2021 ANNUAL BUDGET

LAKE WHATCOM WATER & SEWER DISTRICT

LAKE WHATCOM WATER & SEWER DISTRICT
1220 LAKEWAY DRIVE
BELLINGHAM, WASHINGTON 98229

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2021 ANNUAL BUDGET

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1220 LAKEWAY DRIVE
BELLINGHAM, WASHINGTON 98229

APPROVED December 9, 2020

BOARD OF COMMISSIONERS

Laura Abele, President, Position 1

Todd Citron, Secretary, Position 2

Bruce Ford, Commissioner, Position 3

Leslie McRoberts, Commissioner, Position 4

John Carter, Commissioner, Position 5

Justin Clary, General Manager

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1 GENERAL MANAGER'S MESSAGE

The 2021 Budget represents the proposed fiscal plans for the Lake Whatcom Water & Sewer District for the 2021 calendar year (please refer to Appendix A for a comprehensive presentation of the 2021 Budget). This budget is the culmination of a collaborative effort between the Board of Commissioners and staff, and aligns with the District's mission *to provide the best possible water and sewer services to District customers in a cost efficient manner, and in a way that contributes to protecting Lake Whatcom water quality*. This budget was developed around touchstones of the District's financial policies, which embody the principles that guide District budgeting and long-term financial management, reinforcing the key values of fiscal prudence, pay-as-you-go financing to the extent practicable, and strong stewardship through asset management.

As a special purpose district authorized under state statute, the District's primary functions are the operation of water and sewer utilities, which create relatively forecastable revenues by being funded primarily by rates associated with water sales and sewer services. While many of the District's local government peers (e.g., cities and counties) were adversely impacted over past year by the unanticipated COVID-19 pandemic, the District has weathered the economic impacts of the pandemic thus far based upon its stable revenue sources. At the onset of the pandemic, the District suspended some fees to provide relief to our customers; however, these revenues make up a small percentage of the District's overall revenues and, therefore, had limited impact financially. The District did witness some project delays in 2020 created by pandemic-induced supply chain issues; however, as a whole, the District was largely successful in completing most capital reinvestment projects. While future impacts of the pandemic remain unclear at the time of finalization of the 2021 Budget, the District has conservatively accounted for any impacts that will likely carry forward well into 2021.

Despite the ongoing COVID-19 pandemic, the District's unwavering adherence to its conservative fiscal policies has allowed it to enter 2021 with stable revenue projections while continuing to preserve its fully funded operations and contingency reserves. Utility rate revenues have been projected in accordance with the Board-adopted, multi-year rate schedule. Though new home starts in 2020 (25) were slightly above those witnessed in 2019 (20), development-related revenue projections have been cautiously budgeted at 15 new connections to account for potential impacts of the pandemic. As a result, the 2021 Budget anticipates some growth, yet also maintains a conservative approach in accounting for these revenues.

During the past year, the District Board and staff participated in the USEPA-defined Effective Utility Management process to assess the District's performance in and prioritization of ten common attributes of water/sewer utilities. Using the EUM assessment findings the District identified areas in which resources may be applied over the near- and long-term while maintaining an overall focus on meeting the District's mission and complying with applicable laws and regulations. Attributes identified by the District for additional focus include *operational optimization*, and *infrastructure strategy and performance*. The outcome of the EUM assessment was considered in the development of the 2021 Budget.

The budget includes approximately $8 million in expenditures, which is comprised of allocations of approximately $3.1 million and $4.9 million for the water utility and sewer utility, respectively, while maintaining a restricted bond reserve of $772,000. The water utility budget includes $2.3 million dedicated to operations, a capital reinvestment budget of approximately $600,000, and a debt service budget of approximately $229,000, as well as a contingency reserve of $460,000 and an operating reserve of $540,000. The sewer utility budget includes $2.7 million dedicated to operations, a capital reinvestment budget of approximately $1.5 million, and a debt service budget of approximately $640,000, as well as a contingency reserve of $815,000 and an operating reserve of $430,000.

The 2021 Budget reflects a 2.5% increase over the 2020 Budget, which aligns with union contract-required salary cost-of-living-adjustments and step increases, and health insurance increases for District staff, with little overall change to staffing levels (addition of a temporary seasonal worker). Additional factors contributing to the increase are associated with an increase in the District's capital reinvestment program over 2020, which includes construction of the Dellesta and Edgewater sewer lift station rehabilitation projects (carryovers from 2020), construction of the Euclid sewer lift station rehabilitation project, a significant increase in sewer system rehabilitation efforts over past years to reduce inflow and infiltration, and replacement of the Agate Heights water treatment plant. Continued commitment to the District's ongoing effort to systematically upgrade our sewer lift stations will remain by starting the design and permitting process for the Lakewood and Rocky Ridge sewer lift station renovations. All of this work, as well as a number of other ongoing District programs, will be managed by the Engineering Department with some of the projects constructed by the Operations Department, as appropriate.

The budget has been carefully crafted to emphasize the Board's service priorities while deploying resources in a manner that assures a firm foundation that maintains a positive cash balance at yearend. As a result, the 2021 Budget maintains reserves at levels defined by District financial policies, while maintaining adequate operating capital and investing in critical infrastructure improvements that are aimed at prolonging the life of our assets and protecting the environment. The 2021 capital reinvestment program reflects a pay-as-you-go approach funded through a combination of one-time and ongoing resources consistent with the District's asset management philosophy and the 2016 water and sewer utility rate study. The fact that the 2021 investments can be made without reliance on debt can be attributed to the ongoing commitment to disciplined fiscal policy and management.

Forecasting resources, preparing the budget, monitoring its implementation, and assuring accountability and transparency, all while completing day-to-day work functions, takes an exceptional group of professionals. I want to thank District staff, all of whom had a hand in development of the 2021 Budget. I also want to thank the Board of Commissioners, whose leadership and policy direction has placed the District in a position that enables many of the progressive investments found in this budget. Lastly, I thank the District's customers that make up the Lake Whatcom community, without whom we would not have a purpose.

Sincerely,

Justin L. Clary
General Manager

2 SUMMARY OF FUNDS

The Lake Whatcom Water & Sewer District (District) is a special purpose local government authorized under Title 57 Revised Code of Washington (Water-Sewer Districts). Originally formed in 1968 as Whatcom County Water District No. 10, the District's primary function is to provide water and sewer service to customers in an 18-square mile area encompassing much of the Lake Whatcom watershed, including Geneva, Sudden Valley and the North Shore of Lake Whatcom. The District is governed by a five member Board of Commissioners (Board) who set the policies and rates of the District, and who adopt an annual budget. The annual budget defines the operational and capital improvement programs for that year, as well as maintenance of operating and contingency reserves to respond to unanticipated events, should they occur. The following summarizes each of the District's funds.

2.1 Water Utility Fund (Fund 401)

This fund serves as the primary operating fund of the District's water utility. The majority of revenue is derived from rates charged to water customers. Other revenue sources are interest income, late payment fees, recording fees, permit fees, and miscellaneous charges and fees. All fees and charges are set by the Board. Funds collected are used to pay for operations and maintenance, and capital improvement program-related (system reinvestment) expenditures of the water utility in accordance with the Board-approved annual budget.

Managed within the water utility fund are operating reserve, contingency reserve, and debt service funds:

- Operating Reserve. The operating reserve serves as a liquidity cushion providing protection from risk of short-term variation in the timing of revenue collection relative to payment of expenses and is maintained consistent with District financial policies at the cost to operate the utility for 90 days.
- Contingency Reserve. The contingency reserve ensures that unanticipated projects related to water system expenses will be funded, subsequent to Board approval, and is established through the District's financial policies at one percent of the water utility infrastructure replacement cost.
- Debt Service. This fund provides redemption of long-term loans that financed past water utility projects. Principal and interest on those loans are paid entirely from water utility revenues.

2.2 Sewer Utility Fund (Fund 402)

This fund serves as the primary operating fund of the District's sewer utility. The majority of revenue is derived from rates charged to sewer customers. Other revenue sources are interest income, recording fees, permit fees, payments associated with an existing utility local improvement

district (ULID), and miscellaneous charges and fees. All fees and charges are set by the Board. Funds collected are used to pay for operations and maintenance, and capital improvement program-related (system reinvestment) expenditures of the sewer utility in accordance with the Board-approved annual budget.

Managed within the sewer utility fund are operating reserve, contingency reserve, and debt service funds:

- Operating Reserve. The operating reserve serves as a liquidity cushion providing protection from risk of short-term variation in the timing of revenue collection relative to payment of expenses and is maintained consistent with District financial policies at the cost to operate the utility for 60 days.
- Contingency Reserve. The contingency reserve ensures that unanticipated projects related to sewer system expenses will be funded, subsequent to Board approval, and is established through the District's financial policies at one percent of the sewer utility infrastructure replacement cost.
- Debt Service. The debt service allocation provides redemption of outstanding debt incurred associated with a bond that was issued to finance past sewer utility projects. Bond interest is paid semi-annually and the principal is paid annually from sewer utility revenues.

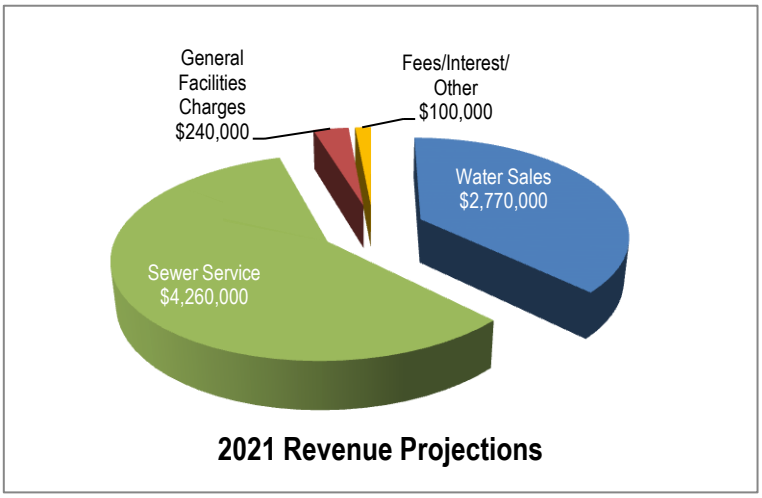
2.3 Bond Reserve Fund (Fund 460)

The fund was established by the covenants of the 2016 bond sale and is restricted by definition. A reserve limitation is required to be held in this fund until the outstanding 2016 bond payment obligations are paid in full (currently scheduled for 2035).

3 2021 REVENUE PROJECTIONS

District functions are funded primarily through revenues received through water sales and sewer service fees, with the relatively small remainder of revenues coming from other fees and charges, as well as permits and other miscellaneous revenues.

In 2016, the District engaged the services of a utility financing consultant to review the District's operational and capital programs relative to revenue projections. The outcome of the study provided a multi-year approach to incremental increases to water and sewer rates through 2021 to ensure sufficient funding for operations, outstanding debt service, and system reinvestment through capital improvement projects and scheduled equipment replacement. Per the Board-approved multi-year rate schedule, 2021 Budget revenues have been based upon water and sewer rate increases of 4 and 2.5 percent, respectively, over 2020 rates. This will result in approximately $2.8 and $4.3 million in water and sewer utility rate revenues, respectively.



The other relatively significant revenue stream is fees the District receives for the connection of new development to its water and sewer systems. These *general facility charges* have been developed based upon the new customer's proportionate share of the cost of constructing the system to which they are connecting, as well as the proportionate share for future system expansion to accommodate that connection's capacity impact. Development within the District in 2020 (25 new homes) was relatively consistent with that witnessed in 2019 (20 new homes). Although current indications are that 2021 will witness similar levels of new development, development-related revenues have been based upon a more conservative number of 15 new homes (resulting in projections of $96,000 and $142,500 in associated revenues to the water utility and sewer utility, respectively).

Other revenues (totaling approximately $110,000), comprised of latecomer and other miscellaneous fees, investment interest, and revenues associated with ULID 18, have been based upon 2020 revenues.

