

REGULAR MEETING OF THE BOARD OF COMMISSIONERS AGENDA October 9, 2019

6:30 p.m. – Regular Session

- 1. CALL TO ORDER
- 2. PUBLIC COMMENT OPPORTUNITY At this time, members of the public may address the Board of Commissioners. Please state your name prior to making comments.
- 3. ADDITIONS, DELETIONS, OR CHANGES TO THE AGENDA
- 4. CONSENT AGENDA
- 5. SPECIFIC ITEMS OF BUSINESS:
 - A. Preliminary 2020 Budget
 - B. Recommended Alternative—Agate Heights Water Treatment Plant Expansion
 - C. Board of Commissioners Insurance Discussion
- 6. OTHER BUSINESS
- 7. STAFF REPORTS
 - A. General Manager
- 8. PUBLIC COMMENT OPPORTUNITY
- EXECUTIVE SESSION
 Executive Session per RCW 42.30.110(1)(g): To review the performance of a public employee
 (General Manager performance evaluation) 30 minutes
- 10. ADJOURNMENT

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DATE SUBMITTED:	October 3, 2019	MEETING DAT	E:	Octobe	r 9, 2019
TO: BOARD OF COMM	SSIONERS	FROM: Rachael	Норе	5	
GENERAL MANAGER APP	ROVAL	Sotollar			
ATTACHED DOCUMEN	TS	1. See below			
		2.			
		3.			
TYPE OF ACTION REQU	ESTED	RESOLUTION	FOF	RMAL ACTION/ MOTION	INFORMATIONAL /OTHER

**TO BE UPDATED 10/9/19 **

BACKGROUND / EXPLANATION OF IMPACT

- Payroll for Pay Period #20 (09/21/2019 through 10/04/2019) total to be added
- Payroll Benefits for Pay Period #20 total to be added
- Accounts Payable Vouchers total to be added

AG whatcom b whatcom b the sewer unit	iENDA Pre BILL m 5.A	Preliminary 2020 Budget								
DATE SUBMITTED:	October 2, 2019	MEETING DATE:	October 9, 2	019						
TO: BOARD OF COMM	ISSIONERS	FROM: Debi Dent	ton, Finance Mana	ger/Treasurer						
GENERAL MANAGER A	PPROVAL	Sistolday								
ATTACHED DOCUMEN	TS	1. Preliminary 2020 Budget								
TYPE OF ACTION REQUESTED RESOLUTION FORMAL ACTION/ INFORMATION Image: Constraint of the second secon										

BACKGROUND / EXPLANATION OF IMPACT

Through the powers granted under <u>Revised Code of Washington Title 57</u> (Water-Sewer Districts) and codified under the District's <u>Administrative Code</u> Title 2, Chapter 2.2 (1):

The General Manager shall develop an operating and capital improvement budget annually for both the water and sewer systems. The annual budget shall provide for the forecasting of revenues and expenditures for the following year. The budget shall be presented to the Board of Commissioners for review and approval prior to the end of December in advance of the budget year.

Using projected revenues based upon prior Board-adopted rate increases (4% and 2.5% water and sewer rates, respectively), actual 2019 operating expenses, and projects defined in the District's water and sewer capital improvement plans, District staff have developed the attached preliminary draft budget for Board discussion.

Of note, the preliminary budget reflects a separation of revenues and expenditures into two independent utilities (water and sewer) in accordance with recommendations of the past rate study.

FISCAL IMPACT

The preliminary budget for 2020 proposes a budget of \$2,920,000 for the water utility, and budget of \$4,838,000 for the sewer utility, resulting in a total budget of approximately \$7.8 million.

RECOMMENDED BOARD ACTION

No action is recommended at this time.

PROPOSED MOTION

Not applicable.

Note: 2020 Budget reflects a separation of revenues and expenditures into two independent utilities (water and sewer) in accordance with recommendations of the past rate study.

REVENUE ASSUMPTIONS: 4.50% increase

- Water rate 4 % increase per Resolution 844
- Sewer rate 2.5% increase per Resolution 844
- Conservatively assumes 15 new connection permits at fees defined in Resolution 860
- Late fees etc. allocated to Water Fund
- Permit fees allocated to Water and Sewer Funds
- Investment interest allocated to Water and Sewer Funds

EXPENDITURE ASSUMPTIONS: 3.5% increase

- Payroll 2.5% COLA plus step increases
- Benefits 2% increase
- Additional .5 FTE budgeted for succession (Utility System Support Specialist)
- Rate study and WA State audit scheduled
- City of Bellingham wastewater treatment cost increase per contract

• Operating reserve maintained per rate study recommendations at \$940,000

Water 90 days \$520,000 Sewer 60 days \$420,000

An operating reserve is designed to provide a liquidity cushion; it protects the utility from the risk of short-term variation in the timing of revenue collection or payment of expenses. Like other types of reserves, operating reserves also serve another purpose; they help smooth rate increases over time. In the 2020 budget our operating reserve goal is \$940,000. This is on the conservative end of the industry standard of 45-60 days for sewer utilities and 60-90 days for water utilities. In any year where operating reserves exceed the maximum days of O&M expenses at year-end, the excess cash is "swept" into the capital account to help pay for capital projects. Contingency funds maintained per rate study recommendations 1% of fixed asset replacement value

Water -	\$460,000
Sewer -	\$796 <i>,</i> 000

In addition to protecting against variations in the timing of operating costs and revenues, it is prudent to maintain a capital contingency reserve to meet unexpected emergency capital outlays. We have used replacement costs to derive the targeted reserve dollar amount which equates to 1% of the replacement cost of fixed assets. In the 2020 budget we have \$796,000 sewer reserve and \$460,000 water reserve. • System reinvestment funded per rate study recommendations

The District has a policy of setting aside a certain amount of rate revenue each year for system reinvestment. Funding depreciation expense meets several standards for reasonable rates: financial integrity, rate equity, and adequacy of capital funding. For 2020 the District has budgeted system reinvestment at \$314,000 into water projects and \$834,000 into sewer projects for a total system reinvestment of \$1,148,000.

DRAFT 10-1-2019

LAKE WHATCOM WATER AND SEWER FUND SUMMARY 2020



& SEWER DIS	401	402	460	
	WATER	SEWER	BOND RESERVE (RESTRICTED)	TOTAL
2020 REVENUES	2,776,771	4,382,039	-	7,158,810
2020 EXPENDITURES	(2,918,769)	(4,838,332)	-	(7,757,101)
CASH/INVESTMENTS 2019 CARRYOVER \$1,800,000	720,000	1,080,000	772,334	2,572,334
CONTINGENCY FUNDS TRANSFER IN	\$460,000	\$787,000		\$1,247,000
PROPOSED 2020 YEAR END BALANCE	\$1,038,002	\$1,410,707	\$772,334	\$3,221,043
ALLOCATED TO OPERATING RESERVE	-\$520,000	-\$420,000		-\$940,000
ALLOCATED TO CONTINGENCY RESERVE	-\$460,000	-\$796,000		-\$1,256,000
ALLOCATED TO CITY OF BELLINGHAM TREATMENT PLANT		-\$100,000		-\$100,000
AVAILABLE 2020 YEAR END BALANCE	\$58,002	\$94,707		\$152,709

DRAFT 10-1-2019 Description Actual 2018 Hudget 2019 9/30/2019 Projected 2019 Budget 2019 WATER 401 2018 2019 2020 2019 2020 WATER 401 2019 2019 2020 2019 2020 REVERVLES 2019 2020 2019 2020 2019 2020 WATER 401 New None Consolitation Lesiblity Study 20996	LAKE W	WHATCOM WATER AND SEWE	CR DISTRICT	٦					
Description Actual Actual Budget 2019 9/30/2019 Projected Hudget 2017 2018 2017 2018 2019 2020 2020 REVENUES	DRAFT 10-1-2019								
NATER - 401 Image: state of the state of th		Description	Actual 2017	Actual 2018	Budget 2019	<mark>9/30/2019</mark>	Projected 2019	Budget 2020	
REVENUES Image: constraint of the second secon	WATER - 401								
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11-333-90-00 EEMA Aug 2015 Sourh Assistance 14/260 226 2,266,45 11,721 16,5000 30,000 10,326 2,260,200 2,602 2,602,35 35,000 10,300 10,305 30,000 200 200,200 2,466,45 2,266,45 2,266,45 2,266,45 2,266,45 2,266,45 2,266,45 2,266,45 2,266,45 2,266,45 2,266,45 2,266,45 2,466,45 2,466,45 2,466,45 2,466,45 2,466,45 2,466,45 2,466,45 2,466,45 2,466,45 2,466,456 2,466,456 2,466,456	404 222 44 00 04		20.007						
Interview Interview <t< td=""><td>401-333-00-00</td><td>EEMA Aug 2015 Storm Assistance</td><td>29,980</td><td>250</td><td></td><td></td><td></td><td></td><td></td></t<>	401-333-00-00	EEMA Aug 2015 Storm Assistance	29,980	250					
The state in the balance fraction (1/3) the final final (1/3) 2,200/11 1,200/11	401-335-97-00-00	Weter Seles Metered (4% have rate increase) *	2 260 645	230	2 526 042	1 040 072	246516400	2 562 771	1 50/
Instruction Participation Participat	401-343-40-10	Permits (15 new connection permits) \$6 000	2,209,043	2,400,443	2,320,043	1,040,073	2,403,104.00	2,303,771	3%
12-13-13-10 Outlinet: Pre-Unitable in Lett. and DAL resy 12-11 2-1/10 -0.000 16,000 24,005.3 3.5010 17 411-359-30.00 Late fees 56,788 56,000 26,773 35,102.07 35,102.07 30,000 20,000 26,773 35,102.07 30,000 20,000 26,773 35,102.07 30,000 20,000 26,773 35,102.07 30,000 20,000 26,773 35,102.07 30,000 20,000 26,773 35,102.07 30,000 20,000	401-343-41-10	Combined Econ (Ingrosse in Lion and Logh foot)	03,913	27.616	30,000	1/1,241	24 000 22	35,000	17%
W1-359-00.0 Like tess 36/78 36/000 300.00 41/762 59/0730 300.00 20 W1-369-10-00 Sale of scrap meet and surplus 224 1,252 2,000 2,602 3,499.33 2,000 20 W1-369-10-00 Miseedinaeous 1,378 2,317 1,000 833 1,110.67 1,000 W1-399-10-00 Miseedinaeous 1,378 2,377 -	401-343-81-10	Lete fore	57,211	59,000	50,000	10,002	24,909.33	55,000	1/ /0
011-00 Investment Interest 3,82 3,2,21 2,000 3,572 3,51625 3,000 2,000 013-367-10-00 Sale of segmental and surplus 2,24 1,252 2,000 2,602 3,676,573 2,000 0 013-367-10-00 Miscellancous 1,278 2,517 1,100 835 1,110,67 1,800 013-397-10-00 Diadgements and Settlements - 7,800 -	401-359-90-00	Late rees	56,798	58,690	50,000	41,782	55,709.55	<u> </u>	10%
401-300 pake of sering meet and surplus 224 1,252 2,000 2,002 3,400,35 2,000 0 001 300-100 Miscellancous 1,578 2,517 1,000 835 1,106,7 1,000 001 300-100 Miscellancous 1,278 2,517 1,000 835 1,106,7 1,000 001 300-100 Sale of Sering meets -	401-361-11-00	Investment Interest	5,582	35,291	25,000	26,372	35,162.67	30,000	20%
401-309-10-01 Maxedumeous 1,5/8 2,51/ 1,000 853 1,110.6/ 1,000 401-309-10-00 Judgements and Serlements - 23,767 - - - - 401-395-10-00 Sale of Capital Assets - 7,800 - <td< td=""><td>401-369-10-00</td><td>Sale of scrap metal and surplus</td><td>224</td><td>1,252</td><td>2,000</td><td>2,602</td><td>3,469.33</td><td>2,000</td><td>0%</td></td<>	401-369-10-00	Sale of scrap metal and surplus	224	1,252	2,000	2,602	3,469.33	2,000	0%
401.39:0.40.00 Judgements and Settlements - 23,767 - - - - 401.39:10.00 Sale of Capital Assets - 7,800 - - - - 401.39:10.00 Sale of Capital Assets - 7,800 - - - - - 401.39:10.00 Insurance Recoveries 2,042 -	401-369-10-01	Miscellaneous	1,378	2,517	1,000	833	1,110.67	1,000	
401.395.10.00 Sale of Capital Assets - 7,800 -	401-369-40-00	Judgements and Settlements	-	23,767	-	-	-	-	
401-395-20-00 Insurance Recoveries 2,042 -	401-395-10-00	Sale of Capital Assets	-	7,800	-	-	-	-	
TOTAL REVENUES 2,493,061 2,787,652 2,721,043 2,110,385 2,760,525 2,776,771 2.05 Image: Contract of the second s	401-395-20-00	Insurance Recoveries	2,042	-	-	-	-	-	
1% 1%<		TOTAL REVENUES	2,493,061	2,787,652	2,721,043	2,110,385	2,760,525	2,776,771	2.05%
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36% 1% Other 1% Other 1				2% Fees/Perr	nits				
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Per Resolution 844 effective 1/1/2020 Per Resolution 844 effective 1/1/2020 Scheduled annual rate increase		61%							
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		Scheduled appual rate increase							

LAKE W	LAKE WHATCOM WATER AND SEWER DISTRICT							
DRAFT 10-1-2019								
	Description	Actual	Actual	Budget 2019	9/30/2019	Projected	Budget	
		2017	2018			2019	2020	
SEWER - 402								
REVENUES								
402-343-41-10-02	Permits (15 new connection permits) \$9,000	85,915	162,024	123,000	171,241	175,000	135,000	9.8%
402-343-50-11	Sewer Service Residential (2.5% rate increase) *	3,849,280	3,964,760	4,058,102	3,066,274	4,088,365.33	4,190,574	3.26%
402-343-50-19	Sewer Service Other	3,961	4,586	4,000	3,267	4,356	4,465	11.6%
402-343-50-80	Latecomer's Fees	6,772	6,772	-	-	-	-	
402-359-90-02	Late Fees	28,399	29,345	-	-	-	-	
402-361-11-00-02	Investment Interest	5,582	35,291	25,000	26,372	35,162.67	30,000	
402-361-40-00-80	ULID 18 Interest/Penalties	18,631	8,889	5,000	4,424	5,000	4,000	-20.0%
402-368-10-00-80	ULID 18 Principal Payments	60,796	30,534	30,000	15,831	15,000	15,000	-50.0%
402-369-10-00-02	Sale of scrap metal and surplus	224	1,251	1,000	2,602	2,700	2,000	100.0%
402-369-10-00-02	Miscellaneous	1,378	2,517	-	833	900	1,000	
402-369-40-02	Judgements and Settlements	-	23,767	-	-	-	-	
402-395-10-00-02	Sale of Capital Assets	-	7,800	-	-	-	-	
402-395-20-02	Insurance Recoveries	2,042	-	-	-	-	-	
	TOTAL REVENUES	4,062,980	4,277,536	4,246,102	3,290,844	4,326,484	4,382,039	2.44%
		6,556,041	7,065,188	6,967,145	5,401,229	7,087,009	7,158,810	
	* Per Resolution 844 effective 1/1/2020							
	Scheduled annual rate increase							

