



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

REGULAR MEETING
OF THE BOARD OF COMMISSIONERS

AGENDA

November 30, 2016

8:00 a.m. – Regular Session

1. CALL TO ORDER
2. PUBLIC COMMENT OPPORTUNITY
At this time, members of the public may address the Commission. Please state your name prior to making comments.
3. ADDITIONS, DELETIONS, OR CHANGES TO THE AGENDA
4. CONSENT AGENDA
5. SPECIFIC ITEMS OF BUSINESS:
 - A. Reservoir Seismic Vulnerability Assessment – Presentation by BHC Consultants
 - B. Strawberry Point Sewage Pump Station Improvements Project - Closeout
 - C. Summary of Existing District Projects
 - D. Country Club Sewage Pump Station Improvements
 - E. Presentation of Draft 2017 Budget
 - F. FCSG Rate Study Presentation
6. OTHER BUSINESS
7. MANAGER'S REPORT
8. PUBLIC COMMENT OPPORTUNITY
9. ADJOURNMENT



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 21, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Bill Hunter	MANAGER APPROVAL <i>[Signature]</i>		
MEETING AGENDA DATE:	November 30, 2016		
AGENDA ITEM NUMBER:	5.A.		
SUBJECT:	Reservoir Seismic Vulnerability Assessment-BHC		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Selected sections of draft 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

Structural engineers from BHC Consultants will present their findings documented in the Reservoir Seismic Vulnerability Assessment for the District's 5 existing steel reservoirs.

Attached are selected sections from the report:

- Table of Contents
- Section 1 – Executive Summary
- Section 2 – Introduction
- Section 3 – Summary of Observations
- Section 4 – Summary of Analysis Methodology
- Section 6 – Summary of Findings – Impact of Failure
- Section 7 – Recommended Priorities for Retrofit

FISCAL IMPACT

None. Staff will use this assessment to prioritize the capital improvements and look for funding opportunities. Staff is currently coordinating with Whatcom County to apply for FEMA grants that cover seismic retrofits.

RECOMMENDED BOARD ACTION

None.

PROPOSED MOTION

None.

~~DRAFT~~

**Lake Whatcom Water and Sewer District
Reservoir Seismic Vulnerability Assessment
Technical Report**

November 2016



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TABLE OF CONTENTS

1.	Executive Summary	1
2.	Introduction	1
3.	Summary of Observations	2
4.	Summary of Analysis Methodology	3
5.	Summary of Findings – Structural	8
5.1	Geneva Reservoir	8
5.1.1	Record Information	8
5.1.2	BHC Field Observations	11
5.1.3	Summary of Findings – Structural	14
5.1.4	Seismic Evaluation Summary	16
5.2	Division 22 Reservoir	16
5.2.1	Record Information	16
5.2.2	BHC Field Observations	20
5.2.3	Summary of Findings – Structural	23
5.2.4	Seismic Evaluation Summary	24
5.3	Division 7 Reservoir	25
5.3.1	Record Information	25
5.3.2	BHC Field Observations	27
5.3.3	Summary of Findings – Structural	30
5.3.4	Seismic Evaluation Summary	31
5.4	Division 30 Reservoir	32
5.4.1	Record Information	32
5.4.2	BHC Field Observations	34
5.4.3	Summary of Findings – Structural	37
5.4.4	Seismic Evaluation Summary	38
5.5	SVWTP Reservoir	38
5.5.1	Record Information	38
5.5.2	BHC Field Observations	43
5.5.3	Summary of Findings – Structural	46
5.5.4	Seismic Evaluation Summary	47
5.6	Relative Predicted Overload	48
5.6.1	Shell Hoop Stresses	48
5.6.2	Longitudinal Shell Compressive Stress	48
5.6.3	Stability as an Unanchored Tank	49
5.6.4	Sloshing Wave Force on Roof to Shell Joint	50
5.6.5	Foundation and Anchorage	50
6.	Summary of Findings – Impact of Failure	50
7.	Recommended Priorities for Retrofit	52
8.	Retrofit Options and Costs	54
8.1	Geneva Reservoir	54
8.1.1	Reducing Water Level	55
8.1.2	Anchorage and Foundation Enhancements	55
8.1.3	Recommended Retrofit Option	58
8.2	Division 22 Reservoir	58

8.2.1	Reducing Water Level	60
8.2.2	Anchorage and Foundation Enhancements.....	60
8.2.3	Upsize Proposed Companion Tank and Demolish Existing	62
8.2.4	Recommended Retrofit Option	62
8.3	Division 7 Reservoir	62
8.3.1	Reducing Water Level	64
8.3.2	Hoop and Longitudinal Overstress.....	64
8.3.3	Anchorage and Foundation Enhancements.....	64
8.3.4	Demolish and Replace Tank.....	67
8.3.5	Recommended Retrofit Option	67
8.4	Division 30 Reservoir	67
8.4.1	Reducing Water Level	68
8.4.2	Anchorage and Foundation Enhancements.....	69
8.4.3	Recommended Retrofit Option	71
8.5	SVWTP Reservoir	71
8.5.1	Reducing Water Level	72
8.5.2	Adding Ballast to Existing Ringwall.....	72

LIST OF TABLES

Table 1 – Reservoir Data.....	2
Table 2 – Analysis Assumption Summary	5
Table 3 – Metal Thicknesses – Geneva Reservoir	12
Table 4 – Seismic Load vs AWWA D100 Allowable – Geneva Reservoir.....	14
Table 5 – Metal Thicknesses – Division 22 Reservoir	21
Table 6 – Seismic Load vs AWWA D100 Allowable – Division 22 Reservoir.....	23
Table 7 – Metal Thicknesses – Division 7 Reservoir	28
Table 8 – Seismic Load vs AWWA D100 Allowable – Division 7 Reservoir.....	30
Table 9 – Metal Thicknesses – Division 30 Reservoir	35
Table 10 – Seismic Load vs AWWA D100 Allowable – Division 30 Reservoir.....	37
Table 11 – Metal Thicknesses – SVWTP Reservoir	44
Table 12 – Seismic Load vs AWWA D100 Allowable – SVWTP Reservoir	46
Table 13 – Lake Whatcom Water and Sewer District - Reservoir Seismic Evaluation Impact Table	51
Table 14 – Probability of Failure (PoF)	52
Table 15 – Consequence of Failure (CoF).....	52
Table 16 – Business Risk Exposure (BRE)	53
Table 17 – Geneva Reservoir Retrofit Options	54
Table 18 – Division 22 Reservoir Retrofit Options	58
Table 19 – Division 7 Retrofit Options	63
Table 20 – Division 30 Retrofit Options	68
Table 21 – SVWTP Retrofit Options	72

LIST OF FIGURES

Figure 1 Site Plan from Original Design Drawings.....	8
Figure 2 Elevation View from Original Design Drawings.....	9
Figure 3 Geneva Reservoir.....	10