Therefore, based upon prior adopted rate increases and conservative projections of other revenues, the 2021 Budget reflects a total revenue from external sources of $7,370,000 ($2,930,000 water utility and $4,440,000 sewer utility), which is an approximate one percent increase over revenues projected in the 2020 Budget, but is within a half of a percent of actual revenues projected through 2020 yearend.

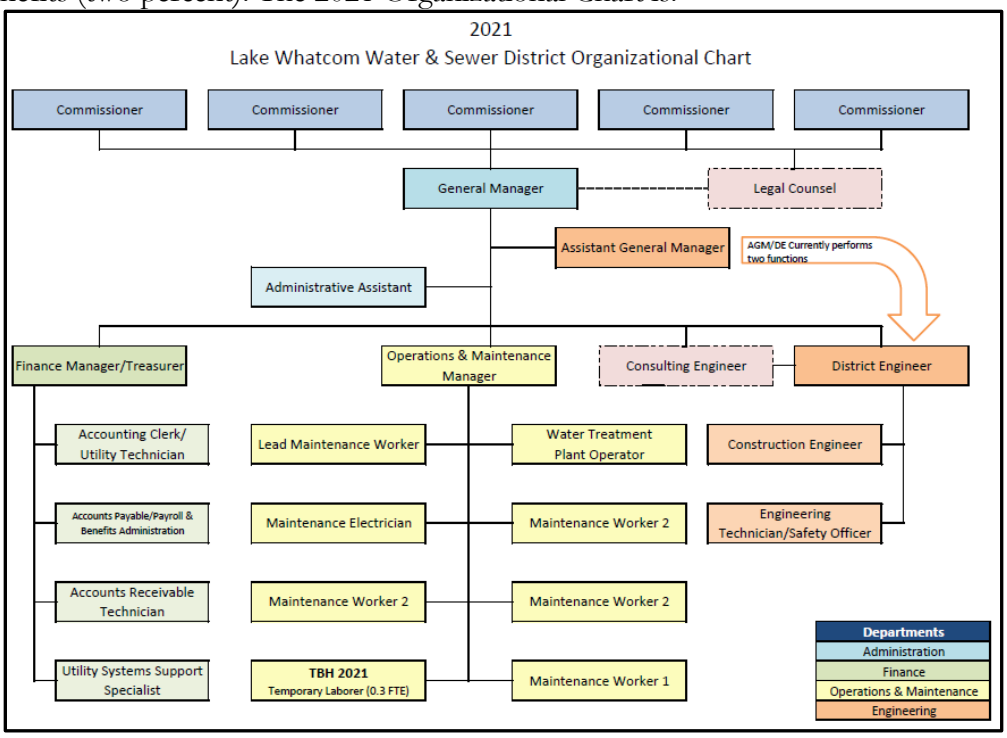
4 2021 EXPENDITURES

4.1 Water Utility Fund (Fund 401)

The Water Utility Fund is the primary fund through which the District conducts water utility-related business. It should be noted that many administrative expenses are shared with the Sewer Utility Fund. The following sections provide summaries of primary components of the fund expenses.

4.1.1 Operating Expenses

Personnel. Being a service-oriented organization, staff salary and associated benefits make up a large portion of the Water Utility Fund budget. Salary- and benefit-related expenses are shared with the Sewer Utility Fund, with exception to the Water Treatment Plant Operator position, which is wholly funded by the Water Utility Fund. For 2021, the District will add a 0.3 full-time equivalent (FTE) above 2020 staffing, which will fund a temporary summer employee to assist the Operations Department. This results in a total of 18.3 FTE positions in 2021. Also of note, the current Finance Manager will retire in mid-2021; the budget therefore reflects 0.5 FTE at the current employee's salary, and 0.5 FTE at a slightly lesser salary, while accounting for some overlap to accommodate transfer of duties consistent with the District's staffing succession plan. Beyond the slight staffing revisions, personnel-related cost increases from the 2020 Budget are primarily associated with union contract-required cost-of-living adjustments to salaries (2.1 percent) and increases to healthcare and related benefits (two percent). The 2021 Organizational Chart is:



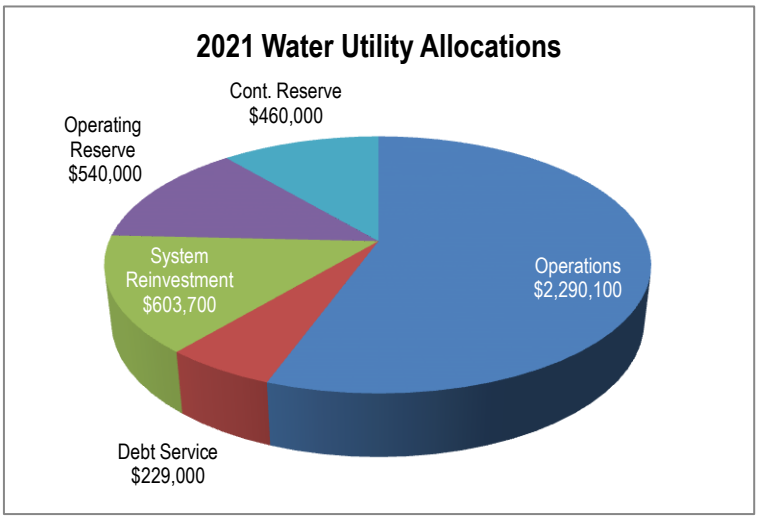
Professional Services. The District relies on a number of professional- and vendor-related services to efficiently and effectively carry out the business of the District. Such providers include contracting with the District's legal counsel and on-call consulting engineer, support services associated with asset management, infrastructure control, administrative systems, and general services (e.g., custodial, landscape maintenance, security, etc.). Many of these services are shared evenly between the water and sewer utilities. The combined professional services for 2021 are projected at $345,200, which is an increase from the 2020 Budget ($281,000), and may primarily be attributed to services related to a utility rate study, implementation of a records management system, and an increase in the District's asset management software for additional system components.

City of Bellingham Fees. The District does not have a drinking water source that is connected to the Eagleridge residential neighborhood located on the Lake Whatcom north shore. Therefore, the District purchases water from the City of Bellingham to serve Eagleridge. The total projected cost for water fees from the City of Bellingham for 2021 is budgeted at $40,000, which is relatively equivalent to prior years' actual costs incurred.

Water Quality Partnerships. With Lake Whatcom as the primary source of drinking water within the District, protection of its water quality is crucial. In 2021, the District will continue its partnership with Whatcom County and the City of Bellingham for water quality monitoring and invasive species inspection programs ($65,000).

Utilities. Electricity to treat and distribute water to District customers, and to pump sewage to the City of Bellingham makes up a significant portion of the District's operating budget. Combined water and sewer utility electricity costs, together with other utilities, are budgeted at $220,000 for 2021 which are slightly above those projected through 2020 yearend.

Fund Carryover. Due to competing workload obligations and the impacts of the COVID-19 pandemic, $120,000 in water utility operating monies was not used under system reinvestment because the associated capital projects were not completed. As a result, these funds will be carried over to 2021 when the associated projects will be completed. Also per District policies, in any year where operating and contingency reserves are fully funded and there is a positive fund balance at yearend, the excess cash is to be used in the following year for system reinvestment in capital projects. For 2021, $205,000 of excess cash is projected for reinvestment in water infrastructure resulting from prior years' balances.



4.1.2 Operating Reserve

In accordance with District financial policies, an operating reserve is maintained equivalent to the cost of operating the water utility for 90 days ($540,000).

4.1.3 Contingency Reserve

A contingency reserve is maintained in accordance with the District's financial policies at one percent of the water utility infrastructure replacement cost ($460,000). As this is contingency fund, no expenditures are budgeted for 2021.

4.1.4 System Reinvestment

The *2021 Capital System Reinvestment Plan*, included as Appendix B, provides a comprehensive description of the projects that will be completed using system reinvestment funds. Following are projects specific to the water utility:

Category	Project	Cost[1]
Capital Outlay Projects—General		
Water/Sewer	SCADA Telemetry-Managed Ethernet Switches (water portion; 2020 carryover)	$7,500
Water/Sewer	Administrative Server Hardware (water portion; 2020 carryover)	$7,500
Water/Sewer	AWIA Risk Assessment and Emergency Response Plan (water portion; 2020 carryover)	$5,000
Water/Sewer	Miscellaneous General Outlay (water portion)	$43,000
	Subtotal	$63,000
Capital Outlay Projects—Water Utility		
Water	Miscellaneous Water Outlay	$45,000
	Subtotal	$45,000
Capital Improvement Projects—Water Utility		
Water	Agate Heights WTP and Opal Booster Upgrades (2020 carryover)	$23,300
Water	Little Strawberry Bridge Water Main Predesign & Estimate (2020 carryover)	$20,000
Water	Sudden Valley WTP 20-year Facility Plan (2020 carryover)	$64,400
Water	Convert Eagleridge Booster to Metering Station (2020 carryover)	$20,000
Water	Austin-Fremont PRV Rebuild (2020 carryover)	$10,000
Water	Agate Heights WTP Phase 1 Upgrade Construction (30 to 60 gpm capacity)	$235,000
Water	Division 30 Booster PLC and UPS Improvements	$60,000
Water	Division 7 Reservoir Predesign, Easements and Permitting	$63,000
	Subtotal	$495,700
	TOTAL	$603,700

[1] Costs presented in table are rounded, please refer to Appendices A and B for specific projected costs.

4.1.5 Debt Service

The District is obligated to annually set aside sufficient funds for debt service repayment associated with prior District capital improvements, which are summarized in the *Revenue Bonds and Loan Funds*

Summary (Appendix C). Water utility-related 2021 expenditures to make principal and interest payments on District low interest loans will be associated with:

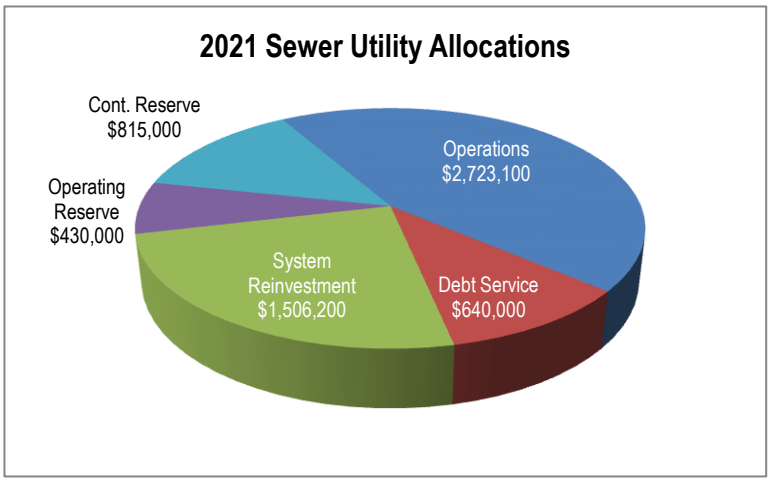
- Geneva AC Pipe Mains Replacement Project ($147,000)
- Division 22 Water Reservoir Construction Project ($82,000)

4.2 Sewer Utility Fund (Fund 402)

The Sewer Utility Fund is the primary fund through which the District conducts sewer utility-related business. It should be noted that many administrative expenses are shared with the Water Utility Fund. The following sections provide summaries of primary components of the fund expenses.

4.2.1 Operating Expenses

Personnel. As sewer utility-related expenses associated with personnel are largely consistent with those of the water utility, please refer to the personnel discussion in Section 4.1.1.



Professional Services. As sewer utility-related expenses associated with professional services are largely consistent with those of the water utility, please refer to the professional services discussion in Section 4.1.1.

City of Bellingham Fees. To protect the quality of Lake Whatcom, all sewage collected by the District is conveyed to the City of Bellingham's sanitary sewer system and treated at the City's Post Point wastewater treatment plant. As a result, the District pays the City for treatment of all sewage collected by the District. The total projected cost for sewer fees from the City of Bellingham for 2021 is budgeted at $750,000, which is slightly above prior years' costs to account for city rate increases.

Utilities. Please refer to the utilities discussion in Section 4.1.1.

