



# CITY OF MANITOWOC

WISCONSIN, USA  
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15-255



## MEMO

**TO:** Public Infrastructure Committee  
**FROM:** Dan Koski, PE, Director of Public Infrastructure  
**DATE:** April 6, 2015  
**RE:** Zoo Aquifer Analysis

Members of the Public Infrastructure Committee:

As you know we have installed automatic livestock waterers at the zoo in an effort to control water costs. The other part of this issue has been looking at the water that flows through several of the exhibits, through the ponds and ultimately to the Little Manitowoc River.

Much of the challenges with this project has been the lack of accurate information regarding what actually exists at the zoo in regard to as built water lines, as well as safeguarding against the ponds freezing in winter. In addition, we wanted to ensure that whatever steps we take ultimately fit in with the recently approved Long Range Plan for the Lincoln Park Zoo. We have investigated numerous scenarios including lining the ponds and installing recirculating pump systems.

At this point, the best option appears to be installing a well to serve the ponds and aviary exhibits. The waterers will continue to use municipal water. In this manner, we should be able to control costs by substituting flow from the municipal water source to the well, and utilizing the existing plumbing.

An important first step is to ensure that the aquifer can handle this water draw. We have received proposals from four consulting firms to analyze the aquifer, obtain regulatory approval, design the well, and provide construction services. Out of the four proposals, AECOM provides the best option at a cost of \$14,800.00. Pump station design is not included in this cost estimate as that phase is dependent upon data obtained in the aquifer analysis.

The Northeast Wisconsin Great Lakes Sport Fisherman group may also be interested in cost sharing to upgrade the water supply to the fish rearing pond if data obtained determines this to be a possibility.

We are therefore recommending entering into a contract with AECOM for the sum of \$14,800.00 to perform aquifer analysis, well design, regulatory approval and bidding, and construction related services.

