



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

REGULAR MEETING
OF THE BOARD OF COMMISSIONERS

AGENDA

June 8, 2016

6:30 p.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. Resolution 827 – 2016 Bond Issue
 - B. Sewer Connection Issue Follow-up
 - C. Monthly Budget Analysis
 - D. Summary of Existing District Projects
 - E. Division 22 Reservoir Project – Contract Award
 - F. District Comments Regarding Whatcom County Comprehensive Plan Update
 - G. North Shore Water Quality Testing RFP
6. OTHER BUSINESS
7. MANAGER'S REPORT
8. PUBLIC COMMENT OPPORTUNITY
9. ADJOURNMENT



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	June 1, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL <i>Patrick Sorensen</i>		
MEETING AGENDA DATE:	June 8, 2016		
AGENDA ITEM NUMBER:	5.A.		
SUBJECT:	Resolution 827 – 2016 Bond Issue		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Fiscal impact spreadsheet		
	2. Resolution 827		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION <input checked="" type="checkbox"/>	FORMAL ACTION/ MOTION <input checked="" type="checkbox"/>	INFORMATIONAL/ OTHER <input type="checkbox"/>

BACKGROUND / EXPLANATION OF IMPACT

At the April 11, 2016 and April 27, 2016 meetings the Board authorized staff to move forward with the refunding bond issue. Current bond markets are at a historical low per Jim Nelson, Senior Vice President and Public Finance Banker from D.A. Davidson. The anticipated sale dates are the week of June 20th.

FISCAL IMPACT

Attached is a spreadsheet which shows the fiscal impact of this refunding issue. Overall our annual debt service expenses will increase by approximately \$11,000 to \$12, 000.

RECOMMENDED BOARD ACTION

Staff recommends the approval of Resolution 827 which issues revenue bonds to cover refunding of the 2009 Bonds, Pay-off of Post Point Contract with the City of Bellingham and financing \$1.2 million new money for the Division 22 Reservoir and the Strawberry Point Pump Station Improvement Projects.

PROPOSED MOTION

To approve Resolution 827 regarding the issuing of revenue bonds.

	PROJECTIONS - DERIVED FROM WATER/SEWER RATE MODELS					Source Model
	2016	2017	2018	2019	2020	
Revenues of the System						
Operating Revenue	\$5,888,026	\$6,064,667	\$6,246,607	\$6,434,005	\$6,627,025	\$6,825,836
Non-Operating Revenue	90,000	90,000	90,000	90,000	90,000	90,000
Capital Contributions	100,000	100,000	100,000	100,000	100,000	100,000
ULID Revenue	60,000	55,000	50,000	45,000	40,000	35,000
Total Revenue	6,138,026	6,309,667	6,486,607	6,669,005	6,857,025	7,050,836
Costs of Maintenance and Operation ⁽¹⁾	3,769,244	3,882,321	3,998,791	4,118,755	4,242,317	4,369,587
Net Revenue Available for Debt Service	2,368,782	2,427,345	2,487,816	2,550,250	2,614,708	2,681,249
Maximum Annual Debt Service	888,259	899,447	899,447	899,447	899,447	899,447
Debt Service Coverage	2.67	2.70	2.77	2.84	2.91	2.98

Increased Revenue from Rate Increases (3%)
Fees (Late fees, Lock fees, Billing Suspension fees etc)
Assumes 10 permits at \$10,00 for Capital Contributions

Increased Expenses (3%)

Includes 2009 Bond, Post Point, DWSRF Loans, PW Loan
\$1.2M new money (Div 22 Res and Strawberry Point Pump)

(1) Excludes Depreciation, Debt Service and Capital Outlay

LAKE WHATCOM WATER AND SEWER DISTRICT
WATER AND SEWER REVENUE AND REFUNDING BONDS, 2016

RESOLUTION NO. 821

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF LAKE WHATCOM WATER AND SEWER DISTRICT, WHATCOM COUNTY, WASHINGTON; APPROVING CERTAIN ADDITIONS, BETTERMENTS AND IMPROVEMENTS TO THE DISTRICT'S COMBINED SYSTEM OF WATER, DRAINAGE AND SEWERAGE; AUTHORIZING THE ISSUANCE OF WATER AND SEWER REVENUE AND REFUNDING BONDS OF THE DISTRICT IN THE AGGREGATE PRINCIPAL AMOUNT OF NOT TO EXCEED \$[6,700,000] TO PAY THE COSTS OF SAID IMPROVEMENTS AND TO REFUND CERTAIN OUTSTANDING WATER AND SEWER REVENUE OBLIGATIONS OF THE DISTRICT; RESERVING THE RIGHT TO ISSUE REVENUE BONDS ON A PARITY WITH THE BONDS HEREIN AUTHORIZED UPON COMPLIANCE WITH CERTAIN CONDITIONS; AND DELEGATING CERTAIN AUTHORITY TO THE GENERAL MANAGER.

Approved: June 8, 2016

LAKE WHATCOM WATER AND SEWER DISTRICT
RESOLUTION NO. 821
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* This Table of Contents and the cover page are provided for convenience only and are not a part of this resolution.

RESOLUTION NO. 821

A Resolution of the Board of Commissioners of Lake Whatcom Water and Sewer District, Whatcom County, Washington; approving certain additions, betterments and improvements to the District's combined system of water, drainage and sewerage; authorizing the issuance of water and sewer revenue and refunding bonds of the District in the aggregate principal amount of not to exceed \$[6,700,000] to pay the costs of said improvements and to refund certain outstanding water and sewer revenue obligations of the District; reserving the right to issue revenue bonds on a parity with the bonds herein authorized upon compliance with certain conditions; and delegating certain authority to the General Manager.

WHEREAS, Lake Whatcom Water and Sewer District, Whatcom County, Washington, formerly known as Water District No. 10 (the "District") operates a combined system of water and sewerage (hereinafter further defined as the "System"); and

WHEREAS, the System is in need of additions, improvements and betterments (hereinafter defined as the "Projects"); and

WHEREAS, the District is authorized pursuant to chapters 57.20 and 39.46 RCW to issue revenue bonds payable from the operating revenues of the System for the purpose of financing the costs of the Projects (herein further defined as the "Improvement Bonds"); and

WHEREAS, pursuant to Resolution No. 750, adopted on March 25, 2009, as amended (the "2009 Bond Resolution") the District has issued and currently has outstanding its Water and Sewer Revenue and Refunding Bonds, 2009, issued on May 5, 2009 in the original principal amount of \$6,080,000 and currently outstanding in the principal amount of \$4,615,000 (the "2009 Bonds") and which mature and bear interest as follows:

<u>Maturity Dates (November 1)</u>	<u>Principal Amounts</u>	<u>Interest Rates</u>
11/01/2016	\$ 250,000	4.000%
11/01/2017	265,000	4.000
11/01/2019	560,000	3.625
11/01/2021	600,000	3.875
11/01/2023	645,000	4.100
11/01/2025	700,000	4.250
11/01/2027	765,000	4.500
11/01/2029	830,000	4.600

; and

WHEREAS, the 2009 Bond Resolution authorizes the defeasance and redemption of the 2009 Bonds maturing on or after November 1, 2018 (the "2009 Refunding Candidates"), in whole or in part on any date on or after May 1, 2018, at a price of par plus accrued interest to the date of redemption; and

WHEREAS, the District now has outstanding a principal balance of \$2,292,804.36 on its Post Point Capital Contribution loan with City of Bellingham, Washington dated January 13, 2016 (the "2016 Loan"), which is payable in approximately equal annual installments of principal and interest (at an interest rate of 5.13%) on July 1 of each year with a final payment due on July 1, 2034; and

WHEREAS, the 2016 Loan permits the District to prepay its obligation in full or in part, without prepayment penalty, at any time; and

WHEREAS, the District has determined that the 2009 Refunding Candidates and the 2016 Loan may be refinanced with the proceeds of refunding bonds authorized herein (the "Refunding Bonds") in order to produce interest savings for the benefit of ratepayers; and

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WHEREAS, in order to finance the Projects, defease and refund all or a portion of the 2009 Refunding Candidates, prepay the 2016 Loan, and pay costs of issuance, the District is proposing to issue water and sewer revenue bonds on a parity of lien with the 2009 Bonds; and

WHEREAS, the 2009 Bond Resolution authorizes the District to issue revenue bonds in the future having a parity lien on net revenues of the System upon compliance with the terms and conditions set forth in the 2009 Bond Resolution, and said conditions will be met with respect to the bonds authorized herein (the "Bonds"); and

WHEREAS, the Board wishes to delegate authority to the District Representative to approve the sale of the Bonds to be underwritten by D.A. Davidson & Co., (the "Underwriter") and to approve for the Bonds, the dates, final principal amounts, interest rates, payment dates, redemption provisions, and other provisions for the Bonds, on the terms and conditions set forth in this resolution;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COMMISSIONERS OF LAKE WHATCOM WATER AND SEWER DISTRICT, WHATCOM COUNTY, WASHINGTON, as follows:

Section 1. Definitions. As used in this resolution the following definitions shall apply unless a different meaning clearly appears from the context:

Accreted Value means (1) with respect to any Capital Appreciation Bonds, as of any date of calculation, the sum of the amount set forth in the resolution authorizing their issuance as the amount representing the initial principal amount of such Capital Appreciation Bonds plus the interest accumulated, compounded and unpaid thereon as of the most recent compounding date, or (2) with respect to Original Issue Discount Bonds, as of the date of calculation, the amount representing the initial public offering price of such Original Issue Discount Bonds plus the



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	June 1, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL <i>Patrick Sorensen</i>		
MEETING AGENDA DATE:	June 8, 2016		
AGENDA ITEM NUMBER:	5.B.		
SUBJECT:	Sewer Connection Issue Follow-up		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL:	1.		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION <input type="checkbox"/>	FORMAL ACTION/ MOTION <input type="checkbox"/>	INFORMATIONAL/ OTHER <input checked="" type="checkbox"/>

BACKGROUND / EXPLANATION OF IMPACT

District legal counsel met with staff on June 1, 2016 to further discuss the “sewer connection” issue that we presented to the Board at the last meeting. Bob Carmichael is presently preparing a memorandum that will outline two options for discussion. Because of the Memorial Day holiday and short work week this memorandum will not be available until the beginning of next week. It will be e-mailed to you. Bob and staff will be prepared to address your questions at the meeting.

FISCAL IMPACT

Not applicable at this time.

RECOMMENDED BOARD ACTION

Discussion only at this time.

PROPOSED MOTION

Not applicable at this time.



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	June 1, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Debi Hill	MANAGER APPROVAL <i>Debi Hill</i>		
MEETING AGENDA DATE:	June 8, 2016		
AGENDA ITEM NUMBER:	5.C		
SUBJECT:	Monthly Budget Analysis		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL:	Monthly Budget Analysis through 5/31/2016		
TYPE OF ACTION REQUESTED	RESOLUTION <input type="checkbox"/>	FORMAL ACTION/ MOTION <input type="checkbox"/>	INFORMATIONAL/ OTHER <input checked="" type="checkbox"/>

BACKGROUND / EXPLANATION OF IMPACT

Information only

FISCAL IMPACT

n/a

RECOMMENDED BOARD ACTION

n/a

PROPOSED MOTION

n/a



OPERATING FUND - 401

MONTHLY BUDGET ANALYSIS

Description	Budget	YTD	
	2016	5/31/2016	42%
REVENUES			
401-343-40-10 Water Sales Metered (8.75% base rate increase) *	2,142,363	788,796	37%
401-343-50-11 Sewer Service Residential (2.5% rate increase) *	3,740,663	1,531,147	41%
401-343-50-19 Sewer Service Other	5,000	1,634	33%
401-343-81-10 Combined Fees	30,000	12,736	42%
401-359-90-00 Late fees	60,000	21,229	35%
401-361-11-00 Investment Interest	1,000	702	70%
401-369-10-00 Sale of scrap metal and surplus	-	-	
401-369-10-01 Miscellaneous	-	121	
401-379-10-20 Permits Operation portion (5 new connection permits)	10,000	13,334	133%
401-385-10-00 Sale of Capital Assets	-	-	
401-385-20-00 Insurance Recoveries	-	-	
401-387-10-00-80 Transfer in from LILID 18 Fund 480	60,000	43,987	73%
TOTAL REVENUES	6,049,026	2,413,686	40%

* Per Resolution 820 effective 11/9/2015
Scheduled annual rate increase

		Description		Budget	YTD	
		MONTHLY BUDGET ANALYSIS		2016	5/31/2016	
					42%	
OPERATING FUND - 401						
EXPENDITURES						
401-53X-10-10		Admin Payroll (2% cola plus step increases - 2016)	629,294	212,720	34%	
401-53X-10-20		Admin Personnel Benefits (Medical, Retirement etc)	207,280	76,594	37%	
401-53X-10-31		Gen Admin Supplies	21,000	14,305	68%	
401-53X-10-31-01		Meetings/Team building	1,500	637	42%	
401-53X-10-40		Web pay/Bank Fees (WA Fed; Xpress, Chase)	20,000	9,378	47%	
		Interfocal - Lake Whatcom Management Program	5,000			
		Interfocal - Invasive Species	50,000			
		Interfocal - Lake Whatcom Tributary Monitor	10,000			
401-534-10-41-00		Water Quality Assurance Programs (TOTAL)	65,000	3,701	6%	
		County Auditor Filing Fees (Simplified)	6,000			
		Data Bar (Statement processing)	25,000			
		Answering Service	2,000			
		Data Pro (Time clock system)	1,500			
		BIAS Financial Software	20,000			
		Web Check services	3,500			
		WA State Auditor	16,200			
		CPA (Internal audit and Financial statements)	3,000			
		Docuware/Web site maintenance and upgrade	5,000			
		Legal Counsel	50,000			
		3D - Computer support	20,000			
		Watchguard	1,000			
		Building security	1,500			
		Building custodial	7,200			
		Pest control	600			
		Landscaping service	4,500			
		South Whatcom Fire (hydrant maintenance)	2,000			
		GE Scada System Software Maintenance - Operations	7,500			
		Wilson Engineering	7,000			
		Camera Van Software	1,500			
		SCADA/PLC Support - Engineering/Operations	5,000			
		Cartograph - Engineering/Operations	8,000			
		Auto Desk (DLT) - Engineering	1,000			
		GIS Partnership	1,000			
		Rockwell - Engineering/Operations	500			
		IT Pipes	1,500			
		ESRI - ARC GIS	1,500			
		Inovise - Engineering	2,000			
		Master Meter	2,000			
		Generator Load Testing	22,000			
		Cyberlock software	1,000			
		Misc (Bid notices etc.)	1,000			
401-53X-10-41-01		Professional Services (TOTAL)	231,500	127,929	55%	
401-53X-10-42		Communication	46,000	19,304	42%	

