2021 Water Rate and Reserve Study

SCOTT LAKE

Purpose of the Study

To determine sufficient reserves budget and adequate rate structure to sustainably support the water system into the future.

Key Factors

1. Rates have been historically very low and inadequate to provide proper funding
2. The HOA fee is very low and inadequate to support non-water related expenses
3. Water infrastructure and components are expensive and have become increasingly so during recent years. Water rates need to be adjusted to account for current market costs of equipment and labor. It has been a significant period of time since Scott Lake has had a proper rate adjustment

Findings

The existing water rates are inadequate to properly fund the system and are not sustainable

Due to many years of low rates, the current level of reserve funding is substantially lower than needed especially for several major upcoming replacement projects

New rates will…

1. Meet the day-to-day operational expenses
2. Build significant financial reserves to adequately fund the water system’s future capital costs

Description of Water System

- Group A Community water system (ID 76787)
  - Regulated by Washington State Department of Health Office of Drinking Water
  - Regulated by Chapter 246-290 Washington Administrative Code (WAC)

- 1,450 full-time residents/104 non-residential population
- 590 active metered connections

- Owned and operated by the Scott Lake Maintenance Company

Component Inventory & Lifespan

- Estimated lifespan is based on typical lifespan rather than standard depreciation schedule. Typical lifespan is estimated greater than lifespan given in depreciation schedules.
- The life span of equipment can vary greatly!
  - Improper sizing
  - Inadequate maintenance
  - High use areas
  - Substandard materials or installation techniques
  - Environmental impacts

Operational & Replacement Cost

- Projections of future reserves are done in “present worth”
- Prices for smaller items are not intended to represent cost to replace one individual component.

- Cost to replace components can vary significantly!
  - Site conditions
  - Contractors
  - State of the economy
  - Variation of 50% - 100% for same scope of work is common

Capital Funding Mechanism

- Best method is internal funding
- Commercial loans
    - Difficult to secure
    - Higher interest rates
- Federal loans and grants
    - Time consuming/delay projects
    - Extensive requirements imposed
    - Interest rates

Replacement Cost of Existing Capital Facilities

- Calculated by assignment of an estimated present worth and then applying inflation over timespan until anticipated replacement year
- Existing reserves applied to meet the cost of components anticipated to require replacement in the near term

Reserve Accounts

Short-Term Reserves: assures reserves are in place for short term replacement expenses. Consists of components with estimated 15 years or less. Annual contributions of $35,000 with starting balance of $165,000.

Emergency Reserve: covers unexpected and immediate repairs. Ideally large enough to cover the most expensive critical item in the system which could fail with little or no warning. Minimum balance $50,000

Reserve Accounts

Operating Reserve: intended for routine operation and maintenance expenses. Should be 10% - 12% of annual budget

Long-Term Reserve: necessary to fully fund all long-term capital replacements. Consists of components with estimated 15+ years. Annual contributions of $165,000 with starting balance of $500,000

Useful Life of Critical Facilities

- One or more well pumps will need to be replaced within the next 10 years
- Chlorine injection pump needs to be replaced
- Backup generators & propane tanks need to be replaced soon
- At least one booster pump needs to be replaced now, three will need to be replaced within the next 10 years
- Most of the distribution system valves and portions of the water lines are in urgent need of replacement. This should be the primary focus of the system for the next few years
- Reservoirs are due for cleaning, sealing and overall inspection for more significant repair work.