DRAFT 10-1-2019									
	Description	Actual 2017	Actual 2018	Budget 2019	9/30/2019	Projected 2019	Budget 2020		
WATER - 401									
OPERATING EXPENDITURES									CHANGE
401-534-10-10	Admin Payroll (2.5% cola plus step increases - 2020)	320,350	301,648	337,135	253,816	329,961	353,723	4.92%	16,588
401-534-10-20	Admin Personnel Benefits (Medical,Retirement etc)	123,078	133,169	142,195	108,258	140,735	149,219	4.94%	7,024
401-534-10-31	Gen Admin Supplies/Equipment (Master Meter Software)	13,289	11,170	15,000	13,977	18,636	35,000 ·	133.33%	20,000
401-534-10-31-01	Meetings/Team building	1,594	1,178	1,500	2,279	3,039	2,000	33.33%	500
401-534-10-40	Web pay/Bank Fees	16,695	20,199	20,000	16,055	21,407	10,000	-50.00%	(10,000)
	Interlocal - Invasive Species (City) (8% increase)				50,000		54,000		
	Interlocal - Lake Whatcom Tributary Monitor (County)				9,183		5,000		
	North Shore Sampling (County)						30,000		
	Mutt Mits						5,000		
401-534-10-41	Water Quality Assurance Programs (TOTAL)	8,856	55,119	90,000	59,183	60,000	94,000	4.44%	4,000
	County Auditor Filing Fees			3,250			3,000		
	Statement processing			12,500			12,500		
	Answering Service			1,000			750		
	Time clock system			1,000			750		
	Financial Software Maintenance			5,000			5,000		
	Web Check services			2,500			2,500		
	CPA (Financial statements)			3,000			3,000		
	Rate Study			-			<u>15,000</u>		
	State Audit			-			<i>5,000</i>		
	Docuware maintenance and upgrade			7,500			7,500		
	Legal Counsel			30,000			20,000		
	Computer support			12,500			15,000		
	Anti virus subscription			500			500		
	Building security			1,000			1,000		
	Building custodial			5,000			5,000		
	Pest control			250			500		
	Landscaping service			2,000			3,000		
	South Whatcom Fire (hydrant maintenance)			1,000			1,000		
	Scada System Software Maintenance - Operations			3,750			3,750		
	Engineering Consultant			10,000			5,000		
	Camera Van Software			750			750		
	SCADA/PLC Support - Engineering/Operations			2,500			5,000		
	Cartegraph - Engineering/Operations			15,000			2,500		
	Auto Desk - Engineering			500			500		
	GIS Partnership (County)			500			500		
	Rockwell - Engineering/Operations			250			250		
	IT Pipes			750			750		
	ESRI - ARC GIS			750			750		
	Innovyze - Engineering			1,250			1,250		
	Master Meter			2,000			2,000		
	Cyberlock software			500			500		
	Whatcom County Emergency Management			10,000			10,000		
	Misc (Bid notices etc.)			2,500			2,500	137,000	
401-534-10-41-01	Professional Services (TOTAL)	259,151	296,727	145,000	119,136	158,848	137,000	-5.52%	(8,000)
401-534-10-42	Communication	24,732	25,601	25,000	20,520	27,360	30,000	20.00%	5,000

DRAFT 10-1-2019	Description	Actual 2017	Actual 2018	Budget 2019	9/30/2019	Projected 2019	Budget 2020		
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401-534-10-45	Admin Lease (copy/printers)	910	4 198	3 500	3 888	5 184	5 000	42 86%	1 500
401-534-10-46	Property Insurance	67.595	66.404	67.000		-	70,000	4.48%	3.000
401-534-10-49	Admin Misc.	682	795	500	40	53	500	0.00%	-
401-534-10-49-01	Memberships/Dues/Permits	8.317	9,443	10.000	7.953	10.604	10.000	0.00%	-
401-534-10-49-02	WA State Dept of Revenue Taxes/County taxes	104,678	113,994	110,000	84,839	113,119	110,500	0.45%	500
401-534-40-43	Training & Travel	12,539	16,743	17,500	15,803	21,071	17,500	0.00%	-
401-534-40-43-01	Tuition reimbursement	184	,	500			500	0.00%	-
401-534-50-31	Operations/Maintenance Supplies	95,454	117,834	75,000	74,355	99,140	75,000	0.00%	-
401-534-50-31-01	Small Assets/tools	-	2,158	35,000	16,266	21,688	25,000	100.00%	(10,000)
401-534-50-48	Operations Repair/Maint contracted work	32,225	75,421	60,000	38,007	50,676	60,000	0.00%	-
401-534-50-49	Insurance Claims	-	1,183	2,500		-	2,500	0.00%	-
401-534-60-41	Operations Contracted (water testing)	12,110	5,418	7,500	5,609	7,479	7,500	0.00%	-
401-534-60-47	Water City of Bellingham	40,386	61,592	45,000	15,857	21,143	45,000	0.00%	-
401-534-80-10	Operations Payroll (2.5% cola plus step increases - 2020)	513,248	546,976	533,190	443,449	576,484	577,129	8.24%	43,939
401-534-80-20	Operations Personnel Benefits (Medical,Retirement etc)	223,200	238,647	251,500	193,854	252,010	247,772	-1.48%	(3,728)
401-534-80-32	Fuel	13,663	14,814	15,000	10,456	13,941	15,000	0.00%	-
401-534-80-35	Safety Supplies	6,149	8,668	5,000	10,088	13,451	10,000	100.00%	5,000
401-534-80-35-01	Safety Supplies Boots	971	928	1,250	439	585	1,250	0.00%	-
401-534-80-35-02	Emergency Preparedness	149	319	5,000	5,170	6,893	5,000	0.00%	-
401-534-80-47	General Utilities (Electric, gas, water, garbage)	98,911	111,942	120,000	77,236	102,981	120,000	0.00%	-
401-534-80-49	Laundry	1,951	2,053	2,000	1,540	2,053	2,000	0.00%	-
	WATER OPERATING EXPENDITURES	2,001,067	2,244,341	2,142,770	1,598,073	2,078,541	2,218,093	3.52%	
DEBT SERVICE									
401-591-34-77-01	Redemption of Long Term Debt Geneva AC Mains	119,938	119,938	119,937	119,937	119,937	119,938		
401-591-34-77-02	Redemption of Long Term Debt Div 22 Reservoir	-	53,831	53,831	65,475	65,475	65,475		
401-591-34-77-73	Redemption of Long Term Debt Loan 064	47,252	236,260	-	-	-	-		
401-592-34-83-01	Debt Service Interest Geneva AC Mains	34,182	32,383	30,584	30,584	30,584	28,785		
401-592-34-83-02	Debt Service Interest Div 22 Reservoir	-	30,982	15,342	18,660	18,660	17,678		
401-592-34-83-03	Debt Service Interest Loan 064	5,670	3,321	-	-	-	-		
SYSTEM REINVESTMENT									
	2019 System Reinvestment Projects						155,000		
401-594-34-62-01	Water Structure	337,296	470,687	425,000	48,959		313,800		
401-594-34-63-01	Water System				116,703				
401-594-34-64-01	Water Equipment				109,060				
TRANSFERS									
	Transfers out to Water Contingency Fund						-		

DRAFT 10-1-2019	Description	A sture1 2017	A atta al 2019	Budant 2010	0 /20 /2010	Ducie etc. d. 2010	B 1		
	Description	Actual 2017	Actual 2018	Budget 2019	9/ 30/ 2019	Projected 2019	Budget 2020		
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WATER FUND	TOTAL WATER REVENUES	2,493,061	2,787,652	2,787,652	2,721,043	2,760,525	2,776,771	-0.39%	
	IOTAL WATER EXPENDITURES	(2,545,405)	(3,191,743)	(2,/8/,464)	(2,107,451)	(2,313,197)	(2,918,769)	4.71%	
	2010 BALANICE CARRYOVER (400/) of \$1,800,000						720.000		
	2019 BALAINCE CARRIOVER (40%) 01 \$1,800,000						720,000		
							400,000		
	2020 ALLOCATED TO OPERATING RESERVES						(520,000)		
	2020 ALLOCATED TO WATER CONTINGENCY						(460,000)		
	PROPOSED AVAILABLE 2020 YEAR END BALANCE						58,002		
SEWER - 402									
									0111105
EXPENDITURES									CHANGE
402-535-10-10	Admin Pavroll (2.5% cola plus step increases - 2020)	320 349	301 897	337 135	253 815	329 960	353 723	4,92%	16.588
402-535-10-20	Admin Personnel Benefits (Medical Retirement etc)	123 075	132.376	142,195	108 371	140 882	149 219	4 94%	7 024
402-535-10-31	Gen Admin Supplies/Equipment	13.889	12.535	15.000	13.405	17.873	20.000	33.33%	5.000
402-535-10-31-01	Meetings/Team building	1.469	1.693	1.500	2,220	2.960	2.000	33.33%	500
402-535-10-40	Web pay/Bank Fees	16,625	20,195	20,000	16,060	21,413	10,000	-50.00%	(10,000)
	County Auditor Filing Fees	, ,	,	3,250	,	,	3,000		<u> </u>
	Statement processing			12,500			12,500		
	Answering Service			1,000			750		
	Time clock system			1,000			750		
	Financial Software Maintenance			5,000			5,000		
	Web Check services			2,500			2,500		
	CPA (Internal audit and Financial statements)			3,000			3,000		
	Rate study			-			15,000		
	State audit			-			5,000		
	Docuware maintenance and upgrade			7,500			7,500		
	Legal Counsel			30,000			20,000		
	Computer support			12,500			15,000		
	Anti virus subscription			500			500		
	Building security for offices			1,000			1,000		
	Building custodial			5,000			5,000		
	Pest control			250			500		
	Landscaping service			2,000			3,000		
	Scada System Software Maintenance - Operations			3,750			3,750		
	Engineering Consultant			10,000			5,000		
	Camera Van Software			750			750		
	SCADA/PLC Support - Engineering/Operations			2,500			5,000		
	Cartegraph - Engineering/Operations			15,000			2,500		
	Auto Desk - Engineering			500			500		
	GIS Partnership (County)			500			500		
	Rockwell - Engineering/Operations			250			250		
				750			750		
	ESKI - AKC GIS			750			750		
	Innovyze - Engineering			1,250			1,250		
	Cyberlock software			500			500		

DRAFT 10-1-2019	Description	Actual 2017	Actual 2018	Budget 2019	9/30/2019	Projected 2019	Budget 2020		
	Whatcom County Emergency Management			10,000			10,000		
	Misc (Bid notices etc.)			2,500			2,500	134,000	
402-535-10-41-01	Professional Services (TOTAL)	108,695	224,840	145,000	103,806	138,408	134,000	-7.59%	(11,000)
402-535-10-42	Communication	24,731	25,600	25,000	20,519	27,359	30,000	20.00%	5,000
402-535-10-45	Admin Lease (copy/printers)	910	4,200	3,500	3,888	5,184	5,000	42.86%	1,500
402-535-10-46	Property Insurance	67,595	66,403	67,000	-	67,000	70,000	4.48%	3,000
402-535-10-49	Admin Misc.	510	353	500	15	20	500	0.00%	-
402-535-10-49-01	Memberships/Dues/Permits	5,898	6,545	7,000	5,607	7,476	10,000	42.86%	3,000
402-535-10-49-02	WA State Dept of RevenueTaxes/County taxes	97,504	108,063	105,000	78,373	104,497	110,500	5.24%	5,500
402-535-40-43	Training & Travel	7,924	9,549	17,500	10,529	14,039	17,500	0.00%	-
402-535-40-43-01	Tuition reimbursement	102	-	500	-	-	500	0.00%	-
402-535-50-31	Operations/Maintenance Supplies	51,805	52,213	75,000	30,068	40,091	75,000	0.00%	-
402-535-50-31-01	Small Assets/tools	-	2,544	35,000	14,718	19,624	25,000	100.00%	(10,000)
402-535-50-48	Operations Repair/Maint contracted work	144,487	74,355	60,000	47,365	63,153	60,000	0.00%	-
402-535-50-49	Insurance Claims	_	1,183	2,500	5,000	5,000	2,500	0.00%	-
402-535-60-41	Operations Contracted (generator load testing)	6,869	-	15,000	-	15,000	15,000	0.00%	-
402-535-60-47	Sewer City of Bellingham Treatment Fee	643,912	589,677	650,000	503,530	671,373	680,000	4.62%	30,000
402-535-80-10	Operations Payroll (2.5% cola plus step increases - 2020)	413,138	442,355	533,190	359,785	467,721	484,792	-9.08%	(48,398)
402-535-80-20	Operations Personnel Benefits (Medical,Retirement etc)	179,101	191,170	251,500	156,862	203,921	247,772	-1.48%	(3,728)
402-535-80-32	Fuel	13,759	14,770	13,000	8,409	11,212	13,000	0.00%	-
402-535-80-35	Safety Supplies	6.280	8.686	5.000	8,557	11.409	10.000	100.00%	5.000
402-535-80-35-01	Safety Supplies Boots	1.048	887	1.250	587	783	1.250	0.00%	
402-535-80-35-02	Emergency Preparedness	279	467	5.000	374	499	5.000	0.00%	-
402-535-80-47	General Utilities (Electric, gas, water, garbage)	92,793	101.163	110.000	71.109	94.812	110.000	0.00%	-
402-535-80-49	Laundry	1.950	2.052	2.000	1.539	2.052	2.000	0.00%	-
	SEWER OPERATING EXPENDITURES	2,344,697	2,395,771	2,645,270	1,824,511	2,483,720	2,644,256	-0.04%	
DEBT SERVICE									
402-591-35-72-50	2009 Bond Principal Payments	265,000	275,000	285,000	285,000	285,000	-		
402-591-35-72-03	2016 Bond Principal Payments	125,000	130,000	130,000	130,000	130,000	425,000		
402-592-35-83-50	2009 Bond Interest Payments	30,900	20,300	10,332	10,332	10,331	-		
402-592-35-83-03	2016 Bond Interest Payments	227,175	224,675	222,074	222,076	222,075	218,176		
SYSTEM REINVESTMENT									
	2019 System Reinvestment Projects						717,000		
402-594-35-62-02	Sewer Structures	337,296	470,687	2,600,000	1,216,791	1,500,000	388,322		
402-594-35-63-02	Sewer System				103,546	105,000	,		
402-594-35-64-02	Sewer Equipment (Flush/Vac Truck)				118,716	120,000	445,578		
TRANSFERS									
	Transfers Out to Sewer/Storm Water Contingency Fund 425	149,000	25,000	15,000	15,000	15,000	-		