Description		Budget	YTD	
MONTHLY BUDGET ANALYSIS		2016	5/31/2016	
401-53X-10-45	Admin Lease	2,000	450	23%
401-53X-10-46	Property Insurance	125,000	-	0%
401-53X-10-49	Admin Misc.	1,000	1,200	120%
401-53X-10-49-01	Memberships/Dues	12,000	12,178	101%
401-53X-10-49-02	WA State Dept of Revenue Taxes/Permits	191,500	83,156	43%
401-53X-40-43	Training & Travel	35,000	10,273	29%
401-53X-40-43-01	Tuition reimbursement	1,000	-	0%
401-53X-50-31	Maintenance Supplies	145,000	62,782	43%
401-53X-50-48	Operations Repair/Maint	65,000	34,369	53%
401-53X-50-49	Insurance Claims	5,000	-	0%
401-53X-60-41	Operations Contracted	10,000	1,640	16%
401-53X-60-47	Water City of Bellingham	40,000	14,686	37%
401-535-60-47	Sewer City of Bellingham Treatment Fee	600,000	300,114	50%
401-53X-80-10	Operations Payroll (2% cola plus step increases - 2016)	908,270	415,448	46%
401-53X-80-20	Operations Personnel Benefits (Medical, Retirement etc)	355,900	161,444	45%
401-53X-80-32	Fuel	30,000	5,485	18%
401-53X-80-35	Safety Supplies	12,000	827	7%
401-53X-80-35-01	Safety Supplies Boots	2,500	304	12%
401-53X-80-47	General Utilities	195,000	97,760	50%
401-53X-80-49	Laundry	3,000	1,263	42%
401-591-35-77	Post Point Principal Payments	73,213	-	0%
401-592-35-83	Post Point Interest Payments	120,426	-	0%
	OPERATING EXPENDITURES	4,154,383	1,667,937	40%
TRANSFERS				
	Transfers Out to System Reinvestment Fund 420	837,000	91,000	
	Transfers Out to DW/SRF Projects Fund 440 (Division 22 Reservoir)	828,150	-	
	Transfers Out to DW/SRF Projects Fund 440 (Loan payment)	139,700	159,650	
	Transfers Out to 2009 Bond Debt Service Fund 450	443,050	443,050	
	Transfers Out to Water Loan Debt Service Fund 470	53,870	53,870	
	TOTAL EXPENDITURES	6,456,153	2,415,507	
OPERATING FUND				
	OPERATING REVENUES	6,049,026	2,413,686	
	EXPENDITURES	(6,456,153)	(2,415,507)	
	CASH/INVESTMENTS BALANCE CARRYOVER	1,900,000	1,994,345	
	OPERATING RESERVES	(800,000)	(1,000,000)	
	CASH/INVESTMENTS BALANCE	692,873	992,524	

		Description	Budget	YTD
		MONTHLY BUDGET ANALYSIS	2016	5/31/2016
				42%
SYSTEM REINVESTMENT FUND - 420				
420-343-40-19		DEA Permits	-	300
420-379-10-30		Permits Capital Portion (5 new connection permits)	40,000	24,478
420-379-10-40		Latecomer Fees	-	4,102
420-397-10-00		Transfers In from Operating Fund 401	837,000	91,000
		TOTAL REVENUES	877,000	119,880
		Active Projects to be completed in 2016	657,000	
	C 12-07	Reservoir Drains to Daylight	13,000	
	C 12-14	Water System Improvements	11,000	
	C 14-05	Strawberry Point	452,498	2,821
	C 14-12	Facility Improvements	10,000	8,845
	C 15-02	SVWTP Chlorine Analyzer	2,500	
	C 15-03	SVWTP Clearwell Overflow	10,000	
	C 15-04	Reservoir Site Security	5,000	
	C 15-05	Reservoir Condition Assessment	35,018	38,971
	C 15-06A	2015 Smoke Testing	1,649	1,649
	C 15-06B	Whatcom Falls MH Repair	97,482	6,930
	C 15-08	Northshore Road Sewer Service Area (complete)	2,950	
	C 15-09	Water Use Efficiency Update (complete)	15,750	11,622
		New 2016 Capital Projects (see CIP detail - 2016)	220,000	
	C 16-02	Asset Management Tools (Cartograph)	30,000	42,203
	C 16-03	Back up Generators and Generator for Marine-Tomb	40,000	97
	C 16-04	LW Interceptor Valve and Detention Basis	20,000	
		Electrical Design for Fault Tolerant Control System (did not need)	-	-
	C 16-05	Water System Plan Update	100,000	
	C 16-06	Replace SCADA Hardware	20,000	7,328
	C 16-07	North Shore Sampling	5,000	97
	C 16-08	SVCA Culverts	5,000	
	C 16-11	Country Club pump station pre-design		
		TOTAL EXPENDITURES	876,847	120,563
SYSTEM REINVESTMENT FUND				
		REVENUES	877,000	119,880
		EXPENDITURES	(876,847)	(120,563)
		CASH/INVESTMENTS BALANCE CARRYOVER	-	722
		CASH/INVESTMENTS BALANCE	153	39

		Description	Budget	YTD
		MONTHLY BUDGET ANALYSIS	2016	5/31/2016
				42%
SEWER/STORM WATER CONTINGENCY FUND - 425				
425-361-11-00		Investment Interest	5,020	5,783
425-397-10-00		Transfers In from ULID 18 Fund 490	-	-
		Transfers In from Bond Reserve Fund 490	-	-
		TOTAL REVENUES	5,020	5,783
425-535-10-41		Stormwater Comp Plan (See Active Projects C1315 PH2)	-	-
425-535-10-89		Investment Service Charges	200	65
425-594-38-63		Water/Sewer Systems	-	-
	C 16-09	SV Sewer Pump Station Emergency Repairs	-	-
425-594-38-64		Machinery/Equipment	200	65
		TOTAL EXPENDITURES	200	65
SEWER/STORM WATER CONTINGENCY FUND				
		REVENUES	5,020	5,783
		EXPENDITURES	(200)	(65)
		CASH/INVESTMENTS BALANCE CARRYOVER	926,910	926,843
		CASH/INVESTMENTS BALANCE (CAPITAL RESERVES SEWER)	931,730	932,561

Description		Budget	YTD
MONTHLY BUDGET ANALYSIS		2016	5/31/2016
			42%
2009 CAPITAL BOND PROJECTS FUND (RESTRICTED) - 430			
430-382-20-00	2009 Bond Proceeds		
	TOTAL REVENUES	-	-
430-594-38-63	Capital Outlay - Water/Sewer Systems (Unclaimed Retainage)	62,683	
	TOTAL EXPENDITURES	62,683	-
CAPITAL BOND PROJECTS FUND			
	REVENUES	-	-
	EXPENDITURES	(62,683)	-
	CASH/INVESTMENTS BALANCE CARRYOVER	62,683	62,683
	CASH/INVESTMENTS BALANCE	0	62,683
2016 CAPITAL BOND PROJECTS FUND (RESTRICTED) - 431			
431-382-20-00	2016 Bond Proceeds	-	
	TOTAL REVENUES	-	-
431-594-38-63	Capital Outlay - Water/Sewer Systems	-	
	TOTAL EXPENDITURES	-	-
CAPITAL BOND PROJECTS FUND			
	REVENUES	-	-
	EXPENDITURES	-	-
	CASH/INVESTMENTS BALANCE CARRYOVER	-	-
	CASH/INVESTMENTS BALANCE	-	-

		Description	Budget	YTD
		MONTHLY BUDGET ANALYSIS	2016	5/31/2016
				42%
DWSRF PROJECTS FUND - 440				
440-333-66-46-40		Division 22 Reservoir (Permits and Design)	994,850	-
440-333-66-46-41		Geneva AC Mains (Permits, Design and Construction)	-	354,408
440-397-10-40		Transfers In from Operating Fund 401	139,700	11,876
440-397-10-41		Transfers In from Operating Fund 401	828,150	147,774
		TOTAL REVENUES	1,962,700	514,058
440-591-34-77-40		Principal Loan Division 22 Reservoir		
440-591-34-77-41		Principal Loan Geneva AC Mains	103,700	
440-592-34-83-40		Interest Loan Division 22 Reservoir		
440-592-34-83-41		Interest Loan Geneva AC Mains	36,000	
440-594-34-62		Division 22 Reservoir (Permits and Design)	1,823,000	102,580
440-594-34-63		Geneva AC Mains (Permits, Design and Construction)	-	8,074
		TOTAL EXPENDITURES	1,962,700	110,654
DWSRF PROJECTS FUND				
		REVENUES	1,962,700	514,058
		EXPENDITURES	(1,962,700)	(110,654)
		CASH/INVESTMENTS BALANCE CARRYOVER	-	(380,594)
		CASH/INVESTMENTS BALANCE	-	42,810
Expenditures offset by draws as projects progress.				

Description		Budget	YTD
MONTHLY BUDGET ANALYSIS		2016	5/31/2016
BOND DEBT SERVICE FUND - 450			42%
450-361-11-00	Investment Interest		
450-397-10-00	Transfers In from Operating Fund 401	443,050	443,050
	TOTAL REVENUES	443,050	443,050
450-535-10-41	Bond Admin Fee	100	
450-591-35-72	2009 Redemption of Long Term Debt	250,000	
450-592-35-83	2009 Bond Interest Payments	192,950	96,475
450-591-35-72-01	2016 Redemption of Long Term Debt		
450-592-35-83-01	2016 Bond Interest Payments		
	TOTAL EXPENDITURES	443,050	96,475
BOND DEBT SERVICE FUND			
	REVENUES		
	EXPENDITURES	443,050	443,050
	CASH/INVESTMENTS BALANCE CARRYOVER	(443,050)	(96,475)
	CASH/INVESTMENTS BALANCE	-	346,575

		Description	
		Budget	YTD
		2016	5/31/2016
			42%
BONDS RESERVE FUND (RESTRICTED) - 460			
460-361-11-00	Investment Interest	10,000	
460-397-10-00	Transfers In from Operating Fund 401		
	TOTAL REVENUES	10,000	-
460-535-10-89	Investment Service Charges	200	65
	TOTAL EXPENDITURES	200	65
BONDS RESERVE FUND (RESTRICTED)			
	REVENUES	10,000	-
	EXPENDITURES	(200)	(65)
	CASH/INVESTMENTS BALANCE CARRYOVER	513,400	513,428
	CASH/INVESTMENTS BALANCE	523,200	513,363

		Description	Budget	YTD
		MONTHLY BUDGET ANALYSIS	2016	5/31/2016
				42%
WATER LOANS DEBT SERVICE FUND - 470				
470-361-11-10		Investment Interest	-	
470-397-10-00		Transfers In from Operating Fund 401	53,870	53,870
TOTAL REVENUES			53,870	53,870
470-591-34-77-72		Redemption of Long Term Debt Loan 119	-	
470-591-34-77-73		Redemption of Long Term Debt Loan 064	47,252	47,252
470-592-34-83-71		Debt Service Interest Loan 44	-	
470-592-34-83-72		Debt Service Interest Loan 119	-	
470-592-34-83-73		Debt Service Interest Loan 064	6,615	6,615
TOTAL EXPENDITURES			53,867	53,867
WATER LOANS DEBT SERVICE FUND				
REVENUES			53,870	53,870
EXPENDITURES			(53,867)	(53,867)
CASH/INVESTMENTS BALANCE CARRYOVER			-	2
CASH/INVESTMENTS BALANCE			3	5



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	June 1, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Bill Hunter and Staff	MANAGER APPROVAL <i>Paul Hunter</i>		
MEETING AGENDA DATE:	June 8, 2016		
AGENDA ITEM NUMBER:	5.D.		
SUBJECT:	Summary of Existing District Projects		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL:	1. June 2016 Summary of Existing District Projects		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION <input type="checkbox"/>	FORMAL ACTION/ MOTION <input type="checkbox"/>	INFORMATIONAL/ OTHER <input checked="" type="checkbox"/>

BACKGROUND / EXPLANATION OF IMPACT

Information only

FISCAL IMPACT

n/a

RECOMMENDED BOARD ACTION

Review and discuss

PROPOSED MOTION

n/a

LAKE WHATCOM WATER AND SEWER DISTRICT Summary of Existing District Projects

Meeting Date	Effective Date			Prepared by	
June 8, 2016	June 2, 2016			LE/BH	
Status of Water and System Capacities					
	South Shore ID# 95910	Eagleridge ID #08118	Agate Heights ID# 52957	Johnson Well ID# 04782	
DOH Approved #	3935	85	54	2	
Connected ERUs	3802	68	44	2	
Remaining Capacity (ERUs)	133	17	10	0	
Commitments – Not yet connected					
Permitted ERUs Under Construction	4	0	0	0	
Pre-paid Connection Certificates and Expired Permits	11	7	5	0	
Water Availabilities (trailing 12 months)	28	0	0	0	
Subtotal	43	7	5	0	
Available ERUs					
	90	10	5	0	

Completed Capital Projects in 2016

C1502 | Sudden Valley Water Treatment Plant Spare Acidification Unit

State Required Report Status

Reporting	Name of Report & Preparer	Completed						When Due
		Jan	Feb	Mar	Apr	May	June	
MONTHLY	Chlorination Report Agate Heights (Kevin)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Postmarked by 10 th of month
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Surface Water Treatment Rule Report (SVWTP) (Kevin)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Postmarked by 10 th of month
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Department of Revenue (Debi)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Due end of following month
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ANNUALLY	Community Right to Know (Hazardous Materials) (Rich)	January 25, 2016						Due by March 31st
	WA State Cross Connection Report (Rich)	May 5, 2016						Due Annually May
	Consumer Confidence Reports (Kevin)	May 2016						<ul style="list-style-type: none"> • Geneva- 5/16 • Sudden Valley 5/16 • Eagleridge – 5/16 • Agate Hghts – 5/16
	Hazardous Waste Activity Report (Rich)	February 29, 2016						Due by March 31st
	OSHA 300 Log (Rich)	Completed January 27, 2016						Due by Feb 1st

State Required Report Status			
Reporting	Name of Report & Preparer	Completed	When Due
ANNUALLY	Water Use Efficiency Performance Report (Kevin)		Due by July 1st
	Washington State Financial Report (Debi)		Due by May 31st
	Report Number of Sewer ERUs to City of Bellingham	Completed 1/15/2016	Due by January 15th
OTHER	CPR/First Aid Training (Rich)	Completed 6/10/2015	Due Biennially Next Due 2017
	Flagging Card Training (Rich)	Completed 7/22/2013	Due Triennially Next Due 2016

SAFETY PROGRAM SUMMARY

Completed by Rich Munson

Summary of Annual Safety Training			
	Enrollments	Completions	% Complete
Engineering - Managers	38	17	100%
Engineering - Staff	19	18	100%
Field Crew	161	132	100%
Field Crew - Managers	26	0	100%
Office Managers	38	0	28%
Office - Staff	48	29	100%

Weekly Crew Safety Meetings

Safety meetings for the field crew take place every Tuesday or Wednesday at 5:00 p.m.

Dates of Safety Committee Meetings

January 14, 2016	
February 11, 2016	
March 9, 2016	
April 11, 2016	
May 12, 2016	
June 9, 2016	

Summary of Work-Related Injuries & Illnesses

Year	2016	2015	2014	2013
Total Number of Work Related Injuries Defined as a work related injury or illness that results in:		1	1	11
<ul style="list-style-type: none"> • Death • Medical treatment beyond first aid • Loss of consciousness • Significant injury or illness diagnosed by a licensed health care professional • Days away from work (off work) • Restricted work or job transfer 	0			
Total Number of Work Related Injuries	0	1	1	11

Defined as a work related injury or illness that results in: <ul style="list-style-type: none"> • Death • Medical treatment beyond first aid • Loss of consciousness • Significant injury or illness diagnosed by a licensed health care professional • Days away from work (off work) • Restricted work or job transfer 				
Total Number of Days of Job Transfer or Restriction (Light duty or other medical restriction)	0	0	0	5
Total Number of Days Away From Work (At home, in hospital, not at work)	0	0	0	13

Developer Extension Agreements			
D1601	Geneva Woods Developer Extension Agreement		
SCOPE	Water and sewer improvements for 4 water and sewer connections.		
SIGN DATE		EXPIRATION DATE	
Prior to Commencing Construction		Prior to Final Acceptance	
<input type="checkbox"/> 1. District Engineer approves design <input type="checkbox"/> 2. Reimbursement of District Engineer review costs <input type="checkbox"/> 3. Copy of insurance policy <input type="checkbox"/> 4. Pay guarantee deposit <input type="checkbox"/> 5. Copies of recorded easement <input type="checkbox"/> 6. Copies of permits <input type="checkbox"/> 7. Pay conformance deposit <input type="checkbox"/> 8. Payment and performance bond <input type="checkbox"/> 9. Pay 25% general facilities fees <input type="checkbox"/> 10. Pays initial facilities inspection deposit <input type="checkbox"/> 11. District issue Notice to Proceed w/Construction		<input type="checkbox"/> 1. District inspects & approves facilities as complete. <input type="checkbox"/> 2. Record drawings <input type="checkbox"/> 3. Easements and title insurance <input type="checkbox"/> 4. Maintenance Bond <input type="checkbox"/> 5. Bill of Sale <input type="checkbox"/> 6. Latecomers Fees <input type="checkbox"/> 7. Supplemental, processing, or administrative fees <input type="checkbox"/> 8. Deliver water meters to District	
Tasks/Notes:			
<ul style="list-style-type: none"> • 4/11/2016 Board approves DEA Application for 5 lots. • 4/14/2016 District Legal Counsel reviewing master developer extension agreement prior to delivering to the developer. • 5/25/2016 Board approved addition of 6th lot to DEA. Staff and Legal Counsel preparing DEA documents. 			

