

Summer 2017

## Water Supply Plan, City of Brooklyn Center



The City of Brooklyn Center selected PCE to complete a water supply plan. Earlier, PCE completed a water age analysis for the water system.

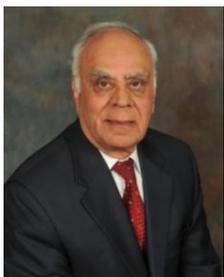
The study will involve completing a water supply plan to meet the Metropolitan Council requirements, updating and calibrating the existing water distribution model, and developing a uni-directional flushing program.

The flushing program will require importing the existing GIS files showing the appurtenances such as valves, hydrants, and pipes, plus running the program.

The other aspect of the study involves developing emergency and contingency plans. The plans will evaluate 16 scenarios. This includes loss of pressure, system contamination, water plant shut down, vandalism, power outages, major water distribution failure, well failure/loss of capacity, loss of communication, inter-connection with Brooklyn Park, and priority for Well #2 which is not connected to the water treatment plant.

The study will establish minimum pressure/elevation of water towers and reaction time for certain demand changes. Another aspect of the study will develop piping requirements and guidelines for temporary water piping in construction areas. A report will be prepared at the conclusion of the study containing the findings, conclusions, and recommendations.

## 2017 Public Works Annual Conference Presentation Orlando, Florida



Naeem Qureshi, President, Progressive Consulting Engineers has been selected to present a paper, "*Funding Crumbling Infrastructures*" at the 2017 Public Works Annual Conference (PWX) in Orlando, Florida on Sunday, August 27 at 2:30PM.

The presentation will discuss how communicating with the consumers in layman's terms can increase support and funding for infrastructure projects. For example, consumers can better understand 100 gallons rather than 1,000

gallons or 100 cubic feet. Making a small change in billing in a 100 gallon unit can increase the consumer understanding of what they are getting for their money.

Also, comparing the cost of a gallon of water, which typically costs \$0.004 to other commodities such as milk, beer, and coffee helps the consumer realize the comparative inexpensive cost of water.

# Bloomington Sam H. Hobbs Water Treatment Plant

The Sam H. Hobb Water Treatment Plant was built in 1973 and an expansion was completed in 2002. The plant can produce up to 14 million gallons a day. The filters in the original plant have provided good service for over 44 years. The City has decided to evaluate the filter to determine the condition of the media after 44 years service. The City selected PCE to conduct a filter evaluation of the original 1973 filter.



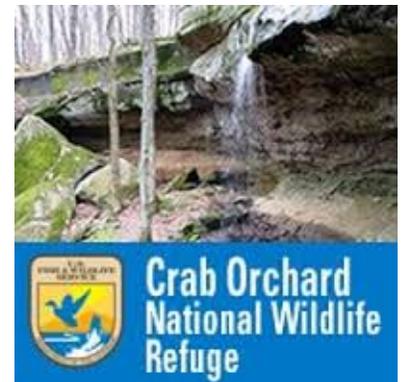
The filters will be observed during backwash to locate non-uniform distribution of backwash, which results from partially clogged under-drains.

The project will include measurement of free-board, filter bed expansion, core sampling of the media, and floc analysis to determine the effectiveness of the backwash in cleaning the media. Samples extricated by the core sample will be sent to the laboratory to determine effective size and uniformly co-efficient and will be compared with the design values.

A filter probe will be used to analyze bed fluidization during backwash. Samples of backwash water will be taken every minute during the backwash to determine the optimum duration of the backwash. A report with recommendations will be written at the conclusion of the study. PCE has successfully completed 34 similar studies on Water Treatment Plants throughout the State.

# Crab Orchard National Wildlife Refuge Water System

In 2008, PCE completed a study of the water system serving the Crab Orchard National Wildlife Refuge General Dynamics Complex and Southern Illinois University Facilities. Recently, the National Wildlife Refuge Region 3, the owner of the water system, selected PCE to design approximately 40,000 linear feet of new watermain and a booster station. The project is to be designed for construction in three phases.



The \$231,600 fee project includes water system update, fire-flow testing, and using the data to calibrate the model. The existing booster station piping is leaking and will be replaced by a new booster station with new pumps and controls. The booster station draws water from the City of Herrin water system and pumps it into the water towers serving the system.

The biggest challenge on this project is to maintain domestic and fire flow services during the construction of the new booster station and water mains. The fire flows for the General Dynamics location are quite substantial. In addition, there may be pockets of poor soil as the area has many lakes and wetlands.

It is expected that the plans and specifications will be completed this Fall and the first phase of the project will be bid this winter.

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