

SELECTMEN'S WORKSHOP
Minutes of 06-29-09
4:20 p.m.

Selectmen:

Peter F. Brothers, Chairman
Miller C. Lovett, Vice Chairman
Robert C. Flanders
Charles G. Palm
Colette Worsman

Co-Interim Town Managers:

John C. Edgar
Brenda L. Vittner

Recording Clerks:

Karin Landry

Call to Order: Chairman Peter Brothers called the meeting to order at 4:20 p.m. He introduced the Board, Co-Interim Town Managers, and the Recording Clerk, and made announcements pertaining to cell phones.

W 09-32 Water System Committee Update

Co-Interim Town Manager John Edgar introduced the matter. The Water Committee's Third Report to the Board of Selectmen was made available to the Board and media prior to the meeting. Water Committee Chair David Thorpe summarized the Report, dated June 29, 2009, on behalf of the Committee. Most of the Committee members were in attendance. Mr. Edgar encouraged the media to follow up with Mr. Thorpe or Water & Sewer Superintendent Brian Carroll at the conclusion of the meeting if they have any questions.

The presentation to the Board included:

- **Overview and Executive Summary**

Since the Committee's last update in the fall of 2008, five citizen members have left the Committee and three have joined the Committee. The three new members are Paul Anderson, Dan Cornelissen, and Tim Goodheart. Mr. Thorpe recognized the efforts of Town staff including Brenda Vittner, Linda Labraney, Lee Bavis, Michelle Therrien and Karin Nelson, in assisting the Committee with its work.

The evolution of the work included:

- Emergency investigation: April 2008 to October 2008. Complete.
- Comprehensive assessment of the water treatment plant: August 2008 to present. 80% complete.

- Analytical look at usage, peaking factors, unaccounted-for losses, quarterly distribution, and long-term demand vs. capacity: October 2008 to present. 90% complete.
- Business Assessment: April 2009 to present. 25% complete.

The completed and committed repairs and maintenance since September 2008 have cost approximately \$180,000.00. Additional repairs and maintenance over the next year will total an estimated \$100,000.00.

- **Summary Information**

Plant Capacity. Mr. Thorpe reviewed the plant capacity as of September 2008 and June 2009, and the projected capacity for September 2009, including raw water input, filter beds(4), clarifier, finish water pumps, and the balanced plant capacity. The plant was not capable of running at full capacity, as believed at the time of the first spare capacity study. The balanced plant capacity is projected at 98% by September 2009.

Recent Maintenance and Plant Condition/Status. Mr. Thorpe reviewed the various measures that have been taken to maximize available spare capacity. Extensive work on the raw water system, particularly upgrading affluent piping from a four to eight inch diameter, dramatically changed the capacity of the filter beds and the amount of time they must run. Once two finished water pumps are replaced this fall, the balanced plant capacity is predicted to be 900,000 gallons a day. That estimate is dependant upon the clarifier being correctly designed. The clarifier cannot be tested until the pumps are replaced. Upon investigation by Mr. Carroll, it was determined that the SCADA system could be updated instead of replaced, at a savings of approximately \$103,000. Enough data has been compiled to update the computer model of the entire distribution system. There has been tremendous conservation from reducing blow offs.

- **Operations and Production Data**

Mr. Thorpe reviewed the finished water consumed, useable storage tank capacity, plant operating hours, billing cycle, unaccounted-for losses, blow off rates, and power consumption for May 2008 and May 2009. Town consumption seems to be down from historic levels, but more data must be gathered in order to know for certain that it is a lasting trend. The usable storage tank capacity has increased to 650,000 gallons, which is very helpful in terms of managing filter run times. The billing cycle has been adjusted to coincide with calendar quarters. There has been no progress on unaccounted-for losses. With more accurate metering and consistent reporting, it is hoped that some of the losses will be identified. There is no information available on power consumption at this time. Mr. Carroll will follow through with providing that information.

Dialogue ensued regarding industry standards for unaccounted-for losses. The New Hampshire Department of Environmental Services and American Waterworks standards are between 10-15%. The Committee's goal is to reduce unaccounted-for losses to 20%. Superintendent Carroll would like to see them reduced as low as possible. Measures are

being taken to meter seasonal users and various uses that have not been metered in the past. There are no known major leaks in the system at this time.

