section was more subjective in nature. The weighting of the five different areas is shown in the table below. This score represents 10% of the overall weighting.

Leadership	20%
Financial Stability	30%
Similar Project Experience	25%
Project Team Experience	15%
Customer User Group / Existing Customers	10%
<b>Total Qualifications and Expertise</b>	<b>100%</b>

<sup>1</sup> Evaluator Adjustments made by the Evaluation Team members will require confirmation of Vendors.



The summary table of the subjective rating is shown below. Specific narrative notes for each of the Vendors follows the table.

Response to Qualifications and Expertise											
Rate on a Scale from 0 to 10 (10 being the Highest)											
Company Name	Leadership		Financial Stability		Similar Project Experience		Project Team Experience		Existing Customers		Point Total
Itron	20%	10	30%	10	25%	10	15%	2	10%	10	8.80
HD Supply	20%	10	30%	8	25%	10	15%	7	10%	10	8.95
Honeywell	20%	10	30%	10	25%	10	15%	10	10%	10	10.00
Landis+Gyr	20%	10	30%	10	25%	10	15%	10	10%	10	10.00
Aclara	20%	8	30%	8	25%	10	15%	10	10%	10	9.00
Graybar	20%	9	30%	10	25%	10	15%	8	10%	10	9.50

### Itron

- 2002 strategic global acquisition Schlumberger and Actaris Metering Systems
- Global presence - Developed OpenWay, which is their AMI solution
- 6500 employees worldwide, with facilities in the US
- Itron Financial – for financing
- ITRI has a strong balance sheet
- 60M meters installed
- Clients range from 50,000 meters to 2M meters
- Partnered with CISCO to develop OpenWay
- PMI is the installation vendor – large installation vendor
- Negative is that they did not provide Project Team resumes or even identify team members

### HD Supply (Sensus)

- Sensus technology is where leadership is expressed
- 2900 Employees in 47 states
- Implemented over 199 AMI Projects
- This Vendor has a local presence
- Financial stability is lower than ITRON - per Morningstar
- No organization chart was provided
- Project member resumes were of HD folks who didn't seem to have a lot of PM experience

### Honeywell

- 129,000 employees
- 150 US patents granted
- PMI is the installation vendor – large installation vendor
- 200 Smart Grid systems installed globally
- 20M meters installed
- Leidos partnership would provide a functionally rich MDMS ePortal
- HON stock price is good
- Good common sized references
- Worldwide operations with Newark, DE (US) based operations
- Project organization chart and overall write up is very good



Landis+Gyr

- Claims to own 25% of the world's Smart Meter Market
- Deployed 30M meters with 33M under contract
- The company is 40% owned by Japan
- 5,500 employees
- They have been in AMI since early 1990's
- Serves Kansas City Power & Light
- References are JEA, Holland BPW (MI) Sidney, NE
- Good Org structure with resumes

Aclara

- 2015 - acquired GE Smart Meters
- Background of TWACS – known in the industry as “Turtle”
- Aclara serves many Rural Electric Cooperatives
- Note: Several legal claims and litigations actions were revealed
- As a side note, they are not using any subcontractors

Graybar (Silver Springs Network)

- Springfield, MO is one of their Clients
- Silver Springs Network is their telecommunication partner
- NexGen will do the installation – a woman-owned enterprise
- Master Meter will be the water meters
- 5,000 to 5.2M meter customers
- Harris MDMS is offered
- Graybar is based nearby, out of St. Louis, MO

The “Point Total” column was created to allow a range of scoring from zero to 10 points with the best Vendors receiving 10 points. The table to the right shows the total points multiplied by the 10% criteria weighting as specified in the AMI RFP. Note that this assigns 1 points (or 10%) to highly qualified Vendors, less to the lower qualified Vendors, with others falling in between. There was not a significant variation in this rating section.

Company Name	Point Total	10% Criteria Weight
HD Supply	8.95	0.895
Itron	8.80	0.880
Honeywell	10.00	1.000
Aclara	9.00	0.900
Landis+Gyr	10.00	1.000
Graybar	9.50	0.950

References – 5% Weighting

The third section of rating was the References. The table associated with the three different aspects of the References is shown below. Note that this is a combination of qualitative (number of relevant References and successful past deployments); and, subjective in the sense of “Quality and Responsiveness to Utility”.

Number of Relevant References	70%
Quality and Responsiveness to Utility	10%
Successful Past Deployments	20%
<b>Total References</b>	<b>100%</b>

Upon review of the Vendor's Responses, all were found to have provided relevant References.