DRAFT 10-1-2019	Description	Actual 2017	Actual 2018	Budget 2019	9/30/2019	Projected 2019	Budget 2020	
SEWER FUND	TOTAL SEWER REVENUES	4,062,980	4,277,536	4,246,102	3,290,844	4,326,484	4,382,039	3.20%
	TOTAL SEWER EXPENDITURES	(3,479,068)	(3,541,433)	(5,907,676)	(3,925,972)	(4,871,126)	(4,838,332)	-18.10%
	2019 BALANCE CARRYOVER (60%) of \$1,800,000						1,080,000	
	2019 FUND 425 TRANSFER IN						787,000	
	2020 ALLOCATED TO SEWER OPERATING RESERVES						(420,000)	
	2020 ALLOCATED TO SEWER CONTINGENCY						(796,000)	
	2020 ALLOCATED TO CITY OF BELLINGHAM TREATMENT PLANT						(100,000)	
	PROPOSED AVAILABLE 2020 YEAR END BALANCE						94,707	
BOND RESERVE - 460								
460-361-11-00	Investment Interest (to Operating Fund)	9,870		-	-	-	-	
460-397-10-00-60	Transfers In from Operating Fund 401	-		-	-	-	-	
	TOTAL REVENUES	9,870		0	0	0	0	
460 525 10 41	Lawate ant Samia Change	765						
400-555-10-41		/03		-	-	-	-	
	TOTAL EXPENDITURES	765		0	0	0	0	
BOND RESERVE FUND	REVENUES	9,870		-	-	-	0	
	EXPENDITURES	(765)			-	-	0	
	CASH/INVESTMENTS BALANCE CARRYOVER						772,334	
	PROPOSED 2020 YEAR END BALANCE						772,334	

Activ	e Cap	ital Improvement Projects							
2020 Budge	et Workshee	t 7							
2020 Budg		s							
10/2/2019								Amt Remaing	
			Pr	oiected Budaet	Spent to Date	Pr	oiected Spendina	to include in	
Category	Project #	Project Title / Tasks	1	to Completion	(as of 9/16/2019)		, Thru 2019	2020 Budget	Notes
	,			- 1	(J	
Rate Fu	inded Pr	oiects							
Sewer	C1611	Country Club Sewer Pump Station - HDD							
	0.0.1	Permits Advertisements Printing Etc.	\$	9 333 44	\$ 933344	\$	9 333 44	\$ -	
		BHC Design Permitting Bidding	\$	206 222 00	\$ 198 642 65	ŝ	206 222 00	\$ -	
		BHC Services During Construction	\$	79 738 00	\$ 49,436,31	ŝ	79 738 00	\$ -	
		Construction Contract	\$	760 585 00	\$ 513 047 68	ŝ	760 585 00	\$ -	
Sewer	C1705	Geneva and Par Sewer Pump Stations	Ψ	100,000.00	φ 010,047.00	Ψ	100,000.00	Ψ	
Cewei	01700	Permits PSE Advertisements Printing Etc	\$	55 386 35	\$ 55 386 35	¢	55 386 35	¢ _	
		RH2	ψ ¢	/10 010 00	\$ 368 /07 80	Ψ ¢	/10 010 00	φ - \$ _	thru amendment #5
		Ran Construction Contract	φ Φ	419,019.00	¢ 138 263 60	φ ¢	419,019.00	φ - ¢	
		Consult Construction Contract	φ Φ	717 926 00	¢ 430,203.09	φ ¢	717 926 00	φ -	
Source	C1709	Bell Chock Volves at Austin and Beaver Sower Dump Stations	¢	9 519 57	φ 447,479.30 ¢ 0.510.57	φ ¢	9 519 57	φ - ¢	
Sewer	C1716A	Dani Check Valves at Austin and Beaver Sewer Fullip Stations	ф Ф	0,010.07	φ 0,010.07 ¢ 10.00.04	φ ¢	15 000 00	φ - ¢ = 000.00	
Water	C1716A	Deau Ellu Diowolls	¢	20,000.00	↓ ↓ 12,000.04 ↓ 11,020.42 ↓	¢	15,000.00	\$ 5,000.00 ¢ 10,000.00	reaf invoice not received yet
vvaler Source	C1902	Dellecto Edgewater & Evolid Server Dump Stations	Ф	40,000.00	φ 11,930.43	ф	30,000.00	φ 10,000.00	
Sewer	C1802	Dellesta, Edgewater & Euclid Sewer Pump Stations							
				00 540 00	A 404 400 00		404 400 00	¢ (40.000.00	
		RH2 Design, Permitting, Blading	\$	93,512.00	\$ 104,400.00	\$	104,400.00	\$ (10,888.00	original agreement, phase 1a
		RH2 Euclid Mitigation Plan	\$	18,867.00	\$ 19,150.00	\$	19,150.00	\$ (283.00	amendment 2, phase 1a
		RH2 Services During Construction - Estimate	\$	70,000.00	\$ -	\$	-	\$ 70,000.00	estimate based on geneva ps
		Construction - Estimate	\$	403,000.00	\$ -	\$	-	\$ 403,000.00	rh2 90% plans cost estimate 8/28/2019
		PSE 3 Phase Electrical Service	\$	25,000.00	\$ -	\$	-	\$ 25,000.00	
		Permits, Advertisements, Printing, Etc.	\$	25,000.00	\$ 15,496.91	\$	18,000.00	\$ 7,000.00	Includes dellest & edgewater & euclid
		Dellesta & Edgewater	_						
		RH2 Predesign, Shoreline Permitting	\$	99,489.00	\$ 76,100.00	\$	76,100.00	\$ 23,389.00	original agreement, phase 1b
		RH2 Edgewater Supplemental Surveying	\$	3,393.00	\$ 3,400.00	\$	3,400.00	\$ (7.00	amendment 1, phase 1b
		RH2 Design, Permitting, Bidding	\$	80,000.00	\$ -			\$ 80,000.00	9/19/2019 draft scope from RH2
Sewer	C1810	Airport PS Generator and Lakewood PS Access Esmt	\$	57,692.93	\$ 57,692.93	\$	57,692.93	\$ -	
Sewer	M1811	North Shore Sewer FM Stream Crossing Protection							
		Wilson Design, Permitting, Services During Construction	\$	38,703.25	\$ 38,703.25	\$	38,703.25	\$-	
		Construction Contract	\$	49,254.33	\$ 49,254.33	\$	49,254.33	\$ -	
Water	C1813	Div 7 Reservoir - Seismic FEMA Grant Application	\$	17,569.00	\$ 17,569.00	\$	17,569.00	\$ -	
Water	C1814	Agate Heights WTP and Opal Booster Upgrades							
		Wilson Predesign, Permitting, DOH Project Report	\$	42,046.00	\$ 32,268.00	\$	42,046.00	\$ -	wilson task order #2018-01
	A1901	Whatcom County Region GIS Imagery Partnership 2019 Flight	\$	1,000.00	\$-	\$	1,000.00	\$-	
Sewer	A1902	Compulsory Sewer Connections	\$	-	\$ -	\$	-	\$ -	
	C1903	District Office Misc Facility Improvements (\$60k budget)							
		Irrigation System, Front Concrete Steps	\$	13,478.80	\$ 13,478.80	\$	13,478.80	\$ -	
		2019 Asphalt Patching - WRS Contract	\$	43,093.00	\$ -	\$	43,093.00	\$ -	will increase due to more patching areas
Sewer	C1904	Comprehensive Sewer Plan Update	\$	69,950.00	\$ 5,926.50	\$	50,000.00	\$ 19,950.00	wilson task order #2019-001 (target by November 2019)
Sewer	C1905	Sewer Rehabilitation and Replacement Projects	\$	40,000.00	\$ 28,539.83	\$	40,000.00	\$ -	
Water	C1906	Water Meters and Replacement Registers	\$	45,000.00	\$ 17,748.38	\$	20,000.00	\$ 25,000.00	
Water	C1907	Fire Flow Improvements - Remove FH #22-122	\$	2,000.00	\$ -	\$	2,000.00	\$ -	
Water	C1908	Fire Flow Improvements - Hydraulic Model Calibration	\$	15,000.00	\$ 4,284.50	\$	15,000.00	\$ -	wilson task order #2019-002 (target by October 2019)
Water	C1909	Little Strawberry Bridge Water Main Predesign & Estimate	\$	20,000.00	\$ -	\$	5,000.00	\$ 15,000.00	
Water	C1910	SVWTP and AHWTP Misc Component Replacement	\$	72,000.00	\$ 29,643.45	\$	72,000.00	\$ -	
Water	C1911	Field CL2 Injection System	\$	5,000.00	\$ -	\$	5,000.00	\$ -	
Water	C1913	SVWTP 20-Year Facility Plan	\$	100,000.00	\$ -	\$	10,000.00	\$ 90,000.00	
Water	C1914	Water Rehabilitation and Replacement Projects	\$	25,000.00	\$ 12,941.74	\$	15,000.00	\$ 10,000.00	svwtp xfmr fire
Sewer	M1916	Flat Car Impellers, Volutes, and Wear Rings	\$	28,583.24	\$ -	\$	28.583.24	\$ -	po #475 \$28,583.24
	M1917	AB PLC-5 Replacements and UPS Improvements	\$	100,000.00	\$ -	\$	_	\$ 100,000.00	<u></u>
				,					
		Tota	1\$	4,358,533.60	\$ 2,639,822.85	\$	3,486,372.60	\$ 872,161.00	

Lake Whatcom Water and Sewer District - Capital Improvement Plan 2020 thru 2025

Program Area / CIP Project # / CIP Project Name		Fund Total	2020	2021	2022	2023	2024	2025
Maintenance	- General							
1909	8 Johnson Well Storage Building - New Siding and Paint	15,000	15,000					
A0011	1 Annual Aphalt Patching	300,000	50,000	50,000	50,000	50,000	50,000	50,000
A0012	2 Annual Tree Trimming	90,000	15,000	15,000	15,000	15,000	15,000	15,000
	Subtotal	405,000	80,000	65,000	65,000	65,000	65,000	65,000
Maintenance	- Water							
W0005	35 Reservoirs - Inspection & Maintenance	31,827				31,827		
	Subtotal	31,827				31,827		
System Reinv	estment - General							
1906	1 Quick connect fitting kit for new CAT backhoe	4,000	4,000					
1907	1 Backhoe - Pallet Forks	4,000	4,000					
1908	18 SCADA Telemetry - Install Managed Ethernet Switches	15,000	15,000					
1910	1 Fork Lift for Shop	25,000		25,000				
A0005	A0005 50 Accounting & Administration Server - Replace/Update Hardware, Network Security, & OS		26,523			26,523		
E0002	E0002 10 Replace 5-yard Dump Truck						131,127	
E0007	E0007 12 Replace Mini Excavator							71,027
E0008	18 Replace Flush and Vac Truck		445,578					
V0001	18 Replace Tool Truck (7 tool trucks in fleet)	206,876	68,959		68,959		68,959	
V0002	9 Replace Administrative Staff Vehicle (4 cars in fleet)	55,167		27,583				27,583
	Subtotal	1,010,820	564,059	52,583	68,959	26,523	200,086	98,611
System Reinv	vestment - Sewer							
0032a	36 Agate Bay Sewer Pump Station - Predesign and Shorelines Permitting	103,000			103,000			
0032b	36 Agate Bay Sewer Pump Station - Design and Bidding	128,750				128,750		
0032c	36 Agate Bay Sewer Pump Station - Construction	540,750					540,750	
0044c	30 Edgewater Pump Station - Construction	250,000		250,000				
0053c	30 Dellesta Pump Station - Construction	250,000		250,000				
0055a	30 Rocky Ridge Pump Station - Predesign and Shorelines Permitting (with Lakewood)	51,500	51,500					
0055b	30 Rocky Ridge Pump Station - Design and Bidding	103,000			103,000			
0055c	c 30 Rocky Ridge Pump Station - Construction					300,000		
0056a	30 Lakewood Pump Station - Predesign and Shorelines Permitting (with Rocky Ridge)	51,500	51,500					
0056b	30 Lakewood Pump Station - Design and Bidding	103,000			103,000			
0056c	30 Lakewood Pump Station - Construction	300,000				300,000		
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				
0155	9 Lake Whatcom Boulevard - Replace ~200LF at Gravity Outlet	56,275	56,275					
0157	12 Install Ball Check Valves at Cable, Ranch House, Flat Car, Beaver	112,551			112,551			

