



AGENDA ITEM #16

**AGENDA ITEM EXECUTIVE SUMMARY
Village Board Meeting
7/10/2023**

Item Title: **Water Meters**

Staff Contact: Karen Young, Public Works Director
 Tom Dahl, Finance Director

NEW BUSINESS

VILLAGE BOARD ACTION:

Provide direction on the water meter replacement program.

Executive Summary:

The Village utilizes meters to account for the water used by customers. The Public Works and Finance Departments have been working together to audit the age, size and type of meters currently in service. In addition, options have been evaluated for potential upgrades to the type of meters used, how meters are read as well as improved technology to allow customers to monitor their water usage on demand. Staff is seeking feedback and direction regarding proposed changes as noted below.

Water Meters, Endpoints & Registers

The complete system to calculate and report water usage for each customer includes a combination of a water meter, endpoint and register. There are approximately 8,400 water customers.

Water Meters: The meter is used to calculate water usage. Current meters are:

- Disc style with several moving internal parts and pieces that are prone to wear due that negatively impacts the accuracy.
- 5-year warranty with 98.5% accuracy and 15-year warranty with reduced accuracy of 90% based on normal flow
- Low flow accuracy of 97% at 0.25 gallon.

Endpoints and Registers: The water usage is read through the use of endpoints and registers. Current endpoint and register technology utilized is called radio read, which requires Village staff to drive the entire town in a vehicle with specialized equipment to collect water meter data for the monthly water billing as well as final readings due to property closings or other special situations. The monthly readings take one to two days to complete. The current monthly cost

charged by the meter reading software host is \$0.04 per unit or approximately \$4,000 per year for all 8,400 units.

Replacement Program

The complete system (meter, endpoint and register) is typically replaced after 20 years due to the reduced accuracy of the meter as it ages. Past practice has been to spread out the replacements annually at a cost of \$80,000 (approximately 335 meters per year depending on meter size), so there was not a large influx of new meters at any given time. However; as part of the internal audit, it was determined that in 2024 there will be approximately 5,000 meters that are over 20 years old. Based on the quantity of older meters, it would appear that past practice was putting greater focus on replacing the register and endpoint and not the actual meter.

Pilot Program Cellular Meter Readings

Earlier this year the Village implemented a pilot program to test new meters, endpoints and registers that rely on cellular reading technology as well as the Beacon EyeOnWater application. There were 18 test locations included in the pilot consisting of residential, commercial, industrial and governmental customers. The EyeOnWater application includes a web portal and smartphone application that provides transparency with timely consumption data allowing users to monitor water consumption and create alerts for potential leaks. The feedback received from the test locations has been positive, with two locations detecting leaks once installed. The commercial user where the leak was detected was found to be consuming as much water on the weekend when the business was not open as it consumed while open during the weekday. The user was thankful to be notified about the leak and indicated that they would have never known about it without the EyeOnWater technology.

Modifications to Replacement Program

Based on the results from the pilot program, staff is implementing changes to the replacement program to improve the precision and long-term accuracy and efficiency of meter readings as well as using technology to create a better customer experience through the following:

Water meters: Introduce newer water meter technology that has:

- Ultrasonic technology with no internal moving parts
- A built-in register
- Greater low flow accuracy
- 20-year warranty with 98.5% accuracy based on normal flow
- Low flow accuracy of 97% at 0.1 gallon.

Endpoints: Introduce cellular read endpoints. Over time, this technology will eliminate the need to have an employee drive to gather meter reading data. The meter reading information would be downloaded via a cellular network and can be read in 15-minute intervals, if desired. In addition to improvements to Village operations this technology allows customer to monitor their water usage on demand through the Beacon EyeOnWater application. There is an increased annual cost for this service. If all remaining customers are converted to cellular, the annual cost would be \$75,000 or about \$0.73 per unit per month.

Implementation of Replacement Program

Staff has evaluated several options for completing the replacements system wide. Below are a few options, which include the following estimated costs to replace the meter and register and the cellular read endpoints and EyeOnWater application:

- **Replace 100% In One Year Utilizing Third-party Vendor**
 - Material Cost - \$2,674,647
 - Installation Cost - \$2,200,000
 - Annual Service Credit Cost - \$75,336

- **Replace 20% Per Year Over 5 Years Utilizing Third-party Vendor**
 - Material Cost - \$535,000 per year for 5 years
 - Installation Cost - \$440,000 per year for 5 years
 - Annual Service Credit Cost - \$15,000 per year increasing each year by \$15,000 until the final year annual cost of \$75,336.

- **Pilot Replacement Program Utilizing Village Staff**
 - Staff's recommendation is to complete a pilot installation program in early 2024 with an increased funding amount of \$125,000 (approximately 400 meters per year). The replacements for 2024 would include prioritizing the oldest residential units as well as a select group of larger size meters. The goal of this program would be to evaluate the number of units that can be replaced by staff and the timeline to do so based on the new types of units being installed. This will assist in further evaluating the future replacement program with the intention of bringing back a recommendation to the Village Board in 2024.

Implications:

Is this item budgeted? Yes, there is \$80,000 in the Fiscal Year 2023 budget which will be spent to replace meters and cellular endpoints. The Fiscal Year 2024 proposed budget would include \$125,000 for the 2024 replacement program.

Estimated cost: N/A

Any other implications to be considered? Due to lead time in taking delivery of the new replacement units, the Village Board would need to approve the order in July 2023 for the 2024 replacement units.

Strategic Priority:

Reliable Infrastructure
Customer Experience

Attachments:

none