<b>Response to References</b>							
<b>Rate on a Scale from 0 to 10 (10 being the Highest)</b>							
<b>Company Name</b>		<b>Number of Relevant References</b>	<b>Quality and Responsiveness to Utility</b>	<b>Successful Past Deployments</b>	<b>Point Total</b>		
<b>Itron</b>	70%	<b>10</b>	10%	<b>10</b>	20%	<b>10</b>	<b>10.00</b>
<b>HD Supply</b>	70%	<b>10</b>	10%	<b>10</b>	20%	<b>10</b>	<b>10.00</b>
<b>Honeywell</b>	70%	<b>10</b>	10%	<b>10</b>	20%	<b>10</b>	<b>10.00</b>
<b>Landis+Gyr</b>	70%	<b>10</b>	10%	<b>10</b>	20%	<b>10</b>	<b>10.00</b>
<b>Aclara</b>	70%	<b>10</b>	10%	<b>10</b>	20%	<b>10</b>	<b>10.00</b>
<b>Graybar</b>	70%	<b>10</b>	10%	<b>10</b>	20%	<b>10</b>	<b>10.00</b>

The "Point Total" column was created to allow a range of scoring from zero to 10 points with the best Vendors receiving 10 points. The table to the right shows the total points multiplied by the 5% criteria weighting as specified in the AMI RFP. Note that this assigns 0.5 points (or 5%) to Vendors who provide quality References, less to those who do not. However, all Vendors provided quality References with no significant differences identified by the evaluation team.

<b>Company Name</b>	<b>Point Total</b>	<b>5% Criteria Weight</b>
HD Supply	10.00	0.500
Itron	10.00	0.500
Honeywell	10.00	0.500
Aclara	10.00	0.500
Landis+Gyr	10.00	0.500
Graybar	10.00	0.500

### Responses to Requirements – 65% Weighting

The fourth section was the technical Requirements. It represented the largest component, as the functionality of the solution acquired by the City is the most crucial aspect to consider. It must work as specified or saving will not be captured and expected value will not be achieved.

The table below is how this area is evaluated. Note that there are fewer line items composing this section than the 17 different areas in the Requirement document.

Project Management	5%
Electric Meters	15%
Water Meters	15%



Installation of Electric and Water Meters	15%
AMI Telecommunication Network and AMI Head End	15%
MDMS and Customer ePortal	15%
System Integration	5%
Security and Infrastructure Requirements	5%
Acceptance Testing and Training	5%
Service Level Agreements	5%
<b>Total Response to Requirements</b>	<b>100%</b>

The linkage between the table above and the 17 tabs of the Requirements document is shown in the table below. In the event there were more than one tab in a line item, the weighting used has been specified per line item.

Criteria	Requirements Tab	Sub-Weighting	Total Weighting
<b>Project Management</b>	1	100%	5%
<b>Electric Meters</b>			
Electric Meters	2	80%	15%
Streetlight Controllers	11	20%	
<b>Water Meters</b>	3	100%	15%
<b>Installation of Electric and Water Meters</b>			
Electric Meter Installation	4	40%	15%
Water Meter Installation	5	40%	
Customer Engagement	16	20%	
<b>AMI Telecommunication Network and AMI Head End</b>			
AMI Telecommunication Network	6	50%	15%
AMI Head End	7	50%	
<b>MDMS and Customer ePortal</b>			
MDMS	8	70%	15%
Internal & Customer ePortal	9	20%	
Pre-Pay	10	10%	
<b>System Integration</b>	12	100%	5%
<b>Security and Infrastructure</b>	13	100%	5%
<b>Acceptance Testing and Training</b>			
Acceptance Testing	14	60%	5%
Training	15	40%	
<b>Service Level Agreements</b>	17	100%	5%
<b>Total Response to Requirements</b>			<b>100%</b>

Initially, the Vendors compliance (1) or non-compliance (0) were totaled. However, upon further examination, there were Vendors that indicated compliance with a "1", but then further explained that it

was only partially in compliance, or that it would comply when the time came that the functionality would be required. Based upon this information, the compliance ratings were adjusted and the following table illustrates the outcome.

Tab Number	Itron Compliance	HD Supply Compliance	Honeywell Compliance	Landis+Gyr Compliance	Aclara Compliance	Graybar Compliance
1	100%	100%	82%	94%	100%	100%
2	78%	80%	95%	94%	73%	71%
3	85%	95%	93%	90%	80%	89%
4	100%	100%	92%	92%	87%	95%
5	100%	100%	94%	97%	70%	97%
6	55%	83%	97%	85%	82%	50%
7	89%	93%	90%	94%	79%	85%
8	84%	100%	99%	97%	90%	100%
9	85%	72%	94%	79%	90%	58%
10	100%	100%	100%	87%	100%	95%
11	80%	100%	90%	90%	0%	100%
12	38%	85%	100%	85%	62%	92%
13	96%	90%	100%	98%	86%	100%
14	100%	100%	100%	100%	67%	100%
15	100%	100%	100%	100%	100%	100%
16	6%	63%	100%	0%	25%	81%
17	0%	88%	88%	38%	63%	81%

There are some items that indicate "0%" compliant. These are marked in yellow. Additionally, all items under 90% compliant for HD Supply and Honeywell, the highest rated Respondents, are marked in blue.

