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

REGULAR MEETING
OF THE BOARD OF COMMISSIONERS

AGENDA

November 24, 2015

8:00 a.m. – Regular Session

1. CALL TO ORDER

2. PUBLIC COMMENT OPPORTUNITY
   At this time, members of the public may address the Commission. 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. Draft 2016 Budget
   B. Reservoir Seismic Vulnerability Assessment – Engineering Agreement
   C. WRIA 1 Water Caucus Discussion
   D. North Shore Road Sewer Extension Report
   E. Division 22 Reservoir Updated Cost Estimate
   F. Sewer Smoke Testing Project – Final Acceptance

6. OTHER BUSINESS

7. MANAGER'S REPORT

8. Executive Session Per RCW 42.30.140(4)(b) - Collective Bargaining Agreement – 30 Minutes

9. PUBLIC COMMENT OPPORTUNITY

10. ADJOURNMENT

LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 16, 2015		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL Bill Hunter		
MEETING AGENDA DATE:	November 24, 2015		
AGENDA ITEM NUMBER:	5.A.		
SUBJECT:	Draft 2016 Budget		
LIST DOCUMENTS PROVIDED ⇨ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Draft 2016 Budget		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL/ OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT
Attached is the proposed budget for 2016.

FISCAL IMPACT
None at this time.

RECOMMENDED BOARD ACTION
Review/discuss the proposed Budget for 2016.

PROPOSED MOTION
No proposed motion.

LAKE WHATCOM WATER AND SEWER DISTRICT

2016 ANNUAL BUDGET

REVENUE ASSUMPTIONS: 5% increase

- Water rate 8.75 % increase
- Sewer rate 2.5% increase
- 5 new connection permits
- ULID 18 revenue allocated to Operating Fund

EXPENDITURE ASSUMPTIONS: net 8.5% increase

- Payroll 2% COLA plus step increases
- Dept of Revenue taxes increase 4%
- Property insurance increase 14%
- Budget expenditures within 1% of rate study recommendations.
- Revenues within 1% of rate study recommendations.
- Operating reserve maintained per rate study recommendations.
- Capital reserve maintained per rate study recommendations.
- Rate funded system reinvestment funded per rate study recommendations.

Operating Reserves (Working Capital)

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 2016 budget our operating reserve goal is $800,000 which is 45 days of Sewer expenses and 90 days of Water expenses which is within the industry standard of 45-60 days for sewer utilities and 60-90 days for water utilities.

Capital Reserves (Capital contingency)

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 .5% of the replacement cost of fixed assets. In the 2016 budget we have $930,000 sewer reserve and $330,000 water reserve; both exceed the minimum capital contingency.

Rate Funded System Reinvestment

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 2016 the district has budgeted system reinvestment at $837,000

OPERATING FUND SUMMARY 401

This fund is maintained as the primary operating fund of the District. The majority of the revenue is derived from rates charged to water and sewer customers. Other revenue sources are interest income, late payment fees, recording fees, permit fees and miscellaneous charges and fees. All fees and charges are set by the Board of Commissioners. Funds collected are used to pay for operating and maintenance expenditures in accordance with the annual operating budget.

SYSTEM REINVESTMENT FUND SUMMARY 420

The System Reinvestment Fund is a special fund intended to receive and disburse funds for capital construction projects. This fund is primarily funded through interfund income from the General Fund. It is additionally funded annually in an amount established through the rate study. Other income is in the form of grants, loans, latecomer fees and permits. The System Reinvestment Fund expenses are derived from the Capital Improvement and Maintenance Plan attached to the fiscal year 2016 budget.

SEWER/STORM WATER CONTINGENCY FUND SUMMARY 425

The Sewer/Storm Water Contingency Fund was created to ensure that unforeseen projects related to sewer system and storm water system expenses will have funding, as approved by the Board. This fund was established with the remaining ULID 18 Fund balance after paying off all Public Works Trust Fund and Department of Ecology loans associated with the ULID.

DWSRF PROJECTS FUND SUMMARY 440

(DRINKING WATER STATE REVOLVING FUND)

The DWSRF Projects Fund is a special fund for the utilization of two Drinking Water State Revolving Fund loans. One project replaces aging water mains including all of the asbestos concrete (AC) water mains in the Geneva service area with ductile iron (DI) water mains. The other project constructs a new .5 MG (million gallon) reservoir to keep up with population growth primarily due to infilling in Geneva and Sudden Valley.

DEBT SERVICE FUNDS

Debt Service describes all expenses in connection with the issuance and initial sale of evidences of debt, such as loans, the sale of revenue bonds, etc. The District has two debt service funds which are used to pay off loans and bonds. A Revenue Bonds and Loan Funds Summary is included in the budget document.

2009 BOND DEBT SERVICE FUND SUMMARY 450

The 2009 Bond Debt Service Fund serves to provide redemption of the 2009 Bond issue. Interest is paid semi-annually, and the principal is paid annually from General Fund revenues.

2009 BOND RESERVE FUND SUMMARY 460

This fund was established by the covenants of the 2009 bond sale and is restricted by definition. A reserve limitation is required to be held in the Reserve Fund until the outstanding 2009 bonds are paid in full. The bond reserve is fully funded.

WATER LOANS DEBT SERVICE FUND SUMMARY 470

The Water Loans Debt Service Fund serves to provide redemption of two long term water project loans. Principal and interest are paid entirely from General Fund revenues.

ULID 18 FUND SUMMARY

480

The ULID 18 Fund is to provide for the revenue which comes from assessments against the properties within the ULID service area, as well as the interest earned on assessments collected prior to bond payments. All debt has been satisfied for this project, and therefore funds are unrestricted. In 2013 the remaining fund balance was utilized to set up the 425 Sewer/Water Contingency Fund. This revenue source is transferred to the Operating Fund 401 monthly and will cease in 2023 upon satisfaction of all assessments by the customer base.

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	Description	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Adopted 2015	10/31/2015	Projected 2015	Budget 2016	
OPERATING FUND - 401										
EXPENDITURES										
401-53X-10-10										
401-53X-10-20	Admin Payroll (2% cola plus step increases - 2016)	1,210,935	1,370,178	1,437,609	1,437,711	580,500	480,860	543,355	629,294	
401-53X-10-31	Admin Personnel Benefits (Medical,Retirement etc)	470,142	487,173	518,800	507,598	220,000	172,357	194,838	207,280	
401-53X-10-31-01	Gen Admin Supplies	48,808	45,187	22,827	22,314	21,000	17,829	21,395	21,000	0.00%
401-53X-10-40	Meetings/Team building	500	978	2,087	1,511	1,500	1,285	1,542	1,500	0.00%
	Web pay/Bank Fees	5,269	9,432	11,203	17,405	18,000	22,921	27,505	20,000	11.11%
	Interlocal - Lake Whatcom Management Program									
	Interlocal - Invasive Species									
401-534-10-41-00	Interlocal - Lake Whatcom Tributary Monitor									
	Water Quality Assurance Programs (TOTAL)									
	County Auditor Filing Fees (Simplifile)				60,134	65,000	34,516	41,419	65,000	0.00%
	Data Bar (Statement processing)								6,000	
	Answering Service								25,000	
	Data Pro (Time clock system)								2,000	
	BIAS Financial Software								1,500	
	Web Check services								20,000	
	WA State Auditor								3,500	
	CPA (Internal audit and Financial statements)								16,200	
	Docuware/Web site maintenance and upgrade								3,000	
	Legal Counsel								5,000	
	3D - Computer support								50,000	
	Watchguard								20,000	
	Building security								1,000	
	Building custodial								1,500	
	Pest control								7,200	
	Landscaping service								600	
	South Whatcom Fire (hydrant maintenance)								4,500	
	GE Scada System Software Maintenance - Operations								2,000	
	Wilson Engineering								7,500	
	Camera Van Software								7,000	
	SCADA/PLC Support - Engineering/Operations								1,500	
	Cartegraph - Engineering/Operations								5,000	
	Auto Desk - Engineering								8,000	
	GIS Partnership								1,000	
	Rockwell - Engineering/Operations								1,000	
	IT Pipes								500	
	ESRI - ARC GIS								1,500	
	Inovise - Engineering								1,500	
	Master Meter								2,000	
	Generator Load Testing								2,000	
	Cyberlock software								22,000	
	Misc (Bid notices etc.)								1,000	
401-53X-10-41-01	Professional Services (TOTAL)								1,000	
401-53X-10-42	Communication	285,389	206,315	340,633	300,258	230,000	207,983	249,580	231,500	0.65%
401-53X-10-43	Memberships/Dues	53,040	42,784	44,375	49,212	50,000	38,575	46,290	45,000	-10.00%
401-53X-10-44	WA State Dept of Revenue Taxes	16,313	10,755	12,204	14,760	-	-	-	-	
401-53X-10-45	Admin Lease	138,971	146,410	164,049	166,468	-	-	-	-	
401-53X-10-46	Property Insurance	3,031	2,850	2,297	2,310	2,000	1,348	1,618	2,000	0.00%
401-53X-10-49	Admin Misc.	137,158	94,276	94,695	105,538	110,000	121,322	121,322	125,000	13.64%
401-53X-10-49-01	Memberships/Dues	(3,484)	-	2,631	800	1,000	712	854	1,000	0.00%
401-53X-10-49-02	WA State Dept of RevenueTaxes/Permits (4% increase)				-	15,000	9,549	11,458	12,000	-20.00%
401-53X-40-43	Training & Travel				-	180,000	151,938	182,326	188,000	4.44%
401-53X-40-44	Tuition reimbursement	27,518	28,136	26,707	20,118	25,000	25,994	31,193	35,000	40.00%
401-53X-50-31	Maintenance Supplies	-	-	-	-	1,000	-	-	1,000	0.00%
401-53X-50-48	Operations Repair/Maint	94,592	96,068	90,632	140,958	125,000	125,205	150,246	145,000	
401-53X-50-49	Insurance Claims	68,496	78,807	44,345	65,735	65,000	55,353	66,424	65,000	
401-53X-60-41	Operations Contracted	5,000	7,455	-	5,360	-	6,633	7,960	5,000	
401-534-60-47	Water City of Bellingham	14,416	25,883	9,111	10,485	10,000	8,131	9,757	10,000	0.00%
401-535-60-47	Sewer City of Bellingham Treatment Fee	13,848	32,057	22,201	34,595	42,000	30,398	36,478	40,000	-4.76%
401-53X-80-10	Operations Payroll (2% cola plus step increases - 2016)	800,320	588,095	550,000	674,017	600,000	446,952	536,342	600,000	0.00%
401-53X-80-20	Operations Personnel Benefits (Medical,Retirement etc)	-	-	-	-	870,750	848,648	858,341	908,270	
401-53X-80-31	Operations General Supplies	-	-	-	-	330,000	306,640	346,637	355,900	
401-53X-80-32	Fuel	-	-	45,661	-	-	-	-	-	
401-53X-80-35	Safety Supplies	39,135	35,834	29,466	32,839	36,000	25,568	30,682	30,000	-16.67%
		9,175	8,763	7,856	6,121	12,000	9,258	11,110	12,000	0.00%

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	Description	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Adopted 2015	10/31/2015	Projected 2015	Budget 2016	
401-53x-80-35-01	Safety Supplies Boots	-	-	-	2,208	2,500	748	895	2,500	0.00%
401-53X-80-47	General Utilities	213,061	197,435	209,641	202,182	210,000	162,777	195,332	197,000	-6.19%
401-53X-80-49	Laundry	4,337	4,092	1,854	1,911	2,000	2,349	2,819	3,000	50.00%
401-591-35-77	Post Point Principal Payments				-	70,000	69,580	69,560	73,213	
401-592-35-83	Post Point Interest Payments				-	145,000	124,080	124,080	120,426	
	OPERATING EXPENDITURES	3,655,970	3,516,963	3,690,884	3,882,548	4,040,250	3,599,287	4,022,357	4,383,383	8.49%
TRANSFERS										
	Transfers Out to System Reinvestment Fund 420	1,140,000	425,063	346,806	947,000	815,000	347,500	356,000	837,000	
	Transfers Out to DWSRF Projects Fund 440 (Division 22 Reservoir)						20,451	21,000	771,650	
	Transfers Out to DWSRF Projects Fund 440 (Loan payment)								139,700	
	Transfers Out to 2009 Bond Debt Service Fund 450	297,250	295,500	443,675	447,450	448,050	447,827	447,827	443,050	
	Transfers Out to Water Loan Debt Service Fund 470	93,350	82,500	200,975	65,339	63,700	117,185	117,185	53,870	
	Transfers Out to ULID 16 Loan Debt Service Fund 480 (re-payment)	113,335	113,335	-	-	-	-	-	-	
	TOTAL EXPENDITURES	5,299,905	4,445,361	4,682,540	5,342,337	5,367,000	4,442,250	4,964,369	6,397,153	
OPERATING FUND										
	OPERATING REVENUES	4,578,889	4,833,381	5,345,365	5,470,741	5,637,879	5,150,508	5,765,529	5,906,881	5%
	EXPENDITURES	(5,299,905)	(4,445,361)	(4,682,540)	(5,342,337)	(5,367,000)	(4,442,250)	(4,964,369)	(6,397,153)	
	2015 BALANCE CARRYOVER								1,606,000	
	2016 YEAR END ALLOCATED TO OPERATING RESERVES								(809,000)	
	PROPOSED AVAILABLE 2016 YEAR END BALANCE								306,726	

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	Description	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Adopted 2015	10/31/2015	Projected 2015	Budget 2016
SYSTEM REINVESTMENT FUND - 420									
420-369-90-20	Prior Year Reimbursement								
420-343-40-19	DEA Permits				38,842		-	-	
420-379-10-30	Permits Capital Portion (5 new connection permits)	2,250	59,998	-		-	-	-	-
420-379-10-40	Latecomer Fees	30,561	46,676	55,508	64,096	40,000	40,851	41,000	40,000
420-397-10-00	Transfers In from Operating Fund 401	10,389	19,074			-	-	-	-
	Transfers In from Geneva Reserve Fund 410	1,140,000	425,063	346,806	947,000	815,000	347,500	356,000	837,000
	Transfers In from System Replacement Fund 415	138,823					-	-	-
		100,000		13,538			-	-	-
	TOTAL REVENUES	**1,422,023**	**550,809**	**415,852**	**1,049,738**	**855,000**	**388,351**	**397,000**	**877,000**
420-534-10-41	DEA Contracted Services								
420-534-90-61	DEA Refunds	13,488	6,586	3,429		-	-	-	-
420-534-60-41	Contracted Professional Services	19,617	-	-			-	-	-
420-594-38-62	Capital Outlay - Structures						-	-	
420-594-38-63	Capital Outlay - Water/Sewer Systems	1,005,927	45,065	14,367	104,392		135,817	150,000	
420-594-38-64	Capital Outlay - Machinery/Equipment		465,860	167,684	750,766		248,415	250,000	
		240,881	106,158	282,785	194,215		12,493	20,000	
	Active Projects to be completed in 2016								
	New 2016 Capital Projects (see CIP detail - 2016)					90,000			657,000
						765,000			220,000
	TOTAL EXPENDITURES	**1,279,913**	**623,669**	**468,265**	**1,049,373**	**855,000**	**396,825**	**420,000**	**877,000**
SYSTEM REINVESTMENT FUND	**REVENUES**	**1,422,023**	**550,809**	**415,852**	**1,049,738**	**855,000**	**388,351**	**397,000**	**877,000**
	EXPENDITURES	**(1,279,913)**	**(623,669)**	**(468,265)**	**(1,049,373)**	**(855,000)**	**(396,825)**	**(420,000)**	**(877,000)**
	CASH/INVESTMENTS BALANCE CARRYOVER								
	PROPOSED 2016 YEAR END BALANCE								-