Lake Whatcom Water & Sewer District
Capital Improvement Projects Staff Report

C1207 Reservoir Overflow Drains to Daylight

Route reservoir overflow drains to daylight.

C1207-ENG Project Administration and Engineering

- 4/2/2014 Staff working with G&O to look at overflow/drain line improvements for Division 22 as part of project C1401.
- 4/6/2016 Staff ordering materials for Geneva Reservoir. Staff documenting outfall and overflow elevations at Division 7 and 30 which probably will not need to be daylighted.
- 5/3/2016 Purchase order issued for fabrication of HDPE air gap assembly.
- 5/24/2016 District installed tideflex check valves in ss manhole for Div 7 and 30 reservoir overflow outlets
- 6/2/2016 Received DOH email confirmation that Division 7 and 30 Reservoir overflow outlets are fine - there is more than 34 vertical feet from overflow to ss manhole rim.

C1207-CON Construction Contract

C1214 Dead End Blow Offs

Install blow offs at water main dead ends.

C1214-ADM Project Administration

- 11/28/2012 Crews researching and inspecting dead end mains. Compiling list of dead ends with proposed installation sketches.
- 1/5/2016 Staff and field crew researched, compiled, and prioritized a list of approximately 32 sites that need modifications. The top 15 sites are scheduled and budgeted to be completed in 2016. Work will be performed by District crews.
- 3/1/2016 Installation of fire hydrant stortz adapters in vicinity of Geneva school complete.

C1306 LLR Sewer Air-Vac Valve Replacement

Replace iron/steel air-vac valves with nylon valves.

C1306-ADM Project Administration

- 4/3/2013 Staff solicited quotes from local suppliers. Ordered and received 9 valves from HD Supply (low quote). There are a total of 14 valves on the force main. Remaining 5 valves will be budgeted and purchased in 2014. Crews will begin installing new valves this spring.
- 10/2/2013 Crews have replaced a couple valves that failed on other forcemains using this inventory.

C1401 Division 22 Reservoir

Add new Division 22 Reservoir. Funded by DWSRF Loan. Loan Amount = \$994,850 at 1.5% for 20 years + 4 years for construction.

C1401-PH1 G&O - Predesign, Permitting

- 10/2/2013 DWSRF loan contract will be executed by State on 10/8/2013. Staff will work with Grey and Osborne to prepare scope of work and fee. Scope/fee will be presented to Board tentatively at 11/13/2013 meeting for review/approval.
- 11/6/2013 Loan contract is executed. Execution date was 10/9/2013.
- 1/29/2014 Board approved scope of work and fee for Predesign work.
- 2/4/2014 Staff and G&O compiling AE agreement and exhibits for execution.
- 3/6/2014 Signed AE agreements received from consultant. District attorney doing final review. Agreements will then be executed by Patrick.
- 4/1/2014 G&O and staff had project kick-off meeting. G&O compiling list of information/data to begin predesign work. Topo survey will begin in a couple weeks.
- 5/7/2014 Consultant has performed topographic/boundary survey. Staff compiling water system data needed for consultants predesign work.

- 8/5/2014 G&O working on reservoir sizing after receiving water system data/info from staff. DOH cultural review in progress.
- 8/23/2014 Published Notice to the Public of Intent to Request Release of Funds in Bellingham Herald. This is required as part of the cultural review process. Have to wait 30 days before beginning test pits or geotechnical borings.
- 9/23/2014 Predesign progress meeting with G&O and District staff. Staff reviewed first 3 chapters of predesign report. G&O will update few minor items and continue final predesign tasks. Set goal to present predesign report to at 1st Board meeting in November.
- 3/3/2015 Staff provided G&O remaining data and info in February to complete the predesign report. G&O is scheduled to make a presentation to the Board at the 3/25/2015 meeting.
- 3/25/2015 G&O presented predesign report to board. There was overall consensus with the plan. Staff and G&O will proceed with permitting and coordination with SCVA.
- 4/30/2015 District submitted pre-application meeting packet to Whatcom County. Pre-App meeting scheduled for 11am on 5/21/2015.
- 5/21/2015 Pre-Application Meeting at Whatcom County - 11am. District and G&O attended. Reviewed permitting requirements with County staff.
- 6/1/2015 Received County's Pre-Application Meeting Findings. Staff and G&O working on Conditional Use Permit application. Staff will coordinate with County for onsite critical areas review (look for wetlands).
- 7/1/2015 Received comments from DOH on project report. G&O and staff will respond to comments. G&O and staff are working on the conditional use permit application.
- 7/29/2015 Conditional Use Permit and Variance Permit applications submitted to Whatcom County.
- 8/4/2015 Staff working with G&O on scope of work for next project phase - detailed design, plans, specs, estimates, and bidding.
- 9/2/2015 G&O working to address DOH project report comments.
- 9/2/2015 Whatcom County is processing Condition Use and Variance Permit application.
- 10/8/2015 County still processing CUP and Variance permits. G&O is working with State DOH to address minor comments on pre-design report.
- 12/9/2015 Hearing for CUP and Variance at 130pm in County Council Chambers.
- 12/30/2015 A Memorandum in Support of CUP and Variance Applications and a Declaration by G&O were submitted to the Whatcom County Hearing Examiner. The documents were prepared by Bob Carmichael with assistance from G&O and District staff.

C1401-PH2 Design thru Bidding

- 9/30/2015 2nd Advertisement for Bids published in Bellingham Herald and Seattle DJC
- 11/3/2015 G&O working on updated construction cost estimates and steel vs concrete technical memorandum.
- 11/24/2015 Technical memo review at Board meeting. Verified steel reservoir as original decided in the pre-design report is still the preferred alternative.
- 12/2/2015 G&O working on detailed design and plans.
- 1/5/2016 G&O continues development of detailed plans and specs.
- 2/5/2016 50% plan review with G&O and District staff/crew.
- 2/25/2016 G&O submitted revised pre-design report with updated ERU tables and responses to DOH review comments. G&O working on detailed plans and specs.
- 3/29/2016 90% plan and spec review done. Plans submitted to DOH for review. G&O working on final documents.
- 3/31/2016 Conference call with DOH indicates pre-design report for requested capacity will be approved. DOH is working on approval letter.
- 4/6/2016 G&O working on final documents. Pending completion of Commerce Dept and DOH reviews, bid advertisement dates will be set.
- 5/5/2016 1st Advertisement for Bids published in Bellingham Herald and Seattle DJC
- 5/12/2016 Advertisement for Bids published in Bellingham Herald and Seattle DJC
- 5/18/2016 Pre-bid meeting 10am
- 6/2/2016 Bid Opening 11am
- 6/8/2016 Tentative Contract Award at Board Meeting

C1402 Geneva Area AC Mains

Replacement of AC water mains in Geneva area. Funded by DWSRF Loan. Loan Amount = \$2,398,750 at 1.5% for 20 years + 4 years for construction.

C1402-PH1 Wilson - Predesign, Permitting, Design, Bidding

- 10/2/2013 DWSRF loan contracts will be executed by State on 10/8/2013. Staff working with Wilson Engineering to develop scope of work and fee. Scope/fee will tentatively be presented to Board at 11/13/2013 meeting.

- 11/6/2013 Loan contract is executed. Execution date was 10/7/2013.
- 12/4/2013 Staff working with Wilson to develop Scope of Work and Fee that includes DWSRF loan contract requirements. Scope/Fee will be presented at 12/11/2013 Board Meeting for approval.
- 12/11/2013 Board authorized GM to execute agreement with Wilson.
 - 1/2/2014 AE agreement executed. Work includes predesign, permitting, topographic surveying, design, and bidding.
 - 1/7/2014 Site walk-thru with District staff and Wilson engineers and surveyors.
 - 1/9/2014 Conference call with DWSRF project manager, Cathy Brockmann. Key District and Wilson staff attended. Meeting covered basic loan contract requirements and setup coordination between parties.
 - 2/4/2014 Wilson preparing preliminary drawings for conceptual water main locations/design. Topographic surveying to follow, when desired alignments are identified.
 - 3/6/2014 Wilson performing preliminary engineering and topographic surveying.
 - 4/2/2014 Wilson continues preliminary engineering and topo surveying work.
 - 4/22/2014 Wilson and District staff meet to coordinate project activities. Topographic surveying and predesign work is in full swing.
 - 6/3/2014 Wilson continues topographic surveying, mapping, and pre-design.
 - 7/9/2014 Wilson presents predesign/project report to Board at meeting. Report is essentially done but will be finalized after receiving public comments after a public meeting tentatively scheduled in September 2014.
 - 8/5/2014 Wilson continues topographic surveying, mapping, and development of preliminary plan set to be used at public meeting. DOH cultural review in progress.
 - 8/23/2014 Published Notice to the Public of Intent to Request Release of Funds in Bellingham Herald. This is required as part of the cultural review process. Have to wait 30 days before beginning any excavations for test pits or geotechnical borings.
 - 9/30/2014 Neighborhood workshop meeting held at District office. Staff sent invitations to properties adjacent to project limits.
 - 11/4/2014 Project / predesign report completed by Wilson. District staff will send to DOH for review/approval. Wilson and District staff continuing to work on detailed plans.
 - 11/6/2014 Project report was mailed to DOH for review/approval.
 - 12/3/2014 DOH reviewed project report and will provide letter to acknowledge they received it to comply with the DWSRF loan requirements. No issues with report.
 - 12/4/2014 Staff, Wilson, and Bob Carmichael are reviewing and updating the District's front end contract documents. Front end documents will be sent to state for review/approval mid-December following completion of updates.
 - 1/6/2015 Staff and Bob Carmichael met to review front end contract documents. Updates almost complete.
 - 2/20/2015 Wilson met with County road inspector to discuss and coordinate right-of-way encroachment permits. DOE was notified of the project for their general permit process related to erosion and sedimentation control. DOH approved the plans and technical specs.
 - 2/26/2015 The project was advertised in the Bellingham Herald and Seattle DJC, two mandatory prebid meetings were held, 5 bids were received and opened. Wilson and staff review bids and criteria. A recommendation to award is planned for the 3/11/2015 board meeting.
 - 3/11/2015 Board selected bid alternate for ductile iron pipe and awards contract to Tiger Construction. Staff will proceed with executing the contract documents.
 - 3/31/2015 Wilson is coordinating permits with agencies. DOE general stormwater permit was advertised in Bellingham Herald on 3/22/2015 and 3/30/2015. DOE will issue permit after 30-day comment period on 4/30/2015. County encroachment permits will be ready to pick up soon. County Land Disturbance Permit has been approved but cannot be released until June 1.
 - 4/1/2015 Staff and Wilson compiling bonds, insurance, etc for complete set of executed contract documents.

C1402-PH2 Wilson - Services During Construction

- 4/29/2015 Board authorized General Manager to execute amendment to Wilson agreement for services during construction.
- 6/3/2015 Staff and Wilson are in process of executing amendment documents.
- 10/8/2015 Staff reviewing proposed amendment for additional time needed for inspection services that were required during construction.
- 1/5/2016 Wilson is preparing record drawings.

C1402-CON Construction Contract - Tiger Construction Ltd.

- 4/10/2015 Substantial Completion Date (includes Change Order 8)
- 4/22/2015 Pre-Construction Meeting with Tiger, Wilson, and Dept of Commerce
- 4/29/2015 District mailed 36 property owners nearby pipe bursting and directional drill sites notifying them construction to begin Mid-May.
- 5/4/2015 District mailed 200+ property owners located within 100-feet of the pipe alignment an informational card directing them to the District website for more details and notifying them of the neighborhood meeting on 5/13/2015.
- 5/13/2015 Neighborhood informational meeting at District office 530pm - 630pm.

- 5/18/2015 Tiger anticipates starting pipe bursting and directional drill sections.
- 6/1/2015 Trenching begins.
- 6/3/2015 Tiger is in full speed construction mode. They have completed the pipe bursting section and will be transferring services to that new line. They are working on the two directional drilling locations and open trench installation on Lakeview street.
- 7/1/2015 Tiger is about 50% done installing main lines. New service lines are about 33% installed. Several new mains have been pressure tested, disinfected, coliform tested and in service.
- 8/4/2015 Tiger is about 80% done installing main lines (main lines should be done mid-August). New service lines are about 50% installed. First batch of asphalt patching occurring week of 8/3/2015.
- 9/2/2015 Tiger is 100% done installing main lines. New services lines are about 70% installed. Paving and restoration still in progress.
- 10/8/2015 Main lines are done, service lines are done. Tiger is working on restoration and asphalt patching.
- 10/19/2015 Substantial Completion Date (include Change Order 8)
- 11/3/2015 Tiger has completed all punch list items except for asphalt patching corrections on Euclid and Lakeview.
- 11/18/2015 Final Completion Date (includes Changer Order 8)
- 12/2/2015 All work has been completed except for asphalt patch correction on Euclid north of Lakeway. Patch quality was not accepted by County. Tiger will make pavement corrections spring 2016. Contract will be held open until this work is complete.
- 1/5/2016 Asphalt patch correction on Euclid will occur in April. Tiger, Whatcom Builders, and County are all in agreement with this schedule.
- 4/20/2016 Euclid asphalt correction finished. Still need to install gravel shoulder.
- 5/3/2016 Gravel shoulder installation by contractor.
- 5/25/2016 Board accepts project as complete. Staff preparing close-out paperwork.

C1405 Strawberry Pt. Sewer PS Improvements

Replace Strawberry Point Sewer Pump Station.

C1405-PH1 RH2 - Predesign

- 2/4/2014 Staff and RH2 working on scope of work and fee estimate. Scope/fee will be on the 2/12/2014 Board meeting agenda.
- 2/12/2014 Board authorizes phase 1 - predesign work.
- 2/26/2014 Board authorizes a revision to phase 1 not-to-exceed amount.
- 3/6/2014 Signed AE agreements received from consultant. District attorney doing final review. Agreements will then be executed by Patrick.
- 3/6/2014 Staff collecting technical information for RH2 to begin preliminary design.
- 4/2/2014 RH2 reviewing pump station run time data for last couple years. Staff to provide detailed on/off data for selected key dates.
- 5/7/2014 Topographic survey is done. RH2 continuing predesign work.
- 8/5/2014 County pre-application submitted. Waiting to hear back from County on meeting date.
- 8/12/2014 RH2 to meet with District crew to go thru design criteria. Information will be documented in pre-design report which is in progress.
- 9/24/2014 RH2 presents predesign report to Board of Commissioners. Staff and RH2 will continue with project as described in predesign report.
- 10/15/2014 RH2 and District staff meet with County Public Works Roads and Stormwater department heads. Meeting was to coordinate county road/stormwater projects with District's pump station project.
- 10/29/2014 RH2 submits substantial shoreline development permit to county.
- 11/25/2014 As part of the shoreline permitting process, County sent notices out to properties within 1000 feet of project. Written comments are due December 26, 2014.

C1405-PH2 RH2 - Design

- 12/10/2014 Board of Commissioners authorize GM to execute contract amendment with RH2 for design phase.
- 12/11/2014 Contract amendment executed with RH2 for design phase.
- 1/28/2015 RH2 working thru detailed design, plans and specs with District staff.
- 3/4/2015 Shorelines permit hearing. Hearing examiner will approved the permits. RH2 working on detailed design. 60-percent review plans will be ready 3-18-2015 for staff.
- 3/26/2015 Staff met with RH2 to review 60% plans and specs. RH2 will make some minor revisions and submit preliminary plans to County engineering as part of the right-of-way encroachment permit application. RH2 is proceeding with detailed design with the target of advertising for bids mid-April.
- 4/27/2015 District staff reviewed 90% plans and specs.
- 5/1/2015 Advertisement for Bids published in Bellingham Herald and Seattle DJC.
- 5/13/2015 Non-Mandatory Pre-Bid Meeting at 2pm.