**Lake Whatcom Water and Sewer District
Reservoir Seismic Vulnerability Assessment
Technical Report**

Figure 4 Geneva Reservoir, September 1, 2015	11
Figure 5 Geneva Reservoir at Shell to Foundation Interface	13
Figure 6 Roof at Entry Hatch	14
Figure 7 Division 22 Reservoir Site Plan from PanGeo Report.....	17
Figure 8 Division 22 Reservoir Elevation View from Original Design Drawings.....	18
Figure 9 Division 22 Reservoir – Proposed Second Tank, from Pan Geo Report.....	18
Figure 10 Division 22 Reservoir.....	19
Figure 11 Division 22 Reservoir, September 1, 2015	20
Figures 12, 13, and 14 Division 22 Reservoir at Foundation	22
Figure 15 Division 22 Reservoir at Roof Hatch	23
Figure 16 Elevation View from Original Design Drawings.....	25
Figure 17 Division 7 Reservoir.....	26
Figure 18 Division 7 Reservoir, September 1, 2015	27
Figure 19 Division 7 Reservoir at Foundation	29
Figures 20 and 21 Division 7 Reservoir at Roof Hatch and Vent.....	30
Figure 22 Elevation View from Original Design Drawings.....	32
Figure 23 Division 30 Reservoir.....	33
Figure 24 Division 30 Reservoir, September 1, 2015	34
Figure 25 Division 30 Reservoir at Foundation.....	36
Figures 26, 27, and 28 Division 30 Reservoir at Roof Hatch and Vent.....	37
Figure 29 Site Plan from Original Design Drawings.....	39
Figure 30 Elevation View with Inlet Diffuser, Wilson Engineering, 1992	39
Figure 31 SVWTP Reservoir	41
Figures 32, 33, and 34 Details of Internal Baffle System for the SVWTP Reservoir	42
Figure 35 SVWTP Reservoir, September 1, 2015	43
Figure 36 SVWTP Reservoir at Shell to Foundation Interface	45
Figure 37 Variable Diameter Ringwall	45
Figure 38 Maximum Static Hoop Stress Ratio	48
Figure 39 Maximum Seismic Hoop Stress	48
Figure 40 Maximum Longitudinal Stress Ratio	49
Figure 41 Stability Ratio as Unanchored Tank	49
Figure 42 Foundation Element Demand/Capacity Ratios	50
Figure 43 External Ringwall Above and Below Grade	56
Figure 44 Supplementary External Ringwall with Anchor Bolts and Ground Anchors	57
Figure 45 Supplemental Internal Bottom Mat Attached to Shell with Studs	58
Figure 46 External Ringwall Above and Below Grade	60
Figure 47 Supplementary External Ringwall with Anchor Bolts and Ground Anchors	61
Figure 48 Supplemental Internal Bottom Mat Attached to Shell with Studs	62
Figure 49 Alternate A – Division 7 Reservoir	65
Figure 50 Alternate C – Division 7 Reservoir	66
Figure 51 Supplemental Internal Bottom Mat Attached to Shell with Studs	67
Figure 52 External Ringwall Above and Below Grade	69
Figure 53 Supplementary External Ringwall with Anchor Bolts and Ground Anchors	70
Figure 54 Effect of Increasing Mat Depth	71
Figure 55 Added Ballast to Existing Ringwall	73

APPENDICES

A.1 Cost Estimates

A.2 Geotest Report 15-0807 January 13, 2016

B.1 Geneva Reservoir Calculations

B.2 Division 22 Reservoir Calculations

B.3 Division 7 Reservoir Calculations

B.4 Division 30 Reservoir Calculations

B.5 SVWTP Reservoir Calculations

1. Executive Summary

A structural analysis was performed on five District water storage reservoirs to determine their sufficiency to withstand existing earthquake code requirements. The shells of all five tanks except the Division 7 and 22 tanks were found to be adequate; however, the foundations and/or anchorage were inadequate in all five tanks. The Division 7 Reservoir is the largest in the system, has the most serious deficiencies, and would have the worst adverse impact if removed from service by an earthquake. It is recommended as the highest priority for retrofit. The recommended priority for further investigation of retrofit options are:

- **Division 7 Reservoir**

A supplemental, external ringwall is the recommended retrofit option at an estimated approximate project cost of \$721,000. This retrofit also includes supplemental shell plates to resolve issues with overstress.

- **SVWTP Reservoir**

An attached, below ground ringwall addition to the existing ringwall foundation is the recommended retrofit option at an estimated approximate project cost of \$156,000.

- **Division 22 Reservoir**

The addition of an external gravity ringwall collar, is the least expensive and recommended retrofit option at an approximate estimated project cost of \$367,000. This retrofit also includes a small amount of supplemental shell plate to resolve issues with overstress.

- **Geneva Reservoir**

An anchored external ringwall is the least expensive and intrusive retrofit alternative, and is the recommended retrofit approach for the Geneva Reservoir at an estimated approximate project cost of \$505,000.

- **Division 30 Reservoir**

The recommended retrofit option for this reservoir is an anchored supplemental ringwall. Although a gravity collar may appear less expensive at first glance, the unit price for concrete could be substantially higher than assumed generally due to the remoteness and elevation of the site. A gravity collar would also involve very poor shell manway access. The estimated approximate project cost for this retrofit option is \$541,000.

2. Introduction

This report is prepared pursuant to a contract between the Lake Whatcom Water and Sewer District and BHC Consultants LLC dated November 30, 2015. The purpose of the contract is to obtain a seismic and structural evaluation of five existing water storage reservoirs within the District boundaries and provide a report discussing the planning level opinion of probability and consequence of failure, specific structural deficiencies, and estimated costs and methods to retrofit these structures to bring them to current standards.

The five welded steel, ground storage reservoirs which are the subject of this report were constructed in the 1970's and 1990's. Their names, dimensions, and maximum capacities are provided in Table 1.

**Lake Whatcom Water and Sewer District
Reservoir Seismic Vulnerability Assessment
Technical Report**

Table 1 – Reservoir Data

Reservoir Name	Nominal Capacity (gal)	Maximum Capacity (gal)*	Year Constructed	Diameter (ft.)	Height of Shell (ft.)
Geneva	500,000	519,206	1979	53'-0"	32'-8"
Division 22	500,000	520,088	1971	50'-0"	35'-0"
Division 7	1,000,000	997,939	1971	70'-0"	35'-0"
Division 30	150,000	151,390	1973	25'-5"	40'-4 ½"
Sudden Valley Water Treatment Plant (SVWTP)**	235,000	225,591	1992	40'-0"	25'-0"

Notes:

- * Maximum capacity is the gross storage volume with the tank filled to the overflow level, with no reductions for internal piping or appurtenances.
- ** The Sudden Valley WTP reservoir also functions as a chlorine contact tank and has an internal baffle system. The nominal capacity of the tank is per the shop drawings.

The evaluation did not include tank roofs or vents, corrosion or coatings, or geotechnical evaluation of site stability.

3. Summary of Observations

BHC visited each tank site on September 1, 2015 and again on December 15, 2015, when the tanks were examined and certain dimensional measurements made. In addition, BHC reviewed available District record information for the tanks, which included limited design or shop drawings, soils reports, and external and underwater inspections. Tank nameplate data or record drawings indicate that the welded steel ground storage tanks were designed in accordance with earlier editions of AWWA D100 *Welded Carbon Steel Tanks for Water Storage*.

The District obtained estimated thickness measurements for ringwall thickness at Reservoirs 7, 22, and 30 using both ground penetrating radar (GPR) and an Olsen concrete thickness gauge (CTG). These tests were performed on January 7, 2016 by Geotest of Bellingham, WA and are described in their report dated January 13, 2016, which is attached as Appendix A.2. Unlike the Geneva and SVWTP Reservoirs, these three reservoirs had no surviving records related to ringwall foundation depth or thickness.

