

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

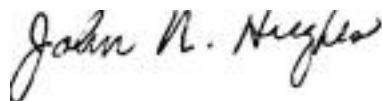
In the Matter of:

ELECTRONIC APPLICATION OF NORTHERN)	
KENTUCKY WATER DISTRICT FOR A)	
CERTIFICATE OF PUBLIC CONVENIENCE)	CASE NO. 2021-00095
AND NECESSITY TO REPLACE ITS EXISTING)	
AUTOMATED METER READING ("AMR"))	
METERS WITH ADVANCED METERING)	
INFRASTRUCTURE ("AMI") AND ISSUANCE)	
OF A BOND ANTICIPATION NOTE)	

RESPONSE TO ATTORNEY GENERAL'S INITIAL DATA REQUESTS

Comes now the Northern Kentucky Water District ("District") and submits its responses to the Attorney General's Initial Data Request dated April 23, 2021.

SUBMITTED BY:



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AFFIDAVIT OF BARRY MILLER

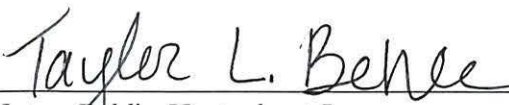
COMMONWEALTH OF KENTUCKY)
)SS
COUNTY OF KENTON)

Comes now affiant, Barry Miller, after being first sworn, deposes, and states that he is the Customer Service Supervisor for the Northern Kentucky Water District, that he is authorized to submit this Response on behalf of Northern Kentucky Water District, and that the information contained in the Response is true and correct to the best of his knowledge and belief, except as to those matters that are based on information provided to him and, as to those, he believes that information to be true and correct.



Barry Miller

This instrument was acknowledged, signed and declared by Barry Miller to be his act and deed
the 11th day of May 2021.



Notary Public, Kentucky at Large
Notary ID Number: KYNP 24265
My Commission Expires: 2/24/2025

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WITNESS – Barry Miller

Q.1. Identify all water utilities in the Commonwealth known to NKWD that have implemented metering systems that utilize one or more components based on AMI technology.

A.1. In due diligence for this project, the District is aware that the following water utilities in the Commonwealth have implemented one or more components of AMI technology:

- Louisville Water Company
- Southeast and West Daviess County Water District
- Cannonsburg Water District
- City of Danville
- City of Olive Hill
- Greenville Utilities Commission

Please note that the District has not taken survey of all utilities in the Commonwealth and the aforementioned list is of entities known to the District at this time. Moreover, this list is based on entities that have implemented AMI as AMI technology overlaps in many respects with AMR technology.

Lastly, the District not only consulted with other utilities inside the Commonwealth regarding the proposed AMI system but also several similarly situated utilities outside the Commonwealth as well. Those utilities included:

- WaterOne, Lenexa, Kansas
- City of Gatlinburg, Tennessee
- Water Resources Division, Clermont County, Ohio
- Greater Cincinnati Water Works, Cincinnati, Ohio

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WITNESS – Lindsey Rechtin

Q.2. Provide the remaining useful life of the Badger Orion Mobile Automated Meter Reading System.

a. If the existing AMR system has not been fully depreciated, explain: (i) how NKWD proposes to recover those stranded costs; and (ii) whether the stranded costs were taken into consideration in any cost-benefit analysis NKWD may have conducted.

A.2. In 2018, Badger Meter informed the District it would no longer manufacture and sell the transmitter used by the existing Badger Automated Reading System employed by the District. As such, and without an equitable replacement part, it effectively ended the useful life of the system and the transmitters (which continue to fail at an increasing rate).

For accounting purposes, the existing Badger Automated Meter Reading System will be retired and taken out of service when the new AMI system is placed in-service. The estimated in-service date of the new AMI system is two years after project initiation. If the proposed system comes in-service as currently estimated, June 30, 2023, the existing Automated Meter Reading System will have a remaining useful life or net book value of two years or \$995,449.96.

The District will continue depreciating the existing meter reading system until it is actually removed from service. The remaining net book value, if any, will be addressed for accounting purposes in the customary fashion prescribed by the Commission during the next rate case.

The District did not consider the stranded costs in the cost-benefit analysis as no status-quo option was available for the existing system. Moreover, in any scenario presented, the stranded costs is constant and would have the same impact on the analysis in each scenario. For more information, please see the Answer to Data Request #5.

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WITNESS – Lindsey Rechtin

Q.3. Provide the remaining useful lives of NKWD’s current meters.

A.3. This is variable depending on the particular meter installed. Meters (not transmitters) are replaced on a regular basis with approximately 8,500 or ten percent (10%) of meters being replaced each year.

For accounting purposes, the remaining useful life, or net book value, of current meters (not transmitters) in total is \$11,163,051 at 12/31/2020. The District is unable to project the remaining useful lives, or net book value, of the meters at the estimated in-service date of the AMI system, June 30, 2023, since the actual cost of any additions and disposals is unknown and variable.

In an abundance of caution, please note that the proposed project generally replaces only the transmitters connected to the meters and not the meter itself.

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WITNESS – Barry Miller

Q.4. Confirm that in the instant application, NKWD proposes only to procure and install new transmitters that utilize AMI technology onto its existing meters, and that the Company intends to retain its current meters.

a. If not confirmed, explain whether the proposed CPCN will include new AMI meters that have communications modules.

b. If NKWD will be filing a separate CPCN application for installation of new meters, provide an estimate for when that filing will be made.

A.4. The District intends to retain its current meters and will not be filing a separate CPCN.

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WITNESS – Barry Miller

Q.5. Provide a discussion regarding what due diligence NKWD conducted as to determining whether any other brands of transmitter units compatible with the Badger Orion Mobile Automated Meter Reading System are still being manufactured.

