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July 31, 2020
 Lake Limerick Country Club
 Water Committee
 E 790 St Andrews Dr
 Shelton, WA 98584

Dear Water Committee:

Northwest Water Systems, Inc. has conducted the attached Water Rate Study for the Lake Limerick Water System with the purpose of determining a sufficient reserves budget and proposing rate structures in order to sustainably support the water system into the future.

Northwest Water Systems is not setting your rates or reserve funding targets but providing detailed information and recommendations so that you can decide on the water rates adequate for your community. The rates that we discuss are a suggestion of what the water rates should be in order to continue with regular operations and adequately fund long-term infrastructure goals.

After reviewing your system infrastructure condition and current finances, we developed three rate scenarios, which are discussed in Section 6.2 of the report. These are intended to align with several different funding strategies for large replacement projects. In all cases, we recommend moving to a more tiered rate structure, rather than the existing simple base charge with overage fee. We also recommend that the water use allocated to the base rate or lowest tier be reduced from 10,000 gallons per month to 6,000 gallons per month, as this is more typical and reflects an average 200 gpd.

The most modest rate structure results in only a minor impact to customer water rates in the short term, but will likely result in reliance on loans or special assessments for funding significant replacement projects, as there would not be adequate reserve savings to fund them internally. On the other end of the spectrum is a more aggressive rate structure that would provide adequate reserves to fund all replacements. We recommend pursuing this structure (termed “Rate Structure C” in the report), as it will allow for increased contributions to your reserves with the expectation that future replacements will then be able to be internally funded. This proposed rate structure is as follows:

Rate Structure C

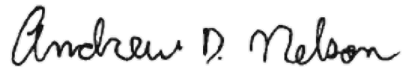
Tier	Use Range	Rate	Estimated Average Fee
Base Rate	0 - 6,000 gal	\$40.00	\$40.00
Tier 1	6,001 - 10,000 gal	\$2.75 / kgal	\$2.53
Tier 2	10,001 - 15,000 gal	\$3.75 / kgal	\$2.04
Tier 3	above 15,000 gal	\$4.75 / kgal	\$4.04
Total			\$48.61

The proposed Rate Structure C represents a significant increase from existing rates; however, the proposed rate is equivalent to \$48.61 per month, which is both modest and typical for Western Washington. As discussed in the following rate study, instituting a lower rate structure than that proposed will likely only postpone eventual rate hikes, as significant infrastructure replacement will otherwise be financed via loans with resultant rate increases then necessitated to meet repayment. Institution of the proposed rate now is intended to smooth any future increases (other than annual adjustment for inflation). Recommendations for transition from the existing rate structure to the proposed rate structure are found in the attached rate study.

Although we evaluate the Lake Limerick Water System's current and future operating costs and offer rate structure suggestions, a Rate Study is only a "snapshot in time" therefore, we recommend this Rate Study be updated on an annual basis. Without annual updates to the rate study, the mathematical calculations and funding models may very well lose their accuracy and affect your long-term goals.

Please feel free to contact me with any questions you may have.

Sincerely,

A handwritten signature in cursive script that reads "Andrew D. Nelson".

Andrew Nelson, Design Engineer

NORTHWEST WATER SYSTEMS, INC.

2020 Water Rate and Reserve Study

prepared for the



Lake Limerick Country Club
Water Committee

by



Northwest Water Systems, Inc.

Planning • Management • Engineering

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Chapter 1 Overview

This report has been prepared by Northwest Water Systems in order to determine the recommended reserve funding and rate structure for the Lake Limerick Water System. It is designed to assist the Lake Limerick Board and Water Committee in making decisions and is not intended for submission to the Washington State Department of Health nor the Utilities and Transportation Commission.

This comprehensive Rate and Reserve Study will help guide the LLCC Water Committee in their budgeting decisions related to the reserve account and make practical suggestions so that LLWS can continue to adequately maintain the Water System's infrastructure and meet their obligations to the Lake Limerick community.

The analysis is based on a starting reserve balance of \$750,000 and projects the necessary savings amounts to fund all future capital replacements. It is assumed that portions of the current reserves will be allocated for an operating reserve, emergency reserve, short-term replacement reserve, and long-term replacement reserve, as discussed in Section 3.2. Only active paying connections are used in development of water rate structure recommendations; growth projections of one additional connection per year are used for the 10-year budget forecast.

This report estimates the system costs and revenue that will be required to maintain the Lake Limerick Water System over the long term and proposes options for updating the base and tiered rates to meet those long-term objectives. The proposed water rate will provide sufficient revenue to: (1) meet the day to day operations expenses and (2) build significant financial reserves to adequately fund the water system's future capital costs without imposing an undue burden on the customers.

1.1 Sources and Historical Records

This evaluation utilizes system maps, usage data, annual budgets, financial records provided by Lake Limerick, data from the Washington State Department of Health records, and the system's current Water System Plan.

The most recent financial records available for review were from the 2018-2019 and 2019-2020 fiscal years. The 2019-2020 budget projects annual revenue of approximately \$500,000, and expenses of \$340,000. About \$130,000 is allocated for moving to reserves.

1.2 Description of Water System

The Lake Limerick Water System is an existing Group A Community water system located in Mason County, Washington that serves the Lake Limerick community.

The water system serves 1,201 active connections, categorized as follows:

- 793 Full-time Residences
- 66 Seasonal Residences
- 333 Recreational Services
- 9 Commercial Services

The system is owned and operated by Lake Limerick Country Club (LLCC). The Water Committee oversees the management of the water system funding.

1.3 Water System Demographics

The Lake Limerick water system service area consists of primarily permanent single-family residences and recreational connections. It is considered that both seasonal and permanent connections use a similar amount of water during the summer months but that consumption by seasonal connections during the winter months is very low.

Recent history indicates a gradual growth trend toward buildout. Therefore, it is assumed for budgetary purposes that the total number of connections will increase by 1 each year, and therefore will not have a significant impact on water rates or revenue.

Chapter 2 Assumptions

2.1 Component Inventory and Lifespan

For rate studies conducted for UTC exempt water systems, estimated lifespan is based on typical lifespan we have seen in the field rather than on standard depreciation schedules. We find that for properly installed and operated components that typical lifespan is significantly greater than lifespan given in depreciation schedules and therefore is the better measure for reserve planning. Our field observations and are based both on our engineering experience and on the input of our water system operational and maintenance divisions and of contractors we frequently work with.

The life span of equipment can vary greatly even from the same supplier and under similar operational and maintenance conditions. In the absence of information to the contrary it is necessary to make the assumption that equipment is properly sized, installed, operated, and maintained. Lifespan is estimated based on average lifespan seen for the component under these conditions. For example, an improperly sized pump or pump operating with a failed pressure tank will fail prematurely. A properly sized pump pumping at design flow against constant head for several extended cycles per day (such as pumping to a reservoir) will typically last longer than average. Similarly, water mains installed in high traffic or unstable areas, with significant point stress (due to rocky bedding or excessive path curvature), near large tree roots, or using substandard materials or installation techniques will often fail prematurely.

When current condition of components can be reasonably known (such as for reservoirs, pumphouse buildings, etc) lifespan estimates are modified by results of inspection or other history. Otherwise, average lifespan as discussed above is utilized in calculating component lifespan.

2.2 Operational and Replacement Cost

The inventory of components is as complete and detailed as is necessary to satisfy the planning needs of the water system. It is typical that a component line item includes the cost of the component itself, as well as installation, installation of any commonly necessary appurtenances, and other requirements such as typical permitting and engineering as required; in some cases such additional items are broken out into their own line items. A certain level of economy of scale is also assumed by necessity. Prices for smaller items such as valve replacement are not intended to represent cost to replace one individual component, rather they represent cost per unit for a more comprehensive replacement of a number of units or of an entire section of distribution system along with the valves, etc.

As with component lifespan, cost to replace a given component is subject to significant variation based on site conditions, the contractor selected, state of the economy, etc. It is not uncommon to see variation of 50% - 100% or more between bids for the same scope of work. Costs of capital replacement utilized in this report represent recent averages for similar scope of work.