The District excavated near the above ringwalls on December 15, 2015 and January 7, 2016, at which time depth measurements were made at three locations on the perimeter of each tank.

The condition of interior and exterior coatings was not evaluated. Visually, conditions appeared consistent with tank inspection reports prepared in 2012 by H2O Solutions.

4. Summary of Analysis Methodology

Each reservoir was analyzed for conformance to AWWA Standard D100-11, *Welded Carbon Steel Tanks for Water Storage*, supplemented by requirements of the 2012 International Building Code and ASCE 7-10, *Minimum Design Loads for Buildings and Other Structures*. Only seismic load combinations were considered, but partial snow mass was included with the roof weight when required by code. Wind and roof live load combinations were ignored.

Analysis was limited to shell, anchorage and foundation elements. Roof framing evaluation was not included, since it does not perform a significant role in lateral resistance to seismic loads. The weights of appurtenances and floor or roof plate overlaps were ignored, except for the weight of internal baffles on the SVWTP Reservoir.

The assumed ground motion applicable for all tanks was the Maximum Considered Earthquake (MCE) which is a maximum ground motion considered to have a risk of occurrence not greater than 2 percent in 50 years (a "2,500 year" earthquake). Ground motions were derived using latitude and longitude for each tank and interpolation software available on-line from the U.S. Geological Service. It should be stressed that the MCE is a "risk adjusted" value and not necessarily the worst possible earthquake that might be expected at less frequent intervals. The MCE is the worst case earthquake considered by the building codes. Design meeting code requirements does not mean there will be no damage, but that an acceptable level of performance will be achieved for the risk category assumed.

All the reservoirs are used for fire protection and are classified in Risk Category IV in the Building Code and as Category III in AWWA D100. These are equivalent categories and refer to essential facilities. The addition of the new Division 22 Reservoir would not change the classifications of the existing reservoirs.

Ground motions were adjusted for soil type using factors in the Building Code. Site Class B has been assumed for the Division 30 reservoir, based on rock encountered during the test pit excavation to expose the ringwall. The Division 22 Reservoir site, where recent soil investigations for a future tank are available, is assumed to be Site Class C. All foundation soils for the other three reservoirs are assumed to be Site Class D.

Analysis methodology in AWWA D100 is based on an assumption of "rigid" shells and an open surface at the top of the tank, in other words, no contact with the roof by sloshing waves induced by earthquake ground motions. When sloshing involves roof contact, the horizontal forces on the tank are magnified and result in increased forces on the tank superstructure and foundation. To account for this effect, methodology in the literature was used to adjust the apparent seismic mass. Reference details are provided in the calculations attached in Appendix B of this report.

Forces computed for design purposes by AWWA D100 methods adjust the predicted forces downward to account for some ductility and deformation in the tank and what is considered an acceptable amount of damage short of failure. Seismic forces due to impulsive mass (structure weight and most of the water mass) are divided by the factor R_w which is 2.5 for unanchored tanks and 3.0 for anchored tanks. Convective loads associated with convective mass (sloshing portion of the contents) are divided by a factor R_i which is 1.5 for both anchored and unanchored tanks. Vertical acceleration concurrent with horizontal ground motion is included.

Unanchored tanks were checked for stability, and anchored tanks were checked for stability in case of anchorage failure. Anchored tanks were checked for uplift of the foundation and for overturning stability about a pivot point at the toe of the shell.

Finally, because the SVWTP tank has internal baffles, the effect of ground motions parallel to the baffles is not the same as for ground motions perpendicular to the baffles. The behavior in the first case would be similar to an un-baffled tank. For ground motions perpendicular to the baffles, the sloshing would be reduced, resulting in less of the water mass counted as convective and more as impulsive, increasing the base shear and overturning moment. The mass of the baffles and the mass of an equivalent volume of displaced water was included in the analysis as an approximation for these effects. However, determining their full effect on the relative amount of impulsive water mass is beyond the scope of this evaluation, and would require a much more complicated analysis.

Table 2 is a summary of analysis assumptions.

5.6.4 Sloshing Wave Force on Roof to Shell Joint

The predicted sloshing wave uplift forces on the roof to shell joint are all approximately 100 lbs per foot or less, which is well within the allowable load on a 3/16 inch fillet weld, which is about 1,300 lbs per inch.

5.6.5 Foundation and Anchorage

In the case of the anchored tanks, maximum anchor spacing is within limits for the Division 30 and SVWTP tanks, but not for the Geneva tank. Anchor plate and anchor bolt stresses exceed allowable for all the anchored tanks. Anchorage failure for the embedded portion due to pullout or concrete failure is an issue for the Geneva and Division 30 tanks, but is adequate for the SVWTP tank.

None of the ringwall foundations, including soil resistance and the weight of water over the interior, are sufficient to prevent uplift, assuming anchorage were provided and adequately designed. Bearing pressure under seismic loading conditions appears to exceed the assumed limits; however, it is probably acceptable for the Division 30 tank if the ringwall is assumed to bear on rock.

Figure 42 below indicates the ratio of load to capacity for various foundation elements. All ratios have been normalized for comparison on an ultimate load to strength basis. All the reservoirs have inadequate foundations, but the SVWTP reservoir is the least problematic and most easily fixed.

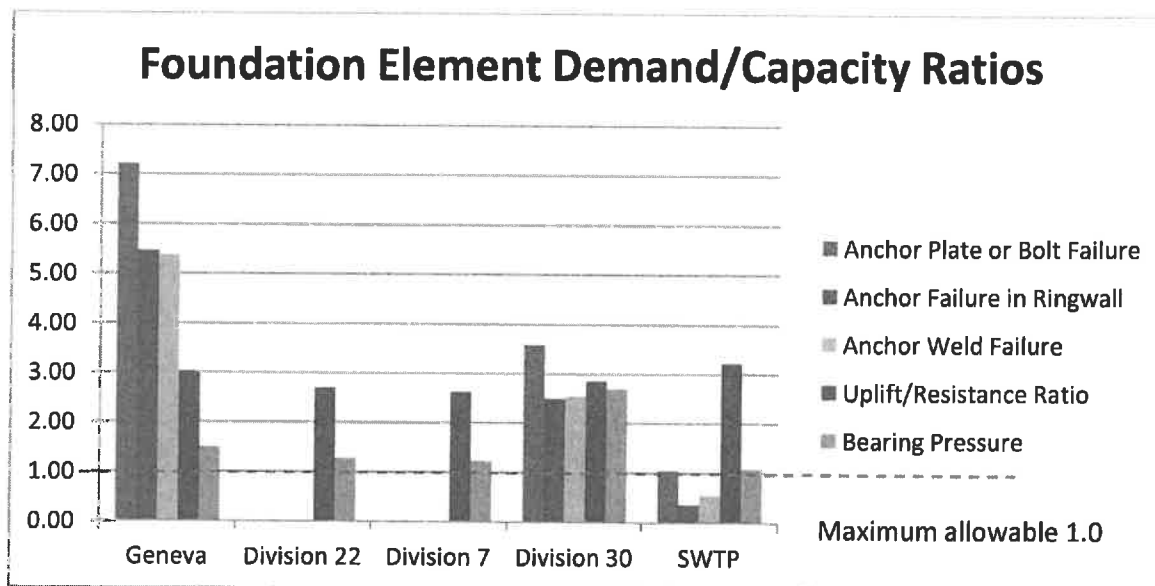


Figure 42 Foundation Element Demand/Capacity Ratios

6. Summary of Findings – Impact of Failure

The District's water system is tightly connected and redundant, with many tanks serving other zones where necessary with interties, PRVs and pump stations. The impact to nearby residences was determined by reviewing location map figures of the reservoirs and determining how many, if any, residences would be impacted should the reservoir fail. Impact to the water system was determined by evaluating the number of ERUs served, and by understanding how the reservoirs are inter-related with one another and provide storage and flow to other reservoirs within the system. Total impact, as shown in Table 13, was determined based on tank condition, impact to nearby residences, and water system impact.