**Response to Technical Requirements**

Rate on a Scale from 0 to 10 (10 being the Highest)

Company Name	Project Management, Tab 1	Electric Meters, Streetlight Controllers Tab 2(80%), 11(20%)	Water Meters, Tab 3	Installation & Customer Engagement - Tab 4(40%), 5(40%), 16(20%)		AMI Telecommand Head End, Tab 6(50%), 7(50%)		Prepay, Tab 8(70%), 9(20%), 10(10%)	System Integration, Tab 12	Security and Infrastructure, Tab 13	Acceptance Testing and Training, Tab 14(60%), 15(40%)	Service Level Agreements, Tab 17	Point Total
				8.13 15%	8.32 15%	8.13 15%	7.22 15%						
Itron	5%	10.00 15%	7.83 15%	8.32 15%	8.13 15%	7.22 15%	8.55 5%	3.85 5%	9.61 5%	10.00 5%	0.00	7.709058	
HD Supply	5%	10.00 15%	8.38 15%	9.31 15%	9.25 15%	8.80 15%	9.43 5%	8.46 5%	9.02 5%	10.00 5%	8.75	9.118236	
Honeywell	5%	8.24 15%	9.37 15%	9.34 15%	9.44 15%	9.32 15%	9.79 5%	10.00 5%	10.00 5%	10.00 5%	8.75	9.438965	
Landis+Gyr	5%	9.41 15%	9.29 15%	9.02 15%	7.56 15%	8.96 15%	9.27 5%	8.46 5%	9.80 5%	10.00 5%	3.75	8.685178	
Aclara	5%	10.00 15%	5.83 15%	8.03 15%	6.76 15%	8.02 15%	9.10 5%	6.15 5%	8.63 5%	8.00 5%	6.25	7.612938	
Graybar	5%	10.00 15%	7.71 15%	8.85 15%	9.29 15%	6.77 15%	9.11 5%	9.23 5%	10.00 5%	10.00 5%	8.13	8.629298	

Company Name	Point Total	65% Criteria Weight
HD Supply	9.118236014	5.927
Itron	7.709057946	5.011
Honeywell	9.438964814	6.135
Aclara	7.612938307	4.948
Landis+Gyr	8.685178415	5.645
Graybar	8.629298233	5.609

The "Point Total" column was created to allow a range of scoring from zero to 10 points with the best Vendors receiving 10 points. The table to the right shows the total points multiplied by the 65% criteria weighting as specified in the AMI RFP. Note that this assigns 6.5 points (or 65%) to Vendors who satisfy all Requirements, less to those who do not.



## Summary

In summary, there are two Vendors that are recommended to be short listed to conduct demonstrations. These two Vendors are Honeywell, with a total score of 93.41% and HD Supply, with a score of 93.22%. Other Vendors scored in the low 80% range or even less. The table below summarizes the total scores of all six of the eligible Vendors.

Company	Price	Quals & Expertise	References	Requirements	Totals	Total Percent
HD Supply	2.000	0.895	0.500	5.927	9.322	93.22
Itron	1.924	0.880	0.500	5.011	8.315	83.15
Honeywell	1.706	1.000	0.500	6.135	9.341	93.41
Aclara	1.530	0.900	0.500	4.948	7.878	78.78
Landis+Gyr	1.038	1.000	0.500	5.645	8.183	81.83
Graybar	1.000	0.950	0.500	5.609	8.059	80.59

**Appendix B**  
**AMI Shortlist Vendor Presentation Notes**



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**Executive Summary**

Based upon a thorough review of all AMI Proposals, there were two Prime AMI Vendors selected for Short List Demonstrations by the City of Independence, MO. HD Supply presented July 11<sup>th</sup> and Honeywell presented July 13<sup>th</sup>. It was noted that each of the AMI Vendor demonstrations were well attended by both the City staff and the Vendor representatives. The information within this report should serve to summarize the activities, but have not been reviewed or approved by the AMI Vendors<sup>1</sup>.

The two AMI Vendors use different telecommunication infrastructures. Honeywell uses a Mesh technology; while HD Supply offers a Point to Multi-Point solution from Sensus. There are pros and cons to each solution. One issue that was raised after Honeywell’s presentation was that it required a significant amount of field devices that the City telecom staff would need to maintain. The HD Supply offering had less devices in the field. A more details discussion of each solution is provided in this report. In short, either solution will likely provide a satisfactory AMI system for the City.

Further investigation will be required before a final decision is made between the two AMI Vendors. In order to “tighten up” the final contract, the “Attachment 7 – Requirements Document” will need to be rewritten to reflect specific contractual requirements. It may be possible to conduct such an exercise with only one, the Preferred AMI Vendor, instead of doing it with both Honeywell and HD Supply. Utilizing the information from this report and from the Financial analysis, that may be possible.