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	Description	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Adopted 2015	10/31/2015	Projected 2015	Budget 2016
SEWER/STORM WATER CONTINGENCY FUND - 425									
425-361-11-00	Investment Interest				869	5,020	4,345	5,000	5,020
425-397-10-00	Transfers In from ULID 18 Fund 480			1,000,000	-	-	-	-	-
	Transfers In from Bond Reserve Fund 490			178,202	-	-	-	-	-
	TOTAL REVENUES			1,178,202	869	5,020	4,345	5,000	5,020
425-535-10-41	Stormwater Comp Plan (See Active Projects C1315 PH2)			24,642	9,654	-	-	-	-
425-535-10-89	Investment Service Charges			120	190	200	130	200	200
425-594-38-63	Water/Sewer Systems			-	-	-	-	-	-
425-594-38-64	Machinery/Equipment			220,480	1,300	-	-	-	-
	TOTAL EXPENDITURES			245,242	11,144	200	130	200	200
SEWER/STORM WATER CONTINGENCY FUND	**REVENUES**			1,178,202	869	5,020	4,345	5,000	5,020
	EXPENDITURES			(245,242)	(11,144)	(200)	(130)	(200)	(200)
	CASH/INVESTMENTS BALANCE CARRYOVER								926,910
	PROPOSED 2016 YEAR END BALANCE								931,730

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	Description	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Adopted 2015	10/31/2015	Projected 2015	Budget 2016
CAPITAL BOND PROJECTS FUND (RESTRICTED) - 430									
430-361-11-00	Investment Interest	11,785	10	-		-	-	-	-
430-382-20-00	2009 Bond Proceeds								
	TOTAL REVENUES	11,785	10	-		-	-	-	-
430-594-38-63	Capital Outlay - Water/Sewer Systems	1,607,281	174,894	19,591		57,250	-	-	62,683
430-597-10-00	Transfers Out to Bond Debt Service Fund 450		150,000						
	TOTAL EXPENDITURES	1,607,281	324,894	19,591		57,250	-	-	62,683
CAPITAL BOND PROJECTS FUND	**REVENUES**	11,785	10	-		-	-	-	-
	EXPENDITURES	(1,607,281)	(324,894)	(19,591)		(57,250)	-	-	(62,683)
	CASH/INVESTMENTS BALANCE CARRYOVER								62,683
	PROPOSED 2016 YEAR END BALANCE								0

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	Description	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Adopted 2015	10/31/2015	Projected 2015	Budget 2016
DWSRF PROJECTS FUND - 440									
440-333-66-46-40	Division 22 Reservoir (Permits and Desgn)						44,718	44,718	894,850
440-333-66-46-41	Geneva AC Mains (Permits, Design and Construction)						1,844,943	2,388,750	-
440-397-10-40	Transfers In from Operating Fund 401						21,276	21,276	911,350
	TOTAL REVENUES						**1,910,937**	**2,464,744**	**1,906,200**
440-591-34-40	Principal Loan Division 22 Reservoir								103,700
440-591-34-41	Principal Loan Geneva AC Mains								-
440-592-34-40	Interest Loan Division 22 Reservoir								36,000
440-592-34-41	Interest Loan Geneva AC Mains								-
440-594-34-62	Division 22 Reservoir (Permits and Desgn)						7,255	7,300	1,766,500
440-594-34-63	Geneva AC Mains (Permits, Design and Construction)						2,127,648	2,388,750	-
	TOTAL EXPENDITURES						**2,134,903**	**2,396,050**	**1,906,200**
DWSRF PROJECTS FUND	**REVENUES**						**1,910,937**	**2,464,744**	**1,906,200**
	EXPENDITURES						**2,134,903**	**2,396,050**	**1,906,200**
	CASH/INVESTMENTS BALANCE CARRYOVER						**(2,134,903)**	**(2,396,050)**	**(1,906,200)**
	PROPOSED 2016 YEAR END BALANCE								-
Expenditures offset by draws as projects progress.									-

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	Description	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Adopted 2015	10/31/2015	Projected 2015	Budget 2016
2009 BOND DEBT SERVICE FUND - 450									
450-361-11-00	Investment Interest								
450-397-10-00	Transfers In from Operating Fund 401	447,250	295,500	443,875	447,450	448,050	447,827	447,827	443,050
	Transfers In from Bond Capital Projects Fund 430		150,000				-	-	-
	TOTAL REVENUES	**447,250**	**445,500**	**443,875**	**447,450**	**448,050**	**447,827**	**447,827**	**443,050**
450-535-10-41	Bond Admin Fee	303	-	-	300	300	78	100	100
450-591-35-72	Redemption of Long Term Debt	215,000	220,000	225,000	235,000	245,000	245,000	245,000	250,000
450-592-35-83	Bond Interest Payments	231,950	225,500	218,900	212,150	202,750	202,750	202,750	192,950
	TOTAL EXPENDITURES	**447,253**	**445,500**	**443,900**	**447,450**	**448,050**	**447,828**	**447,850**	**443,050**
2009 BOND DEBT SERVICE FUND	**REVENUES**	**447,250**	**445,500**	**443,875**	**447,450**	**448,050**	**447,827**	**447,827**	**443,050**
	EXPENDITURES	**(447,253)**	**(445,500)**	**(443,900)**	**(447,450)**	**(448,050)**	**(447,828)**	**(447,850)**	**(443,050)**
	CASH/INVESTMENTS BALANCE CARRYOVER								-
	PROPOSED 2016 YEAR END BALANCE								-

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	Description	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Adopted 2015	10/31/2015	Projected 2015	Budget 2016
2009 BOND RESERVE FUND (RESTRICTED) - 460									
460-361-11-00	Investment Interest	6,677	3,369	-	2,860	2,860	9,813	9,813	10,000
	TOTAL REVENUES	6,677	3,369	-	2,860	2,860	9,813	9,813	10,000
460-535-10-89	Investment Service Charges			24	205	200	130	200	200
	TOTAL EXPENDITURES	0	0	24	205	200	130	200	200
2009 BOND RESERVE FUND (RESTRICTED)	**REVENUES**	6,677	3,369	-	2,860	2,860	9,813	9,813	10,000
	EXPENDITURES	-	-	(24)	(205)	(200)	(130)	(200)	(200)
	CASH/INVESTMENTS BALANCE CARRYOVER								513,400
	PROPOSED 2016 YEAR END BALANCE								523,200

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	Description	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Adopted 2015	10/31/2015	Projected 2015	Budget 2016
WATER LOANS DEBT SERVICE FUND - 470									
470-361-11-10	Investment Interest	129	-	-	-	-	-	-	-
470-397-10-00	Transfers In from Operating Fund 401	93,350	92,500	200,975	65,339	63,700	117,185	117,185	53,670
	TOTAL REVENUES	**93,479**	**92,500**	**200,975**	**65,339**	**63,700**	**117,185**	**117,185**	**53,670**
470-591-34-77-72	Redemption of Long Term Debt Loan 118	74,541	74,541	184,633	8,940	8,940	62,583	62,583	-
470-591-34-77-73	Redemption of Long Term Debt Loan 064				47,252	47,252	47,252	47,252	47,252
470-592-34-83-71	Debt Service Interest Loan 44	7,184	6,385	6,385		-	-	-	-
470-592-34-83-72	Debt Service Interest Loan 119	983	894	805	715	574	417	417	-
470-592-34-83-73	Debt Service Interest Loan 064	11,340	10,395	9,450	8,505	6,930	6,930	6,930	6,615
	TOTAL EXPENDITURES	**94,048**	**92,215**	**201,273**	**65,412**	**63,696**	**117,182**	**117,182**	**53,867**
WATER LOANS DEBT SERVICE FUND	**REVENUES**	**93,479**	**92,500**	**200,975**	**65,338**	**63,700**	**117,185**	**117,185**	**53,670**
	EXPENDITURES	**(94,048)**	**(92,215)**	**(201,273)**	**(65,412)**	**(63,696)**	**(117,182)**	**(117,182)**	**(53,867)**
	CASH/INVESTMENTS BALANCE CARRYOVER								-
	PROPOSED 2016 YEAR END BALANCE								**3**

DRAFT 11/24/2015

	Description	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Adopted 2015	10/31/2015	Projected 2015	Budget 2016
ULID 18 FUND - 480									
480-361-11-00	Investment Interest	59,793	50,356	18,136	-	-	-	-	-
480-361-40-00	ULID 18 Interest/Penalties	47,834	39,218	39,475	31,314	23,000	21,730	22,000	20,000
480-368-10-00	Current ULID 18 Principal Payments	66,417	53,041	75,197	58,262	50,000	44,843	45,000	40,000
480-379-10-30	Latecomers Fee	5,181	5,446	5,711	-	-	5,445	5,445	-
480-397-10-00	Transfers In from Operating Fund 401 (re-payment)	113,335	113,335	-	-	-	-	-	-
	TOTAL REVENUES	**292,560**	**261,396**	**138,519**	**89,576**	**73,000**	**72,018**	**72,445**	**60,000**
480-535-10-69	Sewer Debt Service Charges	400	1,221	158	-	-	-	-	-
480-591-35-73	Redemption of Long Term Debt Loan 063	236,683	241,363	2,663,577	294	-	-	-	-
480-592-35-81	Debt Service Interest Loan 44A	7,029	6,396	1,449	-	-	-	-	-
480-592-35-82	Debt Service Interest Loan 44B	60,212	58,227	8,372	-	-	-	-	-
480-592-35-83	Debt Service Interest Loan 063	7,938	7,276	6,321	1	-	-	-	-
480-597-10-00	Transfers Out to Sewer/Storm Water Contingency Fund 425			1,000,000	-		-	-	-
	Transfers Out to Operating Fund 401			177,364	89,280	73,000	71,650	72,445	60,000
	TOTAL EXPENDITURES	**312,262**	**314,503**	**3,857,241**	**89,575**	**73,000**	**71,650**	**72,445**	**60,000**
ULID 18 LOAN DEBT SERVICE	**REVENUES**								
	EXPENDITURES	**292,560**	**261,396**	**138,519**	**89,576**	**73,000**	**72,018**	**72,445**	**60,000**
	CASH/INVESTMENTS BALANCE CARROVER	**(312,262)**	**(314,503)**	**(3,857,241)**	**(89,575)**	**(73,000)**	**(71,650)**	**(72,445)**	**(60,000)**
	PROPOSED 2016 YEAR END BALANCE								-
									-

DWSRF Loan Funded Projects

Category	Project #	Project Title / Tasks	Original Budget for 2013 Loan Application	Projected Budget to Completion (adjusted 11/19/15)	Spent to Date (11/19/2015)	Amount Remaining
Water	***C1401***	***Division 22 Reservoir***				
		Design/Permitting/Bidding	$ 160,000.00	$ 166,624.00	$ 44,717.54	$ 96,906.46
		ADM - Admin, Permits, Fees, Etc	*$ 35,000.00*	*$ 25,000.00*		
		PH1 - Predesign Report, CUP	*$ 45,000.00*	*$ 44,734.00*	*$ 44,717.54*	*$ 16.46*
		PH2 - Design, Bidding	*$ 80,000.00*	*$ 96,890.00*	*$ -*	*$ 96,890.00*
		Construction	$ 825,000.00	$ 1,590,000.00	$ -	$ 1,590,000.00
		PH3 - Construction Admin/Testing/Inspection	*$ 100,000.00*	*$ 100,000.00*		*$ 100,000.00*
		CON - Construction Contract	*$ 700,000.00*	*$ 1,490,000.00*		*$ 1,490,000.00*
		Contigency	*$ 25,000.00*	*$ -*		*$ -*
		Total	$ 985,000.00	$ 1,756,624.00	$ 44,717.54	$ 1,686,906.46
		Loan Fee (1% of the Total)	$ 9,850.00	$ 9,850.00	$ 9,850.00	$ -
		Grand Total	$ 994,850.00	$ 1,766,474.00	$ 54,567.54	$ 1,686,906.46
		Less DWSRF Loan Amount		$ 994,850.00		
		2016 Capital Improvement Plan Funds Required		**$ 771,624.00**		

Rate Funded Active Projects

Category	Project #	Project Title / Tasks	Original Project Budget	Projected Budget to Completion (adjusted 11/19/15)	Spent to Date (11/19/15)	Amount Remaining
Water	C1207	Reservoir Drains to Daylight				
		ENG - Engineering - Estimate	$ -	$ -	$ -	$ -
		CON - Construction - Estimate	$ 13,000.00	$ 13,000.00	$ -	$ 13,000.00
General	C1214-ADM	Water System Improvements	$ 37,960.00			
		a. Blow-Off Parts, Valves, and Pipe		$ 10,000.00	$ -	$ 10,000.00
		b. Stortz Adapters		$ 1,000.00	$ -	$ 1,000.00
Sewer	C1405	Strawberry Point Sewer PS - PH1 Predesign				
		PH1 - RH2 Predesign	$ 103,411.00	$ 103,411.00	$ 96,496.79	$ 6,914.21
		PH2 - RH2 Design, Bidding	$ 95,169.00	$ 95,169.00	$ 101,493.92	$ (6,324.92)
		PH3 - RH2 Value Engineering, Rebid	$ -	$ 27,006.00	$ 25,097.09	$ 1,908.91
		PH4 - RH2 Services During Construction - Estima	$ 80,000.00	$ 50,000.00	$ -	$ 50,000.00
		CON - Construction - Estimate	$ 450,000.00	$ 400,000.00	$ -	$ 400,000.00
General	C1412	Facility Improvements	$ 10,000.00			
		a. 1220 LW - Irrigation conduits and boxes		$ 2,000.00	$ -	$ 2,000.00
		b. SVWTP - Install Fixed VHF Radio		$ 6,000.00	$ -	$ 6,000.00
		c. 1010 LV - Sliding glass door and concrete apron		$ 2,000.00	$ -	$ 2,000.00
Water	C1502	SVWTP Chlorine Analyzer - Spare Acidification Unit	$ 5,000.00	$ 2,500.00	$ -	$ 2,500.00
Water	C1503	SVWTP Clearwell Overflow	$ 5,000.00	$ 10,000.00	$ -	$ 10,000.00
Water	C1504	Reservoir Site Security	$ 5,000.00	$ 5,000.00	$ -	$ 5,000.00
Water	C1505	Reservoir Condition Assessment	$ 35,000.00	$ 35,018.00	$ -	$ 35,018.00
Sewer	C1506A	2015 Smoke Testing	$ 35,000.00	$ 35,783.30	$ 34,134.30	$ 1,649.00
Sewer	C1506B	Whatcom Falls MH Repair				
Sewer		PH1 - Wilson Design	$ 7,482.00	$ 7,482.00	$ -	$ 7,482.00
Sewer		CON - Construction - Estimate	$ 50,000.00	$ 90,000.00	$ -	$ 90,000.00
Sewer	C1508	Northshore Road Sewer Service Area	$ 10,000.00	$ 13,000.00	$ 10,050.00	$ 2,950.00
Sewer	C1509	Water Use Efficiency Update	$ 15,750.00	$ 15,750.00	$ -	$ 15,750.00
		Total for Active Projects	**$ 957,772.00**	**$ 924,119.30**	**$ 267,272.10**	**$ 656,847.20**