As a result of more efficiently operating filter beds and increased use of the storage tower, the operational hours of the treatment plant have almost been cut in half, significantly reducing energy consumption.

- **Water Service Area**

Draft Water Distribution System Map: The water distribution system with hydrants, blow off locations, the present storage tower, potential new storage tower sites, additional distribution system required for new storage towers, public community wells, parcels connected, parcels not connected, and conservation areas have been identified in a draft water distribution system map. Once finalized, the map will be referenced in the Water Use Ordinance.

Dialogue ensued regarding potential new storage tower sites. A site in the Barnard Ridge area, will require an extension of the distribution system, but will provide a high level of redundancy in the system. Before making recommendations pertaining to maintaining or expanding surface area, and allowing for future development, Selectman Flanders would like the Board to review an updated hydraulic model once projects that are currently in progress have been completed.

Definition of Service Area in Water Use Ordinance: The verbal definition of the map used in the Ordinance must also be updated.

- **Demand vs. Capacity**

Usage, Peaking and Unaccounted-for Loss Factors: Mr. Thorpe explained the methods used to determine actual Meredith usage rates, typical water consumption per person, typical number of residents per household, peaking factors for months, quarters, and years, and unaccounted-for loss rates. He set forth the available spare capacity guideline usages set forth by the DES and the Meredith Actual Usages for residential usage per person (average annual daily usage and maximum quarter daily usage), occupancy per household, and household daily usage (average annual daily usage and maximum quarter daily usage). The results show that Meredith usages and household occupancy are significantly lower than the DES guidelines. In part, the numbers vary because the DES guidelines are based on developing sewer systems as opposed to predicting the useful life of an existing system. The DES provides for the use of locally derived data, if it is available. The Committee predicts that with unbridled development, the system is in very good shape through 2015, and in good shape through 2020. Taking steps to define restrictions on development will give direction to those interested in developing property.

The usage rates and peaking factors should be reviewed on an annual basis for a while. Eventually, a review of the data every two years will be adequate. The data is based on a three-year average, which typically includes a variety of weather conditions. A level of

caution will be applied at the conclusion of the water system study. Although the production numbers recorded in the past are not as accurate as desired, and there were instrumentation problems at one time, there is reasonable confidence that past data is accurate enough to use.

Available Spare Capacity – Gallons per Day: Figures for plant output, capacity allocations, and available spare capacity per day for 2008 as presented and actual, and for 2009 per the Water Use Ordinance and as adjusted were reviewed. The adjusted projections used maximum quarterly usage instead of annual average and appropriate peaking factors, based on a 36-month average. The allocations used actual usage rates and household populations rather than DES guidelines. The allocations included Meredith Bay Colony Club, Hannaford minus Jackson Star, and Meredith Bay Village. All known identified development projects were included. The 2008 study assumed that the plant could run at full capacity, 900,000 gallons per day. Because it was found that the plant was only capable of producing 570,000 gallons per day, there is a decrease in the actual available spare capacity at that time from 9,000 to approximately (300,000). The adjusted maximum day demand at the end of the second quarter of 2009 is very manageable. The figures are based on average day and peak day usage for the past 36 months. Based on the data, the Committee believes that the Town is safe from a water-related catastrophe at this time. Mr. Thorpe suggested that the rules for calculating the demand vs. capacity reports be changed when the Water Use Ordinance is revised.

5-Year and 20-Year Demand vs. Capacity: Future demands vs. capacity forecasts on the Meredith Water System were predicted for 5 and 20 year periods, including raw water input, maximum capacity, capacity threshold, average day demand, and maximum day demand. The reports do not build in a reserve for what cannot be forecast. The 5-year demand is very manageable. Selectman Flanders pointed out that the average day demands and maximum day demands include artificial peaks because only 5' of the water tower was previously being used. A correction will be made to the curve of the 20-year chart.