A.5. Upon learning that Badger would no longer manufacturer and sell the obsolete transmitter, Badger and other manufacturers confirmed that no other brands would be compatible with the current system. Moreover, Badger affirmed that even purchasing a different transmitter from Badger would require the District to purchase an entirely new reading system.

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WITNESS – Barry Miller

Q.6. Confirm that NKWD is proposing to construct its own communication network system for the proposed AMI transmitters.

A.6. The District intends to construct its own communication network system for the proposed AMI system.

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WITNESS – Lindsey Rechtin

Q.7. Confirm that NKWD currently transmits its water consumption data to Sanitation District No. 1 of Northern Kentucky (SD1), and that SD1 sends separate wastewater bills to its customers based on those customers' consumption of NKWD water.

a. Confirm that SD1 is not jurisdictional to the Kentucky Public Service Commission.

b. Explain how SD1 would benefit from the AMI module deployment.

A.7. The District confirms it transmits water consumption data to SD1 and that SD1 sends separate wastewater bills to customers based on water consumption averages. The District also confirms to the best of its knowledge that SD1 is not jurisdictional to the Public Service Commission.

The District has coordinated and worked in concert with SD1 for the proposed system to ensure SD1 receives the data SD1 requires to continue its billing practices.

SD1 will benefit from the proposed system as it will further automate the transmission of data and potentially allow for wastewater billings based on actual usage by SD1. SD1 will also benefit similar to customers and the District as the increase in data obtained will ensure reliability in the usage data and minimize water loss.

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WITNESS – Lindsey Rechtin

Q.8. Explain what due diligence NKWD conducted as to whether it would be more cost-effective to utilize existing cellular systems such as Verizon or AT&T for its communication network. If any, provide the results of that due diligence.

A.8. HDR, a third-party engineer for the District, published the “Meter Reading Study (FINAL DRAFT)” dated August 17, 2020 which included an analysis of whether it would be more cost-effective to utilize existing cellular systems such as Verizon or AT&T (i.e., network as a service or NaaS) for its communication network. The Study is attached to the Petition as Exhibit A.3.

The analysis in the Study determined that a full cellular NaaS solution (labeled as Scenario 4 – AMI Cellular) has the highest overall Present Value cost. Although the upfront transmitter costs are slightly lower than those for other AMI options, the ongoing NaaS service fees are high enough to result in the long-term operational costs being greater than any other AMI options. The additional cost of NaaS was markedly higher in the 20-year Present Value calculation – compared with other AMI options and with the 15-year Present Value – due to its higher service fees.

Lastly, NKWD received bid results for cellular NaaS, which are presented in the response to Question 11, that supported the Study’s findings that cellular is more expensive than the recommended CITCO Water hybrid AMI/AMR solution.

The cellular bids are presented in Question 11 under Part 4 titled “AMI Cell” and ranged from \$13,526,422.40 to \$28,214,731.02. These bid results compare to the recommended Part 5 bid from CITCO Water for \$13,118,324.00. The lowest 20-year present value calculations prepared by the bidders for Part 4 AMI Cell was \$19,755,899.94, which is more costly than the recommended CITCO Water solution under Part 5 “Hybrid AMI/AMR” with a 20-year present value of \$17,838,362.13.

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WITNESS – Lindsey Rechtin

Q.9. Provide a discussion on the extent of NKWD’s due diligence investigations regarding the possibility of “piggybacking” onto the AMI networks of Duke Energy and Owen RECC, in lieu of constructing NKWD’s own AMI data transmission system.

a. Include in your discussion whether any cost-benefit analyses of such an option were conducted, and if so, provide copies.

b. Explain why only the potential for piggybacking onto Owen RECC’s network was modelled in Scenario 8, and why the potential for piggybacking onto Duke Energy’s network was not modelled.

c. Reference p. 25 of the Meter Reading Study, wherein it is stated: “Refinement of this cost through continued discussions with Owen Electric is needed to better understand how it compares with other options.” Provide an update on NKWD’s discussions with Owen.

A.9. The District engaged in a due diligence investigation to determine the potential of using (“piggybacking”) onto other AMI networks. District personnel met with representatives from both Duke Energy and Owen RECC in 2019 to discuss the feasibility of piggybacking on their systems. Unfortunately, neither entity’s network provided a viable alternative.

As to Duke Energy, the District learned Duke Energy’s AMI system is an IPV6 network produced by Itron. IPV6 networks require every device in the network to participate in communicating network traffic which results in a substantial power draw. Although not an issue for electric meters, it is a substantial issue for gas and water meter transmitters that run on batteries. Duke Energy works around this issue on gas meters via a short range, 1-way communication system that polls their gas meters for readings. This communication system has a functional limit of 20 to 30 feet depending on what is in between meters. The solution generally works for Duke Energy as gas meters are usually close to the electric meters and both are above ground. However, such a solution is not viable for water meters for two reasons. First, the distance between most water and electric meters in the District is greater than 100 feet. Second, water meters are below ground which substantially limits signal range propagated. Moreover, Itron (Duke Energy’s AMI network provider) does not make water meters or water meter transmitters compatible with the Duke Energy IPV6 network. Due to these barriers, no cost analysis was performed for “piggybacking” onto Duke Energy’s network.

As to Owen RECC, the District learned that Owen RECC's AMI network would allow for "piggybacking" of gas and water meters to the electric meters using a short-range Zigbee protocol. Although the Zigbee protocol has a theoretical range of 328 feet and produces water meters that work with the Owen RECC's AMI network, the fact the water meters are underground, the considerable distance between the electric and water meters and physical obstacles in the signal path all present substantial obstacles to the viability of this alternative as a whole and on a meter by meter basis. Lastly, this alternative would only be available for customers served by both Owen RECC and the District (approximately 8,500 customers or 10% of the District's total customers).