Fund Carryover. Due to competing workload obligations and the impacts of the COVID-19 pandemic, $600,000 in sewer utility operating monies was not used under system reinvestment because the associated capital projects were not completed. As a result, these funds will be carried over to 2021 when the associated projects will be completed. Also per District policies, in any year where operating and contingency reserves are fully funded and there is a positive fund balance at yearend, the excess cash is to be used in the following year for system reinvestment in capital projects. For 2021, $110,000 of excess cash is projected for reinvestment in sewer infrastructure resulting from prior years' balances.

4.2.2 Operating Reserve

In accordance with District financial policies, an operating reserve is maintained equivalent to the cost of operating the sewer utility for 60 days ($430,000).

4.2.3 Contingency Reserve

A contingency reserve is maintained in accordance with the District's financial policies at one percent of the sewer utility infrastructure replacement cost ($815,000). As this is contingency fund, no expenditures are budgeted for 2021.

4.2.4 System Reinvestment

The *2021 Capital System Reinvestment Plan*, included as Appendix B, provides a comprehensive description of the projects that will be completed using system reinvestment funds. Following are projects specific to the sewer utility:

Category	Project	Cost[1]
Capital Outlay Projects—General		
Water/Sewer	SCADA Telemetry-Managed Ethernet Switches (water portion; 2020 carryover)	$7,500
Water/Sewer	Administrative Server Hardware (water portion; 2020 carryover)	$7,500
Water/Sewer	AWIA Risk Assessment and Emergency Response Plan (water portion; 2020 carryover)	$5,000
Water/Sewer	Miscellaneous General Outlay (sewer portion)	$43,000
	Subtotal	$63,000
Capital Outlay Projects—Sewer Utility		
Sewer	none	$0
	Subtotal	$0
Capital Improvement Projects—Sewer Utility		
Sewer	Dellesta, Edgewater & Euclid Sewer Lift Stations Improvements (2020 carryover)	$509,000
Sewer	AB PLC-5 Replacements and UPS Improvements (2020 carryover)	$69,200
Sewer	Rocky Ridge Sewer Lift Station Improvement Predesign & Permitting	$65,000
Sewer	Lakewood Sewer Lift Station Improvement Predesign & Permitting	$65,000
Sewer	Flat Car Sewer Lift Station Reverse Flow to SV Lift Station Predesign & Permitting	$50,000
Sewer	Euclid Sewer Lift Station Improvements & Stationary Generator Construction	$560,000
Sewer	Sewer System Rehab and Replacement Projects	$125,000
	Subtotal	$1,443,200
	TOTAL	$1,506,200

[1] Costs presented in table are rounded, please refer to Appendices A and B for specific projected costs.

4.2.5 Debt Service

The District is obligated to annually set aside sufficient funds for debt service repayment associated with prior District capital improvements, which are summarized in the *Revenue Bonds and Loan Funds Summary* (Appendix C). Sewer utility-related 2021 expenditures to make principal and interest

payments on District bond obligations are solely associated with the 2016 Bond (which consisted of financing the renovation of two sewer lift stations and the District's portion of upgrades to the City of Bellingham's Post Point wastewater treatment plant). The 2021 sewer utility debt service will be approximately $640,000.

4.3 Bond Reserve Fund (Fund 460)

No expenditures are anticipated in 2021 from this fund. A fund balance of approximately $772,000 will be carried over from 2020.

APPENDIX A

2021 BUDGET

APPENDIX A

LAKE WHATCOM WATER AND SEWER FUND SUMMARY 2021

	401	402		460
	WATER	SEWER	TOTAL	BOND RESERVE (RESTRICTED)
2021 REVENUES	2,933,313	4,439,869	7,373,182	-
2021 EXPENDITURES	(3,201,944)	(4,933,275)	(8,135,219)	-
2020 OPERATING RESERVES	520,000	420,000	940,000	-
2020 CONTINGENCY FUNDS	460,000	796,000	1,256,000	
2020 CARRYOVER BALANCE	$400,000	$710,000	1,110,000	772,334
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PROPOSED 2021 YEAR END BALANCE	$1,111,369	$1,432,594	2,543,963	$772,334
2021 ALLOCATED TO OPERATING RESERVES	-$540,000	-$430,000	(970,000)	
2021 ALLOCATED TO CONTINGENCY FUNDS	-$460,000	-$815,000	(1,275,000)	
AVAILABLE 2021 YEAR END BALANCE	$111,369	$187,594	298,963	$772,334

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Actual 2018	Actual 2019	Budget 2020	Budget 2021
WATER - 401					
REVENUES					
401-333-66-00-00	North Shore Sampling Interlocal Agreement			40,000	-
401-333-97-00-00	FEMA Aug 2015 Storm Assistance	250	-	-	-
401-343-40-10	Water Sales Metered (4% base rate increase) *	2,468,445	2,502,734	2,632,739	2,770,313
401-343-41-10	Permits (15 new connection permits) $6,400	162,024	175,162	90,000	96,000
401-343-81-10	Combined Fees (Liens and Shut Off Fees)	27,616	27,908	35,000	17,500
401-359-90-00	Late fees	58,690	55,332	55,000	27,500
401-361-11-00	Investment Interest	35,291	35,382	30,000	20,000
401-369-10-00	Sale of scrap metal and surplus	1,252	4,840	3,000	1,000
401-369-10-01	Miscellaneous	2,517	10,794	1,000	1,000
401-369-40-00	Judgements and Settlements	23,767	-	-	-
401-395-10-00	Sale of Capital Assets	7,800	5,610	-	-
401-395-20-00	Deposits	-	1,500	-	-
401-395-20-01	Insurance Recoveries	-	5,611	-	-
	TOTAL REVENUES	**2,787,652**	**2,824,873**	**2,886,739**	**2,933,313**
	* Per Resolution 844 effective 1/1/2020				
	Scheduled annual rate increase				

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Actual 2018	Actual 2019	Budget 2020	Budget 2021
SEWER - 402					
REVENUES					
402-343-41-10-02	Permits (15 new connection permits) $9,500	162,024	175,162	135,000	142,500
402-343-50-11	Sewer Service (2.5% rate increase) *	3,964,760	4,068,571	4,186,946	4,256,228
402-343-50-19	Sewer Service Other	4,586	4,550	4,500	4,500
402-343-50-80	Latecomer's Fees	6,772	-	-	-
402-359-90-02	Late Fees	29,345	-	-	-
402-361-11-00-02	Investment Interest	35,291	35,382	30,000	20,000
402-361-40-00-80	ULID 18 Interest/Penalties	8,889	4,822	4,000	2,500
402-368-10-00-80	ULID 18 Principal Payments	30,534	17,407	15,000	8,000
402-369-10-00-02	Sale of scrap metal and surplus	1,251	4,840	3,000	1,000
402-369-10-00-02	Miscellaneous	2,517	10,794	1,000	1,000
402-369-40-02	Judgements and Settlements	23,767	-	-	4,141
402-395-10-00-02	Sale of Capital Assets	7,800	5,610	-	-
402-395-20-02	Insurance Recoveries	-	5,611	-	-
	TOTAL REVENUES	**4,277,536**	**4,332,749**	**4,379,446**	**4,439,869**
	* Per Resolution 844 effective 1/1/2020				
	Scheduled annual rate increase				

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Actual 2018	Actual 2019	Budget 2020	Budget 2021
WATER - 401					
OPERATING EXPENDITURES					
401-534-10-10	Admin Payroll (2.1% cola plus step increases - 2021)	301,648	331,296	353,900	355,000
401-534-10-20	Admin Personnel Benefits	133,169	141,907	174,250	163,000
401-534-10-31	Gen Admin Supplies/Equipment	11,170	15,430	35,000	25,000
401-534-10-31-01	Meetings/Team building	1,178	2,493	2,000	2,000
401-534-10-40	Merchant Services Fees	20,199	20,522	10,000	10,000
401-534-10-40-01	Bank Fees			-	750
	Interlocal - Invasive Species (City) (8% increase)			55,000	
	Interlocal - Lake Whatcom Tributary Monitor (County)			5,000	
	North Shore Sampling (County Interlocal Agreement)			100,000	
	Mutt Mits			5,000	
401-534-10-41	Water Quality Assurance Programs (TOTAL)	55,119	59,184	165,000	65,000
	Master Meter annual support			2,000	2,000
	South Whatcom Fire (hydrant maintenance)			1,000	1,000
	County Auditor Filing Fees			*3,000*	*3,000*
	Statement processing			*12,500*	*12,500*
	Answering Service			*750*	*750*
	Time clock system			*750*	*750*
	Financial Software Maintenance			*5,000*	*6,000*
	Web Check services			*2,500*	*2,500*
	CPA (Financial statements)			*3,000*	*3,000*
	Rate study			*15,000*	*20,000*
	Salary Study			-	-
	State Audit			*5,000*	-
	Records Management system			*7,500*	*15,000*
	Employee Assistance Program				*600*
	IT/Cyber security support			*15,000*	*15,000*

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Actual 2018	Actual 2019	Budget 2020	Budget 2021
	Anti virus subscription			*500*	*500*
	Office software upgrade				*5,000*
	Building security			*1,000*	*1,000*
	Building custodial			*5,000*	*5,000*
	Pest control			*500*	*500*
	Landscaping service			*3,000*	*4,000*
	Scada System Software Maintenance - Operations			*3,750*	*5,000*
	Safety software			*5,000*	*5,000*
	Hearing/Drug/Employee Testing				*750*
	SCADA/PLC Support - Engineering/Operations			*5,000*	*5,000*
	Cartegraph - Engineering/Operations			*2,500*	*8,500*
	Auto Desk - Engineering			*500*	*500*
	GIS Partnership (County)			*500*	-
	Rockwell - Engineering/Operations			*250*	*250*
	IT Pipes			*750*	-
	ESRI - ARC GIS			*750*	*750*
	Innovyze - Engineering			*1,250*	-
	Cyberlock software			*500*	-
	Whatcom County Emergency Management			*10,000*	*10,000*
	Misc (Bid notices etc.)			*2,500*	*2,500*
401-534-10-41-01	Professional Services (TOTAL)	296,727	158,742	100,250	136,350
401-534-10-41-02	Engineering Services			21,000	20,000
401-534-10-41-03	Legal Services			20,000	20,000
401-534-10-41-04	DEA Expenditures				-
401-534-10-41-25	20 Year Sudden Valley Water Treatment Plant Study				
401-534-10-42	Communication	25,601	26,706	30,000	30,000
401-534-10-45	Admin Lease (copy/printers)	4,198	5,078	5,000	5,000
401-534-10-46	Property Insurance	66,404	71,480	72,000	90,000
401-534-10-49	Admin Misc.	795	40	500	500
401-534-10-49-01	Memberships/Dues/Permits	9,443	8,601	10,000	15,000

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Actual 2018	Actual 2019	Budget 2020	Budget 2021
401-534-10-49-02	WA State Dept of Revenue Taxes/County Stormwater fees	113,994	115,871	115,000	115,000
401-534-40-43	Administration and Board Training/Travel/Certification	16,743	17,744	17,500	10,000
401-534-40-43-01	Tuition reimbursement		-	500	500
401-534-50-31	Operations/Maintenance Supplies	117,834	104,079	75,000	120,000
401-534-50-31-01	Small Assets/tools	2,158	21,346	25,000	40,000
401-534-50-48	Operations Repair/Maint contracted work (includes tree trimming)	75,421	58,687	60,000	55,000
401-534-50-49	Insurance Claims	1,183	-	2,500	2,500
401-534-60-41	Operations Contracted (water testing)	5,418	6,619	12,500	12,500
401-534-60-47	Water City of Bellingham	61,592	42,224	40,000	40,000
401-534-80-10	Operations Payroll (2.1% cola plus step increases - 2021)	546,976	580,184	575,561	570,500
401-534-80-20	Operations Personnel Benefits (Medical, Retirement etc)	238,647	255,323	247,590	245,000
401-534-80-32	Fuel	14,814	13,584	15,000	10,000
401-534-80-35	Safety Supplies	8,668	11,340	10,000	10,000
401-534-80-35-01	Safety Supplies Boots	928	816	1,250	1,250
401-534-80-35-02	Emergency Preparedness	319	5,169	5,000	5,000
401-534-80-43-00	Operations Training/Travel/Certifications			-	10,000
401-534-80-47	General Utilities (Electric, gas, water, garbage)	111,942	101,725	110,000	115,000
401-534-80-49	Laundry	2,053	1,943	2,000	2,000
	WATER OPERATING EXPENDITURES	**2,244,341**	**2,178,133**	**2,313,301**	**2,301,850**

