

# **Instructions**

**&**

# **Specifications**

**For An**

# **Automated Meters & Endpoints**

Bid Number 2017-005



**Hardin County Water District No. 2  
Elizabethtown, Kentucky**

Open Date: April 13, 2017

Scott Clark, Administrative/Customer Service Manager  
(270) 737-1056 ext. 301

# **INFORMATION TO BIDDERS**

## **I. ACCEPTANCE OF BIDS**

Hardin County Water District No. 2 (the District) reserves the right to accept the bid deemed lowest and best evaluated as determined by the Hardin County Water District No. 2's Board of Commissioners. The District reserves the right to waive any informalities or minor defects in a bid or to reject any or all bids.

## **II. SUBMITTING BIDS**

1. The bid must be received by the District at 360 Ring Road, Elizabethtown, Kentucky on April 13, 2017 by 10:00 am local time. Any bid received after the specified time shall be disqualified.
2. Each bid must be in a sealed envelope and have typed on the envelope, **SEALED BID**, with the opening date and time. The District assumes no responsibility for the premature opening of or failure to open bids not properly addressed or identified.
3. An authorized representative may withdraw their bid at any time up to the opening time of the bid, but no bid may be withdrawn when the opening process has started.
4. The District will not be responsible for errors or omissions on the part of bidders in making up their bids. All bids must be signed by an authorized representative and any bid received unsigned will be rejected.
5. All bids must be submitted in accordance with the specifications listed. The bidder must note any exceptions to the specification on their Bid Form, otherwise it is determined that the bidder meets the specification listed.
6. The Bid Form shall be completed with each meter, endpoint, or other hardware to be listed separately. See Appendix A.
7. Bids must be completed in ink or type written. Failure to do so will result in the rejection of the bid.

8. Because this packet contains the terms, conditions, and specifications for the bid, the entire packet must be returned. An authorized agent must initial at the bottom of each page acknowledging that they have read the entire page.
9. All prices quoted shall be on a delivery prepaid basis to the District's Office located at 360 Ring Road, Elizabethtown, KY 42701.
10. Bidders are invited to attend the public bid opening, and to review the complete bid files after the bids have been opened. The District will also prepare and mail a bid tabulation showing all vendors' pricing.
11. If a bidder is not bidding on a particular item or items, that fact must be clearly stated.
12. Do not add or include Kentucky sales and/or use tax. The District will furnish the necessary exemption certificate, upon request.
13. The District shall make payment within forty-days after delivery of materials.

### III. ADDENDA TO SPECIFICATIONS

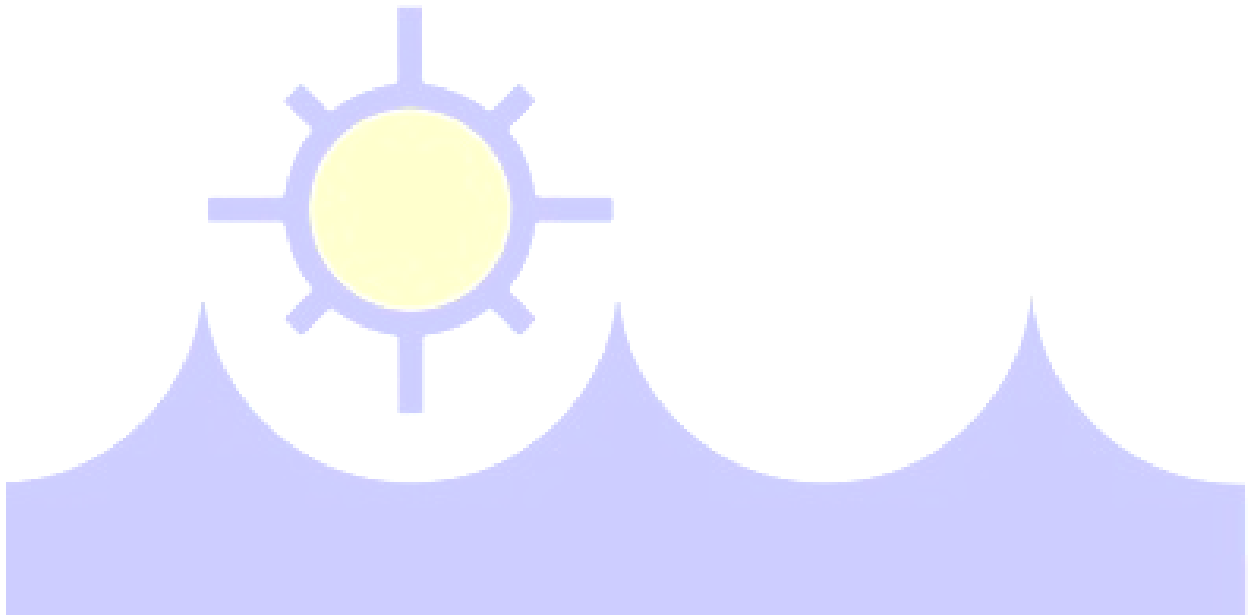
The District reserves the right to issue addenda(s) for the purpose of modifying the documents referred herein at any time prior to the day and time set for the opening.