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<sup>1</sup> This report of the Vendor Demonstrations is subject to review and editing by the City and the Vendors and should be viewed as reference material only and not to be included in contractual documents.



## HD Supply Presentation Highlights

HD Supply, as the Prime, brought in Sensus as the AMI telecommunication solution; Harris (SmartWorks) providing the MDMS; Vanguard as the meter installation vendor; and, Exceleton as the Pre-Pay solution.

### Some Notable Facts About Sensus

Sensus has over 14,000 customers, 630 of which use SaaS. They have over 80M total installed meters (water, gas, and electric), including 16M electric meters.

**FlexNet** uses an FCC licensed primary-use spectrum, legally excluding all others.

The base station power can scale up and down depending on specific location/needed range, with a maximum of 25-watts. Some additional points include:

- Network is "Full duplex" which means it can talk and listen at same time; note that mesh networks are half duplex
- Licensed spectrum provides bandwidth to expand for future uses
- Preliminary analysis indicates that **19** base stations will be needed
  - 16 M400B2 units – typically mounted on towers
  - 3 R100NA units – pole mounted, lower-power
- The power of the units provides redundancy in the event of a failure
- In some of the outlying areas, IPL does not own electric distribution poles (water meters only)
- Question: Will there be any fees for mounting/attaching to non-IPL poles?
- Follow-up: Sensus will look closer at secondary sites for base stations and further vet out mounting options
- Base stations have a 4-6 weeks lead time, but some utilities keep spare transceiver on hand
- Proposal cost does not currently include any spares

### *Sensus FlexNet "Additional Justification" (Jeff)*

- Demand Response
  - CVR
  - Direct Load Control
- Distribution Automation
  - IND using this over cellular network
  - Can also utilize FlexNet AMI network
- Sensus Smart Lighting Control (Auto-dimming/brightening, emergency button) - ThingWorks app

### Overview of Electric Meter Technology (Ken)

- Aclara, Sensus, and Elster meters are all compatible with FlexNet
- Voltage accuracy is typically +/- 0.1%
- Meters include high temperature detection
  - Alarm and/or auto-disconnect
- Meters also include "Tamper" alarm when power is lost and meter is pulled
- Phase detection is a Sensus Analytics road map item
- Pre-Pay option w/ Exceleton MyUsage, requires remote disconnect
- Meters have an "Opt-Out" mode to minimize RF (or turn off altogether)

### Overview of Water Meters (Tyler)

- accuSTREAM meter (available up to 1" size)
  - Positive displacement (oscillating piston)
  - 20-year warranty on register
  - Battery operated
- iPerl meter (alternate)
  - Most accurate on market, no moving parts
  - Electromagnetic
  - Enables leak monitoring, reverse flow, empty pipe, tampering detection
  - Drawback is that there is no "frost-proof" seal
- OMNI meters for 1"+ applications
- Ally meter (alternate)
  - Magnetic flow
  - Additional pressure and temperature monitoring
  - "Reduced" flow state - provides "life sustaining" water
  - May be better outside the electric footprint (no electric connection)
  - Good for problem areas (transient locations - apartments, dorms, etc.)
  - 16-year warranty
  - In "Beta" right now and is expected to be fully available by 2018 Q1
- Smartpoints 510M - 520M
  - Pit-set Smartpoints are mounted above lid, but Independence typically does not own these lids
  - Wall mount (touch pad backup on back of house)

### Overview of Software as a Service (SaaS) and Managed Services Solutions

- All application upgrades, changes, built-in. No additional upgrade cost.
- 785 SaaS utility customers (150 AMI customers added over last year)
- Sensus has dedicated NOC staff, but also uses third-party event monitoring and reaction
- Utility owns the base stations, but Sensus can manage further downstream
- Sensus will clarify managed services proposal in a follow-up

### Harris Smart Works (Ken)

- Harris also owns Infinity CIS (used by Independence)
- Harris has 72 direct customers using MeterSense
- Logic MDM solution - partnership with Sensus for smaller water customers - 330 customers use this now
- Compass is the analytics package that includes configurable dashboards w/ KPIs and key metrics
- Product is already integrated with Infinity CIS
- Remote Connect/Disconnect functionality available either on-demand or via a batch process (list)
- Functionality/Modules:
  - Intelligent Outage Supervision (option)



- Virtual Metering / Meter Grouping allows you to analyze groups of meters (for example for Transformer Loading or Loss Analysis)
- Electrical loss analysis
- Blink Count analysis
- Ability to integrate Customer Awareness modules with InfinityLink (example is electric consumption report)
- BizConnect C&I customer portal / dashboard (will be moved to optional)
- Harris would prefer that Sensus do the hosting, **bid will be updated to reflect this**
- Modules can be turned on-and-off based on availability/need