It is assumed that inflation will average 3%, as has been historically recorded in the "Consumer Price Index" (CPI). Although water systems are comprised primarily of items that may not follow the CPI, it is nevertheless the best assumption that is available. Ideally, long-term reserves will be placed in interest bearing savings instruments (investments) that will exceed inflation; however, this is often difficult to achieve, therefore a 2.5% annual rate of return is assumed. This assumption should be updated in future rate studies based on actual return of investment vehicles available to LLWS. Projections of future reserves are done in "present worth" or 2020 dollars.

2.3 Capital Funding Mechanism

There are numerous capital improvement and replacement program funding mechanisms available. The best method, if feasible, is internally funding via available reserves. If internal funding is not feasible a commercial loan may be sought, though these are often difficult to secure due to the lack of familiarity of many commercial lending institutions with funding water utility projects. Barring the above mechanisms state and federal loans and grants are often available, some of the most common being Block Grants, State Revolving Fund, and USDA Rural Development loans. Advantages of these programs are low interest rates and extended payback periods, and at times grant money or loan forgiveness. Disadvantages are that these programs can be time consuming to obtain and can delay a project, and that they impose a number of additional requirements on the project. Additional requirements vary, but can include environmental and archeological studies, prevailing wage, US Iron and Steel, and a generally higher level of project management and oversight, including mandatory public bid process. Costs associated with funding type are not included in component cost estimates of this report.

2.4 Rate Recommendations

Rate recommendations of this report are based on gradual growth in the customer base with no significant income from connection fees. Average operational and repair costs of the past several years are extrapolated based on the aforementioned assumed rate of inflation.

After institution of the recommended rate structure, an annual increase of 3% is assumed to compensate for inflation. It is recommended that the system re-evaluate its financial condition each year and make adjustments for actual O&M expenses and changes to capital planning as appropriate.

Chapter 3 Water Distribution System Components

3.1 Useful life of Capital Facilities

Components that are not expected to require imminent replacement are not discussed here, but are listed in the component inventory. However, we identified several components that may need to be addressed within the next several years. These are discussed below and should be kept in mind when considering near-term replacement expenses.

- One of the booster pumps at Site 3 was installed in 1991 and is likely near the end of its useful life. Preparation should be made to replace this pump within the next several years. The booster pump at Site 4 was installed in 1999, and could also require replacement within the next 10 years.
- The Air Vacuum Release Assembly was installed in 1970 and will likely need to be replaced soon.
- The SCADA system has a combination of older and newer components with the majority having been installed in 2004. Several upgrades to the system are planned for the near future, and ongoing upgrades or replacement of certain elements is likely to occur.
- Service meters were installed in 2013. Generally, a 15-year lifespan is expected, meaning the meters will likely need to be replaced within this 10-year planning period.
- The pumps in Wells #1 and #4 were both installed in 1998. A 30-year lifespan is typically used for planning purposes for well pumps. It is possible that these pumps could last for many more years, but the system should be prepared to replace them within the next decade should it be necessary.

Replacement of the distribution system is nearly always the largest expense a water system will ever face. As the distribution system ages it is common to have an increasing trend of leakage and breakage. At some point the distribution system becomes untenable on either or both the basis of health and reliability or of maintenance and cost. It is paramount that distribution replacement is anticipated before this point is reached, as replacement is a large capital project requiring a significant lead time in order to obtain engineering and financing, not to mention to execute the installation itself.

Replacement planning recommendations of this report primarily focus on age of existing infrastructure as this is the primary metric for which reliable information is available. However, one of the best indicators that distribution replacement should be planned for in the near future is an increasing trend of distribution system leakage and line breakages. We highly recommend that LLWS consider these distribution system trends in their ongoing capital planning.

3.2 Replacement Cost of Existing Capital Facilities

Replacement cost of existing capital equipment is calculated by assignment of an estimated present worth replacement cost (cost to replace the component in 2020) and then applying inflation over the timespan from the present until the date of anticipated replacement as calculated in the previous section.

Present Value: PV

Number of Years until Replacement: n

Inflation Rate: i

Future Value: $FV = PV(1 + i)^n$

Existing reserves are applied to meet the cost of components anticipated to require replacement in the near term. For the remainder a recommended annual reserve contribution for each component is then

calculated based on meeting the estimated cost (*FV*) at the date of replacement, with a reserve fund yield rate applied to reserves via Future Value Payment.

Reserve interest yield: r

$$\text{Adjusted Annual Reserve Contribution: } PMT = \frac{FV(r-i)}{(1+r)^n - (1+i)^n}$$

Summing the annual reserve contribution across all components yields a total recommended annual capital replacement reserve contribution, which is further subdivided into short term and long-term asset payments. Short term assets consist of components with a calculated service lifespan of 15 years or less, and includes items such as service meters. Long term assets have an estimated service life in excess of 15 years, and typically include distribution piping, reservoirs, buildings, and pumps.

Short term asset reserves should be well funded on an ongoing basis in order to assure reserves are in place for replacement of service meters as this becomes necessary in the next decade. Annual short-term reserve contributions of \$50,000 (indexed to inflation) are recommended.

Additionally, we recommend having an emergency fund in place to cover unexpected and immediate repairs. Ideally, this fund is large enough to cover the most expensive critical item in the system which could fail with little or no warning. For the Lake Limerick system, the most expensive items are the reservoirs, generators, wells, and larger pumps. It is unlikely that a reservoir will fail catastrophically or suddenly – it is more reasonable to assume that minor repairs could be made until reserves are adequate to replace it. Therefore, we recommend having an emergency fund that is capable of covering a new well and well pump installation. The most expensive well and pump combination for your system is Well #6. The estimated cost to replace this well (including new Source Approval), the pump, and related appurtenances is between \$90,000 and \$95,000. Therefore, we recommend maintaining an emergency fund with a minimum balance of \$100,000. This amount would also be adequate to cover multiple less expensive emergencies within the same year, such as two large pumps or generators failing. This value should be adjusted for inflation each year.

We also recommend that an operating reserve be maintained with a balance of 10 - 12% your annual operating budget. For your system, we estimate this to be about \$60,000. This account is meant for routine operation and maintenance costs and can cover some moderate replacements without needing to dip into the emergency fund.

The long-term reserve contribution represents the contribution estimated to be necessary in order to fully fund all long-term capital replacement from reserves only. Estimated annual long-term reserve contribution necessary to fully fund all future capital replacement from reserves is \$315,000, indexed to inflation. Even if external funding is pursued for large projects, a modest long-term reserves balance should be available to fund smaller discrete projects (typically less than \$100,000) which must be executed on short timelines and therefore cannot be aggregated into a larger capital project. This would often include replacement of pumps, pumphouses, telemetry, backup generators, and sometimes sources. Replacement of the largest class of capital equipment such as reservoirs and distribution system divisions are typically planned well in advance and are therefore acceptable candidates for external funding.

The following table provides a summary of the infrastructure and equipment we analyzed, our assessment of each component's remaining life, and the estimated replacement cost. This forms the basis for determining an adequate budget and water rate for your system.

