

Town of Milton

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A BETTER ACCOUNTING OF WATER USE

February 24, 2012

The following comes as a report of activity and proposed action regarding the difference between the amount of water pumped and the amount of water use metered over the last quarter. Approximately 29 million gallons was recorded as being pumped at our three wells last quarter. Approximately 18 million gallons was billed. This leaves a difference of 11 million gallons.

Obligation to Manage Resource

The Town of Milton is obligated to report its use of water pumped from the aquifer to the Delaware River Basin Commission. A 15% loss rate, between water pumped and water use metered, is the upper-end of an acceptable rate of loss. In the case of Milton, the “loss” of 4.35 million gallons would be acceptable. Our goal is not perfection. Metering an additional 6.65 million gallons during a quarter in which we pump 29 million gallons is the target. Accuracy that exceeds this mark would be better.

Metered Use versus Billed Use

There is no written policy regarding the billing of water used by our churches and the volunteer Fire Department. The one church that has a meter is billed for access, only. This flat fee is charged to every customer without regard to the type of customer.

Installing meters on all non-profit customers’ intake would help the town to meet its reporting obligations. If cost recovery is an issue, then the Council should undertake the task of creating a policy. The administration would then implement it.

Understanding the Types Customers and Our Priorities

#1 - There are old meters in inaccessible places, such as within homes. This lack of access gives us no ability to read and, therefore, bill the customer according to use. This type “No Read” is our top priority class of customers. They are all in the group that is not exempt from usage charges – so there will be a short period of time until we recover the cost of installation. There are sixteen (16) in this class of water customer. In the Plan of Work, these customers are on the first line.

There are old meters which must be manually read. A recent bench test of an “old” manual read meter versus a new radio read meter revealed an 11% under-read at normal flow conditions. Low flow conditions revealed an under-read value of nearly 70%. Low flow conditions include the flushing of a toilet at 1.5 gallons per flush. This means that water is being used, but not billed because of a lack of accuracy on the part of the old meters.

The greater discrepancy at a low flow rate is a matter of physics. It takes a certain amount of energy to make the impeller, inside of the meter, turn. And, the larger the pipe, the more energy is required. Therefore, the potential gain in usage/billing accuracy is greater when larger diameter old meters are replaced with the new, more accurate, model.

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#2 - The “Manual Read” class of customers is divided into three groups. The large diameter service customers are prioritized over the smaller diameter service customers. There are two customers with 4” diameter service, two customers with 3” diameter service and twenty-two customers with a 2” diameter service (one of these is not working at all).

The two four inch customers (the Fire Department and Atlantis Industries) are not likely to bring the Town much revenue for their limited “domestic” use of water. The three inch customers are schools. The two inch customers are the car wash and apartments. It is recommended that the 4” meters be installed last (after all residential customers in the 5/8” class are upgraded). The 3” and 2” customers, though, are in the second line of the Plan of Work. The number of customers in this class is twenty-four.

#3 – There are “Manual Read” customers that have existing meter pits in desperate need of repair. There is a potential for an emergency repair, with overtime expenses and the loss of a great quantity of water, here. The additional cost of the meter pit repair is noted in the Plan of Work. The number of customers in this class is thirteen. They are on the third line of the Plan of Work.

#4 – The balance of the residential manual read water customers (5/8” diameter) is forty-eight customers. This is our next priority. They are listed on the fourth line of the Plan of Work.

#5 – The meters at the pump and in the treatment plant are calibrated annually. The difference between the value recorded at the individual wells is quite close to the sum value of the amount that goes through the plant. Our readings are taken manually, though. These once or twice a day readings do not allow for us to gather insight into peak use periods. If we knew what was happening on an hourly basis and had a record-keeping mechanism for it, then we could identify anomalies. Events outside of the norm could then be investigated quickly.

Cost recovery for this investment of equipment is uncertain. It will, however, help us to better account for use and is recommended by our State Planner and advisor with the Delaware Rural Water Authority. This item is listed on the fifth line of the Plan of Work.

#6 – There are six homes with a 1” manual read meter and three businesses with a 1 ½” manual read meter. The sixth line of the Plan of Work includes these customers.

#7 – The last priority among the targeted customers is our two 4” meter customers, and two additional customers that use smaller meters that are oriented in a way that causes inaccurate readings.

The project will span several months. Our supplier has a history of working around our cash flow situation. Nonetheless, it is an un-budgeted expense and requires a commitment on the part of Council.

Please review the chart that follows and give this proposal your thoughtful consideration.

Thank you,

Win Abbott, Town Manager
Cc: Allen Atkins, Public Works Supervisor
Dustan Russum, Water Department Supervisor

WATER USE ACCOUNTING

PLAN OF WORK

Installation Type	Quantity & Cost Each	Total Cost
“No Read” – 5/8” Residential March 2012	16 x \$198.50 If a homeowner does not cooperate, there may be an additional \$1,200 per unit expense carried until it is paid by the homeowner.	\$3,176.00
“Manual Read” – 2” and 3” school, commercial, apartment April, May & June 2012	2 x \$2,075 22 x \$1,25.99	\$4,150.00 \$35,771.78
“Manual Read” – 5/8” Residential with meter pits July 2012	13 x \$198.50 (meters) 13 x \$292.31 (pits)	\$2,580.50 \$3,800.00
“Manual Read” – 5/8” Residential Oct. & Nov. 2012 (next fiscal year)	48 x \$198.50	\$9,528.00
Install remote read “3G Cellular” device at plant and on well pumps November 2012	1 x \$3,000 + \$65/year	\$1,065.00
“Manual Read” – other December 2012	6 x \$274.98 3 x \$579.00	\$1,649.88 \$1,737.00
“No Read” 4” & vertical installations January 2013	Approximately \$5,000.00	\$5,000.00
Total Upgrade Estimate		\$68,458

*Please note that non-compliant homeowners in phase one may bring about greater up-front costs. There are remedies for collection, such as service shut-off. But shut-off does not mean that payment for the construction cost of putting a meter pit at the curb stop will actually occur. A lien could be placed on the property, but that does not guarantee collection, either.

Please see the pages (attached files) that detail the units being under-charged (Super Condensed Meter Reading Report). And the one detailing the #G Cellular product.

At an 11% recovery rate (usage not accurately metered), the homes on this report would be paying for an extra 323,000 gallons per quarter. It is likely that even more would be recovered during the low flow rate periods.

Thanks go out to Allen Atkins, Dustan Russum and Robin Davis for providing much of the information necessary to complete this “Water Use Accounting” report and Plan of Work.

Win Abbott
Town Manager