Program Are	Program Area / CIP Project # / CIP Project Name		2020	2021	2022	2023	2024	2025
0161	30 Stationary Generator Closed Loop Cooling Retrofit - North Point, SV, Flat Car, Beaver	225,102				225,102		
0171	18 Sudden Valley Sewer Pump Station - Recondition Electrical Controls	168,826					168,826	
0172	16 Flat Car Sewer Pump Station - Recondition Electrical Controls	168,826						168,826
0193	100 COB Post Point WWTP Biosolids Handling (LWWSD Cost Share 4.8%) - Construction 2023	10,000,000				10,000,000		
1905a	Beaver, Flat Car, SVPS Motor Leads (replace 3 at \$6k/each)	18,000	18,000					
1905b	18 Beaver, Flat Car, SVPS Motor Leads (replace 2 at \$6k/each)	12,000		12,000				
A0010	35 Update Sewer Comprehensive Plan (Current Plan Dated 6-14-2014)	87,550						87,550
E0003	14 Replace Sewer Camera Vehicle	82,340			82,340			
E0004	8 Replace Camera Equipment	41,524			41,524			
S0001a	15 Sewer System Rehab and Replacement Projects	61,800	61,800					
S0001b	15 Sewer System Rehab and Replacement Projects	679,800		169,950	169,950	169,950	169,950	
S0001c	15 Sewer System Rehab and Replacement Projects	600,000						600,000
	Subtotal	14,646,094	289,075	781,950	715,365	11,123,802	879,526	856,376
System Reii	nvestment - Water							
0084a	40 Agate Heights Water System - Phase 1 WTP Upgrade 1/3 capacity (from 30gpm to 60gpm)	- 55.000	55.000					
	Design, Bid, SDC	,	,					
0084b	40 Agate Heights Water System - Phase 1 WTP Upgrade 1/3 capacity (from 30gpm to 60gpm)	- 180,000		180,000				
	Construction							
0144a	70 South Shore Water System - 1992 SVWTP 0.235MG Chlorine Contact Tank Seismic Retrofit	- 84,413			84,413			
0144	Priority 2 - Design	175 570				175 570		
01440	Priority 2 - Construction	- 1/5,579				1/5,5/9		
0145a	70 South Shore Water System - 1971 Division 7 1.0MG Reservoir Seismic Retrofit and Coatings	- 200.000					200.000	
	Priority 1 - Design & Permitting	,					,	
0164	30 Demolish Old Concrete Reservoir at 1010 Lakeview Street	36,050	36,050					
0166	1 South Shore Water System - SVWTP - Convert from Chlorine Gas to Liquid	103,000			103,000			
0201	20 Convert Eageridge Booster to Metering Station	30,000	30,000					
1902	36 PRV-AUS at Fremont and Austin - Rebuild Vault, replace 3inch and 1.5inch PRVs, Piping, and	10,000	10,000					
	Hardware							
1903	36 Geneva Reservoir Impressed Current Cathodic Protection System	20,000	20,000					
1904	36 Division 22 Reservoir Impressed Current Cathodic Protection System	20,000	20,000					
1911	1 Fire Hydrant Flow Testing Kit for Hydraulic Model Calibration Testing	3,500	3,500					
1912	6 SVWTP (Tank Ladder, 300Amp Breakers, Div 7 Div 22 Flow Meters, Intake Pipe Signs)	40,000	40,000					
1913	1 Dutch Harbor Water Meter - Add to Telemetry/SCADA Historian	20,000		20,000				
1914	4 SVWTP Raw Water Intake - Emergency Pumps (water only portable pump)	50,000				50,000		
1915	6 1237 Lakeview St - Replace 2" PVC with 2" HDPE	50,000			50,000			
1916	10 Fire Hydrant Adapters	1	1					
W0002a	18 Water System Rehab and Replacement Projects	40,000		40,000				
W0002b	18 Water System Rehab and Replacement Projects	50,000					50,000	
W0002c	18 Water System Rehab and Replacement Projects	226,600						226,600
W0003	35 SVWTP Filter 3&4 Media - Replace	25,714						25,714
	Subtotal	1,419,858	214,551	240,000	237,413	225,579	250,000	252,314

Program Area / CIP Project # / CIP Project Name	Fund	Total	2020	2021	2022	2023	2024	2025
* Note: Cost Estimates in 2020 Dollars	Grand Total	17,513,599	1,147,685	1,139,533	1,086,736	11,472,731	1,394,612	1,272,301

Lake Whatcom Water and Sewer District

2020 Capital Improvement Plan

District Administrative Code Section 2.3 – Capital Improvement Plan Policy provides a policy framework to plan and implement capital policies and programs that preserve, maintain, and improve capital facilities, equipment, and assets with the goal of avoiding fiscal emergencies and unplanned capital costs.

The 6-year capital improvement plan (CIP) is updated annually during budgeting efforts for the following year. The CIP coordinates projects identified in the current Water System Comprehensive Plan and Sewer Comprehensive Plan with facility, equipment, and asset needs identified during the trailing 12 months. The current Water System Comprehensive Plan was approved by the Washington State Department of Health on October 3, 2018 and is valid until October 3, 2028 (10-years). The current Comprehensive Sewer Plan was approved by the Washington State Department of Ecology on June 6, 2014. [does a sewer plan expire or is valid for number of years?]]

Capital projects are financed to the greatest extent possible through user fees when direct benefit to users results from the construction of the project. The District utilizes revenue bonds and applicable state and federal loans and grants to assist in capital funding whenever necessary. Each capital project that may be funded by a loan is evaluated within the context of the District's capital improvement program and the capital budget. The funding strategy is reviewed and updated approximately every two to three years as part of the District's period rate study that considers revenues, expenses, CIP needs, and debt. Projects are scheduled to fit within the funding strategy contained in the most current rate study.

Projects are prioritized and scheduled considering the following criteria:

- Impact on the operating budget through increases or reductions in revenues and expenses.
- Identified and scheduled in the water and sewer comprehensive plans.
- Can be realistically accomplished during the year that they are scheduled.
- Implement previous Board-approved reports and strategies.
- Renewal and replacement schedules identified in the asset management system's comprehensive inventory of all capital assets which includes estimates of actual value, replacement cost and remaining useful life.
- Business risk exposure index that factors consequence of failure and probability of failure of the subject asset.

Capital projects that are not completed during the fiscal year are carried over to the next fiscal year. These projects are listed on the paged titled "Active Capital Improvement Project".

whatcom	AGENDA BILL Item 5.B	Agate H Plant E	Heights Water Treatment Expansion Recommended Alternative							
DATE SUBMITTED:	October 2	2, 2019	MEETING DATE:	MEETING DATE: October 9, 2019						
TO: BOARD OF COMMISSIONERS FROM: Bill Hunter, District Engineer/Assist.					r/Assist. GM					
GENERAL MANAGE	R APPROVAL		Jostol alug							
ATTACHED DOCUM	IENTS		1. Agate Height	s Water System U	pgrades: Pre-					
			Design Phasi	ng Recommendati	ons					
TYPE OF ACTION REQUESTED RESOLUTION FORMAL ACTION/ INFORMATION/ Information Information Information										

BACKGROUND / EXPLANATION OF IMPACT

The Lake Whatcom Water & Sewer District owns and operates the Agate Heights water system on the north shore of Lake Whatcom. The water system source is an artesian groundwater well with treatment provided via a system with a capacity of 30 gallons per minute (gpm). The current system capacity is 57 equivalent residential units (ERU), with available system capacity of five additional ERUs.

The District's consulting engineer, Wilson Engineering, previously completed an analysis of various alternatives associated with expansion of the treatment system capacity, which was presented to the Board during its regularly scheduled meeting on May 29, 2019. Based upon Board direction, Wilson Engineering and District staff explored means of mitigating system replacement costs while ensuring the District continues to demonstrate expansion related to the District's water rights. Attached is a memorandum presenting Wilson Engineering and District staff recommended alternative for the Agate Heights water system.

FISCAL IMPACT

The initial scope of work (Phase 1—\$42,000) with the consultant included topographic/boundary surveying, pre-design pilot study, preliminary design, and preparation of the Washington State Department of Health (DOH) project report. The additional project phasing study and cost estimating will require an additional \$7,000 (+/-) to complete the initial scope of work. Should the Board be supportive of this alternative, the consultant will prepare and submit a Project Report to DOH for review and approval.

The current draft of the capital improvement plan includes funding place-holders for the next two phases of the project: Phase 2 includes development of detailed plans, specifications, and cost estimates for bidding in 2020; and Phase 3 construction in 2021. Staff is in the process of developing and refining cost estimates for these phases.

RECOMMENDED BOARD ACTION

No action is recommended at this time.

PROPOSED MOTION

No motion is required at this time.



TO:	LWWSD – Justin Clary, PE and Bill Hunter, PE
FROM:	Brian Smith, PE and Melanie Mankamyer, PE
SUBJECT:	Agate Heights Water System Upgrades: Pre-design Phasing Recommendations DRAFT
DATE:	October 2, 2019

Executive Summary

Some of the existing treatment and pumping equipment for the Agate Heights water system is reaching the end of its useful life. There have also been discussions about expanding the capacity of this system; it has excess water rights available, and this could be used to serve new customers and consolidate separately owned and operated water systems within the District's boundary.

We have developed a recommended phased approach to equipment replacement and system capacity expansion. This consists of:

Phase	Description	Capacity (gpm)	Proposed year	Estimated Capital Cost
1a	Replace treatment system only, not pumps	60 gpm but operated at 34 gpm due to pump capacity	2020	\$160,000
1b	Replace source pump station	60 gpm, with VFDs	2025	\$150,000
1c	Replace transfer pump station	30 gpm	2030	\$110,000
2	Add treatment & pumping capacity in existing building, add storage	120 gpm	2040? When needed	Not estimated
3	Add treatment & pumping capacity - may require additional building space. Add storage.	180 gpm - System able to serve all of north shore	2050? When needed	Not estimated

Introduction

Lake Whatcom Water and Sewer District (LWWSD) owns and operates the Agate Heights water system (Public Water System ID #52957B) on the north shore of Lake Whatcom. This system's water supply comes from an artesian well. The water rights for this well total an instantaneous withdrawal rate of 438 gallons per minute (gpm). Further details can be seen in the LWWSD Water System Comprehensive Plan (June 2018).

The well water contains Manganese (Mn) at a concentration that exceeds the Secondary Maximum Contaminant Level (SMCL). The concentration has been measured from 0.11 to 0.14 mg/L Mn, and the SMCL for Mn is 0.05 mg/L. In 2001, treatment equipment was installed to remove Manganese to below the SMCL. Pumping equipment was also installed to pump the water from the well to the lower water storage tank, and a second pump skid was installed to pressurize the upper pressure zone. In 2008, the second pump skid was converted to pump water from the lower water storage tank to the upper water storage tank that was constructed in that year. All this mechanical equipment has functioned and been maintained for 18 years, but the treatment and pumping equipment will soon be in need of a major overhaul or replacement.

The existing equipment is sized for a source flow rate of 30 gpm. This limits system capacity to 57 Equivalent Residential Units (ERUs). The system currently serves (or has commitments to serve) 52 ERUs and therefore has only 5 available ERUs. This alternatives analysis explores options to overhaul/replace the mechanical equipment while simultaneously increasing source capacity and therefore increasing the number of available ERUs so that there are opportunities for expansion of the water system in the area (as discussed in the Northshore Water System Consolidation Study, August 2017).

This report presents a recommended phased approach to equipment replacement and capacity expansion for the system. For each phase, four categories are described and discussed: mechanical equipment, system capacity, costs, and risks. A "maintain existing system" option is also discussed.

Maintain Existing System - 30 gpm Capacity

Maintain Existing System - Mechanical Equipment

The pumps have all been re-built a number of times and are due for replacement within the coming years. Both of the pump skids are duplex pump skids, so there is redundancy - one

Agate Heights Phasing Recommendations

pump could fail and the other could keep the system in operation until the other was repaired. If the District does not want to pursue any expansion or replacement, we would likely recommend having a spare pump and motor on the shelf for each pump station. We have not researched the cost of this or if these makes and models are still available for purchase. They likely may not, and modifications to the existing skid may need to be made to accommodate a new model of pump/motor.

The Mn treatment equipment contains a number of mechanical components (meter, control valve, actuated valves, pressure switch, gages, and control equipment) that are all original from 2001. These may begin to fail and require replacement. The media in the filter vessel has been periodically inspected and core samples sent to Filtronics for analysis, and the filter vessel has been "topped off" with additional media as needed to maintain full system functionality. This checking of the media would need to continue on a regular basis (perhaps once every 2 years) and there may come a time when all the media needs to be changed out.

The original installation for the building included sodium hypochlorite solution storage within the same space as the treatment and pumping equipment, and this accelerated corrosion of susceptible components of the system. The sodium hypochlorite solution has since been moved to a separate space, but the years that it shared a space likely decreased the life of the equipment.

Maintain Existing System - System Capacity

Maintaining the existing system would continue to provide a system capacity of about 30 gpm. The calculated system capacity of 57 ERUs is explained in detail in the Water System Comprehensive Plan (WSCP). This number was based on an assumption that the source should be relied upon to operate 2/3 of the time. Since publication of the WSCP, we found that the Washington Department of Health (WA DOH) Water System Design Manual contains a recommendation that the source capacity should be enough to provide Maximum Day Demand (MDD) in a period of 18 hours or less of pumping (page 42). This means that the source could be relied upon 18/24 (3/4) of the time instead of 2/3 of the time. This is still sufficiently conservative because the time that the treatment system cannot be in operation (which occurs during a backwash) is a small fraction of the operating time. The backwash time for the existing system is approximately 4 minutes for every 12 hours of operation.

The updated calculation of system capacity could increase the current capacity from 57 ERUs to 64 ERUs upon concurrence with WA DOH. This would mean that the system would have 12 available ERUs instead of currently having 5 available ERUs.

Maintain Existing System - Costs

This alternative would have the lowest capital costs, but the cost of replacing mechanical and electrical components piecemeal as needed may end up costing more than replacing them all at once because it could require multiple mobilizations of a contractor (if LWWSD is not able to self-perform the work). It could also require emergency mobilization of a contractor, which adds cost. Costs for this alternative were not estimated because failure rates of each equipment component are not predictable.

As part of this investigation, the effort required to operate the treatment system was investigated. Detailed information is available in the correspondence in Appendix A. This indicates that current operations can be adjusted to reduce operational effort and expense. These findings apply regardless of whether the treatment system is the existing system or a replacement system.

Maintain Existing System - Risks

This alternative has the highest risk that a critical component of the water system will fail and that water production will cease until it can be fixed. If one of each spare part is not on-hand, there is a risk that the time to obtain that part is excessive and the storage tanks could go empty or the customers could have their water shut off. There is also a risk that a fire could occur during that time and there would be no water to support firefighting efforts.

Phase 1 - 60 gpm, Replace treatment equipment and pumping systems incrementally

The concept of Phase 1 of system component replacement and capacity expansion is that the treatment and pumping systems would be replaced with systems that have a source capacity of 60 gpm. This serves the purpose of replacing mechanical equipment that is near the end of its useful life and providing additional source capacity. Adding source capacity makes sense for a number of reasons: it provides additional capacity for serving more customers (nearby houses that request service), it allows the system to catch up more easily to refill storage after a water main break or fire event, and it demonstrates progress toward the permitted water right allotment. Upgrading from 30 gpm capacity to 60 gpm capacity makes sense because

increasing capacity of the equipment from 30 gpm to 60 gpm only adds a nominal amount of cost to the project - most of the cost is coming from the need to replace the aging equipment.

Due to budget constraints and the condition of the individual pieces of equipment, we are proposing to split Phase 1 of the project in to Phase 1a, Phase 1b, and Phase 1c. Phase 1a consists solely of replacement of the treatment equipment, leaving the two pumping systems in place for another 5-10 years until replacement of those systems is budgeted for. The treatment system, designed for 60 gpm, can be operated at a lower flow rate until the pumps are replaced. This is discussed in further detail in the following sections.

Phase 1b and Phase 1c consist of replacing the source pumping system and transfer pump system, respectively. These are proposed as separate phases because the transfer pumping system replacement has a lower priority than the source pumping system. This is for two reasons: (1) the source pumps are in a more degraded condition because the current system injects a relatively high concentration of chlorine immediately upstream of the pumps, which results in a harsh environment for the pump - the transfer pump station is not subject to this harsh working condition and is expected to have a longer working life for this reason, and (2) the transfer pumping station provides flow to the upper tank and service area, but no new connections are anticipated in this service area - any new connections would be fed from the lower tank, so additional capacity for the upper tank is not needed.