### IV. QUALIFICATIONS OF BIDDERS

The bidder may be required, before the award of the bid, to show to the complete satisfaction of the District that it has the necessary resources, facilities, and ability to provide the services and or products specified. The bidder may also be required to give a past history and references in order to satisfy the District in regard to the bidder's qualifications. Should the bidder be deemed unsatisfactory the bid will be rejected.

## **PROJECT SCOPE**

Hardin County Water District No. 2 currently has approximately 28,000 connections serving Hardin, LaRue, and Hart Counties in Kentucky. The District's current connections are Sensus and Badger AMR water meters and Sensus endpoints.



# **SPECIAL INSTRUCTIONS**

## **I. INSTRUCTIONS**

1. The bidder in calculating the unit price must deduct trade and/or quantity discounts. The unit price on each bid item must be net.
2. All products delivered by the bidder must be new and cannot be ‘second’ quality or a “factory reject.” The District will not accept any products previously delivered to another customer and returned to the vendor for any reason.
3. Delivery shall be made to the District within forty five-days after the order has been placed. If the vendor does not make delivery within the specified forty five-days, the District reserves the right to cancel the order and purchase the items from another bidder.
4. Net payment terms will be up to 45 days from the date of the invoice.

## **II. TERM OF BID**

The term of this bid shall be for a period of two (2) years, from May 2017 to May 2019, unless terminated, canceled or extended.

# **BID EVALUATION PROCESS**

- I. All bids received from vendors will be reviewed and evaluated by the District Board of Commissioners and Staff. The following criteria will be used in making the selection:

<b>Criteria</b>	<b>Weighting</b>
Costs, including future costs	30 points maximum
Quality of Meters	25 points maximum
System and equipment capabilities, including compatibility with existing meters and software	20 points maximum
Ability to provide technical and service support	15 points maximum
System expandability/long range considerations	10 points maximum

- II. The successful vendor shall demonstrate their ability to deliver a metering system that adheres to the requirements outlined herein, support the system on an ongoing and timely basis, and provide references as to where such systems have been successfully installed and are currently in operation. Specific requirements of the metering system are detailed in this RFB, but may not be all inclusive.
- III. A short list of firms may be determined and bidders may be asked to provide a demonstration of their respective system to District officials. The focus of such a demonstration, if requested, shall demonstrate how well the proposed system will meet the District's requirements and needs.
- IV. The short listed vendors may be required to give District staff a site visit to the nearest location utilizing the proposed system.
- V. Each bidder shall be required to demonstrate that their system is compatible with existing District water meters. In the event that the system proposed by the bidder is not presently compatible with the present meters and system used by the District, the bidder shall detail what conversions are necessary to make it compatible and the detail of costs associated with the conversion.