The bid specifications did not preclude a bidder from utilizing either the Duke Energy or Owen RECC's respective systems to collect and transmit the District's meter reading data. However, the District believes these technical challenges and uncertainties likely prevented bidders from proposing utilization of these system in their bids. Lastly, discussion (negotiation) regarding the NaaS fees (and the amount for the District's contribution) deteriorated as the issue became moot with no bidder proposing utilization of the Owen RECC AMI system.

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WITNESS – Lindsey Rechtin

Q.10. Confirm that NKWD’s RFP was conducted as a joint basis with the City of Florence (Florence). If so confirmed:

- a. Confirm that Florence is not jurisdictional to the Kentucky Public Service Commission.**
- b. Explain whether NKWD has considered partnering with either SD1, and/or Florence in deploying the AMI modules. If not, explain fully why not.**
- c. Provide a copy of the “Interlocal Cooperation Agreement” referenced on p. 4 of the RFP.**

A.10. The District confirms that the Request for Proposal was conducted on a joint basis with the City of Florence and that the City of Florence is not jurisdictional to the Public Service Commission to the best knowledge of the District.

The District did not consider partnering with SD1 as SD1 does not maintain or desire its own AMI module. SD1 provides wastewater services and relies upon data from the District’s system in determining its own billing.

A copy of the Interlocal Cooperation Agreement between the District and City of Florence is attached hereto as Exhibit A.

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WITNESS – Lindsey Rechtin

Q.11. Provide a list of bids received from NKWD’s RFP regarding an AMI transmitter system.

A.11. Please see the summary below for bids received by the District. Low bids are highlighted in yellow with bid accepted highlighted green. Please note that included is the bid amount but also the estimated twenty-year costs incurred by the District for each proposal as calculated and submitted on the bid form by the vendor based on the formula provided by HDR, the District’s engineer.

Part 1 – AMR only (Engineer Estimate \$11,740,000)				
Bidder	Bid Amount not using SRF	20 Year Present Value	Bid Amount using SRF loan	20 Year Present Value
Badger	\$11,013,492.40	\$21,397,880.40	\$12,279,507.40	\$22,663,895.40
CITCO Water	\$11,871,280.00	\$22,255,668.00	\$14,583,380.00	\$24,967,768.00
Neptune	\$12,948,297.89	\$23,332,685.89	\$14,229,797.89	\$24,614,185.89
United Systems (Itron)	\$13,158,178.56	\$23,542,566.56	\$13,460,678.56	\$23,845,066.56

Part 2 – AMI Standard (Engineer Estimate \$15,530,000)				
Bidder	Bid Amount not using SRF	20 Year Present Value	Bid Amount using SRF loan	20 Year Present Value
Zenner	\$15,481,842.00	\$19,706,290.79	\$15,481,842.00	\$19,706,290.79
Aclara	\$17,177,060.83	\$21,371,539.33	\$17,593,876.45	\$21,788,354.95
Neptune	\$19,113,330.02	\$23,759,894.00	\$20,394,830.00	\$25,041,394.00

Part 3 – AMI High (Engineer Estimate \$15,510,000)				
Bidder	Bid Amount not using SRF	20 Year Present Value	Bid Amount using SRF loan	20 Year Present Value
CITCO Water	\$13,586,969.00	\$18,160,621.13	\$16,371,269.00	\$20,944,921.13

Part 4 – AMI Cell (Engineer Estimate \$12,860,000)				
Bidder	Bid Amount not using SRF	20 Year Present Value	Bid Amount using SRF loan	20 Year Present Value
Badger	\$13,526,422.40	\$19,755,899.94	\$14,792,433.40	\$21,021,910.94
IBT (Master Meter)	\$21,710,336.90	\$24,775,435.90	\$23,106,329.90	\$26,171,428.00
Neptune	\$26,933,231.02	\$31,579,795.00	\$28,214,731.02	\$32,861,295.00

Part 5- Hybrid AMI/AMR (Engineer Estimate \$15,100,000)				
Bidder	Bid Amount not using SRF	20 Year Present Value	Bid Amount using SRF loan	20 Year Present Value
CITCO Water	\$13,118,324.00	\$17,838,362.13	\$15,864,649.00	\$20,584,687.13
Neptune	\$13,793,111.45	\$19,539,021.00	\$15,086,611.45	\$20,832,521.00
IBT (Master Meter)	\$16,866,176.90	\$21,395,133.90	\$18,246,041.90	\$22,774,998.90

Part 6 – Hybrid AMI/Cell (Engineer Estimate \$14,900,000)				
Bidder	Bid Amount not using SRF	20 Year Present Value	Bid Amount using SRF loan	20 Year Present Value
Neptune	\$20,853,481.96	\$25,499,248.00	\$22,147,982.00	\$26,793,748.00

Part 7 – Hybrid AMI/Other (Engineer Estimate \$15,380,000)				
Bidder	Bid Amount not using SRF	20 Year Present Value	Bid Amount using SRF loan	20 Year Present Value
Neptune	\$17,358,242.88	\$21,850,934.00	\$18,665,649.72	\$23,145,434.00

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WITNESS – Lindsey Rechtin

Q.12. Explain whether NKWD conducted any due diligence as to utilizing a new all-AMR meter reading system, together with attendant costs.

A.12. The District did consider this option and the analysis is contained within the HDR Study which is attached as Exhibit A.3. to the District's Petition. Consideration of a new all-AMR meter reading system is labeled as "Scenario 1."

It should be noted that while the initial capital cost for an AMR system is lower than the AMI systems, in most cases the AMI system's long-term reductions in operational costs lead to lower overall costs for the AMI scenarios. As a result, the 15-year and 20-year Present Value costs of a new all-AMR meter reading system were higher than those of the AMI systems (with the exception of the cellular AMI).

This is further elaborated in the HDR Study, Table 6 on page 24 which is attached as Exhibit A.3. to the Petition.