Component	Year Installed	Service Life	Age	Assessed Life	Current Unit Price	Units	Current Replacement Cost	Cost at Next Replacement
Well 1, 10" x 116', and Source Approval	1967	80	53	27	\$23,000	1	\$23,000	\$51,090
Well 2, 10" x 103', and Source Approval	1968	80	52	28	\$22,000	1	\$22,000	\$50,334
Well 3A, 10" x 148', and Source Approval	1968	80	52	28	\$25,000	1	\$25,000	\$57,198
Well 3B, 10" x 177', and Source Approval	1982	80	38	42	\$27,000	1	\$27,000	\$93,439
Well 4, 10" x 110', and Source Approval	1969	80	51	29	\$22,000	1	\$22,000	\$51,844
Well 5, 10" x 130', and Source Approval	1987	80	33	47	\$24,000	1	\$24,000	\$96,285
Well 6, 10" x 434', and Source Approval	1989	80	31	49	\$45,000	1	\$45,000	\$191,530
Well 1 Pump (3-HP), Controls, Drop Pipe	1998	30	22	8	\$12,000	1	\$12,000	\$15,201
Well 2 Pump (10-HP), Controls, Drop Pipe	2002	30	18	12	\$18,500	1	\$18,500	\$26,377
Well 3A Pump (7.5-HP), Controls, Drop Pipe	2010	30	10	20	\$18,500	1	\$18,500	\$33,413
Well 3B Pump (7.5-HP), Controls, Drop Pipe	2003	30	17	13	\$20,000	1	\$20,000	\$29,371
Well 4 Pump (10-HP), Controls, Drop Pipe	1998	30	22	8	\$19,000	1	\$19,000	\$24,069
Well 5 Pump (10-HP), Controls, Drop Pipe	2004	30	16	14	\$20,000	1	\$20,000	\$30,252
Well 6 Pump (40-HP), Controls, Drop Pipe	2013	30	7	23	\$47,000	1	\$47,000	\$92,759
Booster S1-1 and controls, 4.5-HP	2004	30	16	14	\$7,000	1	\$7,000	\$10,588
Booster S3-1 and controls, 10-HP	2002	30	18	12	\$15,000	1	\$15,000	\$21,386
Booster S3-2 and controls, 10-HP	1991	30	29	1	\$15,000	1	\$15,000	\$15,450
Booster S4-1 and controls, 7.5-HP	1999	30	21	9	\$10,000	1	\$10,000	\$13,048
Booster S6-1 and controls, 10-HP	2004	30	16	14	\$15,000	1	\$15,000	\$22,689
Booster S6-2 and controls, 10-HP	2004	30	16	14	\$15,000	1	\$15,000	\$22,689
Site 1 Bldg, Appurtenances	1985	75	35	40	\$12,500	1	\$12,500	\$40,775
Site 2 Bldg, Appurtenances	1967	75	53	22	\$19,000	1	\$19,000	\$36,406
Site 3 Bldg, Appurtenances	1981	75	39	36	\$19,000	1	\$19,000	\$55,067
Site 4 Bldg, Appurtenances	1968	75	52	23	\$20,000	1	\$20,000	\$39,472
Site 5 Bldg, Appurtenances	1968	75	52	23	\$12,500	1	\$12,500	\$24,670
Site 6 Bldg, Appurtenances	2004	75	16	59	\$32,000	1	\$32,000	\$183,040
84,600 gallon Reservoir, Site 1	1986	100	34	66	\$190,000	1	\$190,000	\$1,336,628
158,600 gallon Reservoir, Site 3	1992	100	28	72	\$320,000	1	\$320,000	\$2,688,006
77,000 gallon Reservoir, Site 4	1983	100	37	63	\$175,000	1	\$175,000	\$1,126,635
158,600 gallon Reservoir, Site 6	2004	100	16	84	\$320,000	1	\$320,000	\$3,832,453
Site 3 Generator, natural gas	1998	50	22	28	\$35,000	1	\$35,000	\$80,077
Site 4 Generator	2022	50	-	2	\$40,000	1	\$40,000	\$42,436
Site 6 Generator, propane	2004	50	16	34	\$35,000	1	\$35,000	\$95,617
Site 1 Fence	2000	50	20	30	\$10,000	1	\$10,000	\$24,273
Site 3 Fence	1998	50	22	28	\$10,000	1	\$10,000	\$22,879
Site 4 Fence	2004	50	16	34	\$10,000	1	\$10,000	\$27,319
Site 5 Fence	2001	50	19	31	\$5,000	1	\$5,000	\$12,500
Site 6 Fence	2001	50	19	31	\$15,000	1	\$15,000	\$37,501
8" Waterline	1967	75	53	22	\$80	15076	\$1,206,080	\$2,310,974
6" Waterline	1967	75	53	22	\$70	58550	\$4,098,500	\$7,853,150
8" Distribution Valves	1967	50	53	15	\$1,200	26	\$31,200	\$48,609
6" Distribution Valves	1967	50	53	15	\$1,000	75	\$75,000	\$116,848
Fire Hydrants	1970	50	50	10	\$5,000	54	\$270,000	\$362,857
Service Meters	2013	15	7	8	\$350	1201	\$420,350	\$532,487
Meter Setters	2013	25	7	18	\$300	1201	\$360,300	\$613,387
Service Laterals	1967	75	53	22	\$1,200	1201	\$1,441,200	\$2,761,488
Air Vacuum Release Assy	1970	50	50	3	\$2,000	7	\$14,000	\$15,298
Standpipe Blowoffs	1970	50	50	15	\$2,000	54	\$108,000	\$168,260
SCADA System - routine upgrade/replace	2004	20	16	2	\$40,000	1	\$40,000	\$42,436

Chapter 4 Revenue and Expenses

4.1 Revenue

Current revenue is based on an average water rate fee of \$34.35 per month per connection. The current annual operating budget for the water system is \$495,900. It is anticipated that the system will have a total reserve balance of \$750,000 at the end of the 2019-2020 fiscal year.

4.2 Expenses

Operating expense estimates in this report are based primarily on past budgets, current records and forecasts. The water system is not expected to experience rapid growth or changes in usage so capital improvements are not expected to significantly impact the operational expenses. It is therefore safe to assume that when indexed to inflation, most operational expenses will remain relatively unchanged.

The largest contributor to the operations and maintenance expense is the day-to-day system management and labor costs, and minor repairs. For our analysis, we assumed labor costs would remain consistent over the planning period aside from annual adjustments for inflation. Electrical usage is generally proportional to water usage and is expected to remain relatively constant on a yearly basis.

The total for general expenses (which does not include reserve funding) is approximately \$330,000 and is expected to increase annually with inflation.

4.3 Existing Reserves

As noted above, it is anticipated that the total reserve balance at the end of the 2019-2020 fiscal year will be \$750,000. Therefore, this is used as the "Starting Reserve Balance" in this study. This should be allocated to the four reserve funds discussed above in Section 3.2: Operating Reserve, Emergency Reserve, Short-Term Asset Reserve, and Long-Term Asset Reserve.

It is advised that long-term reserve funds be placed in interest bearing savings instruments; an average yield of 2.5% on the long-term reserve account is assumed in this rate study. It is recommended that LCMC keep their short-term replacement reserves in liquid investments. The emergency reserve and operational reserve must be readily available and should be maintained in FDIC insured savings accounts. A small rate of return on short term and emergency reserves is likely, however, for the purpose of this rate study yield is assumed to be zero.

Estimated Rate of Return on Long-Term Reserves	2.50%
Estimated Rate of Return on Short-Term and Emergency Reserves	0.00%
Estimated Annual Inflation Rate	3.00%

4.4 10-Year Operational Budget

The following table provides a 10-year summary of the system's operational budget, including the general expenses and reserve allocations discussed above. Note that the "Repair and Maintenance" line item is intended to cover minor day-to-day upkeep and repairs, and does not include significant replacements which are covered in the capital replacement reserve funding.