Phase 1a - Mechanical Equipment

Phase 1a includes replacing the Manganese removal treatment equipment. Equipment is sized for a design flow rate of 60 gpm.

The conceptual mechanical layout is shown in Figure 1. This phase consists of the following:

- Removal of existing Manganese removal treatment system
- Installation of temporary bypass pipe to be able to pump water to reservoir
 - This means that Mn will not be removed for approximately 1 week anticipated that this is acceptable since Mn is a secondary contaminant - may need to notify customers
 - Includes disinfection of temporary pipe and connecting chlorine injection system for disinfection during bypass
- Installation of new Mn removal equipment in the location of old Mn removal equipment
- Installation of new 2 inch flow meter

WATER TREATMENT SYSTEM BUILDING FOOTPRINT CONCEPTUAL LAYOUT FOR PHASE 1a _____ <u>an</u> NEW ELECTROMAGNETIC _____ 29 ₽₩ Ð A D 3 TREATMENT (43) UNIT · hr PROPOSED MANGANESE TREATMENT SKID — (104" x 17.5") 36 3 ____ \otimes 43 Ġ, 6 REMOVE EXISTING PRESSURE SUSTAINING VALVE CONTROL PANEL 38 \mathbb{N}

FIGURE 1



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For the new treatment equipment, several manganese removal treatment systems were investigated. We received proposals from five manufacturers for a system sized for 60 gpm. The manufacturers and budgetary equipment costs are shown below:

Manufacturer	ATEC	WaterSurplus	Filtronics	Evoqua	Tonka
Budgetary					
Equipment	\$40,000	\$40,000	\$57,000	\$74,000	¢128.000
Cost for 60	\$40,000	\$40,000	\$57,000	\$74,000	φ120,000
gpm unit					

In checking references, all of these manufacturers provide good quality equipment. It appears as though a significant factor to explain the wide range of prices is the variety in controls systems that operate the backwash for each of these systems. We also found that ATEC is the most well-established equipment manufacturer in our region, with many water system operators that are fully satisfied with the performance of their equipment.

We anticipate that the specifications for the treatment equipment would be written to allow for a competitive bidding process. The ATEC system has already been pilot tested with the Agate Heights water system and been shown to be effective in removing Mn to well below the SMCL. Other manufacturers would be allowed to perform bench scale or pilot scale testing if they were interested in bidding the project, but any manufacturer would be held to a strict performance specification guaranteeing the effective full-scale performance of the equipment.

Phase 1a - System Capacity

Although the treatment system is designed for 60 gpm capacity, Phase 1a relies on the existing source pump system to provide system flow. The existing duplex pump system provides approximately 30 gpm. It uses a pressure sustaining valve on the outlet of the pump manifold to add head to the system to adjust the operation point because the pump system runs at 100% frequency and does not have Variable Frequency Drives to adjust flow rate down to the target 30 gpm.

Because the new treatment system can be operated at flow rates up to 60 gpm or more, the existing pressure sustaining valve that controls the pump flow rate can be eliminated. The pressure sustaining valve currently adds about 15 psi of headloss to the system. The impact to system operation of removing this pressure sustaining valve (PSV) can be seen on the pump

curve in Appendix B. It should be noted that all pump calculations are for a single pump in operation. The pump station is a duplex pump station, but the second pump is for redundancy only and it is not assumed that both pumps are running at a given time. Assumptions and calculations that went in to the operation points is shown below:

Existing operation:	PSV upstream pressure setting = 95 psi = pressure at discharge
	of pump
	Artesian pressure from well = 12 psi = pump suction pressure
	Head across pump = 95 - 12 = 83 psi = 192 ft
	Therefore, pump operates at approximately 29 gpm
Proposed operation:	Tank elevation, base = 555 ft
(remove PSV)	Tank height = 15 ft assume full tank
	Pump elevation = 388 ft
	Artesian pressure from well = 12 psi = 27.72 ft
	Headloss through piping and filters accounted for in Appendix C
	= 11.79 ft
	Head across pump = (555+15-388) - (27.72) + (11.79) = 166 ft
	= 72 psi
	Therefore, pump operates at approximately 34 gpm

This demonstrates that without the pressure sustaining valve, the pump system is expected to operate at a flow rate of approximately 34 gpm.

A capacity of 34 gpm is sufficient source capacity for 73 ERUs (Maximum Day Demand = 500 gpd/ERU, source on 75% of the time). This would mean that the system would have 21 available ERUs instead of currently having 5 available ERUs. The limiting factor for system capacity would still be source capacity, not storage. This is discussed further in the discussion for Phases 1b/1c.

As a follow-up to the August 2017 Northshore Water System Consolidation Study, LWWSD mapped the level of interest from the survey responses plus other water system consolidation considerations. This map is shown in Figure 2: North Shore Water System Interest. The map shows that there is some interest in connecting to the public water system in the immediate vicinity, although interest is limited.



Phase 1a - Costs

Estimated capital costs for Phase 1a are detailed in Table 1. As discussed in the previous *"Maintain Existing System - Costs"* section, ongoing operational costs can probably be decreased, but this applies to both the existing system and a new system. Because operational costs are expected to be the same for the existing system and the new system in Phase 1a, this is not accounted for in the Phase 1a cost estimate. Maintenance efforts and costs once Phase 1a is completed will be lower than currently because the treatment equipment will be new and components will have a much lower risk of failure and frequency of replacement.

Phase 1a - Risks

The only risk to discuss associated with Phase 1a is that it leaves the pumps in service. They are nearing or at the end of their useful lives, but they have been rebuilt and can be rebuilt again if needed before replacement of the pumping systems. With the redundancy provided by the duplex pumping systems, risk is not excessive.

LAKE WHATCOM WATER AND SEWER DISTRICT Agate Heights Water System Upgrades Preliminary Cost Estimates

Prepared by: Brian Smith, PE, Wilson Engineering LLC

Wilson Job No.: 2018-110

		1		Unit		
Item Description	Quantity	Unit		Price		Amount
CAPITAL COSTS - CONSTRUCTION						
a. Mobilization/Demobilization (10%)	1	LS	\$	8,050	\$	8,050
		 	<u> </u>			
b. Treatment System						
			<u>_</u>	40.000	¢	40.000
New Manganese removal system - 60 gpm - MATERIAL ONLY	1	LS	\$	40,000	\$	40,000
Electromagnetic Flow Meter - 2 inch, installed	1	EA	\$	4,000	\$	4,000
Optional - Replace chemical metering pump, tubing, appurtenances	1	EA	\$	1,500	\$	1,500
Optional - Replace chlorine on-line analyzer	1	EA	\$	5,000	\$	5,000
Labor to remove and dispose of existing equipment, install new equipment, disinfect, test, and start-up		1		l		
system	1	LS	\$	20,000	\$	20,000
SCADA integration with new treatment system - to tell if system is in backwash or not	1	LS	\$	5,000	\$	5,000
		<u> </u>				
Subtotal					\$	75,500
c. Temporary Facilities						
Temporary pipe system - to bypass treatment for approximately 1 week while old is removed, new is			T			
installed and tested	1	LS	\$	5,000	\$	5,000
			Γ			
Subtotal			1		\$	5,000
			1			
SUMMARY						
Subtotal			1		\$	88,550
Contingencies	30%		1		\$	26,600
Preliminary Estimated Construction Costs					\$	116,000
Detailed Engineering Design	20%				\$	23,200
Construction Phase Engineering/Inspection (full time)	10%	1			\$	11,600
					¢	460.000
TOTAL PROJECT ESTIMATED CAPITAL COST					φ	160,000

Preliminary Cost Estimate - 60 gpm, Replace all treatment equipment and leave existing pumps in place (Phase 1a)

Phase 1b - Mechanical Equipment

Phase 1b consists of replacing the source pump station. The layout for this phase is shown in Figure 3. Because the old pump station will be removed and the new one installed in its place, this is anticipated to require temporary pumping facilities (likely exterior to the building) to provide system functionality while the old pump system is removed and the new one is installed and tested. The new pump station will be a duplex pump station for full redundancy.

This new pump station would be designed to include Variable Frequency Drives (VFDs) so that the speed of the pump and therefore the flow rate could be decreased by the operator or control system. This could be helpful to balance flows between the two water storage tanks or to decrease the treatment plant flow rate in an unusual circumstance. This pump station would be designed for a flow rate of 60 gpm for each pump. The pump design point is shown below, and more details of the hydraulic calculation shown below can be found in Appendix C.

Source pump station: Tank elevation, base = 555 ft Tank height = 15 ft assume full tank Pump elevation = 388 ft Artesian pressure from well = 12 psi = 27.72 ft Headloss through piping and filters accounted for in Appendix C = 16.90 ft Head across pump = (555+15-388) - (27.72) + (16.90) = 171 ft = 74 psi

There are a number of manufacturers that make good quality pumping systems. It is anticipated that the specification for these pieces of equipment would be written to allow a number of preapproved manufacturers to competitively bid on the equipment. Once Phases 1a and 1b are complete, the source system will be fully automated and capable of turning on, turning off, and backwashing autonomously.





Phase 1b - System Capacity

Phase 1b provides a source capacity of 60 gpm. This is sufficient source capacity for 129 ERUs (Maximum Day Demand = 500 gpd/ERU, source on 75% of the time). However, this exceeds the capacity of the water storage for the system. Water storage limits the system capacity to 110 ERUs (as detailed in LWWSD Water System Comprehensive Plan, June 2018). A capacity of 110 ERUs would increase the available ERUs to 58. All of these additional ERUs would be served from the lower tank.

Again, this additional system capacity should be considered with respect to potential for system expansion/consolidation. See the August 2017 Northshore Water System Consolidation Study, and Figure 2 of this report. It should also be considered that the additional capacity allows for greater flexibility in operation and provides a greater ability for the system to recover from an event that drains the tanks such as a fire or a water main break.

Phase 1b - Costs

Estimated capital costs for Phase 1b are detailed in Table 2. Because operational costs are expected to be the same for the Phase 1a and Phase 1b, this is not accounted for in the Phase 1b cost estimate. Maintenance efforts and costs once Phase 1b is completed will be lower than currently because the pumping equipment will be new and components will have a much lower risk of failure and frequency of needing replacement and/or rebuilding.

Phase 1b - Risks

There are no risks to discuss associated with Phase 1b. All equipment will be new and in good operating condition for many years. The additional supply capacity decreases the risk of system de-pressurization during a fire flow or main break event because it will be able to re-fill the reservoirs more quickly.

LAKE WHATCOM WATER AND SEWER DISTRICT Agate Heights Water System Upgrades Preliminary Cost Estimates



Prepared by: Brian Smith, PE, Wilson Engineering LLC

Wilson Job No.: 2018-110

Preliminary Cost Estimate - 60 gpm, Replace duplex pump station at source (Phase 1b)

				Unit		
Item Description	Quantity	Unit		Price		Amount
CAPITAL COSTS - CONSTRUCTION						
					í	
a. Mobilization/Demobilization (10%)	1	LS	\$	8,100	\$	8,100
					í	
b. Pumping System - at source (treatment plant)						
			1			
New duplex pump skid with VFDs and control panel - 60 gpm peak capacity per pump - MATERIAL ONLY	1	EA	\$	40,000	\$	40,000
Labor to replace pump skid, disinfect, test, and start-up system	1	EA	\$	16,000	\$	16,000
SCADA re-programming	1	LS	\$	15,000	\$	15,000
Subtotal					\$	71,000
c. Temporary Facilities						
Temporary pump system - to facilitate removal of old and installation of new in same location (approx 1						
week duration for old to be removed, new to be installed and tested)	1	EA	\$	10,000	\$	10,000
Subtotal					\$	10,000
SUMMARY						
Subtotal					\$	89,100
Contingencies	30%				\$	26,700
Preliminary Estimated Construction Costs					\$	116,000
Detailed Engineering Design	15%				\$	17,400
Construction Phase Engineering/Inspection (full time)	10%				\$	11,600
TOTAL PROJECT ESTIMATED CAPITAL COST					\$	150,000

Phase 1c - Mechanical Equipment

Phase 1c consists of replacing the transfer pump station that pumps water from the lower tank to the upper tank of the Agate Heights water system. A layout for this phase was not developed at this time, but the installation is anticipated to be similar in concept to Phase 1b in that the old pump station would be removed and the new one would be installed in its place. As with Phase 1b, this is anticipated to require temporary pumping facilities (likely exterior to the building) to provide system functionality while the old pump system is removed and the new one is installed and tested. The new pump station will be a duplex pump station for full redundancy.

This new pump station would be deigned to run at a constant 30 gpm with an across-the-line starter. The reasons for this are as follows. The existing pump station operates at a constant flow rate of 21 gpm. This is upsized to 30 gpm simply to be able to send more water to the upper tank in case of an unusual circumstance that quickly drains the tank. No new connections are anticipated in the service area of the upper tank, so no additional capacity for this tank is required. The new pump station is proposed as a constant flow pump station instead of having VFDs because there will be no need to decrease the flow rate from the lower tank to the upper tank. With the new source pumps that can flow at 60 gpm or less (with VFDs), the transfer pump flow rate of 30 gpm will help ensure that the lower tank is not drained faster than it can be refilled. The pump design point is shown below, and more details of the hydraulic calculation shown below can be found in Appendix C.

Transfer pump station: Lower tank elevation, base = 555 ft

Lower tank water level = 0 ft assume empty tank (worst-case) Upper tank elevation, base = 824 ft Upper tank water level = 20 ft assume full tank (worst-case) Headloss through piping and filters accounted for in Appendix C = 0.61 ft Head across pump = (824+20-555) + (0.61) = 290 ft = 125 psi

Phase 1c - System Capacity

Phase 1c provides 30 gpm to the upper tank instead of the current 21 gpm. This could increase capacity for the upper tank slightly (because the required equalizing storage component could

be decreased), but no new connections are anticipated to be served from the upper tank, so this increase in capacity has not been quantified.

Phase 1c - Costs

Estimated capital costs for Phase 1c are detailed in Table 3. Maintenance efforts and costs once Phase 1c is completed will be slightly lower than currently because the pumping equipment will be new and components will have a lower risk of failure and frequency of needing replacement and/or rebuilding.

Phase 1c - Risks

There are no risks to discuss associated with Phase 1c. All equipment will be new and in good operating condition for many years. The additional supply capacity decreases the risk of system de-pressurization during a fire flow or main break event because it will be able to re-fill the reservoirs more quickly.

