



AGENDA SUMMARY EUREKA CITY COUNCIL

TITLE: Purchase of Water Meter Parts

DEPARTMENT: Public Works

PREPARED BY: Brian Issa, Deputy Public Works Director – Field Operations

PRESENTED FOR: Action Information only Discussion

RECOMMENDATION:

1. Appropriate \$350,000 from Water Reserves to account number 510-4206-2148; and
2. Approve purchase of a 964 registers/ERTs from Badger Meter for a total cost of \$191,113; and
3. Approve purchase of 2460 meter box lids from Badger Meter for a total cost of \$154,538.39.

FISCAL IMPACT

No Fiscal Impact Included in Budget Additional Appropriation

COUNCIL GOALS/STRATEGIC VISION

- Financially stable, effectively run City

DISCUSSION

The system for measuring water consumption is composed of several parts. Currently, usage is measured by a register which sits atop the brass meter body. Usage information is then transmitted via a radio antenna (ERT) locating in each meter box. That signal is transmitted every few minutes and is picked up by a receiver located in a service vehicle as staff drive routes around the city.

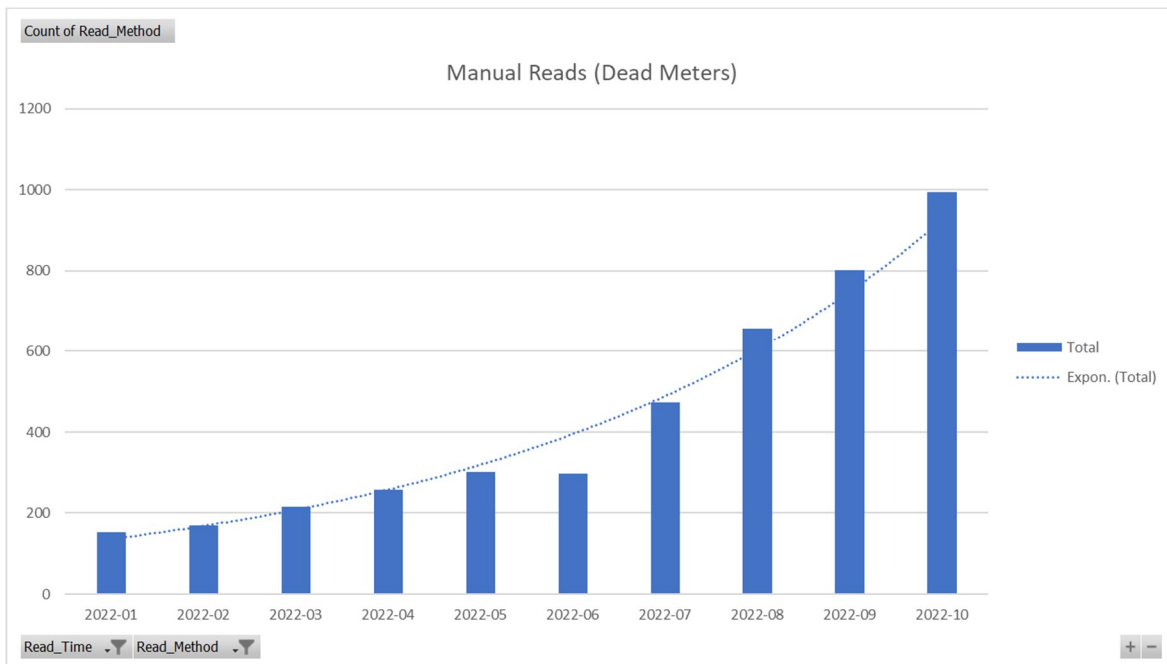
When a radio dies, it requires that staff manually read the meter, increasing both the number of staff and total staff time dedicated to reading meters each cycle. Typically, meter reading takes one person six hours. Under current conditions, it takes two people a total of over 100 hours to complete each read cycle. This will quickly become unmanageable as these same staff also attend to customer service (turn on and turn off requests), respond to emergency repairs, and perform normal system maintenance duties.



1. Brass Meter body with attached register and separate ERT

The current radios were installed in 2006-2007 and have a maximum predicted life of 20 years. Staff have been planning for replacement of the equipment by including a project in both the 2017-2022 water rate study, as well as the rate study currently underway. We have also performed extensive testing of the brass meter bodies and determined that they do not have to be replaced, saving the City considerable expense.

Some amount of radio loss was expected as we get closer to the 20-year lifespan of the equipment. However, in recent months, the radios have started dying at an alarming rate. Based on observations, the death rate for this equipment appears follow a logarithmic trajectory and will very quickly overwhelm staff's ability to keep up. The graph below shows the number of manual reads (dead radios) by month since the start of 2022. The system is losing radios at the rate of about 200 per month (2% per month).



Additionally, there continue to be difficulties in obtaining equipment due to supply chain issues. This is true of all meter manufacturers and does not seem to be getting better. Current lead time for radios is 120 working days (three months) and large orders are being only partially filled as companies try to spread what production capacity they have across all of their customers. These delays are not confined to electronics and are affecting all aspects of the industry including deliver of meter bodies and lids/boxes.

The result is that the equipment upgrades planned for summer/fall of 2023 are unlikely to proceed smoothly and on time. Staff are currently determining the best process for the replacement of the equipment given these constraints, but with the rate the equipment is dying, the City cannot afford to wait until summer to begin replacements.

This purchase will not replace all of the dead equipment, which currently numbers more than 1200 units. Delaying this purchase would result in a minimum delay of 3-6 months to replace that equipment, during which time, staff projects the loss of another 6-15% of the total meter population.

It should also be noted that the technology has changed since this equipment was purchased almost 20 years ago. The new equipment is cellular-based and communicates with the City's system using existing cell towers rather than by reading with a mobile antenna. Staff have been testing the cellular units over the last year and have been impressed. This change provides several advantages over the existing technology including:

- Meter reading is automated and continuous, freeing up field staff for other work
- Allows customers to interact with their data in real time to better manage usage through a customer web portal
- Allows for real time monitoring of leaks
- Allows customers to set leak parameters and receive texts or emails when leaks are detecting (as opposed to waiting a month or more under the current system)
- Continuous monitoring of City water usage patterns
- Continuous monitoring of signal strength and other measures of equipment function and tampering
- Ability to add automated meter valves allowing addresses with a pattern of monthly shut-offs to be turned on and off from the office
- A much more user-friendly way for staff to interact with usage data in order to actively manage the system to ensure compliance with state conservation requirements
- Monitor for backflow events

Given the emergency situation facing the City's system, the equipment manufacturer has offered to divert a shipment of 964 cellular units from another project for immediately delivery. The registers are \$72.50 each and the transmitters are \$125.75. Additionally, because the cellular units function best with different meter box lids than are present at many sites, it is necessary to purchase a tranche of meter box lids in various sizes, at a total cost of approximately \$155,000. This results in a total unplanned purchase of over \$346,000.

The budget within the Water Distribution Division is currently just under 50% expended halfway through the year. Given inflation in the cost of parts in general, it is unlikely that this purchase could be made from within existing line item allocations and still have enough money to make it through the fiscal year. For this reason, staff recommends approval of an additional appropriation to cover the cost of this equipment purchase.

REVIEWED AND APPROVED BY:

- City Attorney
- City Clerk/Information Services
- Development Services
- Finance
- Fire
- Community Services
- Personnel
- Police
- Public Works