

Question 1: How will power outages or lightning strikes affect meters or operation? (Those are not infrequent!)

Answer 1: Residential/commercial endpoints are battery-powered, so they keep measuring through power outages and resume transmitting when the network is back. Network equipment (base stations/repeaters) uses AC power with built-in surge protection and can include battery backups or fail-safe modes; installations follow grounding/surge best practices. If a network outage occurs, meter data is still logged internally and transmitted when service resumes—ensuring no loss in billing data or accountability.

Answer 2: Power outages have no effect on our meters or endpoints, as they are battery powered. Data is stored for 42 days in the event cell coverage is unavailable.

Question 2: In the event of needing repeaters for transmission, where will these go (easements), and how would they be powered and maintained?

Answer 1: Repeaters (if required) are typically mounted on Town-owned infrastructure, such as light poles, water tanks, or public buildings, to avoid easement issues. Power is usually via AC (standard wall outlet or hardwire), and solar-powered units are available in remote areas. Placement is determined by a propagation study conducted before full deployment. We (alongside the manufacturer) coordinate placement and manage installation and maintenance as part of the overall scope.

Answer 2: Our system is cellular based and does not require collectors or repeaters to be installed, nor maintained, by the town. AT&T and Verizon provide that support.

Question 3: What is the overall, long-term cost of these meters compared to existing style meters? Maintenance, replacement, IT and staff, trouble shooting, software updates, etc.

Answer 1: While smart meters have a higher cost than traditional mechanical meters from the 2000s, long-term savings are pretty significant due to:

- a. Elimination of manual reads and truck rolls
- b. Proactive leak detection
- c. Reduced billing disputes and re-reads
- d. Streamlined reporting and alerts
- e. Accuracy in meter usage and billing

Staff burden decreases as manual tasks are replaced by automated data collection and exception-based reporting. That said, costs will vary slightly depending on the platform selected. I am happy to tailor an accurate TCO comparison if you have a preferred system. (ref: [US EPA](#))

Answer 2: E-Meters, with ultrasonic technology, are typically warrantied for 20 years (10 full and 11-20 prorated). These meters will outlast mechanical meters by 5 or more years. Additionally, the improved accuracy increases revenue for the town.

Question 4: Whose responsibility and liability for any problems with operation?

Answer 1: Responsibility is shared across:

- Manufacturer: covers meter and endpoint equipment (typically 10–20-year limited warranty) along with network/software for ongoing connectivity, data transmission, and support.
- Installer (PWS): covers workmanship, programming, and field deployment. Our standard installation and workmanship warranty is 12 months.

These warranty terms are always outlined clearly in the contract so there's no gray area.

Answer 2: We provide 24/7 helpdesk support plus we have in-state technicians for onsite service if needed. The city staff will be provided with training as well for system maintenance and support.

Question 5: How long do the lithium batteries last? What type of battery and storage capacity are required? And have there been issues with them such as fires? What about malfunctioning, replacement, and recycling? Who is responsible?

Answer 1: Most AMI water meters use non-rechargeable 3.6V lithium thionyl chloride batteries with 10–20-year life, depending on the system and read frequency. I pulled two example product data sheets that note a 20-year life in this class. (ref: [Badger Meter](#), [Master Meter](#))

Fire incidents with batteries in all smart metering systems are extremely rare, as they are not charged in the field and are designed to be low-power and safe. At end-of-life, lithium batteries are handled as regulated waste for transport and are typically recycled via certified vendors; EPA/PHMSA guidance applies.

Answer 2: Lithium batteries are used in our meters and endpoints and are designed to last for 20+ years. No issues with fires with installed meters. Certain manufacturers do offer pickup for recycling, for a fee. Most utilities choose to recycle locally.

Question 6: Is our topography an issue with transmitting? Is there any way to test for potential issues and anomalies prior to replacing all the existing meters?

Answer 1: Yes, terrain can impact transmission. That's why a propagation study would be performed in advance. Any challenges from hills, metal lids, or topography are addressed through strategic placement of base station(s)/repeaters, field-testing with a pilot zone, or use of long-range RF endpoints (some reach 1–5 miles depending on conditions). We'd absolutely include this as part of the project planning.

Answer 2: Topography has not been an issue for our system. We run a "propagation study" prior to bidding an RFP, to ensure that there is sufficient cellular coverage. This study is at no cost to the town. All that we require is a list of the service addresses. We can provide a Pilot Study for proof of concept too. Note: Town of Clarkdale and City of Prescott have one of our systems.

Question 7: Are there privacy, security, and safety risks with use of these meters? Will there be an additional cost to opt out?

Answer 1: Privacy/Security: Water meters only transmit usage data, no personal identity, conversations, or video. Data is encrypted (often AES-128 or higher), and system access is role-based and logged. Standards align with AWWA and NIST cybersecurity recommendations for the water sector. (ref: [American Water Works Association](#), [US EPA](#))

RF Safety: The RF output from a smart water meter is extremely low, often lower than a baby monitor or garage door opener. One study equated standing 6 & ½ feet away from a water meter constantly for a month, the emissions would be equivalent to a phone call of 1.3 seconds on 5G/LTE. Other resources I found also consistently show that smart meter RF exposure is significantly lower than what we get constantly from cell phones and Wi-Fi routers. All meter manufacturers using RF are required to comply with FCC/WHO guidelines.

Opt-out: This is a policy call for Council. Across the U.S., some utilities allow opt-out with a manual-read fee, while others do not offer opt-out. I did some digging and linked some examples of each approach for reference. (ref: [Santa Monica](#), [Petaluma](#), [Paso Robles](#), [City of Peoria](#))

Answer 2: Our cellular system meets ISO 27001 and SOC 2 compliance for security, meeting banking level standards. There are no “opt out” costs or charges. A one-time fee for the Beacon website creation, plus billing interface fee and training are all that is required. The only ongoing cost is the Service Unit fees, per endpoint. No annual costs etc. Cancel anytime.