LAKE WHATCOM WATER AND SEWER DISTRICT Agate Heights Water System Upgrades Preliminary Cost Estimates



Prepared by: Brian Smith, PE, Wilson Engineering LLC

Wilson Job No.: 2018-110

			Unit	
Item Description	Quantity	Unit	Price	Amount
CAPITAL COSTS - CONSTRUCTION				
a. Mobilization/Demobilization (10%)	1	LS	\$ 6,100	\$ 6,100
b. Pumping Systems - One at treatment plant, one at lower tank				
New duplex pump skid with control panel - 30 gpm peak capacity per pump, constant speed - MATERIAL				
ONLY	1	EA	\$ 30,000	\$ 30,000
Labor to replace pump skid, disinfect, test, and start-up system	1	EA	\$ 16,000	\$ 16,000
SCADA connection	1	LS	\$ 5,000	\$ 5,000
Subtotal				\$ 51,000
c. Temporary Facilities				
Temporary pump system - to facilitate removal of old and installation of new in same location (approx 1				
week duration for old to be removed, new to be installed and tested)	1	EA	\$ 10,000	\$ 10,000
			. <u> </u>	
Subtotal				\$ 10,000
SUMMARY				
Subtotal				\$ 67,100
Contingencies	30%			\$ 20,100
Preliminary Estimated Construction Costs				\$ 88,000
Detailed Engineering Design	15%		 	\$ 13.200
Construction Phase Engineering/Inspection (full time)	10%			\$ 8,800
TOTAL PROJECT ESTIMATED CAPITAL COST		•		\$ 110,000

Preliminary Cost Estimate - 30 gpm, Replace duplex transfer pump station - lower tank to upper tank (Phase 1c)

Phase 2 - 120 gpm Treatment and Pumping Capacity, Additional Storage

Phase 2 of the Agate Heights water system improvements/expansion is currently conceptualized as an expansion from 60 gpm source capacity to 120 gpm source capacity. In order to utilize this addition production capacity to serve additional customers, additional storage would need to be constructed (new tank and likely new transmission pipe because tank will likely be in a location not near the existing tank). This will be a major system expansion, and the detailed design will need to be developed in the future when this phase of the project is closer to becoming a reality and the required capacity is more precisely determined. Potential scenarios for needing additional capacity have been conceptualized and discussed in the August 2017 Northshore Water System Consolidation Study, amended December 7, 2017.

Phase 2 - Mechanical Equipment

The concept of Phase 2 is that a second Mn removal skid could be installed within the existing treatment plant building, and a 120 gpm pump could be added to the existing pump system to allow the pump system to operate at 120 gpm with full redundancy. It is anticipated that this equipment could be installed within the existing building, although a detailed layout has not been developed.

Phase 2 would also need to include new water storage, and transmission and distribution pipe connecting to this new storage. Source capacity flow would likely be split between the existing lower tank and this new storage.

Phase 2 - System Capacity

Phase 2 would provide a source capacity of 120 gpm. This is sufficient for 259 ERUs (Maximum Day Demand = 500 gpd/ERU, source on 75% of the time). Current storage provides sufficient capacity for 110 ERUs, so the new storage would be sized for an additional 149 ERUs to match source capacity.

Phase 2 - Costs

Costs for Phase 2 have not been estimated at this time. The exact needed capacity for this future phase of system expansion is not known, and the timeline for this expansion is not known, but expected to be greater than 20 years out. The potential for new treatment and pumping equipment to be able to fit in the existing building will help minimize project costs, but building new storage and connecting piping will be a major investment.

Phase 2 - Risks

The primary risk with Phase 2 expansion is the uncertainty of the future need for additional capacity and the associated improvements to system facilities.

Phase 3 - 180 gpm Treatment and Pumping Capacity, Additional Storage

Phase 3 of the Agate Heights water system improvements/expansion is currently conceptualized as an expansion from 120 gpm source capacity to 180 gpm source capacity. In order to utilize this addition production capacity to serve additional customers, more additional storage would need to be constructed (new tank). As with Phase 2, the detailed design will need to be developed in the future when this phase of the project is closer to becoming a reality and the required capacity is more precisely determined. Again, potential scenarios for needing additional capacity have been conceptualized and discussed in the August 2017 Northshore Water System Consolidation Study, amended December 7, 2017. Generally speaking, approximately 180 gpm system capacity is anticipated to be sufficient to serve the maximum anticipated system expansion (including consolidating the District's Eagleridge water system in to the Agate Heights system). For this reason, expansion beyond 180 gpm is not considered.

Phase 3 - Mechanical Equipment

It is anticipated that the treatment and pumping equipment for Phase 3 would require a new building. To utilize this additional source capacity to serve additional customers, new storage would also need to be constructed.

Phase 3 - System Capacity

Phase 3 would provide a source capacity of 180 gpm. This is sufficient source capacity for 388 ERUs (Maximum Day Demand = 500 gpd/ERU, source on 75% of the time). Existing and Phase 2 storage would provide sufficient capacity for 259 ERUs, so the new storage would be sized for 129 ERUs to match source capacity. It should be noted that the existing artesian well

has a physical capacity to provide in excess of 180 gpm and also has an existing water right permit in excess of 180 gpm.

Phase 3 - Costs

Costs for Phase 3 have not been estimated at this time. This is because the phase has only been conceptualized and not designed to any detailed extent. The reason for this is that the exact needed capacity for this future phase of system expansion is not known, and the timeline for this expansion is not known.

Phase 3 - Risks

The primary risk with Phase 3 expansion is the uncertainty of the future need for additional capacity and the associated improvements to system facilities.

Recommendations

The existing Agate Heights treatment and pumping equipment is nearing the end of its useful life. If it continues in operation, individual components will need to be replaced as they fail, and the system capacity will remain unchanged. We recommend that equipment replacement follow the outlined phased approach to gain additional capacity at the same time the aging equipment is replaced. Additional capacity is helpful for existing operations, in terms of being able to better recover from events that could drain the storage tanks, and it is helpful to be able to allow piecemeal system expansion as demand arises. There is an additional benefit of system expansion in that it demonstrates progress toward putting water to beneficial use. We recommend moving forward with Phase 1a, Phase 1b, and Phase 1c of this project per the schedule outlined in the executive summary at the beginning of this report.

Phases 2 and 3 should be further assessed and refined in the future as the Agate Heights water system expands and potentially consolidates nearby smaller water systems.





Agate Heights - discussion with DOH

Wed, May 22, 2019 at 10:14 AM

Brian Smith

bsmith@wilsonengineering.com>

To: Kevin Cook <kevin.cook@lwwsd.org>

Cc: bill.hunter@lwwsd.org, Melanie Mankamyer <mmankamyer@wilsonengineering.com>

All,

I was doing some more digging on this. The original Project Report for the system (December 1999, link below for reference) makes no mention of the well being under the influence of surface water. In fact, section 4.2 of the report (pages 9-10 of pdf) addresses susceptibility of the well/aquifer to contamination and concludes (with reference to the wellhead protection plan) that the well has a low susceptibility for groundwater contamination. The Project Report also includes a bacteriological report from the well that shows an absence of coliforms on 4/5/1999.

But the two Sentry database results showing hits for coliform and fecal two times in 2001 does seem a bit concerning? Might be worth taking a raw water bact sample now just to be safe? But even if it does come back with a positive result, I think that would indicate a need to disinfect the well, not necessarily that it was under the influence of surface water.

I also found the original Management and Operations Manual (circa 2000, link below). On page 72 of the pdf, Section IV, A, second paragraph, it mentions the monthly monitoring of manganese. So between this saying Mn should be measured monthly and that also being what Laura from DOH says, I think that is now pretty well established.

Link for both references: https://wilson.sharefile.com/d-s32286f1405846e18

As far as chlorine grab sampling, I guess the reason to do this more often than twice a week would be if you didn't have much faith in your online chlorine analyzer and it alarming if there is a problem?

Hope this is helpful.

Brian Smith, P.E. **Wilson Engineering, LLC** 805 Dupont Street, Suite 7 Bellingham, WA 98225 Ph: (360) 733-6100 x216 <u>www.wilsonengineering.com</u> *Celebrating 50 Years of Civil Engineering and Surveying!*

On Tue, May 21, 2019 at 5:20 PM Kevin Cook <kevin.cook@lwwsd.org> wrote:

Wow that's interesting, I was under the impression that there was a regulatory difference that required us to jump the extra hoops with the Agate system as compared to a Pole Road type system. Since the Agate system was built in the late 90's early 2000" the district has operated, sampled, tested and reported the same as we do today, I'm not sure if that was set up by Chip Anderson, Sandy Petersen, Wilson or DOH (do you recall Melanie ?) but I always assumed there was a reason for doing it the way we do and the only thing I could put my finger on was our source is possibly under the influence of surface water.

From: Brian Smith [mailto:bsmith@wilsonengineering.com]
Sent: Tuesday, May 21, 2019 3:40 PM
To: Bill Hunter; Kevin Cook
Cc: Justin Clary; Melanie Mankamyer
Subject: Agate Heights - discussion with DOH

I wanted to let you know that I discussed Agate Heights operations with Laura McLaughlin, the Whatcom County regional engineer at DOH. She explained the minimum recommended/required grab sampling frequency at the treatment plant: 1. Manganese: grab sample for Mn concentration at plant effluent at least once per month (this is a recommendation, not a hard requirement). More often if customer complaints or if operator has concerns that justify sampling more frequently. 2. Chlorine: The online chlorine analyzer addresses the need to measure and record the chlorine residual 5 days per week. Laura explained that there is a requirement to "validate" the online analyzer readings using an approved method (grab sampling) at least once every 5 days. She said instead of once every 5 days, most systems plan on doing this two times per week. She didn't mention this source being groundwater under the influence of surface water (GWI). I didn't necessarily want to open this can of worms. I was thinking that it is not because the treatment system is not sufficient to treat it as surface water would be treated. But I did glance through old sampling records on Sentry, and I did find a pre-treatment raw sample that seems to indicate that on 10/1/2001 there was a sample that had both coliform and fecal? Same thing for a pre-treatment sample on 7/2/2001? I didn't see any pre-treatment coliform samples taken after 10/1/2001. Do you think we should look in to this further? Brian Smith, P.E. Wilson Engineering, LLC 805 Dupont Street, Suite 7 Bellingham, WA 98225 Ph: (360) 733-6100 x216 www.wilsonengineering.com Celebrating 50 Years of Civil Engineering and Surveying! www.wilsonengineering.com **Total Control Panel** Login To: kevin.cook@lwwsd.org From: bsmith@wilsonengineering.com You received this message because the domain wilsonengineering.com is on the enterprise allow list. Please contact your administrator to block messages from the domain wilsonengineering.com Water System Improvements Richalou Estates.pdf

Hi Bill and Kevin,

12898K

Appendix B



9/30/2019

LWWSD - Agate Heights

Appendix C - Phase 1a detailed hydraulic calculations

Design flow = 34 gpm

Hydraulics calculations - well to lower tank

					Quantity /	Roughness	Headloss	Frictional
Headloss	Flow, gpm	Pipe Dia., in	Area, sf	Velocity, fps	Length, ft	С	Coeff. K	Headloss (ft)
4" Pipe, well to building (DI)	34	4	0.09	0.87	30	120		0.04
4" Gate Valve	34	4	0.09	0.87	1		0.20	0.00
4" meter	34	4	0.09	0.87	1		5.00	0.06
4" 90 degree elbow	34	4	0.09	0.87	1		0.50	0.01
4" x 2" reducer	34	2	0.02	3.48	1		1.00	0.19
2" pipe in building	34	2	0.02	3.48	30	140		0.78
2" 90 degree elbow	34	2	0.02	3.48	11		0.50	1.03
Filter Media (near end of cycle)	34							9.24
2" x 6" bushing reducer	34	2	0.02	3.48	1		1.00	0.19
6" Pipe, building to tank	34	6	0.20	0.39	1915	140		0.24
6" 45 degree bends	34	6	0.20	0.39	15		0.30	0.01
6" Gate valve	34	6	0.20	0.39	1		0.20	0.00
Pipe entrance to tank	34	6	0.20	0.39	1		1.00	0.00
					Total f	rictional head	loss (ft)	11.79

Elevation Head

Elevation at pump (ft)	388
Elevation of tank base (ft)	555
Tank height (ft)	15
Total maximum elevation head (ft)	182
Pressure Head	
Pressure at pump suction (artesian) (ft)	27.72
Pressure at tank discharge (ft)	0
Total pressure head (ft)	-27.72
Total Dynamic Head (ft)	166.07
Total Dynamic Head (psi)	71.9

9/30/2019

LWWSD - Agate Heights

Design flow = 60 gpm

Appendix C - Phase 1b detailed hydraulic calculations (well to tank)

Hydraulics calculations - well to lower tank

					Quantity /	Roughness	Headloss	Frictional
Headloss	Flow, gpm	Pipe Dia., in	Area, sf	Velocity, fps	Length, ft	С	Coeff. K	Headloss (ft)
4" Pipe, well to building (DI)	60	4	0.09	1.53	30	120		0.10
4" Gate Valve	60	4	0.09	1.53	1		0.20	0.01
4" meter	60	4	0.09	1.53	1		5.00	0.18
4" 90 degree elbow	60	4	0.09	1.53	1		0.50	0.02
4" x 2" reducer	60	2	0.02	6.13	1		1.00	0.58
2" pipe in building	60	2	0.02	6.13	30	140		2.24
2" 90 degree elbow	60	2	0.02	6.13	11		0.50	3.21
Filter Media (near end of cycle)	60							9.24
2" x 6" bushing reducer	60	2	0.02	6.13	1		1.00	0.58
6" Pipe, building to tank	60	6	0.20	0.68	1915	140		0.68
6" 45 degree bends	60	6	0.20	0.68	15		0.30	0.03
6" Gate valve	60	6	0.20	0.68	1		0.20	0.00
Pipe entrance to tank	60	6	0.20	0.68	1		1.00	0.01
					Total f	16.90		

Elevation Head

Elevation at pump (ft)	388
Elevation of tank base (ft)	555
Tank height (ft)	15
Total maximum elevation head (ft)	182
Pressure Head	
Pressure at pump suction (artesian) (ft)	27.72
Pressure at tank discharge (ft)	0
Total pressure head (ft)	-27.72
Total Dynamic Head (ft)	171.18
Total Dynamic Head (psi)	74.1

10/1/2019 LWWSD - Agate Heights

Appendix C - Phase 1c detailed hydraulic calculations (tank to tank)

