



County of Los Alamos

Council Meeting Staff Report

December 18, 2018

Agenda No.:	B.
Indexes (Council Goals):	2018 Council Goal – Quality Governance – Operational Excellence – Maintain Quality Essential Services and Supporting Infrastructure Including Updated Enterprise Software and Permitting
Presenters:	Bob Westervelt
Legislative File:	AGR0603-18

Title

Approval of Services Agreement AGR19-912 with Ferguson Incorporated in the Amount of \$5,559,480.00, Plus Applicable Gross Receipts Tax for Advanced Metering Infrastructure (AMI) Equipment and Services; Approval of the License and Technical Support Agreement with Sensus Incorporated; and Approval of Related Budget Revision 2019-04

Recommended Action

I move that Council approve Services Agreement AGR19-912 with Ferguson Incorporated in the amount of \$5,559,480, plus a contingency in the amount of \$971,950 for a total project budget amount of \$6,531,430.00, plus applicable gross receipts tax. I further move that Council approve execution of the License and Technical Support Agreement between The Incorporated County of Los Alamos and Sensus, Incorporated, funding for which is included in and payable through the Ferguson agreement. I further move that Council approve budget revision 2019-04 and that it be included in the minutes as an attachment.

..Utilities Manager Recommendation

Staff recommends that Council approve the contract, support agreement, project budget and budget revision as presented.

Board, Commission or Committee Recommendation

The Board of Public Utilities recommends that Council approve the motion as presented.

Body

In March of 2016, the Board of Public Utilities adopted, as part of a strategic plan, several recommendations from the July 7, 2015 “Future Electrical Energy Resources” report (the FEER Report). A summary of those adopted recommendations is included as attachment C to this staff report. The first recommendation is “Complete smart meter implementation for all customers”, as several of the remaining recommendations are dependent on Advance Metering Infrastructure for implementation. When the Advanced Metering Infrastructure contract was brought to the Board for consideration in September 2018, concerns regarding privacy of customer usage data were raised. There was also discussion about the relevance and implications of a U.S. Court of Appeals ruling in another jurisdiction that, in summary, ruled that implementation of smart meter technology and data collection from the smart meters did not constitute an unreasonable search under the Fourth Amendment to the US Constitution because the detailed usage information could not be obtained from the City by third-parties, or obtained from the City by law enforcement except through a search warrant. Although the ruling is from another jurisdiction, it is still an area of unsettled law here, and the ruling could be used as a guide for the courts here in New Mexico if litigated. Staff proposes that by ensuring full disclosure of the nature of data that will be collected and that such data is subject to release in the event of a IPRA request, and by allowing for customers that may have concerns regarding that release of incremental usage data to “opt out”, those concerns could be reduced. In most basic terms, if a Smart meter is not installed at a location, such incremental data would not be collected, and thus there would be no detailed usage data for release under an IPRA request, only

the totalized monthly usage data that is collected now. Actual implementation of a program to opt out will be detailed in a future DPU Rule, that will be discussed and approved by the Utilities Board should the Council approve the AMI contract.

The financial ramifications of allowing opt outs are very hard to quantify and are in a large part dependent on the number of customers that eventually choose to opt out. During the NEDO project in 2012-14, smart meters were installed on Barranca and North Mesas. Out of approximately 1,600 affected customers only twenty elected to opt out. If that same ratio applied, we would expect approximately 115 customers to opt out in a system-wide deployment. Given the recent publicity and uncertainty regarding the issue, it is reasonable to expect a somewhat higher opt out response; but given the significant benefits both to the operations of the Utilities and directly to the customers (discussed in more detail below), it is also reasonable still to expect only a relatively low proportion of the customer base to elect to opt out. Based on prior experience and customer feedback received to date, staff is expecting something less than ten percent "opt outs". While an opt out response of that magnitude would significantly impact both the economics and the effectiveness of the project, staff still feels that at that level the project is economically viable, and the significant benefits of AMI would still be realized to a large extent. In the most simplified financial analysis of the impact of opt outs on the project, we may look at the time involved in expected cost savings of AMI. If, as expected, three meter reader positions are eliminated, the project will pay for itself in 5-7 years. The more customers who opt out, the fewer meter reader positions could be eliminated. If the number of opt outs necessitates that no meter reader positions be eliminated, the project pays for itself in around 14 years. The number of opt outs would drive the number of meter reader positions that would be eliminated. Even if that number is zero, the project is still financially viable

The AMI contract with Ferguson, Incorporated was discussed by the Utilities Board at three separate meetings in August, September and November. At the November meeting it was approved by the Utilities Board by a vote of 4 in favor and 1 opposed. In the same motion for approval, provision was made for customers to be allowed to opt out of having a smart meter installed.