Lake Whatcom Water and Sewer District - Capital Improvement Plan 2016 thru 2021

Program Area / CIP Project # / CIP Project Name		Fund	Total	2016	2017	2018	2019	2020	2021
Both Water and Sewer									
0129	Upgrade Cartegraph 8.4 to Cartegraph OMS, Procure 3 field iPads		30,000	30,000					
0131	Replace SCADA Computer Hardware - Move to Virtual Machines		20,000	20,000					
A0005	Accounting & Administration Server - Replace/Update Hardware, Network Security, & OS		41,200		20,600			20,600	
E0001	Replace Backhoe (budget estimate for new unit)	420	161,270					161,270	
V0001	Replace Tool Truck (6 tool trucks in fleet)		109,273		54,636			54,636	
V0002	Replace Administrative Staff Vehicle (3 cars in fleet)		25,000		25,000				
V0003	Replace Locator / Meter Reading Van		26,878		26,878				
V0004	Replace Light Truck		33,598		33,598				
		Subtotal	**447,219**	**50,000**	**160,713**			**236,506**	
Sewer System									
0032	Agate Bay Pump Station Replacement		669,500						669,500
0038	Geneva Pump Station Replacement		669,500			669,500			
0049	Country Club Pump Station Replacement		669,500		669,500				
0050	Par Lane Pump Station Replacement		669,500				669,500		
0055	Rocky Ridge Pump Station Replacement		721,000					721,000	
0120	North Point PS Force Main Direct to Sudden Valley PS (Place-Holder. Need to develop cost est.)		20,000	20,000					
0124	Rehabilitate Old Flat Car Sewer Pump Station - Construction		77,250			77,250			
0128	Install Stationary Generators at Airport OR Marina-Tomb Pump Stations		40,000	40,000					
0132	Electrical Design for Fault Tolerant Control System Backup Power		10,000	10,000					
A0010	Update Sewer Comprehensive Plan (Current Plan Dated 6-14-2014)		66,950				66,950		
S0001	EPA Capacity, Management, Operations, & Maintenance (CMOM) Projects - Sewer I&I		824,000		164,800	164,800	164,800	164,800	164,800
		Subtotal	**4,437,200**	**70,000**	**834,300**	**911,550**	**901,250**	**885,800**	**834,300**
Water System									
0060	Eagleridge Fire Pump Control Upgrade		51,500		51,500				
0108	Replace SVWTP Booster Station Roof		25,750		25,750				
0110	Security - Intrusion Alarms at Reservoirs, Cameras as SVWTP AHWTP		10,300		10,300				
0118	Leak Locator Equipment		9,709		9,709				
0125	Mechanical Staff Gauge for SVWTP Clearwell Reservoir		10,300		10,300				
0130	Eagleridge Booster Station Controls Reconfiguration and PLC Programming		50,000		50,000				
0134	SVCA Louise Creek Water Main Relocation (Need to develop cost)		50,000		50,000				
A0007	Update Water Comprehensive Plan (Current Plan Dated October 2010)		100,000	100,000					
W0002	Water System Rehab and Replacement Projects	420	800,000			200,000	200,000	200,000	200,000
W0003	SVWTP Filter 3&4 Media - Replace		21,503					21,503	
W0005	Reservoirs - Inspection & Maintenance		25,750		25,750				

2016

Program Area / CIP Project # / CIP Project Name	Fund	Total	2016	2017	2018	2019	2020	2021
W0007 SVWTP Filter 1&2 Media - Replace		21,503						21,503
Subtotal		**1,176,314**	**100,000**	**233,309**	**200,000**	**200,000**	**221,503**	**221,503**
Grand Total		**6,060,733**	**220,000**	**1,228,321**	**1,111,550**	**1,101,250**	**1,343,809**	**1,055,803**

* Note: Cost Estimates in 2016 Dollars

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LAKE WHATCOM WATER AND SEWER DISTRICT
YEAR 2016 TRANSFERS

DESCRIPTION	FROM FUND	AMOUNT	TO FUND	AMOUNT
For System Reinvestment	401	837,000	420	837,000
For DWSRF Project Div 22 Reservoir	401	771,650	440	771,650
For DWSRF Geneva Mains Debt Service	401	139,700	440	139,700
For 2009 Bond Debt Service	401	443,050	450	443,050
For Water Loans Debt Service	401	53,870	470	53,870
From ULID 18 payments	480	60,000	401	60,000
TOTAL TRANSFERS		$ 2,305,270		$ 2,305,270

REVENUE BONDS AND LOANS SUMMARY

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

Project Title	Balance Remaining 1/1/2016	Funding Source	Agency	End Date	Rate
Geneva/Sudden Valley Water Distribution Construction	$ 330,764	Rates	Public Works Trust Fund	2022	2.0%
Geneva AC Mains	$ 2,398,750	Rates	Drinking Water State Revloving Fund	2037	1.5%
Division 22 Reservoir	$ 994,850	Rates	Drinking Water State Revloving Fund	2037	1.5%
Post Point Improvements - City of Bellingham	$ 2,292,804	Rates	Inter-local agreement	2034	5.13%
2009 Revenue Bonds Outstanding	$ 4,365,000	Rates		2029	4.0%
Total Debt Outstanding - 1/1/2016	**$ 10,382,168**				

LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 16, 2015		
TO BOARD OF COMMISSIONERS			
FROM: Bill Hunter	MANAGER APPROVAL Bill Hunter		
MEETING AGENDA DATE:	November 24, 2015		
AGENDA ITEM NUMBER:	5.B.		
SUBJECT:	Reservoir Seismic Vulnerability Assessment-Engineering Agreement		
LIST DOCUMENTS PROVIDED ⇨ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Scope of Work and Fee		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION ☐	FORMAL ACTION/ MOTION ☒	INFORMATIONAL/ OTHER ☐

BACKGROUND / EXPLANATION OF IMPACT

BHC Consultants and staff have developed a scope of work for the Reservoir Seismic Vulnerability Assessment. A scope and fee are attached.

The assessment is for the District's 5 welded steel reservoirs. The District has 2 newer concrete reservoirs in Agate Heights and 1 really old concrete reservoir across from the Shop. The concrete reservoirs are not included in this scope of work.

FISCAL IMPACT

The approved budget amount for this project is $35,000. The proposed scope and fee is $35,018. Work is completed on a time and material basis not to exceed this amount.

RECOMMENDED BOARD ACTION

Staff recommends authorizing the execution of an agreement with the consultant for the scope of work and fee attached.

PROPOSED MOTION

Authorize the General Manager to execute an Architectural/Engineering Agreement with BHC Consultants for the Reservoir Seismic Vulnerability Assessment for a not-to-exceed fee of $35,018.

EXHIBIT A
SCOPE OF WORK
Reservoir Seismic Vulnerability Assessment
Lake Whatcom Water and Sewer District

Project Description

The District desires to perform a seismic vulnerability assessment of five existing water storage reservoirs within the District boundaries and provide a report discussing the planning level opinion of probability and consequence of failure, specific structural deficiencies, and estimated costs and methods to retrofit these structures to bring them to current standards.

This seismic vulnerability assessment involves the following five welded steel ground storage reservoirs operated by the District. Dimensions and capacities are those listed in the Request for Proposals.

Reservoir	Capacity	Year Constructed	Diameter	Height
Geneva	0.50 MG	1979	52 ft	32.7 ft
Sudden Valley Water Treatment Plant (SVWTP)	58,718 gal	1992	20 ft	25 ft
Division 7	1.0 MG	1979	70 ft	35 ft
Division 30	0.15 MG	1973	25 ft	40 ft
Division 22	0.50 MG	1971	50 ft	30 ft

Scope of Work

BHC's scope of work is the following:

Task 1 – Assemble Documentation

1.1 Meet with District to receive available record data and documentation remaining to be obtained. Obtain basic construction details and drawings for each reservoir to facilitate in the analysis of each structure, and past condition reports and underwater video inspection of each reservoir (the most current condition reports were done in 2012). Confirm District priorities and goals. Discuss problems or concerns with existing tanks noted by operations staff. Discuss operational restrictions on tank inspections or dewatering. Establish schedule for inspections and data to be obtained. Obtain information on operating water levels and floor elevation, if known.

1.2 Review available record drawings, inspection reports, and soils reports.

1.3 Review available geologic information for project area. Obtain USGS ground motion parameters at tank locations.

District Responsibilities

- Provide available record data, documentation, drawings, condition reports, underwater videos, water levels, floor elevations, and other information regarding the reservoirs.

Assumptions

- BHC shall obtain spectral acceleration values for each site using horizontal coordinates obtained from Google Earth for each reservoir and data obtained from the USGS web site.
- District shall provide bottom, normal operating level, and overflow elevations for each tank if not provided in record drawings. In lieu of elevations, water levels measured from the bottom of each tank for the operating level and overflow will be acceptable.
- District shall indicate reservoirs with current greatest reliability concerns.
- For this seismic vulnerability assessment, BHC intends to use standard USGS ground motion parameters and use Site Class D in the evaluation. Site Class D assumes no liquefiable soils. A geotechnical evaluation is not intended to be needed and is not included in this scope of work. A geotechnical report will not be provided.
- Site surveying by a professional land surveyor is not needed to complete this seismic vulnerability assessment and is not included in this scope of work.

Task 2 – Field Investigations

2.1 At each tank (if record data is unavailable):

a. Request field locates of underground piping and conduit.
b. Verify shell diameter and height, dimensions and locations of anchors (if any). Measure thickness of visible floor plate and number and height of shell courses. Note presence and condition of grout under floor plates at shell perimeter.
c. Take shell thickness measurements at each course.
d. Examine fillet welds at anchor and estimate size and condition.
e. Measure roof pitch, plate thickness, and projection at edge.
f. Note visible appurtenances on roof, such as access ladder, vent, handrails, and painter plugs.
g. Open roof hatch and attempt to observe interior as practicable without entering the tank. Note type and layout of roof support system and rafter dimensions if accessible, including rafter dimensions if accessible. Note existence of any interior ladder, openings, pipe connections, and approximate location and estimated size and configuration of overflow.

h. Examine mechanical elements at reservoir sites.
i. Examine test pits to be excavated by District. At least one trench is required perpendicular to ringwall and to the base of the ringwall depth, sufficient to allow probing under the ringwall to determine width. Test pits excavated by District will be limited to 5 ft depth.
j. Measure ringwall depth and estimate ringwall thickness and note condition.
k. Make reasonable assumptions about material strengths of shell steel and concrete.

2.2 Summarize observations and details to be incorporated in final Technical Report and submit to District as a preliminary progress document. Include soil Site Class to be used for analysis and note any particular concerns.

District Responsibilities

- The District will provide personnel and excavation equipment to install test pits to evaluate the ringwall at each reservoir.
- The District will provide access to each reservoir and accompany the field investigation team.

Assumptions

- District to excavate all trenches and leave them open until examined by BHC. District to assist with measuring outside face ringwall depth and probing beneath ringwall to estimate ringwall thickness
- Trenches to be excavated prior to site visits by BHC.
- None of the reservoirs uses a pile foundation.
- District to unlock access ladders and provide temporary stationary ladders to ladder cages.
- District to unlock and open roof hatches to allow visual observation by BHC.
- Field Investigations will be performed by BHC's Senior Structural Engineer and Staff Engineer (Site Information Lead).
- BHC will visually inspect the inside of the reservoir from outside the roof hatch, but will not enter or inspect the interior of the reservoirs. Fall protection tie-offs are provided on the reservoir. BHC will provide its own body harness.

Products

- Five (5) copies of the preliminary progress document summarizing the observations of the field investigations. This document will be submitted to the District and then incorporated into the final Technical Report.

Task 3 – Structural Analysis and Evaluation

For each tank:

3.1 Compute water, shell, floor, and roof weight.
3.2 Determine sloshing wave amplitude and check for roof contact.
3.3 Compute seismic base shear and overturning moment. Check hoop and longitudinal stresses in the shell.
3.4 If the tank is unanchored, perform calculations to determine if it is stable and strong enough to withstand the forces without rupture of the floor to shell connection. If the tank is anchored, perform calculations to compute anchor loads and the check the ability of anchors to withstand uplift forces.
3.5 For anchored tanks, check the estimated ringwall weight versus uplift forces for ringwall hold-down capacity, assuming anchors are adequate. Estimate anchor capacity for visible portions of anchor unless record information for anchor installation is available, in which case pullout capacity shall be estimated.
3.6 Evaluate the impact of a tank loss of service on the system based on configuration in the District's current Water System Plan (WSP).
3.7 Review aerial photography and topography available from Google Earth and/or the Whatcom County GIS system in the vicinity of each tank, and estimate qualitatively a zone of property damage due to catastrophic failure of a tank and proximity to existing residences and infrastructure.
3.8 Rank each tank in terms of structural deficiency, probability, and consequences of failure.
3.9 Summarize results of analysis as additional text in the Technical Report, discuss with the District, and determine which tanks shall be evaluated for retrofit and in which sequence.

Assumptions

- Applicable codes for estimating loads shall be the 2012 International Building Code, ASCE 7-10, and AWWA D100-11. For the analysis of load increases due to seismic wave roof contact, BHC shall use accepted methodology from the literature and reference the source.
- Only loading from the Maximum Considered Earthquake (MCE) shall be evaluated. The MCE shall be as defined in the building code.
- Seismic analysis will include dead loads due to structure self-weight, fluid loads, and snow loads if required by code concurrent with earthquake loads. Other load types and combinations are not included.
- Roof weight will be estimated based on visual observations for use in evaluating shell and foundation loads. Rafters, interior columns, and other roof features will not be evaluated.
- Loads on appurtenances such as ladders, roof vent, and internal piping are considered insignificant to the performance of the primary lateral load resisting structure (shell and foundation).

Task 4 – Retrofit Recommendations

4.1 For tanks identified as deficient in Task 3:
   a. Identify practicable retrofit options for seismic and mechanical retrofit.
   b. Determine preliminary sizing of shell strengthening elements, if required.
   c. Determine type and number of new anchors.
   d. Determine preliminary size and configuration of new foundation elements.
   e. Prepare order of magnitude opinions of probable cost for retrofit options.
4.2 Recommend priority of repair.
4.3 Furnish all findings in a draft Technical Report and discuss with District staff.
4.4 Finalize Technical Report and present to District Board.

District Responsibilities

- Review draft Technical Report and provide comments within 2 weeks.

Assumptions

- BHC will present the findings to the District Board at a regularly scheduled Board meeting. The presentation will be attended by BHC's Project Manager and Senior Structural Engineer.

Products

- Five (5) copies (bound and PDF file) of the Draft and Final Technical Report.

Task 5 – Project Management and QA/QC

5.1 Coordinate and manage the project team.
5.2 Prepare monthly status reports describing the following:
   a. Services completed during the month
   b. Services planned for the next month
   c. Needs for additional information
   d. Scope/schedule/budget issues
   e. Schedule update and financial status summary
   f. Provide an estimated cash flow (billing) forecast
5.3 Prepare monthly invoices formatted in accordance with contract terms.
5.4 Provide QA/QC review of products prior to delivery in accordance with BHC QA/QC Policies.

District Responsibilities

- Timely processing and payment of invoices.
- Review and process contract change requests and amendments, if needed.

Assumptions

- The project duration will be approximately 3 months.
- Invoices will be BHC standard invoice format.

Products

- Monthly reports and invoices (one copy with invoice and e-mailed PDF file)
- Monthly project schedule and budget updates (included in monthly project report, emailed PDF file).
- Written summary notes describing decisions, direction, action items, or issues associated with scope and budget (e-mailed PDF files).

