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(650) 483-5721



Automated Metering Infrastructure Assessment Project

***Response to Virgin Islands Water and Power
Authority PR-14-21 Bid Request by Z2Solutions
LLC***

February 4, 2022



4 February, 2022

Nicole Aubain
Contract Administration Manager
Virgin Islands Water and Power Authority
9720 Estate Thomas
Al Cohen Plaza St. Thomas, VI 00802

RE: AMI Assessment Project

Dear Nicole Aubain:

Z2Solutions LLC is pleased to provide this proposal to Virgin Islands Water and Power Authority. Z2Solutions is a small, highly focused, consulting group. We specialize in the the justification, selection, implementation, integration, and operation of AMI solutions. This Z2 team has been together for over 10 years with zero turnover of personnel. Utilities of all sizes have enlisted Z2's services. This includes large utilities such as Consolidated Edison, several Florida utilities, as well as a number of island Caribbean utilities.

As a group of individuals that has been in the industry basically since its inception, Z2 is very familiar with the various AMI technologies that have been deployed. This includes the Tantalus solution. Z2 has helped troubleshoot interference issues in Barbados for Barbados Light and Power Corporation. In particular, one of our team is highly experienced in the area of communications and will be recommended as the lead for the investigative portion of this project.

Z2Solutions sincerely hopes you will consider our proposal and will be happy to discuss this proposal to address the needs of your program. With our extensive experience and expertise, successful history of implementations and customer satisfaction, we feel that VIWAPA will enjoy a most successful AMI Assessment project. Please do not hesitate to contact me at 650-483-5721 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "John O. Wambaugh", with a stylized flourish at the end.

John O. Wambaugh
Z2Solutions LLC



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1. Proposer Information

Z2Solutions LLC (Z2) is an Intelligent Grid consulting firm solely focused on serving the needs of progressive utilities for advanced metering and smart grid applications. As a small consulting group, Z2 offers some of the most experienced personnel in the industry while being able to remain very cost effective since the Z2 organization has very little overhead. Z2 has been providing AMI consultation services for approximately 10 years. Prior to that each employee was engaged in providing consulting services at another firm. Overall each consultant has at least 25 years of experience in providing products and services to utilities.

Z2 is uniquely qualified to support your services request and has worked with all types of utilities of all types of sizes. Previous and current clients include Consolidate Edison, Clay Electric Cooperative, Snohomish County Public Utility District, University of Central Florida, Barbados Light and Power, Grand Bahama Power, Bahamas Power & Light, and VINLEC (St. Vincent and the Grenadines).

In order to demonstrate the specific qualifications of Z2 for this project, the following example is offered:

Z2 assisted Barbados Light and Power Corporation in the investigation of proposed AMI to Cellular interference in support of the utilities 902-928 MHz mesh based AMI solution. This effort required the assessment of collectors, routers and meters located in and around DigiCell cellular towers. The assessment included the analysis of the associated AMI hardware, RF signal strength analysis, antenna placement and field evaluations in and around cellular towers. In addition to working with the utility, the AMI vendor was included in the effort as a partner in the investigation so that all parties had an operational understanding of the AMI systems use of the spectrum, channelization, power, and packetizing of data. As a result of the investigation it was found that another cellular provider had maintenance issues on an older cellular tower causing spurious/third order emissions resulting in in-band interference. Z2 provided guidance, assisted in the field investigation and provided reports for the utility to share with cellular companies and regional government spectrum authorities.

2. Proposer Exceptions

Several of the items in this proposal depend heavily on the cooperation and participation of Tantalus. Because every AMI solution has their own unique characteristics, this is particularly true with respect to the propagation study requests (220 MHz and 900 MHz). Every AMI vendor has their own unique characteristics with respect to network deployment standards. These include signal strength, antenna height, communications speed, and others. As noted throughout this proposal, without significant cooperation by Tantalus, the results of this project will likely serve to move straight to the replacement of the solution.

3. Questionnaire (Mandatory)

The undersigned guarantees the truth and accuracy of all statements and answers herein contained. Include additional sheets if necessary.



1. How many years has your organization been in business as a General Offeror, Sub-
Offeror? (circle one). 8 Years
2. Within the past five years, how many Construction projects equal to or greater than this
project has your organization completed? 10
3. Have you ever failed to complete work per Contract Specifications or within the time
limits of a Contract awarded to you, if so, where and why?
No
4. Name three individuals or corporations for which you have performed related work and
to which you refer.
Please see references provided in the Section 5 of this response
5. Have you personally inspected the site of the proposed work? No
Describe any anticipated problems with the site and your proposed solutions.
6. Will you sublet any part of this work? No If so, give details.
7. Have you included any exceptions with your proposal? No
8. Have you included a Preliminary Project Schedule with your proposal? Yes
9. Have you included the professional resume of your intended Project Manager with your
proposal? Yes
10. State the true, exact, correct, and complete name of the partnership, corporation or trade
name under which you do business, and the address of the place of business. (If a
corporation, state the name of the President and Secretary. If a partnership, state the
names of all partners. If trade name, state the names of the individuals who do business
under the trade name. It is necessary that this information be furnished.)

Z2Solutions LLC (Correct Name of Offeror)

The business is a Sole Proprietorship, Partnership or Corporation. (Circle one)



4. Proposal Form

Name of the Offeror **Z2Solutions LLC** (Individual, Firm or Corporation, as case may be)

Date of Proposal **4 February, 2022**

To: The Virgin Islands Water and Power Authority St. Thomas, Virgin Islands

Pursuant to your request for proposal and in compliance with other related Contract Documents, the undersigned does hereby propose to furnish all materials, labour, tools, supervision, equipment, and insurance necessary for this Project, in strict accordance with the Contract Documents for the prices indicated below.

The above-named Offeror affirms and declares:

1. The Offeror is of lawful age and that no other person, firm or corporation has any interest in this proposal or in the Contract proposed to be entered into.
2. That this Proposal is made without any understanding, agreement or connection with any person, firm, or corporation making a Proposal for the same purposes, and is in all respects fair and without collusion or fraud.
3. That the Offeror is not in arrears to the Virgin Islands Water and Power Authority, upon debt or contract, and is not a defaulter, as surety or otherwise, upon any obligation in the Virgin Islands Water and Power Authority.
4. That no officer or employee or person whose salary is payable in whole or in part from the Virgin Islands Water & Power Authority is, shall be or become interested, directly or indirectly, as a contracting party, partner, stockholder, surety or otherwise, in this Proposal, or in the performance of the Contract, or in the supplies, materials, or equipment and work or labour to which it relates, or in any portion of the profits thereof.
5. That the Offeror has carefully examined the site of the work and that, from his own investigations, he has satisfied himself as to the nature and location of the work, the character, quality, and quantity of materials and the kind and extent of equipment and other facilities needed for the performance of the work, the general and local condition and all difficulties to be encountered, and all other items which may, in anyway, affect the work or its performance.
6. All proposals shall remain firm for a period of Sixty (60) days following the date of public opening.
7. **That the undersigned, as Offeror, also declares that he has carefully examined and fully understands all the component parts of the Contract Documents and agrees that he will execute the Contract and will completely perform the work in strict accordance with the terms of the Contract and the Contract Documents therein referred to for the following prices, to wit:**
8. Offeror must fill in all blanks in the Proposal Form. The sum of the extended costs must equal the Lump Sum Proposal Price.



9. The Offeror will carefully coordinate his work with the Virgin Islands Water and Power Authority. The Offeror shall submit a detailed time schedule. This schedule shall be incorporated into the construction schedule to be submitted to the Engineer.