As outlined in response to Question 11, NKWD received bid results for an all-AMR meter reading system that supported the study's findings. The AMR bids are presented in Question 11 under Part 1 titled "AMR Only" and ranged from \$11,013,492.40 to \$14,583,380.00. These bid results compare to the recommended Part 5 bid from CITCO Water for \$13,118,324.00. The lowest present value calculations prepared by the bidders for Part 1 AMR only was \$21,397,880.40, which is more costly than the recommended CITCO Water solution under Part 5 "Hybrid AMI/AMR" with a 20-year present value of \$17,838,362.13.

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WITNESS – Lindsey Rechtin

Q.13. Provide a discussion regarding the degree to which the proposed new AMI module system is compatible with NKWD’s current billing, customer service, and other systems. Include in your discussion the extent to which NKWD considered interoperability between its existing systems and the proposed AMI modules, together with the potential for obsolescence.

A.13. The proposed AMI system has been tested and shown to be compatible with the District’s customer service and billing system.

Furthermore, the proposed system installation includes providing an interface with the District’s current billing and customer service system. The Technical Specifications of the Meter Reading System Replacement solicitation document functional requirements of that interface. The selected Contractor’s proposal describes a process and shared responsibilities (among the District, its billing system software provider, and the Contractor) for complying with those requirements. No material compatibility issues are anticipated by the District or HDR, the District’s third-party engineers.

The Technical Specifications also listed other District systems with which interfaces would be “highly desirable,” but did not require price quotations for these. Functionality requirements for these interfaces have not been defined, but no material compatibility issues are anticipated by HDR, the District’s third-party engineers.

The Technical Specifications and selected Contractor’s proposal include options for the District to receive service and maintenance support for the proposed AMI modules for 20 years. In addition, the District’s billing system software provider has established a record – over 24 years in business – of supporting and enhancing its products while complying with industry standards. The District does not have any reason to believe that this company’s business approach will change. While technology will surely advance during the anticipated 20-year life of this AMI system, the District’s protection against premature obsolescence comes from working with established technology providers who comply with industry standards, and who will continue to meet the needs of large user communities.

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WITNESS – Lindsey Rechtin

Q.14. Explain whether NKWD has considered the possibility of providing billing and customer service on a joint basis with Florence. Include in your response a discussion of whether the proposed joint RFP with Florence could enhance possibilities for conducting billing, customer service, and perhaps other operations on a joint basis with Florence.

A.14. Providing billing and customer service on a joint basis with Florence would require wholesale changes to the District's billing and customer services practices which is not being considered at this time.

Depending on the circumstances, joint operations with our neighboring utilities could be mutually beneficial. For example, the District has conducted joint bids (such as this one) with Florence for the benefit of economies of scale.

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WITNESS – Lindsey Rechtin

Q.15. Explain whether NKWD conducted one or more cost-benefit analyses for the proposed CPCN. If so:

- a. provide a copy of all such analyses;**
- b. ensure that the analyses indicate the source of all cost savings that the deployment will provide;**
- c. explain whether the analyses included potential savings derived from enhanced leak detection capability of an AMI system;**
- d. explain whether the analyses took into consideration potential synergies and other benefits that could be achieved by conducting one or more aspects of the AMI module deployment (i) jointly with Florence; and / or (ii) any cost contributions that SD1 could make toward the CPCN costs.**

A.15. The District conducted a cost-benefit analysis with its Engineer, HDR. A copy of the analysis is included in the Meter Reading Study which is attached to the Petition as Exhibit A.3. Section 4.1 of the Meter Reading Study explains the methodology of the cost/benefit analysis. The analysis, or evaluation, was comprised of two components both quantitative and qualitative. Results of the quantitative analysis are presented in Section 4.5. Sources of cost savings that were quantified in the analysis are included in Section 4.4 Key Cost Model Inputs. Results of the qualitative analysis are presented in Section 4.6.

The analysis did include potential savings from enhanced leak detection capability of the AMI system. Specifically, Section 4.6 of the analysis described several “qualitative” benefits (i.e., expected benefits which were not assigned a dollar value) expected from an AMI system. Advanced leak detection was specifically addressed in support of conservation activities. Further, the analyses facilitated by Resolution of Available Data (i.e., the availability of more consumption data at more frequent intervals) and the Support to Other District Information Systems (such as comparing the District’s SCADA data with meter reading data for leak detection) were both classified as having a “strongly positive impact” under all AMI scenarios (in Table 7). In contrast, an AMR solution was classified as having “no impact” on these parameters.

The analysis did not assume potential synergies and benefits with the City of Florence. The District only engaged in a joint bid with City of Florence to obtain economies of scale. However, the Bid Forms in the solicitation document included the following Alternative Bid Item for all AMI bids:

Alternate Bid Item #2-A27: Shared Data Collection System with Northern Kentucky Water District and City of Florence

Provide an Alternate Deduct Price to the District if the District contracts with the

same Bidder as does the City of Florence. Deduct price is to account for: 1) potential savings in data collector/ repeater mounting infrastructure (if such can be used for each utility); 2) savings in deployment/staging costs; and, 3) any additional savings available from the Bidder if contracting with both Owners: \$ _____ (in figures) and _____ (written out in words). Describe the basis for cost savings if both Owners enter into contracts with the same Bidder.

Responses to this Alternative Bid Item were of nominal value and did not merit further consideration of joint deployment with Florence. In addition, the City of Florence's operational needs required that its deployment begin sooner (around November 2020) than the District was able to complete its regulatory requirements.

The quantitative analysis did not consider any cost contributions that SD1 could make toward the CPCN costs.

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WITNESS – Barry Miller

Q.16. Provide the estimated lifespan of the AMI meter reading system NKWD has selected.

a. Explain whether this lifespan includes any battery that the communications module may use. If not, provide the projected lifespan of the battery.