EXHIBIT B

COST SUMMARY

Reservoir Seismic Vulnerability Assessment

Lake Whatcom Water and Sewer District

BHC CONSULTANTS, LLC:

Job Title	Name	Labor Rate	Task 1 Assemble Documentation	Task 2 Field Investigations	Task 3 Structural Analysis and Evaluation	Task 4 Retrofit Recommendations	Task 5 Project Management & QA/QC	Total Hours	Direct Cost
Principal in Charge	Ron Dorn	73.70					4	4	$295
Project Manager	Jim Gross	62.80	3		2	8	8	21	$1,319
Sr Structural Engineer	Jim Lutz	66.00	4	12	43	56		115	$7,590
Project Engineer	Erika Schuyler	49.50	2	4	8	6		20	$990
Staff Engineer	Kenneth Gray	33.50	4	12	25			41	$1,374
CAD Operator	Patti Simon	46.00			2			2	$92
Admin Support	Uma Pierson	32.70			2	6	4	12	$392
SUBTOTAL (DIRECT LABOR)			13	28	82	76	16	215	$12,052
Overhead Rate (percentage of direct labor):		152.3%							$18,354
Fixed Fee Rate (percentage of DL+OH):		12%							$3,649
									$34,055

SUB-CONSULTANTS:

None

$0

REIMBURSIBLES:

Printing	$400
Mileage & Travel Expenses	$363
Communications	$200
	$963

TOTAL: **$35,018**

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LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 16, 2015		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL		
MEETING AGENDA DATE:	November 24, 2015		
AGENDA ITEM NUMBER:	5.C.		
SUBJECT:	WRIA 1 Water Caucus Discussion		
LIST DOCUMENTS PROVIDED ⇨ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Draft Whatcom County Interlocal Agreement		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL/ OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT

At the November 9, 2015 meeting, staff talked with the Board about pending changes that are proposed within the WRIA #1 Planning Unit, the Salmon Recovery Board and other water planning functions in Whatcom County. The County is proposing these changes through a new Interlocal Agreement (IA) between their original partners (ie., City of Bellingham, Whatcom County, Tribes, Small Cities and others). Water Districts such as LWWSD are not a part of these proposed changes. However, we have the ability to comment on this proposal. If the Board wishes to comment, we need to do so by December 8th in advance of the County Council addressing the attached proposed IA. District legal counsel Bob Carmichael will be present at the November 24th meeting to address the most recent history regarding this issue and the attached County proposal.

FISCAL IMPACT

There is no impact at this time.

RECOMMENDED BOARD ACTION

Discussion and direction is requested.

PROPOSED MOTION

None

INTERLOCAL AGREEMENT
BETWEEN
LUMMI NATION, NOOKSACK INDIAN TRIBE, WASHINGTON STATE DEPARTMENT OF FISH AND WILDLIFE, WHATCOM COUNTY, AND THE CITIES OF BELLINGHAM, BLAINE, EVERSON, FERNDALE, LYNDEN, NOOKSACK, AND SUMAS,
AND PUBLIC UTILITY DISTRICT NO.1 OF WHATCOM COUNTY

WHEREAS, effective natural resource management requires a collaborative and coordinated framework for advancing a shared vision that integrates the full range of existing and future natural resource management efforts across jurisdictions in Water Resources Inventory Area (WRIA) 1; and

WHEREAS, long-term environmental, land use, fisheries and water resource management practices have contributed to the decline of salmonid species, including native Nooksack Chinook populations included in the Puget Sound Chinook Evolutionarily Significant Unit listed as Threatened under the Endangered Species Act (ESA); WRIA 1 Bull Trout that are components of the Puget Sound and Coastal Bull Trout Distinct Population Segment (DPS) listed as Threatened under ESA; and WRIA 1 steelhead that are components of the Puget Sound Steelhead DPS listed as Threatened under ESA; and other salmonid and shellfish resources; and

WHEREAS, a goal of the Watershed Management Project is to have water of sufficient quantity and quality to meet the needs of current and future human generations, including the restoration of salmon, steelhead, and other salmonid and shellfish populations to healthy and harvestable levels and improvement of habitats on which fish rely; and

WHEREAS, another watershed management goal is to ensure that the water resources in WRIA 1 are managed to balance the competing water resource demands for the WRIA in a manner that combines and coordinates data collection efforts, is consistent with ESA recovery actions, ensures that the water quality standards for the designated uses of each water body are achieved, provides economic and environmental certainty for stakeholders and communities, and does not conflict with existing state statutes, federal laws, tribal laws, or tribal treaty rights; and

WHEREAS, in 1999 under a Memorandum of Agreement and acting as the Initiating Governments under RCW 90.82 and consistent with RCW 39.32 Interlocal Cooperation Act, the City of Bellingham, Whatcom County, and Public Utility District No. 1 of Whatcom County (PUD No. 1) entered into an Interlocal Agreement with the Lummi Nation and Nooksack Indian Tribe establishing themselves as the "WRIA 1 Watershed Management Project Administrative Decision Makers" and designating it as the "Watershed Management Project Joint Board" for purposes of the WRIA 1 planning process; and

WHEREAS, in 2004 the Lummi Nation, Nooksack Indian Tribe, and Washington State Department of Fish and Wildlife as the fishery co-managers and Whatcom County and the Cities of Bellingham, Blaine, Everson, Ferndale, Lynden, Nooksack, and Sumas as land use managers entered into an Interlocal Agreement denominating themselves as the WRIA 1 Salmon Recovery Board and pursuant to RCW 77.95.050 designated such Board as the salmon recovery lead entity for WRIA 1 to ensure cooperative and proactive implementation of a jointly developed and adopted Chinook Recovery Plan; and

WHEREAS, in 2005 the *WRIA 1 Salmonid Recovery Plan* was adopted by the WRIA 1 Salmon Recovery Board and was submitted to and reviewed by the National Marine Fisheries Service under the Endangered Species Act for consistency with limits under ESA section 4(d). (50 CFR Part 223); and

WHEREAS, in 2005 the *WRIA 1 Watershed Management Plan-Phase 1* was completed and approved by the WRIA 1 Planning Unit caucuses and the councils and commissions of the local and tribal governments in WRIA 1; and

WHEREAS, parties to this agreement, excluding PUD No. 1, are willing and desire to rescind their previous naming of themselves as the WRIA 1 Salmon Recovery Board and rename themselves with the inclusion of the PUD No. 1 as the WRIA 1 Policy Board and designate such Board as the salmon recovery lead entity; and

WHEREAS, in 2011 the Puget Sound Partnership's Leadership Council designated the WRIA 1 integrated implementation structure under the WRIA 1 Joint Board and WRIA 1 Salmon Recovery Board as the local integrating organization for the Whatcom Action Area, and the two WRIA 1 Boards prepared a signature document accepting the designation as the WRIA 1 Policy Boards; and

WHEREAS, the dissolution of the WRIA 1 Joint Board is consistent with formalizing advancement of the integrated implementation structure that has been progressing in increments since 2007, retains a collaborative multi-jurisdictional decision-making process for tribal participation, increases efficiency of operations, and retains the integrated implementation structure in place in 2011 under which the local integrating organization was established.

NOW, THEREFORE, BE IT AGREED by the parties hereto, namely the Lummi Nation, Nooksack Indian Tribe, Washington State Department of Fish and Wildlife, Whatcom County and the cities of Bellingham, Blaine, Everson, Ferndale, Lynden, Nooksack, and Sumas, and the PUD No. 1 of Whatcom County that:

WRIA 1 Policy Board. There is hereby established the WRIA 1 Policy Board, hereafter referred to as the Board, consisting of one representative from each of the parties to this agreement.

The primary purposes of the Board are to:

1) Facilitate implementation of the *WRIA 1 Salmonid Recovery Plan,* which includes adaptive management, participation in regional salmon recovery, and *WRIA 1 Salmonid Recovery Plan* updates when applicable;

2) Facilitate implementation of the *WRIA 1 Watershed Management Plan-Phase 1*, which includes adaptive management;

3) Facilitate and participate in local recovery planning for bull trout and steelhead, and/or other salmonids, in a form consistent with recovery plans developed by NOAA;

4) Subsequently facilitate creation and adoption by the parties to this agreement of recovery plans for other depressed WRIA 1 salmonid species either as a chapter to the *WRIA 1 Salmonid Recovery Plan* or, if appropriate, as a new WRIA 1 recovery plan;

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5) Provide final review, approval and submission of a habitat project list as intended in the annual Salmon Recovery Funding Board (SRFB) grant process described in RCW 77.85.050 and referred to as a habitat project list;

6) To review, recommend and coordinate actions to be carried out by various entities, including parties to this agreement, pertaining to environmental programs designed for or otherwise affecting ecosystem recovery efforts in WRIA 1;

7) Function as the Local Integrating Organization, which has the purpose of identifying and coordinating implementation of Puget Sound Action Agenda priorities that are consistent with or complement local priorities; and

8) Other activities as agreed to by the Board.

Creation of the Board is solely for cooperative efforts within WRIA 1 and its creation does not create authority over or responsibility for any resource management issue other than specifically described herein.

It is recognized that state and federal agencies represent technical, legal, and financial resources needed for the long-term success of the Board. Proactive engagement of and participation by state and federal agencies may be accomplished through the Board and through the caucuses described herein, whenever possible and appropriate.

Fishery Co-Managers Caucus. Parties to this agreement that are members of the Fishery Co-Managers caucus include the Lummi Nation, Nooksack Indian Tribe, and Washington State Department of Fish and Wildlife (WDFW). The Fishery Co-Managers caucus will designate a representative to serve as a co-chair of the Board and must represent the caucus position on matters before the Board. The Fishery Co-Managers caucus will determine its own operating procedures.

Local Government Caucus. Parties to this agreement that are members of the Local Government caucus include Whatcom County and the cities of Bellingham, Blaine, Everson, Ferndale, Lynden, Nooksack and Sumas. The PUD No. 1, as an Initiating Government for Watershed Planning and a signatory to this Agreement is a member of the Local Government caucus for purposes of decision-making. For matters pertaining to all projects or programs within or otherwise affecting any portion of WRIA 1 located within Skagit County, a representative delegated by the Skagit County Board of Commissioners may be invited to participate in the Local Government Caucus during its deliberation and formulation of a position for the topic under discussion. The Local Government caucus will designate a representative to serve as a co-chair of the Board and must represent the caucus position on matters before the Board. The Local Government caucus will determine its own operating procedures.

Discussions, Decision-Making and other Actions by the Board.

The process of the WRIA 1 Policy Board is supported by designated teams and work groups as described in Exhibit A. The structure and decision-making process for the WRIA 1 Board is described below.

All members of the Board may speak during agenda matters being discussed by the Board representatives. Individuals other than Board members attending a meeting of the Board may participate in agenda discussions only if the Board determines the matter is open to direct participation by others.

At the time decision-making action is taken by the Board, the co-chairs will determine whether a consensus has been reached. Affirmative action or decision by the Board requires the agreement of both caucus representatives.

In addition to actions by the caucuses, the Board may form advisory work groups to support the efforts of the Board and to assist in resolving difficult issues of science and fact.

Actions by the Board are not binding on the respective legislative bodies of each party to this agreement. However, it is understood and agreed that discussions and actions by the Board are to be conducted and carried out in good faith between the parties to this agreement. Any individual speaking on behalf of a party to this agreement or caucus will make every effort to represent his or her respective entity accurately and, when appropriate, will transmit Board recommendations for consideration and action by their respective entity.

Guiding Principles.

1. Each participant on the Board understands that this collaborative effort is not intended to diminish, expand or define the rights of any participant.
2. The relationship between federal, tribal, and state resource managers is complex. So too is the relationship between Indian treaty rights and the state and federal laws designed to protect and recover salmon. The exact parameters of these relationships have not been clearly defined in all instances. Notwithstanding these areas of uncertainty, participating tribes, the state, the federal agencies, and local governments in WRIA 1 are committed to working together to protect and restore ecosystem functions including salmon runs and water resources. The tribes, as well as the other parties, reserve the right to seek different or additional measures viewed as necessary to carry out treaty rights and/or ensure compliance with other local, state, or federal laws.
3. Support a way of life in Whatcom County that meets the vision of residents and their leaders.

Budgetary and Financial Authority. The Board does not have authority to receive, budget, or expend funds, or to hire staff or acquire assets. All actions of the Board are to be implemented through the individual parties to this agreement. However, a party to this agreement may apply for or accept grants and/or perform work under the name of the Board and/or serve as fiscal agent for the Board if a proposal to do so is first reviewed and approved by the Board, including description of the extent of scope and any other limitations to be followed by the party acting on behalf of the Board.

Meetings and Record Keeping. All meetings of the Board are open to members of the public unless the Board determines the discussion of an agenda item is confidential in nature and the Board chooses to limit participation in the agenda item.

Summary minutes, including the topics discussed, general nature of the discussion, and action items adopted by the Board will be prepared, approved by the Board, and distributed to each party to this

agreement for purposes of their administrative record and other applicable legislative and/or legal requirements.

Term. This agreement shall commence on _____ and shall continue indefinitely until cancelled by agreement of the two caucuses or due to a majority of a caucus membership terminating participation described below.

Termination. A party may terminate its participation in and under this agreement thirty days after providing written notice to the other parties of its intent to do so, subject to satisfaction of all obligations supported by and entered into on behalf of the Board.

The Lead Entity and its authority described herein shall survive termination of participation by any party to this agreement. However, should a majority of the herein-named members of either the Fishery Co-Manager Caucus or the Local Government Caucus terminate participation, then this agreement shall become null and void for all remaining parties upon satisfaction of all obligations of individual parties supported by and entered into on behalf of the Board.

Relationship of the Parties. The parties hereto agree that each is an independent entity operating pursuant to the terms and conditions of this agreement. No agent, employee, or representative of any party shall be deemed to be an agent, employee, or representative of any other party for any purpose. Each party shall be solely and entirely responsible for the acts of its agents and employees during the term of this agreement.

Indemnification. Pertaining to those matters jointly undertaken by the parties to this agreement, each party, as an indemnitor, agrees to protect, defend, hold harmless, and indemnify each other party from and against all claims, suits, and actions arising from the intentional, reckless, or negligent acts or omissions of such indemnitor and its agents or employees during the term of this agreement.

Modifications. No changes or modifications of this agreement shall be valid or binding upon any party to this agreement unless such changes or modifications are in writing and are executed by all parties.

Filing of Agreement. Notwithstanding any provision to the contrary, this agreement and any modification thereof shall not be effective until a copy hereof is filed with the appropriate person within each entity, including compliance with RCW 39.34.040 by affected parties to this agreement, PROVIDED that any delay in effecting compliance with this section shall not affect the stated term thereof.

Form of Execution. This agreement may be executed in multiple counterparts.

Exhibit A - DRAFT

Information provided below is from the June 30, 2009 Governance Structure for Implementing WRIA 1 Programs working document and the 2010 Whatcom Action Area Local Integrating Organization proposal to the Puget Sound Partnership's Leadership Council.

Governance Structure: The governance structure for integrated WRIA 1 programming and the composition and role of each organizational level are described below and appear as a diagram in Attachment A.

WRIA 1 Policy Board: The composition of the WRIA 1 Policy Board is established by Interlocal Agreement, and provides the government-to-government structure necessary for tribal participation.

The WRIA 1 Policy Board's role in the integrated governance structure is to represent signatory government's legislative bodies in questions of high-level WRIA 1 programming. The Policy Board discusses watershed and salmon program topics. Endorsements of programs/actions are forwarded from the WRIA 1 Policy Board to the various Legislative Bodies as applicable. Representatives of federal, state, and regional agencies and/or programs interact at the WRIA 1 Policy Board level. Opportunities for Public Comment are provided on agendas of the WRIA 1 Policy Board.

WRIA 1 Management Team: The WRIA 1 Management Team consists of management and policy level staff members representing the WRIA 1 Policy Board signatories. The purpose of the Management Team is to engage in contextual discussions providing the framework for program integration and coordination, administer the program policies of the WRIA 1 Policy Board, provide direction to Work Groups, and make recommendations on program policies to the WRIA 1 Policy Board. Opportunities for Public Comment are provided on agendas of the WRIA 1 Management Team.

Watershed, Salmon, and LIO Work Groups: The Watershed, Salmon, and LIO Work Groups implement actions, programs, projects, and tasks identified by the WRIA 1 Policy Boards and/or WRIA 1 Management Team. The Watershed Work Group is composed of staff of Whatcom County, City of Bellingham, Nooksack Indian Tribe, Lummi Nation, PUD No. 1, and the Washington Department of Ecology. The composition of the Salmon Work Group includes staff of the Lummi Nation, Nooksack Indian Tribe, WDFW, Whatcom County, City of Bellingham, USFS, Whatcom Conservation District, Whatcom Land Trust, and Nooksack Salmon Enhancement Association. The composition of the LIO Work Group is the combined Watershed and Salmon Work Groups.