Work on the Project Contract time begins on the date of issuance of the NOTICE TO PROCEED.

10. The proposed construction schedule must accompany this Proposal Form. (Note: Offeror(s) must bid on each item. All entries in the entire Proposal must be made clearly and in ink; or typed.) The proposed construction schedule must accompany this Proposal Form.

5. Basis of Award Form

Offeror(s) must acknowledge receipt of addendum(s) as follows:

Addendum #I Received on 12 January, 2022 _____

Addendum #II Received on 13 January, 2022 _____

Addendum #III Received on 26 January, 2022 _____

The Offeror certifies that the addendum(s) above has been received and that changes covered by the addendum(s) have been taken into account in this Proposal.

(If Offeror is a firm, fill in the following blanks)

Names of Partners Residence of Partners

John O. Wambaugh _____

Z2Solutions

LLC is a Limited Liability Company formed and certified within Colorado

(If Offeror is a Corporation, fill in the following blanks)

Organized under the laws of the State of Colorado

Name and Address of President John O. Wambaugh, 29 Kennebec Dr., Durango, CO 81301

Dated 3 February, 2021 _____



John O. Wambaugh on behalf of Z2Solutions LLC (Name of Offeror)

29 Kennebec Dr., Durango, CO 81301 (Address of Offeror)

By:  (Signature)

6. Proposer References

The following references are provided for review. Any of these references may be contacted. We only suggest that Z2 be allowed to make an introduction so as to expedite any reference checking process.

6.1. Clay Electric Cooperative

Clay Electric is an electric cooperative utility serving approximately 175,000 electric members in 14 counties in Central Florida. Z2Solutions was selected as the primary consultants for this project after providing an all-day workshop on “what to expect while deploying AMI”. Clay Electric has implemented the first greenfield implementation of the Landis+Gyr IP Mesh solution. They have been involved in a number of activities at Clay Electric including:

- AMI Technology procurement (AMI, MDM, System Integrator, Meter Installation Vendor)
- Business process definition and documentation
- AMI Implementation Plan Development
- AMI Solution and Enterprise Architecture Development
- AMI Communications Plan Development
- Advisory service and support for implementation of AMI solutions

Z2 was involved in the AMI Program implementation serving as the AMI Program Manager and Solution Architect providing overall program management and coordination, AMI network design, business architecture and subject matter expertise to support the integrated implementation of the chosen technologies, specification and build out of the AMI Operations organization, AMI network deployment and AMI meter deployment.

A reference letter from Clay Electric is include as Appendix B.

Client Reference

Frank Holmes

Chief Operating Officer

352-473-8000

fholmes@clayelectric.com

Client start: 7/16

Duration: Complete 6/20



6.2. Consolidated Edison

Con Edison is the investor owned electric and gas utility serving 5,000,000 electric and gas customers in and around New York City. Z2Solutions was selected as the primary consultants for this project in part because of the extensive knowledge of Advanced Metering and the associated information systems. They have been involved in a number of activities at Con Edison including:

- AMI Business Case Development
- AMI Technology procurement (AMI, MDM, Meter Asset Management)
- System Integrator selection for AMI Technology suite and CIS implementation and System Integrator selection for integration of OMS with AMI
- Meter Installation Vendor procurement
- Business process definition and documentation
- AMI Implementation Plan Development
- AMI Solution and Enterprise Architecture Development
- AMI Communications Plan Development
- Advisory service and support for implementation of AMI and MDMS solutions

Currently they are involved in the AMI Program implementation serving as the AMI Program Advisor providing business architecture, quality assurance, new product introduction and subject matter expertise to support the integrated implementation of the chosen technologies, specification and build out of the AMI Operations organization, AMI network deployment and AMI meter deployment.

Client Reference

Tom Magee

AMI Program General Manager
(212) 780-6965

MageeT@coned.com

Client start: 2/15

Duration: Ongoing

6.3. Barbados Light and Power

BLPC is the electric utility serving approximately 150,000 electric customers in Barbados. Z2Solutions was selected as the primary consultants for this project to advise the AMI Program in a number of different areas. Z2Solutions has been involved in a number of activities at BLPC including:

- Develop Advanced Metering Strategic Plan
- Develop AMI business case
- AMI and MDMS vendor contract negotiations
- Business process definition and documentation
- Advisory service and support for implementation of AMI and MDMS solutions
- Prepayment program development
- Outage Management vendor selection and contract negotiations

Client Reference

Charles Harris

Sr. Manager Business Solutions
(246) 626-4510
Charles.Harris@blpc.com.bb

Client start: 6/15

Duration: Ongoing



- AMI Operations assessment and recommendations
- Smart Grid strategy development and individual project execution

Currently Z2Solutions is involved in the AMI Program implementation providing strategic consulting services for the implementation of an electric vehicle charging solution and development of the Prepayment program.

6.4. *Grand Bahama Power Company*

GBPC is the electric utility serving approximately 20,000 electric customers in Grand Bahama Island. Z2Solutions was selected as the primary consultants for this project to advise the AMI Program in a number of different areas. They have been involved in a number of activities at BLPC including:

- Develop Advanced Metering Strategic Plan
- Develop AMI business case
- AMI and MDMS vendor selection contract negotiations
- MWFMS (Clevest) vendor contract negotiations
- Business process definition and documentation
- Advisory service and support for implementation of AMI and MDMS solutions
- Integration architecture design
- Integration testing for AMI, MDMS and MWFMS

Client Reference

Delano Arthur

Director of Grid Solutions

(242) 727-0378

Delano.Arthur@gb-power.com

Client start: 1/18

Duration: Ongoing

GBPC experienced significant damage from Hurricane Dorian in 2019 and suspended the AMI program. Z2Solutions is presently working with GBPC and the AMI vendors to restart the AMI program and complete the integration and testing of the key information systems. Due to the trust earned from working with GBPC, Z2Solutions is managing this effort and the vendors on GBPC's behalf, while GBPC personnel are focused on restoration and rebuilding efforts.

7. Proposal Contents

Z2 will provide all of the required services and documents requested for this project as well as some additional recommended services. Per the original RFP, these services will include:

7.1. *Complete System Assessment*

- Hardware AMI and Communication network (Towers, Collectors, meters etc.)
 - Engineering analysis to include root cause of failures, life expectancy in a tropical environment of devices to including but not limited to meters, communication modules, collectors, etc. Additionally, examine the Meter Reads Reliability (MRR) obtained from Tantalus to determine the cause of the overall decline. Assess and provide



recommendations for the pros and cons of meter repair via module replacement vs. full meter replacement.

- Assess the location of existing collectors to determine ideal placement for new collectors (if needed) to provide complete coverage throughout the territory
- Provide an overall report of current state of system including but not limited to the failed devices, the failure rate of devices, the life expectancy of existing devices, the actions needed to repair.
- Perform Propagation Study on 220Mhz frequency to determine if the network is reliable and effective in the territory's terrain.
- Perform frequency analysis from meter to collector in the 900Mhz
- Full report of findings and actions to be taken and make recommendations for resiliency improvements.

7.2. Professional Services

- Provide engineering estimate for full repair/replacement of the AMI system.
- Provide anticipated annual cost to maintain system and system devices.
- Provide a cost/benefit analysis of converting from tower based to IP based collectors.
- Provide a recommendation for meter specifications for a tropical and corrosive environment.
- System optimization
- Review and provide input on VIWAPA's mitigation plans based on approved FEMA project worksheet.
- Write a "Request for Proposal" to include an estimate to perform work based on the results of the of the assessment, actions to be taken and needs of the Authority.
- If applicable, Review and respond to "Request for Information" from vendors and /or contractors during the repair or replacement bidding process.
- Review and level bids for conformance to contract specifications.
- Review and evaluate submittals from vendors and/or contractors to insure conformance to contract documents.