Predicted Demand Growth by Area: Mr. Edgar explained how future development was projected. He broke the Town into 5 study areas and forecasts were made in 3 periods of time, 0-5 years, 6-10 years, and 11-20 years. A methodical, thorough review was done of properties likely to be developed or redeveloped that would have impact on the water system. Future use and occupancy of each property was predicted. He explained how usage rates, peaking factors and yearly demands were used to make the forecasts. The build out of properties was staged based on knowledge of what properties are most desirable for development. Some environmentally sensitive properties were not included. Refinement of the charts should take place on an ongoing basis once the work is institutionalized. Large projects should be included in the data as soon as it is known that they will have an impact on the water system. There might be concerns regarding demand as early as 2016, and there is little question that there must be more capacity on line by 2020. Dialogue ensued regarding the development of policy regarding expansion, and when to begin addressing expansion of the system.

- **Ordinances, Fees and Rate**

Water Use Ordinance and Fees: A comprehensive overhaul of the Water Use Ordinance text is required. The unit equivalent table upon which fees are based is not consistent with expected water use and should be revised very soon. Mr. Thorpe recommends that it be included as an update to the Ordinance as soon as possible. Dialogue ensued regarding when new information should be translated into changes to the Ordinance. From a planning perspective, the Chair believes that new data should be incorporated as soon as it is available.

Water Rates:

Fees and Rates will not be addressed at this time. If the Board wishes to take an incremental approach, Mr. Thorpe recommends that the unit tables and access fees be addressed immediately, followed by the rate structure and rates, then the text of the Ordinance. Updating the unit table will very quickly affect access fees.

Selectman Worsman is not in favor of rushing forward quickly on the matter. There are 10-11 years before the system will reach capacity. The Board is responsible for long range planning and should be thinking about slowing growth dramatically or increasing the means to increase capacity dramatically. Residents with wells have expressed concerns about subsidizing the costs of water for those utilizing the system. Selectman Flanders pointed out that access fees will build cash reserves to help install additional infrastructure and help relieve the burden on the non-users tax rates. The development of new unit tables and the approach for future planning will be addressed in an upcoming workshop.

Debt Service Recovery: Mr. Thorpe reviewed how the debt service costs are allocated. 40% are allocated to general taxpayers and 60% are allocated to water users. He made a future recommendation for splitting commercial and residential water use 35%/65%. Because water users are also taxpayers, in terms of actual money paid, there is actually a 31%/69% split between water users and tax payers.

- **Future Water System Plans**

Minimal Plan. Infill Alternative. Provide a sustainable water utility based on meeting the needs of the existing service area only. Requires an ordinance amendment to limit expansion potential.

Medium Plan. Infill Alternative with limited expansion. Provide a sustainable water utility based on meeting the needs of the existing service area only with limited priority-based potential expansion. Requires ordinance amendment to establish priorities.

Maximum Plan. Capacity Alternative. Provide a sustainable water utility based on meeting the needs of the existing service area plus future expansions.

Alternative Plans 1A and 2A.

Both plans 1 and 2 could be modified by adding a new storage tower and its necessary distribution system. This has the advantage of providing valuable redundancy in storage and distribution whether or not capacity is increased. Plan 3 has a new storage tower and distribution system included.

Dialogue ensued regarding the future work of the Committee. Mr. Thorpe told the Board that he would like to begin institutionalizing some of the time-consuming tasks that he has been performing on behalf of the Committee. He would like to engage someone who is mathematically talented and able to work with spreadsheets. Doing so will help to ensure that the work is done properly. There was a consensus among the Board that they must recruit a volunteer or find an employee who is able and willing to assist the Committee in that regard.

Resident Jim Hughes praised the Committee for a simplistic, comprehensive, understandable, readable report.

There is a consensus among the Board that the Committee has done a fabulous job. Through the use of volunteer members, the committee has saved the Town substantial amounts in consulting fees. The Chair and Board thanked the Committee for the excellent presentation and thanked the departments for their work in assisting the Committee. The challenge moving forward is to use the data that has been gathered in a meaningful way.

Selectman Flanders moved to adjourn the meeting at 6:20 p.m. Seconded by Selectman Worsman. 5-0. All in favor. Motion passed unanimously.

Following a short recess, the Board moved into a non-public meeting pursuant to New Hampshire RSA 91-A:3II (a), (b) and (e).

Respectfully submitted,

John C. Edgar, Co-Interim Town Mgr.

Peter F. Brothers, Chairman

Brenda L. Vittner, Co-Interim Town Mgr.

Miller C. Lovett, Vice Chairman

Karin Landry, Recording Clerk

Robert C. Flanders

Charles G. Palm

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