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Actual 2018	Actual 2019	Budget 2020	Budget 2021
DEBT SERVICE					
401-591-34-77-01	Redemption of Long Term Debt Geneva AC Mains	119,938	119,938	119,938	119,937
401-591-34-77-02	Redemption of Long Term Debt Div 22 Reservoir	53,831	65,475	65,475	65,475
401-591-34-77-73	Redemption of Long Term Debt Loan 064	236,260	-	-	
401-592-34-83-01	Debt Service Interest Geneva AC Mains	32,383	30,584	28,785	26,986
401-592-34-83-02	Debt Service Interest Div 22 Reservoir	30,982	18,660	17,678	16,696
401-592-34-83-03	Debt Service Interest Loan 064	3,321	-	-	
SYSTEM REINVESTMENT					
	Water System Reinvestment Projects	470,687	336,883	569,400	-
	Water System Reinvestment 2020 Carryover Projects				225,000
	Water System Capital Outlay Projects				88,000
	Water System Capital Projects				358,000
TRANSFERS					
	Transfers out to Water Contingency Fund			**-**	
WATER FUND	**TOTAL WATER REVENUES**	**2,787,652**	**2,824,873**	**2,886,739**	**2,933,313**
	TOTAL WATER EXPENDITURES	**(3,191,743)**	**(2,749,673)**	**(3,114,577)**	**(3,201,944)**
	2020 - 520,000 reserves/460,000 contingency				**980,000**
	2020 BALANCE CARRYOVER				**400,000**
	2021 ALLOCATED TO OPERATING RESERVES				**(540,000)**
	2021 ALLOCATED TO WATER CONTINGENCY (FUND 426)				**(460,000)**
	PROPOSED AVAILABLE 2021 YEAR END BALANCE				**111,369**

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Actual 2018	Actual 2019	Budget 2020	Budget 2021
SEWER - 402					
OPERATING EXPENDITURES					
402-535-10-10	Admin Payroll (2.1% cola plus step increases - 2021)	301,897	331,295	353,900	355,000
402-535-10-20	Admin Personnel Benefits	132,376	142,020	174,250	155,000
402-535-10-31	Gen Admin Supplies/Equipment	12,535	16,069	20,000	25,000
402-535-10-31-01	Meetings/Team building	1,693	2,833	2,000	2,000
402-535-10-40	Merchant Services Fees	20,195	20,546	10,000	10,000
402-535-10-40-01	Bank Fees			-	750
	Camera Van Software annual support			1,500	1,500
	County Auditor Filing Fees			*3,000*	*3,000*
	Statement processing			*12,500*	*12,500*
	Answering Service			*750*	*750*
	Time clock system			*750*	*750*
	Financial Software Maintenance			*5,000*	*6,000*
	Web Check services			*2,500*	*2,500*
	CPA (Financial statements)			*3,000*	*3,000*
	Rate Study			*15,000*	*20,000*
	Salary Study			-	-
	State Audit			*5,000*	-
	Records Management system			*7,500*	*7,500*
	Employee Assistance Program				*600*
	Legal Counsel			*20,000*	-
	IT/Cyber security support			*15,000*	*15,000*
	Anti virus subscription			*500*	*500*
	Office software upgrade				*5,000*
	Building security			*1,000*	*1,000*
	Building custodial			*5,000*	*5,000*
	Pest control			*500*	*500*

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Actual 2018	Actual 2019	Budget 2020	Budget 2021
	Landscaping service			*3,000*	*4,000*
	Scada System Software Maintenance - Operations			*3,750*	*5,000*
	Engineering Consultant			*5,000*	-
	Safety software			*5,000*	*5,000*
	Hearing/Drug/Employee Testing				*750*
	SCADA/PLC Support - Engineering/Operations			*5,000*	*5,000*
	Cartegraph - Engineering/Operations			*2,500*	*8,500*
	Auto Desk - Engineering			*500*	*500*
	GIS Partnership (County)			*500*	-
	Rockwell - Engineering/Operations			*250*	*250*
	IT Pipes			750	1,500
	ESRI - ARC GIS			*750*	*750*
	Innovyze - Engineering			*1,250*	-
	Cyberlock software			*500*	-
	Whatcom County Emergency Management			*10,000*	*10,000*
	Misc (Bid notices etc.)			*2,500*	*2,500*
402-535-10-41-01	Professional Services (TOTAL)	224,840	130,953	100,750	128,850
402-535-10-41-02	Engineering Services			19,000	20,000
402-535-10-41-03	Legal Services			20,000	20,000
402535-10-41-04	DEA Expenditures				-
402-535-10-41-25	Sewer Comp Plan				-
402-535-10-42	Communication	25,600	26,705	30,000	30,000
402-535-10-45	Admin Lease (copy/printers)	4,200	5,078	5,000	5,000
402-535-10-46	Property Insurance	66,403	71,480	72,000	90,000
402-535-10-49	Admin Misc.	353	417	500	500
402-535-10-49-01	Memberships/Dues/Permits	6,545	6,045	8,000	10,000
402-535-10-49-02	WA State Dept of Revenue Taxes/County Sormwater fees	108,063	109,349	115,000	115,000
402-535-40-43	Administration and Board Training/Travel/Certification	9,549	13,602	17,500	10,000
402-535-40-43-01	Tuition reimbursement	-	-	500	500
402-535-50-31	Operations/Maintenance Supplies	52,213	40,332	75,000	50,000

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Actual 2018	Actual 2019	Budget 2020	Budget 2021
402-535-50-31-01	Small Assets/tools	2,544	16,505	25,000	30,000
402-535-50-48	Operations Repair/Maint contracted work (includes tree trimming)	74,355	57,617	60,000	95,000
402-535-50-49	Insurance Claims	1,183	5,000	2,500	2,500
402-535-60-41	Operations Contracted (generator load testing)	-	-	15,000	25,000
402-535-60-47	Sewer City of Bellingham Treatment Fee	589,677	614,936	680,000	750,000
402-535-80-10	Operations Payroll (2.1% cola plus step increases - 2021)	442,355	472,156	483,494	476,500
402-535-80-20	Operations Personnel Benefits (Medical,Retirement etc)	191,170	206,813	247,590	232,000
402-535-80-32	Fuel	14,770	11,898	13,000	13,000
402-535-80-35	Safety Supplies	8,686	9,552	10,000	10,000
402-535-80-35-01	Safety Supplies Boots	887	964	1,250	1,250
402-535-80-35-02	Emergency Preparedness	467	374	5,000	5,000
402-535-80-43-00	Operations Training/Travel/Certifications				10,000
402-535-80-47	General Utilities (Electric, gas, water, garbage)	101,163	92,329	100,000	105,000
402-535-80-49	Laundry	2,052	2,144	2,000	2,000
	SEWER OPERATING EXPENDITURES	**2,395,771**	**2,407,012**	**2,668,234**	**2,784,850**

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Actual 2018	Actual 2019	Budget 2020	Budget 2021
DEBT SERVICE					
402-591-35-72-50	2009 Bond Principal Payments	275,000	285,000	-	
402-591-35-72-03	2016 Bond Principal Payments	130,000	130,000	425,000	435,000
402-592-35-83-50	2009 Bond Interest Payments	20,300	10,331	-	
402-592-35-83-03	2016 Bond Interest Payments	224,675	222,075	218,176	205,425
SYSTEM REINVESTMENT					
402-594-35-62-02	Sewer System Reinvestment Projects	470,687	1,970,079	1,230,900	
	Sewer System Reinvestment 2020 Carryover Projects				600,000
	Sewer System Capital Outlay Projects				43,000
	Sewer System Capital Projects				865,000
402-594-35-64-02	Sewer Equipment (Flush/Vac Truck)			525,000	
TRANSFERS					
	Transfers Out to Sewer/Storm Water Contingency Fund 425	25,000	-	-	-
SEWER FUND	**TOTAL SEWER REVENUES**	**4,277,536**	**4,332,749**	**4,379,446**	**4,439,869**
	TOTAL SEWER EXPENDITURES	**(3,541,433)**	**(5,024,497)**	**(5,067,310)**	**(4,933,275)**
	2020 BALANCE - 420,000 reserves/796,000 contingency				**1,216,000**
	2020 BALANCE CARRYOVER				**710,000**
	2021 ALLOCATED TO SEWER OPERATING RESERVES				**(430,000)**
	2021 ALLOCATED TO SEWER CONTINGENCY (FUND 425)				**(815,000)**
	PROPOSED AVAILABLE 2021 YEAR END BALANCE				**187,594**

APPENDIX B

2021 SYSTEM REINVESTMENT PLAN

Introduction

The District has segregated its accounting and annual budgets into separate water and sewer utilities. This year, the Capital Improvement Plan (renamed this year as System Reinvestment Plans) has also been separated into two plans, one for water and the other for sewer.

Planned expenditures have been re-grouped into Capital Outlay and Capital Projects. Capital Outlay is intended to include equipment and small/minor projects. Capital Projects include significant projects in terms of cost, planning, permitting, and design efforts.

The current System Reinvestment Plans are primarily funded by utility rate revenues, with a small amount of funds coming from general facilities fees collected from new connections.

In preparation for the upcoming rate study scheduled to begin in early 2021, a Debt/Grant Funding Needs list is under development. The intent is to provide a comprehensive list of significant capital investments to rank, prioritize, and schedule work in coordination with the rate study's planning horizon for debt financing. The list will include a host of recommendations developed through Sudden Valley Water Treatment Plant 20-year facility planning, and sewer collection system rehabilitation and renewal projects to prepare for ultimate system build-out that will occur in the coming decades. The list also includes the District's share of the City of Bellingham Post Point WWTP Biosolids Improvements.

2021 BUDGET - Active Projects Estimates

This spreadsheet summarizes current active projects that are anticipated to continue into 2021 and updates projected budget amounts to achieve completion.

Water System Reinvestment Plan 2021 thru 2026

For 2021, the Water System Reinvestment Plan has approximately $446,000 available for capital outlay and capital projects. Of that, $240,000 is funded by water rate revenues, and the remaining $206,000 funds are from unallocated 2019 carry-over water funds.

Sewer System Reinvestment Plan 2021 thru 2026

For 2021, the Sewer System Reinvestment Plan has approximately $908,000 available for capital outlay and capital projects. Of that, $800,000 is funded by sewer rate revenues, and the remaining $108,000 funds are from unallocated 2019 carry-over sewer funds.

Debt/Grant Funding Needs 2021 thru 2026

This list is still in development. At this point, most of the project schedules are arbitrarily set to 2026 with the exception of the $10M COB Post Point WWTP expenditure. The projects will be prioritized and scheduled over the next few months as staff prepares for the upcoming rate study to begin in early 2021. It is anticipated the list will be further prioritized and scheduled as staff starts working with the rate study consultant and preliminary rate impacts are calculated.

Also, there are some projects that have multiple options. Until an option is selected, the database sums all of the options for a particular project, thereby multiply funding needs until a single option is selected and the others removed.