Ad Hoc Work Groups: Work Groups are established for topic or program specific purposes with the composition determined in part by the topic or program they are formed to address. The Work Groups are intended to provide significant opportunity for involving private citizens and other community stakeholders in the local implementation process. Work Groups make recommendations to the WRIA 1 Management Team.

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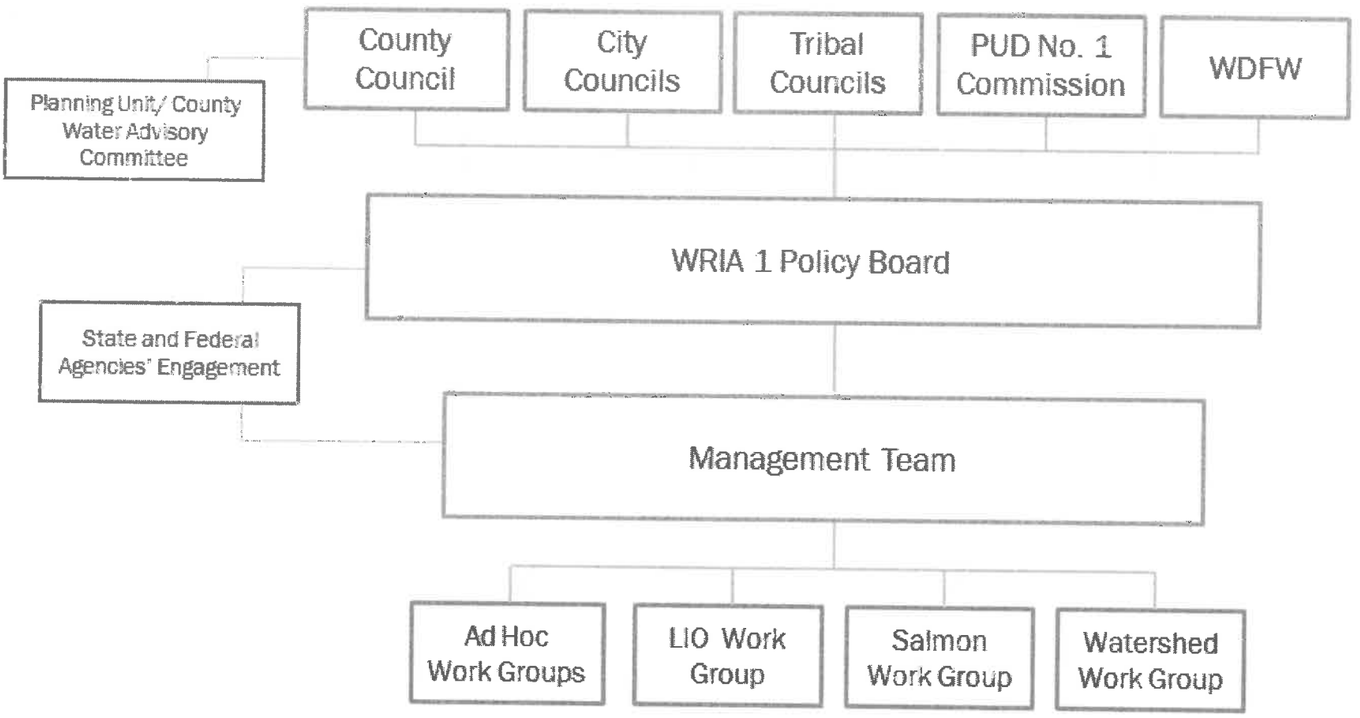
Exhibit A - Integrated Implementation Structure DRAFT



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- Councils of Bellingham, Blaine, Everson, Ferndale, Lynden, Nooksack, Sumas, and Whatcom County.
- Tribal councils of the Lummi Nation and the Nooksack Indian Tribe
- Commission for PUD No. 1
- WDFW decision structure

Constituents represented by each of the Councils and Commissions

- Nooksack Indian Tribe Representative
- Lummi Nation Representative
- WDFW Regional Manager
- Whatcom County Executive
- Mayors of all Municipalities
- Public Utility District Manager

Constituents represented by each of the members on the WRIA 1 Policy Board.

Board entity communications with other organizations as part of ongoing programs (e.g., USFWS, USFS)

Public Comment is included on WRIA 1 Policy Board meeting agendas

- Designated Representative of the WRIA 1 Policy Board including: Nooksack Indian Tribe, Lummi Nation, WDFW, Whatcom County, City of Bellingham, Small Cities Representative, PUD No. 1

Board entity communications with other organizations as part of ongoing programs (e.g., USFWS, USFS)

Public Comment is included on meeting agendas.

Salmon Work Group Members include staff of Nooksack Indian Tribe, Lummi Nation, WDFW, USFS, Whatcom County, Bellingham, WCD, Whatcom Land Trust, and NSEA. Combined Review Team associated with Salmon Work Group has additional representation that changes annually but typically includes FCZDAC, Small Cities, Nooksack Forks Community Member, WSU/Sea Grant, WWU, and DOE among others.

Watershed Work Group Members include staff of Nooksack Indian Tribe, Lummi Nation, Whatcom County, Bellingham, PUD No. 1, Department of Ecology.

LIO Work Group composition is primarily Salmon Work Group and Watershed Work Group plus Small Cities Representative and MRC Coordinator.

Ad Hoc Work Group composition is based on topic and purpose of work.

LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 16, 2015		
TO BOARD OF COMMISSIONERS			
FROM: Bill Hunter	MANAGER APPROVAL Bill Hunter		
MEETING AGENDA DATE:	November 24, 2015		
AGENDA ITEM NUMBER:	5.D.		
SUBJECT:	North Shore Road Sewer Extension Report		
LIST DOCUMENTS PROVIDED ⇨ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Technical Memorandum from Wilson Engineering		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL/ OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT

Melanie Mankamyer from Wilson Engineering will present the attached memorandum that summarizes the number of septic tanks and vacant lots at the end of North Shore Road.

FISCAL IMPACT
None.

RECOMMENDED BOARD ACTION
None.

PROPOSED MOTION
None.

Wilson
SURVEY/ENGINEERING
805 Dupont Street, Ste. #7, Bellingham, Washington 98225
Telephone: (360) 733-6100 • Facsimile: (360) 647-9061

MEMORANDUM

TO: Patrick Sorensen, General Manager
Bill Hunter, PE, Assistant Manager / District Engineer
FROM: Melanie Mankamyer, PE
SUBJECT: Northshore System Extension Preliminary Investigation
JOB NO.: 2015-053
DATE: November 19, 2015

Earlier this year the District Board requested additional information regarding the properties along the north shore of Lake Whatcom that have been developed with on-site septic systems, and a review of the parameters that need to addressed if the District decides to pursue a sewer system extension to this area.

Wilson Engineering was tasked with conducting this research. The purpose of this Memorandum is to document the results of the research and present candidate "next step" actions.

In the District's approved 2014 Comprehensive Sewer Plan, a potential future sewer basin was identified at the east end of North Shore Road (Exhibit J-4). This area was included in the sewer capacity analyses for North Shore. This area is not currently designated as an Urban Growth Area (UGA) or Limited Area of More Intense Rural Development (LAMIRD), though the majority of the existing lots are much smaller than 5 acres - a typical definition for "rural".

The Growth Management Act (GMA) limits the extension of sewers into rural areas. RCW 36.70A.110(4) provides in part:

> In general, it is not appropriate that urban governmental services be extended to or expanded in rural areas except in those limited circumstances shown to be necessary to protect basic public health and safety and the environment and when such services are financially supportable at rural densities and do not permit urban development.

As discussed in Bob Carmichael's Memorandum to the Board, dated March 31, 2015, there are two potential courses of action to lawfully extend sewer to the area at the end of Northshore Road - designation of the area as a LAMIRD by Whatcom County or Conditional Use Permit Approval for the extension by Whatcom County showing it is necessary to protect public health and safety and the environment. The March 31, 2015 Memorandum provides substantial background on the process and requirements associated with both of these options and is attached.

We met with County Planning Department representatives to discuss their potential position/reaction to both of these paths. They were understanding of the goal, but were concerned about having sufficient back-up information to go down either path. They suggested additional research into the status of existing septic systems, failure rates, and drinking water sources from the public health side, and age of the developments for the LAMIRD option.

One of the key criteria in establishing a LAMIRD is showing that the land was characterized by existing development more intensive than the surrounding rural areas as of July 1, 1990. Using data from the Whatcom County Assessor's office, we have determined that there are 97 residential units in this area. Of

those, 54 were built before 1990 (20 of these before 1960), and 44 were built in 1990 or later. Five are listed as being built in 1990 but there is insufficient information to determine if they were there prior to July 1, 1990. This data is shown on the attached figure, color-coded by construction date. Also shown are the 28 vacant parcels that potentially could be developed and the one development that is currently underway. We removed parcels from the vacant category if they shared ownership with adjacent developed parcels and were too small to be developed separately, or if they had public ownership or were restricted (shown on the figure as "exclusions").

We also obtained the septic system records that were available from the Whatcom County Health Department's website and entered relevant data into a database. This data indicates that all but two of the 96 septic systems have been inspected since 2009, with 55 having been inspected since January 2013. The records also included a 1974 permit for an outdoor toilet for a cabin. The last conventional gravity system was installed in 2004. The table below provides the number of each of the types of septic systems installed in this area. A full list of the septic systems and their inspection data is attached.

OSS TYPE	Number installed
CONVENTIONAL GRAVITY	33
PUMP TO GRAVITY DISTRIBUTION	28
BIOFILTER	11
PRESSURE DISTRIBUTION	10
AEROBIC TREATMENT UNIT w/ PRESSURE DISTRIBUTION	5
SAND FILTER w/ MOUND	2
MOUND	2
AEROBIC TREATMENT UNIT w/ DRIP IRRIGATION	2
NON-PRESSURIZED MOUND	1
DRIP IRRIGATION	1
OUTDOOR TOILET/PRIVY	1
UNIDENTIFIED	1

The majority of the inspections were performed by professionals (71), with only 20 systems being inspected by the homeowner (the remaining were new and inspected by the County during installation). Twenty of the inspection records indicated that "maintenance was needed",- eight needed the septic tank pumped and eleven needed minor work like sealing the risers. Only one needed major work for a failed pump.

Twenty-eight of the septic systems appear to be located on the lake side of Northshore Road. Five of the residences were built after 1990, and six of the older septic systems have been replaced. There are several septic systems in this area that are quite old, including two installed in 1935 and one dating back to 1908, that do not appear to have been replaced or upgraded.

We estimate that about 22 septic systems have been replaced - the permit application date is much newer than the year the building was built. Most of the replacements were for residences built before 1980 - and included the septic system for 1901 house which was replaced in 2014. From the data, it is hard to tell which replacements are due to failing systems and those required for remodels.

We were able to identify the drinking water source for 69 of the properties Seventeen appear to draw water from Lake Whatcom, and 50 use well water. Two properties were listed as being on a community or association water system, though we expect this number to be higher and possibly include those with unidentified water sources. We were not able to find information on the drinking water source for 28 of the properties.

In conclusion, the data provided by the Health Department records does not provide sufficient evidence to support potential claims of septic system failures that could justify a "health and safety and the environment" case. Nor will the level of pre-1990 existing development at just over half of the total development be sufficiently compelling alone to justify the creation of a LAMIRD, in part because it will be seen as "enabling" the development of the 28 vacant parcels.

We do believe that there is a high probability that the County would support a sewer extension with data that these septic systems were impacting the water quality in the lake. We recommend that the District pursue a rigorous water quality testing program to collect data that would show such an impact. With that data, and the results listed in this memo, the District would be able to make the compelling argument for extending sewer to this area, regardless of the approach.

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MEMORANDUM

TO: Board of Commissioners – Lake Whatcom Water & Sewer District

FROM: Robert A. Carmichael

DATE: March 31, 2015

SUBJECT: Potential for Northshore Sewer Extension

I. BACKGROUND

There may be interest on the Board of Commissioners in exploring the possibility of Lake Whatcom Water and Sewer District ("District") extending its sewer system to serve approximately 80-100 homes at the end of Northshore Road along Lake Whatcom, all of which are presently served by on-site septic systems. Preliminary investigation by legal counsel and staff resulted in a verbal report to the Board at its first meeting in March and a Board request for a follow up memorandum. This memo is meant to comply with that request. It is preliminary in nature and intended to identify potential courses of action in case the District Board chooses to become proactive on this issue. Significant issues associated with how to pay for the potential sewer extension, and the U.L.I.D. process, are not part of the memo.

II. POTENTIAL COURSES OF ACTION

There are two potential legal paths to lawfully extending sewer to the 80-100 homes at the end of Northshore Road:

(1) Designation by Whatcom County of the area as a Limited Area of More Intense Rural Development ("LAMIRD"); or

(2) Conditional Use Permit Approval for the extension.

The principal purpose of this memorandum is to outline the applicable laws and steps necessary under each potential legal path. Analysis of the potential for success requires development of factual information to determine if the necessary legal criteria will likely be met. Such work is beyond the scope of this memorandum.

Before discussing each option in turn, limitations on sewer extensions arising from the Growth Management Act (Chapter 36.70A RCW or "GMA") should be briefly examined.

III. LIMITATIONS ON SEWER EXTENSIONS IN GMA

The GMA limits the extension of sewers into rural areas. RCW 36.70A.110(4) provides in part:

> In general, it is not appropriate that urban governmental services be extended to or expanded in rural areas except in those limited circumstances shown to be necessary to protect basic public health and safety and the environment and when such services are financially supportable at rural densities and do not permit urban development.

RCW 36.70A.110(4). The foregoing provision has been generally interpreted to preclude extension of sewers outside of designated Urban Growth Areas ("UGAs") unless the extension is demonstrated as necessary to protect public health and safety. *Thurston County v. Cooper Point Association, et al., 148 Wn. 2d 1, 17-18, 57 P. 3rd 1156 (2002).* Therefore, one path available for extending sewers to the end of Northshore Road is to factually demonstrate that such extension is necessary to protect public health and safety. This will likely require either evidence of failing septic systems, or evidence that septic systems pose inherent health and safety risks when located along the shores of an impaired water body which supplies municipal drinking water.

Sewers may also be extended to serve limited areas of more intense rural development ("LAMIRDs") as a permitted use under certain circumstances. WCC 20.82.030(4). Public services and public facilities like sewers are allowed in LAMIRDs so long as they are provided "in a manner that does not permit low-density sprawl." RCW 36.70A.070(5)(d)(iv). A sewer extension serving a LAMIRD as a permitted use must also be consistent with an approved sewer comprehensive plan and the County Comprehensive Plan. LAMIRDs are designated by the County in its Comprehensive Plan and referred to therein as Rural Communities. Strict statutory criteria and County Comprehensive Plan criteria must be satisfied for an area to qualify for LAMIRD designation.

The 80-100 homes at the end of Northshore Road along Lake Whatcom presently served by septic systems are located in a rural area with Rural 5 Acre ("R-5A") zoning. Therefore, the two potential legal pathways for extending sewer services to serve these homes is: (1) have the area designated as a LAMIRD; or (2) obtain a Conditional Use Permit showing that the extension is necessary to protect public health and safety and the environment.

IV. TEXT AMENDMENT NECESSARY TO COUNTY COMPREHENSIVE PLAN

Current County Comprehensive Plan **Policy 2T-2** is unnecessarily restrictive on the extension of sewers and if not amended could result in denial of a conditional use permit for a sewer extension even when necessary to protect the public health and safety and environment. This same current policy is also inconsistent with allowing sewers in a LAMIRD, despite other language in the County Comprehensive Plan and Zoning Code authorizing sewers in LAMIRDs.