- 5/19/2015 Bid Opening - 1pm
- 5/27/2015 Bid prices came in too high. Board rejected all bids. Staff will make some value engineering revisions and rebid January 2016.
- 7/1/2015 Staff reviewing RH2 draft agreement amendment for value engineering and rebid in 2016.
- 8/4/2015 Agreement amendment in process of being executed. Design revisions will begin soon.
- 11/3/2015 District is reviewing updated plans.

C1405-PH3 RH2 - Redesign and Rebid

- 8/11/2015 Advertisement for Bids published in Bellingham Herald.
- 9/2/2015 RH2 site design to eliminate need for temporary shoring.
- 10/8/2015 RH2 submitted revised plans to District for review.
- 12/2/2015 District reviewed plans. RH2 finalizing plans and bid documents to be ready to advertise January 2016.
- 1/6/2016 Advertisement for Bids published in Bellingham Herald
- 2/3/2016 Non-mandatory pre-bid meeting at 2pm at District office.
- 2/10/2016 Bid opening at 105pm at District office
- 2/24/2016 Contract awarded to Tiger construction at board meeting
- 2/29/2016 Notice of Intent to award issued to contractor. Bonds, insurance, and contract are in process of being executed.

C1405-PH4 RH2 - Services During Construction

C1405-CON Construction Contract - Tiger Construction Ltd.

- 3/31/2016 Pre-construction meeting with RH2, Tiger Construction, and District Staff.
- 4/6/2016 District staff reviewing submittals and requests for information from Tiger.
- 5/3/2016 Submittal reviews complete. Pumps have been ordered. Contractor ordering materials.
- 6/2/2016 Tiger onsite setting up temporary bypass pump system. System testing to follow.

C1407 Low Sewer PS VFD

Replace rotophase with VFD.

C1407-ADM

- 1/5/2015 Staff obtaining quotes for VFD's from vendor. District electrician reviewing electrical panel space requirements and proposed VFD dimensions.
- 1/22/2015 VFD's received by District. District crew will install in pump station.

C1412 Facility Improvements

Includes several small facility improvements at various sites. Work includes: Irrigation conduits and boxes at Admin building under asphalt parking and concrete walks, installation of VHF radio at SVWTP, installation of glass sliding door in shop lunch room, laser level, and industrial labeler for asset management and safety programs.

C1412-ADM

- 4/2/2014 Staff obtaining quotes from landscape companies for installation of irrigation system.
- 12/15/2015 Staff obtaining quote to install VHF radio at SVWTP.
- 1/4/2016 Ordered industrial labeler for asset management and safety programs.
- 2/2/2016 Sent purchase order to NW Communications, Inc to install radio at SVWTP. Work will be coordinated with District electrician.
- 2/23/2016 Communication radio installation completed at SVWTP.

C1503 SVWTP Clearwell Overflow

Redirect clearwell emergency overflow piping from backwash tank to daylight.

C1503-ADM

- 3/26/2015 Staff began topography survey, field measurements, mapping, and research of buried pipe and structures. Design of a solution is in progress.

- 5/4/2015 Staff developed plan and profile for proposed improvements and will be coordinating with SVCA for work to occur this summer. It is anticipated the work will be done by District crews and equipment.
- 8/25/2015 Staff obtained SVCA encroachment permit to perform installation. Crew will begin potholing to very elevations at critical pipe crossings. Installation will begin soon after.
- 10/8/2015 Crew is verifying elevations. Materials are being ordered..
- 1/5/2016 Materials received. Work will begin mid to late spring during a dryer weather window. Installation will be performed by District crew.
- 4/6/2016 Staff called in ungerground utility locates in preparation to schedule work to occur.
- 5/3/2016 Work ready to begin pending dryer weather.

C1504 Reservoir Site Security

Install site security system as 1 reservoir site. Pilot project to evaluate equipment, configuration, and telemetry options.

C1504-ADM

- 5/4/2015 District staff have done initial research on available security camera systems and motion detection. List of equipment and options is in development. Initial pilot site will be the SVWTP.

C1505 Reservoir Condition Assessment

Reservoir condition and seismic assessment. Summarize state of District's reservoirs, evaluate seismic risks, and determine future capital improvements and priorities.

C1505-ADM

- 8/4/2015 Staff developing Request for Proposals for qualified seismic structural condition assessment of steel reservoirs.
- 8/19/2015 Request for Proposal published in Bellingham Herald and Seattle Daily Journal of Commerce. Two engineering firms have toured the sites to date.
- 9/2/2015 Two engineering firms toured reservoirs to date. There are at least 5 interested firms.
- 9/16/2015 Proposals due at 4pm.
- 10/8/2015 District received proposals from 5 firms. Staff selection committee will meet 1pm 10/15/2015 to discuss and score proposals.
- 10/28/2015 Board selects BHC Consultants LLC for the Reservoir Seismic Vulnerability Assessment.
- 11/3/2015 Staff working BHC to develop scope/fee
- 12/2/2015 Board authorized scope and fee at last board meeting. Staff is working to execute the AE agreement with BHC and begin work.
- 12/15/2015 BHC site visit for inspection and measurements of structural components of reservoirs.
- 1/7/2016 District staff and BHC could not determine thickness of concrete ring wall foundations at 3 reservoirs in SV by excavation. The District does not have as-built or shop drawings for those reservoirs. Seismic calculations are based on knowing or assuming foundation dimensions. Rather than assume dimensions, District staff has contracted with Geotest to measure foundation wall thicknesses using ground penetrating radar. District crews will provide excavation pits.
- 2/4/2016 BHC working on seismic report. They have all the information and data needed to complete the report.
- 2/17/2016 BHC submitted review draft of seismic study to staff for review. Staff is reviewing draft.

C1506 2015 Sewer System Rehab

Combines several separate projects into one recurring annual project. The intent is to rehabilitate or replace aging sewer system mains and manholes as well as searching for sources of inflow and infiltration. Work includes smoke testing, manhole and main repairs, etc as deficiencies are found and prioritized. C1506A = Smoke Testing, C1506B = Whatcom Falls Manhole.

C1506B LLRI Outfall at Whatcom Falls Park

- 3/19/2015 Staff, Wilson, and City of Bellingham met onsite to review project objectives. The manhole located near the entrance of Whatcom Fall park is severely corroded by H2S from the District LLRI outfall. The manole is made of brick and need to be replaced.
- 3/26/2015 District executes task order with Wilson to assist with developing detailed plans and notes for the manhole replacement. District staff will advertise, and contract the work, as well as perform contract administration. Wilson will provide technical assistance/submittal review as needed.
- 3/31/2015 Staff working on a solution to get old-Flat Car sewer pump station going. Flow must be diverted from the LLRI in order to install the new manhole at Whatcom Falls park later this summer.
- 4/1/2015 Wilson proceeding with topo and manhole structure survey and design.

- 5/4/2015 District staff, Wilson, and City have been coordinating for replacement of Whatcom Falls Park manhole replacement.
- 8/4/2015 Wilson finalizing plans, details, and notes for submittal to City of Bellingham for review and approval.
- 9/2/2015 Bellingham is requiring formal project submittal for review. Staff and Wilson are preparing application and documents for submittal to City. Project will not be ready for construction this year.
- 1/5/2016 District staff working with City operations Department to review manhole rehabilitation plans and specs.
- 4/6/2016 Wilson is refining design to accommodate temporary bypass pumping that will be needed during construction.
- 4/18/2016 Plans have been accepted by City and are in review.

C1601 General Engineering Services

Advertise and select engineering firm for general engineering services for 5-year agreement. The selection process is also for the County Club Sewer Pump Station design.

C1601-ADM

- 3/2/2016 Staff is preparing request for qualifications for two projects. One is general engineering services, the other is Country Club Sewer Pump Station Improvements.
- 3/18/2016 Request for Qualifications published in Bellingham Herald.
- 4/14/2016 Submittals are due.
- 5/10/2016 Consultant selection committee meeting at 9am.
- 5/25/2016 Board selects Wilson for General Engineering Services and BHC for Country Club Sewer Pump Station.

C1602 Cartegraph Software Upgrade

Upgrade operations and maintenance system software. Upgrade existing Cartegraph system.

C1602-ADM

- 2/4/2016 Cartegraph working on setting up test database. Test database should be online week of 2/8/2016.
- 3/2/2016 Staff working with Cartegraph to integrate system onto District server infrastructure.
- 4/6/2016 Staff working with 3d Computers (IT consultant) to get infrastructure ready for cartegraph deployment.
- 4/26/2016 Cartegraph integration finished. Test database loaded.
- 5/3/2016 Staff and Cartegraph coordinating and scheduling training.

C1603 Marina-Tomb Stationary Generator

Install stationary emergency backup generator to serve both Marina and Tomb sewer pump stations.

C1603-ADM

- 4/5/2016 Issued purchase order to RH2 to assist District with sizing and selecting stationary generator from GSA. Scope also includes PLC programming to incorporation generator alarms.
- 4/6/2016 Staff coordinating with SVCA on site requirements, landscaping, screening, etc.
- 4/12/2016 District staff met onsite with SVCA staff to coordinate location, siting, and screening of stationary generator.
- 4/28/2016 RH2 finished sizing generator. Recommended generator size is 100kw. District staff is selecting generator, components, and options for purchase through GSA.
- 6/2/2016 Staff finalizing generator options and quote with GSA vendor.

C1604 LWBI Isolation Valve for Airport PS

*Part A - Install isolation valve on Lake Whatcom Boulevard Interceptor to allow airport full use of force main.
Part B - Install valve extension on pinch valve at Sudden Valley Detention Tank. Valve is located at bottom of deep manhole. Extension will allow manual operation at ground level.*

C1604a-AD LWBI Isolation Valve for Airport PS

M

- 5/3/2016 Staff investigating feasibility of installing isolation valve in existing de-watering manhole. This is desirable to avoid a deep wet excavation in the Lake Whatcom Boulevard.
- 6/1/2016 Vendor demos diamond blade chain saw that cuts ductile iron pipe. Staff is researching to find the best method to cut ductile iron force main pipe inside 48-inch manhole to install valve where there is very limited space to work.

C1604b-AD Detention Tank Pinch Valve Extension

M

- 4/6/2016 Staff coordinating with vender on extension dimensions. Staff will order extension soon.
5/3/2016 Purchase order issued for valve extention.

C1605 Water System Plan Update

Update District's Water System Plan. Current edition expires 3-15-2017.

C1605-PH1

- 4/6/2016 Selection of consultant is part of the general engineering services RFQ.
5/3/2016 State DOH would like to meet with the District and consultant to coordinate the water system plan update prior to beginning work. The intent is to coordinate the scope of work for the plan update.

C1606 Replace SCADA Workstation Hardware

Replace computer hardware the runs SCADA system at shop and SVWTP.

C1606-ADM

- 2/4/2016 Hardware has been ordered and received. Staff working on configuration and setup of new hardware.
2/29/2016 Integration of the 1st of 4 replacement computers is done. Staff is in process of integrating other machines.

C1607 Northshore Water Quality Sampling

Water quality sampling plan to evaluate impact of existing onsite sewage disposal system at the end of Northshore road.

C1607-PH1

- 3/30/2016 Request for Proposals advertised in Seattle Daily Journal of Commerce
4/28/2016 Request for Proposal advertised in Seattle Daily Journal of Commerce
5/1/2016 Request for Proposals advertised in Bellingham Herald
5/24/2016 Proposals due 4pm. Received one proposal.

C1608 SVCA Culvert Replacements

SVCA is replacing various culverts in Sudden Valley. Water and sewer mains may have to be relocated to accomodate the new culverts.

C1608-ADM

- 2/4/2016 SVCA and District staff are discussing SVCA's plans for culvert replacements and how they might impact water and sewer mains.
2/29/2016 SVCA is working on developer extension agreement to cover relocation of water mains for culvert improvements. Proposed DEA will be brought to board for review-comment-approval after staff and legal review.
3/16/2016 SVCA submitted draft agreement to District for review. Staff review document.
4/27/2016 Discussion of coordination of work with SVCA. Each site and project will be reviewed on a case-by-case basis to determine if utility relocation is to the benefit of the District. For one site, the District will relocate the water main the literally cuts through a storm drain culvert as a public works project funded by the District. For the other site, SVCA will protect in place an existing sewer main at its expense.
5/3/2016 District and SVCA coordinating work as needed.
6/2/2016 Staff preparing bid package to use to solicit quotes from contractors to move water main.

C1609 SVPS Emergency Repairs

Make pump station level control modifications to replace failing ultrasonic level sensor.

C1609-CON Construction

- 4/5/2016 Contractor onsite making electrical and control modifications.

5/3/2016 Work is finished. Contract close out paperwork is in progress.

6/2/2016 Waiting for contractor to file intents and affidavits prior to final payment and project close-out.

C1610 Little Strawberry Water Leak on Bridge

Water main has small leak. Leak is in a section of main that is mounted to a bridge on Little Strawberry.

C1610-ADM

4/6/2016 Staff evaluating alternatives to get within reach of pipe to find and repair leak.

C1611 Country Club Sewer Pump Station

Rehabilitation of Country Club Sewer Pump Station.

C1611-PH1 Predesign

4/6/2016 Selection of consultant is in conjunction with general engineering services RFQ.

C1612 Cedar Hills Water Main Relocate

Relocate water main for Whatcom County. County is installing stormwater treatment systems to remove phosphorus.

C1612-PH1

4/6/2016 Staff coordinating with County and Wilson to relocate water main to accommodate stormwater treatment system.

5/3/2016 District working with County to execute an interlocal agreement to establish cost sharing terms. Agreement will be similar to recent Cable Street reconstruction project.

5/25/2016 Board authorizes interlocal agreement with County and fund project using the storm/sewer contingency fund.

6/2/2016 Staff coordinating with County and Wilson as needed.

C1613 Northshore Water System Consolidation

DOH water system consolidation feasibility grant to explore opportunity to consolidate small water systems.

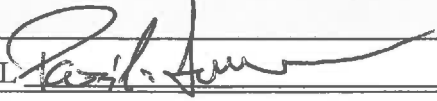
C1613-PH1

4/6/2016 District received notice that grant funding was approved for the feasibility study. Staff coordinating with DOH for grant contracts.



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	June 1, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Bill Hunter	MANAGER APPROVAL 		
MEETING AGENDA DATE:	June 8, 2016		
AGENDA ITEM NUMBER:	5.E.		
SUBJECT:	Division 22 Reservoir Project – Contract Award		
LIST DOCUMENTS PROVIDED ⇨ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Bid Summary		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION <input type="checkbox"/>	FORMAL ACTION/ MOTION <input checked="" type="checkbox"/>	INFORMATIONAL/ OTHER <input type="checkbox"/>

BACKGROUND / EXPLANATION OF IMPACT

The Division 22 Reservoir No. 2 project involves constructing a new 626,000-gallon welded steel reservoir adjacent to the existing 500,000-gallon Division 22 Reservoir in Sudden Valley.

An Advertisement for Bids was published in the Bellingham Herald and the Seattle Daily Journal of Commerce on 5/2/2106 and 5/12/2016. A non-mandatory pre-bid meeting was held on 5/18/2016. Two (2) bids were received and opened on 6/2/2016. District staff and the consultant are evaluating the bids and supplemental bidder responsibility criteria. A recommendation will be made at the board meeting.

FISCAL IMPACT

Funding for this project includes funds from a Drinking Water State Revolving Fund (DWSRF) loan (1.5% interest for 20 years) and a 2016 Revenue Bond. \$700,000 was budgeted in the DWSRF loan for construction and \$800,000 is allocated from the 2016 Revenue Bond for a total construction contract budget of \$1,500,000.

The engineer’s estimate by Gray & Osborne, Inc. for construction is (all numbers include 8.5% state sales tax):

Schedule A – Base Bid	\$1,375,943
Schedule B – Reservoir Railing	\$16,275
Schedule C – Expanded Utility Vault	\$40,145
Total Construction Cost	\$1,432,363

The apparent low bidder is T Bailey, Inc. with a bid of \$1,402,525.25 including Bid Schedules A, B and C (including state sales tax). The low bid is within the District’s budget.