2021 BUDGET - Active Projects Estimates

Report Last Revised 12/2/2020

Project Number	Project Title / Tasks	Spent to Date as of 12/2/2020	Projected Budget To Completion	Projected Spending Thru 2020	Additional Payments in 2020	Amt Remaining to include in 2021 Budget
C2006	SCADA Telemetry - Managed Ethernet Switches	$158	$20,000	$5,000	$4,842	$15,000
C2007	Administrative Server Hardware	$0	$25,000	$10,000	$10,000	$15,000
A2021	AWIA Risk Assessment and Emergency Response Plans	$0	$10,000	$0	$0	$10,000
	Subtotal General	***$158***	***$55,000***	***$15,000***	***$14,842***	***$40,000***
C1802	Dellesta, Edgewater & Euclid Sewer Pump Stations	$571,485	$1,105,604	$596,525	$25,040	$509,080
M1917	AB PLC-5 Replacements and UPS Improvements	$24,001	$118,191	$49,000	$24,999	$69,191
	Subtotal Sewer	***$595,487***	***$1,223,795***	***$645,525***	***$50,038***	***$578,270***
C1814	Agate Heights WTP and Opal Booster Upgrades	$95,494	$124,320	$101,046	$5,552	$23,274
C1909	Little Strawberry Bridge Water Main Predesign & Estimate	$0	$20,000	$0	$0	$20,000
C1910	SVWTP and AHWTP Misc Component Replacement (Raw pH Probe, 4 Pump Control Valves, 2 Surge Valves, Spare Transfer Pump, AHWTP Finish Meter)	$59,433	$72,000	$65,000	$5,567	$7,000
C1913	SVWTP 20-Year Facility Plan	$56,008	$159,710	$95,360	$39,352	$64,350
C2011	Convert Eagleridge Booster to Metering Station	$11,463	$30,000	$15,000	$3,537	$15,000
C2012	Austin-Fremont PRV Rebuild	$0	$10,000	$0	$0	$10,000
C2013	Geneva and Div 22 Res Impressed Current Cathodic Protect	$0	$40,000	$0	$0	$40,000
C2016	SVWTP Misc Component Replacement (CCB Fiberglass Ladder, Spare 300 Amp Breakers, Div 22 Finish Meter, Raw Meter, CCB Pressure Transmitter, Intake Anchorage Warning Signs)	$14,559	$40,000	$14,559	$0	$25,441
	Subtotal Water	***$236,957***	***$496,030***	***$290,965***	***$54,008***	***$205,065***

Lake Whatcom Water and Sewer District
Water System Reinvestment Plan 2021 thru 2026

Program Area / CIP Project # / CIP Project Name	Fund	Total	2021	2022	2023	2024	2025	2026
Capital Outlay - General (Costs are halved, split 50/50 between Water/Sewer)								
0218 1 Misc 2021 General Capital Outlay		43,000	43,000					
A0005 50 Accounting & Administration Server - Replace/Update Hardware, Network Security, & OS		25,000			12,500			12,500
V0001 18 Replace Tool Truck (7 tool trucks in fleet)		108,000		36,000		36,000		36,000
Subtotal		176,000	43,000	36,000	12,500	36,000		48,500
Capital Outlay - Water								
0214 4 SVWTP Raw Water Intake - Emergency Pumps (water only portable pump)		50,000			50,000			
0219 1 Misc 2021 Water Capital Outlay		45,000	45,000					
W0003 35 SVWTP Filter 3&4 Media - Replace		26,485					26,485	
W0005 35 Reservoirs - Inspection & Maintenance		32,782			32,782			
W0007 35 SVWTP Filter 1&2 Media - Replace		26,485						26,485
Subtotal		180,753	45,000		82,782		26,485	26,485
Capital Projects - Water								
0084b 40 Agate Heights Phase 1 WTP Upgrade 1/3 capacity (from 30gpm to 60gpm) - Construction		235,000	235,000					
0144a 70 1992 SVWTP 0.235MG Chlorine Contact Tank Seismic Retrofit - Priority 2 - Design		86,946		86,946				
0144b 70 1992 SVWTP 0.235MG Chlorine Contact Tank Seismic Retrofit - Priority 2 - Construction		180,847			180,847			
0145a 70 1971 Division 7 1.0MG Res Seismic Retrofit, Coatings - Priority 1 - Predesign, Esmts & Permitting		63,000	63,000					
0145b 70 1971 Division 7 1.0MG Res Seismic Retrofit, Coatings - Priority 1 - Design & Permitting		133,000				133,000		
0166 1 South Shore Water System - SVWTP - Convert from Chlorine Gas to Liquid		100,000		100,000				
0215 6 1237 Lakeview St - Replace 2" PVC with 2" HDPE		50,000		50,000				
0220 1 Divison 30 Booster PLC and UPS Improvements		60,000	60,000					
W0002a 18 Water System Rehab and Replacement Projects		50,000				50,000		
W0002b 18 Water System Rehab and Replacement Projects		440,000					220,000	220,000
Subtotal		1,398,792	358,000	236,946	180,847	183,000	220,000	220,000
Grand Total		1,755,545	446,000	272,946	276,129	219,000	246,485	294,985

* Note: Cost Estimates in 2021 Dollars

Lake Whatcom Water and Sewer District
Sewer System Reinvestment Plan 2021 thru 2026

Program Area / CIP Project # / CIP Project Name	Fund	Total	2021	2022	2023	2024	2025	2026
Capital Outlay - General (Costs are halved, split 50/50 between Water/Sewer)								
0218 1 Misc 2021 General Capital Outlay		43,000	43,000					
A0005 50 Accounting & Administration Server - Replace/Update Hardware, Network Security, & OS		25,000			12,500			12,500
V0001 18 Replace Tool Truck (7 tool trucks in fleet)		108,000		36,000		36,000		36,000
Subtotal		176,000	43,000	36,000	12,500	36,000		48,500
Capital Outlay - Sewer								
A0010 35 Update Sewer Comprehensive Plan (Current Plan approved 7/21/2020)		85,000					85,000	
E0004 8 Replace Camera Equipment		42,769		42,769				
Subtotal		127,769		42,769			85,000	
Capital Projects - Sewer								
0032a 36 Agate Bay Sewer Pump Station - Predesign and Shorelines Permitting		100,000		100,000				
0032b 36 Agate Bay Sewer Pump Station - Design and Bidding		125,000			125,000			
0032c 36 Agate Bay Sewer Pump Station - Construction		525,000				525,000		
0055a 30 Rocky Ridge Pump Station - Predesign and Shorelines Permitting (with Lakewood)		70,000	70,000					
0055b 30 Rocky Ridge Pump Station - Design and Bidding		45,000		45,000				
0055c 30 Rocky Ridge Pump Station - Construction		413,000			413,000			
0056a 30 Lakewood Pump Station - Predesign and Shorelines Permitting (with Rocky Ridge)		70,000	70,000					
0056b 30 Lakewood Pump Station - Design and Bidding		45,000		45,000				
0056c 30 Lakewood Pump Station - Construction		413,000			413,000			
0124a 42 Flat Car Reverse Flow to SVPS Piping and Valves - Design & Permitting		50,000	50,000					
0124b 42 Flat Car Reverse Flow to SVPS Piping and Valves - Construction		100,000		100,000				
0157 12 Install Ball Check Valves at Cable, Ranch House, Flat Car, Beaver		115,927		115,927				
0161 30 Stationary Generator Closed Loop Cooling Retrofit - North Point, SV, Flat Car, Beaver		231,855			231,855			
0163 36 Euclid Electrical Controls Replacement and New Stationary Generator		560,000	560,000					
0171 18 Sudden Valley Sewer Pump Station - Recondition Electrical Controls		173,891				173,891		
0172 16 Flat Car Sewer Pump Station - Recondition Electrical Controls		173,891					173,891	
0173 16 Beaver Sewer Pump Station- Recondition Electrical Controls		173,891						173,891
0221 1 Sudden Valley Sewer Pump Station PLC and UPS Improvements		75,000		75,000				
S0001a 15 Sewer System Rehab and Replacement Projects		115,000	115,000					
S0001b 15 Sewer System Rehab and Replacement Projects		495,000		165,000	165,000	165,000		
S0001c 15 Sewer System Rehab and Replacement Projects		1,200,000					600,000	600,000
Subtotal		5,270,456	865,000	645,927	1,347,855	863,891	773,891	773,891
* Note: Cost Estimates in 2021 Dollars	Grand Total	5,574,225	908,000	724,697	1,360,355	899,891	858,891	822,391

12/2/2020

Lake Whatcom Water and Sewer District
Debt/Grant Funding Needs 2021 thru 2026

Program Area / CIP Project # / CIP Project Name			Fund	Total	2021	2022	2023	2024	2025	2026
Sewer - Debt/Grant Funding Needed										
0193	100	COB Post Point WWTP Biosolids Handling (LWWSD Cost Share 4.8%) - Completion 2025		10,000,000					10,000,000	
0202	2	Airport Sewer Crossing Gravity Pipeline Sag - Reinstall 250LF to Remove Sag		30,000						30,000
S9999	1	Blank		0	0	0	0	0	0	0
			Subtotal	10,030,000	0	0	0	0	10,000,000	30,000
Water - Debt/Grant Funding Needed										
1011	80	SVWTP - Raw Water Pump Modifications		246,170						246,170
1012	80	SVWTP - Clearwell Transfer Pump Modifications		348,140						348,140
1013	80	SVWTP - Finished Water Pump Modifications		762,200						762,200
0145c	70	1971 Division 7 1.0MG Reservoir Seismic Retrofit and Coatings - Priority 1 - Construction		1,550,000						1,550,000
0189	70	Fire Flow & Seismic Improvements - Replace Division 7 Reservoir (Applied for $1.5M Grant + $215k matching District Funds = $1.7M Total Project Cost)		215,000						215,000
1021	60	SVWTP - Recommended Modifications to Chlorine Contact Basin - Option 1		700,400						700,400
1022	60	SVWTP - Reduced Modifications to Chlorine Contact Basin - Option 2		515,000						515,000
1023	60	SVWTP - New Welded Steel Tank Chlorine Contact Basin - Option 3		1,189,650						1,189,650
1031	60	SVWTP - Recommended Main Bldg Seismic Retrofits		121,540						121,540
1032	60	SVWTP - Recommended Pump Bldg Seismic Retrofits		299,730						299,730
1041	60	SVWTP - Liquid Alum in Existing WTP Main Bldg - Option 1		65,920						65,920
1042	60	SVWTP - Liquid Alum in New Chemical Building - Option 2		1,173,170						1,173,170
1043	60	SVWTP - Manual Addition of Soda Ash in WTP Main Bldg - Option 3		1,161,840						1,161,840
1044	60	SVWTP - Mini-Bulk Addition of Soda Ash in New Chemical Bldg - Option 4		1,283,380						1,283,380
1045	60	SVWTP - Recommended Chemical System Modification - Option 5		1,221,580						1,221,580
0110	18	Security - Intrusion Alarms at Reserviors, Cameras as SVWTP AHWTP		11,941						11,941
0084c	6	Agate Heights Phase 2 WTP Upgrade 2/3 capacity, Tank 1 of 2, Main Ext to Trailer Park and Forks Restaurant		1,519,437						1,519,437
0084d	6	Agate Heights Phase 3 WTP Upgrade 3/3 capacity, Tank 2 of 2, Main Ext		7,878,562						7,878,562
0200	2	Division 30 Reservoir Safety Railing Around Perimeter		30,000						30,000
W9999	1	Blank		0	0	0	0	0	0	0
			Subtotal	20,293,659	0	0	0	0	0	20,293,659
* Note: Cost Estimates in 2021 Dollars			Grand Total	30,323,659	0	0	0	0	10,000,000	20,323,659

Details for Misc 2021 Capital Outlay Item

The items below provide a breakdown of small and minor equipment and projects that are included in the lines labeled "0218 Misc 2021 General Capital Outlay, 0219 Misc 2021 Water Capital Outlay, and Misc 2021 Sewer Capital Outlay in the Water and Sewer System Reinvestment Plans.