**Ten Year Budget
for the
Lake Limerick Water System**

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Automobile Expenses	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572	20,159
Bank Service Charges	1,236	1,273	1,311	1,351	1,391	1,433	1,476	1,520	1,566	1,613
Computer and Internet	515	530	546	563	580	597	615	633	652	672
Dues and Subscriptions	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688
Employee Expenses	136,063	140,145	144,349	148,680	153,140	157,734	162,466	167,340	172,361	177,531
Equipment Rental	4,120	4,244	4,371	4,502	4,637	4,776	4,919	5,067	5,219	5,376
General Liability	21,115	21,748	22,401	23,073	23,765	24,478	25,212	25,969	26,748	27,550
Interest Expense	1,100	700	300	0	0	0	0	0	0	0
License and Permits	2,266	2,334	2,404	2,476	2,550	2,627	2,706	2,787	2,871	2,957
Meals and Entertain.	309	318	328	338	348	358	369	380	391	403
Merchant Acct Charges	2,472	2,546	2,623	2,701	2,782	2,866	2,952	3,040	3,131	3,225
NSF Check Fees	309	318	328	338	348	358	369	380	391	403
Office Supplies	824	849	874	900	927	955	984	1,013	1,044	1,075
Office Expense	1,545	1,591	1,639	1,688	1,739	1,791	1,845	1,900	1,957	2,016
Postage and Delivery	4,635	4,774	4,917	5,065	5,217	5,373	5,534	5,700	5,871	6,048
Professional Fees	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239
Repairs and Maint.	20,000	20,600	21,218	21,855	22,510	23,185	23,881	24,597	25,335	26,095
Service Contracts	3,296	3,395	3,497	3,602	3,710	3,821	3,936	4,054	4,175	4,301
Small Tools and Equip.	4,120	4,244	4,371	4,502	4,637	4,776	4,919	5,067	5,219	5,376
Supplies	12,360	12,731	13,113	13,506	13,911	14,329	14,758	15,201	15,657	16,127
Taxes - Property	100	103	106	109	113	116	119	123	127	130
Taxes - Public Utility	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572	20,159
Telephone	1,957	2,016	2,076	2,138	2,203	2,269	2,337	2,407	2,479	2,553
Travel Expense	515	530	546	563	580	597	615	633	652	672
Uniforms	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305	1,344
Utilities	21,630	22,279	22,947	23,636	24,345	25,075	25,827	26,602	27,400	28,222
Water Testing	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524	6,720
General Expense Total	329,627	339,083	348,834	358,990	369,760	380,853	392,278	404,047	416,168	428,653
<i>Operating Reserve</i>										
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
<i>Emergency Reserve</i>										
Target Balance	100,000	103,000	106,090	109,273	112,551	115,927	119,405	122,987	126,677	130,477
Current Balance	97,087	100,000	103,000	106,090	109,273	112,551	115,927	119,405	122,987	126,677
Annual Installment	2,913	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800
Running Balance	100,000	103,000	106,090	109,273	112,551	115,927	119,405	122,987	126,677	130,477
<i>Short-Term Asset Reserve</i>										
Target Balance	225,000	231,750	238,703	245,864	253,239	260,837	268,662	276,722	285,023	293,574
Current Balance	244,660	294,660	346,160	399,205	453,842	510,117	568,081	627,783	689,290	752,829
Annual Installment	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239
Expenditures	0	0	0	0	0	0	0	532,487	0	0
Running Balance	294,660	346,160	399,205	453,842	510,117	568,081	627,783	689,290	752,829	818,068
<i>Long-Term Asset Reserve</i>										
Target Balance	665,789	928,001	1,278,058	1,662,824	2,067,793	2,493,789	2,941,663	3,372,049	3,851,984	4,397,634
Current Balance	350,000	665,789	928,001	1,278,058	1,662,824	2,067,793	2,493,789	2,941,663	3,372,049	3,851,984
Annual Installment	315,000	324,450	334,184	344,209	354,535	365,171	376,126	387,410	399,033	411,004
Expenditures	15,450	84,872	15,298	0	0	0	0	39,270	13,048	362,857
Accrued Interest	16,239	22,634	31,172	40,557	50,434	60,824	71,748	82,245	93,951	97,503
Running Balance	665,789	928,001	1,278,058	1,662,824	2,067,793	2,493,789	2,941,663	3,372,049	3,851,984	4,397,634
Reserve Payment Total	369,660	380,750	392,173	403,938	416,056	428,537	441,394	454,635	468,274	482,323
Monthly Cost Summary										
General Expenses	\$ 27,469	\$ 28,257	\$ 29,070	\$ 29,916	\$ 30,813	\$ 31,738	\$ 32,690	\$ 33,671	\$ 34,681	\$ 35,721
Reserve Payments	\$ 30,805	\$ 31,729	\$ 32,681	\$ 33,661	\$ 34,671	\$ 35,711	\$ 36,783	\$ 37,886	\$ 39,023	\$ 40,194
Total	\$ 58,274	\$ 59,986	\$ 61,751	\$ 63,577	\$ 65,485	\$ 67,449	\$ 69,473	\$ 71,557	\$ 73,704	\$ 75,915
Number of Paying Connections	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211
Monthly Cost Per Connection	\$ 48.48	\$ 49.86	\$ 51.29	\$ 52.76	\$ 54.30	\$ 55.88	\$ 57.51	\$ 59.19	\$ 60.91	\$ 62.69

A 3% rate of inflation is assumed for all regular expenses. The Operating, Emergency, and Short-Term Replacement Reserves should be kept in readily accessible liquid assets. A negligible rate of return is expected for these reserves. The Long-Term Replacement Reserve should be kept in moderately conservative investments with an assumed rate of return of 2.5%.

Chapter 5 Future Reserve Funding

The level of capital replacement reserve funding is a continuum and is generally in flux as savings accrue and are then utilized to fund projects. While a high level of funding which does not require any dependence on outside funding sources is ideal, many systems end up acquiring loans for large projects either out of necessity, or in order to not substantially increase customer rates. In general, water systems which utilize loans to fund infrastructure projects continue to use loans for capital replacement projects, as water rates would typically have to be quite high in order to simultaneously repay past debt obligation while also funding long term replacement reserves. Most commonly water systems strike a balance wherein replacement reserves are less than 100% funded (typically 30%-70%), allowing funding of small or emergent replacements via reserves but often relying on external funding for large capital projects.

At the current funding levels and rate of reserve contributions, the system would have adequate reserves to fund most or all replacements within the next 30 years except for the distribution system, which would require about 3/4 of the cost to be funded by a loan (about \$7.8 million). This loan value could be reduced by approximately 50% if long-term reserve contributions are increased to \$215,000 per year. Full internal funding of all projects including replacement of the distribution system would require an annual contribution to the long-term reserves of approximately \$315,000, which is the assumed approach and is reflected in the operational budget above.

Chapter 6 Water Rates

The three major components of Lake Limerick’s water rates are:

- 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 short term capital equipment expenses. Long term capital projects may be funded either via reserves or via external funding provided water rates are sufficient to accommodate any additional debt repayment which external funding may impose. Funding of large capital projects from reserve funds is preferred when possible. The total reserves balance should not be drawn down below an inflation adjusted level of approximately \$400,000 in order to ensure adequate operating, emergency, and short-term capital replacement reserves are maintained.

6.1 Current Rates and Structure

Current water rates are comprised of a base rate of \$30 per month and an excessive use charge of \$2 for every 1,000 gallons used in excess of 10,000 gallons per month. This results in an average monthly cost per connection of \$34.35. The table below lists the complete water rate and fee structure.

Current Rate Structure

Metered Lot (10,000 gallons per month base allocation)	\$30.00/month
Locked Meter	\$16.00/month
Unmetered Lot	\$16.00/month
Half-Lot, Metered (5,000 gallons per month base allocation)	\$14.00/month
Half-Lot, Unmetered	\$8.00/month
Excessive Use (Over Base Allocation)	\$2.00/1,000 gallons
New Valve and Meter Installation (includes water spigot upon request)	\$1,000.00
Spigot Installation (customer side, past meter and backflow devices)	\$175.00
Lockout (reduces monthly fee to \$16.00)	\$60.00
Return to Service (increases monthly fee to \$30.00)	\$60.00
Hose Bib Lock	\$15.00

In addition to the rate recommendations in the following sections, we suggest charging half-lots nearly as much as full-lots, even if usage is substantially less. The majority of the cost to the system is for providing service to a connection (maintaining equipment and infrastructure, reading meters, accounting, etc.); these costs are nearly the same whether a connection uses a lot of water or none at all. Therefore, we recommend that all connections that have access to water share similarly in the cost to provide service, with more minor variations due to classification and actual water use.

We also recommend increasing the fees to perform services such as new valve, meter, or spigot installation, lockout, return to service, etc. These fees need to cover the cost of all parts and labor (on-

site, accounting, etc.) and a modest premium. The water system should not lose money on these services, and ideally will make a small profit. It is not likely that this can be accomplished with the current fees.

6.2 Water Rate Structure Options

The Lake Limerick community consists of primarily single-family residential and recreational connections. Based on available meter records, average system wide usage is 212 gallons per connection per day. Because usage varies considerably throughout the year due to part-time and seasonal users, it is important to maintain a significant base rate and not rely too heavily on usage charges for revenue. This ensures that there is a relatively consistent revenue stream even during months when customers are using very little water or are residing in their primary home away from Lake Cushman. That being said, it is also important to have tiered usage charges above the base rate to recoup costs associated with customers who use larger amounts of water. Although the majority of the cost of service is not dependent on usage amounts, higher water demands do require increased capacity and storage and cause higher rates of equipment wear and electrical use. A tiered rate structure also provides incentive for water conservation and is a key part of Lake Limerick’s Water Use Efficiency program.