## **METER AND SOFTWARE SPECIFICATIONS**

- I. Currently the District has two approved manufacturers Sensus and Badger as stated in January 2015 Board Minutes. However, vendors showing just case and pass the District's evaluation process would be considered with Board approval.
- II. The Vendor is encouraged to bid multiple models of the same meter size as the District uses various models based on customer needs. Sizes for standard meters range from 5/8" x 3/4" to 10". Meters 12" to 20" are to be mag meters. (See XIV of this Section)
- III. Compatibility - The proposed technology for reading the meters must be compatible with the District's current billing system, i-nHANCE/iCIS from Harris Computer Systems.
- IV. Bidder must state the cost of annual maintenance agreements on the software and hardware. Bidder must maintain their quoted price for a minimum of two years.
- V. Environmental Conditions – water meters must be able to consistently meet all of the performance expectations of this contract. Disinfectant residual in the system is in the form of chloramine and excess ammonia may be present in finished water.
- VI. Regulatory Compliance – water meters must be compliant with ANSI/NSF #61 Annex F, Annex G, and NSF372 in addition becoming compliant with any other relevant regulations that take effect during the contract period. All bidders shall supply certification of compliance with the bid proposal.
- VII. Quality Assurance – A copy of ISO 9001 registration shall be submitted with the bid proposal.
- VIII. Product Guarantee
  1. Coverage – The product guarantee shall apply to all meters, 5/8" through 10", registers, encoders, Automated Meter Reading (AMR) and Automated Meter Infrastructure (AMI) endpoint transmission devices, software and hardware reading and related equipment purchased by the District under this contract.
  2. Accuracy – Meters shall be guaranteed to meet or exceed new meter accuracy standards as stated in the latest edition of AWWA C700, C701, C702, C703, and C707 for a period of one year from the date of installation. Meters failing to meet new meter accuracy standards within 12 months of installation, shall be replaced free of charge or manufacturer's warranty whichever is greater. After the one-year period, meters shall operate at AWWA rebuilt meter accuracies for the life of the meter.
  3. Digitally encoded registers shall be guaranteed to meet all of the requirements stated in the latest edition of AWWA C707 for 15 years when matched with a meter of the same manufacturer and installed in accordance with the manufacturer's instructions.

4. Material and Workmanship – Meters found to be defective in materials and or workmanship shall be replaced free of charge for a period of 12 months from date of installation.
5. Housing – Meter housing shall retain structural integrity for at least 15 years from date of installation.
6. Meter Housing Serial Number – Serial Number for each meter shall be stamped in the housing use complete digits; dot matrix digits or other etching methods are prohibited.
7. Register – The sealed register shall be an encoder type electronic, digital register. The sealed register shall remain free from manufacturing defects in workmanship and materials, and guaranteed to function for a period of at least 15 years from date of installation. The meter register must remain free of condensation, moisture or other materials that would tend to obscure the register digits or disrupt the flow of digitally, encoded information. The register shall comply with AWWA standard C707.
8. Transmitting Device/Endpoint – The housing holding the transmitting device shall have the transmitting device unique identification number, the identification number that is actually transmitted for identification.
9. Limit of Liability – The forgoing guarantees apply to all meters installed and operated in accordance with AWWA M6 – “Water Meters” – Selection, Installation, Testing and Maintenance Manual.” Meters that have been damaged by willful misconduct, negligence, vandalism or an act of God shall not be applicable under foregoing guarantee.

#### IX. New Meter Test Requirements

1. Meter test results shall be provided with each meter certifying that it was calibrated and successfully passed AWWA new meter accuracy requirements as a complete unit at each of the required test flow rates.
  2. Meter test results shall be provided on an Excel format via email attachment. The test file shall include manufacturer’s serial number, flow rate, test results, meter size and date.
- X. Repair and replacement parts must be available for all meters, registers, encoder registers, transmitter (endpoint) devices and all other meter devices under this contract. Contractor is to furnish a copy of their catalog for replacement parts for repairs upon award of contract.
- XI. Meters 5/8” x 3/4” to 2” shall be in measures of US gallons and be capable of being read to the nearest 10 gallons, however currently the District’s meters are programed to read at the nearest 100 gallons. Meters 3” and larger shall be in measures of US gallons and be capable of being read to the nearest 100 gallons, however currently the District’s meters are programed to read at the nearest 1000 gallons.



XII. The register shall have a dial divided into gradients of down to 1/1000<sup>th</sup> of the units of registration. Register test rings shall be available for shop testing.