Table 13 – Lake Whatcom Water and Sewer District - Reservoir Seismic Evaluation Impact Table								
Reservoir	Capacity	Population (Per Section 2.1, WSP)	Flow Between Zones	Location	Tank Condition	Impact: Nearby Residences	Impact: Water System	Overall Impact
Sudden Valley Study Area								
Division 30	0.15MG	6,595	Fed by Div 7	Residential	Deficient	High	Medium (1,158 ERUs served; feeds high elevation homes)	Medium
Division 22	0.5MG		Linked with Geneva	Residential	Deficient	High	Medium (1,782 ERUs served; feeds Geneva)	Medium
Division 7	1.0MG		Fed by SVWTP; Feeds Div 30	Residential	Highly Deficient	High	High (2,153 ERUs served; largest size, feeds Div 30)	High
SVWTP	0.235MG		Feeds Div 7, Div 22, and Div 30	At WTP; no downstream residences	Somewhat Deficient	Low	High (3,935 ERUs served; feeds Div 7, Div 22, and Div 30)	Medium
Geneva Study Area								
Geneva	0.5MG	3,231	Div 22 also serves Geneva Area due to intertie	At District shops. Some residences nearby	Deficient	Medium	Medium (646 ERUs served; can be served by SV tanks, but could impact nearby District shops)	Medium
Notes:								
1) Individual zone populations were not included within the current Water System Plan. Therefore, study area population was given as reference.								
2) Fire flow considerations: Per the WSP, the fire flows within the system are adequate for all tanks.								

7. Recommended Priorities for Retrofit

Due to both the nearby residence and water system impact, the Division 7 reservoir will have the most impact should failure occur. The SVWTP reservoir has a very high impact on the water system, as it feeds the entire water system, and its storage reservoir is part of the treatment process. SVWTP feeds both the Division 7 and the Division 22 reservoirs; Division 7 in turn feeds Division 30, and Division 22 connects to the Geneva reservoir through the existing intetie.

One way to determine the priority of tank retrofits is to evaluate risk. Risk is typically determined as the probability of occurrence times the consequence of the event. The District uses Business Risk Exposure (BRE) as the term for risk and BRE is defined as:

$BRE = \text{Probability of Failure (PoF)} \times \text{Consequence of Failure (CoF)}$.

Probability of Failure is the probability that the reservoir will fail during the design earthquake and is defined by the ratings in Table 14.

Table 14 – Probability of Failure (PoF)	
PoF Rating	Probability that facility will fail during design earthquake
1	0%
2	10%
3	20%
4	30%
5	40%
6	50%
7	60%
8	70%
9	80%
10	90%

Consequence of Failure is a rating that is defined by the item that failed (a component, facility, or system), the level of failure (minor, major, intermediate, significant, or total), and the percentage of the system that is affected. Table 15 provides the ratings for CoF.

Table 15 – Consequence of Failure (CoF)			
CoF Rating	Description	Level Affected	Percent Affected
1	Minor Component Failure	Asset	0 - 25%
2	Major Component Failure	Asset	25 – 50%
3	Major Asset Failure	Asset	0 – 25%

Table 15 – Consequence of Failure (CoF)

CoF Rating	Description	Level Affected	Percent Affected
4	Multiple Asset Failure	Facility / Sub-System	25 – 50%
5	Major Facility Failure	Facility	50 – 100%
6	Minor System Failure	Total System	20 – 40%
7	Medium System Failure	Total System	40 – 60%
8	Intermediate System Failure	Total System	60 – 80%
9	Significant System Failure	Total System	80 – 90%
10	Total System Failure	Total System	90 – 100%

ERUs can be used to define the percentage of the District affected and provide a rating for CoF. The PoF rating is estimated based on the seismic evaluation calculations and professional judgement. The resulting BRE values are shown in Table 16.

Table 16 – Business Risk Exposure (BRE)

Reservoir	ERUs	Percentage of Total South Shore System	CoF Rating	PoF Rating	BRE
Division 30	1,158	29%	6	10	60
Division 22	1,782	45%	7	10	70
Division 7	2,153	55%	7	10	70
SVWTP	3,935	100%	10	7	70
Geneva	646	16%	5	10	50

Based on Tables 13 and 16, recommended retrofits in order of priority are:

Division 7 Reservoir. Given its importance, the fact it is unanchored, it has the highest probability of failure, and it has one of the highest consequences of failure, the Division 7 Reservoir is recommended as the highest priority for retrofit or replacement.

SVWTP Reservoir. This reservoir is less of a hazard than the Division 7 Reservoir, but is critical as the source for other reservoirs and as part of the treatment process. The SVWTP Reservoir also has the highest consequences of failure since it serves the greatest number of ERUs in the South Shore System. The SVWTP has a lower probability of failure than the Division 7 reservoir.

Division 22 Reservoir. This reservoir is recommended next in priority because it is unanchored and liable to failure, has a large storage volume, and would result in high neighborhood impact in case of failure.

Division 30 Reservoir. This is the smallest reservoir and its failure would remove service from higher elevation customers and cause damage to nearby residences in the event of collapse. It is not that this tank is unimportant, but the risks and consequences of failure are greater at the other sites.

Geneva Reservoir. The Geneva Reservoir serves the fewest customers and, in the event of failure, service could be provided from other tanks. Based on ERUs, the Geneva Reservoir has the lowest consequences of failure. Given its size and proximity to the District's maintenance facility, failure of this tank could seriously disrupt the District's ability to respond to other problems in the system in the event of an earthquake.

8. Retrofit Options and Costs

Following are descriptions and estimated costs for various alternative retrofit schemes. These are very preliminary and are based on approximate sizing of major elements, with allowances for miscellaneous associated work. Detailed estimate spreadsheets are provided in Appendix A.1. Cost estimates are planning level and include sales tax, an allowance for design, permitting, inspection, and construction administration, plus a contingency.

The opinion of probable construction cost herein is based on our perception of current conditions at the project location. This opinion reflects our professional opinion of costs at this time and is subject to change as the project design matures. BHC Consultants has no control over: variances in the cost of labor, materials, equipment; cost for services provided by others; contractor's means and methods of executing the work or of determining prices; nor, competitive bidding or market conditions, practices or bidding strategies. BHC Consultants cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from the costs presented as shown.

8.1 Geneva Reservoir

Table 17 summarizes problems and possible solutions at the Geneva Reservoir, followed by discussion and estimated cost.