During public comment at one of the Board discussions of the Ferguson contract, one customer raised a point about a potential safety issue related to meter base failure or improper installation. While going into specifics about that particular incident is outside the scope of this agenda topic, we can assure the Council and the public that qualifications of the installers and the safety of their process were considered and included in the RFP, each bidder's response, and the evaluation team's consideration of each proposal. The contractor will photograph existing conditions, test the meter base and existing connections, and ensure a safe installation. If conditions preclude safe installation, DPU crews will be notified and will work with customers to rectify such conditions before installing the new meter.

Another customer expressed concern that the project was not justified on an economic basis. This is a concern also expressed in some of the Board discussion. It is important to recognize that the fundamental justification for the project is not that it will result in significant cost savings, but rather that it will result in numerous operational benefits for the department and our customers. Those benefits have been discussed at numerous previous Board meetings, and several of them are highlighted in the bullets below and are also covered in the Power Systems Engineering, Inc. (PSE) report, which is discussed below. Internal analysis has repeatedly indicated that in addition to the operational benefits to be achieved, there is also a positive economic benefit to the department, which of course translates into lower costs for our customers. This internal assessment has been repeatedly validated by an external analysis performed by a recognized industry expert, Power System Engineering (PSE). Again, their report will be further discussed below.

Based on discussion, there seems to be some confusion regarding anticipated system life expectancy vs guaranteed duration of system support vs duration of hardware warranties. These are all covered in the contract and attachments provided. The individual hardware components are warranted for periods ranging from one to twenty years. (Exhibit G to the Services Agreement). The installation warranty is one year (page 12 of the Services Agreement). This does not equate to the anticipated life of the product or installation. The warranty covers manufacturing or installation defects, which normally would present within that specified period. The anticipated life of the hardware is considerably longer.

Further, the warranty and expected life of the hardware does not equate to the anticipated life of the AMI System, which is covered in section M of the Services Agreement, and refers primarily to the anticipated life of the current generation of the software and programming. This reflects how long the software developer will commit to support any major release of its product. It would not be practical for a software developer to support a single release of its product forever. For example, Microsoft Windows v3, 3.1, 95, 98, 2000, NT, XP, and Vista, are all no longer supported, yet Microsoft's standard product support promise did apply to each major release of the product. Per section M of the Services agreement, Ferguson warrants that the system will be supported for a minimum of twelve years. If the Sensus system we deploy is no longer supported after that time, and has not been updated through interim releases, it is very unlikely that Sensus or a successor company would not have a replacement offering that would continue to work with our "infrastructure," or that another company would not have developed a replacement system. This clause simply assures that we would not need to address this issue for at least twelve years. All the hardware - meters, collectors, repeaters, communications modules, etc., would continue to work, and to be supported for the duration of each component's anticipated life, typically twenty or more years.

A question has been raised concerning the inclusion of a twenty percent contingency for the project. The purpose of the contingency is so if some unknown or unforeseen circumstance develops it can be addressed through a contract modification immediately, preventing potential long delays of the project's progress. Especially on a project of this nature where large and numerous crews of contractor personnel are on site, long delays can cause significant cost increases for demobilization and remobilization of contractor crews and equipment, or housing of crews for extended non-productive periods. Long delays can also lead to significant scheduling or rescheduling complications, as contractors typically will not leave their crews idle while change orders are running through a long approval process. On a project of this scope and complexity, a twenty percent contingency is common. Of course, the Council could consider any alternative contingency percentage deemed appropriate and modify the recommended motion accordingly. The twenty percent contingency is staff's recommendation.

There has been discussion about meter data collected through the AMI system being public information. As part of the project, usage data will be available to an individual customer on a near real time basis, through a secure logon and a secure and feature-rich portal provided by Sensus. Individuals desiring access to data that is not tied directly to that individual's account would have to request such data through an Inspection of Public Records (IPRA) request, and it would be provided according to relevant law and procedures at the time. Such data would not be available real time, nor through the feature-rich user portal.

Finally, there have been several questions regarding the often referenced "Business Case Study," or PSE Report, mentioned above. The initial study was completed in 2015 to determine the economic viability of pursuing an AMI deployment. The study was conducted primarily to give staff an understanding of the status of the developing technology and viability of full deployment as a follow-

on to our successful pilot conducted as part of the NEDO project in 2012. The report has been referenced several times and excerpts from it presented in several discussions with the Board and individual Board members. Relevant excerpts from the report were included for the January 2018 Board discussion which was pulled from the agenda and the February 2018 informational discussion regarding the merits of AMI deployment. In preparation for the August discussion, staff did review the assumptions and costs included in the 2015 report and considered both to still be relevant to the current proposal being considered, and so presented that report and discussion in the August agenda. Based on Board comments and concerns, however, we did contact Power Systems Engineering, with whom we are maintaining a support agreement for the duration of the project, and asked them to update the analysis. That updated report and analysis is included in its entirety herewith and will be presented in full tonight. The report is in Power Point format. Covered is:

- 1) A brief history of the evolution of meter reading technology,
- 2) An overview of the capabilities and benefits of an AMI deployment, both from a customer perspective and from a utilities operational perspective,
- 3) A presentation of some samples of reports and analytics that are typical of a robust AMI system such as is contemplated here, and finally,
- 4) An economic analysis comparing the projected project cost with the anticipated net present value of future cost savings, including a description of the assumptions used to determine those potential savings. Note the projected project cost has been updated to reflect this proposed project specifically.

