

**Report to the membership at the April 29, 2017 Annual meeting**  
Water Committee Report

**1. Financial performance 2016/17 water year** (May 1, 2016 to April 30, 2017)

Methods A and B are two separate ways of assessing financial performance.

Method A measures costs against the approved budget.

Board-approved operating budget: \$12,765 (line 8 below)

Actual spending: \$ 9,886 (line 8 below)

Approved minus spending: \$ 2,879

Method B tracks annual change in the account balance.

Account balance April 29, 2017: \$9,676

Account balance May 1, 2016: \$2,651

Increase in balance: \$7,025

Line item accounting of Board-approved budgeted cost and actual cost (Method A).

Line item	Budgeted cost	Actual cost	Explanation
1. Underground electric line from Tamarack Road to reservoir	\$6,265	\$6,853	Schedule delay: Initiated early July but not completed under end of November.
2. Flushing hydrants on legs east of Lostine River Road	\$2,200	\$0	Deferred due to schedule delay and in order to stay within budget: total cost overruns of ~\$1,500 on electrical line, addition of meter setters to line 3, and base operations.
3. Install two missing backflow prevention valves in meter box	\$400	\$0	<ul style="list-style-type: none"> <li>• Cost increased to \$900 because a policy requiring meter setters was adopted mid-year to help mitigate the substandard pipe in the service lines.</li> <li>• Tried to complete this spring but Terry Jones too busy.</li> </ul>
4. Improved method for disinfection	\$750	\$0	Project was budgeted based on OAWU input, but we developed a satisfactory work-around so project was removed.
5. Base operations	\$1,500	\$1,938	<ul style="list-style-type: none"> <li>• Electricity(\$1129), water analysis &amp; postage(\$508), OAWU dues(\$83), mailings(\$38), misc. expense(\$180)</li> <li>• Cost overrun was due to total coliform problem (analysis &amp; postage, electricity, hardware = ~\$600 vs. ~\$150 in past years)</li> </ul>
6. Unanticipated repairs	\$1,500	\$1,095	<ul style="list-style-type: none"> <li>• \$290 – 50% cost-share to replace broken part on trencher rental used for electric line</li> <li>• \$805 – troubleshoot telemetry &amp; install new radio</li> </ul>
7. Consultation with professionals	\$150	\$0	JUB Engineers was hired to review the 30-year water system plan. Board approved work to be completed in April but JUB will invoice in May (next water year).
8. Total operating budget, lines 1 to 7	\$12,765	\$9,886	
9. Targeted contribution to capital reserve	\$4,000		
10. Total, lines 8+9	\$16,765		The year's projected income was approx. \$16,700
11. Available for contribution to capital reserve = \$6,879			\$6,879 = Line 10 budgeted cost minus line 8 actual cost. Allocate \$2,600 (lines 2&3) to 2017/18 operating budget; remainder of \$4,279 contributed to capital reserve.

## 2. Microbial indicators of poor water quality, and follow-up

- We had our first total coliform-positive (TC+) sample last summer. We were required to submit three additional rounds of samples because each round of resampling resulted in one or more TC+ samples. In total, 7 of 12 samples were TC+. The presence of TC is considered an indicator for the possible presence of E. coli bacteria. After we failed the third round, the state required us to chlorinate the water system.
- Good news: 1) Testing of TC+ samples were always E. coli-negative. This meant our water had not been exposed to soil or water in contact with fecal material, thus a boil water notice was not required. 2) Well samples were TC-negative. 3) The state-required chlorination was successful.
- Bad news: The state will have diminishing tolerance with future positive findings; location, type, and frequency of future positive findings will determine if continuous disinfection is required.
- Analysis: Six of the 7 TC+ samples were associated with the upper Tamarack Road branch. A model (see below) showed there was poor turnover of water in the reservoir (i.e., “old” water). This condition is known to lead to “outgrowth” of bacteria on reservoir walls and they partition into the reservoir water. Under these conditions and because of the design of our system, reservoir water containing TC+ bacteria would be preferentially distributed to the upper Tamarack Road branch of the system. In summary, the model matched the results on the ground and showed us what had caused the TC+ samples. The poor turnover of water in the reservoir arose from efforts to manage two telemetry system problems and the absence of a low-water shutoff on the well pump.
- Prevention: (1) A spreadsheet model was constructed to examine how different system operating parameters affected water age in the reservoir, and to identify the pumping on-off cycle and reservoir setpoints that strike an appropriate balance between “younger water” in the reservoir (2-3 weeks vs. many months) and less water storage for suppressing a house fire or wildland fire (an average of 15,000 gallons Oct-June, average of 31,000 gallons in summer). (2) The malfunctioning radio was replaced and the new system control parameters implemented. (3) Fire hydrants are being flushed more frequently because they are short dead-ends that often support higher levels of microbial growth.