XIII. Laying lengths for small meters are as follows:

$$\begin{aligned} 5/8'' \times 3/4'' &= 7 1/2'' \\ 1'' &= 10 3/4'' \end{aligned}$$

XIV. Laying lengths of the meters larger than 1'' in retrofit instances will depend on the environment. However, typically laying lengths, for large meters are as follows:

$$\begin{aligned} 1 1/2'' &= 13'' \\ 2'' &= 15 1/4'' \\ 3'' &= 17'' \\ 4'' &= 20'' \\ 6'' &= 24'' \\ 8'' &= 30 1/8'' \\ 10'' &= 41 1/8'' \end{aligned}$$

XV. Meters 12'' and above will be mag meters with battery powered, submersible integral registers.

XVI. Meter Radio Transmission Device (Endpoint Device)

1. Meter endpoint devices shall provide two-way communication for mobile device data collection mode and shall have the capability to migrate to a fixed network mode.
2. The manufacturer will guarantee that the reading obtained electronically matches the mechanical odometer reading on the register.
3. The meter endpoint device housing shall be provided with a removable sticker with the transmitting device unique identification number and a corresponding bar code that represents the transmitting device unique identification number.
4. The vendor shall list all capable alerts and performance data that can be obtained for the meter or endpoint that is specified.
5. The vendor will specify the maximum reading distances for each endpoint specified.

# **BID ALTERNATE ONE – AMI SOLUTION**

## **I. AMI SCOPE OF WORK**

1. The AMI Fixed Base solution must be capable of meeting the data collection needs of the District now and in the future for a specified area. The scope of work involves, but is not limited to, providing and installing an AMI Fixed Base System which includes software, hardware, and all necessary training and installation support. The AMI Fixed Base System shall collect meter data and alarms from the utility meter base and transmit the data wirelessly “over-the-air” to one or more basestation data collection points. The AMI Fixed Base system should be compatible with Sensus, and Badger (ADE), (Incorporating Sensus protocols) water meters equipped with absolute encoder registers.

## **II. FIXED BASED SYSTEM OVERVIEW**

1. The Fixed Base AMI System must provide two-way communication from the Host Software/Computer to strategically located basestations and also have the ability to communicate down to the installed endpoint. The two-way communication should allow for time synchronization (+/- 1 Minute of NIST), firmware upgrade and programming options to the basestations and also the endpoints. These applications must be performed “over-the-air” and without the need to visit a location. The communication from the basestation to the endpoint must utilize a primary licensed FCC Narrow Band two-way frequency. The System must be capable of migration from mobile to fixed base AMI and shall allow data collection (manual, mobile RF, and/or fixed base) to operate together seamlessly in a mixed system that utilizes the same technology with a common interface to the District’s CIS. The System shall provide a secondary means of reading meters equipped via a vehicle or handheld device equipped with an RF transceiver.
2. The Fixed Base AMI System must be designed to provide coverage for all meters located within the specific utility territory to collect data. The Fixed Base System must have the ability to support conservation initiatives, off cycle reads, customer leak detection alerts, reverse flow and distribution line leak detection. During the programming initialization, the system should provide the ability to identify successful transmission and allow the installer the ability to verify transmission success while at the installation site. The data collection devices should incorporate a store-and-forward redundancy feature and should transmit the data to the back end system immediately upon receipt.

3. The Fixed Base Host Software shall provide numerous applications and/or feature sets to support various departments such as customer service, billing, operations, meter reading, revenue protection and others. The software should allow for configurable reports using the data collected. The software should provide pull down easy application screens for the end user to manage the system. Specific reports should be automated to inform the end user when alarm conditions occur or insufficient data has been collected from specific accounts and or regions. The software should also provide customizable usage graphs for applications that can be set to report daily/weekly/ monthly and hourly data. The system will also provide the ability to incorporate mapping capabilities for proactive maintenance and analyzing purposes.

### **III. AMI SOFTWARE**

1. The Host Software must provide all the control needed in the network and provide for the essential functions of network management, meter communications, reporting, database configuration and alarms monitoring. It shall comply with prevailing industry standards and should run on a Windows-compatible computer. The Host Software must be able to interface with handheld and mobile meter reading software to enable a mixed meter reading approach that utilizes the same technology. The Host Software must interface to the District's CIS/billing software. The meter reading data communicated to the CIS system shall be provided in an ASCII flat file format. The server hardware must be provided by the vendor for installation at the host site or the vendor may use a hosted/cloud approach for software and data management. If computer hardware is required, it is the responsibility of the vendor to include those costs in their bid proposal.
2. The Host Software must provide the ability to maneuver data to various reports and also to compatible software applications. The system should provide the ability to verify the percentage of reads received for particular areas and/or selected meter routes. This data should then be exposed to various configurable parameters set, such as high/low parameters to assure the accuracy of the data. Once this review has taken place, the data should then be grouped for exporting purposes to the billing and/or CIS system within the utility. The host software must also have the ability to group route information and both import and export that data to a handheld meter reading and/or programming device.
3. The Host Software should provide "industry standard" reporting and functionality. The vendor should include a detail list of the features and reports for the District to review. Samples of reports maybe requested during the evaluation process.