Budget Amount		Description
		CIP #0218 Misc 2021 General Capital Outlay (Costs will be split 50/50 between water/sewer)
$	35,000	Annual Asphalt Patching (A0011)
$	20,000	Upgrade Existing GPS Unit to Centimeter Grade GPS with Real Time Corrections & Staff Training
$	10,000	Install Electrical Outlets Along Fence at Shop for Equipment Engine Block Heaters and Battery Charger
$	11,000	HDPE Pipe Electro fusion Machine & Crew Training
$	10,000	SVWTP to SVPS Radio Link Telemetry (Ubiquiti AirFiber or similar) Study and Testing
$	86,000	Total
$	43,000	Total / 2 (funded 50/50 between water and sewer departments
		CIP #0219 Misc 2021 Water Capital Outlay
$	25,000	Install Insertavalve at Geneva Reservoir for Emergency Isolation
$	15,000	SVWTP Raw Water Intake Piping Alignment Investigation/Excavation
$	5,000	Camp Firwood Dead End Water Main Auto Flusher
$	45,000	Total
		Misc 2021 Sewer Capital Outlay
$	-	No items

CAPITAL PROJECT NARRATIVE

Project Name:	Rocky Ridge Pump Station Replacement
CIP #:	0055

Asset Register:	LWWSD ➔ Sewer ➔ Pump Stations ➔ Rocky Ridge				
Failure Mode:	Capacity	Level of Service	Mortality	Efficiency	
Business Risk Exposure:	30	= 10 x 3 x 1 (PoF x CoF x Redundancy)			
Remaining Life:	0 years	**Consumed Life:**	40+ years	**Effective Life:**	40 years

PURPOSE and DESCRIPTION OF THE PROJECT

Project includes retrofitting existing Smith & Loveless wet well mounted pump station with new single speed pumps, controls, telemetry, pressure transducers for monitoring the wet well level, backup high and low floats and a pole mounted work light manually switched at control panel. Land access is limited to foot traffic and the project will need to address a construction easement or access to the site via Lake Whatcom. The retrofit is part of a District wide pump station plan to replace all 30+ year old equipment.

The existing pump station was installed in the 1970's and is located adjacent to Lake Whatcom. Two existing 10 HP pumps each have a design point of 100 GPM at 70-feet TDH. The wet well diameter is four feet and the power service is currently 3-phase / 230V. Check valves are inaccessible for maintenance and cleaning. If a check valve ever jams it would be a major project to access the check valves for service.

The O&M Manual for this pump station is missing.

Budget Estimate (*Based on Edgewater and Dellesta. Assumes doing two stations at same time – Lakewood & Rocky Ridge)*

Phase A – begin 2 years before construction
Predesign, Shoreline Permit: $70,000

Phase B – begin 1 year before construction
Design, Bidding: $45,000

Phase C – construction year ($413,000 total)

Services During Construction:	$35,000
Construction:	$325,000
PSE Service	$25,000
SCADA Integration	$3,000
Site Access Difficulty Contingency	$25,000

Grand Project Total: $528,000

Cost estimate in 2020 dollars.

CAPITAL PROJECT NARRATIVE

Historical Cost Data from Previous Project

Dellesta & Edgewater	Cost	Divide by 2 (cost each station)
Predesign & Permitting	$ 141,000	$ 70,500
Design & Services During Bidding	$ 84,000	$ 42,000
Services During Construction	$ 71,000	$ 35,500
Construction	$ 647,000	$ 323,500
PSE Service Upgrades	$ 50,000	$ 25,000
SCADA Integration	$ 5,000	$ 2,500
Subtotal Construction Phase	$ 773,000.00	$ 386,500
Total	$ 998,000.00	$ 499,000

For further information about this project contact Bill Hunter.

Revision History

- Created 8/1/2006.
- Revised 8/2/2006 by MMM: Revised project scope, added budget.
- Revised 8/3/2006 by BH: Added to purpose.
- Revised 8/28/2006 by MMM: Revised PS description.
- Revised 12/6/2007 by BH: Adjusted budget to reflect recent Plum/Strawberry Canyon project costs.
- Revised 8/6/2009 by BH: Adjusted budget to reflect recent Tomb PS project.
- Revised 10/4/2011 by BH: Updated budget numbers to be a bit more conservative.
- Revised 12/5/2016 by BH: Updated budget numbers base on recent pump station projects.
- Revised 10/24/17 by KH. Updated narrative and updated budget numbers based on recent pump station projects.
- Revised 11/30/2020 by BH. Updated budget numbers based on Edgewater and Dellesta Sewer Pump Station Improvements.

CAPITAL PROJECT NARRATIVE

Project Name:	Lakewood Pump Station Retrofit
CIP #:	0056

Asset Register:	LWWSD ➔ Sewer ➔ Pump Stations ➔ Lakewood					
Failure Mode:	Capacity	Level of Service		Mortality	Efficiency	
Business Risk Exposure:	30	= 10 x 3 x 1 (PoF x CoF x Redundancy)				
Remaining Life:	0 years	**Consumed Life:**	46 years		**Effective Life:**	40 years

PURPOSE and DESCRIPTION OF THE PROJECT

Project includes retrofitting existing Smith & Loveless wet well mounted pump station with new single speed pumps, controls, telemetry, pressure transducers for monitoring the wet well level, backup high and low floats and a pole mounted work light manually switched at control panel. Maintenance access is sometimes an issue with the adjacent homeowner and the project will need to provide a new permanent access road and easement either through WWU or the adjacent homeowner's property. The retrofit is part of a District wide pump station plan to replace all 30+ year old equipment.

The existing pump station was installed in the 1974 and is located adjacent to Lake Whatcom. The service area for this pump station is very small (about 5 residences and the WWU Lakewood facility). Wastewater from this station is re-pumped by Airport Pump Station. The station has two existing 15 HP pumps; each have a design point of 100 GPM at 85-feet TDH. The wet well diameter is x-feet and the power service is currently 3-phase / 230V. Check valves are inaccessible for maintenance and cleaning. If a check valve ever jams it would be a major project to access the check valves for service.

The O&M Manual for this pump station is missing.

CAPITAL PROJECT NARRATIVE

Budget Estimate (*Based on Edgewater and Dellesta. Assumes doing two stations at same time – Lakewood & Rocky Ridge)*

Phase A – begin 2 years before construction
Predesign, Shoreline Permit: $70,000

Phase B – begin 1 year before construction
Design, Bidding: $45,000

Phase C – construction year ($413,000 total)

Services During Construction:	$35,000
Construction:	$325,000
PSE Service	$25,000
SCADA Integration	$3,000
Site Access Difficulty Contingency	$25,000

Grand Project Total: $528,000

Cost estimate in 2020 dollars.

Historical Cost Data from Previous Project

Dellesta & Edgewater	Cost	Divide by 2 (cost each station)
Predesign & Permitting	$ 141,000	$ 70,500
Design & Services During Bidding	$ 84,000	$ 42,000
Services During Construction	$ 71,000	$ 35,500
Construction	$ 647,000	$ 323,500
PSE Service Upgrades	$ 50,000	$ 25,000
SCADA Integration	$ 5,000	$ 2,500
Subtotal Construction Phase	$ 773,000.00	$ 386,500
Total	$ 998,000.00	$ 499,000

CAPITAL PROJECT NARRATIVE

For further information about this project contact Bill Hunter.

Revision History

- Created 8/2/2006.
- Revised 8/2/2006 by MMM: Revised project scope, added budget.
- Revised 8/3/2006 by BH: Added to purpose.
- Revised 12/6/2007 by BH: Adjusted budget up slightly.
- Revised 8/6/2009 by BH: Adjusted budget to reflect recent Tomb PS project.
- Revised 10/4/2011 by BH: Updated budget numbers to be a bit more conservative.
- Revised 12/5/2016 by BH: Updated budget numbers base on recent pump station projects.
- Revised 10/24/17 by KH. Updated narrative and updated budget numbers based on recent pump station projects.
- Revised 11/30/2020 by BH. Updated budget numbers based on Edgewater and Dellesta Sewer Pump Station Improvements.

CAPITAL PROJECT NARRATIVE

Project Name:	Agate Heights Treatment Plant Additional Capacity
CIP #:	0084

Asset Register:	LWWSD ➔ Water ➔ Agate ➔ Agate Heights Water Treatment Plant					
Failure Mode:	Capacity	Level of Service		Mortality	Efficiency	
Business Risk Exposure:	12	= 2 x 6 x 1 (PoF x CoF x Redundancy)				
Remaining Life:	Available New = 8 ERU	**Consumed Life:**	Connected/ Reserved = 49 ERU	**Effective Life:**	Existing Plant Capacity = 57 ERU	

PURPOSE and DESCRIPTION OF THE PROJECT

2021 Funding for Construction of Phase 1a
This is a multi-year project where predesign, design, bidding, and permitting have been completed (Active project #C1814). As of November 2020, the project is out for bid with bids due in mid-December 2020. The intent is to award a construction contract at the end of December 2020 and begin construction early 2021. This capital project item provides funding for the construction of Phase 1a scheduled for 2021.

The system capacity was originally limited to 30 gpm as part of an agreement between two developers to share a water right. With the transfer of the 360 gpm water right (Washington State Department of Ecology Water Right Permit No. CG1-22763P) to the Agate Heights water system well in 2010, this capacity limitation is no longer applicable. The District is planning for future demand by incrementally increasing treatment plan capacity in three phases.

- **Phase 1a** - Upgrade the manganese water filtration plant to 60 gpm, replace telemetry and controls, improve existing source pump capacity to 34 gpm by removing the flow limiting pressure sustaining valve. (**Current project #C1814 and with proposed construction in 2021**)

- Phase 1b - Replace source pump station, increase capacity to 60 gpm and include variable frequency drives (VFDs). (Future improvements not yet scheduled in capital improvement plan.)

- Phase 1c - Replace transfer pump station, increase capacity to 30 gpm. (Future improvements not yet scheduled in capital improvement plan.)

Phase 1a Equipment Sizing and Capacity
The new manganese treatment package plant will have a 60 gpm capacity, but be operated initially at the maximum capacity of the existing source pumps (34 gpm when the flow-restricting pressure sustaining valve is removed).

CAPITAL PROJECT NARRATIVE

With increasing the source pump and treatment capacity to 34 gpm, and applying the revised source capacity availability factor of 20 hours per day the number of equivalent residential units (ERU) that can be supported by the Agate Heights Water System is **81 ERU**

Budget Estimate for 2021 Construction
Estimate for construction, software development, startup, & testing is $235,000.

Engineer's Construction Cost Estimate	$158,000
8.5% Sales Tax	$13,430
Subtotal Construction	$171,430
25% Contingency	$42,858
Software Development, Startup & Testing	$18,000
Total	$232,288

(Use $235,000 for budget)

Cost in 2020 dollars.

For further information about this project contact Bill Hunter.

Revision History

- Created 8/5/2009 by BH.
- Revised 5/1/2012 by CDS & MMM: Revised scope and updated budget
- Revised 11/23/2020 by BH. Updated text and budget numbers for 2021 construction.