Current **Policy 2T-2** categorically prohibits sewers outside a Short Term Planning Area. Under current **Goal 2T** of the County Comprehensive Plan, Short Term Planning Areas are to be established, outside of which urban levels of development will not occur. WCCP **Goal 2T**. Short Term Planning Areas are overlay designations within UGAs. The first bullet point under current **Policy 2T-2** states: "No sewer shall be extended outside a Short Term Planning Area." Of course, the potential area for a Northshore sewer extension is not located in a Short Term Planning Area or even in a UGA. Therefore, unless current **Policy 2T-2** is changed, no Northshore sewer extension is possible under the current County Comprehensive Plan.

The restriction on sewers in current **Policy 2T-2** makes no allowance for sewer extensions when necessary to protect the public health and safety and the environment, as allowed by RCW 36.70A.110(4) and Whatcom County Comprehensive Plan **Policies 2EE-4, 5T-1, and 5T-2**. The current restriction is also inconsistent with allowing sewer extensions in LAMIRDs as otherwise authorized by the County Zoning Code (WCC 20.82.030(4)) and County Comprehensive Plan **Policies 2EE-4, 5T-1, 5T-2, and 5T-3**. Due to these inconsistencies with GMA and with other provisions in the County's own Zoning Code and Comprehensive Plan, a strong case can be made for amendment of current **Policy 2T-2** to eliminate the current categorical prohibition on extending sewers outside of Short Term Planning Areas.

Important Recent Development: Fortunately, a very timely County process is underway right now before the Planning Commission to amend most of current **Goal 2T** and **Policy 2T**, including striking the portion of **Policy 2T-2** which currently prohibits sewer extensions outside Short Term Planning Areas. This is a byproduct of the County eliminating the distinction between Short Term and Long Term Planning Areas within UGAs, so it is part of a much bigger proposed change in the County Comprehensive Plan. If the proposed text amendments to the County Comprehensive Plan before the Planning Commission are ultimately adopted by the Council, which is very likely, then there will be no need for the Lake Whatcom Water & Sewer District to propose a text amendment to the County Comprehensive Plan **Policy 2T-2** prior to pursuing the two legal pathways discussed below.[1] The balance of this memorandum is written under the assumption that the prohibition on sewer extensions outside Short Term Planning Areas under current **Policy 2T-2** will soon be eliminated.

V. PATH 1: ESTABLISH A LAMIRD TO ACCOMMODATE NORTHSHORE SEWER EXTENSION

Sewer extensions in residential LAMIRDs which are in conformance with a state approved sewer comprehensive plan and consistent with the Whatcom County Comprehensive Plan are "permitted outright" under the County Zoning Code. WCC 20.82.030(4). A Comprehensive Plan

[1] It is still possible and perhaps desirable for additional County Comprehensive Plan text amendments more specific to the problem of septic systems along Lake Whatcom to express a policy level desire to eliminate septic systems along the Lake. If the District decides to move forward, additional thought may be given to proposing potential new County Comprehensive Plan policies specifically directed at protecting Lake Whatcom water quality from impairment from septic systems. But this is not necessary to pursue the two potential paths outlined herein.

amendment for a LAMIRD designation must be filed with the County. Such applications are due on or before December 31st for consideration in the following year. WCC 2.160.040(C). So, for consideration in 2016, an application must be filed on or before December 31, 2015. Then in the following year, the County Council will decide if it chooses to "docket" the application for processing. It is not required to do so. But if the County Council believes a proposed LAMIRD should be considered, it will be approved for processing. Thereafter, it will be reviewed by the Planning Department which will perform SEPA review, prepare a staff report, and schedule the matter for a public hearing before the County Planning Commission. The Planning Commission will make a recommendation on the application to the County Council and the County Council will make a final decision. The County Council may or may not have its own public hearing on the application. Given that the County is working toward meeting a June 2016 deadline for its Comprehensive Plan update, it is likely that consideration of a new LAMIRD would not take place until the latter half of 2016 at the earliest.

To prepare the application for a residential LAMIRD designation, the proposed boundaries must be carefully drawn with LAMIRD criteria in mind. The criteria that must be satisfied for a residential LAMIRD designation is set forth in RCW 36.70A.070(5)(d)(iv) and (v). The statutory criteria provides:

> (iv) A county shall adopt measures to minimize and contain the existing areas or uses of more intensive rural development, as appropriate, authorized under this subsection. Lands included in such existing areas or uses shall not extend beyond the logical outer boundary of the existing area or use, thereby allowing a new pattern of low-density sprawl. Existing areas are those that are clearly identifiable and contained and where there is a logical boundary delineated predominately by the built environment, but that may also include undeveloped lands if limited as provided in this subsection. The county shall establish the logical outer boundary of an area of more intensive rural development. In establishing the logical outer boundary, the county shall address (A) the need to preserve the character of existing natural neighborhoods and communities, (B) physical boundaries, such as bodies of water, streets and highways, and land forms and contours, (C) the prevention of abnormally irregular boundaries, and (D) the ability to provide public facilities and public services in a manner that does not permit low-density sprawl;
>
> (v) For purposes of (d) of this subsection, an existing area or existing use is one that was in existence:
>
> (A) On July 1, 1990, in a county that was initially required to plan under all of the provisions of this chapter;

RCW 36.70A.070(5)(d)(iv) and (v). Following the state statute, the County also has LAMIRD designation criteria. County Comprehensive Plan **Policy 2HH-1**. Key mandatory criteria for land considered for Rural Community LAMIRD designation under the County Comprehensive Plan are:

- That the land was characterized by existing development more intensive than surrounding rural areas as of July 1, 1990; and
- That the land is not currently designated by the Comprehensive Plan as UGA or Resource Lands.

County Comprehensive Plan **Policy 2HH-1.A**.

The County Comprehensive Plan also contains the following additional locational criteria to consider for evaluation in combination, all of which need not apply.

- The existing (1990) residential built environment was more intensively developed than surrounding areas;
- Public services are available to serve potential infill, such as adequate potable water and fire protection, transportation facilities, sewage disposal and stormwater control;
- The area is planned for more intensive development in a post-GMA plan;
- Existing zoning prior to LAMIRD designation, except zoning may not be a sole basis for designation.

County Comprehensive Plan **Policy 2HH-1.B.**

If an area satisfies the above LAMIRD criteria in **Policy 2HH-1.A** and generally conforms to one or more of the criteria in **Policy 2HH-1.B** above, then the outer boundary criteria set forth in **Policy 2HH-1.C** will be used to determine the boundaries. The outer boundary "must minimize and contain areas of intensive development and be delineated predominately by the built environment" and shall include:

- Areas that were intensively developed and characterized by the built environment (including water lines and other utility lines with capacity to serve areas of more intensive uses) on July 1, 1990;
- Areas that on July 1, 1990, were not intensively developed may be included within Rural Community boundaries if they meet any of the following conditions:
  - Including area helps preserve character of existing built neighborhood
  - Including area allows the logical outer boundary to follow a physical boundary such as bodies of water, streets and highways, and land forms and contours
  - Including the area prevents logical outer boundary from being abnormally irregular
  - Including the area is consistent with efficient provision of public facilities and services in a manner that does not permit low-density sprawl

- Including area does not create a new pattern of low-density sprawl.

County Comprehensive Plan **Policy 2HH-1.C**

Based on the foregoing, support for a LAMIRD designation for the Northshore area requires identifying the existing built environment as of 1990 and determining a logical outer boundary per the above criteria. Assessor's office records and aerial photographs may be used. Limiting connection to sewer to assure it does not promote sprawl will likely be required with any LAMIRD.

Appeals: An appeal of a LAMIRD designation by the County Council is made to the Growth Management Hearings Board. Any appeal from a Growth Management Hearings Board decision is made to Superior Court. From there to Court of Appeals Division 1 in Seattle. And discretionary review is possible from there by the State Supreme Court.

VI. PATH 2: OBTAIN CONDITIONAL USE PERMIT

New sewer extensions outside a UGA and LAMIRD are authorized in WCC 20.82.030(4) by conditional use permit. WCC 20.82.030(4) provides in part that "Sewer lines shall not be extended to serve lots in rural areas unless such extensions are shown to be necessary to protect basic public health and safety and the environment, and when such services are financially supportable at rural densities and do not permit urban development." Therefore, to make the case for a sewer extension at Northshore Road the District must produce evidence showing that the above standards are met.

In addition, the general conditional use permit criteria of the County must also be satisfied. WCC 20.84.220. One particular criteria is that the proposal "(1) Will be harmonious and in accordance with the general and specific objectives of Whatcom County's Comprehensive Plan and zoning regulations." WCC 20.84.220(1). It is to meet this criteria that **Policy 2T-2** must be amended to remove the categorical prohibition on sewers outside Short Term Planning Areas. But based on the Comprehensive Plan text amendments currently being considered by the Planning Commission, it is highly likely that this prohibition on sewers in **Policy 2T-2 will** be removed in the near future.

Obtaining a conditional use permit requires filing a conditional use permit application with Whatcom County, County SEPA review, production of a staff report, and a public hearing before the County Hearing Examiner. The application can be filed at any time that the District believes it has the evidence at hand to make its case. If all criteria are met, the Hearing Examiner must grant approval. Usually conditions are attached to any approval.

To obtain a Northshore sewer extension conditional use permit, it will be vital to produce evidence that pollution from existing septic systems is reaching the Lake or at least that existing septic systems at their present locations and numbers generate a significant risk of producing a

public health problem. *Thurston County v. Cooper Point Association, et al., 148 Wn. 2d 1, 17-18.* Supporting testimony from Department of Ecology would be extremely helpful, as would other expert testimony. Conditions on any approval will likely also require restrictions on connection to the sewer by new subdivisions, but it is premature to speculate on the nature of the restriction likely required.

In the event a preponderance of the evidence before the Hearing Examiner demonstrates that the specific and general criteria for a conditional use permit are met, the Hearing Examiner may grant approval and the extension may be completed.

Appeals: Appeals of a conditional use permit approval or denial are heard on the record by the County Council. Any appeal of the decision of the County Council is by Land Use Petition Act ("LUPA") Petition, filed under Chapter RCW 36.70C., directly to Superior Court, again on the record. Appeals from Superior Court go to the Court of Appeals, Division 1 in Seattle. Any review from there is to the State Supreme Court.

VII. POTENTIAL NEXT STEPS IN PROCESS (no set order)

1. Feasibility review to determine evidence needed to support each path/strength of case.
2. Feasibility review to determine how to pay for extension.
3. Meet with elected officials from County and City to gauge level of potential support.
4. Meet with staff from County, City, and Department of Ecology to discuss best path forward.
5. Work with County staff on bringing proposal forward.

NORTHSHORE ROAD OSS DATA

prop_id	geo_id	YearBuilt	INSTALL DATE	PERMIT SUBMITTAL DATE	INSPECTION DATE	OSS TYPE	INSP TYPE	OSS STATUS	WATER SOURCE	DISTANCE TO LAKE
28972	370405461512	1979								
83865	380430507018	1901	7/11/2014	6/4/2014	7/11/2014	ATU-PD	NEW		Lake	130
84069	380432409074	1908			2/28/2013	CG	ROSS	MN-Pump		130
84001	380432220473	1914		6/9/1987	4/15/2014	CG	ROSS	Satisfactory		
83860	380430501040	1920		7/13/2004	7/12/2012	CG	HROSS	Satisfactory	Well	
83967	380432101474	1929		6/29/1972	6/25/2014	CG	ROSS	Satisfactory	Lake	
84053	380432398124	1930		9/17/1984	6/5/2012	P-GD	ROSS	MN-Minor	Well	
29003	370405540448	1934		8/4/1998	5/3/2012	P-GD	ROSS	MN-Minor		
29006	370405548451	1934		8/29/2012	9/17/2014	PD	ROSS	Satisfactory		
28991	370405507471	1935			4/10/2014	CG	ROSS	Satisfactory		
28998	370405523493	1935			6/30/2014	CG	ROSS	MN-Pump		
83964	380432095482	1936	4/26/2007	2/22/2007	5/21/2014	BIO	ROSS	Satisfactory		145
173194	380432166425	1945	10/26/2009	5/18/2007	12/6/2011	PD	ROSS	Satisfactory	Well	125
28960	370405450530	1946		5/15/1997	10/1/2011	CG	HROSS	Satisfactory	Well	220
83939	380432007557	1946		6/25/1969	11/16/2011	CG	HROSS	Satisfactory	Lake	
83843	380430486030	1949	6/15/2009	10/17/1997	7/17/2014	PD	HROSS	Satisfactory		
84071	380432412058	1949		7/17/1996	4/23/2014	P-GD	ROSS	Satisfactory	Lake	80
84092	380432510075	1949			4/21/2014	PD	ROSS	Satisfactory		
28953	370405438554	1950		6/5/2012	9/26/2012	ATU-PD	ROSS	Satisfactory	Lake	115
28957	370405447538	1950			6/2/2014	CG	ROSS	Satisfactory		
83968	380432108466	1954			8/28/2013	CG	ROSS	MN-Pump		
28426	370404011364	1961			12/29/2011	P-GD	ROSS	MN-Major		100
84077	380432426006	1961		3/30/1989	4/9/2014	PD	ROSS	Satisfactory		130
29001	370405534456	1962			6/21/2014	CG	HROSS	Satisfactory		
83807	380430428098	1962	12/21/2004	5/10/1996	7/5/2012	P-GD	ROSS	Satisfactory	Well	
84060	380432406049	1962			5/22/2014	CG	HROSS	Satisfactory		
28427	370404022361	1967			5/3/2012	CG	ROSS	MN-Minor		80
175503	380432336222	1968	9/6/2002	8/8/2002	4/14/2014	ATU-DI	ROSS	Satisfactory	Lake	
29008	370405556447	1968			12/14/2011	CG	ROSS	Satisfactory		
84009	380432233326	1971		11/22/2002	5/10/2012	CG	ROSS	MN-Pump	Lake	200
84073	380432421019	1971			6/24/2010	P-GD	ROSS	Satisfactory		40
83986	380432183411	1972	6/26/2006	4/24/2006	6/10/2014	ATU-PD	ROSS	Satisfactory	Lake	
83991	380432195367	1972			6/20/2014	CG	ROSS	Satisfactory		
84057	380432402159	1973		5/26/1972	4/15/2012	CG	HROSS	Satisfactory	Lake	150