Based on Lake Limerick water system characteristics and our assessment of appropriate levels of reserve funding, we have developed three different proposed rate structures, as shown in the tables below. A base rate allows for average use without any additional usage fee. Tiers 1 – 3 reflect “moderately heavy use”, “heavy use”, and “excessive use”, respectively. Each tier applies a usage charge for any water use within its specified range.

Rate Structure A is similar to the existing rate structure in effect for 2020, with the exception of the base usage being lowered from 10,000 gallons per month to 6,000 gallons per month, which is a more typical allocation for the base rate. While Rate Structure A represents only a minor impact to customers, it does not provide the level of funding necessary to save for major, long-term projects such as replacement of the distribution system. If this rate structure is used, funding for large projects would have to come from loans or special assessments.

Rate Structure A

Tier	Use Range	Rate	Estimated Average Fee
Base Rate	0 – 6,000 gal	\$30.00	\$30.00
Tier 1	above 6,000 gal	\$2.00 / kgal	\$4.63
Tier 2	N/A		
Tier 3	N/A		
Total			\$34.63

Rate Structure B is a bit more aggressive in that it implements a higher base rate as well as additional tiers with increased usage charges. This is a modest step up from the existing rates and would provide an improved level of funding for long-term reserves. If things go well and major infrastructure and equipment last as long or longer than the anticipated service life, this approach may allow enough reserves to be saved to fund most replacements other than the distribution system without loans. However, very large projects or infrastructure that needs to be replaced sooner than anticipated would likely still require the use of loans, as would the replacement of the distribution system.

Rate Structure B

Tier	Use Range	Rate	Estimated Average Fee
Base Rate	0 - 6,000 gal	\$35.00	\$35.00
Tier 1	6,001 - 10,000 gal	\$2.25 / kgal	\$2.07
Tier 2	10,001 - 15,000 gal	\$3.00 / kgal	\$1.63
Tier 3	above 15,000 gal	\$3.50 / kgal	\$2.98
Total			\$41.68

Finally, Rate Structure C proposes the most aggressive changes. This structure further raises the base rate to \$40 per month and increases the rates for each of the tiers. The resulting average rate is roughly 40% higher than what customers are currently paying. However, this is the minimum level of revenue that would build adequate reserves to cover all replacement costs without the need for future loans or special assessments.

Rate Structure C

Tier	Use Range	Rate	Estimated Average Fee
Base Rate	0 - 6,000 gal	\$40.00	\$40.00
Tier 1	6,001 - 10,000 gal	\$2.75 / kgal	\$2.53
Tier 2	10,001 - 15,000 gal	\$3.75 / kgal	\$2.04
Tier 3	above 15,000 gal	\$4.75 / kgal	\$4.04
Total			\$48.61

Our recommendation is for the system to implement Rate Structure C. The resulting water rate will provide financial sustainability for the system and allow a high level of service quality and reliability to be provided into the future without relying on loans or needing sudden, large special assessments to cover the cost of replacement projects. Although the average rate from this rate structure is a sizeable increase from the current rates, it is in line with state guidance for water affordability and is still on the lower end of water rates for similar systems in Western Washington. However, moving to the proposed rate structure from the current rates will be more easily attained by transitioning gradually over the course of several years, instead of making one single large increase. The below table shows our recommended phase-in schedule of 3 years. Implementation of the usage tiers and associated volumes can be made immediately, as this is a minor overall impact to customer rates. The base rate is then increased each year until the target base rate is reached. Note that due to inflation, the base rate will need to be increased by 19% each year in order to reach the target rate by the third year. Once the target rate is achieved, only annual adjustments of 3% to keep pace with inflation should be necessary.

Proposed Three-Year Phase-in Schedule

	2021	2022	2023
Target Base Rate	\$40.00	\$41.20	\$42.44
Actual Base Rate	\$30.00	\$35.68	\$42.44
Implement Usage Tiers	YES		

It should be understood that not raising rates now only delays more significant future increases, as loans would then need to be taken out for large replacement projects in coming years. Eventually, this will start to forcibly push up water rates to keep up with the loan payments, and will make it increasingly difficult to set aside additional reserves. Either way, water rates end up increasing, but by being proactive now, the system can stay ahead of the curve and make well-planned, intentional adjustments rather than waiting for the next big replacement to come due and making sudden reactionary changes.

The following table shows the anticipated expenditures for long-term asset replacement for the next 30 years. Additionally, a comparison of the proposed rate structures is shown. Each of the rate structures provides for a different level of reserve funding and therefore, varying degrees of reliance on loans. The estimated amount of any loans needed to fund replacement projects, as well as the years they would be needed, is also indicated.

Year	Replacement Expenses for Long-Term Components	Using Rate Structure A			Using Rate Structure B			Using Rate Structure C		
		Long-Term Reserve Contribution	Loans Required	Reserve Balance at End of Year	Long-Term Reserve Contribution	Loans Required	Reserve Balance at End of Year	Long-Term Reserve Contribution	Loans Required	Reserve Balance at End of Year
		Starting Balance ----->		\$ 350,000	Starting Balance ----->		\$ 350,000	Starting Balance ----->		\$ 350,000
2021	\$ 15,450	\$ 115,000	\$ -	\$ 460,789	\$ 215,000	\$ -	\$ 563,289	\$ 315,000	\$ -	\$ 665,789
2022	\$ 84,872	\$ 118,450	\$ -	\$ 506,726	\$ 221,450	\$ -	\$ 717,363	\$ 324,450	\$ -	\$ 928,001
2023	\$ 15,298	\$ 122,004	\$ -	\$ 628,767	\$ 228,094	\$ -	\$ 953,413	\$ 334,184	\$ -	\$ 1,278,058
2024	\$ -	\$ 125,664	\$ -	\$ 773,291	\$ 234,936	\$ -	\$ 1,218,058	\$ 344,209	\$ -	\$ 1,662,824
2025	\$ -	\$ 129,434	\$ -	\$ 925,293	\$ 241,984	\$ -	\$ 1,496,543	\$ 354,535	\$ -	\$ 2,067,793
2026	\$ -	\$ 133,317	\$ -	\$ 1,085,075	\$ 249,244	\$ -	\$ 1,789,432	\$ 365,171	\$ -	\$ 2,493,789
2027	\$ -	\$ 137,316	\$ -	\$ 1,252,951	\$ 256,721	\$ -	\$ 2,097,307	\$ 376,126	\$ -	\$ 2,941,663
2028	\$ 39,270	\$ 141,435	\$ -	\$ 1,388,994	\$ 264,423	\$ -	\$ 2,380,521	\$ 387,410	\$ -	\$ 3,372,049
2029	\$ 13,048	\$ 145,679	\$ -	\$ 1,559,666	\$ 272,356	\$ -	\$ 2,705,825	\$ 399,033	\$ -	\$ 3,851,984
2030	\$ 362,857	\$ 150,049	\$ -	\$ 1,380,528	\$ 280,526	\$ -	\$ 2,689,081	\$ 411,004	\$ -	\$ 3,997,634
2031	\$ -	\$ 154,550	\$ -	\$ 1,573,456	\$ 288,942	\$ -	\$ 3,052,474	\$ 423,334	\$ -	\$ 4,531,492
2032	\$ 47,763	\$ 159,187	\$ -	\$ 1,727,002	\$ 297,610	\$ -	\$ 3,384,879	\$ 436,034	\$ -	\$ 5,042,756
2033	\$ 29,371	\$ 163,963	\$ -	\$ 1,908,133	\$ 306,539	\$ -	\$ 3,753,598	\$ 449,115	\$ -	\$ 5,599,063
2034	\$ 86,218	\$ 168,881	\$ -	\$ 2,040,567	\$ 315,735	\$ -	\$ 4,082,693	\$ 462,588	\$ -	\$ 6,124,819
2035	\$ 333,717	\$ 173,948	\$ -	\$ 1,927,818	\$ 325,207	\$ -	\$ 4,176,038	\$ 476,466	\$ -	\$ 6,424,257
2036	\$ -	\$ 179,166	\$ -	\$ 2,159,659	\$ 334,963	\$ -	\$ 4,623,776	\$ 490,760	\$ -	\$ 7,087,893
2037	\$ -	\$ 184,541	\$ -	\$ 2,402,805	\$ 345,012	\$ -	\$ 5,093,007	\$ 505,483	\$ -	\$ 7,783,210
2038	\$ 613,387	\$ 190,077	\$ -	\$ 2,028,984	\$ 355,362	\$ -	\$ 4,955,858	\$ 520,647	\$ -	\$ 7,882,732
2039	\$ -	\$ 195,780	\$ -	\$ 2,280,382	\$ 366,023	\$ -	\$ 5,454,928	\$ 536,266	\$ -	\$ 8,629,473
2040	\$ 33,413	\$ 201,653	\$ -	\$ 2,509,838	\$ 377,004	\$ -	\$ 5,943,481	\$ 552,354	\$ -	\$ 9,377,125
2041	\$ -	\$ 207,703	\$ -	\$ 2,785,480	\$ 388,314	\$ -	\$ 6,490,090	\$ 568,925	\$ -	\$ 10,194,701
2042	\$ 10,277,174	\$ 213,934	\$ 7,800,000	\$ 484,045	\$ 399,963	\$ 3,900,000	\$ 474,452	\$ 585,993	\$ -	\$ 516,108
2043	\$ 156,900	\$ 220,352	\$ -	\$ 561,185	\$ 411,962	\$ -	\$ 747,752	\$ 603,573	\$ -	\$ 986,850
2044	\$ -	\$ 226,962	\$ -	\$ 807,851	\$ 424,321	\$ -	\$ 1,201,375	\$ 621,680	\$ -	\$ 1,648,743
2045	\$ -	\$ 233,771	\$ -	\$ 1,067,663	\$ 437,051	\$ -	\$ 1,679,386	\$ 640,330	\$ -	\$ 2,346,300
2046	\$ -	\$ 240,784	\$ -	\$ 1,341,158	\$ 450,162	\$ -	\$ 2,182,787	\$ 659,540	\$ -	\$ 3,080,986
2047	\$ 51,090	\$ 248,008	\$ -	\$ 1,576,529	\$ 463,667	\$ -	\$ 2,660,248	\$ 679,326	\$ -	\$ 3,801,953
2048	\$ 210,489	\$ 255,448	\$ -	\$ 1,662,025	\$ 477,577	\$ -	\$ 3,000,520	\$ 699,706	\$ -	\$ 4,398,449
2049	\$ 51,844	\$ 263,112	\$ -	\$ 1,920,124	\$ 491,904	\$ -	\$ 3,526,594	\$ 720,697	\$ -	\$ 5,193,984
2050	\$ 24,273	\$ 271,005	\$ -	\$ 2,221,028	\$ 506,662	\$ -	\$ 4,109,208	\$ 742,318	\$ -	\$ 6,059,831