Component	Year Installed	Service Life	Age	Assessed Remaining Life	Current Unit Price	Units	Current Replacement Cost	Cost at Next Replacement
Well #2, 6" x 35', and Source Approval	1972	80	49	31	$20,000	1	$20,000	$50,002
Well #4, 8" x 40', and Source Approval	1976	80	45	35	$22,000	1	$22,000	$61,905
Well #5, 8" x 40', and Source Approval	1982	80	39	41	$22,000	1	$22,000	$73,918
Well #6, 8" x 41', and Source Approval	1986	80	35	45	$22,000	1	$22,000	$83,195
Well #2 Pump (7.5-HP), Controls, Drop Pipe	1972	30	49	1	$20,000	1	$20,000	$20,600
Well #4 Pump (15-HP), Controls, Drop Pipe	1976	30	45	1	$25,000	1	$25,000	$25,750
Well #5 Pump (15-HP), Controls, Drop Pipe	2020	30	1	29	$25,000	1	$25,000	$58,914
Well #6 Pump (15-HP), Controls, Drop Pipe	1986	30	35	1	$25,000	1	$25,000	$25,750
Chlorine Injection Pump and Tank*	2002	15	19	5	$1,000	1	$1,000	$1,159
Chlorine Contact Pipe, 12"	2002	80	19	61	$120	100	$12,000	$72,820
Hydropneumatic Tank, 3,000 gallons*	1972	55	49	10	$20,000	1	$20,000	$26,878
Air Compressor, Speedaire 3-gal	1972	15	49	1	$500	1	$500	$515
Generator, Cummins 60 KW, propane	1972	50	49	1	$35,000	1	$35,000	$36,050
Propane Tank, 500 gallons	1972	40	49	1	$2,000	1	$2,000	$2,060
Pump House	1972	60	49	11	$20,000	1	$20,000	$27,685
Treatment Facility, 22' x 34'	2002	60	19	41	$20,000	1	$20,000	$67,198
Limestone Contact Tanks	2002	40	19	21	$20,000	7	$140,000	$260,441
Well Site Fence	2019	50	2	48	$10,000	1	$10,000	$41,323
Concrete Reservoir at Lift Station, 80k-gal	1972	80	49	31	$150,000	1	$150,000	$375,012
Generator, Cummins 20 kW, propane	1986	30	35	1	$12,000	1	$12,000	$12,360
Propane Tank, 250 gallons	1986	40	35	5	$1,500	1	$1,500	$1,739
Lift Station Building, concrete block	1986	80	35	45	$5,000	1	$5,000	$18,908
Booster Pump 1, 5 HP, 100-gpm	1986	30	35	1	$9,000	1	$9,000	$9,270
Booster Pump 2, 5 HP, 100-gpm	1986	30	35	1	$9,000	1	$9,000	$9,270
Lift Station Fencing	1986	50	35	15	$10,000	1	$10,000	$15,580
Upper Reservoir, Steel, 60k-gal, 21'x24'	1986	80	35	45	$135,000	1	$135,000	$510,515
Booster Building	1986	60	35	25	$10,000	1	$10,000	$20,938
Generator, Kohler 14 kW, propane	2019	30	2	28	$11,000	1	$11,000	$25,167
Propane Tank, 250 gallons	1986	40	35	5	$1,500	1	$1,500	$1,739
Booster Pump 3, 3 HP, 100-gpm*	1986	30	35	5	$7,000	1	$7,000	$8,115
Booster Pump 4, 3-HP, 100-gpm	2020	30	1	29	$7,000	1	$7,000	$16,496
Bladder Tanks, 34-gallon	2015	10	6	4	$500	12	$6,000	$6,753
Reservoir Site Fencing	1986	50	35	15	$5,000	1	$5,000	$7,790
Telemetry System	2010	20	11	9	$20,000	1	$20,000	$26,095
2" Pipe, Poly	1976	50	45	5	$50	7300	$365,000	$423,135
4" Pipe, AC*	1976	75	45	20	$60	23275	$1,396,500	$2,522,234
6" Pipe, AC	1976	75	45	30	$70	10900	$763,000	$1,852,001
8" Pipe, PVC	1986	75	35	40	$80	1200	$96,000	$313,156
2" and 4" Valves (estimated quantity)*	1976	30	45	2	$800	130	$104,000	$110,334
6" Valves (estimated quantity)*	1976	30	45	2	$1,000	50	$50,000	$53,045
8" Valves (estimated quantity)*	1986	30	35	2	$1,200	20	$24,000	$25,462
Service Laterals*	1976	75	45	5	$1,200	590	$708,000	$820,766
Service Meters*	2004	15	17	8	$350	590	$206,500	$261,588
Meter Setters	2004	25	17	8	$300	590	$177,000	$224,218
								$8,607,849

In the Next 5 Years - $1,593,872

Component	Year Installed	Service Life	Age	Assessed Remaining Life	Current Unit Price	Units	Current Replacement Cost	Cost at Next Replacement
Well #2 Pump (7.5-HP), Controls, Drop Pipe	1972	30	49	1	$20,000	1	$20,000	$20,600
Well #4 Pump (15-HP), Controls, Drop Pipe	1976	30	45	1	$25,000	1	$25,000	$25,750
Well #6 Pump (15-HP), Controls, Drop Pipe	1986	30	35	1	$25,000	1	$25,000	$25,750
Air Compressor, Speedaire 3-gal	1972	15	49	1	$500	1	$500	$515
Generator, Cummins 60 KW, propane	1972	50	49	1	$35,000	1	$35,000	$36,050
Propane Tank, 500 gallons	1972	40	49	1	$2,000	1	$2,000	$2,060
Generator, Cummins 20 kW, propane	1986	30	35	1	$12,000	1	$12,000	$12,360
Booster Pump 1, 5 HP, 100-gpm	1986	30	35	1	$9,000	1	$9,000	$9,270
Booster Pump 2, 5 HP, 100-gpm	1986	30	35	1	$9,000	1	$9,000	$9,270
2" and 4" Valves (estimated quantity)*	1976	30	45	2	$800	130	$104,000	$110,334
6" Valves (estimated quantity)*	1976	30	45	2	$1,000	50	$50,000	$53,045
8" Valves (estimated quantity)*	1986	30	35	2	$1,200	20	$24,000	$25,462
Bladder Tanks, 34-gallon	2015	10	6	4	$500	12	$6,000	$6,753
Chlorine Injection Pump and Tank*	2002	15	19	5	$1,000	1	$1,000	$1,159
Propane Tank, 250 gallons	1986	40	35	5	$1,500	1	$1,500	$1,739
Propane Tank, 250 gallons	1986	40	35	5	$1,500	1	$1,500	$1,739
Booster Pump 3, 3 HP, 100-gpm*	1986	30	35	5	$7,000	1	$7,000	$8,115
2" Pipe, Poly	1976	50	45	5	$50	7300	$365,000	$423,135
Service Laterals*	1976	75	45	5	$1,200	590	$708,000	$820,766