CAPITAL PROJECT NARRATIVE

Project Name:	Flat Car Reverse Flow to SVPS
CIP #:	0124

Asset Register:	LWWSD ➔ Sewer ➔ Pump Stations ➔ Lakewood					
Failure Mode:	Capacity	Level of Service		Mortality	Efficiency	
Business Risk Exposure:	42	= 6 x 7 x 1 (PoF x CoF x Redundancy)				
Remaining Life:	N/A	**Consumed Life:**	N/A	**Effective Life:**	N/A	

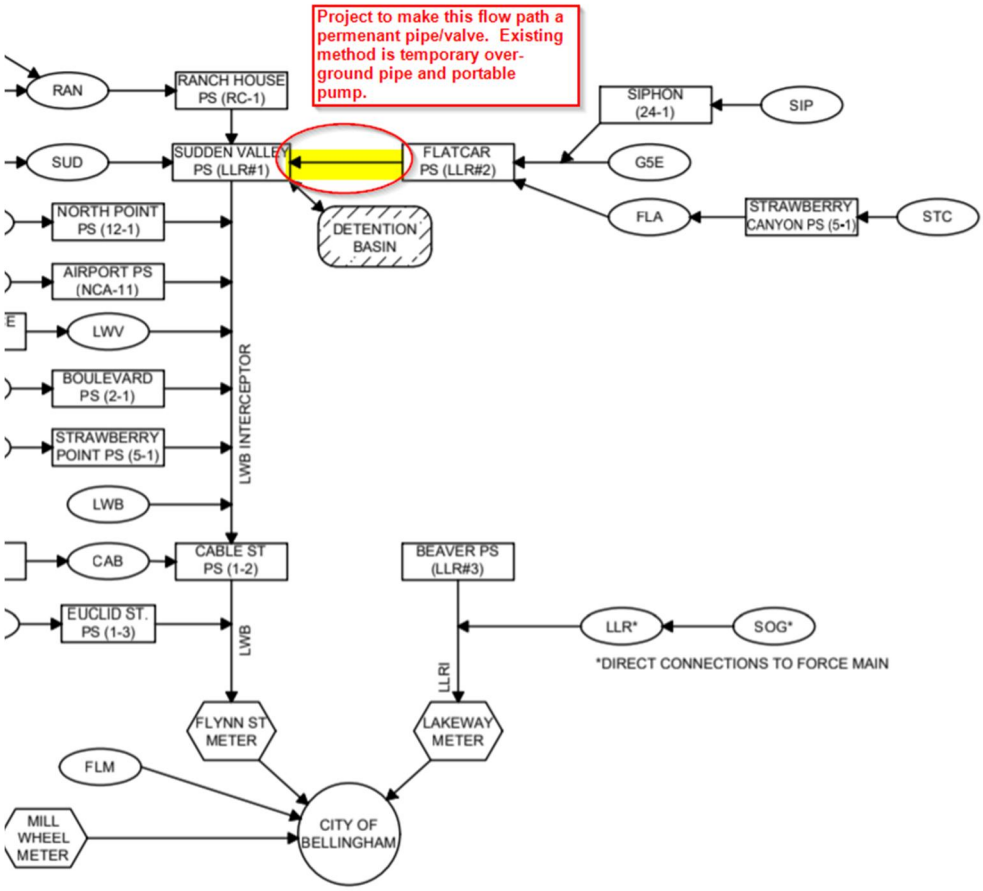
PURPOSE and DESCRIPTION OF THE PROJECT

This project adds a permanent or semi-permanent means to change the direction of flow output from the Flat Car Sewer Pump Station. The purpose is to be able to quickly select which direction the Flat Car Sewer Pump Station discharge is directed; either to Beaver (normal operations), or reverse flow back to Sudden Valley Sewer Pump Station (special operations or emergencies).

The standard District operating mode sends the flow from the Sudden Valley Pump Station (via Flat Car PS) to the Lake Louise Road Interceptor (LLRI) – the former “High Energy” scenario – because of the lack of sufficient capacity in the LWBI. The schematic for this standard operating mode is shown in Exhibit E-1 in the 2020 Sewer Comprehensive Plan.

The District maintains the capability to send flows from the Sudden Valley Pump Station and the Flat Car Pump Station to the LWBI. This operating mode is used only during dry weather and mainly to facilitate maintenance on the LLRI and its associated facilities (Flat Car and Beaver Pump Stations) or in emergencies. This reverse mode was used during the reconstruction of the Whatcom Falls sewer manhole and the HDPE fitting failure at Beaver. The schematic for this reverse operating mode is shown in Exhibit E-2 2020 Sewer Comprehensive Plan.

Exhibit E-2 Schematic from 2020 Sewer Comprehensive Plan Reverse Flow Scenario Diagram



As part of the design process, several different alternatives will need to be explored and evaluated to select a preferred solution.

The ideal solution would include permanent piping and valves to direct flow from the existing wet well pumps. However, the downstream gravity pipe system will need to be analyzed for capacity as existing wet well pumps may have more flow capability than the receiving pipes. A restrictor orifice may needed, along with verification that operating points on the existing pump curves do not cause damaging cavitation or motor overload conditions.

Another option is permanent piping and valves, but utilizes a portable engine driven pump or perhaps a new permanent pump separate from the existing large wet well pumps.

It may be possible to hang a new pipe on the old flat car bridge owned by Sudden Valley Community Association, but this has not yet been investigated. Another alternate is to support a new pipe on a single new beam that crosses the creek.

Permitting conditions and mitigation requirements due to the proximity to Beaver Creek have not yet been evaluated.

CAPITAL PROJECT NARRATIVE

The following budget estimate is very preliminary and assumes that a cost effective solution is readily available and that minimal permitting and site mitigation is required.

Budget Estimate

Phase A (2021) - Design and Permitting	$50,000
Phase B (2022) - Construction	$100,000
Total	$150,000

Cost estimate in 2020 dollars.

For further information about this project contact Bill Hunter.

Revision History

- Created 11/30/2020. BH.

CAPITAL PROJECT NARRATIVE

Project Name:	1971 Division 7 1.0MG Reservoir Seismic Retrofit, Coatings
CIP #:	0145

Asset Register:	LWWSD ➔ Water ➔ Reservoirs				
Failure Mode:	Capacity	Level of Service	Mortality	Efficiency	
Business Risk Exposure:	54	= 6 x 9 x 1 (PoF x CoF x Redundancy)			
Remaining Life:	51 years	**Consumed Life:**	49 years	**Effective Life:**	100 years

PURPOSE and DESCRIPTION OF THE PROJECT

A structural analysis of the Lake Whatcom Water and Sewer District Division 7 water reservoir has found significant deficiencies in its ability to meet existing earthquake code requirements (BHC report, December 2016). The recent Water System Plan also analyzed the capacity of the Division 7 reservoir and found it to be significantly oversized at a volume of one million gallons. The Water System Plan recommended an alternatives analysis for this reservoir to compare the cost of making seismic upgrades and replacing the interior and exterior coatings that are beyond their useful life against the alternative of replacing the Division 7 reservoir with a more appropriate (~half a million gallons) amount of storage volume. Wilson Engineer LLC prepared a technical memorandum dated February 8, 2018 that documents an analysis of these alternatives. The tech memo looks at 3 alternatives:

Alternative 1 - Make Seismic Upgrades and Replace Coatings (Cost Estimate $1.72M)
Alternative 2 – Replace Division 7 Reservoir with Two 185,000 Gallon Reservoirs (Cost Estimate $1.43M)
Alternative 3 – Do Nothing

Alternative 2 was recommended as the preferred alternative that replaces 1-millon gallon Division 7 reservoir with two smaller 185,000 gallon reservoirs. The advantages noted in the tech memo for Alternative 2 include:

1. Capital Cost – the estimated capital cost of Alternative 2 is significantly lower than Alternative 1.
2. Water Quality – The existing Division 7 reservoir is significantly oversized and results in an excessive average water age of 4.6 days. The hydraulic residence time in the reservoirs proposed in Alternative 2 would be 2.1 days under average day demand in a build-out scenario. This would be within the AWWA recommendation of less than 2.5 days average hydraulic residence time and would help improve water quality in terms of less formation of disinfection by-products and better maintenance of chlorine residual in the distribution system.
3. Improved Water Pressure – Installing new storage 25 feet higher than the existing reservoir will improve water pressure for those houses immediately adjacent to the reservoir. The increased pressure will not negatively impact the system in terms of over pressurizing or decreasing pumped flow excessively.

4. Resiliency – Having two parallel water storage reservoirs provides substantially improved system resiliency in case of emergency (earthquake or unexpected failure of one tank) or typical maintenance. Having the ability to keep one reservoir in service while taking the other out of service will improve the District's ability to serve their customers efficiently.
5. Maintenance – Replacing a steel reservoir with concrete reservoirs decreases maintenance efforts and costs. The corrosion protection systems (interior and exterior coatings, cathodic protection) that are required for steel reservoirs are not needed for concrete reservoirs. Current interior coatings for a steel reservoir need to be replaced/refurbished at least every 15 years. This requires the tank to be taken out of service for the work, and this is significantly challenging with only one tank.
6. Construction/Operation Feasibility – Alternative 1 would require temporary storage during construction that would either be prohibitively expensive or would make operation of the system during construction very challenging. It is unknown if the limited temporary storage proposed as part of this alternative would be acceptable to the water system operator, the fire department, or the Department of Health. Alternative 2 allows the existing tank to remain in service during construction and does not impose the operational challenges of Alternative 1.

In 2018, the District submitted a FEMA Hazard Mitigation Grant application to replace the Division 7 Reservoir with two new reservoirs constructed to meet seismic standards, and to implement ShakeAlert on reservoirs, water pumps and water treatment plants District-wide.

The grant application was developed in conjunction with Washington State Emergency Management Division (WA-EMD) and the Federal Emergency Management Agency (FEMA) as a Hazard Mitigation project. The cost share would be as follows: FEMA 75%, WA-EMD 12.5%, and LWWSD 12.5%. The application is still under consideration by the federal and state governments.

In 2019, the District also applied for a Public Works Trust Fund loan to assist with the District's 12.5% share. Unfortunately the District's application did not score high enough to qualify. The project cost estimate prepared as part of this effort and adjusted to 2021 dollars is $1.7M. The detailed cost estimate is attached.

Staff recommends allocating a small amount of funding to begin preliminary design, permitting, easement acquisition, and grant/loan application support. This project will begin a multi-year effort that will help the District score higher when competing for grants and loans. As the project progresses, future phases and budget scopes will be developed and scheduled in the System Reinvestment Plan.

Budget Estimate

The 2021 budget includes $63,000 the begin work on predesign, permitting, easement acquisition, and grant/loan application support.

Cost in 2020 dollars.

For further information about this project contact Bill Hunter.

Revision History

- Created 11/30/2020 by BH.

LAKE WHATCOM WATER AND SEWER DISTRICT **7/11/2019**
Division 7 Reservoir Replacement (Alternative 2)
Preliminary Cost Estimates

Prepared by: **Brian Smith, PE and Melanie Mankamyer, PE, Wilson Engineering LLC**

Wilson Job No.: **2019-104**

Construction Year

Preliminary Cost Estimates - Replace Div 7 Reservoir with Two Concrete Reservoirs **2018** **2021**

Item Description	Quantity	Unit	Unit Price	Amount	Amount
CONSTRUCTION					
a. Mobilization (10%)	1	LS	$ 72,922	**$ 73,000**	**$ 93,000**
b. Temporary Erosion and Sediment Control (1%)	1	LS	$ 7,220	**$ 7,300**	**$ 9,200**
c. Storage Improvements					
Concrete storage tank 185,000 Gallon 30 ft dia x 35 ft height (installed by supplier, prevailing wages)	2	EA	$ 171,000	$ 342,000	$ 427,064
Reservoir railing	2	EA	$ 10,000	$ 20,000	$ 23,485
Tree removal	1	LS	$ 30,000	$ 30,000	$ 35,227
Clearing and grubbing	1	LS	$ 10,000	$ 10,000	$ 11,742
Site earthwork	1	LS	$ 90,000	$ 90,000	$ 105,682
Overflow piping	500	LF	$ 100	$ 50,000	$ 58,712
Piping from new tank to existing, 12" diameter	500	LF	$ 100	$ 50,000	$ 58,712
Manual valve on one tank outlet (other tank to have isolation valve with electronic actuator, priced with ShakeAlert Integration)	1	EA	$ 2,000	$ 2,000	$ 2,348
Surface restoration / planting mitigation	1	LS	$ 20,000	$ 20,000	$ 23,485
Stormwater management	1	LS	$ 8,000	$ 8,000	$ 9,394
Electrical, telemetry and instrumentation	1	LS	$ 100,000	$ 100,000	$ 117,424
Subtotal				**$ 722,000**	**$ 873,276**
d. Access Road Improvements					
Clearing / grubbing / grading	1	LS	$ 15,000		$ 17,614
Base Course (6-in)	180	Ton	$ 40		$ 8,455
Top Course (3-in)	90	Ton	$ 50		$ 5,284
Geotextile (triax grid)	700	SY	$ 3		$ 2,466
Stormwater management	1	LS	$ 5,000		$ 5,871
Subtotal				**$ -**	**$ 39,689**
SUMMARY					
Subtotal				$ 802,300	$ 1,015,165
Contingencies	15%			$ 120,300	$ 152,300
Sales Tax	8.5%			$ 78,421	$ 99,235
Preliminary Estimated Construction Costs				**$ 1,002,000**	**$ 1,267,000**
Permit Fees	2.2%			$ 22,000	$ 24,500
Easement Acquisition				$ 5,000	$ 5,500
DOH Project Report					$ 20,000
Topographic Survey	2%			$ 20,040	$ 21,300
Geotechnical Investigation				$ 10,000	$ 10,700
Engineering Design	10%			$ 100,200	$ 106,500
Construction Phase Engineering/Inspection	10%			$ 100,200	$ 109,500
Construction Phase Surveying	1%			$ 10,020	$ 11,000
NEW CONSTRUCTION TOTAL PROJECT ESTIMATED COST				**$ 1,270,000**	**$ 1,576,000**
Demolition of Existing Division 7 Steel Reservoir (including permit fee and sales tax)				$ 167,000	$ 172,000
NEW CONSTRUCTION PLUS DEMO TOTAL PROJECT ESTIMATED COST				**$ 1,437,000**	**$ 1,748,000**