### Exceleron Pre-Pay (Dan)

- Exceleron includes Prepay, Assist, and Monitoring modules
- Customized profile and alerts
- Independence sees very few write-offs (~0.05%)
- Non Pre-Pay customers can use MyUsage Assist to view consumption and get notifications
- MyUsage portal will be linked directly from Harris customer portal to provide customers with a single access point

### AMI Implementation Process (Ken – HD Supply)

- HD Supply has completed 200 fully deployed AMI projects
- Project team will encounter issues when touching old equipment
- Will utilize a team approach with HD Supply + Engineers + Sensus PM
- Meters come pre-programmed from Factory
- Techs will have a handheld device with GPS
- Pilot: will work with Independence on pilot acceptance criteria
- Meters are sample tested after receipt
- Ken from HD Supply will be the dedicated Project Manager

### Vanguard Installation Services (TJ)

- Vanguard will coordinate with Independence in the planning phases on the number of meters to be installed per week
- Standard weekly status meetings with project team
- Vanguard site manager will live here and be dedicated full time
- QA process: Vanguard manager will review pictures and perform field audits on a certain % of installed AMI meters
- Project manager will handle all customer complaints directly
- Techs have handhelds and cell phones
- VUSS website will contain data, pictures, etc. after they have been QC'd
  - Independence personnel will have access to this portal
  - All pictures are reviewed by Vanguard personnel after install (takes 24-48 hrs)
  - After 24-48 hours, data is available on website and completions file (Excel/CSV) will be sent to Independence project team
- Overall communication plan is a point of discussion to be developed

- The Independence mass service order process may not yet be working due to Infinity CIS being behind schedule
  - AMI project will not start until Infinity implementation is complete
- VUSA has a dedicated call center
  - Mailer will refer customers to call center or website (vusinc.com)
- Goal: 3% 'exceptions'
  - Ex: Safety issues, repairs needed, access issues
  - These will show up on website and be reported weekly
- Installers can be identified as either "Vanguard" or "Contractor for City of Independence" (TBD)
- Vanguard will hire local employees and provide on-site training during the first month

### Financing

- Government Capital Corporation
  - HD Supply will follow up with Financing options
- AMI Head End price should be \$1,360,957 not \$2.4M
  - Harris will formally provide updated price
- "Outage Supervision" line item will be removed (have Milsoft already) - saves \$126k
- SmartWorks Connect price will be reduced (Infinity Link has most of this)
- BizConnect will move to an Option
- Smart Streetlights will move to an Option

### FOLLOW-UP ITEMS

- Sensus will look closer at secondary sites for base stations and further vet out mounting options
- Harris will provide a reference for a utility using both MeterSense MDM and Infinity Link CIS
- Managed Services bid updates/clarifications
  - MDMS/Sensus hosting arrangements
  - Sensus AMI network managed services (applied to base stations, backhaul, etc.)
- Requirements document (attachment 7)
  - Vendor team will update Attachment 7 to ensure that all items of compliance are checked Y to "Included in Base Price"
  - Sensus will follow up on item 2.125 (Power Quality – IEEE standard reference)
  - Vendor to describe workflow currently provided related to requirement 12.008 (meter installs and removals between AMI Head-End / Cityworks)
  - Vendor to provide responses on 16. Customer Engagement tab
  - Vendor to provide an update to 17.009 and 17.012 as requested in Attachment 7 markup
- Pricing Updates:
  - Vendor to provide price option for iPerl and ally water meters
  - Vendor to decrease price for MDMS as discussed
  - Vendor to decrease price for SmartWorks Connect (Infinity Link already has most of this)
  - Items to be moved from Base Bid to Optional include: (1) MDMS Outage Supervision module; (2) BizConnect module; and, (3) Smart Streetlights
- HD Supply to provide further detail on Financing and complete tab in pricing worksheet



## Honeywell Presentation Highlights

Honeywell's Proposal includes both Leidos and WESCO as subcontractors. Representatives of these companies were present at the demonstrations. Exceleron, as the Pre-Pay solution, was not present.

### Some Notable Facts About Honeywell

- Honeywell acquired Elster in late 2015
- Honeywell's Smart Energy group is part of the Home & Buildings Technology division
- Honeywell/Elster account for 200M installations in the last 10 years, including 12M+ smart meters
- Honeywell is a Preferred and Exclusive AMI Partner for "Hometown Connections"

### Honeywell EnergyAxis Managed Service

Honeywell EnergyAxis Managed Service (HEMS) is their mesh network telecommunication solution. Some items of note include:

- Utilizes unlicensed 900 MHz Mesh
- Meters, when powered up, auto-configure a best communication path
- All meter data and potentially streetlights will pass through the same network
- Preliminary plan includes **94** gatekeepers (designed for 50% capacity to allow for expansion)
- **55** Gatekeepers would be on cellular backhaul, with the remainder on Fiber
- Mesh network can be stretched to remote areas using repeaters
  - Locations will be determined during initial design phases
  - Pole space may need to be leased from adjacent electric utilities for a small fee which would be the responsibility of Independence
  - Many of the municipalities Honeywell deals with have similar "water-only" areas
- Design will utilize existing Fiber for backbone as well as 4G cellular gatekeepers
  - Ethernet connection to Fiber

### *Discussion of Unlicensed vs. Licensed Spectrum*

Honeywell discussed the technical aspects of their mesh network that included a discussion of Unlicensed vs. Licensed spectrum. Some items of note include:

- The mesh network operates in the public frequency band of 902-928 MHz; with HEMS typically using the 917-925 MHz range
- It uses a frequency-hopping technology that will auto-select on different bandwidth to avoid latency issues, based on traffic congestion levels.
- Honeywell defended the technology by further stating they've experienced:
  - No existing problems with any of their 140 installations
  - No interference complaints with FCC, with one exception, which was an illegal/unauthorized user
  - Have example of downtown Manhattan high-rises with 1000's of customers using 900 MHz ranges



## Hosted Solution Overview (Leidos)

Leidos presented their hosted offering, with the MDMS referred to as: "Connexo Insight" and their AMI Head End solution labeled "Connexo NetSense". Their Proposal includes a new Customer ePortal, with the option to integrate with the existing Customer ePortal.

Leidos stated that they've successfully integrated with Harris products in the past and all costs for integration are included in proposal price.

Leidos demonstrated their Utility ePortal that provided a significant level of business best practices gathered over the past decade. Some items of note include:

- Initial landing page shows high-level system metrics
- All data can be exported to xxx.csv format
- Safety feature to "disable" the Disconnect function (e.g. for a customer on life-support equipment)
- On-demand meter read will take ~30 seconds
- Different views are available for Engineering, Customer Service, and Customers, with customizable color-schemes
- System integration with CIS:
  - Interfaces are made available to CIS (ex: disconnect button) but CIS modifications are not included in scope, which is consistent with what was requested in the RFP
- Map interface that includes:
  - Color-coding by status
  - Ability to ping meters
  - Layers for meters and gatekeepers
  - Not meant to replace OMS, but some of this can be made available to customers
- Rate analysis that includes graphs and comparisons of typical customers and outliers
- Transformer analysis based on aggregated meter data

## HEMS Operational Support (Honeywell)

Honeywell maintains two Data Centers, with the primary Data Center near Dallas. Disaster-recovery backup is provided by the Data Center in Little Rock, AR. Some additional facts include:

- Redundant circuits, routers, switches, servers, discs, databases, and physical security
- HEMS Operations handles the daily technical tasks
- 12 Utilities in North America are currently using the HEMS fully managed solution
- As part of the managed services offering, Honeywell will review alarms/events/trends and deliver insights to Independence Operations team
- The Honeywell team is spread across a few different locations in Plano, Texas; Louisiana; North Carolina; and, others

## Meters (Honeywell)

### *Electric Meters*

The A3 Alpha meter is offered for the C&I customers, with the REX meter for residential customers. It supports net metering and its radio can be turned off for customers seeking to "opt out" of AMI, but a field visit is required to do so. Note that this would not have to be pre-programmed at the factory.

### *Water Meters*

Honeywell recommends reading down to the lowest volume increment possible. They have proposed the EnergyAxis Water Module. Notes/comments regarding pit installations include:

- Most utilities replace pit lids
- Independence doesn't own lids, which are mostly all steel, some indoors
  - For steel lids, they usually drill a hole
  - Usually ~6-feet of cable so it won't disconnect upon opening
  - If module is disconnected it will send a Tamper Alarm

They do not offer a water meter disconnect, stating none are currently available with remote disconnect capabilities. Honeywell developed one, but were not able to get the costs low enough to make deployment economically feasible.

Meters report to Gatekeepers six times per day.

### [AMI Implementation Process \(Jesus Gonzalez – PM from Honeywell\)](#)

Seven Honeywell project team members report up to the Honeywell PM, including:

- Network Planner (GIS studies, network layout)
- Project Engineer (install software, operationalize)
- Project Planner (logistics such as purchasing, meter types/sizes, tracking status of orders)
- System Trainer (will train City personnel on system operations)
- Integration Engineer (integration with City systems)
- Field Services Engineer (leading installation crews, some training, manager will be on-site full time)
- Support Engineer (technical support)

Leidos and PMI (or alternate local installation contractor) also report to the Honeywell PM.

Honeywell PM is not on-site 100% for the duration of the project, but will likely be on-site full time early on, then back in Raleigh as the Project progresses.