Table 17 – Geneva Reservoir Retrofit Options			
Problem	Possible Solution	Positives	Negatives
Excessive seismic forces	Reduce water level	Least cost	May be operationally unacceptable
Inadequate anchorage and foundation capacity	Alternate A Provide supplementary external ringwall attached to shell with studs	<ul style="list-style-type: none"> • Less expensive than anchor chairs and bolts • Less excavation than other ringwall enlargements since most of new foundation is above grade 	<ul style="list-style-type: none"> • May require relocation of shell manhole • Reduces access around tank more than other alternatives • May be aesthetically objectionable • Requires relocation of valves/piping
	Alternate B Provide supplementary external ringwall with	Supplemental ringwall can be constructed with minimal encroachment	<ul style="list-style-type: none"> • More excavation than previous alternative if



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 21, 2016		
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FROM: Bill Hunter	MANAGER APPROVAL <i>[Signature]</i>		
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SUBJECT:	Strawberry Point Sewage Pump Station – Project Closeout		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL:	1. 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

Tiger Construction Ltd. has completed all contract requirements and punch list items. Staff recommends accepting the Strawberry Point Sewer Pump Station Improvements as complete.

FISCAL IMPACT

Original Construction Contract (<i>Tiger Construction Ltd.</i>)	\$368,040.00	
CO#1 (<i>Additional block wall foundation drains</i>)	\$230.07	
CO#2 (<i>Additional days due to PSE schedule</i>)	\$0	
CO#3 (<i>Additional fencing, delete parking signs</i>)	\$387.50	
CO#4 (<i>Adjust unused unit price item quantities</i>)	(\$11,972.00)	
Subtotal approved change orders to date	(\$11,354.43)	-3.1%
Total Construction Cost	\$356,685.57	
8.5% Sales Tax	\$30,318.27	
Grand Total Including Sales Tax	\$387,003.84	

RECOMMENDED BOARD ACTION

See proposed motion.

PROPOSED MOTION

Accept the Strawberry Point Sewer Pump Station Improvements as complete and direct staff to close out the project.



November 21, 2016

RH2 ENGINEERING, INC.
www.rh2.com
mailbox@rh2.com
1.800.720.8052

WASHINGTON
LOCATIONS

BOTHELL
MAIN OFFICE
22722 29th Drive SE, Suite 210
Bothell, WA 98021

BELLINGHAM

EAST WENATCHEE

ISSAQUAH

RICHLAND

TACOMA

OREGON
LOCATIONS

NORTHERN OREGON
MAIN OFFICE
6500 SW Macadam Ave, Suite 100
Portland, OR 97239

SOUTHERN OREGON
Central Point

COASTAL OREGON
North Bend

Ms. Kristin Hemenway, P.E., Construction Engineer
Lake Whatcom Water and Sewer District
1220 Lakeway Drive
Bellingham, WA 98229

Sent Via: E-mail

Subject: Acceptance of Strawberry Point Sewer Pump Station Improvements

Dear Mrs. Hemenway:

RH2 Engineering, Inc., (RH2) has reviewed the Strawberry Point Sewage Pump Station Improvements after several punchlist meetings and correspondence with Tiger Construction Inc. and their subcontractors JH Kelly and QCC. This effort has included multiple site visits, revised punchlists, along with review and delivery of spare mechanical and electrical parts as required by the contract.

Final punchlist completion occurred today with delivery of spare electrical parts and O&M Manuals to the District. RH2 accepts the sewer pump station as complete with the exception of review of the asbuilt drawings. We recommend the District accept the project as complete. Should you have any questions or concerns, please contact me at (360) 676-0836, ext. 5342. It has been a pleasure to work with you and your staff on this project.

Sincerely,

RH2 ENGINEERING, INC.

Dan Burwell, P.E.
Project Manager

DWB/jq



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 21, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Bill Hunter and Staff	MANAGER APPROVAL <i>[Signature]</i>		
MEETING AGENDA DATE:	November 30, 2016		
AGENDA ITEM NUMBER:	5.C.		
SUBJECT:	Summary of Existing District Projects		
LIST DOCUMENTS PROVIDED ⇒	1. November 2016 Summary of Existing District Projects		
NUMBER OF PAGES	2.		
INCLUDING AGENDA BILL:	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

Staff presentation of Summary of Existing District Projects and priorities.

FISCAL IMPACT

Not applicable at this time.

RECOMMENDED BOARD ACTION

Review and discuss

PROPOSED MOTION

Not applicable at this time.

LAKE WHATCOM WATER AND SEWER DISTRICT

Summary of Existing District Projects

Meeting Date	Effective Date		Prepared by	
November 30, 2016	November 21, 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	3807	68	44	2
Remaining Capacity (ERUs)	128	17	10	0
Commitments – Not yet connected				
Permitted ERUs Under Construction	10	0	0	0
Pre-paid Connection Certificates and Expired Permits	11	2	5	0
Water Availabilities (trailing 12 months)	17	0	0	0
Subtotal	38	2	5	0
Available ERUs	90	15	5	0

Completed Capital Projects in 2016	
C1207	Reservoir Overflow Drains to Daylight
C1402	Geneva Area A/C Mains
C1412	Facility Improvements
C1502	Sudden Valley Water Treatment Plant Spare Acidification Unit
C1503	SVWTP Clear well Overflow
C1601	General Engineering Services
C1602	Asset Management System Upgrade
C1609	Sudden Valley Sewer Pump Station Emergency Repairs
C1604a	LWB/Airport Isolation Valve
C1604b	Detention Basin Gate Valve Extension
C1608	SVCA Culvert Replacements

State Required Report Status								
Reporting	Name of Report & Preparer	Completed						When Due
MONTHLY	Chlorination Report Agate Heights (Kevin)	Jan	Feb	Mar	Apr	May	June	Postmarked by 10 th of month
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		July	Aug	Sept	Oct	Nov	Dec	
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Surface Water Treatment Rule Report (SVWTP) (Kevin)	Jan	Feb	Mar	Apr	May	June	Postmarked by 10 th of month
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
ANNUALLY	Department of Revenue (Debi)	Jan	Feb	Mar	Apr	May	June	Due end of following month
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		July	Aug	Sept	Oct	Nov	Dec	
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	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
	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)	June 30, 2016	Due by July 1st
	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
	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 8/3/2016	Due Triennially Next Due 2019

SAFETY PROGRAM SUMMARY

Completed by Rich Munson

Summary of Annual Safety Training				
	Enrollments	Completions	% Complete	
Engineering - Managers	34	34	100%	
Engineering - Staff	19	19	100%	
Field Crew	182	182	100%	
Field Crew - Managers	26	26	100%	
Office Managers	20	11	55%	
Office - Staff	48	48	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	October 13, 2016			
February 11, 2016	November 15, 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: <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	1	1	11
Total Number of Work Related Injuries Defined as a work related injury or illness that results in:	0	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 				
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 6 water and sewer connections.		
SIGN DATE	7/27/2016	EXPIRATION DATE	7/27/2019
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. • 7/14/2016 Plans received from developer. • 7/28/2016 DEA executed and recorded at Auditor's office • 7/28/2016 Plans transmitted to Wilson for review and comment. • 8/1/2016 Wilson completed fire flow analysis – no issues. About 3030 GPM fire flow available after improvements. • 8/16/2016 District received revised plans from developer. • 8/17/2016 Wilson reviews plans and requests copy of proposed easements for review. • 8/22/2016 District returns plan review comments and easement comments to developer. • 9/7/2016 Draft easements are good to record. Returned originals to developer for recording. 			