Note: the loan values shown above include an extra \$50,000 to cover additional costs associated with the State and Federal loan programs. This amount is an expense and does not contribute to the reserve balance.

The capital reserves should be re-evaluated periodically to verify that they are growing adequately and to permit changes to the rates if they are found to be insufficient or excessive. With the current number of 1,201 paying connections, each \$1.00 change in the monthly base rate results in a \$14,412 change in annual income. A common question asked at sanitary surveys is whether the system has recently

evaluated its capital reserves; therefore, we recommend performing these capital improvement evaluations in the months prior to sanitary surveys, which occur on either 3 or 5 year cycles at the discretion of the Department of Health.

Chapter 7 Summary of Recommendations

Although the water system as a whole appears to be well-managed and most major infrastructure has many more years of useful life, the system needs to be preparing for both routine maintenance and large future replacement projects. At the current level of funding, the system would not be able to pay for a large capital project such as mainline replacement without conducting a special assessment or obtaining external funding such as loans. It is critical that the system be proactive in planning for these projects now, so that they will be prepared when key infrastructure is due for replacement. At the very least long-term reserves should be funded sufficiently to cover all anticipated small and mid-size projects, as common funding mechanisms such as USDA and SRF loans tend to increase the cost of a project by approximately \$50,000. Unless the financial need is great, it is typically uneconomical and thus undesirable to fund small to medium projects from these sources due to the additional costs involved, as well as longer timelines in order to secure funding and meet prerequisite requirements.

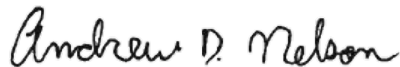
We recommend implementing Rate Structure C. This structure results in a rate that is affordable and sustainable, while eliminating future reliance on loans. Keep in mind that rates should be updated annually to keep pace with inflation and the rising costs of operating and maintaining the water system.

Rate Structure C is a relatively typical rate structure for Western Washington; however, Lake Limerick residents are accustomed to somewhat lower water rates. A gradual increase each year is generally easier for customers to accept, and prevents the need for sudden, large increases or special assessments in future years to catch up with operating costs. It is recommended that Rate Structure C be phased in over the next 3 years as described in Section 6.2. Expenses and rates should then be updated annually and reevaluated with any significant changes or every 5 years. At minimum, ongoing annual increase for the rate of inflation should be employed.

Additionally, we recommend increasing the fees for items such as new valve, meter, or spigot installations, lockout and return to service, and hose bib locks. These fees are currently fairly cheap and should be increased. An appropriate fee for these services will cover all equipment and labor costs (physical, bookkeeping, etc.) plus a modest premium on top of that. Although these fees are not a substantial percentage of overall revenue, it is important that the system not lose money on these services.

Overall, the Lake Limerick Water System is well operated and well maintained. LLWS is in the position to meet most emergency situations as well as capital replacement of short term and smaller long-term capital infrastructure. With institution of the recommended rate structure LLWS will be well positioned for sustainable operation into the foreseeable future.

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Chapter 8 Appendix

Capital Replacements Worksheet

Proposed Ten Year Budget

LLWS Financials – 2018-2019, 2019-2020

Water Rates – 2019-2020

**Capital Replacements Worksheet
for the
Lake Limerick Water System**

Date of Capital Replacement Assessment	2020
Starting Reserve Balance	\$ 750,000
Special Assessment	\$ -
Total Available Funding	\$ 750,000
Projected Inflation Rate	3.0%
Long-Term Savings Account Interest Rate	2.5%
Interest Compoundings per Year	1
Short-Term / Long-Term Break Point	15 years