It is noteworthy that the previous PSE analysis did not consider the positive financial impact of a reduction in FTE's, as their assumption at the time was that those FTEs would simply be absorbed into other roles in the department, rather than used to backfill openings as they occur. That misunderstanding has been corrected for this revision, and as a result, as shown on page 46 of the PSE presentation, the expected break-even falls between years five and seven, compared to the breakeven between years ten and thirteen previously presented.

The remainder of this staff report is a representation of the information provided at the August 2018 meeting. (Original text is presented in "strikeout" with corrections inserted where necessary). The Alternatives and Fiscal Impact sections have been updated to include the most recent updates from the PSE report and staff discussion.

This contract is for equipment, supplies, installation, software, and project management services for implementation of system-wide advanced metering infrastructure (AMI). The system will provide accurate, near real-time read capability for electric, water, and gas services for DPU customers.

BACKGROUND: DPU began considering implementation of AMI several years ago as the capabilities of the available systems improved in response to the development of more complex pricing models which began to emerge, primarily in the electric industry, in the early 2000s. The DPU conducted a pilot deployment as part of the NEDO Project in 2012 through 2014. While the project was limited in scope and distribution, the Department did learn and realize the impact advanced metering could have on our systems and business model and made the strategic decision to explore the business case for system-wide deployment. In 2015 the Department engaged Power Systems Engineering, a consulting firm specializing in electric grid modernization and utilities metering systems, to conduct a business case analysis for full implementation of advanced metering for all of

the metered services (electric, gas, and water). The study identified economic benefits and non-economic benefits, both of which have been considered in the decision to move forward. Only considering the economic benefits, the analysis indicated indicates a fourteen five to seven-year payback for a representative system the system under consideration. Excerpts from the The PSE report are included as attachment G D to this staff report.

In 2016 the DPU issued RFP 2016-2031 for system-wide deployment of Advance Metering Infrastructure. This was in about the same time as the County's ERP project was being competed and moving forward, and to better coordinate the two projects the decision was made to postpone the AMI project, so that RFP was cancelled. We reissued the RFP in late 2016 as a multi-step procurement.

PROJECT OBJECTIVES: System-wide deployment of advanced metering offers many benefits to customers of the DPU.

- More accurate metering. While some customers may see increases in their bills, this is a result of more accurate metering. It is important to remember that any consumption that is not metered simply adds to the "socialized cost of doing business". More accurate metering yields the result that those customers using the metered commodities pay for them, rather than some portion of their consumption being spread to all customers.
- Reduced Meter reading costs. The five-person crew of meter readers, plus equipment and vehicles, will no longer be required. The department has been working with affected personnel to transition them into other vacancies as they materialize. We also anticipate that one or two "metering technicians" will be required to manage the metering system, but the net result is anticipated reduction of staffing by three to four FTE's upon full system implementation.
- Reduced billing costs. Again, because of the constraints of manually reading meters, the billing is required to be handled in 22 separate read cycles. The billing staff runs billing essentially every business day of the month. With full deployment of advanced metering, we will be able to establish more efficient billing schedules.
- Reduced costs for turn on/turn offs, move in/move outs, rereads, and other account management issues. For example, when a customer comes in with a question about their readings, the customer service representative can "ping" the meter real time, right then and there, and get an accurate reading to correct or confirm the billing in question. This functionality has been in place in the pilot project deployment area for two years or more and has proven to be extremely useful and reliable for resolving billing disputes or errors.
- Two-way communications. The system provides for true two-way communications, so customers can be notified of service events or issues by way of an in-home display, text message, or mobile app.
- Real-time leak detection and notification. All three meters can be set to monitor and detect potential leaks. If consumption is registered constantly for a defined period of time, notice can automatically be generated to the Utility or the customer advising them of a possible leak. This can save customers thousands of dollars in consumption and potential damages, compared to not being aware of the abnormal consumption until their next regular read and billing cycle.
- Customers can also realize savings by monitoring and managing their consumption real-time. If you only get your consumption information in monthly totals and only once per month, it is harder to recognize and take advantage of incremental opportunities for savings.
- Functionality of the Smart Customer Mobile app, is realized. We implemented the customer mobile application last year, but with only limited functionality, as many of the capabilities and features require real-time, or at least incremental reads, to be fully realized.