A.16. The expected life span of the system is twenty (20) years. For accounting purposes, the proposed system will be depreciated over fifteen (15) years.

Specifically, the Technical Specifications of the Meter Reading System Replacement solicitation required that the AMI meter reading system have a design life of twenty (20) years. The Contractor that the District selected to implement its AMI meter reading system is offering 20-year support for the Full Communications System (equipment, software, and firmware), Meter Data Management System, and Remote Shutoff Valves.

The transmitters in the AMI meter reading system selected by the District are powered with lithium thionyl chloride batteries designed to last over 20 years. Should battery failure occur before the end of 20 years, the Sensus 20-year battery warranty (15 years full warranty plus 5 years prorated warranty) provides for replacement.

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WITNESS – Lindsey Rechtin

Q.17. Explain the steps NKWD undertook to insure interoperability of the proposed new AMI meter reading system with NKWD's other existing systems.

A.17. The District engaged thoroughly with HDR to review its existing systems and ensure the technical specifications require integration with the District's existing systems. The Technical Specifications of the Meter Reading System Replacement solicitation document requires that the AMI Contractor must provide an interface with the District's current billing system. High-level functional requirements for that interface are described in Section E.2, p. 45 of the Technical Specifications, part of Exhibit A.4 of the Petition.

For the proposed AMI system, the file format for the interface is the same type of file format that is used for the existing system. No material interoperability issues are anticipated by the District or its consultant.

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WITNESS – Lindsey Rechtin

Q.18. Explain why NKWD’s analysis did not include a status quo scenario.

A.18. A status quo scenario was not possible considering the unavailability of transmitters from Badger who stopped manufacturing transmitters in late 2018. The District was unable to take measures to even extend the functionality of the existing system such as making a large bulk order purchase as the District was not informed until after the transmitters became unavailable. Similarly, attempts to purchase used transmitters from other utilities using the existing transmitter was also unsuccessful.

As outlined in response to Question #5, upon learning that Badger would no longer manufacturer and sell the obsolete transmitter, the District tested and confirmed that no other brands of transmitter unit was compatible with the Badger Orion Automated Meter Reading System. Even purchasing a different transmitter from Badger would require the District to purchase a new reading system.

In addition, Badger also informed the District in 2020 that it would not provide support for the reading software (that collects the readings from the mobile equipment and transfers to billing system) after August 31, 2021. Although no updates or further support will be provided, the District can continue to use the software (and as a short-term solution support the software with internal IT staff).

Lastly, the District would note that Part 1 of the bids and Scenario 1 of the analysis did include an AMR only system which is the equivalent or in-kind replacement to the Badger system currently in place with the lowest 20-year present value cost at \$21,397,880.40 compared to the proposed system with a 20-year present value cost of \$17,838,362.13.

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WITNESS – Barry Miller

Q.19. Confirm that most of NKWD’s meters are located in underground vaults. If so confirmed, provide a discussion on the difficulties involved with creating a RF network capable of receiving all transmissions from underground meters.

A.19. Most of the District’s meters are located in underground vaults.

Currently the District’s AMR system is read through a transmitter that is mounted through the lid with attachments that secure the transmitter to the lid.

Each bidder had to contemplate in its bid whether lid replacement was necessary and factor in such costs into the respective bid. The proposed AMI system will use the existing meter lids and mount in the same format as the AMR system transmits data by radio frequency. Having the lids and mount as a feature already in place significantly reduced overall costs. Comparatively, other proposals, such as bids for cellular readings, would require replacement of all lids with plastic.

To give a full appreciation of the impact replacement of lids could have on bids, currently the District 76,950 standard lids in service and replacement lids costs \$52.80 each. For heavy duty lids, the District has approximately 8,550 lids in service and currently pays \$111.21 for each heavy-duty lid.

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WITNESS – Lindsey Rechtin

Q.20. In the event the Commission grants the CPCN, explain what NKWD will do with its current meter reading personnel. Provide also the monetary savings in meter reading expense NKWD expects to achieve through the deployment of the AMI modules.

A.20. Said personnel will be transferred internally to help maintain the AMI system as necessary and fill other additional duties for the District depending on the employment needs for the District at the time of transition. Based on the twenty-year present value difference of \$3,559,518.27 between proposed AMI system and the lowest priced AMR replacement system, the District expects to save \$177,975.91 annually in meter reading expense.

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WITNESS – Lindsey Rechtin

Q.21. Reference the Application, “Project Description,” p. 2. Explain how the new meter reading system will enhance customer services.

A.21. Customer services will be enhanced as more data will be readily available to the District than ever before. The new system is expected to enhance customer services by:

- Increased granularity of water consumption data that will assist in proactively identifying customer-side leaks supporting customer service interactions regarding consumption, and water usage analysis to inform water conservation efforts.
- Reduced staff time required to obtain regular and follow-up reads, thereby freeing up resources to address other District needs.
- Potential use of remote shutoff valves (RSVs) that could be used in conjunction with the AMI system to remotely turn-off and turn-on services that require such actions often.
- Potential future “add-on” enhancements, such as distribution system leak detection sensors to aid in locating leaks and managing water loss, and pressure sensors and integration with the District hydraulic model, to support system analysis and operations.
- Possibility of offering a customer portal to customers for their use in tracking water consumption and to support District and SD1 communications with customers.
- Increased data to support water usage analysis and inform water conservation efforts.

CASE NO. 2021-00095

WITNESS – Lindsey Rechtin

Q.22. Provide the criteria by which NKWD will determine whether any given customer will have remote shut-off valves (RSV) installed.

A.22. The District intends to install remote shut-off valves only on meters where historically on average the District has to perform three (3) or more shut offs each year. This determination is made solely on the meter and indifferent of the account holder(s) for that meter during any given time frame or basis for shut off.