RECOMMENDED BOARD ACTION

See proposed motion.

PROPOSED MOTION

Select Additive Alternates in addition to Schedule A - Base Bid:

- Schedule B: Additive Alternate for Full Circumference Reservoir Railing
- Schedule C: Additive Alternate for Expanded Utility Vault (this is the automatic closing seismic control valve)

Award the Division 22 Reservoir No. 2 construction contract to _____
for a total contract amount of \$_____ including Bid Schedules A, B, and C
(including state sales tax), and authorize the general manager to execute the construction
contract.



Bid Summary
Division 22 Reservoir No. 2 - LWWSD Project #C1401

Bid Opening: 6/2/2016

Name of Firm	Engineer's Estimate	CBI Services, Inc.	T. Bailey, Inc.
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SCHEDULE A - BASE BID

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
1	Minor changes	1	CALC	\$ 25,000.00	\$ 25,000.00	\$ 25,000.00	\$ 25,000.00	\$ 25,000.00	\$ 25,000.00
2	Mobilization and Demobilization	1	LS	N/A	\$ 114,000.00	N/A	\$ 200,000.00	N/A	\$ 20,000.00
3	Tree Removal and Delivery to SVCA	1	LS	N/A	\$ 10,000.00	N/A	\$ 50,000.00	N/A	\$ 20,000.00
4	Clearing and Grubbing	1	LS	N/A	\$ 5,000.00	N/A	\$ 15,000.00	N/A	\$ 10,000.00
5	Temporary Erosion and Sediment Control	1	LS	N/A	\$ 8,000.00	N/A	\$ 20,000.00	N/A	\$ 6,000.00
6	Locate Existing Utilities	1	LS	N/A	\$ 2,000.00	N/A	\$ 10,000.00	N/A	\$ 4,000.00
7	Trench Safety & Shoring	1	LS	N/A	\$ 3,000.00	N/A	\$ 500.00	N/A	\$ 1,500.00
8	Site Earthwork	1	LS	N/A	\$ 50,000.00	N/A	\$ 70,000.00	N/A	\$ 85,000.00
9	0.63 MG Reservoir, Foundation and Painting	1	LS	N/A	\$ 825,000.00	N/A	\$ 614,250.00	N/A	\$ 667,450.00
10	Utility Vault	1	LS	N/A	\$ 11,000.00	N/A	\$ 35,000.00	N/A	\$ 13,500.00
11	Site Piping	1	LS	N/A	\$ 140,000.00	N/A	\$ 215,000.00	N/A	\$ 190,000.00
12	Surface Restoration	1	LS	N/A	\$ 25,000.00	N/A	\$ 75,000.00	N/A	\$ 11,000.00
13	Electrical, telemetry and instrumentation	1	LS	N/A	\$ 25,000.00	N/A	\$ 110,000.00	N/A	\$ 100,000.00
14	Commercial Hot Mix Asphalt (HMA) Restoration	1	LS	N/A	\$ 9,900.00	N/A	\$ 15,000.00	N/A	\$ 10,000.00
15	Rock Excavation	20	CY	\$ 100.00	\$ 1,000.00	\$ 100.00	\$ 2,000.00	\$ 110.00	\$ 2,200.00
16	Unsuitable Excavation	50	CY	\$ 80.00	\$ 2,000.00	\$ 80.00	\$ 4,000.00	\$ 75.00	\$ 3,750.00
17	Additional crushed surfacing base course	50	TN	\$ 65.00	\$ 1,250.00	\$ 65.00	\$ 3,250.00	\$ 35.00	\$ 1,750.00
18	Additional commercial hot mix asphalt restoration	100	TON	\$ 110.00	\$ 11,000.00	\$ 110.00	\$ 11,000.00	\$ 95.00	\$ 9,500.00
TOTAL SCHEDULE A - BASE BID						\$ 1,268,150.00		\$ 1,475,000.00	\$ 1,180,650.00

SCHEDULE B: ADDITIVE ALTERNATE

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
19	Full Circumference Reservoir Railing	1	LS	N/A	\$ 15,000.00	N/A	\$ 17,000.00	N/A	\$ 12,000.00

SCHEDULE C: ADDITIVE ALTERNATE

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
20	Expanded Utility Vault	1	LS	N/A	\$ 37,000.00	N/A	\$ 82,000.00	N/A	\$ 100,000.00

SUMMARY OF ALL BID SCHEDULES

SCHEDULE A - BASE BID		\$ 1,268,150.00		\$ 1,475,000.00	\$ 1,180,650.00
SCHEDULE B		\$ 15,000.00		\$ 17,000.00	\$ 12,000.00
SCHEDULE C		\$ 37,000.00		\$ 82,000.00	\$ 100,000.00
SUBTOTAL		\$ 1,320,150.00		\$ 1,574,000.00	\$ 1,292,650.00
SALES TAX @ 8.5%		\$ 112,212.75		\$ 133,790.00	\$ 109,875.25
GRAND TOTAL		\$ 1,432,362.75		\$ 1,707,790.00	\$ 1,402,525.25

Bid Guarantee	Yes	Bid Guarantee	Yes
Addenda Acknowledge	Yes	Addenda Acknowledge	Yes
Subcontractors listed per RCW 39.30.060	Yes	Subcontractors listed per RCW 39.30.060	Yes
Certification of Non Segregated Facilities	Yes	Certification of Non Segregated Facilities	Yes
EPA Form 6100-3	Yes	EPA Form 6100-3	Yes
EPA Form 6100-4	Yes	EPA Form 6100-4	Yes
Complete Bidders List	Yes	Complete Bidder's List	Yes



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	June 1, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL <i>Patrick Sorensen</i>		
MEETING AGENDA DATE:	June 8, 2016		
AGENDA ITEM NUMBER:	5.F.		
SUBJECT:	District Comments Regarding Whatcom County Comprehensive Plan Update		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1.		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION <input type="checkbox"/>	FORMAL ACTION/ MOTION <input type="checkbox"/>	INFORMATIONAL/ OTHER <input checked="" type="checkbox"/>

BACKGROUND / EXPLANATION OF IMPACT

At the May 25, 2016 Regular Meeting, Todd offered to draft two letters on behalf of the Board commenting on Whatcom County's Comprehensive Plan Update.

FISCAL IMPACT

None

RECOMMENDED BOARD ACTION

Review/comment on the two draft letters.

PROPOSED MOTION

No motion needed.



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	June 2, 2016		
TO BOARD OF COMMISSIONERS			
FROM:	MANAGER APPROVAL <i>[Signature]</i>		
MEETING AGENDA DATE:	June 8, 2016		
AGENDA ITEM NUMBER:	G		
SUBJECT:	Lake Whatcom North Shore Water Quality Testing Proposal		
LIST DOCUMENTS PROVIDED → NUMBER OF PAGES INCLUDING AGENDA BILL:	1. Lake Whatcom North Shore Water Quality Testing Proposal		
	2.		
	3.		
TYPE OF ACTION REQUESTED	RESOLUTION <input type="checkbox"/>	FORMAL ACTION/ MOTION <input type="checkbox"/>	INFORMATIONAL/ OTHER <input checked="" type="checkbox"/>

BACKGROUND / EXPLANATION OF IMPACT

Most recently the District received one (1) proposal for the proposed North Shore water quality testing project as advertised by the District on May 1, 2016. The RFP was out on the Market for approximately 3 weeks. This is a very specialized project as proposed. The submission was made by Herrera Environmental Consultants of Seattle. As reflected in their cover letter Herrera accepts all the terms of our RFP. Based upon their proposal they appear to have significant experience in the areas of expertise that we are looking for.

Staff is proposing to have the full Board evaluate the proposal between now and the June 29, 2016 Board meeting. Because we only received one proposal, we will invite the proposer to the June 29 meeting in order to address their proposal and address your questions.

FISCAL IMPACT

As presented Herrera proposes as fee of \$16,000 for their proposed tasks, which are outlined in the attached. Explanations of each task are provided.

RECOMMENDED BOARD ACTION

No action is required at this time.

PROPOSED MOTION

Not applicable at this time.



May 24, 2016

Attn: Patrick Sorensen
Lake Whatcom Water and Sewer District
1220 Lakeway Drive
Bellingham, WA 98229

Subject: Lake Whatcom North Shore Water Quality Testing Proposal

Dear Mr. Sorensen:

Herrera Environmental Consultants (Herrera) is pleased to submit the enclosed proposal for Lake Whatcom North Shore Water Quality Testing in accordance with the Request for Proposals (RFP) announced on May 1, 2016. Our company and contact information includes:

Herrera Environmental Consultants
2200 Sixth Avenue, Suite 1100
Seattle, WA 98121
UBI: 600 633 936
Federal Tax ID: 91 132 934 6

Contact: Rob Zisette
Email: rzisette@herrerainc.com
Phone: 206-787-8262
FAX: 206-441-9108

Herrera also has an office in Bellingham located at 114 W. Magnolia St., Suite 505, Bellingham, WA 98225. Our Bellingham office is managed by Chris Webb, who may be contacted by email at cwebb@herrerainc.com or by phone at 360-398-5075.

Herrera accepts all terms of the RFP, including the terms and conditions of the sample contract provided in Attachment 2 of the RFP.

Sincerely,

Herrera Environmental Consultants, Inc.

Rob Zisette
Principal Water Quality Scientist

Enclosure: Lake Whatcom North Shore Water Quality Testing Proposal



LAKE WHATCOM NORTH SHORE WATER QUALITY TESTING PROPOSAL

Prepared For Lake Whatcom Water and Sewer District
by Herrera Environmental Consultants

STATEMENT OF QUALIFICATIONS

Company Information

Herrera is a leading Pacific Northwest engineering and scientific firm focused on restoration, water, and sustainable development. Herrera's interdisciplinary teams of scientists, engineers, and regulatory specialists solve complex problems facing municipalities, government agencies, businesses, tribes, and non-profits. Herrera staff serve clients from offices across the western United States and abroad. Herrera provides cost-effective, scientifically defensible, and realistic solutions to complex resource challenges.

For the over 20 years, Herrera has been a Pacific Northwest leader in the fields of water quality and surface water management. Our staff has extensive experience in achieving compliance with local, state, and federal regulations. Herrera's work conducting lake and stream water quality and sediment investigations, and developing management strategies for water quality improvement and the protection of aquatic habitats has established us as regional water quality experts. Herrera's expertise encompasses successful planning, implementation, and design strategies that have been applied to projects throughout the Pacific Northwest for clients that include federal, state, and local agencies as well as private sector clients. Herrera has designed and implemented monitoring programs to meet a wide range of goals including basin scale characterizations of water quality, pollutant source tracking studies, pollutant loading assessments, and stormwater BMP performance evaluations for residential, municipal, and industrial sites. Our quality assurance project plans include detailed data quality objectives, and quality control and data assessment procedures that are based on various federal (EPA) and state (Ecology) guidelines.

Herrera incorporated in 1986, and has continued to expand and be financially stable for the past 30 years. Herrera currently has 85 employees in offices located in Washington (Seattle, Bellingham, and Olympia), Montana (Missoula) and Oregon (Portland). Herrera has an employee stock ownership program, and is governed by the following corporate officers and board of directors (BOD): Michael Spillane (CEO, BOD President), Carol Slaughterbeck (CFO, Executive Vice President), John Lenth (Water Vice President, BOD Secretary), Mark Ewbank, (Restoration Vice President), Jose Carrasquero (Restoration Vice President), Phil Coughlan (Sustainable Development Vice President, BOD Chair), Theresa Wood (Contracts Vice President), and Carlos Herrera (BOD Director).

Herrera is licensed to do business in the State of Washington, Whatcom County, and City of Bellingham. Herrera has 24 licensed professional engineers, four licensed geologists, one licensed hydrogeologist, one licensed landscape architect, and one licensed site assessor. In addition, Herrera scientists and engineers have completed training courses and hold certifications for a variety of technical disciplines.

Project Approach and Coordination

Herrera will design a water quality study for the Lake Whatcom Water and Sewer District (LWWSD) to prove whether on-site wastewater systems in the project area contribute to water quality degradation of Lake Whatcom or represent a public health risk to lake users. On-site wastewater system data compiled for LWWSD indicate the presence of old systems in the project area that are likely contributing phosphorus to the lake. On April 7, 2016, the U.S. Environmental Protection Agency (EPA) approved a water quality improvement plan for Lake Whatcom. This plan, called the Lake Whatcom Watershed Total Phosphorus and Bacteria TMDL (total maximum daily load), addresses the lake's decline in water quality which is attributed to an elevated amount of phosphorus, which causes excessive growth of algae blooms and low dissolved oxygen levels. Excessive algae growth impacts the drinking water treatment system by clogging water filtration equipment and creating disinfection by-products, presents a human health risk from the release of toxins in blue-green algae blooms, impairs fish habitat from reduced dissolved oxygen concentrations in bottom waters, and increases sediment release of phosphorus from reduced dissolved oxygen concentrations and increased pH. Additional potential impacts of wastewater input to Lake Whatcom include an increase in fecal coliform bacteria and human pathogens, as well as the addition of man-made chemicals such as pharmaceuticals and toxic substances that may harm aquatic life and may not be removed by drinking water treatment.

Herrera will first prepare a technical memorandum summarizing the available water quality sampling and analysis methods, and recommending the method or combination of methods that are most cost-effective for meeting the project objective. Herrera will then meet with stakeholder representatives to discuss the advantages and disadvantages of the sampling and analysis methods, and to select the method or combination of methods for the project. Herrera will prepare a Quality Assurance Project Plan (QAPP) that includes detailed methodology for sample design, collection, and analysis, and includes data analysis reporting in accordance with current guidelines from the Washington State Department of Ecology (Ecology). As directed by LWWSD, Herrera may implement the QAPP or assist other stakeholder(s) with the implementation.

Effective coordination of project stakeholders is critical for insuring project success. Herrera has worked with all of the project stakeholders including but not limited to LWWSD, City of Bellingham, Whatcom County, Ecology, and EPA. Herrera has an excellent reputation for this work involving pollutant source evaluation of various water bodies in Washington State. Herrera's project manager and principal investigator Rob Zisette will provide the technical credibility needed to obtain stakeholder buy-in based on his well-known expertise in limnology, lake and drinking water reservoir management, microbial source tracking of sanitary sewage sources using various microbial, chemical, and molecular DNA methods. Herrera's principal-in-charge Joy Michaud will provide additional technical credibility based on her extensive water quality and limnology experience, including work on Lake Whatcom for LWWSD, and will effectively coordinate input from stakeholders at meetings using her facilitator training and experience.

Key Personnel

The Herrera team has selected five key personnel that are most qualified for this project. Roles and experience of key personnel are summarized below, and resumes are attached.

Rob Zisette. Rob will serve as the Project Manager and Principal Investigator for this project. Rob is a principal water quality scientist at Herrera with over 30 years of experience tracking

pollutant sources to lakes and other water bodies. Rob is a recognized expert in microbial source tracking (MST) and was selected by the U.S. EPA to author guidelines for using MST in the development of Total Maximum Daily Loads (TMDLs). Rob is also a recognized expert limnologist and was selected by the City of Seattle to lead a panel of limnologists in the investigation of causes of excessive algae growth impacting water quality and treatment plant operations of Lake Youngs, which supplies drinking water to over 80 percent of Seattle's customers.

Joy Michaud. Joy will serve as the Principal-in-Charge and Stakeholder Facilitator for this project. Joy is a principal water quality scientist at Herrera with over 30 years of experience in lake management, pollutant source tracking, and stakeholder facilitation. Joy evaluated phosphorus loading analysis of Lake Whatcom for LWWSD among many other lake projects. She also led the pollutant loading analysis of publicly owned treatment works (POTWs) in Puget Sound for the Washington Department of Ecology.

Gina Catarra. Gina will serve as the Water Quality Monitor and Quality Assurance Officer for this project. Gina is a senior scientist at Herrera with over 10 years of experience in sampling and analysis for a variety of water quality investigations. Gina recently evaluated and recommended field methods for detecting on-site wastewater system contamination of streams in the Hood Canal watershed. Gina has extensive water sample collection and laboratory analysis experience that she applies for identifying appropriate sample analysis methods, and reviewing data quality of field and laboratory data.