NORTHSHORE ROAD OSS DATA

prop_id	geo_id	YearBuilt	INSTALL DATE	PERMIT SUBMITTAL DATE	INSPECTION DATE	OSS TYPE	INSP TYPE	OSS STATUS	WATER SOURCE	DISTANCE TO LAKE
28988	370405503478	1974			5/4/2015	CG	HROSS	Satisfactory	Lake	
83792	380430406096	1974								
29011	370405562448	1976		3/20/2002	6/26/2014	P-GD	ROSS	Satisfactory		
83877	380430540056	1976	7/20/1976	7/30/1974	9/22/2014	CG	ROSS	MN-Minor	Well	
28951	370405436563	1977			5/12/2011	P-GD	ROSS	Satisfactory	Lake	145
83678	380430233143	1977	11/15/2007		3/4/2014	CG	ROSS	Satisfactory	Well	100
83687	380430248170	1977	6/11/2009	9/8/2008	5/22/2012	BIO	ROSS	Satisfactory	Well	300
84064	380432408082	1977		1/10/1977	5/30/2014	CG	ROSS	Satisfactory	Lake	100
83970	380432110450	1978			7/21/2010	CG	ROSS	Satisfactory		
84061	380432406098	1978		7/11/1964	10/4/2012	CG	ROSS	Satisfactory	Lake	100
28994	370405513468	1981			6/26/2014	CG	HROSS	Satisfactory		
28997	370405520463	1981			7/25/2013	P-GD	ROSS	Satisfactory		
83998	380432211356	1981		1/14/2005	8/6/2010	BIO	ROSS	Satisfactory	Well	
84016	380432248410	1981	7/21/1981	6/5/1979	10/13/2011	CG	HROSS	Satisfactory	Well	200
173192	380432172419	1983	4/16/2009	9/17/2008	5/19/2014	PD	HROSS	Satisfactory	Lake	100
83787	380430377173	1983	6/8/1999	1/6/1998	6/2/2012	CG	HROSS	Satisfactory	Well	
83770	380430342139	1985		5/16/1991	6/20/2014	P-GD	ROSS	MN-Pump	Well	
84068	380432409067	1985		3/22/1979	4/23/2014	P-GD	ROSS	Satisfactory	Lake	100
84006	380432227335	1986		3/5/1986	7/10/2010	CG	ROSS	MN-Minor	Community	
84048	380432382192	1987		4/20/1995	4/26/2012	CG	ROSS	MN-Pump	Well	
173191	380430436073	1990		8/15/1988	8/29/2012	CG	ROSS	Satisfactory		
83704	380430308156	1990		11/15/1989	8/20/2013	P-GD	ROSS	MN-Minor	Well	
83749	380430309198	1990		1/19/1989	8/20/2013	P-GD	ROSS	MN-Minor	Well	
83768	380430340230	1990		6/11/1990	1/27/2015	M	ROSS	Satisfactory		
84055	380432401107	1990		10/16/1988	9/17/2014	PD	HROSS	Satisfactory	Lake	
83763	380430330125	1992		5/29/1992	8/20/2013	P-GD	ROSS	MN-Minor	Community	
83764	380430330126	1992		6/19/1990	8/20/2013	P-GD	ROSS	Satisfactory	Well	
83775	380430347173	1992		10/6/1988	8/20/2013	P-GD	ROSS	MN-Minor	Well	
83756	380430324153	1993	2/22/2006	7/13/1994	8/20/2013	P-GD	ROSS	MN-Pump	Well	
84035	380432341206	1993		2/2/1981	12/19/2014	P-GD	HROSS	Satisfactory	Well	
83778	380430358195	1994		6/28/1990	10/14/2011	P-GD	HROSS	Satisfactory		
83809	380430430140	1994	7/6/1986	11/19/1993	1/27/2012	NP-M	ROSS	MN-Pump	Well	
84018	380432255292	1996	3/3/2011	5/1/2006	5/17/2013	SF-M	ROSS	Satisfactory	Well	100
28955	370405443546	1997		5/10/1996	4/14/2014	P-GD	HROSS	Satisfactory	Well	90

NORTHSHORE ROAD OSS DATA

prop_id	geo_id	YearBuilt	INSTALL DATE	PERMIT SUBMITTAL DATE	INSPECTION DATE	OSS TYPE	INSP TYPE	OSS STATUS	WATER SOURCE	DISTANCE TO LAKE
84025	380432270345	1997		8/5/1996	10/11/2010	CG	ROSS	Satisfactory	Well	100
83785	380430367112	1999		9/30/1998	12/20/2013	P-GD	ROSS	Satisfactory	Well	
83755	380430320150	2001		9/30/1998	2/6/2010	P-GD	ROSS	MN-Minor	Well	500
84013	380432242336	2001		9/23/1996	1/10/2015	P-GD	HROSS	Satisfactory	Well	150
83774	380430346202	2002		3/20/2002	6/19/2014	M	ROSS	Satisfactory	Well	
83789	380430379225	2002		1/6/1998	11/30/2011	CG	HROSS	Satisfactory	Well	
83823	380430450060	2002	11/2/2001	2/9/2005	3/19/2012	P-GD	HROSS	Satisfactory	Well	
84024	380432269277	2002		4/27/2001	4/20/2015	BIO	ROSS	Satisfactory	Well	180
83776	380430349121	2004		10/27/2003	8/28/2010	CG	ROSS	Satisfactory	Well	400
83793	380430409203	2004		12/6/1988	6/30/2014	P-GD	ROSS	Satisfactory	Well	
83953	380432060521	2004		10/8/1969	5/24/2010	CG	ROSS	Satisfactory	Well	
84051	380432391206	2004		1/24/2001	1/8/2013	BIO	ROSS	Satisfactory	Well	
84062	380432407091	2004		8/18/1986	6/23/2011	P-GD	ROSS	Satisfactory	Lake	
28986	370405493492	2005			11/10/2011	ATU-DI	ROSS	Satisfactory	Well	
83797	380430415090	2005		1/6/2009	6/11/2014	P-GD	ROSS	Satisfactory	Well	
83821	380430448089	2005	8/25/2005	9/30/2004	5/19/2014	BIO	ROSS	MN-Minor	Well	
83838	380430480073	2005	4/9/2006	3/3/2004	9/14/2012	BIO	ROSS	Satisfactory	Well	
83863	380430504105	2006	1/12/2006	8/26/2004		BIO			Well	
83867	380430510064	2006		4/13/2005	11/26/2014	BIO	ROSS	Satisfactory	Well	
28959	370405448518	2007		6/8/2009	7/20/2009	PD	HROSS	Satisfactory	Well	55
83833	380430473088	2007		8/26/2004	4/22/2015	BIO	ROSS	Satisfactory	Well	
84044	380432371206	2007	3/28/2013	1/21/2003	8/7/2014	ATU-PD	ROSS	Satisfactory	Well	
83971	380432110540	2008	6/17/2006	8/23/2005	1/25/2015	BIO	ROSS	Satisfactory	Well	
84008	380432230425	2008	10/7/2009	6/23/2008	12/6/2011	PD	ROSS	Satisfactory	Well	500
84011	380432239317	2008	2/13/2012	9/19/2008	2/13/2012	SF-M	ROSS	Satisfactory	Well	250
84040	380432355196	2009		10/30/2002	6/21/2014	ATU-PD	ROSS	Satisfactory	Well	400
175016	380432078535	2012	10/13/2011	4/14/2011	10/14/2014	DI	ROSS	Satisfactory	Well	
83835	380430478051	2012	9/30/2011	2/19/2010	9/30/2011	PD	NEW	Satisfactory	Well	
83995	380432205362	2014	9/4/2014	2/27/2004	9/4/2014	P-GD	NEW	Satisfactory	Well	150

NORTH SHORE AREA

NORTH SHORE INTERCEPTOR

POTENTIAL FUTURE PUMP STATION LOCATION

POTENTIAL FUTURE SEWAGE BASIN

LAKE WHATCOM

SUDDEN VALLEY

DISTRICT BOUNDARY

NORTH SHORE RD

0 1,000 2,000 Feet

N

LEGEND

- Existing Manhole
- Gravity Sewer
- Existing Sewage Interceptor or Force Main
- Existing Sewage Pump Station
- Existing Onsite Septic System
- LWWSD Boundary
- Pump Station Service Area Boundary
- Watershed Protected Properties
- Exclusions
- Vacant

YearBuilt

- 1901 - 1989
- 1990 - 2015
- Under Construction

057

WILSON ENGINEERING, LLC
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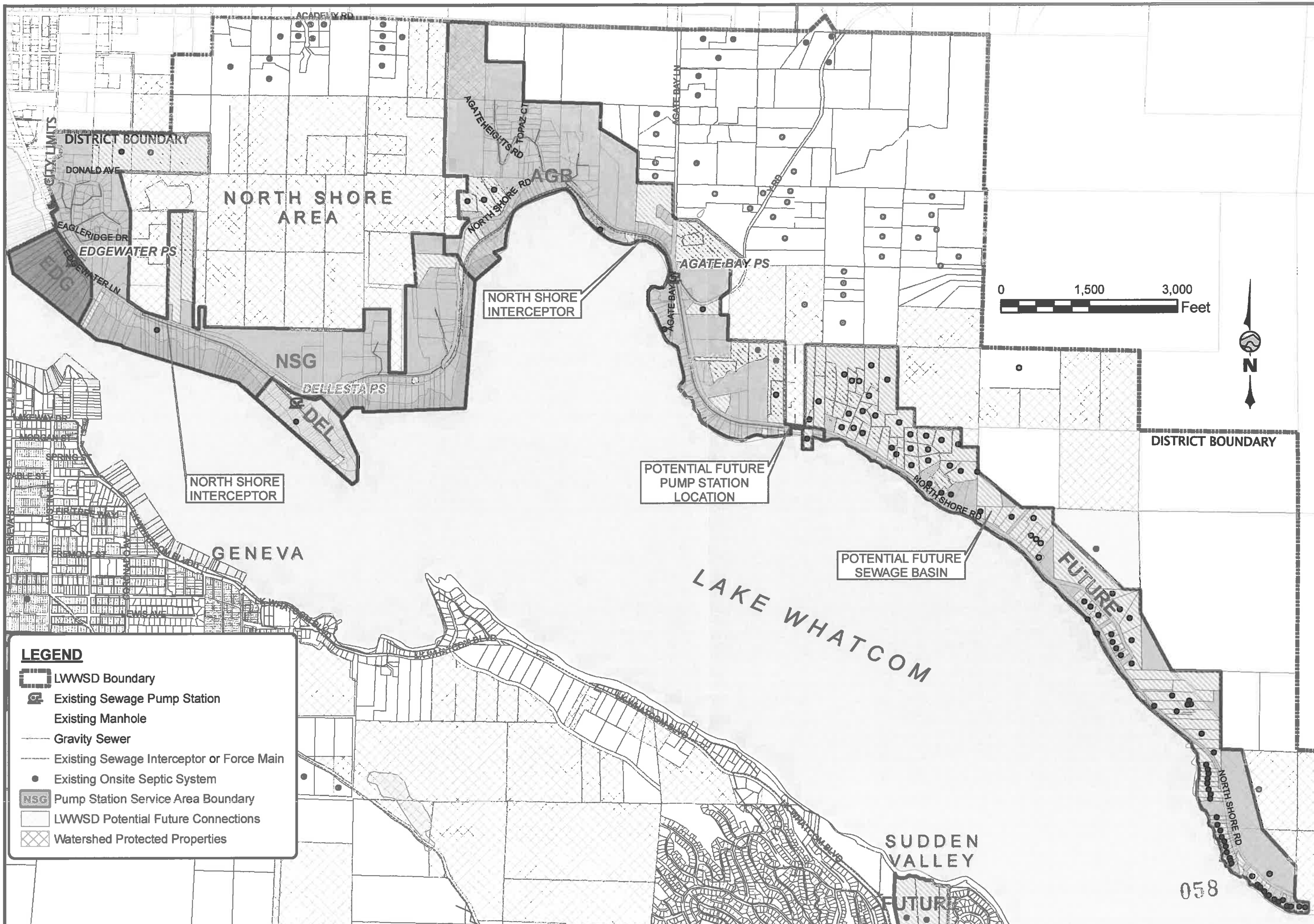
Wilson SURVEY/ENGINEERING www.wilsonengineering.com

DESIGNED BY MMM | DRAWN BY RDN/RW | CHECKED BY MMM

LAKE WHATCOM WATER & SEWER DISTRICT
WASHINGTON
WHATCOM COUNTY
NORTHSHORE SEWER EXTENSION
LAND OCCUPANCY

DATE NOV 2015 | SCALE AS SHOWN | JOB NO. 2015-053

SHEET 1 OF 1



058

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DESIGNED BY MMM | DRAWN BY RDN | CHECKED BY MMM

LAKE WHATCOM WATER & SEWER DISTRICT
WHATCOM COUNTY WASHINGTON

EXHIBIT J–4
NORTH SHORE
POTENTIAL SEWER GROWTH MAP

SHEET 1 OF 1 | DATE JUNE 2013 | SCALE AS SHOWN | JOB NO. 2013–014

LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 16, 2015		
TO BOARD OF COMMISSIONERS			
FROM: Bill Hunter	MANAGER APPROVAL Bill Hunter		
MEETING AGENDA DATE:	November 24, 2015		
AGENDA ITEM NUMBER:	5.E.		
SUBJECT:	Division 22 Reservoir Updated Cost Estimate		
LIST DOCUMENTS PROVIDED ⇨ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Memorandum from Gray & Osborne, Inc.		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL/ OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT

As part of the scope of work for the design of the new Division 22 Reservoir, the District wanted to verify its decision to build a welded steel reservoir (rather than a concrete reservoir). Construction cost estimates have escalated significantly since the time the District applied for loan funding in 2013. The attached memo updates construction cost estimates with the best and newest data available, considers a longer life-cycle cost analysis (steel vs concrete), and summarizes research of steel versus concrete performance related to earthquake resilience.

FISCAL IMPACT

None.

RECOMMENDED BOARD ACTION

A steel reservoir was selected at the conclusion of the Pre-Design Report that was presented and discussed with the Board last spring. New information in the attached memo includes a longer life-cycle cost analysis that indicates concrete eventually has a savings over steel, but not until 50 years or so. It appears steel has an advantage post-earthquake over concrete due to material flexibility, easier damage assessment and repairs.

All things considered in the attached memo, staff recommends a steel reservoir. The major reasons are: minimal annualized life-cycle costs savings ($4,000/year for 75-year analysis), material flexibility during an earthquake, easier assessment and repairs post-earthquake, newer construction methods (welded internal roof seams) and technology (cathodic protection) that help mitigate corrosion rates.

PROPOSED MOTION

None.

Gray & Osborne, Inc.
CONSULTING ENGINEERS

MEMORANDUM

TO: BILL HUNTER, DISTRICT ENGINEER
FROM: CORINNE TRAVIS, P.E.
DATE: NOVEMBER 20, 2015
SUBJECT: RESERVOIR COST COMPARISON UPDATE, DIVISION 22 RESERVOIR DESIGN
LAKE WHATCOM WATER & SEWER DISTRICT, WHATCOM COUNTY, WASHINGTON
G&O #14456.01

Gray & Osborne completed a preliminary design report for the proposed Lake Whatcom Water & Sewer District's Division 22 Reservoir dated June 2015. Since then, we have received additional information on current welded steel reservoir costs from recent jobs that have been bid. The additional bid information indicates that welded steel reservoir costs have increased. As a result, the estimated cost included in the predesign report should be updated to provide a more accurate cost comparison. This information will better allow the District to select the best material option. This memorandum summarizes the proposed reservoir design criteria and provides an update to the material cost comparison as well as a discussion of seismic issues between welded steel and concrete tanks.

DESIGN CRITERIA

The proposed reservoir will be constructed adjacent to the existing 0.5 MG reservoir. It will have an identical overflow elevation of 841 feet. Table 1 summarizes the design criteria for the proposed reservoir.

060

701 Dexter Avenue North, Suite 200 Seattle, Washington 98109 (206) 284-0860 Fax (206) 283-3206

TABLE 1

Reservoir Design Criteria

Parameter	Value
Overflow Elevation	841 feet
Diameter	56 feet
Shell Height	39 feet
Maximum Water Level	35 feet
Total Volume	718,500 gallons
Water Volume	644,000 gallons

MATERIAL COST COMPARISON

The District has requested an updated cost comparison between welded steel and prestressed concrete tanks.

Welded Steel

Reservoir cost per gallon from reservoirs bid in recent years has been reviewed. The cost per gallon has increased over the last 20 years, making historic data less applicable to current conditions. Gray & Osborne has bid three reservoirs since 2013. Table 2 summarizes these tanks and the costs from the projects' lowest bidders.

Reservoir costs vary depending on dimensions, foundation requirements, and accessories like stairs or gutters. The Coulee City tank is a standpipe, and thus had significant foundation requirements as well as increased construction costs due to height, which increases the cost per gallon and per square foot metric.

TABLE 2

Recently Bid Reservoir Information

Tank Information	Oak Harbor	Coulee City	Bothell
Bid Date	April 2013	March 2015	June 2015
Total Volume (gallons)	5,155,100	621,000	1,189,600
Water Volume (gallons)	4,229,800	612,500	1,023,000
Diameter (feet)	150	31	90
Shell Height (feet)	39	110	25
Reservoir Bid Cost (1)	$2,620,400	$857,980 (2)	$1,188,815
Total Volume Cost per Gallon	$0.51	$1.38	$1.00
Steel Quantity (square feet) (3)	53,700	12,300	19,800
Steel Cost per Square Foot	$48.80	$69.75	$60.04

(1) In 2015 dollars.
(2) Includes higher costs for foundation.
(3) Includes shell, floor, and roof area.