Based upon an analysis performed using data from November 2018 through January 2019, each shut-off for non-payment of water bills costs the District an average of \$20.62 in labor and transportation. This considers:

- Burdened labor rates; and
- Two trips to the meter (one trip to shut off and return trip to turn back on).

Using 2019 data on meters that were shut-off three or more times, the remote shut-off valve capital cost will be repaid in slightly over 4 years (4.36 years) from savings the District realizes by not incurring the costs to manually shut-off the meters. Please note that 2019 had the lowest number of shut-offs in the 15 years for which records are available (2020 not considered in analysis due to impact of pandemic and specific Commission Orders regarding shut-offs). Using shut-off quantities from 2017, the District's savings from not manually shutting off the meters would repay the shut-off valve capital cost in 2.77 years.

CASE NO. 2021-00095

WITNESS – Barry Miller

Q.23. Confirm that in the current CPCN, NKWD is not also seeking permission to purchase customer portals for its customers.

a. Regarding the future potential for customer portals, explain whether the portal would consist of hardware to be installed in each customer’s premises, or the ability to access customer data via an internet website, over the customer’s own computers or other devices.

A.23. The District is not seeking Commission approval to purchase a customer portal system at this time but wants to notice the Commission and public of the District’s considerations and potential future capabilities.

The customer portal which the District may consider implementing in the future is an external-facing website. Customers would access this website using their own computers, smart phones, and/or other Internet devices. Access to customers’ individual data would be password protected. The customer portal would likely be a commercial off-the-shelf software package, licensed by the District and potentially hosted by the software provider. However, the District is not contemplating in any instance the installation of any hardware on any customer’s premises beyond adding AMI transmitters to the existing meters.

CASE NO. 2021-00095

WITNESS – Lindsey Rechtin

Q.24. In the event the Commission grants the proposed CPCN, explain whether NKWD proposes to maintain its current meter testing program.

A.24. The District intends to maintain its current meter testing program at this time. However, once the system is in place, the District may consider requesting extension of the testing program from the current ten-year period to a fifteen-year period in light of the recommendation by HDR in the Meter Reading Study in Section 5.3 Recommended Next Steps and considering the District's expected increased ability to monitor and verify meter usage and issues in near real time with the proposed AMI system.

CASE NO. 2021-00095

WITNESS – Lindsey Rechtin

Q.25. Provide NKWD’s labor costs for: (i) current shut-offs; and (ii) shut-offs once the proposed AMI system has been installed.

A.25. The District’s total labor costs in 2019 were \$113,437.00 for shut-offs. Using pre-pandemic numbers, in 2019, the District completed 6,471 shut-offs for non-payment of water bills. If the AMI system and remote valves had been installed for each meter having more than three shut-offs per year, the number of shut-offs would have been reduced by 73.1% or 4,730 shut-offs. Accordingly, the estimated annual labor costs would be \$30,520 or 73.1% less per year.

Exhibit A

**Interlocal Agreement
Northern Kentucky Water District and City of Florence**

INTERLOCAL COOPERATION AGREEMENT

THIS INTERLOCAL COOPERATION AGREEMENT (the "Agreement") is made and entered into on this the 9th day of April, 2014, by and between the City of Florence, Kentucky (the "City") and Northern Kentucky Water District (the "District"). The City and the District are sometimes individually referred to herein as a "Party" and collectively as the "Parties".

RECITALS

WHEREAS, under the Interlocal Cooperation Act set forth in KRS 65.210 to 65.300, inclusive (the "Act"), any powers, privileges or authority exercised or capable of exercise by a public agency may be exercised jointly with another public agency under an agreement (an "interlocal cooperation agreement") with one another for joint or cooperative action; and

WHEREAS, the Act permits local governmental units to cooperate with other local governmental units and public agencies to make more efficient use of their powers and to provide services and facilities in a manner that is in their best interest and the best interest of the local communities they serve; and

WHEREAS, the District was created under the authority and provisions of KRS Chapter 74, and is a public agency as defined in KRS 65.230, with the authority to acquire, retain, and develop real property for the purpose of constructing, installing, extending, operating, maintaining and repairing water utility lines and related facilities thereto; and

WHEREAS, the Parties desire to work jointly and cooperatively, from time to time, to implement efficient and effective competitive bidding procedures awarding contracts for the joint construction of improvements owned by and/or under the jurisdiction of the City and water utility improvements owned by and/or under the jurisdiction of the District, but not for the City to provide or supply water pursuant to a water user agreement that waives or otherwise subjects the City to jurisdiction or regulation of the Kentucky Public Service Commission.

NOW, THEREFORE, in consideration of the above recitals and the mutual benefits to be derived by each of the Parties, the Parties hereby agree as follows:

1. Effective Date. This Agreement shall be effective upon approval and execution by the Parties, upon approval of the Attorney General of the Commonwealth of Kentucky as required by KRS 65.260, and the filing of a certified copy of this Agreement with the County Clerk in which the City is located and the Secretary of State of the Commonwealth of Kentucky pursuant to KRS 65.290.

2. Purpose. The purpose and intent of this Agreement is to set forth a mechanism for the City and the District, pursuant to their respective powers, privileges, and authority, to enter into Project Agreements (defined herein), from time to time, to combine their efforts and resources for the construction of improvements to be owned by and/or under the jurisdiction of the City and water utility improvements to be owned by and/or under the jurisdiction of the District.

Recorded: GABRIELLE SUMME
COVINGTON: KENTON COUNTY CLERK
Doc type: AGREEMENT
Book / Page : C - 5450 / 241 8pgs
Doc#: 14 07 10 059 00197
Dt/tm Recorded: 07/10/2014 03:29:37pm
Total fees: 26.00 Tax: 0.00
Clerk name: DANIELLE STRINKO

3. Duration. This Agreement shall remain in effect until **December 31, 2035**, or unless earlier terminated pursuant to Section 8 of this Agreement.