ShakeAlert Integration (Based on RH2's 2018 estimate)

1. ShakeAlert Application	1	LS	$ 13,000	**$ 13,000**	**$ 13,000**
2. ShakeAlert Policy Development	1	LS	$ 42,000	**$ 42,000**	**$ 45,000**
3. ShakeAlert at MTU at Shops *(update includes District In-Kind contribution of Staff time)*	1	LS	$ 14,000	**$ 14,000**	**$ 30,000**
4. Audible Alarms to Shop, Water Treatment Plant and Office	1	LS	$ 18,000	**$ 18,000**	**$ 21,000**
5. Division 7 Isolation Valve Integration	1	LS	$ 69,000	**$ 69,000**	**$ 81,000**
6. Division 22 Seismic Valve Integration	1	LS	$ 6,000	**$ 6,000**	**$ 7,000**
7. Water Treatment Plant Pump Shutoff	1	LS	$ 15,000	**$ 15,000**	**$ 17,600**
8. Geneva Reservoir Isolation Valve Integration	1	LS	$ 69,000	**$ 69,000**	**$ 81,000**
9. Transmission Pump Shutoffs (Div 30, Opal, Beecher)	1	LS	$ 31,000	**$ 31,000**	**$ 36,400**
TOTAL ESTIMATED COST				**$ 277,000**	**$ 332,000**

CAPITAL PROJECT NARRATIVE

Project Name:	Euclid Electrical Controls Replacement and New Stationary Generator
CIP #:	0163

Asset Register:	LWWSD ➔ Sewer ➔ Pump Stations ➔ Euclid					
Failure Mode:	Capacity	Level of Service		Mortality	Efficiency	
Business Risk Exposure:	27	= 9 x 3 x 1 (PoF x CoF x Redundancy)				
Remaining Life:	4 years	**Consumed Life:**	21 years	**Effective Life:**	25 years	

PURPOSE and DESCRIPTION OF THE PROJECT

2021 Funding for Construction
This is a multi-year project where predesign, design, and permitting have been completed for the Euclid Sewer Pump Station project (Active project #C1802). Construction contract documents will be finalized by January 2021 with the goal of advertising for bids early February. The intent is to award a construction contract February/March 2021 with construction to occur during summer 2021. This capital project item provides funding for the construction phase scheduled for 2021.

The Euclid Sewer Pump Station is located along the westerly shore of Lake Whatcom at approximate address 1700 Euclid Ave and is subject to the County's shoreline permitting process. The pump station and system controls were upgraded in 1999. The pump station is using duplex Flygt submersible pumps; 3 phase, 230 Volt, 15 HP (Flygt Model 3140.090).

The improvements include:

- Sewer bypass pumping for a portion of the project.
- Site grading to install an access road and awning.
- Shorelines mitigation plan.
- Temporary sedimentation and erosion control systems and site restoration.
- New power drop and existing pump refurbishment.
- Waterproofing existing wetwell concrete surfaces.
- Power drop.
- On site generator and slab.
- Installation of electrical and telemetry systems.

Budget Estimate for 2021 Construction

Estimate for construction, consultant services during construction, PSE electrical service improvements, startup, & testing is $560,000.

Engineer's Construction Cost Estimate	$336,000
8.5% Sales Tax	$28,560
Subtotal Construction	$364,560
25% Contingency	$91,140
PSE Service Contract	$23,000
RH2 Services During Construction	$75,000
SCADA Integration and Commissioning	$5,000
Total	$558,700

(use $560,00 for budget)

Cost estimate in 2020 dollars.

For further information about this project contact Bill Hunter.

Revision History

- Created 11/23/2020. Prepare cost estimate for construction phase in 2021. BH.

CAPITAL PROJECT NARRATIVE

Project Name:	Division 30 Booster PLC and UPS Improvements
CIP #:	0220

Asset Register:	LWWSD ➔ Water ➔ Booster Pump Stations				
Failure Mode:	Capacity	Level of Service	Mortality	Efficiency	
Business Risk Exposure:	27	= 9 x 3 x 1 (PoF x CoF x Redundancy)			
Remaining Life:	0 years	**Consumed Life:**	20 years	**Effective Life:**	20 years

PURPOSE and DESCRIPTION OF THE PROJECT

In June of 2017, the Allen Bradley PLC-5 Control System was discontinued by Rockwell Automation and is no longer available or supported. Since Rockwell is no longer supplying replacement parts for these systems, many users are looking for used or surplus parts for replacement parts that can be hard to find, expensive, and have no guaranty. Rockwell is encouraging customers to migrate from the PLC-5 Control System to the ControlLogix PLC platform, for which, hardware component and support is readily available.

The District has several sites that use these older style PLC's:

- Beaver Sewer Pump Station and Flat Car Sewer Pump Station (active project in progress, Project #M1917 as of November 2020)
- Division 30 Booster Station (project proposed for 2021)
- Sudden Valley Sewer Pump Station (project proposed for 2022)

This project includes the replacement of discontinued PLC's as well as make uninterruptable power supply (UPS) improvements for better facility reliability at the **Division 30 Booster Station**.

Budget Estimate
Estimate for design, bidding, construction, programming, and SCADA integration and commissioning is $60,000.

Cost in 2020 dollars.

CAPITAL PROJECT NARRATIVE

Budget cost estimate based on Project #M1917 - Beaver and Flat Car PLC and UPS Improvements summarized as follows:

Design	$17,000
Services During Bidding	$2,000
Services During Construction	$14,000
Software Development, Startup & Testing	$16,000
Construction Contract	$65,000
SCADA Integration and Commissioning	$5,000
Total	$119,000

For further information about this project contact Bill Hunter.

Revision History

- Created 11/6/2018 by BH.
- Updated 11/23/2020 by BH. Updated cost estimates using current Beaver and Flat Car PLC and UPS project costs.

CAPITAL PROJECT NARRATIVE

Project Name:	Sewer System Rehabilitation and Replacement Projects
CIP #:	S0001

Asset Register:	LWWSD ➔ Sewer ➔ Collection System			
Failure Mode:	Capacity	Level of Service	Mortality	Efficiency
Business Risk Exposure:	15	= 3 x 5 x 1 (PoF x CoF x Redundancy)		
Remaining Life:		**Consumed Life:**		**Effective Life:**

PURPOSE and DESCRIPTION OF THE PROJECT

Combines several separate District projects into one annual project. The goals of this project include: finding and repairing inflow and infiltration (I&I) sources, rehabilitating degraded pipelines, and increasing capacity where needed to provide for planned growth and future flow rates.

The annual project scope and focus will vary based on the type of high priority items identified during the previous year. Types of work include: sewer main slip lining (spot repairs and full lengths), pressure grouting service tees, pressure grouting manhole leaks/voids, rebuild/seal manholes, smoke testing, and other efforts to reduce I&I, rehabilitate pipelines, and increase capacity where needed.

Engineering (Plans, Specs & Est.):	District Staff
Bid & Contract Administration:	District Staff
Construction:	$115,000 (target for 2021) $165,000 (annual target for 2022-2024) $600,000 (annual target for 2025-2026)

2021 budget includes $115,000 for the following tasks:

Task 1 – Begin LWBI Priority 1 Relining (Estimated Cost $95,000). Cure-In-Place-Pipe (CIPP) relining of 2 Lake Whatcom Boulevard Interceptor (LWBI) pipe segments from MH GT-29 to MH GT-27, approximately 700 LF that are identified in the final hydraulic analysis as “Priority 1” pipe segments prepared by Wilson Engineering at the end of 2020. The first 2 segments are in the worst condition and are priority projects within the Priority 1 scope of work.

Task 2 – Inflow and Infiltration Repairs (Budget Amount $20,000). Work includes minor sewer system rehab and replacement that target elimination of inflow and infiltration. The District will utilize a unit price contract executed in late 2020 to make the repairs as they are found. Staff will package the repairs to minimize mobilization costs and complete as many improvements as the budget allows. The type of work includes but is not limited to: manhole / wet well grouting, pipe slip lining and spot repairs, lateral grouting, and other miscellaneous repairs.

Below is more specific information on LWBI pipe relining based on a hydraulic analysis performed by Wilson Engineering at the end of 2020. The analysis identifies and prioritizes CIPP segments for future project planning and scheduling.

Priority 1 Perform CIPP Pipe Rehabilitation on Eleven Pipe Segments - This will eliminate the dependence on the detention basin to prevent sewer overflows for CURRENT ERUs.	29-28 (480 LF) 28-27A (213 LF) 27A-27 (170 LF) 27-26 (313 LF) 26-25 (385 LF) 25-24 (402 LF) 24-23 (438 LF) 23-22 (269 LF) 22-21 (404 LF) 21-20 (472 LF) 20-19 (373 LF)
Priority 2 Perform CIPP Pipe Rehabilitation on Nine Pipe Segments – This will eliminate the dependence on the detention basin to prevent sewer overflows for BUILD-OUT ERUs.	19-18 (384 LF) 18-17 (196 LF) 17-16 (292 LF) 16-15 (321 LF) 15-14 (268 LF) 14-13 (306 LF) 13-12 (410 LF) 12-11 (374 LF) 11-SPCAB (299 LF)

Segments identified for 2021

When all of the above pipe segments are rehabilitated with CIPP, the LWBI will have sufficient capacity for full system build-out without reliance on the Sudden Valley Detention Basin.

CAPITAL PROJECT NARRATIVE

The current rehabilitation plan is to perform the work as a multi-year effort, beginning with the most restricted segments first.

For planning and budgeting purposes the cost estimate per lineal foot of CIPP from 10" to 18" diameter pipe is around $113/LF, including 8.5 % sales tax and 15% contingency, but does not include mobilization. Breaking the project up into smaller subprojects will create more mobilization costs. Unit price cost estimate is based on numbers from a similar project bid in March 2020 for Mt. Vernon. The estimated cost to complete both priorities in one single project is:

All Priority 1 Segments (approximately 3,919 LF)	$460,000
All Priority 2 Segments (approximately 2,850 LF)	$340,000
Total (6,779 LF)	$800,000

Cost estimate in 2021 dollars.

For further information about this project call Bill Hunter.

Revision History

- 10/26/2011. Combined separate I&I related projects into one annual project budget. Bill Hunter. Footnote: October 2011 Pro-Vac Estimate (Hank) for Smoke Testing: $0.65/LF and can test approximately 10,000 LF per day.
- 11/18/2013. Minor budget updates. Bill Hunter.
- 12/6/2016. Updated budget for year 2017. BH.
- 11/6/2018. Updated budget for year 2019. BH.
- 11/4/2019. Updated budget for year 2020. BH.
- 12/1/2020. Updated budget and cost estimates for year 2021, edited project description. BH & KH.

APPENDIX C

2021 REVENUE BOND AND LOANS FUND SUMMARY

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REVENUE BONDS AND LOANS SUMMARY

The District has obtained publicly funded loans to construct projects. The project title, loan remaining, funding source, agency and interest rates are noted as follows:

Project Title	Balance Remaining 1/1/2021	Funding Source	Agency	End Date	Rate
Geneva AC Mains	$ 1,799,062	Rates	Drinking Water State Revolving Fund	2035	1.5%
Division 22 Reservoir	$ 1,113,070	Rates	Drinking Water State Revolving Fund	2037	1.5%
2016 Revenue Bonds Outstanding	$ 5,605,000	Rates		2035	2.25%
Total Debt Outstanding - 1/1/2021	**$ 8,517,132**				