Dylan Ahearn, PhD. Dylan Ahearn will serve as the Water Quality Data Statistician for this project. Dylan is an associate environmental scientist at Herrera with 15 years of experience designing studies, collecting data, and conducting detailed pollutant loading assessments for over 50 stormwater treatment structures in the Puget Sound region. Dylan is a data analysis and presentation expert who uses a combination of advanced non-parametric statistical methods and visualization software to clarify complex data structures.

Heidi Houck, PE. Heidi Houck will serve as the Sanitary Engineer for this project. Heidi is a senior engineer at Herrera with 14 years of experience in multidisciplinary civil and environmental engineering projects. She is experienced in stormwater and wastewater treatment and conveyance design, including investigation of sanitary sewer backups, cross-connections, and inflow and infiltration (I&I) using closed-circuit television (CCTV), smoke testing, and dye testing.

Project Experience and References

Examples of relevant projects successfully completed within the past five years by Herrera are summarized below including project title, client name and address, client contact phone and email, years performed, and project description.

Hood Canal Watershed Pollution Identification and Correction Field Monitoring Methods Evaluation, Hood Canal Coordinating Council, 17791 Fjord Drive NE, Suite 122, Poulsbo, WA 98370, Julie Horowitz, (360)902-9818, julie.horowitz@gov.wa.gov, 2013-2014.

Herrera conducted a literature research to assess the feasibility of using field procedures to supplement ongoing laboratory testing for identifying fecal coliform bacteria and nitrogen sources in the Hood Canal Watershed, including marine and fresh waters, with an emphasis on detecting sources from onsite sewage systems for the Hood Canal Coordinating Council. Herrera prepared method attribute tables for field testing of fecal bacteria, fecal indicator parameters, and nitrogen analyses that specified the type of analysis, manufacturer, minimum detection limit, range, accuracy, ease of use, advantages, disadvantages, and cost

of each method. Recommended methods included optical brightener and ammonia nitrogen monitoring using *in situ* electronic probes because of their high specificity, low cost, ease of use, and their ability to provide immediate results for source tracking, collect data over extended periods of time to identify temporal patterns of source discharge, and provide real time data or send alarms to initiate verification sampling.

Portage Bay Shellfish Protection Districts Fecal Bacteria Loading, Whatcom County Public Works, 322 N. Commercial, Suite 110, Bellingham, WA 98225, Erika Stroebel, (360)676-6876, EStroebe@co.whatcom.wa.us, 2008-2010. Since its inception in 1998, the Portage Bay Shellfish Protection District (PBSPD) has been promoting reductions in fecal coliform bacteria loading in the Nooksack River basin with the goal of promoting healthy shellfish beds in the vicinity of Portage Bay. In an effort to quantify bacteria loading and locate bacteria hot-spots within the agricultural tributaries of the lower Nooksack, Herrera designed and implemented a monitoring program for Whatcom County, consisting of fecal coliform bacteria and flow monitoring at 15 subbasins in the Nooksack basin. The Herrera-authored monitoring plan called for six storm events and six base flow samples. Herrera successfully monitored all 15 stations under storm conditions, even though the Herrera offices were more than 70 miles from the sampling stations. Herrera used GIS analysis and field data to correlate land use with areal bacteria loading rates. These data were used to inform future bacteria management decisions by the County for reducing bacterial loading to productive and valuable shellfish beds in Portage Bay.

Piper's Creek Microbial Source Tracking Study, Seattle Public Utilities, 700 5th Ave, Suite 4900, Seattle, WA 98124, Amy Minchillo, (206)684-0974, minicha@seattle.gov, 2007-2011. Herrera scientists designed and implemented a microbial source tracking study using a DNA analysis (pulsed field gel electrophoresis [PFGE]) technique to identify sources of fecal coliform bacteria in Piper's Creek, which is located in Seattle, Washington. Herrera prepared a quality assurance project plan (QAPP) for collecting a total of 432 water samples over a one year period from 18 stream stations during 12 base flow events and 12 storm flow events. The water samples were analyzed for fecal coliform bacteria and a total of 384 *E. coli* isolates from the resulting bacteria cultures were matched to known sources in the PFGE library. Herrera also collected municipal wastewater and animal fecal samples for updating the PFGE library with local sources. Fecal coliform bacteria loadings were calculated for all stations in Piper's Creek and its tributaries using the bacteria concentration and stream discharge data, and a bacteria load duration curve was developed for the mouth of Piper's Creek using 5 years of historical discharge data for comparison to the total maximum daily load (TMDL) based on water quality standards. Human and specific animal sources of bacteria were identified for three stations on Piper's Creek and one station on Venema Creek. Graphical and statistical analyses of bacteria concentration, loading, and source data were used to evaluate spatial, temporal, and hydrologic trends in the data. The study report included recommendations for reducing fecal coliform bacteria and the threat to public health.

Northern Idaho Microbial Source Tracking Study and TMDL Fact Sheet, U.S. EPA, 1200 Sixth Ave, Suite 900, Seattle WA 98101, Jayne Carlin, (206)553-8512, Carlin.Jayne@epamail.epa.gov, 2008-2011. Herrera scientists evaluated the use of microbial source tracking in the development of *E. coli* total maximum daily loads (TMDLs) for 13 impaired streams in northern Idaho. Herrera conducted a literature search, identified limitations of the available methods, and prioritized the impaired streams based on observed *E. coli* concentrations, recreational use, known *E. coli* sources, and stakeholder involvement. Herrera developed alternative sampling designs and prepared an EPA-approved quality assurance project plan (QAPP) that included collection of flow measurements and water samples for *E. coli* enumeration, and source tracking using two molecular (genetic) methods

at upstream and downstream stations in three high priority stream basins. The microbial source tracking (MST) methods included pulse field gel electrophoresis (PFGE) of *E. coli* by a contract laboratory and host-specific polymerase chain reaction (PCR) of *Bacteroides* by the EPA Region 10 laboratory. Herrera coordinated all field and laboratory activities, which included the collection of water sampling, fecal source sampling for development of the genetic library, preparation of blind samples containing known sources for quality control, and enumeration and source identification of bacteria present in the collected water samples. Herrera also provided data quality review during implementation of the QAPP. Herrera was then retained to prepare a detailed fact sheet for EPA to assist TMDL writers with identifying the limitations and costs of various MST methods for identifying fecal bacteria sources in watersheds, and determining fecal bacteria loadings by fecal source groups to impaired water bodies.

Green Lake Phosphorus and Fecal Coliform Source Tracking, *Seattle Parks and Recreation, 800 Maynard Ave S., Seattle, WA 98134, Kevin Stoops, kbstoops55@gmail.com, 2004-2011.* Herrera designed and implemented three stormwater monitoring projects to track sources of phosphorus and fecal coliform bacteria in the Woodland Park basin of Green Lake in Seattle, Washington. In the initial study, stormwater samples were collected from seven locations during six storm events. Several pollutant sources were identified, including a large wood chip pile that was highly contaminated with phosphorus and bacteria, and was immediately removed by Seattle Parks and Recreation. Herrera scientists conducted microbial source tracking using molecular ribotyping (genetic fingerprinting) to identify specific sources of fecal coliform bacteria in the wood chip pile and throughout Woodland Park. Herrera engineers evaluated the performance of several small stormwater treatment facilities, and recommended the construction of new facilities to treat the majority of runoff from the park. Herrera then conducted additional sampling at South Woodland Park Outfall to determine if sanitary sewer cross-connections were impacting this stormwater drainage system. Water quality samples were collected during base flow and storm events, and were analyzed for microbiological and chemical constituents to identify the potential presence of sanitary sewage. Results showed that base flow and storm flow drainage from the outfall were not contaminated with sanitary sewage during the monitored events. Herrera conducted a third study where more recent stormwater monitoring results showed further reduction in phosphorus and fecal coliform bacteria loadings to Green Lake as a direct result of converting playfields from a dirt to synthetic turf surface.

Port Angeles Stormwater Assessment and Design, *City of Port Angeles, 321 East Fifth Street, Port Angeles, WA 98362, Jonathan Boehme (360)417-4811, jboehme@cityofpa.us, 2011-2015.* Herrera worked with the City of Port Angeles to develop a functional resourcing and financial analysis of the staffing, equipment, and funding mechanisms necessary to meet the requirements outlined in the City's current (2007-2012) and future (2013-2018) Phase II NPDES Permits. Herrera developed a questionnaire and held a workshop to prepare a report summarizing the City's current stormwater management program and identifying gaps in the City's existing resources. Herrera evaluated existing water quality data collected from City streams and Port Angeles Harbor, focusing primarily on fecal coliform bacteria data, to identify where water quality problems are the most severe. Ten years of water quality data from five stream basins were used to prioritize the basins, and recommend routine monitoring and fecal source tracing. Herrera implanted the recommended fecal source tracing in the highest priority basin (Peabody Creek) using reconnaissance and monitoring during dry and wet weather. Sources were identified by comparing fecal bacteria test results to event-specific thresholds, and stormwater sources to the stream were verified using dye testing and video inspection. Using grant funds from Ecology, Herrera completed preconstruction planning

and design of three stormwater capital projects: Permeable Pavement Alley Retrofits, Peabody Creek Water Quality Retrofits, and Stormwater Decant Facility Redesign.

Broadview Sewer Investigation, Seattle Public Utilities, 700 Fifth Ave, Suite 4500, Seattle, WA 98124, Grace Manzano, (206) 233-1534, grace.manzano@seattle.gov, 2009-2011. Herrera conducted an investigation of sewer backups in the Broadview neighborhood of northwest Seattle, and developed and implemented initial steps of the recommended solution. Herrera determined short-term and long term alternative solutions to the sewage backup problem. Investigative steps conducted to address the Broadview issues include review of historic CCTV tapes and additional CCTV inspections, smoke testing, conveyance system condition assessments, and computer modeling of the entire system using XPSWMM. Herrera evaluated a range of potential solutions including natural drainage systems to reduce stormwater runoff entering the combined sewer system, additional conveyance capacity, and sanitary and storm sewer system rehabilitation. A cost analysis was performed for alternative solutions. Herrera engineers provided support throughout design and construction of sewer improvements. Herrera also installed flow meters and measured flow in the sanitary sewer system for model calibration and effectiveness evaluation, and assisted with alternatives analysis and construction oversight of additional sewer improvements.

Illicit Discharge and Detection Elimination (IDDE) Field Screening Manual and Training for Local Governments, King County Department of Natural Resources 201 S Jackson Street, Suite 600, Seattle, WA 98104, Jeanne Dorn, (206)477-4787, Jeanne.Dorn@kingcounty.gov, 2012-2013. King County, the Washington Stormwater Center, and Herrera received a Grant of Regional or Statewide Significance (GROSS grant) from the Washington State Department of Ecology to develop an IDDE Field Screening Manual (Manual) for the State of Washington. This Manual serves as guidance for municipalities in Washington that perform field screening and source tracing to address IDDE program requirements in the National Pollutant Discharge Elimination System (NPDES) Phase I and Phase II Municipal Stormwater Permit. To develop the Manual, Herrera conducted a survey of Washington permittees to determine which methodologies and indicators are currently being used for field screening and source tracing of illicit discharges. Herrera also performed a literature review to gather input from local and national IDDE programs, and facilitated discussions at the Regional Operations and Maintenance Program (ROADMAP) and Eastern Washington Stormwater Coordinators Group (EWSCG) forums. The Manual is organized to provide detailed information on methodologies used for field screening a municipal separate storm sewer system (MS4) for illicit discharges as well as methodologies used for source tracing of potential illicit discharges. The manual identifies chemical and physical indicators that suggest that an illicit discharge may be present and can be used to trace the source of a potential illicit discharge.

Additional relevant projects completed over five years ago include:

- California Creek Optical Brightener Study, Whatcom County Public Works, 2005-2007
- Blaine Stormwater Management Plan and Microbial Source Tracking Study, City of Blaine, 1998-2002
- Thornton Creek and Matthews Beach Microbial Source Tracking Study, Seattle Public Utilities, 2004-2007
- Green-Duwamish Watershed Water Quality Assessment and Microbial Source Tracking Study, King County, 2004-2006

- Upper Willapa River Microbial Source Tracking Study, Pacific County, 2003-2005

Examples of recent awards include:

- Port of Olympia Stormwater Treatment System Project: APWA National Award Winner for Project of The Year in the Environment, category \$5 million - \$25 million, 2015
- Chambers Lake Stormwater Treatment Facility Project: ACEC Engineering Excellence Award, 2015

PHASE 1 WORK PLAN

Scope of Work

The project will be conducted in two phases. Phase 1 includes the development of a sampling and analysis plan (SAP) to determine if onsite sewage system leachate is a source of coliform and phosphorus pollution in Lake Whatcom. Phase 2 would be the actual sampling, analysis, and reporting of the Phase 1 study results. Herrera will conduct Phase 1 as described by task below. Phase 2 may be implemented by Herrera and/or stakeholders as part of ongoing sampling and testing programs.

Task 1 - Review Information. Herrera will conduct a cursory review of recent and current monitoring by others to understand how the project SAP could supplement existing efforts and avoid duplication of work. Herrera will review literature on sanitary sewage source investigations that may be used as a model for the project SAP. Herrera will use literature review findings for various microbial source tracking studies describe above, and updated it with additional investigations of onsite sewer system impacts on lake water quality.

Task 2 - Outline Plan. Herrera will prepare an annotated outline the project SAP summarizing results of the information review (Task1), and outlining the recommended sampling and analysis methods for determining if onsite sewage systems are a source of pollution to Lake Whatcom. Methods for detecting sewage contamination of lake water include simple field and laboratory tests of indicator chemicals or bacteria, to complex molecular methods analyzing the DNA of fecal bacteria or viruses. Herrera has evaluated all of the available methods for multiple projects and most recently recommended field testing with a fluorometer to measure low concentrations of optical brighteners for detecting onsite sewage contamination of streams draining to Hood Canal. Herrera's principal investigator originally used fluorometer testing in 1981 to locate failing onsite systems along the shoreline of Pine Lake in Sammamish, Washington. Field fluorometers have since been developed that accurately measure low concentrations of optical brighteners by measuring a specific wavelength and employing methods to correct interferences from natural substances in surface waters. Herrera will compare advantages of the two instruments from Turner Designs: AquaFluor handheld fluorometer (0.5 ppm detection limit of grab samples) and the Cyclops-7 submersible sensor (0.6 ppb detection limit with long-term data logging at higher cost).

The sampling design of optical brighteners or another selected indicator parameter will be developed based on designs of successful investigations that target locations and periods of maximum sewage discharge to the lake. It is recommended that monitoring be conducted at many nearshore locations within and outside areas of suspected discharge based on findings of the onsite sewage system analysis. Monitoring should be conducted when maximum discharge is expected, such as Saturday morning when laundry detergents are in high use, and following

storm events when shallow groundwater discharge to the lake is high. It is anticipated that monitoring would be conducted on one or two days this summer, and again next winter if sewage inputs are not detected in summer.

An alternative monitoring approach will be considered that includes dye testing of individual onsite sewage systems. Green dye would be added to a system and observed in the lake or temporary well points installed near the shoreline. This monitoring may be conducted as an alternative to nearshore monitoring of optical brighteners or other indicator parameters, or to verify the indicator parameter findings.

The annotated outline will also describe the data analysis and statistical procedures for evaluating the collected data, and assess the confidence level of conclusions obtained from the alternative sampling designs. A cost estimate and preliminary schedule to implement the SAP will be included in the annotated outline.

Task 3 - Attend Workshop. Herrera will attend a workshop with the District Board of Commissioners to summarize preliminary research and coordinate completion of the SAP. Herrera's principal investigator and meeting facilitator will present research findings and recommendations outlined for Task 2 at a workshop to be scheduled by LWWS.

Task 4 - Prepare Plan. Herrera will finalize the sampling and analysis methods based on the workshop (Task 3) and prepare a draft SAP for review by LWWS and other select stakeholders. Herrera will prepare a final SAP that addresses review comments and discussions at a meeting with the District Board of Commissioners (Task 5). The plan will be prepared following Herrera's rigorous QA/QC process that includes reviews by a technical specialist, editor, project manager, and principal-in-charge.