Honeywell PM tasks include:

- Utilizing MS Project to manage schedule
- Weekly status meetings with the City
- Risk management, action logs, standard PM functions
- Methodology based on PMI PMBOK (Jesus is a PMP)

Project Phases are: Initiate --> Plan --> Execute Initial Phase (Pilot + Infrastructure) --> Execute & Monitor, Control --> Close

Pilot site selection criteria include:

- Typically deploy one cluster in Pilot in the "hardest" area
- But could also support several clusters
- May want to consider selecting a mix of residential and large C&I customers to validate different solutions



- Recommend aligning the pilot site selection with the key business case drives

### Installation Process (Matt Chapman, Manager of Field Services)

Field Service Engineer will be on-site 100% (the most likely candidate for this role resides in Blue Springs) and will responsible for daily installation activities including:

- Managing contractors
- Making sure technology is working
- Managing PMI (or other local contractor)
  - Honeywell has already reached out to Midwest and Mark One who are local installers
  - PMI would also hire local contractors
  - Currently required to pay prevailing wage rates for registered electricians (per State requirements), although the job function does not require an electricians level of skill. City could capture a significant cost savings if the state would agree to ease requirements.
- Emphasizing Safety with daily tailgates, lessons-learned meetings, and a project specific safety plan to be developed
- Work Order Management System (WOMS) called Installation Tracking System (ITS)
  - ITS will be used regardless of whether PMI or a local installation contractor is selected
- Honeywell will establish call center operations in cooperation with the City
- During the initial project phase:
  - Project Communication Plan will be developed which Includes letter communications, CSR talking points, processes for routing phone calls, etc.
  - Configure WOMS integration
  - Develop installation plan and schedule (by route/area, around billing window, etc.)
- Rough target is to complete 95% of an area complete before moving on
- Striving for 2% of less Return to Utility (RTU) - analogous to "Exceptions" that the team is unable to complete and will remain after the project (ex: customer repairs, refusals, etc.)
- 48-hour turnaround on data/installation verification back to the City
- City CSRs will have access to the ITS portal?
- Installers and vehicles will be uniformed. They can operate under the City logo, Contractor logo, or a combination

### Systems Integration (Tim, Chief Architect of Managed Services Solution)

There are four primary integrations: CIS Infinity; Cityworks; Milsoft OMS; and, InfinityLink ePortal.

#### *Infinity CIS Integration*

- Meter Lifecycle Management
  - Can us flat file interface or Multispeak
  - Meter install, move in/move out, meter change, connect/disconnect, etc.
- Billing Interface
- Anything from Utility Portal demo (earlier) can be made available through Infinity CIS if desired

#### *Milsoft Outage Management*

- Easiest integration, they are a Hometown Connections partner

#### *Cityworks Asset Management*

- Advanced Alert module allows for alerting based on complex rules

### *InfinityLink ePortal Integration*

- Full suite of Multispeak services are available to integrate AMI data into the ePortal user experience
- Honeywell/Leidos can implement their own portal or provide interfaces for
  - Consumption data
  - Register reading data
  - Event data
  - Outage history
  - Etc.
- Pre-configured consumption chart widget can be easily implemented into existing ePortal

### Pricing Notes

- Additions to base bid:
  - ~\$27 addition for integration to Cityworks per requirement 8.013
  - Pricing options for installation of pit-mount water meter transceiver:
    - Replacement the entire water pit lid, or
    - Cutting a hole in the existing lid
    - Note: lids are typically steel and are not owned by the City
  - Cost of cellular air-time fees for years 4-10 (currently only 3 years are included in bid)
- Additions to Optional pricing:
  - Future load forecasting (requirement 9.017)
  - Normalizing energy consumption for temperature, etc. (req. 9.028)
  - Meter with ZigBee chip (req. 9.064)
  - All items related to Streetlights will be moved to optional (controllers, modules, integration, etc.)
- Cost of cellular air-time fees represents an estimate ("worse case")
  - City could negotiate directly with carriers for lower rate based on bulk purchases
- Suggest a working session during negotiation/contract phase for system integrators to meet with Harris CIS team to fully understand integration requirements
- If requirements are well-defined, Honeywell could include language in the SOW to the effect of "integration costs not to exceed +5%"
- Security costs are built into product, not bolted-on, which is why the "Security and Infrastructure" section shows \$0
- Training costs are built-in to Managed Services cost model and Project Management (field services team), which is why these appear as \$0
- Customer Engagement cost includes only the IVR system (outbound robocalls)
- Honeywell call center costs are included with Labor cost
- Many of the CapEx items would be payment upon delivery
- Hosting options would be monthly or yearly charges

### Financing

- Honeywell has partnered with Missouri Public Utility Alliance (MPUA) - Hometown Connections
- City would work directly with MPUA
- City could also use a local bank if necessary
- After Year 2, there will be no prepayment penalty



## Mesh Versus Point to Multi-Point Networks

Depending on the network provider selected, there are two primary network types: (1) mesh networks, and (2) point to multi-point networks. The figure below provides more insight relative to each of the network solutions.