Design flow = 30 gpm

Hydraulics calculations - lower tank to upper tank

					Quantity /	Roughness	Headloss	Frictional
Headloss	Flow, gpm	Pipe Dia., in	Area, sf	Velocity, fps	Length, ft	С	Coeff. K	Headloss (ft)
8" pipe tank outlet	30	8	0.35	0.19	1		0.80	0.00
8" pipe (DI)	30	8	0.35	0.19	95	120		0.00
8" 90 degree elbow	30	8	0.35	0.19	1		0.50	0.00
8" 45 degree elbow	30	8	0.35	0.19	3		0.30	0.00
8" x 4" reducer	30	4	0.09	0.77	1		1.00	0.01
4" pipe (DI)	30	4	0.09	0.77	550	120		0.52
4" 45 degree elbow	30	4	0.09	0.77	4		0.30	0.01
4" x 8" reducer	30	4	0.09	0.77	1		1.00	0.01
8" pipe (DI)	30	8	0.35	0.19	1620	120		0.05
8" 45 degree elbow	30	8	0.35	0.19	20		0.30	0.00
8" Gate valve	30	8	0.35	0.19	3		0.20	0.00
Pipe entrance to tank	30	8	0.35	0.19	1		1.00	0.00
					Total f	0.61		

Elevation Head

Elevation of lower tank base (ft)	555
Lower tank water level (ft)	0
Elevation of upper tank base (ft)	824
Upper tank water level (ft)	20
Total elevation head (ft)	289

Pressure Head - zero (tanks open to atmosphere)

Total Dynamic Head (ft)	289.61
Total Dynamic Head (psi)	125.4

whatcom by Ite	ENDA Con BILL m 5.C	mmissioner Insurance Discussion					
DATE SUBMITTED:	October 2, 2019	MEETING DATE:	October 9, 2	019			
TO: BOARD OF COMM	ISSIONERS	FROM: Justin Clary, General Manager					
GENERAL MANAGER A	PPROVAL	Sotolley					
ATTACHED DOCUMEN	TS	1. Table-Commissioner Insurance Survey of WASWD Members (2,500-5,000 connections)					
TYPE OF ACTION REQU	ESTED	RESOLUTION	FORMAL ACTION/ MOTION	INFORMATIONAL /OTHER			

BACKGROUND / EXPLANATION OF IMPACT

During its 2019 session, the Washington State Legislature passed Senate Bill 5122, which revised <u>RCW 57.08.100</u> removing the minimum customer base requirement (5,000 customers) for water/sewer districts to have the option of providing health insurance to commissioners. Governor Inslee subsequently signed the bill into law, which became effective July 28, 2019. The District currently serves approximately 4,300 customers; therefore, the pending law will allow the District Board to consider providing insurance to its members. During its regularly scheduled July 31 meeting, the Board discussed the option of providing insurance to commissioners. During the Board. Following presents the Board's questions, and staff findings, which were discussed during the Board's August 28 meeting:

- 1) What would be the cost of providing insurance to Medicare-eligible commissioners through the Washington State Public Employees Benefits Board (PEBB)? District staff contacted PEBB regarding this question. PEBB indicated that because commissioners are considered employees (they are compensated per State statute), they do not qualify for Medicare rates, and would therefore be required the same rates as non-Medicare-eligible employees. If health insurance is provided to commissioners, Medicare would become secondary insurance because the commissioners would be considered active employees covered by District insurance.
- 2) What would costs be to the District and commissioners if commissioners are considered part-time employees under District personnel policies? District Personnel Policies Manual Section 6.09 (Benefits for Part Time and Temporary Employees) reads:

Regular Part Time Employees: All leaves, including holidays, and insurance premiums are pro-rated. Pro-rated means the ratio between the number of hours in the employee's normal work schedule and forty (40) hours per week.

Under <u>RCW 57.12.010</u>, commissioners are compensated based upon a per meeting basis, regardless of the length of each meeting, not on an hourly basis. Because both length of meetings and number of meetings attended per week vary greatly, administration of a proportionate cost sharing arrangement for insurance premiums could be burdensome from an audit perspective. In addition, the District would need to develop a procedure for collection of premium payments from commissioners, and penalties should a commissioner fail to provide timely payment. That said, the following table provides a rough breakdown on annual costs to the District and individual commissioners based upon various scenarios under 2019 rates:

	5 Hours per Week			10 Hours per Week				20 Hours per Week				
	12.5%			87.5% 25%			75%		50%		50%	
Coverage		District	Сс	ommission		District	С	ommission		District	Сс	ommission
Commissioner	\$	1,249.50	\$	8,746.50	\$	2,499.00	\$	7,497.00	\$	4,998.00	\$	4,998.00
Commissioner/Spouse	\$	2,271.00	\$	15,897.00	\$	4,542.00	\$	13,626.00	\$	9,084.00	\$	9,084.00
Commissioner/Family	\$	3,037.50	\$	21,262.50	\$	6,075.00	\$	18,225.00	\$	12,150.00	\$	12,150.00

3) Commissioner Carter volunteered to work with Debi Denton to clarify how PEBB works relative to Medicare-eligible individuals.

Debi Denton and Commissioner Carter discussed this topic on August 20. The two concluded that since commissioners are considered employees, Medicare rates do not apply. Further discussion will need to include the factors of commissioner contribution level as well as non-participation waiver fees if all commissioners do not wish to participate in PEBB coverage.

4) Would a change in policy to provide insurance to commissioners qualify as a "change in status" that would enable enrollment at any time, or would the District need to wait until the annual open enrollment period (November of each year)? District staff contacted PEBB regarding this question. PEBB indicated that the Board of Commissioners would be considered a separate group under the District and would be eligible for initial enrollment at any time (i.e., not subject to the annual November enrollment period). PEBB also indicated that, because the Board of Commissioners would be a separate group, the District would be responsible for the monthly waiver fee (currently \$150) for any commissioner that elects not to be covered by PEBB insurance.

During its discussion during the August 28 meeting, the Board decided to inquire during the Fall WASWD conference if other districts with less than 5,000 connections are considering providing insurance to their boards. Discussion during the Small Districts meeting at the conference indicated that none of the districts in attendance were considering this option due to financial constraints. However, it should be noted that, aside from the District, all others in attendance were 1,400 connections or fewer. Since the WASWD conference, District staff contacted WASWD members in the 2,500 to 5,000 connection range (more comparable to the District size). Attached is a table summarizing those findings.

FISCAL IMPACT

The fiscal impacts of the providing insurance to District commissioners is estimated to be up to approximately \$79,000 per year (based on 2019 rates, current Board makeup, and if insurance was provided consistent with represented employees [95% District—5% commissioners).

RECOMMENDED BOARD ACTION

No action is recommended at this time.

PROPOSED MOTION

Not applicable.

Commissioner Insurance Survey WASWD Members (2,500-5,000 connections)

	Conne	ctions			Provides	Considering
					Commissioner	Commissioner
District	Water	Sewer	Commissioners	Employees	Insurance	Insurance
Beacon Hill Water & Sewer District	3,975	2,772	3	9	no	considered
Coal Creek Utility District	4,021	3,590	3	17	yes	NA
King County Water District #49	4,107	0	3	7	yes	NA
King County Water District #125	3,500	0	3	7	yes	NA
Lake Whatcom Water & Sewer District	4,000	4,300	5	18	no	yes
Liberty Lake Sewer & Water District	5,004	4,341	3	13	no	no
Manchester Water District	3,358	0	3	8	yes	NA
North Beach Water District	2,713	0	3	8	no response received	
Northeast Sammamish Sewer & Water District	3,302	4,859	3	9	yes	NA
Olympic View Water & Sewer District	4,800	3,700	3	13	yes	NA
Skyway Water & Sewer District	3,355	4,074	3	10	no	considered

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DATE SUBMITTED:	October 2, 2019	MEETING DATE: October 9, 2019				
TO: BOARD OF COMM	ISSIONERS	FROM: Justin Clary				
GENERAL MANAGER A	PPROVAL	Sestor Clay				
ATTACHED DOCUMEN	TS	1. General Manager's Report				
TYPE OF ACTIO	N REQUESTED	RESOLUTION	FORMAL ACTION/ MOTION	INFORMATIONAL /OTHER		

BACKGROUND / EXPLANATION OF IMPACT

Updated information from the General Manager in advance of the Board meeting.

FISCAL IMPACT

None.

RECOMMENDED BOARD ACTION

None required.

PROPOSED MOTION

None.



General Manager's Report

Upcoming Dates & Announcements

Regular Meeting – Wednesday, October 9, 2019 – 6:30 p.m.

Important Upcoming Dates

Lake Whatcom Water & Sewer District							
Regular Board Meeting	Wed Oct 30, 2019	8:00 a.m.	Board Room				
Employee Staff Meeting	Thu Oct 10, 2019	8:00 a.m.	Board Room				
	,		Commissioner McRoberts to Attend				
Investment Comm Meeting	Wed Oct 30, 2019	10:00 a.m.	Small Conference Room				
Safety Committee Meeting	Mon Oct 28, 2019	1:00 p.m.	Small Conference Room				
Lake Whatcom Management P	rogram						
Data Group Meeting	Thu Oct 10, 2019	9.00 a m	City of Bellingham PW Offices				
	1110 Oct 10, 2019	9.00 a.m.	2221 Pacific Street				
Policy Group Meeting	Mon Eeb 24, 2020	3:00 p.m.	City of Bellingham Fireplace Room				
	10111 20 24, 2020		625 Halleck Street				
Joint Councils Meeting	March 2020	TBD	TBD				
Other Meetings							
WASWD Section III Meeting	Tue Nov 12, 2019	6:15 p.m.	Bob's Burgers, 8822 Quil Ceda Pkwy, Tulalip, WA				
Whatcom Water Districts	Wed Oct 16, 2019	1.00 n m	Board Boom				
Caucus Meeting	Wed Oct 10, 2015	1.00 p.m.					
Whatcom Falls (Bellingham)	Thu Oct 17, 2019	3.00 n m	Whatcom Falls Park Arbor Court				
Water Treatment Plant Tour	1110 000 17, 2015	5.00 p.m.					
Whatcom County Council of	Wed Oct 9 2019	4.00 n m	Council of Governments Offices				
Governments Board Meeting		4.00 p.m.	314 E Champion Street				

Committee Meeting Reports

Safety Committee:

Safety Committee met on September 30; committee noted that a number of recently updated safety programs were presented during the September 12 staff meeting, as well as the office alarm protocol for during non-business hours; the committee is currently reviewing the lockout/tagout, small tools, and chemical hygiene safety programs; and will be evaluating conducting a noise assessment of District facilities/equipment.

Investment Committee:

> No meeting has been conducted since the last report.

Upcoming Important Agenda Topics and Meetings

- Administrative Code Update (October 30)
- Engineering Standards Update (October 30)

- 2020 Budget Presentation (November 13)
- Sudden Valley Water Treatment Plant Facility Improvement Plan Award (November 13)
- District-Bellingham Wastewater Treatment Agreement Discussion (November 13)
- 2020 Budget Adoption (November 27)

2019 Initiatives Status

Administration and Organizational Document Review/Revision

Personnel Policies Manual

- Workplace Violence Policy Update Approved by the Board during February 27 meeting.
- Drug Testing Policy Update
 Approved by the Board during February 27 meeting.
- Paid Family & Medical Leave Act Policy Addition Approved by the Board during February 27 meeting.
- Other revisions as identified/needed

Administrative Code

- Board Meeting Dates/Times
 Adopted by the Board during January 30 meeting (Resolution No. 854).
- Purchasing Policy
 Adopted by the Board during March 13 meeting (Resolution No. 857).
- Other revisions as identified/needed

Commissioner Protocol Manual

Work session to review/revise Adopted by the Board during April 10 meeting.

Health & Safety Program

Review programs

Ongoing. Safety Committee has updated the District's Employee Safety Manual, and Return to Work, Respirator, Chlorine Safety, Confined Space, Vehicle Operation, Fire Safety, and Meter Reader Safety programs.

File Management System

- Electronic file management structure revision
 File management structure has been revised and migration of documents is complete.
- Digitize applicable hard copies and file in DocuWare Staff attended DocuWare training on June 13; R Hope developing process for ensuring digitalization of applicable documents in accordance with State regulations.

Community/Public Relations Enhancement

<u>Website</u>

- Reconfigured the layout of the *About* dropdown menu to make more user friendly.
- > Expanded content for the *Board of Commissioners* page (commissioner bios and photos).
- > Routinely providing alerts, as appropriate, on page (e.g., water main flushing notice).

Intergovernmental Relations

- B. Ford, J. Carter, and J. Clary met with Satpal Sidhu, Whatcom County executive candidate, and Seth Fleetwood, Bellingham mayor candidate, on September 30.
- > J. Clary attended a Whatcom Land Trust event on October 2.

GENERAL MANAGER'S REPORT LAKE WHATCOM WATER & SEWER DISTRICT PAGE 2

- > J. Clary scheduled to attend the Whatcom Council of Governments board meeting on October 9.
- B. Ford, J. Carter, and J. Clary scheduled to meet with April Barker, Bellingham mayor candidate, on October 14.

Social Media Program

- Develop/implement social media program Program implemented February 14.
- Create/manage District LinkedIn account LinkedIn account is live (<u>www.linkedin.com/company/lake-whatcom-water-and-sewer-district</u>) with new information posted regularly.
- Create/manage District Facebook account Facebook account is live (<u>https://www.facebook.com/Lake-Whatcom-Water-Sewer-District-455872278278848</u>) with new information posted regularly.
- Create/manage District NextDoor account NextDoor currently limits public agency pages to only emergency response agencies, J. Clary registered individually to monitor "neighborhoods" within District service area.

Press Releases

- District staff recognition press release issued on January 14.
- ShakeAlert implementation press release issued on July 23.

50-Year Anniversary

- Press release/logo Release issued November 21, 2018; logo developed November 20, 2018.
- Banner Installed January 10.
- Commissioner/employee jackets with 50th anniversary logo Jackets distributed to staff during March 14 staff meeting.
- Celebration
 Completed during the annual employee banquet on January 11.

Fact Sheets

Develop District fact sheets General informational fact sheet on the District created on April 15 Water conservation fact sheet created in June and distributed with July/August utility bills.

Lake Whatcom Water Quality

Management Program

Attend organized meetings; initiate additional meetings/discussions outside of program J. Clary participating on the Interjurisdictional Coordinating Team (ICT) in the development of the Lake Whatcom Management Program 2020-2024 Work Plan, and attended the Policy Group meeting on September 30.

Onsite Septic System Impact Assessment

North shore monitoring

J. Clary and Gary Stoyka, Whatcom County Natural Resources Program Manager, have finalized a scope of work for water quality monitoring and are in the process of finalizing an interlocal agreement between the District and County. The city of Bellingham has elected to contribute staff resources to the effort; with no financial participation proposed, the city has requested to not be included in the interlocal agreement.

