



CITY OF MARSHALL

COMMISSION AGENDA INFORMATION SHEET:

MEETING DATE: January 14, 2016

PROJECT: Consider a report regarding the feasibility of converting to an automated fixed base (antenna) water meter reading system. (Public Services Director)

DESCRIPTION:

Since 2011, city staff have been researching, in great detail, the feasibility of replacing our hand-read water meters with an automatic drive-by radio (AMR) water meter reading system or an antenna fixed based – advanced metering infrastructure (FBMR or AMI) meter reading system. The AMR drive-by technique has been around for decades and involves meters that send a low power signal to a portable computer installed in a city vehicle – this system requires the vehicle to drive by each meter to download the meter reading. The fully automated AMI system is an advancement above the AMR system because it uses a series of radio antennas and repeaters and water meters with a high powered radio transmitters to communicate with a central “reading base” to instantaneously collect meter readings throughout our water utility system. Under an AMI operating system, data and operations allow a home base to execute commands with a meter or meters to check for leaks, remotely turn a meter off, check pressure reading, etc.

The advanced age of our meters leads to lower accuracy in meter readings. Low accuracy readings result in lower revenue; lower revenue often translates to higher rates to cover fixed operational costs. We previously compiled a meter report showing the age of our current water meter units in 5-yr increments – the results are as follows:

<u>Qty.</u>	<u>%</u>	<u>Age</u>
2,243	21.44%	0 to 5 years
1,445	13.81%	5 to 10 years
1,434	13.70%	10 to 15 years
1,292	12.35%	15 to 20 years
<u>4,050</u>	38.70%	20 and older
10,464		

*Meters normally have a 15 year life cycle, after which point they lose their ability to accurately read because of worn parts. The meter age report noted herein above shows that in a detailed survey in 2011, 51% of our water meters were over 15 years of age, with nearly 40% (38.70%) being 20 years old and older. Older meters will read lower, may not read at low flow, or may not read at all.

Water sales revenue is a large portion of our annual Water Utility budget (nearly \$5.9 million estimated in 2016); our sewer sales are based on water sales during the winter months of November, December, and January, so even sewer revenue is affected by water sales.

F Y I – Estimated Factors (approximately):

- 83% of our current meters that require hand reading, cannot be converted to radio or drive-by read.
- 100% of our current meters must be read by hand each month; requiring four full-time meter readers.
- Increased reading accuracy may result in increased water bills for some low read customers.
- Approximately 23% of our meter accounts may be held by residents below the poverty level or over age 65 (based on census information).
- About 29% of our residential accounts are paid late each month.
- Our water meter reading system consists of approximately 8,918 “active” standard 5/8” X 3/4” and 1” business and residential water meters; this program would only address the “active” water meters.

AMI (Fixed Base – Advance Metering Infrastructure) System and meter replacement:

- Auto reads 98% to 99% of water meters with click of a mouse.
- Estimated minimum 5% to 6% increase in revenue based on increased accuracy of newer meters.
- Opportunity to reconfigure the water rate structure and create a tiered rate schedule that rewards conservation and lower water consumption; a new rate structure could actually reward users who use less water.
- Conversion at one time would require an infrastructure, equipment, and software investment in an estimated range of \$2.25 million to \$2.5 million dollars; financially supported by increased reading accuracy revenue and lower operational costs, with a 8 to 10 year full payback.

FUNDING:

Acct. Name & No
Various Funds

Original Budget
To be determined

RECOMMENDED CITY COMMISSION ACTION:

Continue to investigate and report additional findings to the City Commission on the advantages and funding alternatives for converting to a fixed base automated meter reading system, supported by replacing older water meters with new accurate reading meters.

CITY CONTACT: J. C. Hughes, Public Services Director - 903-503-4503

ATTACHMENTS:

N/A