Lake Whatcom Water & Sewer District Capital Improvement Projects Staff Report

C1214 Dead End Blow Offs

Install blow offs at water main dead ends.

01 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.
- 8/9/2016 Crews completed work at 2 locations. (Alder Ct. and Arrow Root Pl.)

C1306 LLR Sewer Air-Vac Valve Replacement

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

01 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.

04 Predesign and 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 Whatcom County is processing Condition Use and Variance Permit application.
- 9/2/2015 G&O working to address DOH project report comments.
- 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.

07 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

10 Construction

- 8/8/2016 Contractor has begun construction work. Trees have been cut. Timber will be delivered to Sudden Valley. Contractor will remove stumps this week.
- 9/8/2016 Contractor has excavated down to footing subgrade. Geotechnical engineer reviewed site conditions. Contractor working on ring-wall footings.
- 10/17/2016 Concrete ring wall and asphalt floor pad complete. Contractor beginning to layout steel floor panels.
- 11/21/2016 Contractor is close to finishing steel work and welding.

C1405 Strawberry Pt. Sewer PS Improvements

Replace Strawberry Point Sewer Pump Station.

02 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.

05 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.

08 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.

09 Services During Construction

8/9/2016 RH2 providing construction contract admin support and inspection as needed.

10 Construction

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.
8/9/2016 Contractor is starting work on electrical systems. Startup scheduled for September 8th.
9/8/2016 Contractor ready to begin startup. We are waiting for PSE to schedule a date for new power drop for we can proceed with startup.
10/5/2016 New pump station put into service. Contractor finishing site work and demobilizing equipment.
10/17/2016 District and RH2 perform punch list inspection.
11/21/2016 Contract finished punch list. O&M manuals delivered to District. Final completion of project is very close.

C1407 Lowe Sewer PS VFD

Replace rotophase with VFD.

01 Administration

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.

C1504 Reservoir Site Security

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

01 Administration

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.

01 Administration

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.
- 8/2/2016 District returned review comments to BHC. BHC beginning final revisions on report.
- 10/19/2016 BHC completing report. Should have final report finished and ready to present to Board in November.
- 11/30/2016 BHC to present final draft of Seismic Vulnerability Assessment to board.

C1506B 2015 Sewer System Rehab

Recurring annual project that aims to rehabilitate or replace aging sewer system mains and manholes, and search for inflow and infiltration. Work includes smoke testing, manhole and main repairs. C1506B = Whatcom Falls Manhole.

01 Administration

- 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 Willson is refining design to accomodate temporary bypass pumping that will be needed during construction.
- 4/18/2016 Plans have been accepted by City and are in review.

10 Construction

- 8/9/2016 Contractor is building pre-cast manhole. Submittals are in progress. Work tentativley to begin later half of August.
- 9/8/2016 New manhole has been installed. New District forcemain alignment has been installed. Contractor

working on backfilling excavation and site restoration.

10/6/2016 Punch list inspection with City, District, and Contractor. Two minor items noted: Contractor needs to redo the asphalt patch and regrade around manhole rim to accommodate City mowers.

11/21/2016 Last two punch list items are schedule for week of November 28.

C1603 Marina-Tomb Stationary Generator

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

01 Administration

- 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 incorporate 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.
- 8/4/2016 Generator and transfer switch ordered. Scheduled arrive in about 2 months.
- 10/10/2016 Generator delivered to site.
- 10/18/2016 Staff obtained permit from County for concrete slab. Crews installed transfer switch on electrical rack. Crews preparing to start on excavation and concrete forms.
- 11/21/2016 Underground electrical work done, auto-transfer switch installed, concrete slab has been poured and is curing. District crews plan to set generator on slab week of November 28.

C1605 Water System Plan Update

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

01 Administration

- 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.
- 8/16/2016 Meeting with Wilson and DOH to coordination scope of work. Wilson developing scope and fee for task order.
- 9/8/2016 Wilson developed scope of work after coordination with District staff and DOH. Scope/fee will be present at next board meeting for approval.
- 9/20/2016 Task Order with Wilson Engineering executed. Wilson will start work soon.

C1606 Replace SCADA Workstation Hardware

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

01 Administration

- 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.

01 Administration

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.

7/27/2016 Agreement with consultant has been executed.

9/8/2016 Staff received preliminary draft plan from consultant and will share with board

10/3/2016 Workshop with County and City to review draft sampling plan.

10/19/2016 Consultant working on sampling plan revisions based on workshop comments with City and County.

11/21/2016 Consultant will start sampling during next good rain event.

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.

01 Administration

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.

01 Administration

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

8/9/2016 Staff working with BHC to develop scope of work

9/8/2016 AE agreement finalized and being routed for execution. Scope/fee was approved by board on 8/31/2016. Work to begin as soon as agreement is executed.

11/2/2016 District attended Center Condo Owner's Association board meeting to present and coordinate the project. Association gave District needed letter of authorization to pursue Whatcom County permits for construction - of either option (pump station or direction drill).

02 Predesign

10/11/2016 Held predesign meeting with BHC and District staff. BHC beginning preliminary design.

11/21/2016 Staff and BHC working on scope amendment to investigate horizontal direction drilling as the primary option. This option has the potential to eliminate the need for the pump station.

03 Permitting

10/20/2016 Pre-Application meeting with Whatcom County to review anticipated permitting requirements.

11/7/2016 District and GeoEngineers met with Whatcom County Critical Areas Biologist to review potential critical areas.

C1612 Cedar Hills Water Main Relocate

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

01 Administration

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.

10 Construction

8/9/2016 Water utility relocated are done. County contractor is now working on the storm water filter systems.

9/8/2016 Contractor still working on stormwater facilities.

11/21/2016 County's construction appears complete. District waiting for invoice from County.

C1613 Northshore Water System Consolidation

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

01 Administration

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

8/9/2016 Staff working with Wilson on a task order scope of work.

9/8/2016 Task order scope/fee approved by board on 8/31/2016. Once task order has been executed, Wilson will begin work.

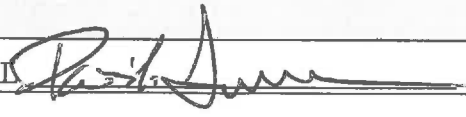
10/19/2016 Wilson working on study.

Number of Projects 16



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 21, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Bill Hunter	MANAGER APPROVAL 		
MEETING AGENDA DATE:	November 30, 2016		
AGENDA ITEM NUMBER:	5.D.		
SUBJECT:	Country Club Sewage Pump Station Improvements		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Exploratory Drilling Scope and Fee Estimate		
	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

During the pre-design process for the Country Club Sewer Pump Station Improvements District staff explored the conceptual feasibility of eliminating the pump station and instead installing a gravity sewer using horizontal directional drilling (HDD) methods. The District and BHC Consultants have confirmed there is enough elevation change from Country Club Sewer Pump Station to Ranch House Sewer Pump Station for a gravity sewer pipe.

Staff estimates HDD construction costs are close to the same as rebuilding the sewer pump station (\$400k +/-).