Trend line logarithmic y-intercept equations can be obtained by plotting the cost per gallon and per square foot against volume, which can then be applied to the proposed Division 22 Reservoir. Using the cost per gallon y-intercept equation, the Division 22 Reservoir will have a cost per gallon of $1.28 and a total cost of approximately $920,000. Using the cost per square foot of steel y-intercept equation, the Division 22 Reservoir will have a cost per square foot of $69.84 and a total cost of approximately $825,000. These costs include the reservoir, foundation, and painting.

The Coulee City tank has higher costs due to additional foundation and construction requirements, and the high surface area to volume ratio from its geometry relative to other tanks of similar capacity. Because the Division 22 Reservoir will be more easily constructed, the lower estimated cost of $825,000 derived from the square foot costs will be used for this analysis. This estimate includes the reservoir, foundation, and tank painting.

Maintenance Costs

As discussed in the predesign report, welded steel tanks typically require interior recoats every 25 years and exterior overcoats every 10 years. Recoating costs are estimated to be approximately $9 per square foot for the interior and $3 per square foot for the exterior assuming a top coat only. The exterior surface area will be approximately 9,325 square feet and the interior will be approximately 14,250 square feet, which includes additional area for structural elements. Table 3 summarizes maintenance over 30, 50, and 75 years.

TABLE 3

Welded Steel Recoating Life Cycle Costs

	Life Cycle Analysis Period		
	30-Year	**50-Year**	**75-Year**
Number of Interior Recoatings	1	2	3
Number of Exterior Recoatings	3	5	7
Net Present Value of Recoatings, 2015 Dollars[(1)]	$217,697	$407,420	$597,144

(1) NPV analysis assumes 3.0 percent inflation rate.

Concrete

Gray & Osborne has bid one DN Tank in the past several years. The tank had a 1.0 MG capacity with an 84-foot diameter and 24.5-foot shell height. The average contractor markup from the DN Tank quote for that tank was 25 percent. We have received an updated cost estimate from DN Tanks for a prestressed, post-tensioned concrete reservoir. The proposed 56-foot diameter, 39-foot shell height tank cost is quoted to be $895,000. With a 25 percent markup, the tank is estimated to cost $1,120,000 in 2015 dollars. This cost includes the reservoir and foundation.

Concrete tanks do not require coating. Normal maintenance will include cleaning and inspections, which are also required for a steel reservoir, thus those costs are not analyzed in this memorandum.

Summary

Table 4 summarizes the capital, maintenance, and 30-, 50-, and 75-year life cycle costs for welded steel and concrete tanks. These costs do not include other work required to complete the project that would be similar for both reservoir types, such as site work and piping.

TABLE 4

Reservoir Material Cost Comparison

Estimated Costs	Welded Steel			Concrete
	30-year	50-year	75-year	
Capital Costs[(1)]	$ 825,000	$ 825,000	$ 825,000	$1,120,000
Periodic Maintenance Costs, Net Present Value	$ 217,697	$ 407,420	$ 597,144	$ 0
Life Cycle Costs, Net Present Value	$1,042,697	$1,232,420	$1,422,144	$1,120,000

(1) Capital costs for reservoir, foundation, and tank painting only.

SEISMIC COMPARISON

It is our understanding that the District is concerned with the proposed tank's ability to withstand seismic events. This section summarizes seismic issues between welded steel and concrete tanks.

Welded Steel

There is little available data on how AWWA D100 welded steel tanks have withstood earthquakes due to the limited number of large earthquakes within the United States since D100 was updated in 1996 with significant changes to seismic design standards. The updates included high-strength anchor bolt requirements, steel panel thickness and special material requirements, revised seismic design load equations, a new seismic map, revised equations for calculating stresses, and a revised equation for calculating minimum freeboard.

Two studies of tanks following the magnitude 6.7 Northridge earthquake in southern California in 1994 included data on welded steel reservoir damage. The studies are referenced at the end of this memorandum. None of the 14 welded steel tanks included in the studies was constructed to D100 standards, and only four were noted as being anchored. Of the anchored tanks, ranging in size from 1.1 MG to 10.3 MG and built between the years 1973 and 1985, only one tank was damaged. Damage was limited to the drain pipe pulling away slightly and causing a small leak. Damage ranging from inlet or outlet piping separation to complete tank failure was reported at the 10 unanchored tanks.

Following the 2001 magnitude 6.8 Nisqually earthquake, an American Society of Civil Engineer's (ASCE) publication reported that "in one case a standpipe designed to modern

AWWA standards had either stretched anchor bolts or had slight elephants foot buckling" and that the anchorage at several other steel tanks had stretched. However, the same publication stated that "many utilities had seismically upgraded their tanks that may have limited the amount of tank damage." Figure 1 shows elephant foot buckling on a tank following the Northridge earthquake.

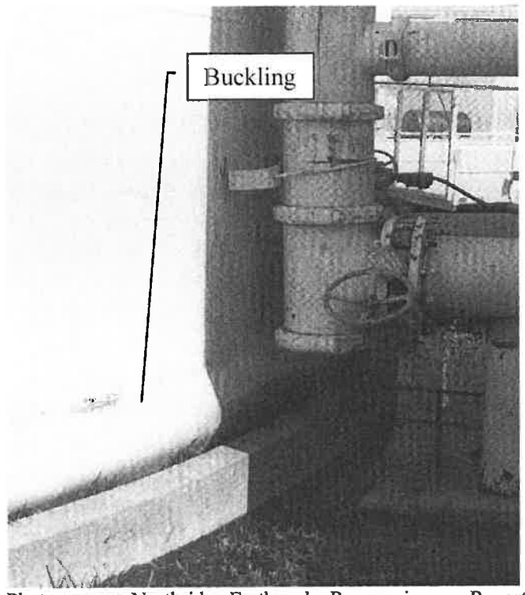

Photo source: Northridge Earthquake Reconnaissance Report.

FIGURE 1

Elephant Foot Buckling at Base of Steel Tank

Concrete

The Northridge earthquake studies also included data on seven concrete tanks constructed between 1956 and 1992 which were located within a 15-mile radius of the epicenter. At least four of the tanks were partially or completely buried. The studies reported damage to two of the concrete tanks including spalling and minor separation of roof panels, with no damage reported to the remaining five. Spalling is when the outer layer of concrete flakes off. Often, this is due to internal reinforcement expanding and cracking the

concrete material. The damage reported did not impact short-term operation. Figure 2 shows an example of concrete spalling.

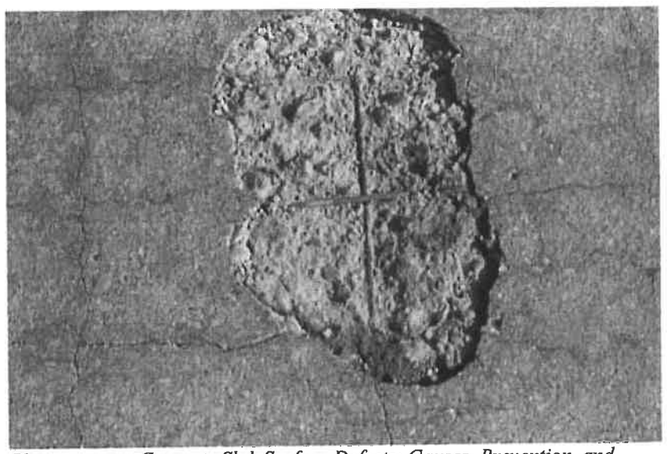

Photo source: *Concrete Slab Surface Defects: Causes, Prevention, and Repair.* Portland Cement Association, 2001.

FIGURE 2

Concrete Spall over Rebar

The aforementioned ASCE publication reported that "several concrete tanks cracked" in the Puget Sound area but that there were "no catastrophic tank failures" during the Nisqually earthquake. No additional information could be easily obtained about those tanks and the extent of damage from the cracks.

Comparison

Despite limited data on AWWA D100 steel tank performance during an earthquake, design load calculations and material properties can provide a basic comparison. When designed properly, both concrete and welded steel tanks have the structural capability to withstand a seismic event. The seismic resistance of these tanks is a function of the anchorage system that provides the stability for overturning during a seismic event. The anchorage system typically consists of cables for concrete tanks and steel anchor bolts for steel tanks.

In comparing a concrete tank and steel tank of the same volume and dimension, i.e., height and diameter, the anchorage requirements for the concrete tank would be more

than that for a steel tank. Because the seismic forces are a function of the structure's mass, the mass of the concrete will generate greater forces than a steel tank.

Other than a complete tank failure during a seismic event, the structural impacts for a steel tank are more evident and easily identifiable. These include elephant's foot, a crushing of the lower portion of the bottom ring, and failure of the anchor bolt connection to the foundation to the reservoir. The damages and impacts to a concrete tank are not that evident, except for cracks on exterior surfaces.

The repairs to steel tanks are straightforward. The damaged section(s) and/or items would be removed and replaced. To determine the extent of the damages and repairs for a concrete tank, however, would most likely include an intensive and extensive investigation to determine the location of any possible leakage.

Gray & Osborne has no previous experience with repairs of a concrete tank as a result of a seismic event. However, Gray & Osborne was involved in the assessment and repairs of two steel tanks that suffered damages from the 2001 Nisqually earthquake. In both cases, the anchor strap connections to the tanks in several locations failed and were repaired.

The data compiled does not strongly point to one material over the other in terms of seismic resilience. However, based on our experience with tank design and repairs, we recommend a welded steel tank due to their structural performance, material flexibility, and potential cost and ease of repairs.

SUMMARY

A welded steel tank is recommended for the proposed Division 22 Reservoir. Although the 50- and 75-year life cycle costs of a welded steel tank are greater than those for a concrete tank, the cost difference is not large. The recommendation for welded steel is based on the reasons presented in the predesign report, such as more competitive bids and ease of repairs or modifications. Additionally, we believe that a welded steel tank will sufficiently withstand a moderate seismic event with minor damage.

REFERENCES

Author unknown (1995). Northridge Earthquake Reconnaissance Report, Volume 1. Earthquake Spectra: The Professional Journal of the Earthquake Engineering Research Institute.

Brown, K. J., P. J. Rugar, C. A. Davis, T. A. Rulla (1995). Seismic Performance of Los Angeles Water Tanks. *Lifeline Earthquake Engineering: Proceedings of the Fourth U.S. Conference,* 668-675.

McDonough, P. W. (editor) (2002). The Nisqually, Washington, Earthquake of February 28, 2001. *Technical Council on Lifeline Earthquake Engineering*, Monograph No. 20.

Portland Cement Association (2001). Concrete Slab Surface Defects: Causes, Prevention, and Repair. *Concrete Information, IS177.*

CMT/hhj

LAKE WHATCOM WATER & SEWER DISTRICT
DIVISION 22 RESERVOIR
ENGINEER'S PRELIMINARY COST ESTIMATE
November 20, 2015

NO.	ITEM	QUANTITY	UNIT PRICE	AMOUNT
1.	Minor Changes	1 CALC	$25,000.00	$25,000.00
2.	Mobilization and Demobilization	1 LS	$100,000.00	$100,000.00
3.	Clearing and Grubbing	1 LS	$15,000.00	$15,000.00
4.	Temporary Erosion Control	1 LS	$8,000.00	$8,000.00
5.	Locate Existing Utilities	1 LS	$2,000.00	$2,000.00
6.	Trench Excavation Safety System	1 LS	$3,000.00	$3,000.00
7.	Site Earthwork	1 LS	$50,000.00	$50,000.00
8.	Unsuitable Excavation	200 CY	$40.00	$8,000.00
9.	Site Piping	1 LS	$100,000.00	$100,000.00
10.	Gravel Borrow	60 TN	$25.00	$1,500.00
11.	Crushed Surfacing Base Course	560 TN	$35.00	$19,600.00
12.	Surface Restoration	1 LS	$10,000.00	$10,000.00
13.	Welded Steel Reservoir	1 LS	$825,000.00	$825,000.00
14.	Electrical, Telemetry, and Instrumentation	1 LS	$85,000.00	$85,000.00
	Subtotal			$1,252,100.00
	Contingency (15%)			$187,900.00
	Sales Tax at 8.5%			$106,500.00
	Total Construction Cost:			**$1,546,500.00**

LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 17, 2015		
TO BOARD OF COMMISSIONERS			
FROM: Bill Hunter	MANAGER APPROVAL Bill Hunter		
MEETING AGENDA DATE:	November 24, 2015		
AGENDA ITEM NUMBER:	5.F.		
SUBJECT:	Sewer Smoke Testing Project – Final Acceptance		
LIST DOCUMENTS PROVIDED ⇨ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1.		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION ☐	FORMAL ACTION/ MOTION ☒	INFORMATIONAL/ OTHER ☐

BACKGROUND / EXPLANATION OF IMPACT

SFE Global has completed smoke testing for the projected titled 2015 Sewer System Rehab Project. Approximately 83,000 feet of sewer mains on the North Shore and in Sudden Valley were tested. There were several minor incidents that included defective cleanout caps, a loose manhole lid assembly, and 11 residences that failed to show any smoke from roof vents. There was one major incident discovered where a rainwater downspout was connected to the sanitary sewer (this was on the North Shore).

This project finishes a multi-year effort to smoke test all of the District's sewer mains. A map will be in the board room that summarizes smoke testing work and shows locations of sewer system repairs.

FISCAL IMPACT

The SFE Global completed the project at the original contract amount of $35,783.30 (including sales tax).

RECOMMENDED BOARD ACTION

Staff recommends accepting the project as complete. Staff will then finalize project close-out paperwork.

PROPOSED MOTION

Accept the 2015 Sewer System Rehab project performed by SFE Global as complete.

LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 17, 2015		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL		
MEETING AGENDA DATE:	November 24, 2015		
AGENDA ITEM NUMBER:	7.0		
SUBJECT:	Manager's Report		
LIST DOCUMENTS PROVIDED ⇨ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Manager's Report		
	2.		
	3.		
TYPE OF ACTION 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 Comments

November 24, 2015

Important Upcoming Dates:

- **Meetings Associated with the Lake Whatcom Management Program:**
  - **Policy Group Meeting:** The next meeting is set for **November 30, 2015 at 2:30 p.m.** in the City of Bellingham's Fireplace Meeting Room located in the bottom floor of the Municipal Court Building next to the City's Information Technology Office at 625 Halleck Street. Remember, all Policy Group Meetings are publicly noticed by the District.
  - **Management Meeting:** The date for the next meeting with the Mayor and County Executive has not been set at this time.
- **Next Regular Board Meeting:** The next regular meeting will be held on, **December 9, 2015** at 6:30 p.m.

  Note: the November 24 meeting is not a "Special Meeting" because this date was previously adopted by Resolution.
- **Employee Staff Meeting**: The next staff meeting is set for **Thursday, December 10, 2015 at 8:00 a.m.** in the Board Room. Commissioner McRoberts is scheduled to attend this meeting. Scheduling is rotated by alphabetical order each month.
- **Employee Safety Committee Meeting**: The next meeting is set for **December 10, 2015 at 9:00 a.m.** following the Staff Meeting in the Small Conference Room.
- **Washington Association of Sewer & Water Districts (WASWD) Section III Meeting:** The next Section III meeting will be held on **Tuesday, December 8, 2015** at 6:15 p.m. at Bob's Burger & Brew in Tulalip. All WASWD Section III Meetings are publicly noticed by the District.
- **Whatcom Water District's Caucus Meeting**: The next Caucus meeting is set for **December 16, 2015** at 1:00 p.m. in the Board Room.

Other:

- **Committee Meeting Reports as Needed**: This is a place holder for Board and staff members to report on recent committee meeting reports since the last Board Meeting.