



**CITY OF UMATILLA  
AGENDA COVER SHEET**

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**DATE:** January 16, 2014                      **MEETING DATE:** January 21, 2014  
**SUBJECT:** Water System  
**ISSUE:** Overview of Needs

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**BACKGROUND SUMMARY:** Please refer to attached memorandum.

**STAFF RECOMMENDATIONS:** Please refer to attached memorandum.

**FISCAL IMPACTS:** Please refer to attached memorandum.

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**COUNCIL ACTION:**

**Reviewed by City Attorney**    Yes                      No                      **vN/A**  
**Reviewed by City Engineer**    Yes                      No                      N/A



City of Umatilla

*Nature's Home Town*

Office of the City Manager

## Memo

**To:** Mayor and City Council Members  
**From:** Glenn A. Irby, City Manger  
**cc:** File  
**Date:** January 16, 2014  
**Re:** Overview of Water System's Needs

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### INTRODUCTION

During the morning hours of October 30, 2013 a 10 inch water main ruptured along Kentucky Avenue. Crews immediately attempted to isolate the break by exercising valves designed to turn off the flow of water to this immediate area. Unfortunately, this attempt failed and ultimately the city's entire system had to be turned off at the main plant. Making matters worse was that this section of pipe is located in a low area and water from multiple directions drained back into the trench dug to necessitate repairs. Water kept filling the trench hampering crews from making repairs and it became necessary to seek assistance from Utility Technicians with the much larger dewatering pumps. Eventually, after several hours, the system was back to normal operating pressures. Unfortunately, both restaurants and residents were without water and once the system was back on, a boil water notice was required by the Florida Department of Environmental Affairs [FDEP] until samples proved that chlorine residuals were at proper levels and remained stable; a three day process.

Staff was directed by the City Council to review the entire system and make recommendations on how to ensure that this situation would not occur again in the future. Staff began this process by reviewing what it knew went wrong and discussing alternatives. This memorandum is intended to report on various needs of the system and what can be done to greatly reduce the likelihood of a major waterline break in the future.

### HISTORY

Umatilla's potable water system is between 40 and 60 years of age. Of course, there are some areas that are much younger, but the majority of the system is aged. Like most things, a centralized water system and its accoutrements do not last forever and newer and better ideas and material are continually born and manufactured.

Umatilla has areas within its system that have pipe made of ductal iron and other areas with pipe of various quality. At the time of installation, the quality was likely thought the best available to the

market. However, progress has brought much better quality products to the industry. Low quality pipe by today's standards is thought to have been the culprit with the line that failed on October 30<sup>th</sup>.

## **APPROACHES TO REMEDIATION**

Staff has identified five solutions to accomplish overall assurance that should a line break occur in the future, and it likely will, the results will not be the entire city being without water. However, none of the suggestions are quick and none are considered by staff to be overly affordable. These sections will exam each option in some detail.

**A. System Replacement.** Ted Wicks is an engineer with intimate knowledge of Umatilla's utility system. He was asked to provide an engineer's estimate of what it would cost to replace all water lines and install new as well as replacement isolation valves [there are some areas without valves at all]. He provided a detailed list of pieces/parts, including installation that total \$4,032,017. However, this figure is questioned by other engineers and believed to be only half of the true cost. Until such an endeavor was engineered and results of a formal bid obtained, staff believes it prudent to rely on the higher number of \$8 million.

**B. Insert New Valves.** Action Industries of Silver Springs was asked to quote replacing all isolation valves. This is done by locating each existing valve and actually inserting a new valve behind the existing one. The cost quoted is \$1,040,687. It is believed that this would provide the system with adequate isolation needed when a break occurs. However, it does not address the aged pipe and it does not address locating/uncovering or covering newly installed valves or road repair. The location of valves would be done in-house and road repair would likely be done by other sources.

**C. Exercise/Assess Valve Condition.** Utility Service Company from Atlanta, Georgia is the company that has a contract with the city to maintain the water plant [paint, etc.]. They have a system whereby they will come in with mechanical equipment that will locate all valves and exercise them. During this effort they would assess the condition of each valve and make recommendations for repair or replacement, depending on condition. The cost to exercise and assess is \$55 per valve. It is estimated that there are 359 valves, including fire hydrant isolation valves, so the total would be approximately \$20,000. This amount does not include replacing valves found to be defective or ones broken during exercising.

**D. Purchase Valve Equipment.** Team Industrial Services, a company from North Carolina has equipment for sale that would allow city crews to install new isolation valves for a cost of \$118,000. This does not include the valves or restorative costs for roads and streets disturbed during construction. The valves would cost an estimated \$893,550 for a total estimated cost with equipment of \$1,011,550.

You will note that this total cost is slightly less than option "B" above and the city would be purchasing the equipment with this specific option. The reason is that the valves and installation are different along with the added cost of capital equipment purchasing with this option. Once valves are replaced city-wide, it is unknown if this equipment would have residual value or should be retained for future use. This option also does not address line replacement.

**E. Provide for Replacement In-House.** The city may have the unique opportunity to replace the entire distribution system in-house using two existing employees who are trained and experienced in this type of work. This option would require the city to hire a minimum of four additional personnel. All four new hires would be considered full-time temporary employees, paid

but with no benefits afforded full-time non-temporary employees. The city would have to pay FICA on wages, but they would not be eligible for health insurance or state retirement benefits. Two of the four temporary employees would be needed to fill the positions of the two full time employees assigned to the line replacement crew. The second two temporary employees would be placed on the newly created crew. A very rough estimate as to cost savings is 50% or up to \$4 million. A disadvantage to this method is it would be a relatively slow process compared to contracting with a company to do the work. A contractor might bring in multiple crews and in-house the city would have only one crew.

## **FINANCING**

Recently, the Council was given a presentation on financial sustainability of the City's utility system by a rate consulting firm. There is no way the system can withstand the fiscal impacts of any of these options at once. Should the council be agreeable to increasing user fees, any of these options could be financed.

## **CONCLUSION**

Five options are presented herein. Of the five, two contemplate full replacement of the current transmission water line system and the other three options regard valve exercising and/or replacement. All, except the exercising of the valve option is expensive, and even this option could result in a great deal of expense if a majority of the valves need replacing or break during exercising. Regardless, costs range from a low of \$20,000 for exercising valves to a high of \$8 million to replace the system including valves.

Was the line break of October 30, 2014 a fluke or the beginning of a complete system-wide failure? A direct and flawless answer is likely not to be had. The system is relatively old and there are many linear feet of pipe types no longer used in the industry, but this does not automatically mean a total system failure is guaranteed to happen at some point in the future. Will there be more line breaks in the future? Without a doubt breaks will occur, but such could happen with brand-new lines as well.

## **RECOMMENDATIONS**

Properly working isolation valves are seen as a must, because it is inevitable that a line(s) is going to at some point break. The entire city should not have to suffer. Staff believes location, exercising and replacement of those valves not working properly should be a first priority; therefore, a contract with Utility Services should be pursued. The company represented to Public Works Director Ken White they believe the majority of the valves will function properly.

If the Council is of the opinion that the system should be replaced, which would include the isolation valves, staff recommends two things: a) allow for the rate study to be finalized and new rate structure adopted, and b) direct staff afterward to seek necessary financing for system replacement over time using in-house labor. It should be cautioned that it is estimated a four man crew working a 40 hour week and installing 1,000 linear feet of pipe per week will take approximately 13 years to retrofit the city. This may seem like a lengthy time period, but if the city grows in population during this time, the expense would be spread over more taxpayers than there currently are.