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- Improved outage management. Through advanced metering, the Utility can be notified of actual or impending outages, and may be able correct the situation, often before customers are even aware that an event was occurring. Staff can also monitor the system and determine the exact scope of an outage and can monitor restoration efforts.
 - Advanced rate design. There are many exciting rate options that can improve system reliability, reduce costs system wide, and save individual customers money, all facilitated by the advanced metering's measurement of incremental consumption. For example, demand response programs can be initiated, allowing customers to choose to shift their consumption to lower cost non-peak periods.
 - Account management is improved. For example, Account Pre-pay can be enabled, allowing a customer to pay in advance, and notifying that customer as available funds reach predetermined thresholds. This allows the customer to make real-time decisions whether to curtail consumption. This is especially helpful to households that have trouble keeping up with their bills.

SELECTION PROCESS: Award was through a multi-step competitive process. Power Systems Engineering remained under contract to assist with the procurement, and provided consulting expertise on requirements definition, scoring criteria and weighting, coordination of offeror inquiries, and evaluation of proposals. Step One invited proposals from qualified offerors in response to a defined set of requirements and scoring criteria. Eight proposals were received and reviewed. The top three, based on the criteria specified in the Step One Solicitation, were invited to participate in Step Two, which included additional specified written responses and an on-site product demonstration, following a defined demonstration script. One of those finalists was initially selected based on criteria specified in the Step Two solicitation and we undertook contract negotiations with that offeror. Unfortunately, an impasse was reached in contract negotiations, so that award was rescinded. The selection committee reviewed the proposals and scoring and determined that award to the next highest scoring responsive bidder is in the best interest of the County, and we initiated contract negotiations with that offeror. The proposed agreement is the result of those negotiations.

PRIVACY OR HEALTH CONCERNS: In some areas of the US, citizens have expressed concern over having "smart meters" installed at their properties. The concern most often expressed relates to having RF transmissions in close proximity to the customer's domicile and any potential subsequent health impacts. This health concern has been studied and the extremely low power of the RF transmission from meters has not been shown to have any adverse health effects. The other most common concern heard relates to the potential for loss of privacy should someone be able to access the data from a customer's meter. All AMI systems that would be considered have extremely advanced data encryption and security protocols. No instance has yet, to our knowledge, occurred where anyone has hacked into a smart meter data transmission and used the information for nefarious purposes. More information on these issues and links to relevant and credible studies are posted on the DPU website.

Alternatives

If Council does not approve this service agreement the DPU will continue metering and billing with existing meters and processes and would seek other, potentially less effective methods to realize the cost savings and service and reliability enhancements the project provides. The existing residential dial electrical meters and mechanical commercial electric meters will be programmatically replaced with standard electronic meters over the course of 2-4 years since many of those meters are currently operating past their useful 50-year life.

A “legislative” resolution to the privacy issues would certainly be the best solution. However, in the absence of such a resolution, customer utility usage data remains subject to release under IPRA. The decision could be made to delay AMI deployment until and unless such a “legislative resolution” is implemented, but that is likely to take several years. If that decision is made, the current project would be cancelled, and the Department would have to initiate the project “from scratch” at some future date. The numerous benefits to operations and to customers would be delayed until such implementation is realized. It is also noteworthy that a large number of electric meters are already past their useful life and will be replaced within the next several years, so subsequent deployment of AMI would result in duplicate expenditure for subsequent replacement of those meters.

Fiscal and Staff Impact

The project involves an initial cash outlay of approximately \$4.9M and continuing annual operating costs of approximately \$100k. Due to the scope and complexity of this project, we have requested additional budget authority for a twenty percent contingency of \$972k. It is anticipated that the meter reading function, currently a crew of five FTE’s, will be eliminated, but would be replaced by a Metering Technician function of one or two FTE’s. With reductions in system losses due to more accurate metering, reduction in account costs due to the ability to service meters and accounts remotely rather than having to dispatch a crew, and improved outage and restoration management, the expected fiscal payback (economic breakeven point) for the system is between five and seven years. There are also significant operational benefits that do not have direct fiscal or staffing impacts, as discussed in the body of the PSE report. As noted above, these fiscal impacts are based on full deployment. While the costs of the project will not change significantly with less than full deployment, some of the economic benefits may change somewhat. It is not possible to gauge the magnitude of such changes without a better idea of how many customers would opt out; but based on the assumptions described the reduction of economic benefits would be minimal and the project still has a fairly short economic “break even” point, as discussed above and in the PSE report.

Attachments

- A - Services Agreement AGR19-912 and Exhibits as noted therein
- B - Budget revision 2019-04 - Advanced Metering Infrastructure
- C - BPU Strategic Initiative for Implementation of FEER Recommendations
- D - Power Systems Engineering Business Case Study updated September, 2018
- E - Flexnet System Overview