Task 5 - Project Management and Meetings. The Herrera principal investigator will manage the project by tracking all work progress to meet the project budget and schedule. Herrera will provide monthly invoices and progress reports to LWWS.

The Herrera principal investigator will attend a kickoff meeting with LWWS prior to development of the annotated outline to clarify project objectives and proposed activities. The Herrera principal investigator will attend a meeting with the District Board of Commissioners to present and discuss the draft SAP. The Herrera principal investigator and meeting facilitator will attend a public meeting to present the final SAP to the Lake Whatcom Cooperative Management Program (LWWS, City of Bellingham, and Whatcom County).

Schedule and Fee Estimate

The proposed schedule and fee estimate of each task is summarized in the following table.

Task	Start Date	End Date	Hours	Expense	Fee Estimate
Task 1 – Review Information	7/11/16	7/22/16	10	\$0	\$1,500
Task 2 – Outline Plan	7/25/16	8/19/16	25	\$0	\$3,500
Task 3 – Attend Workshop	8/22/16	8/26/16	10	\$100	\$2,000
Task 4 – Prepare Plan	8/29/16	9/30/16	40	\$0	\$6,000
Task 5 – Project Management/Meetings	7/11/16	9/30/16	15	\$100	\$3,000
Totals	--	--	100	\$200	\$16,000

Billing Rates and Other Direct Costs

The 2016 billing rates for key and support personnel are presented in the following table.

Personnel	Title	Hourly Billing Rate
Rob Zisette	Scientist VI	\$205.92
Joy Michaud	Scientist VI	\$206.03
Gina Catarra	Scientist III	\$120.03
Dylan Ahearn	Scientist V	\$194.39
Heidi Houck	Engineer IV	\$144.83
Pamela Jackowich	Administrative Coordinator IV	\$99.09
Natalya Tonkikh	Accounting Administrator II	\$78.03

Other direct costs include automobile use at \$0.54/mile.

Rob Zisette, an aquatic science principal, has 30 years of professional experience specializing in surface water management, including water quality assessments, stormwater management plans, aquatic plant management studies, lake restoration projects, and environmental impact statements. He has developed and implemented monitoring and quality assurance project plans for various freshwater and marine water and sediment quality investigations. Rob has evaluated nonpoint source pollution and the effects of best management practices (BMPs) in streams and urban drainage basins. He has assessed benthic invertebrate populations, fish habitat, and riparian conditions in streams. Rob has mapped aquatic plants, evaluated aquatic plant management techniques, assessed plankton communities, identified nutrient sources, and characterized taste and odor sources in lakes and drinking water reservoirs. He has conducted microbial source tracking (MST) studies, technical work groups, and presented MST study findings at various conferences sponsored by EPA, Ecology, and water organizations. His additional experience includes water quality impact analysis for solid and hazardous waste management projects, sediment quality characterization and dredge disposal analysis for marine sediment management projects, laboratory analysis of water samples for various chemical and biological parameters, and quality assurance review of field and laboratory data.

Credentials

M.S. in Water Resource Management, University of Washington, 1980

B.S. in Environmental Biology, University of Calgary, 1978

Key Project Experience

Whatcom County California Creek Optical Brightener Study

Whatcom County, WA

Rob managed an optical brightener study for Whatcom County to identify potential sources of human fecal coliform bacteria and to determine if the optical brightener method is an effective tool for identifying the presence of domestic wastewater (e.g., failing septic systems) in subbasins of California Creek, which flows into Drayton Harbor, Washington. He prepared a detailed sampling and analysis plan, coordinated the installation, retrieval, and analysis of the optical brightener sample pads. Rob prepared the monitoring report, which included a discussion of the usefulness of optical brightener monitoring in the California Creek basin and recommendations for revision of the sampling methodology.

Geneva Basin Comprehensive Monitoring and Study Plans to Evaluate Watershed Management Actions

Whatcom County, WA

Rob Zisette was Herrera's project manager for this comprehensive monitoring study and watershed management project. Lake Whatcom, in the heart of Whatcom County, provides drinking water for over 85,700 people. The Lake is located in a developing suburban area and consequently there is concern that degrading water quality may be exacerbated by pollutant loading from these developing areas. Rob compiled information on all of the best management practices (BMPs) that are currently being applied within the Geneva Basin of the Lake Whatcom watershed. Rob developed various monitoring strategies to assess the effectiveness of each BMP for phosphorus control. He prepared a sampling and analysis plan, following Ecology's QAPP preparation guidelines, for measuring the pollutant load reduction of each BMP. Rob also prepared a separate plan for evaluating the stormwater treatment effectiveness of two filter vaults and one swale in the Geneva Basin.



Piper's Creek Microbial Source Tracking Study
Seattle, WA

For Seattle Public Utilities, Rob managed the design and implementation of a microbial source tracking study using a DNA analysis (pulsed field gel electrophoresis [PFGE]) technique to identify sources of fecal coliform bacteria in Piper's Creek, which is located in Seattle, Washington. Rob prepared a quality assurance project plan (QAPP) for measuring stream discharge and collecting a total of 432 water samples over a one year period (2007 - 2008) from 18 stream stations during 12 base flow events and 12 storm flow events. The water samples were analyzed for fecal coliform bacteria and a total of 384 E. coli isolates from the resulting bacteria cultures were matched to known sources in the PFGE library. He collected municipal wastewater and animal fecal samples for updating the PFGE library with local sources, and validated the laboratory data. Rob oversaw management of hydrologic data, calculation of fecal coliform bacteria loadings for comparison to the TMDL, and identification of human and animal sources of bacteria. He prepared a study report that included graphical and statistical analyses of bacteria concentration, loading, and source data to evaluate spatial, temporal, and hydrologic trends in the data, and presented recommendations for reducing fecal coliform bacteria concentrations and the threat to public health.

Northern Idaho Microbial Source Tracking Study and TMDL Fact Sheet
Idaho

Rob managed a project for Idaho Department of Environmental Quality that used an EPA grant to evaluate the use of microbial source tracking in the development of E. coli total maximum daily loads (TMDLs) for 13 impaired streams in northern Idaho. Rob conducted a literature search, identified limitations of the available methods, and prioritized the impaired streams based on observed E. coli concentrations, recreational use, known E. coli sources, and stakeholder involvement. He prepared an EPA-approved quality assurance project plan (QAPP) based on a proposed sampling design that included collection of flow measurements and water samples for E. coli enumeration and source tracking using two molecular (genetic) methods at upstream and downstream stations in three high priority stream basins. He also prepared an EPA fact sheet to assist TMDL writers, coordinated field and laboratory activities, and provided data quality review during implementation of the QAPP.

Lake Youngs Limnology Expert Panel Workshop
Seattle, WA

Rob participated in a workshop with other limnology experts to evaluate observed trends in drinking water quality primarily associated with algae growth in Lake Youngs for Seattle Public Utilities. Rob evaluated spatial and temporal trends in key hydrologic and water quality parameters using graphical and statistical analysis of a comprehensive set of limnological data collected over a 15-year period at eight monitoring sites located in Lake Youngs and the Cedar River Watershed. He prepared a report that summarized the observed trends, presented the data analysis findings to the expert panel, participated in discussions among experts at a workshop, and provided recommendations for future data collection and analysis to address water quality concerns.

Green-Duwamish River Water Quality Assessment
King County, WA

Rob was project manager of the water quality assessment of the Green-Duwamish River Watershed for King County, Washington. Rob coordinated the compilation and analysis of an extensive set of hydrologic and water quality monitoring data collected from 17 locations over a three-year period. He prepared the water quality assessment that included detailed statistical and pollutant loading analyses of the entire data set. Rob also coordinated a microbial source tracking study using ribotyping (DNA analysis) of E. coli bacteria to identify sources of fecal coliform bacteria in the Green-Duwamish River watershed, and prepared a detailed report evaluating how those sources varied by season, hydrologic condition, and land use within the monitored stream and river basins.



Joy Michaud, a Herrera Principal and head of our Olympia office, has over 25 years of experience as a water resource professional. Since Joy successfully ran a small business for nearly 20 years, she is expert at managing multiple and diverse projects and responding to a wide variety of client needs. She has an interdisciplinary background that includes; water quality studies, fish and aquatic habitat assessments, watershed planning, policy development, project permitting, and public facilitation among others.

Ms. Michaud's technical expertise includes studies of lakes, streams, stormwater systems, and Puget Sound. In addition to scientific studies, Ms. Michaud has performed watershed assessments and developed watershed management plans to meet the requirements of a number of different watershed planning processes. Ms. Michaud has experience with both SEPA- and NEPA-driven environmental assessments and environmental impact statements, and ESA-driven biological assessments. Many of these projects have been challenging and controversial.

Ms. Michaud's broad technical expertise and effective communication skills has enhanced her ability to work successfully with a wide variety of stakeholder groups. She has assisted State agencies such as Ecology, WSDOT, WDFW, PSAT and others with internal or facilitated review of different programs or policies; she has worked directly with tribal agencies and their water quality programs, and she has facilitated and coordinated the work of many technical advisory groups and citizen committees formed to carry out various resource protection related tasks. The diversity of this experience speaks to her aptitude for understanding and articulating issues and assisting development of manageable solutions.

Credentials

Post-Graduate Research / 1983 / University of Uppsala / Uppsala, Sweden
MS / Environmental Science & Engineering / 1982 / University of Washington
BS / Water Resources / 1979 / University of Wisconsin - Stevens Point

Key Project Experience

Lake Whatcom Surface Water Impact Assessment

Whatcom County, WA

This assessment was prepared for use in an EIS developed to address issues associated with expansion of sewer and water services to Water District #10s service areas. Since Lake Whatcom provides the local drinking water supply, the issues related to potential surface water impact were the most complex portion of the EIS. The purpose of this EIS was to evaluate impacts from expansion of sewer and water service and related residential development. Since Lake Whatcom is the drinking water supply for the City of Bellingham, water quality issues were the most critical concern associated with the project. Joy Michaud reviewed and evaluated close to 20 years of lake monitoring data, as well as data from tributary streams and stormwater systems. This information was assimilated and evaluated to create a concise summary of the existing condition of this large, complex lake system. Ms. Michaud evaluated the potential for impacts to local streams in the affected development area and related this potential to possible long term impacts to the water quality of Lake Whatcom. The evaluation focused on stormwater/flooding affects, nutrients, bacteria and other lake water quality issues as well as those related to septic and sewerage issues. This was a very controversial project, yet despite the many appeals and suits pertaining to the EIS, all were resolved in favor of the Water District and in support of the technical analysis performed.



Control of Toxic Chemicals in Puget Sound, Phase 3: Loadings of POTW Discharges of Treated Wastewater

Washington State Department of Ecology

Joy Michaud led Herrera's involvement in this Phase 3 study to evaluate the contribution of municipal wastewater dischargers (POTWs) to the loading of toxic chemicals to Puget Sound. Under a Phase 2 study (also led by Ms Michaud), both industrial and municipal (e.g. POTWs) permitted discharges had been evaluated and it had been determined that municipal dischargers contributed a significantly larger portion of the load of toxic chemicals. However, two of the major limitations of the Phase 2 study were that the data set did not include data collected under similar circumstances, and that the vast majority of the parameters were below analytical levels of detection and therefore could not be adequately quantified. The purpose of the Phase 3 study was to refine the estimate of discharges from POTWs by collecting new data using a rigorous and consistent approach and using more sensitive laboratory techniques that would result in much lower detection levels. Joy worked directly with Ecology to select 10 POTWs that represented the range of wastewater treatment types, facility sizes, and locations around Puget Sound. She developed the experimental design and directed development of the detailed monitoring and analysis plan. She then coordinated the efforts of the many Herrera staff who implemented the monitoring plan and performed the data analyses. She directed the technical analysis of results and led development of the report. Due to the high level of public scrutiny of these studies, she worked closely with Ecology staff through multiple internal and external reviews of the report.

Port of Olympia Marine Terminal-Stormwater Treatment and Conveyance System Design *Olympia, WA*

Joy Michaud is Herrera's Project Manager for this multifaceted project to design the conveyance and treatment system for industrial stormwater at the Port's 65 acre Marine Terminal. The terminal property is primarily used for log storage and handling. The treatment system is being designed specifically to achieve the industrial permit benchmark values for chemical oxygen demand (COD), copper, zinc, and turbidity specified under the Industrial Stormwater General Permit. COD from log yard runoff is inherently difficult to treat and does not respond to traditional stormwater treatment. Therefore, under Joy's direction this project began by performing a thorough literature search and screening analysis of more than 40 technologies. Based on the results of this work, several innovative treatment options were identified for additional evaluation and a series of bench scale studies were performed to test COD removal. Based on the results from these a pilot scale system was set up on Port property to optimize system design. Results from the pilot study as well as vendor testing and further bench scale studies have been used to re-evaluate and refine treatment options. Herrera has developed a preliminary engineering report that lays out the conceptual design of the treatment system and testing strategy and is currently progressing through the design phases of the project.

Eastern Washington Effectiveness Study Development *Washington*

Joy was the project manager for this effort to facilitate a group of Eastern Washington permittees to identify and develop a series of stormwater program effectiveness studies to meet NPDES permit requirements. Through a series of workshops with the permittees she managed development of over 30 research proposals and walked the group through initial rating and ranking of the studies.

City of Belfair Basin Plan *Belfair, WA*

Joy is the project manager for this plan to prepare a stormwater basin plan that addresses water quality impacts within the Belfair vicinity. Through data review, field surveys, modeling, and geospatial analysis the impacts to stream flow, habitat, flooding and water quality under four build-out scenarios for the Belfair area are being evaluated.

Gina Catarra is an environmental scientist with Herrera and has over 10 years of experience as an analytical chemist. Her laboratory experience includes performing analyses for metals, non-metal inorganics, organochlorine pesticides, polychlorinated biphenyls (PCBs), and chlorinated herbicides and performing data validation of reports in accordance with various regulatory guidelines including EPA Contract Laboratory Program (CLP), National Pollutant Discharge Elimination System (NPDES) permit program and Department of Ecology. Her analytical experience includes analyzing and interpreting data for a wide range of sample matrices including marine sediment, tissue, water, soil and sludge. Her field experience includes the collection of soil, sediment and water samples and on-site monitoring of chemical parameters in marine environments. Gina has been involved with salt marsh rehabilitation research that included collection of soil, sediment, and water samples and field monitoring. She is also familiar with wetland delineation and wetland management policies. Her efforts at Herrera are focused on providing data validation of laboratory analyses for projects, preparing project sampling and analysis plans (SAPs) and quality assurance project plans (QAPPS), as well as conducting preliminary assessments, site investigations, and Phase I environmental site assessments.

Credentials

B.S. in Marine Science / Long Island University / 1995
Certificate in wetland science and management, 2001

Key Project Experience

Hood Canal Watershed Pollution Identification and Correction Field Monitoring Methods Evaluation Mason County, WA

Gina conducted a literature research to assess the feasibility of using field procedures to supplement ongoing laboratory testing for identifying fecal coliform bacteria and nitrogen sources in the Hood Canal Watershed, including marine and fresh waters, with an emphasis on detecting sources from onsite sewage systems for the Hood Canal Coordinating Council. She prepared method attribute tables for field testing of fecal bacteria, fecal indicator parameters, and nitrogen analyses that specified the type of analysis, manufacturer, minimum detection limit, range, accuracy, ease of use, advantages, disadvantages, and cost of each method. Recommended methods included optical brightener and ammonia nitrogen monitoring using in situ electronic probes because of their high specificity, low cost, ease of use, and their ability to provide immediate results for source tracking, collect data over extended periods of time to identify temporal patterns of source discharge, and provide real time data or send alarms to initiate verification sampling.

