

VILLAGE WATER SUPPLY NOTES AND DISCUSSION QUESTIONS

March 17, 2016

NOTES FROM AVAILABLE DOCUMENTS

East Montpelier Fire District

- East Montpelier Fire District #1 was formed in 2010 as a municipality, governed by a prudential committee.
- The Fire District is exploring purchasing the privately-owned and operated Crystal Springs Water Company.

Water Source

- The water system is currently supplied by 3 springs with a combined yield of 50 gallons per minute.
- The 3 operating springs flow into a 40,000-gallon concrete reservoir. The well house for Spring #1 stores another 18,000 gallons. The system is pressurized by gravity. Water is distributed through 24,900 linear feet of water main.
- Crystal Springs had deeded water rights on the Pratt property: 495 feet around each spring. Land use within 200 feet of the sources is undeveloped forest land. The water system has a Source Protection Plan for assessing vulnerabilities from land uses within the source protection areas.

Distribution System

- The water distribution system begins at the springs. The transmission main runs cross-country to Cherry Tree Hill Road, continuing cross-country to Route 2.
- The distribution system services the majority of residents along Route 2 and Route 14 South.
- 5 hydrants exist, but cannot be used for fire fighting. The water system would need to have 500 gpm for a 2 hour duration, or an equivalent 60,000 gallons of storage for use for fire flow.
- The system does not have meters at user connections.

Water Usage

- System serves approximately 300 people through 115 connections.
- Average daily demand is 39,000 gpd (2010 source readings), with a maximum day demand of approximately 74,100 gpd. The combined yield of the springs exceeds the average day demand, but not the maximum day demand.
- During droughts, the springs are only capable of producing a combined yield of 36,000 gpd.
- Crystal Springs has an emergency back-up well located off Route 14, with a yield of over 50 gpm, that is approved to be used under emergency scenarios. This well does not have an adequate source protection area of 200ft radius around the well, which would be needed for source approval.
- Two test wells were drilled and tested in 1992 at the site of the existing springs. One of these wells yielded 350 gpm, which would provide adequate flow for both the existing connected users and potential expansion of the distribution for both new users and fire flow protection. No application for source approval was submitted and both test wells were abandoned.

Users

- 93 residential customers; 19 commercial customers. (Huntington Homes replaced Lylehaven Farm)

- The system is not metered; users pay a flat unmetered rate.
- Rates have been flat for several years. The evaluation report notes that current rates would not be sufficient to cover O&M expenses if the Fire District were to run and operate the system.

Permitting and Compliance

- Regulated by Vermont Drinking Water and Groundwater Protection Division under WSID#5264. Permit to Operate issued in April 2015. This permit does not have an expiration date.
- The permit identifies 8 violations of the Vermont Water Supply Rule and gives a July 2015 compliance deadline.
- The state issued a Notice of Alleged Violation (NOAV) in December 2015 with 9 alleged violations. The NOAV set January 2016 as new compliance deadlines.
- A sanitary survey by ANR in January 2016 identified that 2 permit requirements were not being met, as well as 2 significant operational deficiencies and 1 minor deficiency related to the O&M Manual. Three minor operational deficiencies were confirmed corrected after the sanitary survey. ANR required a written response by March 12, 2016.
- The permit is not transferable or assignable without ANR approval.
- Crystal Springs is not permitted to add new service connections or expand the existing water demand requirements without first demonstrating adequate reserve capacity. This was done in 2015 for Huntington Homes, based on unused capacity from Fairview Farms.
- Expanding the system would require an evaluation of the consistent yield of the springs or permitting a well in the vicinity of the springs.

QUESTIONS FOR DISCUSSION

1. What is a fire district? What is the relationship between the Fire District and the town?

The Fire District is really a water district. Under state law, it is its own municipality. Seven years ago, the state approached the town about possibly taking over the Crystal Springs system. A core group of residents met with state officials about different options to do this. The group's main interest is to maintain the water source and to provide an asset to the town. The group decided that organizing as a fire district (as opposed to an association or a cooperative) made the most sense for moving business along. The Town created the Fire District. The Fire District has bylaws and a regulation, which are on the Fire District website.

2. How were the Fire District's boundaries determined? Could they be changed?

Boundaries were based on where the distribution lines go. The district could not have holes, so 170 properties were located within the boundaries. Of these, 117 properties had active lines; 135 properties could be served by the system.

3. What is the status of the Fire District's efforts to acquire Crystal Springs?

The Fire District borrowed \$9,700 to hire Aldrich & Elliott to do an Engineering Feasibility Study: what the system included, what condition it was in, and what was needed to get into compliance. Dean Hedges, the current owner, has corrected some of these items. The Fire District did a business analysis to determine a fair acquisition price. This study determined

that a price of about \$200,000 is sustainable for the Fire District; the owner is asking for \$500,000. The parties are at an impasse.

4. How would the Fire District finance acquisition of Crystal Springs?

The Fire District would have to borrow money for the acquisition. The district would need to float a bond to repay the loan. There are government sources of low-interest (and some negative-interest) loans available to fire districts. An appraisal of the Crystal Springs system would need to be done to justify a loan amount to the lender.

5. What roles do the Public Service Board and ANR's Drinking Water and Groundwater Protection Division play?

ANR's Drinking Water and Groundwater Protection Division regulates water supply permitting and water quality. The Public Service Board regulates utility rates, quality of service and overall financial management. The Department of Public Service represents the public interest in utility cases before the Public Service Board, federal regulatory agencies, and state and federal courts. In the past few years, ANR has stopped copying the Fire District on correspondence with Crystal Springs. ANR has been reluctant to take enforcement action over significant non-compliance issues. The Fire District believes that more enforcement pressure might encourage a sale at a reasonable price.

6. The Planning Commission is interested in adopting village zoning that would enable more residential and commercial development in the village. What challenges and opportunities would this create for the Fire District?

A new water source well would be needed to serve new residential and commercial connections. This is needed anyway to provide sufficient supply to existing customers.

7. What kinds of infrastructure improvements are needed?

The system needs another water source (well) with a higher yield, a larger reservoir, and metering. The Fire District estimates that at least \$100K of improvements are needed.

8. Are there areas where additional fire protection (hydrants, etc.) is needed or desired?

Hydrants exist now but can't be used because there is not enough water volume. Hydrants are not an initial goal of the Fire District.

9. How interested would the Fire District be interested in adding a source well to serve additional connections?

A new water source is needed to provide adequate yield and water pressure to existing customers.

10. What types of land use restrictions, if any, are needed to protect the water source?

Not addressed.

11. What is the best scenario outcome for the future of the water system? Worst scenario outcome?

Not addressed.

12. Are there similar situations in other towns? How have they been addressed?

Berlin took over Hedge's water system there. Some small water systems have worse problems and these are the systems that ANR's compliance efforts are focused on.

13. Could the Fire District recreate a new system at a reasonable price?

The cost would be high. It costs about \$1million for each mile of piping.

14. What would the Fire District need to do if it acquired Crystal Springs?

The Fire District would need to increase water volume, improve infrastructure (e.g., meters and backflow preventers) and improve documentation. The Fire District would need to hire an operator.