8. Work Plan

Z2 will follow all safety and security guidelines as outlined in the RFP. It is stipulated here that this evaluation and analysis cannot be completed without the full cooperation of VIWAPA and Tantalus. The work plan is divided into two phases. The first phase is the overall evaluation of the Tantalus system and the subsequent recommendation. The second phase is the process of developing an RFP to select a replacement solution.

8.1. Phase 1: Task 1 – Project Kickoff

This is a milestone task to kickoff the project. It will consist of a virtual meeting to accomplish the following:

- Introduction of Z2 and VIWAPA personnel to participate in the project.
- Introduction of Tantalus technical or account manager contact



- A review of the overall proposed project schedule
- A review of the data request provided by Z2 to be fulfilled by VIWAPA (Task 2)

Deliverable: Kickoff meeting slide deck (Powerpoint), Project Schedule (MS Project), Data Request (Excel)

8.2. Phase 1: Task 2 – Data Discovery and Analysis

Prior to any onsite time, a data request will be submitted to VIWAPA, this request will include the following:

- Provide original network propagation study as performed by Tantalus
- Include any additions or enhancements to the network since that study was completed
- Lat/Lon of all meters and communications devices currently in the network
- Overview of all backhaul methods and connectivity
 - Cellular providers, Ethernet, Fiber
- Current version of firmware for deployed equipment and if possible current version of what is available from Tantalus and any fixes these proposed version would supply
- Current generation of hardware for all field deployed assets with a request to Tantalus to compare against the version currently shipping
- Evaluation of field tools from Tantalus in order to determine what can be used as part of evaluation process.
- Current version of Tantalus HeadEnd software versus version currently being shipped by Tantalus

Deliverable: None, other than to be used in Task 3

8.3. Phase 1: Task 3 – Onsite Evaluation Plan

After analysis of the information provided by the data request, Z2 will draft a plan that maps out the desired activities for an onsite visit. This plan will include:

- Overall schedule of activities
- Sites to visit
- Measurements to be taken
- Meetings to be scheduled

The duration of this visit will be determined by the analysis of the data request. It is also noted that this onsite visit should also be supported by a technical representative from Tantalus.

Deliverable: Onsite evaluation plan with schedule, sites to visit, measurements to be taken, participation required, and tools to be used.

8.4. Phase 1: Task 4 – Onsite Evaluation

This task will be the execution of the plan developed in Task 3. It is noted that based on any one of a number of variables, this evaluation may be amended as necessary.



Deliverable: No formal deliverable other than copies of notes and findings as appropriate. The more formal delivery of these findings will be included in the subsequent reports to be provided.

8.5. Phase 1: Task 5 – Propagation Study on 220 MHz Frequency

A propagation study cannot be performed without the significant support from the Tantalus. Any analysis performed of a general nature would be of limited value without taking into account the specific characteristics of the Tantalus hardware. Z2 will work with Tantalus to create a study that identifies and validates coverage issues and identifies possible remedial action.

Deliverable: A report showing potential coverage gaps and possible remedial action.

8.6. Phase 1: Task 6 – Frequency Analysis from Meter to Collector in the 900 MHz

Similar to the 220 MHz study, a 900 MHz study must take into account specifics of the Tantalus hardware. However, Z2 can leverage here their knowledge of other 900 MHz solutions in comparison to Tantalus. Once again, this task will depend on cooperation from Tantalus.

Deliverable: A report detailing an expected 900 MHz network design based on data collection requirements including amount of data and frequency of collection.

8.7. Phase 1: Task 7 – Root Cause of Failure Report

A report will be developed that predicts the overall root causes of failure for the solution. Hardware evaluation will include:

- Evaluation of PCB's for contamination or salt buildup
- Presence of residual flux that could impact RF filters, clocks, and crystal based circuits
- Other PCB contamination

Note that for comparative purposes it will be important to be able to compare equipment that has been deployed for some period of time versus new equipment.

Deliverable: A report that summarizes the findings of what was discovered during the onsite evaluation including pictures and any specific conclusions.

8.8. Phase 1: Task 8 – Life Expectancy Report

This report will attempt to quantify the remaining useful life of the existing solution as well as also quantify the expected support costs to achieve that life expectancy. Note that of particular concern here is that Tantalus no longer appears to be offering the 220 MHz TuNet collectors. If this is verified, it will have a significant impact on the remaining life expectancy.

Deliverable: A Life Expectancy Report (Word) that will likely be one of the pivotal deliverables in determining whether to try to improve the performance of the existing system or to look toward replacement

8.9. Phase 1: Task 9 – Meter Read Reliability Assessment

This will be an intensive analysis task. Data requested here will include:



- Any appropriate reports available from the Tantalus system.
- Meter reading export files
- Comparison of initial versus current performance and how that has changed over time
- Analysis will be highly dependent on the available data history in Tantalus or in other VIWAPA systems.

Deliverable: A report (Word) that details the findings of this analysis. The deliverables may also include any spreadsheet data that would be incorporated into the main report.

8.10. Phase 1: Task 10 – Overall System Recommendation

This deliverable will be a summary document leveraging the other deliverables to make a determination as to the fate of the Tantalus solution. It will make the case for ongoing support or replacement of the solution. The report will include not only the technical findings of the analysis but also financial cost impacts of the recommended decision.

Deliverable: A summary report (Word or Powerpoint) that makes the recommendation for the system. A supporting financial analysis (Excel) would also accompany this report.

8.11. Phase 1: Task 11 – Tantalus Quality Improvement Plan (Optional)

If the overall system recommendation is to continue to support the Tantalus solution, this document will outline the steps to be taken to elevate the system performance to an acceptable level. This would include the mitigation plans as related to an approved FEMA project worksheet. Recommended actions could include:

- Targeted collector replacement (based on vintage or manufacturing lot)
- Targeted meter replacement (based on vintage or manufacturing lot)
- Network augmentation based on discovered coverage gaps
- Antenna upgrades or repositioning
- Firmware upgrades as necessary
- Software/IT upgrades to enhance system performance at HeadEnd

Deliverable: An overall document (Word) detailing the steps and timeline to be taken to achieve improved performance. This document will also include the predicted performance improvements to be used to validate the steps taken.

8.12. Phase 2: Task 12 – AMI RFP Development

Z2S will develop an RFP or RFPs associated with the established strategy document. The potential RFP's to be generated include:

- AMI Solution (meters, network, AMI HeadEnd)
- Meter Data Management Solution (MDMS) – MDMS requirements could be included with AMI RFP if desired, putting them together does somewhat limit the MDMS vendor options
- Customer Portal – This is likely a secondary phase activity and is not considered part of this scope.



- Pre-paid Metering – This is also likely a secondary phase activity especially since Prepayment can't be offered until meters are deployed. This RFP is not considered part of this scope.

