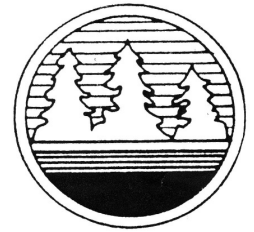




# LMCPC

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## 2018 ANNUAL MEETING REPORT

The main topic of the day was the water storage tank's need for repairs and/or replacement. Water Chair Joe Connell made a presentation detailing the deterioration of the tank's concrete lid. There was much discussion about options and costs. The slideshow will be up on the website soon, as well as the complete minutes from the Annual Meeting. Jason summarized the five options the membership wants the board to consider:

- 1) Get a temporary tank and build a new tank. This option could provide long-term redundancy in the system and provide insurance against failure of our existing tank over the next few years as we build up funds for constructing a new tank.
  - 2) Get a loan from the community and move straight to the new tank
  - 3) Repair the existing tank and then build the new tank in 3 years
  - 4) Connect to Water District 119
  - 5) Get a temporary tank and a loan to start on the new tank right away
1. This option may in fact be the option that we are forced to go with, should the storage tank fail unexpectedly. The costs for a temporary tank rental do not change if we plan for it, or if it is an emergency response. However, if we believe our Professional Engineer from Northwest Water Systems (Todd Krause from NWS), the concrete tank specialist, and the repair crews that have looked at the tank, we are looking at a roof that will survive through until the Fall of 2019. The most pessimistic schedule from the Todd and the tank providers says that we can have the tank finished and online in early 2019.
  2. After careful, detailed, and meaningful study of our current status and the options moving forward by our PE Todd Krause and by the LMCPC board, we will be proceeding toward this solution path of moving straight to the new tank without the \$48K repair of the current storage tank roof. The methods and options to pay for it are being actively explored right now.
  3. This option would have us repair the roof of the existing tank, and then wait to build the new tank in 3 years. This option does not take into account the status of the walls and other issues with the tank, which is added risk at this point. It should be noted here also that the full rehabilitation of the existing tank was quoted at almost \$200K, which is nearly twice the cost of a new tank, and we would not get to the volume required for fire flow (existing tank is 69,000 gallons, replacement tank options are over 130,000 gallons). Also, the 3-year life of the tank roof repair, at a cost of \$48K, is just about 40% of the cost of a replacement tank, which will last us at least 60-75 years.
  4. The cost of connecting the LMCPC water system into District 119 was examined several years ago. At that time, the cost to run pipe up Mountain View and then connect into our distribution line was over \$1 million. This cost is certainly higher now, and all residents would still need to pay off existing infrastructure loans for many years to come, which would effectively be a "double water bill" for our residents. Our current plan will require an additional \$31.39 per month per resident for 3 years to pay for it.
  5. Getting a temporary tank and a loan to start right away has been spoken about, and is actually a combination of #1 and #2 above. We have in fact decided that the temporary tank is something that we may be forced to do, but it is not necessary right now. And, we are planning on moving out right away to get the new tank purchased and installed, but we are opting to do self or community based financing, as the loan will carry a significant extra cost due to DOH requirements (\$25-40K extra, and 2-4 months longer in schedule).

It should be noted that the temporary tank referred to in the above text may also be the "used steel tank" that we have been examining. We now know that this used steel tank is not going to be ready to be taken down in October as was initially planned, and that the costs to tear-down, ship, and rebuild will outweigh a temporary tank rental, should we need to use a temporary tank.

An analysis of concrete versus steel tanks was performed by our PE, Todd Krause, and is shown below. The clear winner, both in Todd's opinion and that of the LMCPC board is that concrete is the winner due to many factors.

For storage volumes over 20,000 gallons, concrete and steel tanks are by far the two most common choices for potable water tank construction. Each have their advantages and disadvantages, outlined as follows:

**Cost**—Often the primary factor driving a decision for a public water system is the cost associated with that decision. Depending on the tank's geometry, concrete tanks are less expensive up to around 500,000 gallons. For a +/- 60,000-gallon tank, one would expect a steel tank to be about three times more expensive than a concrete tank. In general, the taller the tank, the more competitive steel becomes, over about 70 feet high, steel is likely the less expensive option.

Lifespan—If properly constructed and maintained, both steel and concrete tanks should last more or less “forever”. For our purposes, we can define forever as well over 100 years; however, there is no reason to believe that a concrete tank would last 200+ years, the same would apply to a well-maintained steel tank.

Maintenance—

Concrete tanks require only basic maintenance that any tank would require: cleaning and maintenance of the floats, ladders, hatch, etc.

Steel tanks in addition to the basic maintenance, require to be lined or re-lined every 20-30 years. This lining is equivalent to approximately 1/5 of the construction cost. There is a “permanent” liner that costs approximately ¼ of the installation cost that can be used on the interior. The exterior of the tank much also be painted every 20-30 years. This costs approximately 10-15% of the original cost of the tank. If a steel tank is not properly maintained, it typically begins having significant failure issues after about 50 years.

A glass-lined steel tank is also made. This is basically the same as the old porcelain enamel covered steel appliances and sinks that were popular in the 1940’s (and before and after). These tanks are perhaps 4x the cost of concrete, but similar to concrete have only very basic maintenance needs.

Other Factors

Concrete is porous, and as such can harbor microbial populations, making them more difficult to keep disinfected for non-chlorinated water systems. Since Lake Margaret chlorinates, this really is not a consideration.

Concrete tanks have a realistic height limitation of about 70 feet tall.

Steel tanks are generally more subject to the sun heating the water and causing thermal stratification of the water. Steel tanks exposed to sunlight should definitely be painted a light color. The taller and skinnier the tank, the more this is an issue.

There are multiple manufacturers of steel tanks, but basically just one manufacturer of concrete tanks.

After many hours of meetings contemplating the best option, the board has come up with a 3-year plan to raise money for a new water tank by increasing the monthly system costs by \$31.38 per month so we don’t have to borrow money to get it, and should an issue arise with the existing water storage tank before completion of the new one, we have contingency plans in place for a temporary tank installation.



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MONDAY AUGUST 13, 7PM-8:30PM**



Firewise.org will present valuable information on keeping our neighborhoods safe from wildfire. Light appetizers & desserts at 6:30PM  
15600 1st Ave NE, downtown Duvall.



**SATURDAY, SEPTEMBER 15th, 2018 1PM @ SWIM LOT!**  
**Potluck side dishes, hamburgers & hot dogs provided by LMCP**  
**Treatment plant tours for all interested parties**  
To volunteer or for more information contact [suebeauvais@yahoo.com](mailto:suebeauvais@yahoo.com) 425.788.1627

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**NEXT LMCP BOARD MEETING—MONDAY, AUGUST. 27th, 2018 7PM**

Meetings are held at Lot 194—the B.A.B. 3329 NE 195th St., Lake Margaret, Duvall

All owners are welcome to attend.