#### **IV. BASESTATIONS**

1. The TGB must demonstrate the capability to collect data wirelessly from the Meter Transceiver and communicate back to the Fixed Base Host Software.
2. The TGB must support two-way communications over an FCC primary licensed frequency with the Meter Transceiver and provide such functionality as priority alarms and over-the-air updates.
3. The TGB must be flexible with regards to installation option.
4. The TGB must be AC powered.
5. The TGB must provide memory back-up (30 days).
6. The TGB must be able to support and process up to 40,000 endpoints.
7. The TGB must have a battery backup capable of maintaining eight hours of support.

#### **V. SOFTWARE SUPPORT AND TRAINING FOR THE AMI SYSTEM**

1. The vendor will provide a complete set of installation and operating instructions for all the components of the fixed base system. Onsite training by authorized vendor personnel or their representatives must be provided. The vendor must also arrange a pre-deployment meeting to identify the critical path items for installation and training needs.
2. The vendor shall clearly state any annual cost associated with the software maintenance or support. The annual cost bid shall not increase during the term of the contract.
3. The Vendor shall be required to state its warranty and/or guarantee policy with respect to each item of proposed AMI equipment. The procedure for submitting warranty claims must also be provided.

#### **VI. ADDITIONAL INFORMATION**

1. If the vendor requires information for conducting a propagation study, GPS locations of meters, available tanks site information, and other pertinent information will be available via a secured Dropbox connection. The information provided is confidential in nature and is only to be used for this project only.

# BID ALTERNATE TWO – REMOTE SHUT OFF

## I. SPECIFICATIONS

With a system of nearly 28,000 connections and the regional demographics, the District experiences above average customer service transfers. These transfers could include obtaining a reading, turning off the service, turning on the service or similar activities. The District is looking for efficient alternatives to physical visits to customer service locations. For the following specifications, the “Device”, could be a meter, valve or other system.

1. The Device must have at a minimum of open and closed positions. Other positions should be stated in the vendor’s bid summary.
2. The Device must have its own power source. Specific power specifications should be included in the vendor’s bid summary, along with battery life expectancy.
3. If the Device is a meter, explain how that meter would integrate with the District’s current system.
4. If the Device is not a meter, explain how a reading may be obtained. If a reading cannot be obtain with your Device, explain the benefits of a valve only Device.
5. The vendor shall provide a sample of the Device at the time of the bid opening.
6. The vendor shall provide installation instructions and diagrams of the device in the vendor’s bid summary.
7. Vendor will give an overview of the supporting systems and/or software needed to accomplish remote shut off.
8. Vendor will supply initial cost and annual maintenance cost for any systems and/or software for Number 7.



**Addenda  
01  
For  
The Annual  
Material Bid**

Bid Number 2017-005



**Hardin County Water District No. 2  
Elizabethtown, Kentucky**

Open Date: April 13, 2017

Scott Clark, Administrative/Customer Service Manager  
(270) 737-1056 ext. 301

## **ESTIMATED BID QUANTITIES**

### **Hardin County Water District No. 2 Estimated Meter Size Quantities**

<b>ITEM NUMBER</b>	<b>DESCRIPTION</b>	<b>QUANTITIES</b>
1	5/8" x 3/4" Meter	3000
2	1" Meter	100
3	1 1/2" Meter	50
4	2" Meter	50
5	3" Meter	25
6	4" Meter	6
7	6" Meter	2
8	8" Meter	2
9	10" Meter	0
	<b>Total</b>	<b>3235</b>

\*These quantities are based on typical meter purchases before the acquisition of the City of Elizabethtown. These quantities are subject to change and are only estimates at the time of this bid.