For the purposes of these proposal, only an AMI solution RFP is being quoted. Z2's RFP process is a very methodical process. Documents included in the RFP package will typically include:

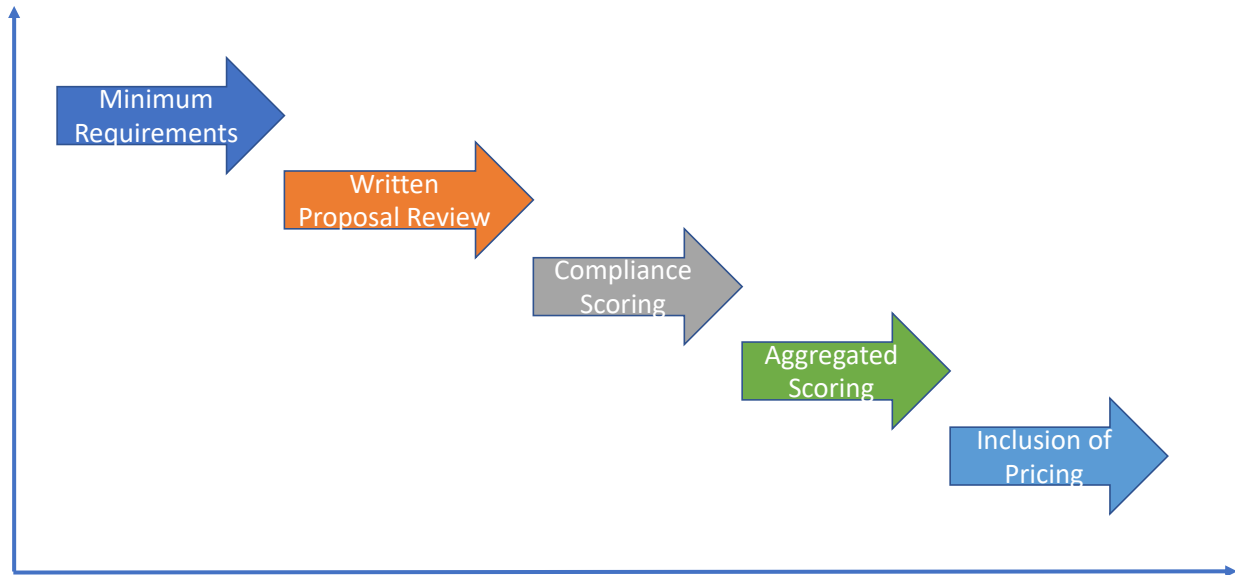
- Main RFP document outlining the main solution requirements, response format, and VIWAPA policy specific information
- Summary table of meter forms and quantities
- Solution Compliance Matrix
- Solution Pricing Matrix
- VIWAPA Specific Forms or documents
- Non-disclosure agreement (NDA)
- Detailed meter list with GPS coordinates and/or address information
- Detailed list of utility assets and locations including offices, substations, poles etc.
- Any application pole attachment or other field standards
- Statement of Work

In the list above, a signed NDA is required to allow bidders to access the more detailed information in the list. Z2 has developed an RFP Template and selection process which ensures that the selection is objective and traceable to ensure that VIWAPA receives the best and most cost effective technology and services which withstands any protest or objection. Additionally, Z2 uniquely provides a Statement of Work with the RFP to ensure that the selected vendor fully understands all services and deliverables and reduces the time of contract negotiations and price increases. This process has resulted in the selection of 12 AMI technologies, 10 MDMS technologies, 5 MIV services and 6 System Integrations services.

Deliverables: All of the documents in the list above.

8.13. Phase 2: Task 13 – AMI RFP Proposal Evaluation

Z2's RFP process incorporates a structure that provides for an orderly evaluation of received proposals. The high-level process is shown below:



Note that the role of Z2 in this process is to facilitate scoring activities and provide analysis of each proposal without actually being part of the scoring process. Instead a VIWAPA team of personnel will be tasked with the review of the proposals. However, the responsibility for managing and guiding this process is on Z2.

8.13.1. Minimum Requirements

The RFP will include a list of the minimum requirements that are necessary for the bidder to meet in order to be considered. As part of the initial validation, each proposal will be evaluated against these requirements, a bid considered to not meet these requirements may be disqualified.

Also, VIWAPA procurement may determine compliance of the proposals based on additional criteria as outlined in the RFP document set.

8.13.2. Written Proposal Review

The Proposal Response format will include responses to specific RFP requests such as

- Project Team identified
- Proposed Network Design
- Project Schedule
- Other

VIWAPA team members will be given a scoring tool (spreadsheet) in which to enter scoring results

8.13.3. Compliance Scoring

As mentioned, the Compliance matrix provides a structured mechanism for the listing of individual solution requirements across a number of categories. An example of this listing is shown below:



| Req Number | Requirement | Response | Vendor 1 | | | Vendor 2 | | |
|------------|--|----------|---|----------------|-------------|----------|---|----------------|
| | | | Comment | Adjusted Score | Final Score | Response | Comment | Adjusted Score |
| EM-1 | All proposed Electric Meters must be compatible with and in production in at least one utility AMI system with the proposed AMI network devices and proposed AMI HES software. | Comply | A brief description of how your solution complies or partially complies with the requirement should be inserted here. | | 5 | Comply | A brief description of how your solution complies or partially complies with the requirement should be inserted here. | 5 |
| EM-2 | All proposed electric meters must meet UL2735, including UL746c. | Comply | | | 5 | Comply | | 5 |
| EM-3 | All electric meters must comply with all applicable ANSI C12.19 and C12.20 standards, including accuracy class (0.2%), data tables, protocols, Alarms, Events, security and safety. | Comply | | | 5 | Comply | | 5 |
| EM-4 | All electric meters must comply with the District's attached meter requirements and standards for electric meters, test data, labeling and shipping. See RFP Attachment for the District's Electric Meter Standard | Comply | | | 5 | Comply | | 5 |

Vendors will receive the Compliance matrix without the “Adjusted Score” and “Final Score” visible and will complete the matrix as directed. To facilitate the process, Z2 will create and aggregated matrix that includes all vendor responses with “Adjusted Score” and “Final Score” columns visible for each bidder. In this was evaluators can see vendor responses side by side and score them relatively. The sheet will auto-score each response based on the fixed response options in the Response column. Evaluators can then override that score by entering their own values in the Adjusted Score columns.

The results of the scoring of each tab is then summarized on a separate tab on the scoring tool. An example of this is shown below:

| Tab | Weightings | | Totals | Scored Totals | Sub-Weightings | Value per Question | Vendor 1 | | Vendor 2 | | Vendor 3 | | Vendor 4 | | Vendor 5 | |
|-------------------------|------------|-------------------|--------|---------------|----------------|--------------------|-----------|--------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|
| | | | | | | | Sub-Score | Score | Sub-Score | Score | Sub-Score | Score | Sub-Score | Score | Sub-Score | Score |
| Electric Meters | 20.0% | Requirements | 40 | 40 | 90% | 0.5% | 200 | 20.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| | | Value Adds | 6 | 6 | 10% | 0.3% | 30 | | 0 | | 0 | | 0 | | 0 | |
| Water Meters | 15.0% | Requirements | 23 | 23 | 60% | 0.4% | 115 | 15.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| | | Value Adds | 22 | 22 | 40% | 0.3% | 110 | | 0 | | 0 | | 0 | | 0 | |
| AMI Communications | 22.5% | Requirements | 16 | 16 | 70% | 1.0% | 80 | 22.5% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| | | Value Adds | 10 | 10 | 30% | 0.7% | 50 | | 0 | | 0 | | 0 | | 0 | |
| Security | 0.0% | Requirements | 18 | 18 | 95% | 0.0% | 90 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| | | Value Adds | 1 | 1 | 5% | 0.0% | 5 | | 0 | | 0 | | 0 | | 0 | |
| AMI Tools | 10.0% | Requirements | 8 | 8 | 100% | 1.3% | 40 | 10.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| | | Value Adds | 0 | 0 | 0% | 0% | 0 | | 0 | | 0 | | 0 | | 0 | |
| AMI HES | 10.0% | Requirements | 28 | 28 | 90% | 0.3% | 140 | 10.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| | | Value Adds | 4 | 4 | 10% | 0.3% | 20 | | 0 | | 0 | | 0 | | 0 | |
| Outage Management | 2.5% | Requirements | 13 | 13 | 95% | 0.2% | 65 | 2.5% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| | | Value Adds | 1 | 1 | 5% | 0.1% | 5 | | 0 | | 0 | | 0 | | 0 | |
| Distribution Automation | 5.0% | Requirements | 5 | 5 | 20% | 0.2% | 25 | 5.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| | | Value Adds | 11 | 11 | 80% | 0.4% | 55 | | 0 | | 0 | | 0 | | 0 | |
| SaaS | 7.5% | Requirements | 16 | 16 | 80% | 0.4% | 80 | 7.5% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| | | Value Adds | 5 | 5 | 20% | 0.3% | 25 | | 0 | | 0 | | 0 | | 0 | |
| MDMS Interfaces | 5.0% | Requirements | 27 | 27 | 100% | 0.2% | 135 | 5.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| | | Value Adds | 0 | 0 | 0% | | 0 | | 0 | | 0 | | 0 | | 0 | |
| Pricing Requirements | 2.5% | Requirements | 24 | 24 | 100% | 0.1% | 120 | 2.5% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| | | Value Adds | 0 | 0 | 0% | | 0 | | 0 | | 0 | | 0 | | 0 | |
| Totals | 100% | Requirement Total | 218 | 218 | | | | 100.0% | | 0.0% | | 0.0% | | 0.0% | | 0.0% |
| | | Value Adds Total | 60 | 60 | | | | | | | | | | | | |
| Matrix Allocation | 100% | | | | | | | 100.0% | | 0.0% | | 0.0% | | 0.0% | | 0.0% |
| Total Score | | | | | | | | 100.0% | | 0.0% | | 0.0% | | 0.0% | | 0.0% |

8.13.4. Aggregated Scoring

After scoring is complete, all scoring team scores will be added to show an overall score for each vendor. This score is considered the Functional Scoring as it has not yet taken pricing into account. After aggregating all Compliance and written proposal section responses into one master sheet, the team will review the scoring to address anomalies and possibly adjust scoring.

8.13.5. Inclusion of Pricing

Typically in the same meeting as the reveal of the Aggregated Scoring, pricing is introduced. This pricing is not just the quoted items but the expected total cost of ownership over the life of the



solution. Based on the relative cost of each solution, a scoring methodology is applied. The result is that a vendor who scored highest in the functional side of the process may not still be in first after pricing is condired.

8.13.6. Remaining Process

Once scoring is complete, the Team will make a determination of a Short List. This typically consists of 2-3 vendors for which demonstrations are scheduled (virtual or in person). Based on these presentations and any subsequent open questions, a finalist is selected. Over the past 10 years it has been extremely rare for this decision to not ultimately be unanimous.

Deliverables: All RFP documentation, scoring and pricing results, and summary presentations regarding scoring results as necessary.

8.14. Phase 2: Task 14 – AMI Vendor Contract Negotiations

Z2Solutions will support VIWAPA in the negotiation of a Master Services Agreement, Statement of Work and other contract documents typically involved with an AMI solution. As mentioned above, Z2Solutions includes a template MSA and SOW in the RFP and receive comments back from the vendor as to any exceptions they take to these documents. However, many vendors still expect to negotiate terms after they are selected. Z2 recommends to use our templates and experience to ensure that VIWAPA has a utility-friendly contract and delivers the full functionality and performance that VIWAPA should expect. As an example, the City of Palo Alto requested some support from Z2Solutions following their selection and negotiation of an AMI solution and in the review of the contract, Z2 provided a list of eight terms which are less than a typical utility contract would include.

9. Proposed Personnel

As mentioned at the outset, Z2Solutions is a small but dedicated consulting group. Each of us has our own areas of expertise but can be somewhat interchangeable depending on the topic. However, these are the 3 people who will support your project. Barring a catastrophic event, there will be NO substitutions. Detailed resumes are provided in Appendix A.

9.1. Mark Day

Mark Day (Executive Consultant) is a consultant based in Charlotte, NC with over 12 years of consulting experience and an additional 18 years of vendor related experience serving the utility industry. He has worked with both large and small utilities in the areas of strategy, roadmap, business case, procurement, and implementation activities. Specific areas of expertise include Business Case Development, Advanced Meter Infrastructure, Meter Data Management, and Prepayment. He has authored a number of reports and provided courses on these topics for a number of industry organizations including Distributech and NRECA. This includes a paper for NRECA to educate cooperatives on the features, functionality and application of a Meter Data Management system. Mark lists Middle Tennessee Electric (Mark was the Program Manager and led the technology selections for MTEMC), Tacoma Power (Mark developed the AMI business case) and Con Edison (Mark led the selection of the MDM and Meter Installation Vendor) as successful AMI utility references. Mark is presently providing Program Management services for Clay Electric.



9.2. Ron Smith

Ron Smith (Executive Consultant) brings a keen understanding of AMI Technology through years of development and implementations experience all while gaining a robust background in technology deployment, assessment, and implementation. Ron developed the deployment strategy and detailed processes for the largest geographic deployment of an AMI solution in North America. Prior to joining Z2Solutions he was the VP of Marketing/Product Management with Aclara supporting software and AMI for electric, water and gas technologies. Additionally, he has held positions within engineering and corporate management as a member of ESCO Technologies Acquisitions and Merger team. In Ron's current position, he is available to apply his extensive background in technology and business to the utility industry aiding in the assessment, business case development, deployment, and integration of AMI systems or implementation. Ron is presently providing Metering and AMI Network Deployment Management support for Snohomish Power Utility District and continues to support Barbados Light and Power implementation and Smart Grid Roadmap development.

9.3. John O. Wambaugh

John O. Wambaugh (Executive Consultant) brings an extensive MDM and AMI experience through the deployment of AMI and MDM solutions for more than 25 years and has been directly involved with the implementation of more than 25 AMI solutions at electric, gas and water utilities. John is presently advising Con Edison and Seattle City Light with their planning and technology selection activities and lists Middle Tennessee Electric, PSE&G, KCP&L, AmerenUE, Xcel Energy, Puget Sound Energy, PECO, JEA, Oncor, Toronto Hydro, Alliant Energy, Vattenfall as successful AMI or MDM implementation references. John is also the Business Process Architect and Strategic Advisor for Con Edison for their AMI implementation. Prior to joining Z2Solutions, he was able to assist utilities as Chief Solutions Architect with eMeter, a leading MDMS company and as the Vice President, Services with Cellnet responsible for the deployment and operation of over 10 million AMI meters. Now John is able to apply his extensive knowledge of integration and implementations issues to provide better and more effective evaluation of AMI and MDM solutions as well as their subsequent implementation.

10. Work Approach

Z2 will work with VIWAPA in a manner which is comfortable to the utility personnel. Z2 prefers a more agile project communications approach that represents an open communications concept rather than strict Project Manager managed process.

Also, as part of this process it is assumed that VIWAPA will provide a project document repository such as Teams or other mechanism to allow easy distribution and access to project documents.

Z2 can provide a weekly or monthly project status report as desired.

