

Minutes

NEW BERLIN UTILITY COMMITTEE

August 21, 2001

Members Present:

Alderman Gallagher, Alderman Ament, Alderman Thomas, Mike Holzinger (Director Finance and Utility)

Others Present:

Mayor Wysocki, Aldermen Bullerman, Scheuble, Wilkens and Chiovatero, Tom Krumplitsch (Utility Operations Manager), Larry Wilms (Division Engineer) J.P. Walker (Interim City Engineer) Steve Schultz and Dr. John Jansen of Ruekert - Mielke

Excused:

Robert Dude (Citizen Member)

Alderman Gallagher called the meeting to order at 5:19 p.m.

ITEM 23-01

Approval of Minutes of July 31, 2001

MOTION by Mr. Holzinger to approve the minutes of the Utility Committee Meeting of 7/31/01. Second by Alderman Thomas and approved unanimously.

ITEM 24-01

Lake Michigan Water Study

ITEM 25-01

Geophysical Logging Study, Well No. 8

Presentation by Ruekert-Mielke began with a brief history of New Berlin's Water System from the 1960's through current day. The 1960's saw local subdivision systems created, Municipal system proposed, Milwaukee water investigated, and groundwater system installed. In the 1970's additional wells were drilled, private systems were connected, storage facilities were expanded, and distribution systems were also expanded. The 1980's saw an additional well added, additional storage added, distribution system expanded and the Water Study begun. In the 1990's, the Water Study was completed, new shallow wells were investigated, new wells were drilled, a new tower constructed, and the Water Study was updated.

The presentation went on to show the current water supply efforts, which included the Lake Michigan Water Supply Study, Phase One paper geophysical study, Phase Two field geophysical study, and Well No. 8 field and sample analysis. The options for future supply were then addressed. Lake Michigan Water Supply source, Groundwater supply source, and combined lake Michigan and Groundwater supply source are all options.

The next item to be presented was the historic water demands. Those included, residential at 252 gpcd, industrial at 2,281 gpcd, commercial at 1,351 gpcd, and public at 2,216 gpcd.

The analysis of various records to determine probable future factors followed. Those included recent patterns, evaluate large users separately, 95% confidence level, residential at 247 gpcd, commercial at 799 gpcd, industrial at 1,350 gpcd and public at 1,150 gpcd and unaccounted at 10%.

The presentation went on with Fire protection levels recommended by ISO. Those are based upon the amount of water needed for fully engulfed fires, larger for commercial and industrial areas, at 3,500 gpm for 3 hours which equals 630,000 gallons.

Projections of new customers by class taken from Land Use Plan was the next item discussed. Those results show 271 commercial, 37 industrial, 6 public and 3,538 residential ultimate new customers for the MMSD Ultimate Service Area by 2010, and only slightly more by 2020.

The projections of new customers times the water use factors equal the demand. By 2010, use on the average day will be 4.05 MGD. A peak day will be 9.52 MGD. By 2020, the average day will be 4.29 MGD, and a peak day will be 10.07 MGD. In the Ultimate example, the average day will be 4.51 MGD, and peak day 10.61 MGD.

The existing system inventory was then discussed. We currently have 9 wells and pumping stations. Total capacity of 9.61 MGD with all Wells in full service, 2.75 MG ground storage, 1.75 MG elevated storage, 1.48 miles of water main, 4 pressure zones and the SCADA system monitoring the entire pumping and distribution.

The presentation then moved on to the historic and recent well pumping capabilities. Historically, with all wells in service and the largest down for maintenance, the average day was 3.25 MGD, and the peak day at 7.16 MGD with the available capacity at 7.70 MGD. In the summer of 2001, with reduced capacities and mechanical failures, an average day in July was 4.29 MGD, and the peak day at 6.79 MGD with the available capacity at 6.62 MGD. These figures, and a chart diagramming those figures show that demand is outpacing supply.

The EPA drinking water standards determine the required water quality was the next issue to be presented. Those standards include bacteriological, organics, secondary standards (aesthetic only) include inorganics, radionuclides and arsenic. The recent radionuclide rule affects six of the City wells. All six exceed limits for both radium and gross alpha, with the gross alpha increasing, the radium levels steady, and compliance being required starting in November of 2003.