In order to proceed with HDD as a design alternative the District needs to field verify if subsurface soils are adequate. The District asked BHC Consultants to prepare a scope of work and fee estimate to perform exploratory borings along the proposed alignment.

Attached is a scope of work and fee estimate from BHC's geotechnical engineering subconsultant, GeoEngineers, to obtain necessary Whatcom County permits and to perform the exploratory drilling.

FISCAL IMPACT

None at this time.

The District has executed an agreement with BHC Consultants for a pump station replacement that includes project management, permitting, predesign, surveying, plans, specs, cost estimate, and bidding. The initial agreement is time and materials not to exceed \$153,093.

Task #5 in the original agreement is for pump station plans, specifications, and cost estimate. The project budget for Task #5 is \$78,109. Staff recommends deleting Task #5 work.

A new task will be created to obtain required permits for exploratory drilling, drilling, and preparing a geotechnical memorandum discussing HDD feasibility, design, and construction. The cost estimate for this new task is between \$18k and \$22k.

RECOMMENDED BOARD ACTION

See proposed motion.

PROPOSED MOTION

Authorize the General Manager to execute Amendment #1 to the Agreement with BHC Consultants to:

1. Delete Task #5 work for pump station plans, specifications, and cost estimate (\$78,109)
2. Add a new task for exploratory drilling, permitting, and geotechnical memorandum for time and materials not to exceed \$25,000.
3. The Total Price for the agreement is reduced from \$153,093 to \$99,984.

November 8, 2016

BHC Consultants, LLC
1601 Fifth Avenue, Suite 500
Seattle, Washington 98101

Attention: Erika Schuyler, PE

Subject: Addendum Scope and Fee Estimate
Geotechnical Engineering Services
Country Club Sewer Line Trenchless Pipe Installation
Sudden Valley, Whatcom County, Washington
File No. 0430-013-00

INTRODUCTION AND PROJECT UNDERSTANDING

GeoEngineers, Inc. (GeoEngineers) is pleased to present this addendum scope and fee estimate to provide geotechnical engineering services to BHC Consultants, LLC (BHC) for the Lake Whatcom Water and Sewer District (LWWSD) Country Club Sewer Pump Station Improvements Project in the Sudden Valley area of Whatcom County, Washington.

As part of the Country Club Sewer Pump Station Improvement project, we understand the team would like to evaluate an alternate installation of the 8-inch sewer line using trenchless pipe installation methods that would allow gravity flow in lieu of constructing pump station improvements. As currently envisioned an approximately 550 foot crossing, about 10 to 30 feet deep below site grades is being considered as a method to install the pipe. A horizontal directional drill (HDD) is considered a likely feasible installation method, but other trenchless methods (jack and bore, microtunnel, etc.) may also be appropriate. The new pipe will connect the Country Club pump station to the Ranch House pump station.

Based on our understanding of the local geologic conditions, we anticipate that a shallow mantle of glacial soils will be encountered, possibly with Chuckanut formation sandstone bedrock within the depth of the pipe profile. Trenchless installation at this pipe diameter and length are typically completed as a contractor design-build to meet project specifications, and the presence or absence of bedrock along the pipe profile is a significant factor in construction planning.

SCOPE OF SERVICES

The purpose of our services is to provide a characterization of subsurface soil, rock and groundwater conditions as a basis for project design and construction. We are proposing three explorations along the

project alignment to provide contractors with information to complete their design and reduce the likelihood for extra costs associated with unanticipated soil/bedrock conditions. We propose the following scope of services:

1. Perform a site visit to locate the borings and contact the "one-call" service to locate utilities in the vicinity of the explorations. We have also included a subcontracted private utility locate in our fee estimate.
2. Coordinate a Shoreline Exemption Permit with Whatcom County for explorations within 200 feet of Lake Louise. The anticipated cost of the permit fee has been included in this estimate. We have assumed that a county right-of-way (ROW) permit will not be required.
3. Explore soil and groundwater conditions by drilling 3 exploratory borings along the alignment of the trenchless pipe installation to depths on the order of 25 to 35 feet below ground surface. The borings will be completed with a subcontracted truck-mounted drill rig. The drill rig will be equipped to obtain rock cores if bedrock is encountered in the borings. We anticipate that the explorations will take approximately 1½ days to complete.
 - We have provided a range of costs with up to 90 feet of total drilled exploration, including between 25 and 75 feet of rock coring required within this footage.
 - We have included subcontracted traffic control for one day of drilling if the borings/cores are located within roadway areas of Sudden Valley.
 - We have included drums and soil removal in our cost estimate.
4. Evaluate pertinent physical and engineering characteristics of the foundation soils based on laboratory tests performed on samples obtained from the explorations. Laboratory testing will include moisture content, grain-size analyses, and Atterberg limits tests as appropriate for the materials encountered. Unconfined compression tests will be completed on up to three rock core samples, if bedrock is encountered.
5. Provide a geotechnical data report with a summary of our field explorations. Exploration logs, a site plan, and any supporting test data will be included.
6. Prepare a geotechnical memorandum discussing general trenchless pipe installation (including HDD) design and construction considerations including effect of subsurface conditions on drill feasibility, potential shoring and dewatering requirements for drilling/receiving pits, and construction staging considerations.

The subsurface explorations will be monitored by one of our engineering geologists or geotechnical engineers on a full-time basis. Our representative will obtain samples of the various soils/bedrock encountered, classify the materials and maintain a detailed log of each exploration. The holes will be backfilled with bentonite chips in general accordance with the Department of Ecology procedures. The soil samples will be sealed and returned to our laboratory for additional examination and laboratory testing, as appropriate.

State law requires that the driller provider call the state "dial-before-you-dig" contractor number to clear utility locations prior to the explorations. However, they do not check on-site utilities and locating the on-site utilities is the responsibility of the owner. GeoEngineers does not assume liability for any damage or losses

related to encountering buried utilities that have been incorrectly located or were not located at all. We have included a subcontracted private utility locate.

SCHEDULE, TERMS AND BUDGET

GeoEngineers is available to begin work immediately upon notice to proceed. The primary variable in our schedule is obtaining the shoreline exemption permit, which can take up to 90 days. Drilling subcontractors typically require a lead time of 2 to 3 weeks, but can be scheduled in advance while the permit is being processed. The laboratory testing and analyses will be completed approximately 1 to 2 weeks after the explorations are completed. We can provide verbal results to you as the results become available. The written data report will be available approximately 1 week thereafter. If this schedule does not meet your needs, please contact us regarding any modifications that will allow you to meet your time schedule.

GeoEngineers is currently under contract for the project. We propose to conduct our additional services on a cost plus fixed fee basis in accordance with the rates in the attached fee estimate and terms of the mutually negotiated contract with BHC Consultants Engineers, dated July 20, 2007.

The fee for our services are estimated to range between \$18,910 and \$21,150 which includes permitting fees and subcontracted expenses, in accordance with the approximate breakdown provided the table below. We will endeavor to keep you apprised of project status and conditions that may significantly affect our scope and estimate and will not provide additional services beyond the fees estimated below without your written authorization.