10.1. Pricing

The pricing presented here is provided as a not-to-exceed quote without mutual agreement between Z2 and VIWAPA. The pricing is broken out with respect to specific activities and deliverables. Any over-arching project management activities will be absorbed within these numbers.



| Phase | Item # | Mapping | Task | Hours | Rate | Ext. Cost | Travel |
|---------------|--------|---------|---|------------|-------|-------------------|-----------------|
| 1 | 1 | 6 | Project Kickoff | 10 | \$250 | \$ 2,500 | |
| | 2 | 1 | Data Discovery and Analysis | 48 | \$250 | \$ 12,000 | |
| | 3 | 1 | Onsite Evaluation Plan | 32 | \$250 | \$ 8,000 | |
| | 4 | 1 | Onsite Evaluation | 80 | \$250 | \$ 20,000 | \$ 7,500 |
| | 5 | 3 | Propagation Study on 220 MHz frequency | 80 | \$250 | \$ 20,000 | |
| | 6 | 4 | Frequency Analysis from meter to collector in the 900 MHz | 80 | \$250 | \$ 20,000 | |
| | 7 | 2 | Root Cause of Failure Report | 64 | \$250 | \$ 16,000 | |
| | 8 | 2 | Life Expectancy Report | 32 | \$250 | \$ 8,000 | |
| | 9 | 1 | Meter Read Reliability Report | 48 | \$250 | \$ 12,000 | |
| | 10 | 5 | Overall System Recommendation Report | 40 | \$250 | \$ 10,000 | |
| | 11 | 5 | Tantalus Quality Improvement Plan | 48 | \$250 | \$ 12,000 | |
| 2 | 12 | 6 | AMI RFP Development | 40 | \$250 | \$ 10,000 | |
| | 13 | 6 | AMI RFP Proposal Evaluation | 64 | \$250 | \$ 16,000 | TBD |
| | 14 | 6 | AMI Vendor Contract Negotiations | 80 | \$250 | \$ 20,000 | |
| Totals | | | | 746 | | \$ 186,500 | \$ 7,500 |

The pricing only includes allowances for 1 trip to VIWAPA for 1 consultant which could possible be over a 2 week period. An estimated trip cost of \$7,500 has been used as a placeholder. Z2 expenses all trips at cost with no markup and according to VIWAPA travel policy. Also note that travel may not specifically align with the tasks associated above. Travel will be limited or extended based on the needs and preferences of VIWAPA. Note that should it be determined that the Tantalus solution is salvageable, the items in Phase 2 above will not be required. Likewise, if the determination is to replace the Tantalus system then item 11 above will not be necessary.

The table below is from the RFP. The Mapping column in the above pricing table shows how items have been assigned to the table provided in the RFP.

| ITEM | QUANTITY | UNIT COST | DESCRIPTION | TOTAL COST |
|------------------|----------|-----------|--|-------------------|
| 1 | 1 | \$ 52,000 | Assessment of the MRR, Hardware AMI and Communication Network (Towers, Collectors, Meters) | \$ 52,000 |
| 2 | 1 | \$ 24,000 | Engineering Analysis if failing devices (meters, communication modules, collectors.) | \$ 24,000 |
| 3 | 1 | \$ 20,000 | Propagation Study on 220Mhz frequency | \$ 20,000 |
| 4 | 1 | \$ 20,000 | Frequency analysis from meter to collector in the 900Mhz | \$ 20,000 |
| 5 | 1 | \$ 22,000 | Reporting of Assessment and Engineering Analysis | \$ 22,000 |
| 6 | 1 | \$ 48,500 | Professional Services | \$ 48,500 |
| Total Sum | | | | \$ 186,500 |

NOTE: Z2Solutions has successfully delivered our services remotely and without travel in an effort to reduce costs and to accommodate COVID policies and concerns. The forecasted travel in this plan is believed to be the bare minimum required to accomplish the tasks. Z2 can increase onsite presence based on discussions with VIWAPA personnel to meet VIWAPA specific requirements and desires.

Z2 accepts the payment terms as per the RFP as follows:

| | Description | Percent | Amount |
|---|--|---------|-------------------|
| 1 | Mobilization | 5% | \$ 9,325 |
| 2 | Complete System Assessment | 30% | \$ 55,950 |
| 3 | Completion of Propagation Study and Frequency Analysis | 20% | \$ 37,300 |
| 4 | Final Reporting | 20% | \$ 37,300 |
| 5 | Completion of Professional Services | 20% | \$ 37,300 |
| 6 | Contract Closeout and demobilization | 5% | \$ 9,325 |
| | Total | | \$ 186,500 |

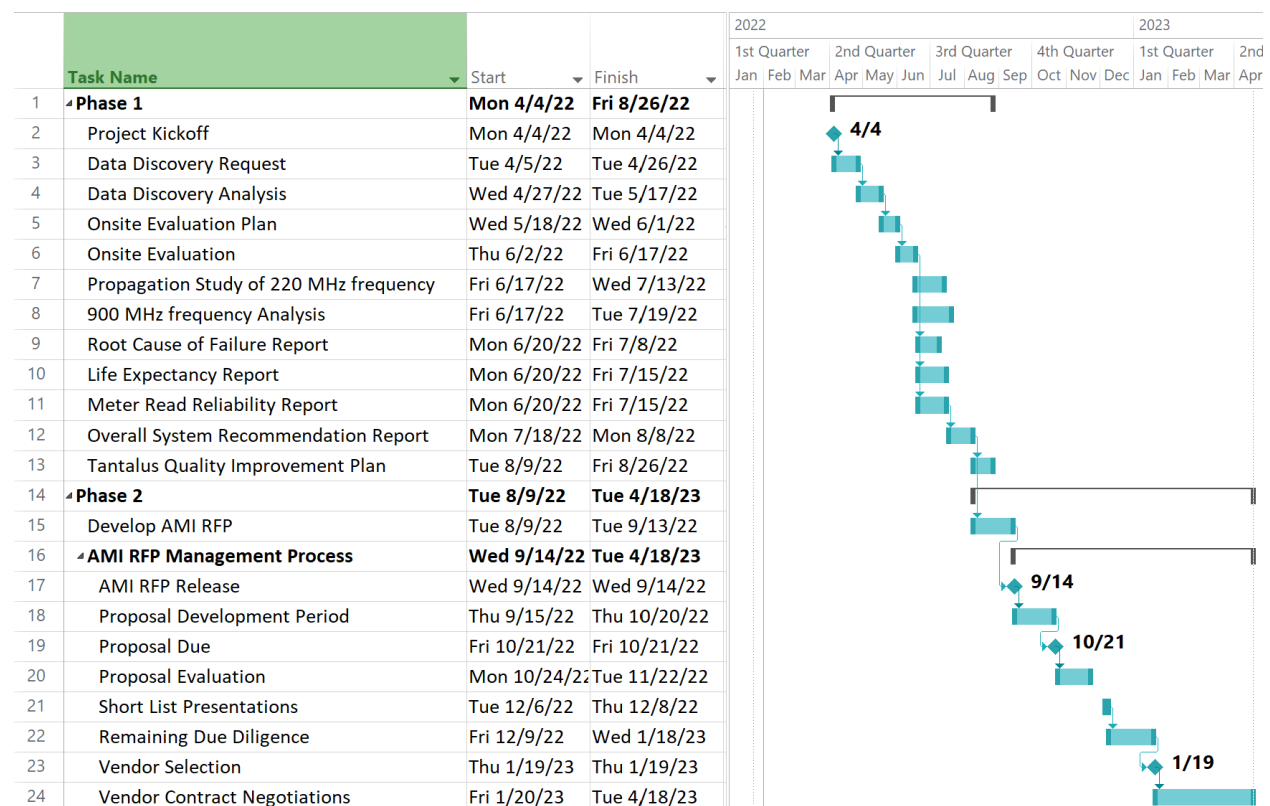


Note that the actual payment amounts will differ based on the outcome of the system evaluation. (An RFP won't be generated if the analysis recommends salvaging the existing system.

