



12/3/2020 Site Visit Observations

Attendees: Derrick Fleury (Town of Ticonderoga), Todd Hodgson (Essex County), Roy Richardson (B&L)
Purpose: To evaluate the existing water main location and identify potential areas where the pipe might be able to be reused

The following observations were made during our visit:

1. Old Chilson Area
 - a. There is a vault with a throttled valve to reduce pressure downstream of the valve. Estimated pressure upstream is 90 psi, whereas downstream essentially flows only by gravity with low pressure.
 - b. Some houses in this area need pumps to provide adequate pressures
 - c. Part of this main runs in an area of potential wetlands, which is located at the back of properties and not near the road. Maintenance of the pipe in this area could be difficult during certain times of the year. Town had previous issues trying to access pipe in this area.
2. Near the Divide (mid route)
 - a. Pressures in this area are generally around 10 psi with most houses having pumps to boost pressure to their residence
 - b. Little to no issues with the pipe in this area
 - c. Air release vault is flooded
3. Eagle Lake Area
 - a. Observed heavy traffic, including multiple tractor trailers, on the road.
 - b. Road is narrow with houses and lake near the road on one side and steep drop offs and rock faces at edge of road on the opposite side. Not sure if an excavator could work in some of these areas, even with cribbing.
 - c. This is a DOT controlled road, which will require 12 ft minimum lane widths during work. Will struggle to get this in some areas.
 - d. The pipe is located opposite the lake side at shallow depths. Observed that pipe is generally in the shade and under or adjacent to the drainage swale, which appears to get high flows. The shallow install, lack of sun, and high water table put this pipe at high risk for emergency repairs in colder weather once flow is not constant.

Discussion on potential pipe reuse:

1. Old Chilson Area – Not recommended for reuse
 - a. The area upstream (closer to Eagle Lake) of the throttled valve has been solid pipe, with little known repairs needed in the recent past. This pipe could be potentially reused,

however there is concern over the pipe that is located in the backyards of residents and particularly the stretch that runs through the potential wetland area. Should a break occur, it could be a difficult location to access for repairs due to the wet area. See Figure 1 showing this area.

- b. The area downstream of the throttled valve (closer to the Chilson Reservoir) has seen little pressure over the years and as a result has not needed many repairs. Should a future project reverse the flow and pressurize this portion of the main, there is no way to know if it will hold or start major leaking without pressurizing it and testing. There is risk to this as if it starts leaking during a test, it may not stop, even when pressure is reduced back to normal.
2. Near the Divide (mid route) – Recommended for potential reuse
 - a. Pipe in this area is generally accessible and has not had issues. Reuse in this area is a potential option.
 - b. Recommend that air release vault get pumped out and inspected. Vault should have a sump or other means to prevent air release valve from being submerged.
 3. Eagle Lake Area – Generally not recommended for reuse
 - a. Figure 2 shows an area at the start of Eagle Lake where potential reuse of the pipe could occur as it is accessible for repairs and has not had many repair issues.
 - b. Figures 3, 4, and 5 are very concerning as there is high risk of pipe freezing and/or breaks, without a reliable way to make the necessary repairs in a prompt time frame. The steep drops, proximity to road, narrow lanes, and presence of ledge will make repairs slow, costly, and very difficult for Town crews. This could put residents out of water for an extended period of time while repairs are being made. It will take time to setup cribbing and other means to be able to excavate the pipe and traffic will be down to one lane for the duration of the repair. Traffic is of high concern, as the lanes are narrow with no shoulders. Log trucks traversing this area during a repair might not have sufficient room to get around the construction without either going off of the road or the Town crews reducing their footprint, which is not very feasible. This is a safety risk to the Town employees and the public in general in these narrow areas.
 - c. In the Eagle Lake area, a new pipe could be located in a better location and would be expected to have a significantly lower need for repairs. Although the capital costs would be higher now, it would reduce the risk of costly emergency repairs to the existing pipe and should be considered more viable over the long haul. In addition, a planned construction with advanced traffic warning signs would reduce the frustrations to the public that would occur due to an unplanned repair.



Figure 1: Existing main is away from the road and is installed through a potential wetlands area. Access to pipe could be difficult and time consuming.



Figure 2: Existing main is on side of road away from lake as generally shown by the yellow line. Pipe in this area is generally serviceable.



Figure 3: Existing main is on side of road away from lake as generally shown by the yellow line. Pipe in this area is shallow, has rock ledges right against pipe and is anticipated to be a difficult repair.



Figure 4: Existing main is on side of road away from lake as generally shown by the yellow line. Pipe in this area is shallow, has rock ledges right against pipe, and a steep drop off from road to culvert, making this a very difficult repair.

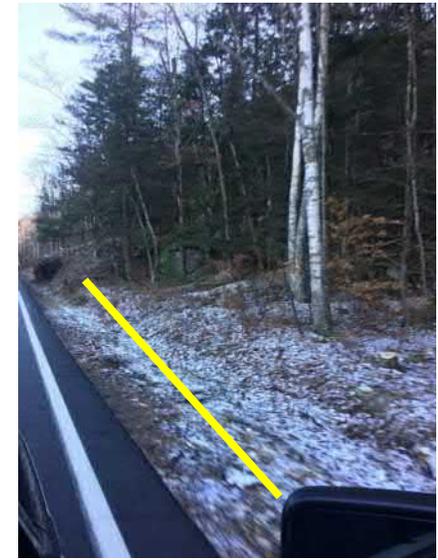


Figure 5: Existing main is on side of road away from lake as generally shown by the yellow line. Pipe in this area is generally serviceable. Anticipate high water in this area from runoff of steep slope, leading to concerns of heaving around pipe.