4. City/District Projects. For purposes of this Agreement, a “**City/District Project**” shall mean a project proposed by either Party involving both the construction, installation, relocation, extension, or other modification, of any improvements or related facilities thereto owned, to be owned, or otherwise under the jurisdiction of the City, and any water utility improvements or related facilities thereto owned, to be owned, or otherwise under the jurisdiction of the District. Examples of such a project include, but are not limited to, street replacement projects where water lines / mains needing replacement are located in the same right of way or nearby. However, no such project shall involve the City providing or supplying water to the District which is a regulated utility subject to the jurisdiction and authority of the Kentucky Public Service Commission. Nothing herein is intended as a waiver of the City’s exemption from the Public Service Commission’s regulatory authority un Chapter 278 of the Kentucky Revised Statutes.

Notwithstanding anything contained in this Agreement to the contrary, it is hereby expressly understood and agreed between the Parties that neither Party shall be obligated to enter into a proposed City/District Project, and that either Party may disapprove of a proposed City/District Project in their sole and absolute discretion, for any reason or no reason at all. If the Parties reach mutual consent and approval of a proposed City/District Project, then the Parties may proceed to prepare plans and specifications, engage in competitive bidding, enter into Project Agreements, and/or engage in any other joint and cooperative action permitted under this Agreement.

5. Plans/Specifications and Competitive Bidding.

(a) Projects Bidded by the City. If the City and the District reach mutual consent and approval of a proposed City/District Project, the District may deliver to the City reasonably detailed construction plans and specifications relating to that portion of the City/District Project involving the construction, installation, relocation, extension, or other modification of any water utility improvements or related facilities (“**Water Utility Work**”). The plans and specifications for the Water Utility Work shall be subject to the joint review and approval by both the District and the City.

If the City and the District mutually consent to and approve the Water Utility Work, the City shall issue an Invitation For Bid in connection with any approved City/District Project, which shall include the Water Utility Work as an alternate bid item. In doing so, the City shall comply with all competitive bidding and advertising requirements applicable to the City/District Project, including, without limitation, noting in any public advertisement that the City is advertising the project on its behalf and as agent of the District pursuant to the interlocal cooperation agreement between the City and the District.

If the City receives a bid or bids under any Invitation For Bid that includes the Water Utility Work and that the City is willing to accept, the City shall deliver a full and complete copy of such bid or bids to the District for the District’s review and approval. If the District approves such bid or bids, the District shall notify the City in writing not later than **30** days after District

receives a full and complete copy of such bid or bids whether the District is willing to accept such bid or bids. If the District fails to notify the City in writing within the 30 day period, then such failure shall be deemed to be the District's disapproval of the bid. In that event, the City shall be entitled to accept the bid for that portion of the work that comprises the construction, installation, relocation, extension, or other modification of any City planned improvements or related facilities.

(b) Projects Bidded by the District. As an alternative to the provisions contained in Section 5(a) above, if the City and the District reach mutual consent and approval of a proposed City/District Project, the City may deliver to the District reasonably detailed construction plans and specifications relating to that portion of the City/District Project involving the construction, installation, relocation, extension, or other modification of any City planned improvements or related facilities ("City Work"). The plans and specifications for the City Work shall be subject to the joint review and approval by both the District and the City.

If the City and the District mutually consent to and approve the City Work, the District shall issue an Invitation For Bid in connection with any approved City/District Project, which shall include the City Work as an alternate bid item. In doing so, the District shall comply with all competitive bidding and advertising requirements applicable to the City/District Project, including, without limitation, noting in any public advertisement that the District is advertising the project on its behalf and as agent of the City pursuant to the interlocal cooperation agreement between the City and the District.

If the District receives a bid or bids under any Invitation For Bid that includes the City Work and that the District is willing to accept, the District shall deliver a full and complete copy of such bid or bids to the City for the City's review and approval. If the City approves such bid or bids, the City shall notify the District in writing not later than **30** days after City receives a full and complete copy of such bid or bids whether the City is willing to accept such bid or bids. If the City fails to notify the District in writing within the 30 day period, then such failure shall be deemed to be the City's disapproval of the bid. In that event, the District shall be entitled to accept the bid for that portion of the work that comprises the construction, installation, relocation, extension, or other modification of any water utility improvements or related facilities.

6. Project Agreements. If the City and District mutually agree to accept any bid that includes the Water Utility Work or the City Work, as the case may be, then City and District shall execute and enter into a project agreement substantially in the form attached hereto as Exhibit A and incorporated herein by reference (each, a "**Project Agreement**"). For purposes of clarification, a Project Agreement will not be substantially in the form attached hereto as Exhibit A if it (a) includes any other person or entity who is not a party to this Agreement or another interlocal cooperation agreement valid under Kentucky law, (b) substantially changes or modifies any of the Parties' rights or obligations under this Agreement, or (c) substantially changes or modifies any services envisioned by this Agreement to be provided by either Party hereunder.

7. Further Acts and Deeds. The City and the District, respectively, hereby represent and warrant to the other that they are authorized to and will execute, acknowledge, and deliver

any and all other easements, deeds, documents, certificates, or instruments necessary or required to effectuate this Agreement and the purposes contemplated herein, or to establish the ownership and/or jurisdiction of the City and the District over any improvements constructed pursuant to this Agreement or any Project Agreement.

8. Termination. This Agreement may be terminated by either party upon thirty (30) days written notice to the other; provided, however, such termination shall not be effective until the completion of any pending City/District Project for which a Project Agreement has been executed.

