
**NORTH OGDEN CITY
STAFF REPORT**

TO: CITY COUNCIL
FROM: BRENT TAYLOR, MAYOR
SUBJECT: WATER METER FAILURES
DATE: 12/30/2014

We have experienced a significant number of failed water radios in our water meter reading system. During our Work Session on January 6th we will have an agenda item to discuss the situation. Based on that discussion, we will get additional questions researched for you and then plan to bring the item back to you during a future meeting to request funds to replace the dead radio meters. Here is a summary of the situation:

Our system relies upon a radio to transmit the monthly reading of the water usage to City Hall in order to be billed. The majority of our current radio transmitters were installed *en masse* in 1997 when we first introduced this system. The radios had a 5 year warranty, but have lasted much longer. We usually see 250-300 failures per year, and have money budgeted to replace some of them every year. The last few months, however, hundreds have failed every month. The radios have simply reached their lifespan and are now failing in large numbers. This is expected to continue. Currently we have 1,700 meters that have failed.

We have confirmed that the meters have failed, because we have replaced the software and had the software contractor fly out to verify that the system is working. Public Works, Utility Billing, and the software contractor have literally spent hundreds of hours looking into the issues. We were already transitioning to new fixed-base radio meters that can be read from a single location (as discussed in the budget earlier this year). However, we were not planning on 1,700 meters to fail at once and the cost to replace all these meters is far more than what we have in the budget. The meters cost about \$240, and we are looking at a total of \$410,000 to replace the 1,700 radios currently dead, and an additional \$192,000 during the next 1-3 years to replace the remaining 800 meters installed about the same time (we plan to install these 800 as they fail, unless the Council wishes otherwise).

Craig expects that more meters will fail this winter, as it seems the cold ruins many radios that are teetering on the edge (many of the 1,700 radios died in the November cold snap that

hit). So, the cost could be even higher. There are funds in the Water Fund to cover these meters if the Council approves new ones. However, the Council will also need to look very closely at the sustainability of the Water Fund and a rate increase to cover the new meters. I am sending a letter to the many residents affected, so that people know the facts of the situation and know that the problem is not going to be fixed for several months. Craig recommends against replacing the meters in winter, because opening the water lids this time of year will allow in cold air that can cause pipes to freeze. We also would need to wait for the funds to purchase new meters to be budgeted, and for them to be ordered. There will be more information on this situation to follow.

Here are some questions and answers from Public Works Director Craig Giles about the meter situation:

Why is it worse to replace meters in the winter?

Not only are we dealing with winter conditions (wet and snow) we have to be considerate of the cold weather on the other components of the meter (wiring, register, meter) it's not impossible to replace, it's adds more cost (insulation) and the chance to freeze increases. Nobody likes opening meter pits in the winter if you can avoid it.

How have we verified that this is indeed a dead radio problem, and not another issue? What steps were taken?

The radios are sealed units so the steps are limited. We have the 'drive by' option and the 'hand-held' option and when both fail to read the meter we then conclude the radio is dead.

How many more meters may fail? How soon do we expect this to happen? How many meters have been replaced so far?

In the late 1990's approximately 4,000 meters were changed to the meters we now have. Those meters and radios had a 5 year guarantee. We have replaced approximately 1,500 in the last two years. With 1,700 being out at present time that leave about 800 that are left to be changed out. We were in the process of changing out 800 meters each year, hoping to get on top of the aging meters but as you can see the years caught up to us. We would like to change out these 1,700 now and the last 800 next year.

Is replacing the radios really the only solution here?

Yes, the radios are dead and the only option is to change them out for new ones. There is nothing wrong with the meters themselves, but with the radio reading, when we change these out we leave the meter in place and change out the guts.

What is the estimated cost to replace the 1,700 dead meter radios? What is the estimated cost to replace the number of currently functional radios that may fail in the next year?

The cost to replace the radio and the register (they are one unit now) with a 20 year warranty will be \$410,000. The cost of the last 800 will be approximately \$192,000. We have been budgeting each for replacements unfortunately they are dying quicker than anticipated.