## **SERVICE AREA**

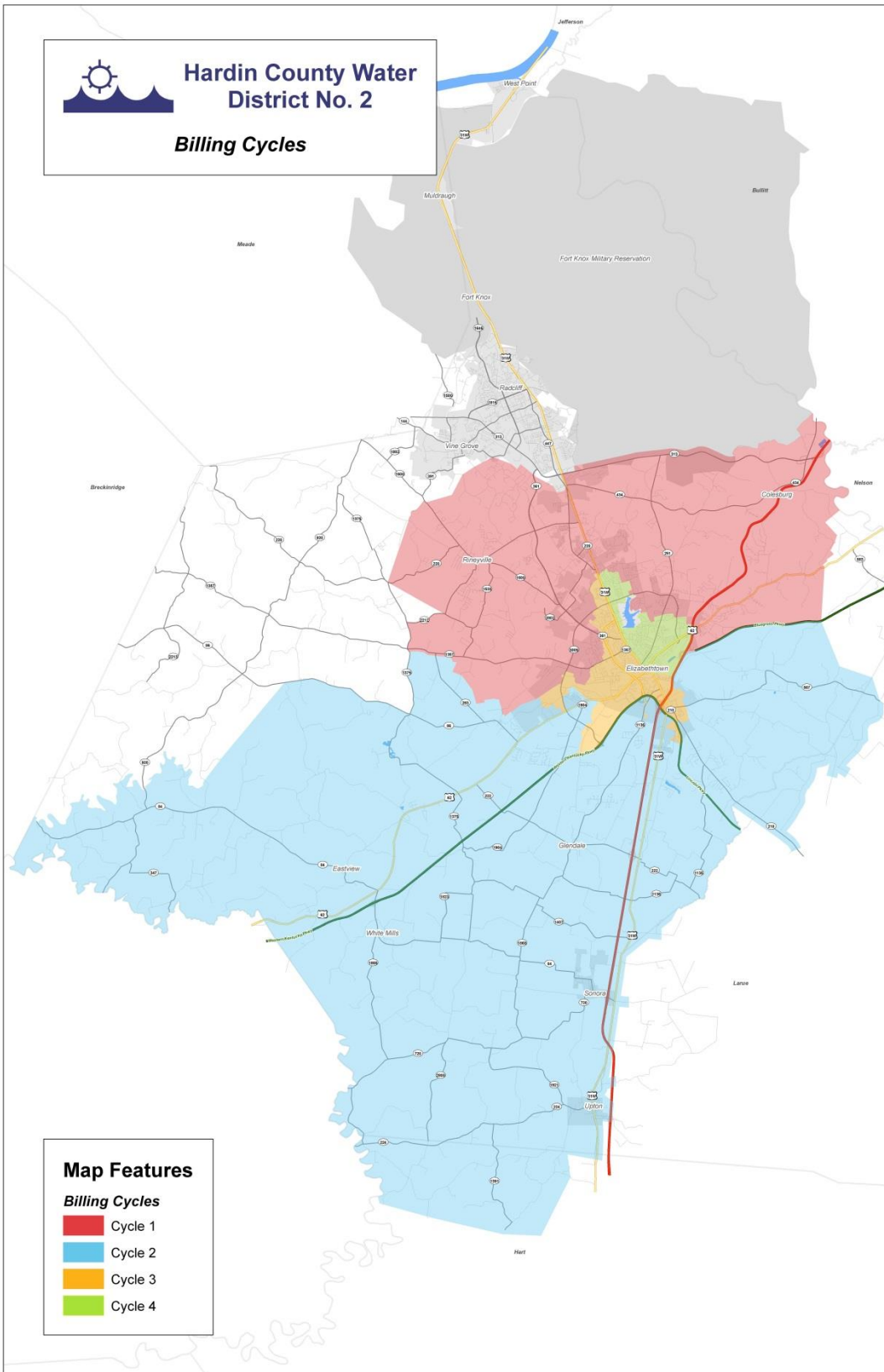
Hardin County Water District No. 2 service area includes Hardin, LaRue and Hart Counties. The service area is approximately 450 square miles with 1,000 miles of water main. The District understands that some areas, do to density, would not be covered through a "fixed based" system. The District is looking to cover its core population that encompasses the Elizabethtown Area. This can be defined by using Ring Road/Highway 3005 as outer part of the anticipated first step into a fixed based system. The vendor can include additional areas as it sees fit. All fixed based areas should be defined by the vendor and each area should be bid as a separate line item.





# Hardin County Water District No. 2

## Billing Cycles



### Map Features

#### Billing Cycles

-  Cycle 1
-  Cycle 2
-  Cycle 3
-  Cycle 4