Component	Year Installed	Service Life	Age	Assessed Life	Current Unit Price	Units	Current Replacement Cost	Cost at Next Replacement
Well 1, 10" x 116', and Source Approval	1967	80	53	27	\$23,000	1	\$23,000	\$51,090
Well 2, 10" x 103', and Source Approval	1968	80	52	28	\$22,000	1	\$22,000	\$50,334
Well 3A, 10" x 148', and Source Approval	1968	80	52	28	\$25,000	1	\$25,000	\$57,198
Well 3B, 10" x 177', and Source Approval	1982	80	38	42	\$27,000	1	\$27,000	\$93,439
Well 4, 10" x 110', and Source Approval	1969	80	51	29	\$22,000	1	\$22,000	\$51,844
Well 5, 10" x 130', and Source Approval	1987	80	33	47	\$24,000	1	\$24,000	\$96,285
Well 6, 10" x 434', and Source Approval	1989	80	31	49	\$45,000	1	\$45,000	\$191,530
Well 1 Pump (3-HP), Controls, Drop Pipe	1998	30	22	8	\$12,000	1	\$12,000	\$15,201
Well 2 Pump (10-HP), Controls, Drop Pipe	2002	30	18	12	\$18,500	1	\$18,500	\$26,377
Well 3A Pump (7.5-HP), Controls, Drop Pipe	2010	30	10	20	\$18,500	1	\$18,500	\$33,413
Well 3B Pump (7.5-HP), Controls, Drop Pipe	2003	30	17	13	\$20,000	1	\$20,000	\$29,371
Well 4 Pump (10-HP), Controls, Drop Pipe	1998	30	22	8	\$19,000	1	\$19,000	\$24,069
Well 5 Pump (10-HP), Controls, Drop Pipe	2004	30	16	14	\$20,000	1	\$20,000	\$30,252
Well 6 Pump (40-HP), Controls, Drop Pipe	2013	30	7	23	\$47,000	1	\$47,000	\$92,759
Booster S1-1 and controls, 4.5-HP	2004	30	16	14	\$7,000	1	\$7,000	\$10,588
Booster S3-1 and controls, 10-HP	2002	30	18	12	\$15,000	1	\$15,000	\$21,386
Booster S3-2 and controls, 10-HP	1991	30	29	1	\$15,000	1	\$15,000	\$15,450
Booster S4-1 and controls, 7.5-HP	1999	30	21	9	\$10,000	1	\$10,000	\$13,048
Booster S6-1 and controls, 10-HP	2004	30	16	14	\$15,000	1	\$15,000	\$22,689
Booster S6-2 and controls, 10-HP	2004	30	16	14	\$15,000	1	\$15,000	\$22,689
Site 1 Bldg, Appurtenances	1985	75	35	40	\$12,500	1	\$12,500	\$40,775
Site 2 Bldg, Appurtenances	1967	75	53	22	\$19,000	1	\$19,000	\$36,406
Site 3 Bldg, Appurtenances	1981	75	39	36	\$19,000	1	\$19,000	\$55,067
Site 4 Bldg, Appurtenances	1968	75	52	23	\$20,000	1	\$20,000	\$39,472
Site 5 Bldg, Appurtenances	1968	75	52	23	\$12,500	1	\$12,500	\$24,670
Site 6 Bldg, Appurtenances	2004	75	16	59	\$32,000	1	\$32,000	\$183,040
84,600 gallon Reservoir, Site 1	1986	100	34	66	\$190,000	1	\$190,000	\$1,336,628
158,600 gallon Reservoir, Site 3	1992	100	28	72	\$320,000	1	\$320,000	\$2,688,006
77,000 gallon Reservoir, Site 4	1983	100	37	63	\$175,000	1	\$175,000	\$1,126,635
158,600 gallon Reservoir, Site 6	2004	100	16	84	\$320,000	1	\$320,000	\$3,832,453
Site 3 Generator, natural gas	1998	50	22	28	\$35,000	1	\$35,000	\$80,077
Site 4 Generator	2022	50	-	2	\$40,000	1	\$40,000	\$42,436
Site 6 Generator, propane	2004	50	16	34	\$35,000	1	\$35,000	\$95,617
Site 1 Fence	2000	50	20	30	\$10,000	1	\$10,000	\$24,273
Site 3 Fence	1998	50	22	28	\$10,000	1	\$10,000	\$22,879
Site 4 Fence	2004	50	16	34	\$10,000	1	\$10,000	\$27,319
Site 5 Fence	2001	50	19	31	\$5,000	1	\$5,000	\$12,500
Site 6 Fence	2001	50	19	31	\$15,000	1	\$15,000	\$37,501
8" Waterline	1967	75	53	22	\$80	15076	\$1,206,080	\$2,310,974
6" Waterline	1967	75	53	22	\$70	58550	\$4,098,500	\$7,853,150
8" Distribution Valves	1967	50	53	15	\$1,200	26	\$31,200	\$48,609
6" Distribution Valves	1967	50	53	15	\$1,000	75	\$75,000	\$116,848
Fire Hydrants	1970	50	50	10	\$5,000	54	\$270,000	\$362,857
Service Meters	2013	15	7	8	\$350	1201	\$420,350	\$532,487
Meter Setters	2013	25	7	18	\$300	1201	\$360,300	\$613,387
Service Laterals	1967	75	53	22	\$1,200	1201	\$1,441,200	\$2,761,488
Air Vacuum Release Assy	1970	50	50	3	\$2,000	7	\$14,000	\$15,298
Standpipe Blowoffs	1970	50	50	15	\$2,000	54	\$108,000	\$168,260
SCADA System - routine upgrade/replace	2004	20	16	2	\$40,000	1	\$40,000	\$42,436

**Ten Year Budget
for the
Lake Limerick Water System**

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Automobile Expenses	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572	20,159
Bank Service Charges	1,236	1,273	1,311	1,351	1,391	1,433	1,476	1,520	1,566	1,613
Computer and Internet	515	530	546	563	580	597	615	633	652	672
Dues and Subscriptions	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688
Employee Expenses	136,063	140,145	144,349	148,680	153,140	157,734	162,466	167,340	172,361	177,531
Equipment Rental	4,120	4,244	4,371	4,502	4,637	4,776	4,919	5,067	5,219	5,376
General Liability	21,115	21,748	22,401	23,073	23,765	24,478	25,212	25,969	26,748	27,550
Interest Expense	1,100	700	300	0	0	0	0	0	0	0
License and Permits	2,266	2,334	2,404	2,476	2,550	2,627	2,706	2,787	2,871	2,957
Meals and Entertain.	309	318	328	338	348	358	369	380	391	403
Merchant Acct Charges	2,472	2,546	2,623	2,701	2,782	2,866	2,952	3,040	3,131	3,225
NSF Check Fees	309	318	328	338	348	358	369	380	391	403
Office Supplies	824	849	874	900	927	955	984	1,013	1,044	1,075
Office Expense	1,545	1,591	1,639	1,688	1,739	1,791	1,845	1,900	1,957	2,016
Postage and Delivery	4,635	4,774	4,917	5,065	5,217	5,373	5,534	5,700	5,871	6,048
Professional Fees	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239
Repairs and Maint.	20,000	20,600	21,218	21,855	22,510	23,185	23,881	24,597	25,335	26,095
Service Contracts	3,296	3,395	3,497	3,602	3,710	3,821	3,936	4,054	4,175	4,301
Small Tools and Equip.	4,120	4,244	4,371	4,502	4,637	4,776	4,919	5,067	5,219	5,376
Supplies	12,360	12,731	13,113	13,506	13,911	14,329	14,758	15,201	15,657	16,127
Taxes - Property	100	103	106	109	113	116	119	123	127	130
Taxes - Public Utility	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572	20,159
Telephone	1,957	2,016	2,076	2,138	2,203	2,269	2,337	2,407	2,479	2,553
Travel Expense	515	530	546	563	580	597	615	633	652	672
Uniforms	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305	1,344
Utilities	21,630	22,279	22,947	23,636	24,345	25,075	25,827	26,602	27,400	28,222
Water Testing	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524	6,720
General Expense Total	329,627	339,083	348,834	358,990	369,760	380,853	392,278	404,047	416,168	428,653
<i>Operating Reserve</i>										
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
<i>Emergency Reserve</i>										
Target Balance	100,000	103,000	106,090	109,273	112,551	115,927	119,405	122,987	126,677	130,477
Current Balance	97,087	100,000	103,000	106,090	109,273	112,551	115,927	119,405	122,987	126,677
Annual Installment	2,913	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800
Running Balance	100,000	103,000	106,090	109,273	112,551	115,927	119,405	122,987	126,677	130,477
<i>Short-Term Asset Reserve</i>										
Target Balance	225,000	231,750	238,703	245,864	253,239	260,837	268,662	276,722	285,023	293,574
Current Balance	244,660	294,660	346,160	399,205	453,842	510,117	568,081	627,783	156,790	220,129
Annual Installment	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239
Expenditures	0	0	0	0	0	0	0	532,487	0	0
Running Balance	294,660	346,160	399,205	453,842	510,117	568,081	627,783	156,790	220,129	285,367
<i>Long-Term Asset Reserve</i>										
Target Balance	665,789	928,001	1,278,058	1,662,824	2,067,793	2,493,789	2,941,663	3,372,049	3,851,984	3,997,634
Current Balance	350,000	665,789	928,001	1,278,058	1,662,824	2,067,793	2,493,789	2,941,663	3,372,049	3,851,984
Annual Installment	315,000	324,450	334,184	344,209	354,535	365,171	376,126	387,410	399,033	411,004
Expenditures	15,450	84,872	15,298	0	0	0	0	39,270	13,048	362,857
Accrued Interest	16,239	22,634	31,172	40,557	50,434	60,824	71,748	82,245	93,951	97,503
Running Balance	665,789	928,001	1,278,058	1,662,824	2,067,793	2,493,789	2,941,663	3,372,049	3,851,984	3,997,634
Reserve Payment Total	369,660	380,750	392,173	403,938	416,056	428,537	441,394	454,635	468,274	482,323
Monthly Cost Summary										
General Expenses	\$ 27,469	\$ 28,257	\$ 29,070	\$ 29,916	\$ 30,813	\$ 31,738	\$ 32,690	\$ 33,671	\$ 34,681	\$ 35,721
Reserve Payments	\$ 30,805	\$ 31,729	\$ 32,681	\$ 33,661	\$ 34,671	\$ 35,711	\$ 36,783	\$ 37,886	\$ 39,023	\$ 40,194
Total	\$ 58,274	\$ 59,986	\$ 61,751	\$ 63,577	\$ 65,485	\$ 67,449	\$ 69,473	\$ 71,557	\$ 73,704	\$ 75,915
Number of Paying Connections	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211
Monthly Cost Per Connection	\$ 48.48	\$ 49.86	\$ 51.29	\$ 52.76	\$ 54.30	\$ 55.88	\$ 57.51	\$ 59.19	\$ 60.91	\$ 62.69