10.2. Work Schedule

The provided schedule is based on typical durations of specific project deliverables keeping in mind that VIWAPA personnel will be active participants in the overall process and that they will still be maintaining their daily job responsibilities. Z2 is readily able to adjust the schedule based on VIWAPA requirements and preferences.

The overall proposed schedule for this project is outlined below.



The project assumes a start date on or about the beginning of April with a conclusion of the first phase in August. The schedule for Phase 2 shows completion by the end of the first quarter of 2023. It is noted here that there are risks with respect to the schedule in that a number of entities need to be coordinated to complete some of the tasks. These issues will need to be addressed during the project as necessary.



11. Appendix A – Resumes

11.1. Mark Day

Mark Day is an independent consultant and trusted advisor to electric utilities with Z2Solutions LLC. He has over 25 years of experience in defining, developing, utilizing and operating smart metering, meter data management and prepayment systems for the utility industry. His experience includes the integration of these systems into cohesive and efficient environments that support the business needs of utilities.

Mark is an expert in the technology, operation and business processes of AMI, MDM and Prepayment. He also has extensive knowledge of the customer impacts of these technologies and how they enable new services and billing options. It is this technical knowledge along with the awareness of the corresponding customer impacts that allow him to provide broad insight to the utility. He has worked with municipal, cooperative and investor-owned utilities at all levels of management from executive to line personnel.

PROFESSIONAL ACTIVITIES

- Utility course instructor for Distributech in 2014

WORK EXPERIENCE

2013 to Present – **Z2Solutions LLC**, Charlotte, NC

2008 to 2013 – **UISOL**, Santa Clara, CA

PROJECTS

Clay Electric Cooperative, Keystone Heights FL (July 2016 – Present): Z2Solutions is the primary consultant for the AMI project at Clay. Services include AMI, MDMS, Prepayment, and MIV selection along with overall implementation and program management support.

Con Edison, New York NY (2014 – Present): Z2Solutions is the primary consultant for the AMI project at Con Edison. Services included AMI, MDMS, MAMS (Meter Asset Management System), SI, and MIV selection along with business case development and business process modeling support. Z2Solutions has continued in an advisory role throughout the implementation and deployment phases.

Seattle City Light, Seattle WA (2014 – Present): Z2Solutions is the primary consultant for the AMI project at SCL. Services included AMI, SI, and MIV selection along with business case development and business process modeling support. Other services included deployment planning, system configuration support, and general advisory services. Z2Solutions has continued in an advisory role.

Tacoma Public Utilities, Tacoma WA (February 2014 – Present): Z2Solutions is the technical advisor to the CTO for Tacoma Public Utilities to evaluate and propose an AMI strategy for the replacement and expansion of AMI technology for TPU's service territory for electric and water metering. Z2Solutions is presently assisting with the development of business cases and deployment scenarios.

Middle Tennessee EMC, Murfreesboro, TN (August 2011 – Present): Mark supported the development of a Smart Grid Architecture and Technology Roadmap for MTEM. The resulting



roadmap was accepted by the executive management and utility board and serves as the 5-year strategic plan for the utility and the guiding template for the implementation of Smart Grid at the utility. Mark supported the project management for the initial standup of MDM and AMI systems along with the deployment 500 meters. Mark is currently supporting the preparation and subsequent management of the main AMI and MDM implementations along with field equipment deployment.

Brunswick EMC, Shallotte, NC (March 2008 – Present): Mark has supported the prepayment program at Brunswick since 1989. As a consultant starting in 2008, he has helped them develop vending and system architecture strategies. Mark is currently supporting their migration to a different Prepayment head end solution.

The Navy Yard, Philadelphia, PA (May 2012 – December 2013): Mark supported the AMI and MDM planning and requirements development as part of the overall Energy Master Plan developed by a consortium of companies.

NRECA, Arlington, VA (November 2008 – Present): Mark has executed a number of projects for NRECA's Cooperative Research Network (CRN). These project include and MDMS Vendor Snapshot, a more comprehensive MDMS research report on implementation considerations, a comprehensive report on Prepayment services implementation, and a DOE report on the status or Prepayment programs that were funded by Smart Grid Investment Grants.

Los Angeles Department of Water and Power, Los Angeles, CA (2013): Mark supported the evaluation of current AMI capabilities and future options with respect to the development and expansion of Demand Response capabilities at LADWP.

EDUCATION

B.S., Electrical Engineering, Carnegie Mellon University

ISO 9000 Quality Auditor

Business Analysis Master Certificate, Villanova University

Project Management Master Certificate, Villanova University

LIST OF PUBLICATIONS

"*Taking Advantage of AMI Technologies.*" Mark Day and Bill Schleicher, Electricity Today, March 2013.

"*Prepayment Case Studies.*" Copresenter, TechAdvantage, March 2012.

"*Understanding and Implementing Demand Response Systems.*" Copresenter, Autovation 2010.

Various other presentations, symposiums, etc. regarding MDM, AMI, Smart Grid, and Smart Meter programs and technologies

LIST OF INDUSTRY COURSES

"*Implementing Prepayment and Its Impact on the Utility*" Mark Day, Distributech 2014



11.2. John O. Wambaugh

John Wambaugh is an independent consultant and trusted advisor to electric utilities with Z2Solutions LLC. He has over 25 years of experience in defining, implementing and operating smart metering and meter data management systems for the utility industry. His experience includes development of energy management system applications, distribution management system applications and outage management systems.

John is a recognized expert in the technology, operation and business processes of AMI and MDM as well as utility back office systems impacted by smart meter data. He has a unique blend of deep technical knowledge and customer interaction skills. He has demonstrated an ability to interact from the executive and senior level management as well as field and line personnel at municipal, cooperative and investor-owned utilities.

PROFESSIONAL ACTIVITIES

- Utility course instructor for Distributech since 2009
- Board of Directors for Utilimetrics since 2006
- Associate member of the IEEE

WORK EXPERIENCE

2013 to Present – **Z2Solutions LLC**, Durango, CO

2010 to 2013 – **UISOL**, Santa Clara, CA

PROJECTS (Relevant projects only for brevity)

Puget Sound Energy, Bellevue WA (February 2017 – Present): Z2Solutions is providing advisory services for the integration of MDM with SAP, as well as other AMI project implementation activities.

Con Edison, New York NY (February 2015 – Present): Z2Solutions is the primary consultant for the AMI project at Con Edison. Services included AMI, MDMS, MAMS (Meter Asset Management System), SI, and MIV selection along with business case development and business process modeling support. Z2Solutions has continued in an advisory role throughout the implementation and deployment phases.

Tacoma Public Utilities, Tacoma WA (February 2014 – Present): Z2Solutions is the technical advisor to the CTO for Tacoma Public Utilities to evaluate and propose an AMI strategy for the replacement and expansion of AMI technology for TPU's service territory for electric and water metering. Z2Solutions is presently assisting with the development of business cases and deployment scenarios.

Public Service Gas & Electric, Newark, NJ (February 2014 – Present): Z2Solutions is the technical advisor to the ECNet team and assisted in the contract and SOW negotiations for an AMI solution to cover PSE&G's most critical 12,000 C&I customers replacing a cellular and phone line solution. John continues to advise the project team during the design and deployment of the solution.

Middle Tennessee EMC, Murfreesboro, TN (August 2011 – July 2015): John led the development of a Smart Grid Architecture and Technology Roadmap for MTEM. The resulting roadmap was accepted by the executive management and utility board and serves as the 5-year strategic plan for the utility and the guiding template for the implementation of Smart Grid at the utility. John is



leading the development of Business Process Models for all of MTEMC's AMI business processes in preparation for the implementation of the AMI program. John is presently serving as the solution architect and systems integration support to the AMI program as well as subject matter expertise. John is also providing ongoing advisory services to the MTEMC executive team.