Ten Year Budget - Annual Reserve Contributions and Balances

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Operating Reserve										
Target Balance	60,000	61,800	63,654	65,564	67,531	69,556	71,643	73,792	76,006	78,286
Current Balance	58,252	60,000	61,800	63,654	65,564	67,531	69,556	71,643	73,792	76,006
Annual Installment	1,748	1,800	1,854	1,910	1,967	2,026	2,087	2,149	2,214	2,280
Running Balance	60,000	61,800	63,654	65,564	67,531	69,556	71,643	73,792	76,006	78,286
Emergency Reserve										
Target Balance	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239
Current Balance	48,544	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339
Annual Installment	1,456	1,500	1,545	1,591	1,639	1,688	1,739	1,791	1,845	1,900
Running Balance	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239
Short-Term Asset Reserve										
Target Balance	265,000	272,950	281,139	289,573	298,260	307,208	316,424	325,917	335,694	345,765
Current Balance	165,000	199,485	235,535	272,667	304,159	342,392	382,967	424,759	206,216	250,553
Annual Installment	35,000	36,050	37,132	38,245	39,393	40,575	41,792	43,046	44,337	45,667
Expenditures	515	0	0	6,753	1,159	0	0	261,588	0	0
Running Balance	199,485	235,535	272,667	304,159	342,392	382,967	424,759	206,216	250,553	296,220
Long-Term Asset Reserve										
Target Balance	663,112	785,694	975,153	1,172,785	104,545	300,263	504,741	490,703	683,729	885,221
Current Balance	500,000	663,112	785,694	975,153	1,172,785	104,545	300,263	504,741	490,703	683,729
Annual Installment	165,000	169,950	175,049	180,300	185,709	191,280	197,019	202,929	209,017	215,288
Special Assessment	129,422	129,861	-	-	-	-	-	-	-	-
Expenditures	141,110	188,840	0	0	1,255,494	0	0	224,218	26,095	26,878
Accrued Interest	9,800	11,611	14,411	17,332	1,545	4,437	7,459	7,252	10,104	13,082
Running Balance	663,112	785,694	975,153	1,172,785	104,545	300,263	504,741	490,703	683,729	885,221
Reserve Payment Total	**332,626**	**339,161**	**215,579**	**222,046**	**228,708**	**235,569**	**242,636**	**249,915**	**257,413**	**265,135**

Water Rates

- Operational and Administrative Expenses
- Short Term Capital Costs/Reserve Funding
- Long Term Capital Costs/Reserve Funding

Financial sustainability requires that the water system be capable of generating adequate revenue to fund operation and maintenance costs as well as capital expenses.

Water Rate Structure

- Majority of water rate should come from base rate so that revenue is consistent throughout the year
- Tiered usage charges are necessary to recoup costs associated with customers who use larger amounts of water
- Higher water demands require increased capacity and storage and cause higher rates of equipment wear/electrical use

New Water Rate Structure

Tier	Use Range	Rate
Base Rate	0 – 700 cubic feet	$75.00
Tier 1	701 – 1,000 cubic feet	$1.25/100 cubic feet
Tier 2	1,001 – 1,500 cubic feet	$1.75/100 cubic feet
Tier 3	Above 1,500 cubic feet	$2.00/100 cubic feet

- Annual increase of 3% to compensate for inflation
- Re-evaluate financial condition each year

New Water Rate Structure

- 2020 service meter records indicate average use of 150 gallons per day, 600 cubic feet per month
- Provides financial sustainability allowing a high level of service quality and reliability
- Minimum level of revenue that would build adequate reserves for infrastructure replacement costs and timeline
- Anything less will require future loans or special assessments
- In line with state guidance for water affordability (1.5% median household income)

Summary

- Water rates have been historically low and inadequate to fund the system
- Water system has been underfunded from years of low rates
- To be sustainable, the base water rate needs to be increased substantially
- Without the new rate structure/increase the system will not be able to pay for capital projects
- Critical that the system be proactive in planning