## 3. 30-Year Water System Plan

- Draft submitted to Board in February.
- Board approved hiring of J-U-B Engineers to review aspects of the Plan and deliver a report.
- Water Committee used the 5-page report to revise the 30-Year Water System Plan. J-U-B report and revised Water System Plan were submitted to the Board.
- Water Committee recommended a 10,000 gallon tank is needed as soon as finances allow. Two justifications:
  - Take a 2<sup>nd</sup> step towards prevention of coliform-positive samples → Bring turnover of water into recommended 3-5 day range, which reduces the potential need for future continuous disinfection (\$30,000 - \$40,000).
  - Increase water storage for fire suppression → The reservoir would be isolated from the tank’s drinking water and maintained full. This provides 50,000 - 53,000 gallons for fire suppression. Using ODF guidelines 50,000 gallons was calculated as the volume for running sprinkler kits at 20 lots with structures, for 2 hours in advance of the arrival of a wildland fire.
- Water Committee recommended and Board approved ear-marking the \$7,076 (i.e., current balance of \$9,676 minus \$2,600 allocated to 2017/2018 operating budget) for the tank, and moving on two parallel paths: (1) try to locate a used tank through a government excess program (expected cost of \$10,000 - \$15,000), and (2) collect information on low-interest loan\* applications and terms for a new tank (expected cost \$25,000). Water Committee to report findings to Board.  
\* National Rural Water Association Revolving Loan Fund, Rural Community Assistance Corporation Loan Fund, and CoBank (part of U.S. Farm Credit System).

4. **Board-approved 2017/18 water year budget** (May 1, 2017 to April 30, 2018)

Line item	Budgeted cost	Justification
1. Flushing hydrants on legs east of Lostine River Road	\$ 2,200	From last year. Needed for maintenance flushing and for disinfecting after breaks or other contamination events.
2. Two missing backflow prevention valves (with meter-setters) in meter box	\$ 900	From last year. Needed to protect against cross-contamination.
3. Meter-setters (3) for two lots connecting to water system in 2017	\$ 1,500	New policy. Needed to mitigate against breakage of substandard pipe in the service line.
4. Pump-saver	\$ 500	New, improved pumping regime has longer pump run times. Needed to protect impeller and motor under potential low water conditions.
5. Engineering review	\$ 2,000	Needed to review the 30-year water system plan. \$2,800 was approved but invoice will be for ~\$2,000.
6. Base operations	\$ 1,600	Electricity, water analysis & postage, OAWU dues, mailings, misc. expenses
7. Contingency - Unanticipated repairs - Operating cushion	\$ 1,500 \$ 2,000	Capital reserve contributions are locked-up; need to keep some money in operating account to provide flexibility during year. Use of money in the operating cushion requires Board review and approval.
8. Total operating budget, lines 1 to 7	\$12,200	
9. <u>Targeted</u> contribution to capital reserve account	\$ 6,000	\$7,076 balance + \$6,000 new = ~\$13,000 available for tank (And perhaps up to \$15,000 when considering operating cushion.)
10. Total, lines 8+9	\$18,200	Budget comes from: \$2,600 + \$15,750 = \$18,350 <ul style="list-style-type: none"> <li>• Lines 2&amp;3 of last year's budget (\$2,600) were unspent and transferred to the 2017/18 operating budget.</li> <li>• Rates to be the same as last year. Projected income is expected to be \$12,950 from a \$350/lot base fee plus \$2,800 from use fee (\$7.00/1000 g. x 400,000 g.) = <u>\$15,750</u>.</li> </ul>

5. **Operation and Maintenance Manual**

- 2017 revision completed.

Distributed at the April 29, 2017 annual HLOA meeting.