

WATER SYSTEM IMPROVEMENT

BACKGROUND

The Fairlee water system has been in operation since 1940. It provides water service to the center of Town along Route 5 and the southern end of the Lake Morey area. The well and pump house are northeast of the Town center, located on the east side of Route 5 near the Fairlee Diner. Two water storage tanks are located west of Bald Top Road.

The primary water tank, constructed in 1974, has a capacity of 100,000 gallons. Its purpose is to provide potable water. The average daily volume required for potability is 70,000 gallons. The primary tank is cast-in-place concrete.

The second water tank, constructed in 2003, has a capacity of 265,000 gallons and was built primarily to meet fire flow requirements. The volume required for fire flow is a minimum of 120,000 gallons. The second tank's bottom and walls are cast-in-place concrete, while its roof is constructed of 12" thick, 40' long pre-cast concrete planks which were manufactured off-site. A thin concrete topping was installed over the top of the planks. Constructing the tank cost the Town about \$1,100,000 and was funded through a loan from the Vermont Drinking Water Revolving Fund with a 20-year amortization schedule.

After being in operation for slightly more than ten years and in accord with a recommended schedule, the Town contracted with a diving company to inspect the interior of the more recently-constructed 265,000 gallon water tank (August 3, 2015). During the inspection, the divers discovered pieces of concrete from the underside of the tank's roof lying on the bottom of the tank.

Upon this discovery, the Town Administrator and Selectboard opened conversations with the second tank's designer and project construction manager. Simultaneously, they sought the services of an independent structural engineer, Tim Schaal, who concluded that structural failures of the roof's pre-cast concrete planks led to cracks at the top of the tank's walls and eventually will lead to roof collapse.

The Town contracted with a civil engineering firm, Tata & Howard, to evaluate tank repair alternatives and available funding avenues. In response to customer complaints about water quality and Water Contractor Lance Colby's concerns about aged water mains, the Town asked Tata & Howard to additionally evaluate water quality and water distribution. (The firm's January 2017 engineering report is available in the Town Hall for public viewing.)

Having no success at addressing water tank issues with the responsible parties, the Town began conversations with Chris Callahan, a construction attorney. Due to the likelihood of impending litigation, the Selectboard, Water Contractors, and the Town Administrator were informed at that time that it was ill-advised to share information with the public. During a comprehensive and important meeting on March 21st, Mr. Callahan granted permission to the Selectboard and the Town Administrator to share a reasonable amount of situational and cost information with the Fairlee community.

WHAT WE KNOW TODAY

The total cost of Tata & Howard’s Water System recommendations is **\$3,869,500**

- Tata & Howard evaluated 5 different alternatives for the repair and/or the replacement of the second water tank, tapping the expertise of specialty contractors who have visited the tank site to assist in the estimating of repairs. **They have concluded that the least expensive approach is to replace the tank.** This would involve demolishing the existing tank and constructing a new glass lined fused to steel tank in the same location. **The estimated demolition and replacement cost is \$1,059,500.**
- Tata & Howard found that town water is very hard and—as is common for wells in our region—contains an above average amount of manganese. As a first step in improving quality, Tata & Howard **recommends water softening and the installation of a filtering system.** The filtration system would be installed in an addition to the well house control building. **The estimated softening and filtration costs are \$1,377,000.**
- Water Contractors Lance Colby and Barry Larson and Tata & Howard concluded that there are several sections of the distribution system piping that are too small, older and inadequate. After reviewing the system, Tata & Howard recommends **replacing approximately 8,600 feet of water main**, which will in turn improve water quality and fire protection. **The current estimated water main upgrade and replacement costs are \$1,433,000.**

What we don’t yet know is “At the end of the day, how do we pay for this?”

Based on the advice of attorney Chris Callahan, it is imperative that Town officials remain publically tight-lipped about the amount that the Town may receive from other entities for the water tank defects and the remaining payments (totaling \$415,176) on the tank’s 20-year bond. The timeframe for mediation and closing legal matters is unknown.

Some may argue that the tank issue is not an emergency and should be postponed until the end of litigation. Certainly it is extremely unlikely that the damaged tank will experience a catastrophic failure. However, should the tank continue to fail and become increasingly unsafe to use, the tank can be quickly isolated and taken offline.

Others may suggest that enhancements to the Water System should be funded only by water users. The Fairlee Water System is a town-owned asset that benefits all tax payers and property owners – directly and indirectly – with potable water and fire protection, and when the second tank was constructed, funding was split by water users and all taxpayers (2/3 water users, 1/3 all taxpayers). We believe that it is in the Town’s best interests to address the defective tank’s issues as soon as possible, and we also believe that – at least with the tank – the funding should be equitable.

Moving forward now requires the Town to secure funding. To immediately address the situation, the Town and Tata & Howard have been in conversations with USDA Rural Development about grants and loans. We have once again come to the conclusion that:

Today is the least expensive time to invest in the Water System.

Why Now?	Reasons Not to Postpone
<p>USDA Grants Officials at the USDA office indicated that today, the USDA has a limited amount of money to offer and the town may be eligible for grants of up to a maximum of 45%.</p> <p>The Selectboard, in consultation with the engineering firm, is recommending trying to secure the funds for all three projects at this time. The projects are all necessary and if submitted as one application we believe we will stand a better chance of grant funding at this time. Fairlee will have a higher likelihood of being provided with a higher percentage grant showing the need due to debt retirement.</p> <p>The USDA cannot let Fairlee know what its grant percentage might be or even the complete funding package until after voters (not just water users) have approved a water bond. In order to be eligible for 2017 funding, Fairlee must start this bond process as soon as possible.</p> <p>If we assume a conservative 40% grant and a 40-year 2% bond – and if we assume no legal cost recovery at the time at which we approve the bond – the grant amount would be approximately \$1.6 million, the loan amount would be approximately \$2.3 million, and the debt service (paid over 40 years) would be approximately \$88 thousand.</p> <p>Proposed cuts in the federal budget suggest the elimination of USDA Rural Development Program grants. 2017 may be the last year in which significant grants will be available to Fairlee.</p>	<p>No USDA Grants Without USDA grant opportunities, Fairlee will need to make up the shortfall by borrowing.</p>