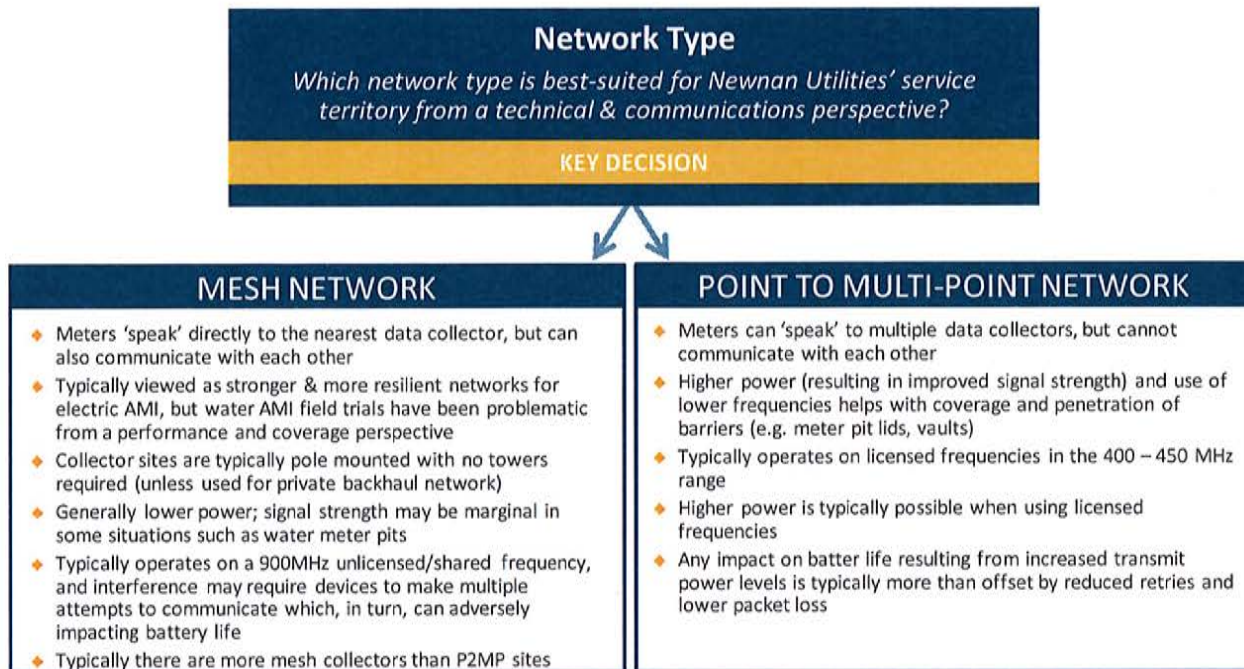


Figure 1: Comparison of Mesh and Point to Multi-Point Network Solutions

## Attachment 7 - Requirement Document Discussion

During the Vendor Demonstrations, the "Attachment 7 – Requirements Document" was reviewed. Many of the non-compliance Requirements were moved to comply. However, there were yet remaining non-compliance Requirements. A table was constructed to include both the HD Supply and the Honeywell non-compliance Requirements (see "Non-Compliance Comparison HON-HDSupply.xls"). Some summary statements may be drawn from reviewing this spreadsheet.

- Honeywell indicated 31 non-compliant requirements, while HD Supply has 41. However, HD Supply's responses to the Requirements appeared to be from a more critical contractual viewpoint.
- If a Requirement had any aspect of it that could not be met, it was shown as non-compliant. For example, Requirement 2.001 required electric meters to support an internal disconnect switch on 1S, 2S, 4S, 5S, 9S, 12S and 16S meters. Some of these meters (5S, 9S, 16S) are physically not able to contain disconnect switches, so they indicated non-compliance, while Honeywell did not do so.
- HD Supply indicated six non-compliant requirements in the Customer Engagement Tab that will likely be removed.
- Through contract negotiations, some of the non-compliant items may be removed.

- Additionally, Independence may determine that full compliance of some Requirements is not needed and that partial compliance will suffice.
  - One that comes to mind is Requirement for the meter to contain the programming history. If the history is maintained in the AMI Head End and can be refreshed from the AMI Head End to the meter, that could be deemed to satisfy the intent and function of the requirement.
  - A second might be the speed on which data is pushed through the system and presented to the CSR's desktop.
  - A third requirement might be the meter accuracy (0.2%) - which was difficult for the Vendors to attain.
- There were only three requirements that neither of the two top Vendors jointly were in non-compliance. These were Requirements 2.026; 7.167; and 7.206.
- It's possible the inherent differences between a mesh and a point to multi-point telecommunication system are the reason for some of the differences in non-compliance to very different Requirements.
- There was a significant amount of non-compliant Requirements that the Vendors have indicated are either on, or could be on, their future roadmap to be completed in the 2018-2019 timeframe.