A 3% rate of inflation is assumed for all regular expenses. The Operating, Emergency, and Short-Term Replacement Reserves should be kept in readily accessible liquid assets. A negligible rate of return is expected for these reserves. The Long-Term Replacement Reserve should be kept in moderately conservative investments with an assumed rate of return of 2.5%.

LLWS Financials 2018-2020

	10/1/18 to 09/30/19	Budget 10/01/19 to 09/30/20
Ordinary Income/Expense		
Income		
Gross Revenue Water		
47100 · Water Metered	\$ 443,223.95	\$ 495,900.00
Total Gross Revenue Water	\$ 443,223.95	\$ 495,900.00
Total Income	\$ 443,223.95	\$ 495,900.00
Gross Profit	\$ 443,223.95	\$ 495,900.00
Expense		
60200 · Automobile Expense		
60201 · Fuel/Gas Expense	\$ 6,598.17	\$ 7,200.00
60205 · Auto Repair & Maintenance	\$ 7,827.15	\$ 7,800.00
X Total 60200 · Automobile Expense	\$ 14,425.32	\$ 15,000.00
X 60400 · Bank Service Charges_	\$ 818.74	\$ 1,200.00
X 61700 · Computer and Internet Expenses	\$ 14,979.71	\$ 500.00
X 62500 · Dues & Subscriptions	\$ 2,094.60	\$ 2,000.00
62600 · Employee Expense		
62602 · New Hire Expense	\$ 34.27	
62603 · Education & Training	\$ 1,937.31	
63600 · Salaries & Wages	\$ 78,597.35	\$ 132,100.00
66000 · Payroll Expenses	\$ 3,573.74	
66100 · Payroll Tax Expense	\$ 74.77	
62600 · Employee Expense - Other	\$ -	
X Total 62600 · Employee Expense	\$ 84,217.44	\$ 132,100.00
X 62905 · Equipment Rental	\$ 6,281.93	\$ 4,000.00
X 63310 · General Liability Expense	\$ 9,829.95	\$ 20,500.00
X 63400 · Interest Expense	\$ 1,900.73	\$ 1,500.00
X 63805 · License & Permits	\$ 2,419.87	\$ 2,200.00
X 64300 · Meals and Entertainment	\$ 79.94	\$ 300.00
X 64400 · Merchant Account Charges	\$ 1,957.28	\$ 2,400.00
X 64700 · NSF Check Fees Returned Items	\$ 418.00	\$ 300.00
X 64900 · Office Supplies	\$ 437.26	\$ 800.00
X 64901 · Office Expense	\$ 4,167.67	\$ 1,500.00
X 66500 · Postage and Delivery	\$ 4,400.00	\$ 4,500.00
X 66700 · Professional Fees	\$ 43,278.57	\$ 55,000.00
66900 · *Reconciliation Discrepancies	\$ 123.36	
X 67200 · Repairs and Maintenance	\$ 31,417.58	\$ 30,800.00
X 67400 · Service Contracts	\$ 848.64	\$ 3,200.00
X 67800 · Small Tools and Equipment	\$ 6,768.79	\$ 4,000.00
X 67805 · Supplies_	\$ 11,583.96	\$ 12,000.00
X 68002 · Taxes - Property	\$ 60.00	\$ -
X 68010 · Taxes - Public Utility	\$ 13,923.55	\$ 15,000.00
X 68100 · Telephone Expense	\$ 2,504.35	\$ 1,900.00
68400 · Travel Expense	\$ 12.00	\$ 500.00
68500 · Uniforms	\$ 516.60	\$ 1,000.00
X 68600 · Utilities v	\$ 23,144.56	\$ 21,000.00

	<u>10/1/18 to 09/30/19</u>	Budget 10/01/19 to 09/30/20
X 69805 · Water Testing	\$ 2,289.00	\$ 5,000.00
Total Expense	<u>\$ 284,899.40</u>	<u>\$ 338,200.00</u>
Net Ordinary Income	\$ 158,324.55	\$ 157,700.00
Other Income/Expense		
Other Income		
70200 · Interest Income_	\$ 13,646.77	\$ 800.00
Total Other Income	<u>\$ 13,646.77</u>	<u>\$ 800.00</u>
Net Other Income	\$ 13,646.77	\$ 800.00
Net Income	<u><u>\$ 171,971.32</u></u>	<u><u>\$ 158,500.00</u></u>
Moved to reserves	\$ 132,147.30	\$ 130,400.00
Edward Jones	\$ 525,706.27	
Heritage Bank	\$ 105,470.61	
Heritage Bank	<u>\$ 60,476.65</u>	
	<u>\$ 691,653.53</u>	

LAKE LIMERICK COUNTRY CLUB

WATER RATE CHARGES for Fiscal Year 2019 -2020

	Monthly Billing	Base Allocation	Annual Fees	Water Available
Metered	\$ 30.00	first 10,000 gal.	\$ 360.00	Yes
Metered, locked	\$ 16.00	0	\$ 192.00	No
Non-metered	\$ 16.00	0	\$ 192.00	No
Half lot, metered	\$ 14.00	first 5,000 gal.	\$ 168.00	Yes
Half lot, non-metered	\$ 8.00	0	\$ 96.00	No

Excess Usage (over 10,000 gallons for full lot, over 5,000 for half lot) will be billed monthly @ \$2.00 / 1,000 gallons or any portion thereof.

For example, a total usage of 11,005 gallons for a full lot would result in an additional \$4.00 excess usage charge.

Breakdown of Monthly Fees

	Basic fees incl. utility tax	Mainline replacement reserves	Water capacity reserves	Total plus excess usage
Metered	\$ 22.00	\$ 5.00	\$ 3.00	\$ 30.00
Metered, locked	\$ 8.00	\$ 5.00	\$ 3.00	\$ 16.00
Non-metered	\$ 8.00	\$ 5.00	\$ 3.00	\$ 16.00
Half-lot, metered	\$ 10.00	\$ 2.50	\$ 1.50	\$ 14.00
Half lot, non-metered	\$ 4.00	\$ 2.50	\$ 1.50	\$ 8.00

Additional Charges:

New valve and meter installation (includes water spigot upon request)	\$ 1,000.00
Install spigot (customer side, past meter and backflow devices)	\$ 175.00
Lockout (reduces monthly fee to \$16.00 – voluntary or involuntary)	\$ 60.00
Return to service (increases monthly fee to \$30.00)	\$ 60.00
Hose bib lock	\$ 15.00

Notes:

1. Fees are for originally platted lots, and for half lots resulting from dividing a full lot, not per owner or combined lots.
2. All fees are subject to change at any time.
3. Per Washington State Department of Health laws (WAC 246-290-496(2)), a lot must have a meter installed in order to have water available.
4. Per Bylaws of Lake Limerick Country Club, Article II (A), only members in good standing have the right to use water from the LLCC water system.
5. Washington State Public Utility Tax of 5.029% is included in the base amount.