9. Financing. The City and District shall each be responsible for its own administrative expenses that it incurs in undertaking this Agreement, as well as the budgeting therefore. As to the specific City/District Project expenses, the District shall reimburse the City for those expenses related to the Water Utility Work pursuant to Section 5(a) in the manner and to the extent provided for in the Project Agreement, and City shall reimburse the District for those expenses related to any City Work pursuant to Section 5(b) in the manner and to the extent provided for in the Project Agreement, as the case may be. All other City/District Project expenses shall be paid by the City if such project is bid pursuant to Section 5(a), and all other City/District Project expenses shall be paid by the District if such project is bid pursuant to Section 5(b).

10. Administrator. This Agreement between the City and District shall be administered by a board of at least two individuals, one-half of such individuals shall be appointed by the City and the other half appointed by the District. The City and District shall each be entitled to replace its representative(s) on the board from time-to-time upon written notice to the other party.

11. Real and Personal Property. All real or personal property acquired during the course of a City/District Project bid pursuant to Section 5(a) shall belong to the City, and all real or personal property acquired during the course of a City/District Project bid pursuant to Section 5(b) shall belong to the District, until such time as such project is completed. Upon completion, all real and personal property related to the Water Utility Work under Section 5(a) shall be assigned to the District, and all real and personal property related to the City Work under Section 5(b) shall be assigned to the City. All other real and personal property shall remain with the City pursuant to Section 5(a), or shall remain with the District pursuant to Section 5(b), as the case may be.

12. Assignment. Neither the City nor the District shall be permitted to assign their rights or interests under this Agreement.

13. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Kentucky.

14. Default. If either Party defaults under this Agreement, and should such default continue for more than thirty (30) days after written notice is given to the defaulting Party from the non-defaulting Party, the non-defaulting Party may terminate this Agreement by delivering written notice of termination to the defaulting Party.

15. Waiver. No delay or omission by either Party to exercise any right shall impair any such right or be a waiver thereof, but any such right may be exercised from time to time and as often as may be deemed expedient by such Party. Any waiver must be in writing and executed by such Party to be effective, and a waiver on one occasion shall be limited to only that particular occasion.

16. Notices. All notices, demands and requests given or required to be given by either Party hereto to the other Party shall be in writing and shall be deemed to have been properly given if sent by U.S. registered or certified mail, postage prepaid, return receipt requested, personal delivery, or by overnight delivery service, addressed as follows:

To City: City of Florence
Attn: Mayor Diane Whalen
8100 Ewing Blvd.
Florence, Kentucky 41042

with a copy to: (City of Florence Legal Counsel)
(address)

To District: Northern Kentucky Water District
Attn: Richard Harrison, VP of Engineering
2835 Crescent Springs Road
Erlanger, KY 41018

with a copy to: Hemmer DeFrank PLLC
Attn: Brian C. Dunham
250 Grandview Drive, Suite 500
Fort Mitchell, KY 41017

or to such other address as either Party may from time to time designate by written notice.

17. Interpretation. The titles to the Sections and Paragraphs hereof are for reference only and do not limit in any way the content thereof. Any words herein which are used in one gender shall be read and construed to mean or include the other gender wherever they would so apply. Any words herein which are used in the singular shall be read and construed to mean and to include the plural wherever they would so apply, and vice versa.

18. Complete Agreement; Counterparts. This Agreement, the Exhibits and resulting Project Agreements are the complete agreement of the parties hereto and supersede all previous understandings relating to the subject matter hereof. This Agreement may be amended only by an instrument in writing which explicitly states that it amends this Agreement, and is signed by the party against whom enforcement of the amendment is sought. This Agreement may be executed in several counterparts, each of which shall be regarded as an original and all of which shall constitute but one and the same instrument.

19. Validity. The provisions of this Agreement are severable. If any term, covenant or condition of this Agreement shall be held to be invalid, illegal or unenforceable in any respect,

the remainder of this Agreement shall not be invalidated thereby, and this Agreement shall be construed without such provision.

[signature page follows]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective duly authorized representatives.

CITY:

DISTRICT:

City of Florence, Kentucky

Northern Kentucky Water District

By: Diane E. Whalen
Mayor

By: [Signature]
President / CEO

Commonwealth of Kentucky)
County of Boone)

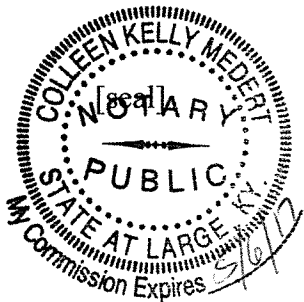
The foregoing instrument was subscribed, sworn to and acknowledged before me this 17th day of March, 2014, by Diane Whalen, the Mayor of the City of Florence, Kentucky, on behalf of the said City.

[seal]

Donna A. Smith
Notary Public
My commission expires: 3-25-17

Commonwealth of Kentucky)
County of Kenton)

The foregoing instrument was subscribed, sworn to, and acknowledged before me this 9TH day of APRIL, 2014 by Ron Lovan, the President / CEO of Northern Kentucky Water District, a water district formed and operating under Chapter 74 of the Kentucky Revised Statutes, on behalf of the water district.



Colleen Kelly Medert
Notary Public
My commission expires: 5/6/17

In accordance with KRS 65.260, the Attorney General of the Commonwealth of Kentucky has determined that the above Agreement is in proper form and compatible with the laws of the Commonwealth of Kentucky.

ATTORNEY GENERAL OF THE
COMMONWEALTH OF KENTUCKY

By: Ryan Halloran
Assistant Attorney General for
Honorable Jack Conway – Attorney General

June 9, 2014

RECEIVED AND FILED
DATE 6/24/2014

ALISON LUNDERGAN GRIMES
SECRETARY OF STATE
COMMONWEALTH OF KENTUCKY
BY [Signature]

This instrument prepared by
and after recording return to:

Tim Lynch / Bco
Timothy Lynch, Esq.
Hemmer DeFrank PLLC
250 Grandview Drive, Suite 500
Fort Mitchell, KY 41017