Johns River Bridge Washing Effluent Translator Study for Washington State Department of Transportation Markham, WA

Herrera evaluated potential impacts to groundwater and surface water from the discharge of wastewater from bridge and ferry terminal washing activities. This evaluation was performed pursuant to requirements identified in the National Pollution Discharge Elimination System (NPDES) permit that was issued by the Washington State Department of Ecology (Ecology) for these activities. Due to water quality concerns identified during preparatory washing of bridges and marine transfer spans, the permit requires waste-specific translators be developed for copper, lead, and zinc. Gina wrote a sampling plan addendum for samples to be collected during preparatory washing of the Johns River Bridge, which spans the Johns River near Markham, Washington. She also led the field effort to collect effluent and background surface water samples. Gina provided validation for all analytical chemistry and contributed to a summary report.



Seattle Public Schools Drinking Water Quality Program

Seattle, WA

Herrera was part of a multidisciplinary team that developed a remediation plan to improve the drinking water quality in the Seattle Public Schools (SPS) such that the water will meet all regulatory standards and be aesthetically acceptable to students, staff, and others who drink the water. Gina assisted in developing and implementing a sampling and analysis plan for the project. She coordinated Herrera's sampling effort to collect over 7,000 drinking water samples at more than 100 SPS facilities during a seven month period. In addition, Gina collected samples, reviewed analytical data, and completed a data quality summary for all analytical results.

Paine Field Target Range Site Investigation

Everett, WA

Herrera conducted a site investigation of a former target range site located at Paine Field for the U.S. Army Corps of Engineers (USACE) to determine if further action was required at the site. Gina developed a work plan for the site and performed associated field work. She documented site conditions, conducted field screening of soil for lead and other heavy metals using a field portable x-ray fluorescence (FPXRF) instrument, and collected confirmation soil samples. Gina validated all laboratory results and provided findings in a summary report.

Benthic Invertebrate Sampling for U.S. Army Corps of Engineers

Westport, WA

Gina provided field sampling assistance along a 1000-foot stretch of shoreline where the U.S. Army Corps of Engineers, Seattle District placed sandy, dredged material in Half Moon Bay, Westport, Grays Harbor County, Washington. Intertidal samples were collected using a cylindrical coring device at 13 sites in western Half Moon Bay and South Beach at low tide. Samples were collected to obtain data on benthic invertebrates in and adjacent to the project footprint to document changes in population density and community composition that may occur as a result of the placement of dredged material.

Environmental Site Assessments for King County

Seattle, WA

Gina completed two environmental site assessments (ESAs) for King County Department of Natural Resources and Parks, Wastewater Treatment Division in Seattle, Washington. The ESAs were conducted in anticipation of improvements being made to two existing wastewater pumping stations and were performed in accordance with the ASTM standard practice guidelines. Gina provided recommendations for Phase II follow up investigations.

Environmental Site Assessments for Sound Transit

King County, WA

Gina completed 11 environmental site assessments (ESAs) in Seattle, Washington to evaluate commercial, industrial, undeveloped, and residential properties subject to acquisition by Sound Transit for a new light rail line. The ESAs were completed using a client-specific template comparable to the ASTM standard practice guidelines. Gina provided recommendations for Phase II follow up investigations.

Colville Post and Pole Removal Site Evaluation

Stevens County, WA

Herrera personnel performed a removal evaluation of a former wood treating operation in Stevens County, Washington. Gina collected samples and conducted field analysis for pentachlorophenol in soil and ground water using the Rapid Assay immunoassay test kit. She also maintained site and sample information, and created sample shipment records using Scribe software.



Dylan Ahearn, PhD

Associate Scientist



HERRERA

Dylan has over 10 years of experience studying the environmental ramifications of human alteration to aquatic systems. Dylan has designed studies, collected data, and conducted detailed pollutant loading assessments for over 50 stormwater treatment structures (e.g., wet ponds, swales, filter strips, green roofs, pervious pavement, and proprietary systems) in the Puget Sound area. He has extensive hands-on knowledge of green infrastructure and, having designed and implemented the monitoring network at the Washington State University Low Impact Development Research Center, is involved in cutting edge stormwater treatment research. Dylan is a data analysis and presentation expert who uses a combination of advanced non-parametric statistical methods and visualization software to clarify complex data structures. In addition to leading workshops on monitoring, Dylan is also a Geology professor at Edmonds Community College. Whether it is teaching, programming dataloggers, conducting statistical analyses, or designing his next field experiment, Dylan approaches his work with an attention to detail and a passion for environmental stewardship.

Credentials

PhD in Hydrology from University of California, 2004

BA in Geology from Guilford College, 1996

Key Project Experience

Port of Olympia Stormwater Treatment Design

Olympia, WA

The Port of Olympia is required to meet benchmarks for chemical oxygen demand (COD), turbidity, and dissolved zinc at its 65-acre marine terminal under the Industrial Stormwater General Permit. The Port has failed to meet benchmarks for these pollutants based on quarterly monitoring, so they are required to conduct an evaluation of "all known, available, and reasonable treatment" (AKART) and implement treatment BMPs selected through the AKART process. Dylan evaluated potential treatment options for the stormwater and target pollutants. He led the effort to design and implement bench scale and pilot testing of media that were under consideration as part of the treatment system. He provided design support for the chemical oxidation system that was ultimately selected for the treatment system and was an integral part of this project which went on to win an AWWA National Award.

Seattle Public Utilities South Henderson Raincatchers Plan Development

Seattle, WA

Seattle Public Utilities (SPU) is developing a strategy to decentralize combined sewer overflow control for the Henderson Combined Sewer subbasin in the South Lake Washington basin. Stormwater runoff from residential rooftops, which is currently tightlined to the sanitary sewer system, will be disconnected from the combined sewer system and routed through on-site treatment Best Management Practices (BMPs), which in turn discharges excess runoff (or non-infiltrated stormwater) to a separate, existing stormwater conveyance system. Dr. Ahearn assessed local CSO concentrations, roof runoff concentrations, and BMP removal efficiencies, for five target constituents. Dr. Ahearn then conducted a loading analysis of current and proposed conditions to assess the costs and benefits of various scenarios.



Seattle Street Sweeping Water Quality Effectiveness Study

Seattle, WA

The City of Seattle has been using street sweeping as a good housekeeping practice since the early 1900s, yet they do not receive water quality credit for their program from Ecology. In 2014, the City implemented a paired basin study to monitor the effectiveness of street sweeping by analyzing runoff quality in the storm drain of swept and unswept basins. Dr. Ahearn, directed the experimental design and monitoring approach, oversaw monitoring, and managed the project for Herrera. A BACI (before after-control impact) design was used with 2 control basins and 2 treatment basins. Custom inserts were designed and installed in four inlets along MLK Avenue in South Seattle. Flow-weighted composite samples and continuous flow measurements were collected for 2 years, one year before treatment, and one year during treatment. The results from this study will be used in the effort to obtain water quality credit for the City's street sweeping program.

San Francisco Bioretention Analysis

San Francisco, CA

The City of San Francisco is conducting a major initiative to implement Green Stormwater Infrastructure (GSI) across the City in order to reduce hydraulic loading to their combined sewer system. Currently, 8 projects are being implemented as a demonstration to test how cost effective the GSI approach will be for the City. In 2014, Dr. Ahearn assisted the City with developing an approach for monitoring 3 of the 8 demonstration projects. He provided experimental design support, developed a standard operating procedure, and helped the City clarify the objectives of their monitoring efforts. Finally, Dr. Ahearn helped develop standard details for monitoring bioretention systems.

Burnt Bridge Creek Monitoring

Vancouver, WA

Burnt Bridge Creek is a highly modified, urban stream that flows westward from its agricultural origins on the east, through the heart of Vancouver, Washington, to its terminus at Vancouver Lake. The City of Vancouver hired Herrera to monitor the water quality of the creek in order to establish baseline characteristics and observe the effects of watershed rehabilitation efforts. Dr. Ahearn provided statistical analysis and data visualization support for this project. Specifically, he compared historical data to recent data using a nonparametric Mann-Whitney U-test and conducted spatial comparisons with a Wilcoxon Signed Rank Test. The results from these analyses were used to highlight sub-basins which were contributing the highest pollutant concentration, in addition the results were used to aid in the interpretation of the historical water quality dataset for the basin.

Kitsap Bioretention Soil Media Study

Seattle, WA

In 2014, the Washington State Department of Ecology awarded Kitsap County a \$300,000 grant to conduct column experiments with the goal of developing an improved bioretention soil media (BSM) specification. Dr. Ahearn aided in drafting the QAPP, including leading the experimental design and media selection. Dr. Ahearn was a technical resource through the duration of the project and drafted a synthesis report which summarized the results of the study to move toward recommendations for a new specification. This cutting edge research is unique in the state and further defines Dr. Ahearn and Herrera as bioretention experts both locally and nationally.



Heidi Houck is a senior engineer with over 10 years of experience in multidisciplinary civil and environmental engineering projects. She is experienced in stormwater and wastewater conveyance design, including stormwater management, gravity and pressure pipe design, pump station design, and odor control design and evaluation. Ms. Houck is also experienced in water resources engineering, including design of culverts; river restoration; shoreline stabilization using large woody debris; levee and dike design, removal and setbacks; and temporary erosion and sediment control (TESC). She provides design PS&E and construction management and oversight for stormwater, wastewater, and rivers projects. Ms. Houck also assists with underwater structural inspections and surveying. She has seven years of diving experience with survey measurements, structural integrity assessment, and photo/video documentation.

Credentials

B.S., Civil Engineering with Environmental Engineering Specialty, 2004
Professional Engineer, Washington / #45246 / 2008

Key Project Experience

Broadview Sewer Investigation *Seattle, WA*

The Broadview neighborhood of northwest Seattle has a history of sewage backups during very large storm events. Herrera conducted an investigation of sewer backups in the Broadview neighborhood, and developed and implemented initial steps of the recommended solution. Herrera determined short-term and long term alternative solutions to the sewage backup problem. Investigative steps conducted to address the Broadview issues include review of historic CCTV tapes and additional CCTV inspections, smoke testing, conveyance system condition assessments, and computer modeling of the entire system using XPSWMM. Ms. Houck was the project engineer and assisted with evaluation of a range of potential solutions including natural drainage systems to reduce stormwater runoff entering the combined sewer system, additional conveyance capacity, and sanitary and storm sewer system rehabilitation. A cost analysis was performed for alternative solutions. Herrera also coordinated modeling efforts with King County in order to develop mutually beneficial solutions. Following Herrera's recommendations, SPU completed installation of approximately 1,000 feet of new sanitary sewer pipe in 2009. Herrera engineers provided support throughout design and construction of those sewer improvements.

Kent/Auburn Conveyance System Improvement Project *King County, WA*

The Kent/Auburn Conveyance System Improvement (CSI) project includes development of capital improvement plans to expand King County's wastewater conveyance system in the cities of Kent, Auburn, Algona, and Pacific. Several alternatives including combinations of storage, pump stations, force mains, and gravity sewers were developed and evaluated to determine the best configuration to serve wastewater conveyance needs through 2050. Herrera assisted with the alternatives development and design for the Stuck River Trunk and the Auburn West Interceptor Parallel. As project engineer, Ms. Houck evaluated the wastewater conveyance alternatives, including evaluation of cost, schedule, constructability, permitting, and environmental issues. Ms. Houck evaluated odor issues in the project area. Ms. Houck was the task lead for the civil design including plans, specifications, cost estimating, and construction management assistance. She developed preferred conveyance alternatives and

Heidi Houck, PE

prepared design packages, including final design for the Stuck River Trunk pipeline and 60% design for the Auburn West Interceptor Parallel. She also assisted with the project management for Herrera. Construction of the Stuck River Trunk Pipeline was completed in 2013, and finalization of the Auburn West Interceptor Parallel design in 2015.

Mount Baker Road Neighborhood Residential Development Design and Support Services - OPAL Community Land Trust (OPAL)

Eastsound, WA

Herrera designed a private roadway, stormwater management facilities, and utilities, including water, septic, and sewer systems, for a residential low impact development (LID) located in Eastsound, WA. Herrera also prepared a drainage report as part of the project. Ms. Houck led the temporary erosion and sediment control (TESC) design task. She prepared the TESC plans, specifications, and cost estimate. Ms. Houck coordinated the TESC with the other design elements, including drainage, roadway, and utility design.

Secret Harbor Salt Marsh and Estuary Restoration

Cypress Island, WA

Washington Department of Natural Resources (DNR) asked Herrera to prepare a comprehensive feasibility study, design restoration features and corrective actions, prepare monitoring plans, and provide permitting assistance for the restoration of the estuary at Secret Harbor on Cypress Island, Washington. The property is located within the Cypress Island Natural Resource Conservation Area and Aquatic Reserve, one of the largest areas of its kind in the state. The objectives of the Secret Harbor Salt Marsh and Estuary Restoration project are to: 1) restore hydrologic connection and nearshore processes to the salt marsh, estuary, and adjacent freshwater wetlands and streams, and 2) provide a continuum of upland, riparian, freshwater, and salt water habitats within this 28 acre site. An alternatives analysis was conducted, and design documents are being provided for the preferred alternative, including plans, specifications, and cost estimate. The design includes scalping the existing dike, excavating a breach in the existing dike, removing fill from the salt marsh, excavating dendritic channels in the salt marsh, removing the road that borders the salt marsh, filling the upland ditch, and installing culverts under the upland road. Ms. Houck is the Project Engineer and worked with Herrera's geomorphologists and fisheries biologists to create a preferred alternative design. Ms. Houck prepared the drawings, specifications, and cost estimate. She also provided construction management services and acted as resident engineer, including coordinating with the Contractor, performing inspections, producing daily reports, reviewing submittals and RFIs, tracking quantities, and processing Contractor billing applications.

Mercer Island Decant Facility Retrofit

Mercer Island, WA

Herrera is working with the City of Mercer Island to develop a pre-design report and a grant application for a decant facility retrofit at the City's maintenance facility which won a FY 2012 Supplemental Statewide Stormwater Grant from the Washington State Department of Ecology. The decant facility retrofit will isolate decant liquids from storm water and improve the water quality of storm water flows to Lake Washington by providing containment of sediment and fluid on the decant pad, installation of new catch basin structures, and installation of new piping to convey flows to the sanitary sewer system. Ms. Houck is the lead engineer, and is preparing the pre-design report, plans, specifications, and a cost estimate for the retrofit.





LAKE WHATCOM WATER AND SEWER DISTRICT
AGENDA BILL

DATE SUBMITTED:	June 1, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL		
MEETING AGENDA DATE:	June 8, 2016		
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 <input type="checkbox"/>	FORMAL ACTION/ MOTION <input type="checkbox"/>	INFORMATIONAL/ OTHER <input checked="" type="checkbox"/>

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

June 8, 2016

Regular Board Meeting

6:30 p.m.

Important Upcoming Dates:

- **Meetings Associated with the Lake Whatcom Management Program:**
 - **Policy Group Meeting:** The next meeting is scheduled for **Monday, June 13, 2016** at 3:00 p.m. in the City of Bellingham's Fireplace Room located in the bottom floor of the Municipal Court Building at 625 Halleck Street. The Fireplace Room is located next to the City's Information Technology Office on the east side of the Court Building.
 - **Management Meeting:** The date and time for the next meeting with the Mayor and County Executive has not been set at this time.
- **Next Regular Board Meeting:** The next meeting will be held on **Wednesday, June 29, 2016** at 8:00 a.m.
- **Employee Staff Meeting:** The next staff meeting is set for **Thursday, June 9, 2016** at 8:00 a.m. in the Board Room. Commissioner Casey is scheduled to attend this meeting as he had to miss the May meeting.
- **Employee Safety Committee Meeting:** The next meeting is set for **June 9, 2016** at 9:00 a.m. in the small conference room.
- **Washington Association of Sewer & Water Districts Section III Meeting:** The next Section III meeting will be held at Bob's Burger & Brew in Tulalip at 6:15 p.m. on **June 14th**.
- **Whatcom Water District's Caucus Meeting:** The next Caucus meeting is set for **June 15, 2016** 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 meetings, such as the Lake Whatcom Policy Group, since the last Board Meeting.
- **Commissioner Replacement Recruitment:** As directed at the last meeting staff has initiated the process for a Commissioner recruitment to fill Ian's position. This will include notice to all residents in District 5 and a formal advertisement. Application deadline is June 30.