JEA, Jacksonville, FL (January 2011 – September 2012): John led the development of a Smart Grid Architecture and Smart Grid Integration Architecture for JEA, including recommendations for the strategic deployment of an Enterprise Service Bus integration solution. This project is in support of JEA's Smart Grid Investment Grant focused on improving customer services. As a follow on engagement, John managed a complete cyber security review of all systems and integrations impacted by the DOE program and made recommendations for compliance with the Cyber Security Plan.

Glendale Water & Power, Glendale, CA (October 2010 – March 2011): John led the development of a Smart Grid Architecture and Strategic Roadmap for GWP. This architecture and roadmap was requested after GWP received a DOE grant for implementation of smart metering and distribution automation to ensure that the technology selection and integration was consistent with an overall utility strategy. The roadmap continues to be utilized today, and GWP is utilizing UISOL for the selection and integration of an Enterprise Service Bus (ESB) and Outage Management System/Distribution Management System (OMS/DMS). John is also providing ongoing strategic consulting to GWP for the operation of its smart metering program.

EDUCATION

B.S., Mechanical Engineering and B.S., Materials Science, Vanderbilt University, 1979.

M.S., Metallurgical Engineering, Ohio State University, 1981

LIST OF PUBLICATIONS

"The Value of AMI: It's so much more than billing." John O. Wambaugh, Electric Energy T&D Magazine, September/October 2013

"Tackling OMS and AMI Integration." Terry Nielsen and John O. Wambaugh, Quarterly Magazine, Fall 2012.

"From 145MW to 290MW by 2012." Tor Garman and John O. Wambaugh, Autovation, February 2011, Washington, D.C.

"Are we ready for Real-time Pricing?" John O. Wambaugh, Intelligent Utility, June 2010.

"Outage Management Realities." John O. Wambaugh, AMI-MDM Working Group, March 2008, Seattle, WA.

LIST OF INDUSTRY COURSES

"AMI Data Operations: Managing real-time sensor data to unlock the next level of utility operational improvements". John O. Wambaugh, Distributech 2019

"Real World Lessons in Project Management, Deployment and Operation of Your AMI." John O. Wambaugh, Autovation 2005, 2006, 2009.



"AMI/MDM - Take Advantage of the Future Capabilities Now." John O. Wambaugh, CS Week College 2007, 2008, 2009, 2010 and Ontario Utility Forum 2006.

"Smart Grid Architecture: The First step to Smart Grid." John O. Wambaugh, Distributech 2012.

11.3. Ron Smith

A seasoned executive with extensive utility industry knowledge in the electric, gas, and water market segments. Highly technical with a wide variety of IOU, Municipal, and Cooperative market experience. Able to quickly understand and develop integrated utility solutions due to a broad understanding of technologies utilized in the AMI and utility operations market. Expert understanding of utility operations and the implementation of advanced software and network technologies.

PROFESSIONAL ACTIVITIES

- I.E.E.E since 1984
- Management Roundtable
- Knights of Columbus
- NIST Smart Grid Working Groups
- American Water Association
- Illinois Municipal Association

WORK EXPERIENCE

2014 to Present – **Z2Solutions LLC**, Troy, IL

2012 to 2014 – **UISOL**, Santa Clara, CA

Responsibilities include developing advanced business processes for Smart Grid Operations and AMI implementation. Additionally, this position requires a close working relationship with utilities for the assessment of current business processes and technologies as deployed, assisting in both hardware and software technology decisions, working in concert with the utility to develop implementation strategies or roadmaps, and the integration processes needed to successfully integrate new technologies into the utility.

PROJECTS

- **Clay Electric Cooperative**, Keystone Heights FL (July 2016 – Present): Z2Solutions is the primary consultant for the AMI project at Clay. Services include AMI, MDMS, Prepayment, and MIV selection along with overall implementation and program management support. Ron is responsible for development of metering standards and support for the network design and deployment.
- **Seattle City Light**, Seattle, WA (June 2015 – Present): Ron is responsible for the support and development of metering processes, meter shop processes, network deployment, and metering personnel change management.
- **ConEd New York** (April 2015 – Present): Ron was responsible for the AMI requirements gathering process, development of the RFP documentation and assistance with the selection process. Ron continues to support the network deployment process as required for the selected vendor to develop detailed RF propagation studies.



- **Public Service Gas & Electric**, Newark, NJ (February 2014 – Present): Z2Solutions is the technical advisor to the ECNet team and assisted in the contract and SOW negotiations for an AMI solution to cover PSE&G's most critical 12,000 C&I customers replacing a cellular and phone line solution. Ron continues to advise the project team during the design and deployment of the solution.
- **SaskPower**, Regina, SK (April 2012 – Present): Ron was responsible for the design and implementation of the AMI network solution of 500+ base stations. Ron developed the deployment plan and rollout logistics that has allowed the installation of 10 or more communications towers and base stations each week. Ron is also responsible for assisting the AMI program and IT personnel in setting up and operating the AMI solution. The P2P network when completed will consist of 400 towers and cover an area just slightly smaller than the state of Texas.

2000 to 2012 – **Aclara**, St. Louis, MO

Vice President Product Marketing/Management: Responsibilities included the oversight of merging three Aclara technology segments into one cohesive segment. This involved the merging of product marketing and marketing communications for RF, power-line, and software into one group to fully support sales and product development. Additional responsibilities included utility market analysis for all segments and utility commodities, the management of cross functional teams, and the development of technology strategies for future products. In this role, reported to the president of Aclara as member of the executive management team.

Director, Utility Solutions Segment (ESCO Technologies): Involved in all aspects of two utility AMI companies (TWACS and STAR technologies) while supporting several internal Metering, Demand Response, and Smart Grid initiatives. Involvement in several utility standards within the DOE and NIST working groups for utility transmission, distribution, and cyber security. Minor responsibilities include providing utility market guidance and competitive intelligence for product marketing and development. This corporate role reported directly to the CEO and President of ESCO Technologies.

Product Marketing Manager: Developed the market and product requirements for ACLARA's RF or power line metering products that continue to support the company's metering solutions today. This position required working closely with utility customers and engineering teams to meet product performance and cost objectives. Additional responsibilities included competitive product analysis, joint partnership development, and technical due diligence for M&A activity (ESCO), intellectual property management, technical sales, and team training.

EDUCATION

B.S., Electrical Engineering, Southern Illinois University, Edwardsville (1986)



12. Appendix B – Clay Electric Cooperative Reference Letter



Clay Electric Cooperative, Inc.

June 1, 2017

To Whom It May Concern:

Z2 Solutions, LLC, has been providing consulting services for our Advanced Meter Infrastructure (AMI) project since June of 2016. More specifically, they have been involved since the project's inception with services consisting of project strategies and technical education. Their services have been instrumental in the vendor selection, the ongoing business change processes, and the upcoming system deployments.

The Z2 Solutions team has been easy to work with and has exhibited a high level of professionalism. They will be working with us for the next couple of years through the project's duration and we have been very pleased with their performance.

Should you wish to discuss our experience with Z2 Solutions further, please do not hesitate to call me at (352) 473-8000, x8319.

Sincerely,

Frank R. Holmes
Chief Operating Officer

FH/ra

A Touchstone Energy Cooperative 

Department of Engineering
Post Office Box 308 Keystone Heights, Florida 32656-0308
FAX (352) 473-1407