

PROGRESSIVE CONSULTING ENGINEERS, INC.
Civil • Water Supply • Municipal

WATER BULLETIN

Water System Evaluation, Rochester Public Utilities

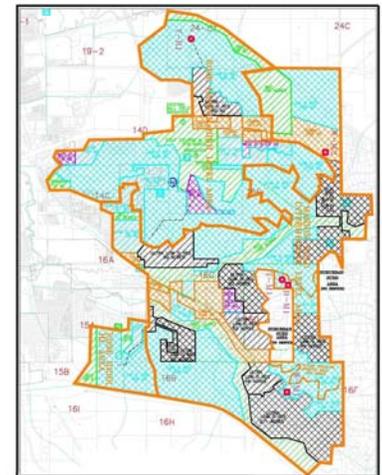
Rochester Public Utilities (RPU) selected PCE to provide services for the fifth year (2010) phase of a five year water system evaluation.

The proposed analysis for the year 2010 was Rose Harbor/Marion Service Area (RMSA), and included:

1. Evaluating the additional future water supply and storage needs prepared by RPU for RMSA.
2. Updating the existing RPU RMSA computer model to reflect peak day water demands.
3. Reviewing and integrating the diurnal demand curves provided by RPU into the RMSA computer model.
4. Preparing an ultimate computer model for RMSA to reflect future average and peak day water demands based on information provided and the existing and ultimate build-out infrastructure.
5. Evaluating and providing recommendations for water system infrastructure additions to meet the existing and ultimate water demands.
6. Determining the trunk mains location and size required for efficient use of existing and recommended future water storage tanks and wells within the RMSA.

The analyses included modeling the distribution system using Bentley's WaterCAD software-V8i edition for the extended period simulation (EPS). Using the modeling results, PCE made recommendations regarding the supply, storage and distribution needs of the expanding water system. Pressure and fire flow analyses were also completed to determine if the area will have sufficient pressure and fire flow at present and in the future when demands increase.

PCE provided a brief report containing the modeling results with necessary recommendations for additional wells, water storage facilities, or distribution system water main additions to meet present and ultimate water demands in RMSA.



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Water Rate Study, St. Louis Park, MN

The City of St. Louis Park currently has a 3-block (3-tier) inclining rate structure for their residential customers and a flat rate for commercial and irrigation customers. A recent study by another consultant recommended that the City also implement a 3-tier rate structure also for commercial customers. The City of St. Louis Park wanted to explore other options and directed PCE to update the water rates to meet the water utility, operation, maintenance and capital expenditure requirements to determine other options for implementing conservation rates.

During this study, the water rates will be developed according to the methodology described in the American Water Works Association (AWWA) Water Rates Manual (M1) using the Base-Extra Capacity method. The rates developed will have a fixed customer charge and a

volume-based charge known as a commodity charge. A 3-block inclining rate structure will be developed for the residential customers similar to what they have at present. However, since the city has separate irrigation meters for commercial and industrial customers, a flat rate with separate irrigation rates will be developed for the commercial/industrial/institutional customers.

The report will be prepared at the end of the study containing the methodology and the recommendations for the new rate structure that will ensure that the City will generate sufficient revenue to create a cash balance for routine expenses and capital improvement projects and any unexpected expenses that may occur in the future. The rates will satisfy the DNR requirements for a water conservation rate structure. The final report is scheduled to be submitted to the City by mid August 2010.

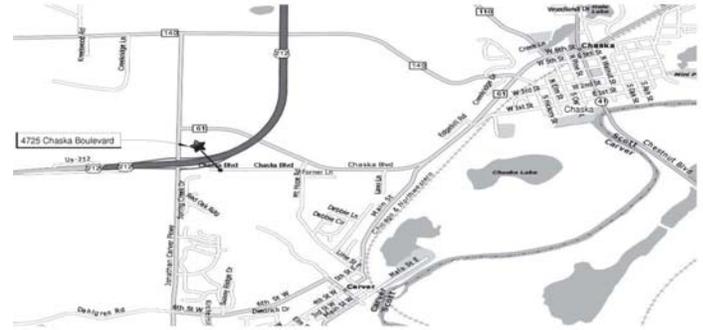
Water Supply MnDOT Chaska Truck Station, Chaska, MN

The Minnesota Department of Transportation (MnDOT) is constructing a truck station and future cold storage building in Chaska. The site is located at the western edge of the City of Chaska away from City water and sewer system on new Trunk Highway 212. MnDOT decided to construct their own water supply system. The design team directed PCE to design a new well and iron and manganese removal water treatment plant along with a chemical feed system and back-wash recycle basin.

The well will supply up to 55 gpm for the domestic supply for the office area and up to 100 gpm for the truck area for filling the trucks and washing down the salt during the winter.

The scope of work for PCE will include researching the well logs in the area, preparing a well profile for new well showing the geology, preparing plans and specifications for the 100

gpm well, sizing the treatment units, and preparing final plans and specifications for the treatment plant design to remove iron and manganese. The scope also includes providing construction period services including shop drawings review and site observations once the project is bid.



Water Treatment Plants No. 1 and No. 2, Goodview, MN

The City of Goodview constructed two pressure water plants for the removal of iron and radium. Plant No. 1 has a capacity of 600 gpm and treats water from either Wells 1 or 2. Plant No. 4 has a capacity of 900 gpm and is designed to remove iron and manganese from Well No. 4. Both of these plants have been in operation for about a year. The plants are producing excellent water quality results well below the standards for radium, iron and manganese.

The hydrous manganese oxide feed rates have been gradually reduced, while the levels of total Radium 226 and 228 have remained well below the standard of 5 pCi/L, gross alpha of the effluent is also below the standard of 15 pCi/L. The level of iron and manganese is below the standard of 0.30 mg/L for iron and 0.05 mg/L for manganese.

The tables show the results for radium, iron and manganese.

Radium Results Plant Effluent					
Date	HMO Feed Rate mg/L	Filter Plant No. 1		Filter Plant No. 2	
		Gross Alpha pCi/L	R 226 + R 228 pCi/L	Gross Alpha pCi/L	R 226 + R 228 pCi/L
8/20/2009	1.00	2.92	0.1513	2.56	0.377
11/20/2009	0.50	0.15	0.153	0.786	1.1069
3/15/2010	0.25	1.62	0.122	0.793	0.1304

Iron and Manganese Results								
Date	Filter Plant No. 1				Filter Plant No. 2			
	Iron		Manganese		Iron		Manganese	
Sampled	Raw	Treated	Raw	Treated	Raw	Treated	Raw	Treated
6/17/2010	0.62	0.03	0.816	0.016	0.68	0.02	0.856	0.02

Presentations

Jeny Shah made a presentation to the Minnesota Rural Water Association Conference in St. Cloud, MN on March 3, 2010 entitled "Water Sustainability Through Conservation".



Adam Kramer, P.E. made a presentation to the American Water Works Association (AWWA) Metro Operator's School on April 6, 2010 entitled "Chlorine Regulations".



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