

# Large Meters What Do They Really Cost?

By Russ Topp, Circuit Rider

I know large meters are expensive, but can you afford to ignore them? I just sat through one of Pat's water classes and the topic was water meters. Of course, residential meters are very important to maintain and replace. When the time comes, American Water Works Association (AWWA) recommends testing them at least every 10 years, but large meters are important, too. Large meters are much more costly and tend to be ignored for that reason. The presenter at the class gave an example of a water system that had a considerable amount of industry in their community. He said that 20 meters in that system used 80% of the water produced. This system replaces some of these large meters every month! If these meters get even 1% slow it costs the water department thousands of dollars monthly! I realize most small communities in Nebraska do not have this problem, but most do have at least a couple large meters. Most schools will have a large meter. Some other buildings may be: an apartment building, fire barn, locker, laundromat, hospital, jail, food or beverage processing plant, Co-op or agriculture spraying business, just to name a few. Typically these large meters lose the ability to register low flows over a period of time. Most meters have a leak detection device on them. It is usually a triangle or small wheel that indicates a very low flow. Simply watch the leak indicator and have someone flush a toilet or run a faucet slowly and see if it turns. If it doesn't turn you are not being compensated for any low flows into that building. This can add up to a considerable amount of money over a year's time.

AWWA recommends testing 3/4 inch water meters at least every 10 years, 2 inch meters every 4 years, 3 inch meters every 3 years, 4 inch meters every 2 years and 6 inch and larger meters every year. If you have high iron and manganese they suggest testing twice as often!

Another thing to keep in mind is the installation of these large meters. It is imperative to follow the manufacturer's installation instructions when installing large meters. I got on the web sites of a couple of manufacturers just to get an idea. Both manufacturers highly recommend using a strainer before the meter. This will reduce the amount of straight pipe required before the meter. The strainer actually straightens out the flow before the water enters the meter. It also filters out debris that may enter the meter and interfere with the accuracy. Without the strainer, 10 to 25 times the pipe diameter of straight pipe is recommended before the meter. This means a 2 inch meter would need a minimum of 20 inches of straight pipe before the meter. With the strainer, 4 to 5 times the pipe diameter of straight pipe is recommended before the meter. This means a 2 inch meter would need a minimum of 8 inches of straight pipe before the meter. 2 to 4 times the pipe diameter of straight pipe is recommended downstream of the meter.

Some other items that you may want to consider may be a bypass. Some installations, such as a hospital, may require a bypass. This will allow you to test and repair the meter without interrupting their service. Full open shut off valves should be installed for future maintenance and repair. An expansion joint will make it much easier to install and maintain the meter in the future.

The best advice I can give is to read and follow the manufacturer's recommendations concerning installation and testing for the most accurate meter possible.