Onsite Septic System Conversion Program

- Identify applicable lots
 Staff identified lots to pursue connection to District collection system.
- Implement conversion notification process
 Notice of requirement to connect to District sewer system sent to three property owners on February 21. District staff issued a reminder to each property owner on September 4.
- Complete conversion Of the three properties, one has been issued a requirement to connect by October 7 by the Whatcom County Health Department, one has attended a Board meeting regarding the financial burden of the connection, and one has not responded to-date.

Watershed Stormwater Utility

Participate in utility development process
 J Clary attended multiple meetings of the citizen advisory committee, the April 30 public meeting; and multiple County Council meetings.
 County Council held a public hearing and adopted (vote of 5-2) the rate structure during its July 23 meeting; the utility will become effective (begin assessing rates) January 1, 2020.

Board Technology Upgrades

Board-issued Tablets

Identify/implement appropriate systems to board Tablets have been issued to each commissioner.

Electronic Board Packets

Implement electronic-only packet production process District has converted to electronic-only packet production.

Asset Management

Asset Location

GPS District infrastructure in Sudden Valley Emily McGinty, GIS intern (WWU environmental science major with a GIS certification), started on June 20 and should be complete by mid-October.

Preventative Maintenance

Develop/refine automatic work order notification process in Cartegraph District staff have developed the hierarchy of assets for the system with Cartegraph and are testing the system on a pilot scale. Anticipate full implementation by the end of November.

O&M Workload Capacity Analysis

- Implement process in Cartegraph for tracking resource use Engineering and operations staff are tracking resources specific to utilities.
- Analyze resource allocation data Staff are analyzing data; for example, the data enabled an update to the District's master fees and charges schedule (adopted by the Boar during its September 11 meeting).

New Development Process Refinement

Revise/implement new development permit/inspection/approval process The District issued a letter in May to all individuals that have obtained a Water Availability determination from the District over the past 12 months, notifying them of District limited resources for side sewer inspections and water service installations, and first come-first serve policy relative to the Lake Whatcom land disturbance window (June 1 – September 30). This letter is also being issued with water/sewer availability requests received since May.

AG whatcom <i>B</i> <i>B</i> <i>B</i> <i>B</i> <i>B</i> <i>B</i> <i>B</i> <i>B</i>	iENDA BILL Ger em 9 Per	Executive Session General Manager Annual Performance Evaluation					
DATE SUBMITTED:	October 2, 2019	MEETING DATE: October 9, 2019					
TO: BOARD OF COMM	ISSIONERS	FROM: Justin Clary, General Manager					
GENERAL MANAGER APPROVAL		Sistof along					
ATTACHED DOCUMEN	TS	1. 2018-2019 Performance Report					
TYPE OF ACTION REQU	ESTED		FORMAL ACTION/ MOTION	INFORMATIONAL /OTHER			

BACKGROUND / EXPLANATION OF IMPACT

The District entered into an employment agreement on August 29, 2018, with Justin Clary to serve as the District's general manager. Mr. Clary's first day of employment with the District was October 1, 2018. Per Section 10, Performance Evaluation, of the agreement, the Board of Commissioners is to evaluate Mr. Clary's performance annually, on or about the anniversary of appointment. During its September 25 meeting, the Board defined an approach and schedule for conducting the performance evaluation. The Board also requested that Mr. Clary submit an annual report summarizing District achievements over the past year, as well as proposed initiatives for 2020. The requested document is attached.

FISCAL IMPACT

No impact is anticipated.

RECOMMENDED BOARD ACTION

No action is recommended at this time.

PROPOSED MOTION

Not applicable.



1220 Lakeway Drive Bellingham, WA, 98229 (360) 734-9224 Fax 738-8250

MEMORANDUM

To: Board of Commissioners Lake Whatcom Water & Sewer District Date:

October 2, 2019

From: Justin Clary, General Manager

RE: 2018-2019 Performance Report

As my first year with the Lake Whatcom Water and Sewer District (District) comes to a close, I have been honored to work with the Board of Commissioners (Board) and staff in serving our customers. The purpose of this memorandum is to provide the status of Board-approved 2019 initiatives and other self-assigned objectives, as well as to propose a new set of initiatives for 2020 for Board consideration. Of note, the accomplishments highlighted below would not have been attained but for the tremendous support of both Board and staff.

2018-2019 Accomplishments

Administration and Organizational Document Review/Revision:

- Mission, Goals, and Operating Norms. Reviewed and revised with the Board the District's mission statement and goals, and implemented staff operating norms.
- Union Contract. Negotiated the 2019-2021 agreement with the AFSCMErepresented employees within Board-defined parameters.
- Operations & Maintenance Manager. Successfully filled the newly created Operation & Maintenance Manager position.
- Employee Relations. Initiated employee appreciation programs including issuance of an employee-specific recognition email on each employee's District anniversary; held District staff chili cook-off and dessert bake-off competitions; implemented a confidential employee assistance program through PeaceHealth; held a District Operations Day that allowed staff to showcase their jobs to the Board; and developed an employee recognition bio (Miguel Gillis) that was published in WASWD's Pipeline newsletter.
- 2019 Budget. Facilitated Board adoption of the 2019 Budget under a new, enhanced format.
- Personnel Policy Manual. Completed a comprehensive review and update to the District's personnel policy manual, including updates to the District's workplace

violence and drug testing policies, and addition of a policy specific to the recently enacted Paid Family & Medical Leave Act.

- Administrative Code. Through various resolutions, overhauled the District's purchasing policy, codified Board meeting dates/times, and completed a comprehensive review of the District financial policies and master fees and charges schedule.
- Commissioner Protocol Manual. Completed a comprehensive review and update to the District's commissioner protocol manual.
- Health & Safety Program. Working with the Health and Safety Committee, completed a comprehensive review of the District's employee safety manual, as well as updates to several safety programs (return to work, respirator, chlorine safety, confined space, vehicle operation, fire safety, and meter reader safety programs).
- Cross-connection Control Program. Updated the District's cross-connection control program for consistency with current regulations.
- File Management System. Implemented a new file structure for management of electronic files on the District's server, and assigned Rachael Hope to revitalize management of permanent electronic files on the District's DocuWare system.

Community/Public Relations Enhancement:

- Website. Led effort in reformatting the *About* page, expanding the content on the *Commissioner* and *Staff* pages, and ensured that alerts and news updates were regularly posted.
- Social Media. Developed a social media program that defines how District social medial will be used and maintained; and created a District social media presence, including development and regular updates to District Facebook and LinkedIn pages, and regular review of postings on NextDoor "neighborhoods" that overlap District service area.
- Press Releases. Issued five press releases over the past year (DOH approval of comprehensive water plan, hiring of the O&M Manager, District 50th anniversary, employee service recognition, and ShakeAlert system activation).
- 50-Year Anniversary. Celebration of the District's 50th anniversary included creation of an anniversary-specific logo, issuance of a press release, installation of a temporary banner, distribution of jackets/vests with the 50th anniversary logo, and expansion of the annual staff recognition banquet to include a slide show of the District's history.
- Fact Sheets. Developed a general information sheet on the District, and a water conservation sheet that was distributed with the July/August bills.

- Sudden Valley Trunk-or-Treat Event. District participated in 2018 Sudden Valley Community Association Trunk-or-Treat event, and is planning to participate again this year.
- Intergovernmental Relations. Regularly attended Whatcom County Water Utility Coordinating Committee, Whatcom Water Alliance, Lake Whatcom Management Program, Whatcom Water Districts Caucus, and WASWD Section III meetings; presented District updates at Sudden Valley Community Association and South Whatcom Fire Authority meetings; held individual meetings with City/County public works directors and management staff; coordinated District interviews with City mayor and County executive candidates; and currently coordinating a breakfast with 40th and 42nd district legislators in December.

Lake Whatcom Water Quality:

- Management Program. Regularly attended policy group, data group, interjurisdictional coordinating team, and executive team meetings, including development of the 2020-2024 work plan; presented the District's perspective during the annual joint councils meeting in March.
- Onsite Septic System Impact Assessment. Leading the effort in development of an interlocal agreement between the District, County, and City for water quality monitoring during the 2019-2020 winter.
- Onsite Septic System Conversion Program. The District identified three septicserved parcels within 200 feet of District sewer system, issued notices of requirement to connect, and is tracking the connection of those properties (required to connect by August 2020).
- Watershed Stormwater Utility. Attended multiple citizen advisory committee and county council meetings, and the April 30 public meeting to track the progress and rate structure development; facilitated Board discussion on the topic prior to county council adoption.

Board Technology Upgrades:

• Issued tablets to Board and management team, and converted to electronic-only Board meeting packet production.

Asset Management:

- Asset Location. Hired a GIS intern (Emily McGinty) to record GPS data on District infrastructure within Sudden Valley; project is on track for completion in mid-October.
- Preventative Maintenance. District staff developed a hierarchy of assets in Cartegraph and are pilot testing; project remains on track for completion by year end.

O&M Workload Capacity Analysis:

- Resource Tracking. Engineering and operations staff began recording labor and resources specific to each utility task in Cartegraph.
- Resource Allocation Data Analysis. With the initiation of engineering and operations staff recording data to Cartegraph-generated work orders, data is now becoming available to better understand resource needs; this data was used in the revision to the District's master fees and charges schedule approved during the Board's September 11 meeting.

New Development Process Refinement:

 The District issued a letter in May to all individuals that have obtained a Water Availability determination from the District over the past 12 months, notifying them of District limited resources for side sewer inspections and water service installations, and first come-first serve policy relative to the Lake Whatcom land disturbance window (June 1 – September 30). This letter has also been issued with water/sewer availability requests received since May.

2020 Initiatives

Similar to this past year's initiatives, the initiatives proposed for 2020 are intended to supplement District day-to-day operational and capital improvement obligations with minimal fiscal impact. Following are the management team's proposed initiatives.

1) Administration/Operations

- Level-of-Service Analysis. Level-of-service standards are measures of the minimum amount of capacity/response that a public facility must provide to meet that community's basic needs and expectations. As a public agency operating aging water and sewer infrastructure with finite revenue sources, development of operational level-of-service standards for each utility will facilitate a conversation with the Board specific to balancing customer expectations with available resources.
- Six-Year Business Plan. Building upon the level-of-service analysis, each District department (executive, engineering, finance, and operations) will develop a business plan that defines staffing, facility, and equipment needs to meet District-defined level-of-service standards over a six-year planning horizon.
- Rate Study. The District performs a comprehensive review of its water and sewer rates every five years to ensure that rates for each utility are keeping pace with utility needs. With the most recent rate structure set through December 31, 2021, the District will undertake a comprehensive rate review that utilizes water and sewer utility capital improvement programs and information developed through the level-ofservice analysis and six-year business plan efforts.
- Biennial Budget. As a special purpose district authorized under state statute, the District's primary functions are the operation of water and sewer utilities. With an

> effective six-year capital improvement program and forecastable revenues and expenditures, converting to a biennial budget would be relatively seamless and could create long term workload efficiencies. As such, District staff will explore with the Board the pros and cons of converting from an annual to a biennial budget.

- Bond Rating Review. A bond rating of a public agency apprises potential investors of the quality and stability of a bond (such as to finance necessary capital improvements). The higher the bond rating, the better the interest rate that agency may receive when issuing a bond. The District's current bond rating is AA-. In discussions with the District's bond underwriter, there are a number of relatively minor actions that the District may undertake to pursue a higher bond rating (AA). Understanding that the District may pursue a bond for large infrastructure improvements during the next five years, the District should now pursue a higher bond rating that will benefit it financially over the long-term debt payment period.
- Staffing Succession Plan. A few years ago, the District prepared a succession plan to address anticipated staff retirements; however, that document is now out-of-date. With a number of District employees, including members of the management team, projected to retire over the next five years, an updated succession plan needs to be developed to ensure that institutional knowledge is retained prior to the retirement of these individuals, as well as a path forward is developed for how the District will re-fill these positions.
- Job Description Review. Up-to-date descriptions of each District position are crucial in ensuring staff understand their duties and functions, in assisting management in evaluating employee performance, and for recruiting for vacant positions. Many of the District's job descriptions have not been updated for several years. Therefore, a comprehensive review of all job descriptions that have not been updated in the past three years will be conducted in the latter half of 2020. This will also allow for completion of an accurate salary survey in early 2021 in preparation for negotiation of a successor union contract later that year.

2) Emergency Response/System Security

- America's Water Infrastructure Act-compliant Risk and Resilience Assessment. America's Water Infrastructure Act of 2018 is a federal law that provides for water infrastructure improvements throughout the country. Through the provisions of this Act, the District is required to conduct a U.S. Environmental Protection Agencycompliant risk and resilience assessment by June 30, 2021, and develop an emergency response plan by December 31, 2021 (based upon the current customer base). Through the District's emergency planning contract with Whatcom County, the District will complete the risk and resilience assessment in 2020 to ensure ample time for completion of the emergency response plan by the end of 2021.
- Cyber Security Assessment. In recent years, local governments have become the targets of cyber criminals, nation-states, and hacktivists. Compromises of information technology (IT) and operational technology (OT) systems can greatly impact a utility, in the form of loss of staff productivity and cost of rectifying an IT/OT compromise, as

well as the potential to jeopardize public health and environmental protection. The District's insurer, the Washington Water/Sewer Risk Management Pool, will be providing security assessments and training to its members. The District will utilize this program to conduct an assessment of its IT/OT security system. Note this effort will also integrate with the America's Water Infrastructure Act risk and resilience assessment effort.

• Emergency Vender Contracts. With revision to state statute in 2019 that now allows for unit price contracting, the District will pursue contracts with applicable venders for on-call contracts to provide assistance as needed, including during periods of emergency response.

3) Community/Public Relations

- General Public Relations. Staff will continue to complete regular updates to the District website, and Facebook and LinkedIn pages, continue to track District-related comments on Nextdoor, and issue press releases, as applicable.
- Intergovernmental Relations. The general manager will continue to regularly engage in meetings with local, regional, and state partners consistent with the past year.
- EnviroStars Certification. The EnviroStars green business program is a free, onestop hub for assisting businesses in operating in an environmentally responsible manner. As a leader in promoting sustainable business practices within the Lake Whatcom watershed, the District already completes many EnviroStars certification requirements. Gaining certification will reiterate with our customers and neighbors the District's commitment to environmentally responsible and sustainable business practices.

4) Lake Whatcom Water Quality

- Management Program. The general manager will continue to regularly participate in policy group, data group, interjurisdictional coordinating team, executive team, and joint councils meetings.
- Onsite Septic System Impact Assessment. The District will continue to lead the effort in water quality monitoring along the north shore to assess the impacts of onsite septic systems.
- Onsite Septic System Conversion Program. The District will continue to pursue connection of septic-served parcels within 200 feet of District sewer system.