

Village of Cleveland  
Water System Improvements  
Project No. 2016-119

Board Meeting – Water Storage Tank & Transmission Main

The project will involve the replacement of the existing water storage tank and transmission main. The new tank is proposed to be located at the Village well property with the new transmission main running from the existing well field, through the woods over to Maple Flats Road, and continuing down Maple Flats Road up to the North Street/Old North Street/Gale Road intersection at the Village boundary.

The tank overflow was proposed to be the same as the existing tank (about 583.33'). There is a location on Maple Flats Road where the elevation is close to the overflow of the tank. This means that under normal conditions, there could be negative pressure in this area. It should be noted that there are no reported existing outside users in this area. Although this issue exists, there are potential design alternatives to remedy this issue. The description of each alternative are outlined below and the pros and cons for each are outlined on the attached sheet.

**Option 1: Move tank to the highest point or on Village side of highest point**

This option would involve placing the tank at the highest point along the transmission main, which is near the Vella property on Maple Flats Road. The tank could also go on the Village side of the highest point, which is still near the Vella property. The main would be installed at the traditional depth of 5' from ground surface to the top of the pipe.

**Option 2: Move the tank to a higher elevation on the existing Village property**

The tank would be pushed further into the woods on the Village property (still on the proposed transmission main route). The transmission main would be installed at the traditional depth of 5' along the entire length of Maple Flats Road. There are 2 potentials under this option: height of the tank remains as proposed (Option 2A) and increasing the height of the tank to the maximum possible at the current diameter (Option 2B). The transmission main near the high spot on Maple Flats Road could also be installed deeper via directional drilling methods.

**Option 3: New transmission main route**

This would involve moving the transmission main route to Reservoir Drive and Center Street. There are 2 potentials under this option: leave the tank height as proposed (Option 3A) or increase the height of the tank to 60' high (Option 3B).

**Option 4: Install booster pump station**

This option involves adding a booster pump station at the new tank site in order to pump over the high spot on Maple Flats Road. The pump station would need to be sized to meet fire flow demands.