The presentation continued with facts about Southeastern Wisconsin's three main aquifers, two shallow aquifers (glacial drift and dolomite aquifers) both connected to surface recharge, and a regional confined aquifer with little local recharge. They went on to explain the benefits and drawbacks of each. In New Berlin, there are three dolomite wells, No. 2 at Glendale Park, No. 9 at Valley View, and No. 10 at Westridge. No. 6 at Regal Manors was abandoned. There are six sandstone wells. No. 1 Forest View, No. 3 Rogers Drive, No. 4 Green Ridge, No. 5 Regal Manor, No. 7 National Avenue, and No. 8 Valley View. Dolomite wells have fractured flow patterns; enabling water to travel long distances, and a yield of 600 – 700 gallons per minute, however, they are more susceptible to surface influences. There are currently no problems with the existing three wells. The deep sandstone aquifer is a major source of water, yielding over 1000 gallons per minute, but has problems with radionuclides, saline water, and arsenic, declining levels and long term viability. Future supply from sandstone will be limited. Reduced pumpage will help salinity problems, may reduce radium, regional decline will lessen, and as water levels stabilize, will be less costly to pump.

Future water needs will need to be met using one, or a combination of one or more of the following: shallow wells, sand and gravel, dolomite, deep sandstone, or lake Michigan Water source. When considering Lake Michigan Water, the following options are available; City of Milwaukee in Hales Corners and Greenfield, City of Milwaukee through West Allis, City of Oak Creek or City of Oak Creek through Franklin. The Milwaukee option is viewed as the most cost effective as: the mains are in place, there is sufficient capacity, they are willing to negotiate, the quality is excellent, there is surplus quantity, and it is a long term source. There are however the political obstacles to overcome, and current diversion issues.

Future water needs will also need to consider two service area options. 1) Serve the entire MMSD area would need CGLG approvals, would mean a lengthy process, would not address the immediate needs, and it would involve negotiations with Milwaukee re future development. 2) Serve only up to Subcontinental Divide would need only DNR approval, less time, still does not address the immediate needs, but future development issues are less. Under either option, new wells are needed for hot, dry weather issues, quality of life, increasing use, fire protection, equipment failures, and a diversion may not get approved.

Cost estimates were charted in millions of dollars, and break down as follows:

All Ground Water All Lake Water Combined System

Capital costs 14.53 11.54 14.25

O & M costs 28.12 40.73 33.57

Total \$42.65 \$52.27 \$47.82

The presentation continued with the potential next steps. Drill test wells, begin discussions with Milwaukee water, explore diversion with DNR/CGLG, and finish Well No. 8 remediation. The Well Siting Investigation update showed charts and maps including potential sand and gravel aquifers, contaminant source inventory, potential

exploration areas, seismic refraction surveys at three sites in the eastern half of the City, electrical resistivity survey at those same three sites, the Gatewood Park resistivity data, the TEM survey at two sites, potential deep sand and gravel deposits at the Johnson Gravel Pit site, and finally, the test drilling results showing: New Berlin Hills no prospective and Gatewood Park insufficient sand and gravel. At the Theater site two borings with one prospective test well site, and at Johnson Pit, five borings with three prospective test well sites.

On the issue of the Well 8 Logging study, the presentation showed that the water quality would improve to near original conditions by reducing pumping rate to 700 gpm, that the lower portion of the well produces saline water, and that saline water zone is likely to contain elevated radionuclides. Sealing the lower 200 feet of the well is expected to significantly reduce salinity, and reduce radionuclides. Sealing procedure will unfortunately also reduce capacity of the well. Work will be completed after peak pumping period and after the results of the Waukesha Well 9 are available.

Mr Schultz and Dr Jansen took questions from the committee as well as citizens in attendance.

ITEM 26-01

Rebatzke Storm Sewer Backup Claim

Item was deferred

Motion to adjourn at 6:50 by Alderman Ament, second by Alderman Thomas and carried unanimously