

## LAKE VERMILION Water Supply Feasibility Report for Minnesota DNR



The Minnesota DNR is planning for construction of facilities at its newest park on the Iron Range. The Lake Vermilion State Park is expected to add camping facilities, a visitor center and new trails. To bring water to these areas of expansion the DNR selected PCE for a \$98,300 study to evaluate the options of using water from Lake Vermilion, connecting to the Breitung Township Water Distribution System, or a combination of the two. Several pipe alignments were investigated and rock profiles were developed for each alignment. Due to the rock profile in the park, installation of deep bury and shallow bury (with insulation) were evaluated. The lake water was tested for several water quality parameters. Treatment schemes were investigated and costs were calculated to treat the water. A system for addressing water stagnation due to long pipe lines and variable demand was also developed.



**Naeem Qureshi, PE** presented a paper, *Funding Crumbling Infrastructure*, at the Minnesota Public Works Association Fall Conference on November 21, 2013.

The paper discussed the increasing need for infrastructure reconstruction during a time of decreased revenue caused by lower demands. Communication and partnerships with local community leaders were highlighted as strategies that can lead to higher rates and increased revenue.

**David Brown, PE** has recently joined the PCE team as a Senior Project Manager in the water engineering group. Mr. Brown was recently President of Bluestone Engineering, an Arden Hills, MN based water engineering consulting firm. He is a licensed professional civil engineer in Minnesota, Wisconsin, North Dakota, and Illinois. With over 21 years of experience, Mr. Brown's extensive experience in water treatment, pumping, distribution & storage planning, design, and construction services is a great addition to the firm. Presently Mr. Brown is working on the design of a water treatment plant in Alden, MN and the design of two 2 million gallon ground storage facilities in Shakopee.



## BULLETIN

Winter 2013/2014

## ALDEN, MN Water Treatment Plant Design



The current Water Treatment Plant in Alden is over 60 years old. In 2012, PCE was part of the team retained by the City to evaluate the existing plant. The report recommended that the City construct a new plant adjacent to the existing one. The City hired the assessment team to design the new plant. The new \$1.2 million, 200 gpm gravity plant will use aeration to oxidize iron followed by filtration. A backwash recycle basin and 45,000 gallon clear well will be part of the project. New chemical feed equipment will also be installed. The project is expected to be bid in March 2014, with construction completed by the end of 2014.

## MN PUBLIC WORKS ASSOCIATION Conference



## PCE WELCOMES



The City of Lake Elmo is interested in purchasing water from the City of Oakdale to augment their supply and to serve part of their community. The City of Oakdale retained PCE to prepare a feasibility report regarding Oakdale supplying water to Lake Elmo. The report will include:

1. A model of the Oakdale Water Distribution System to determine the system's ability to supply a Maximum Day Demand of 900 gpm to the Lake Elmo service area.
2. A review of three, five, and ten maximum average day demands to determine how the firm well capacity combined with storage will meet Lake Elmo demands.
3. A cost of services rate study to determine water rates to serve Lake Elmo.



## OAKDALE TO LAKE ELMO, MN Cost of Service Study



The Study is expected to be completed in January 2014.

## COON RAPIDS, MN Well Rehabilitation



PCE successfully completed a \$3.9 million, multi-year well rehabilitation project from 2001 to 2005 for the City of Coon Rapids. The project involved the reconstruction of 22 wells and the East and West Booster Stations. In 2012, PCE started working on rehabilitation of four wells completed in the initial project of 2001. In 2013 Coon Rapids retained PCE to rehabilitate wells No. 19, 20, 22, and 23. The project will involve removing well pumps and motors to inspect the bearings and shafts. Worn out parts will be replaced and reconditioned. The project is expected to be bid in February 2014, with a completion date of May 15, 2014; prior to the start of the high demand season.

## SHAKOPEE, MN 2.0 Million Gallon Storage



In 2005 PCE successfully completed the design and construction of two 2.5 Million gallon prestressed concrete ground storage facilities, including a 20-foot deep valve vault. A recent Water System Study has shown the need for an additional 2 Million gallon ground storage facility to be located in the first high elevation service area that will feed the normal pressure zone by gravity. PCE is part of the team selected to complete this project and will be responsible for the design of the new tank and valve vault. The new domed tank is expected to be 105 feet in diameter and have walls 35 feet in height. The tank will be a prestressed wire wound type and will be located on the corner of Wood Duck Trail and County Road 17. The project is expected to be bid in March 2014. Planned completion date is November 2014.



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