FEE BREAKDOWN

Task	Fee
Review existing data, shoreline exemption permit application, and subcontractor coordination	\$ 1,300
Site visit and utility locate	\$ 400
Shoreline permit fee	\$ 410
Field labor and expenses	\$ 1,550
Subcontracted drilling	\$8,500 to 11,100
Subcontracted traffic control	\$ 850
Private utility locate	\$ 450
Laboratory testing and log preparation	\$ 1,050
Data report preparation	\$ 1,800
Trenchless design and construction considerations memo	\$ 2,900
Estimated Total	\$ 18,910 to 21,510

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RECOMMENDED ADDITIONAL SERVICES

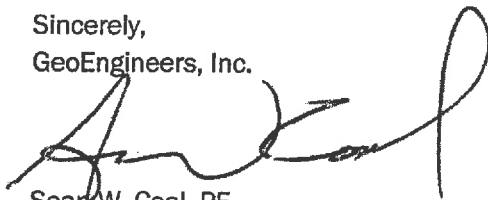
A trenchless crossing of this size has some inherent risks that can be reduced with suitable design, planning, and construction practices. Our data report will provide the contractor with soils information to help avoid unanticipated conditions along the drill path. GeoEngineers has significant experience with trenchless design and construction (especially HDD), and our design and construction considerations memorandum is intended for the owner and design team to help with project planning. We recommend that we also be retained to evaluate the Contractor's proposed trenchless design, drilling procedures and equipment to ensure that the design is consistent with accepted practices and has a high likelihood of successful completion. Our review can also help identify other risks such as the likelihood of inadvertent returns of drilling fluid from hydraulic fracture, which would be particularly problematic for this crossing adjacent to Lake Louise. We also recommend that we be retained to provide monitoring and support during construction to ensure the Contractor's plan is properly implemented, provide documentation of activities and during construction, and to identify potential problems and provide assistance should corrective measures be necessary during construction. We can provide a scope and fee estimate for these services upon your request.

There are no intended third party beneficiaries arising from the services described in this proposal and no party other than the party executing this proposal shall have the right to legally rely on the product of our services without prior written permission of GeoEngineers.

We appreciate the opportunity to present this addendum scope and fee estimate and look forward to working with you and the rest of the team on this project. Formal authorization for our services can be provided by returning one signed copy of this proposal. Please call if you have questions.

We appreciate the opportunity to present this proposal and look forward to working with you and the rest of the team on this project. Formal authorization for our services can be provided by returning one signed copy of the attached task order. Please call if you have questions.

Sincerely,
GeoEngineers, Inc.



Sean W. Cool, PE
Senior Geotechnical Engineer

SWC:DSP:tlh

One copy submitted electronically

Attachments:

Estimate of Costs by Task Staff Member

Direct Salary Cost (DSC)

Min/Max Labor Rates Table – Actuals Not to Exceed (NTE)

Disclaimer: Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

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David Phelps, PE
Principal

035



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 21, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL _____		
MEETING AGENDA DATE:	November 30, 2016		
AGENDA ITEM NUMBER:	5.E.		
SUBJECT:	Presentation of Draft 2017 Budget		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Draft 2017 Budget		
	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

Attached is the proposed budget for 2017.

FISCAL IMPACT

None at this time.

RECOMMENDED BOARD ACTION

Review/discuss the proposed Budget for 2017

PROPOSED MOTION

No proposed motion.

REVENUE ASSUMPTIONS: 4% increase

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

EXPENDITURE ASSUMPTIONS: net 2.4% increase

- Payroll 2.4% COLA plus step increases
- Dept of Revenue taxes increase 4%
- Property insurance increase 7%
- Retirement contributions increase 3.3%
- Health Insurance premiums increase 11%
- Operating reserve maintained per rate study recommendations at \$800,000
 - Water 60-90 days \$440,000
 - Sewer 45-60 days \$360,000
- Contingency funds maintained per rate study recommendations 1% of fixed asset replacement value
- Rate funded system reinvestment funded per rate study recommendations.

Operating Reserves (Working Capital)

An operating reserve is designed to provide a liquidity cushion; it protects the utility from the risk of short-term variation in the timing of revenue collection or payment of expenses. Like other types of reserves, operating reserves also serve another purpose; they help smooth rate increases over time. In the 2017 budget our operating reserve goal is \$800,000. This is 60 days of Sewer expenses and 90 days of Water expenses which is within the industry standard of 45-60 days for sewer utilities and 60-90 days for water utilities.

Capital Contingencies(Water and Sewer/Stormwater)

In addition to protecting against variations in the timing of operating costs and revenues, it is prudent to maintain a capital contingency reserve to meet unexpected emergency capital outlays. We have used replacement costs to derive the targeted reserve dollar amount which equates to 1% of the replacement cost of fixed assets. In the 2017 budget we have \$750,000 sewer reserve and \$440,000 water reserve.

Rate Funded System Reinvestment

The District has a policy of setting aside a certain amount of rate revenue each year for system reinvestment.

Funding depreciation expense meets several standards for reasonable rates: financial integrity, rate equity, and adequacy of capital funding. For 2017 the district has budgeted system reinvestment at \$677,000 for new projects. The District also is budgeting for completion of current projects at \$778,000.

	Description	Actual 2014	Actual 2015	Adopted 2016	Budget 2017
OPERATING FUND - 401					
	REVENUES				
401-343-20-00	Latecomer Fee	-			-
401-343-40-10	Water Sales Metered (9% base rate increase) *	1,744,440	1,986,211	2,142,363	2,285,226
401-343-50-11	Sewer Service Residential (2.5% rate increase) *	3,480,670	3,680,523	3,740,663	3,844,032
401-343-50-19	Sewer Service Other	5,640	4,711	5,000	5,000
401-343-81-10	Combined Fees	39,825	29,762	30,000	30,000
401-359-80-00	Late fees	64,178	59,921	60,000	50,000
401-361-11-10	Investment Interest	1,639	824	1,000	1,500
401-361-40-00-80	ULID 18 Interest/Penalties	-		-	15,000
401-368-10-00-80	ULID 18 Principal Payments	-		-	40,000
401-369-10-00	Sale of scrap metal and surplus	3,967	1,720	-	2,500
401-369-10-01	Miscellaneous				-
401-369-90-00	Bank fees	1,545		-	-
401-379-10-20	Permits Operation portion (10 new connection permits)	34,558	31,905	10,000	30,000
401-395-20-00	Insurance recovery	-	15,943	-	-
401-395-40-00	Sale of Capital Assets	5,000		-	-
401-397-10-00-80	Transfer in from ULID 18 Fund 480	89,280	73,517	60,000	-
	TOTAL REVENUES	5,470,742	5,985,037	6,049,028	6,303,258
<p>61% 36% 2% 1%</p>					
<p>Legend:</p> <p>61% Sewer Service</p> <p>36% Water Sales</p> <p>1% Fees/Charges</p> <p>2% Permits, Other</p>					
<p>* Per Resolution 806 effective 1/1/2015</p> <p>Scheduled annual rate increase</p>					

	Description	Actual 2014	Actual 2015	Adopted 2016	Budget 2017
	OPERATING FUND - 401				
	EXPENDITURES				
401-53X-10-10	Admin Payroll (2% cola plus step increases - 2017)	1,437,711	544,028	629,294	639,252
401-53X-10-20	Admin Personnel Benefits (Medical, Retirement etc)	507,598	191,599	207,280	269,830
401-53X-10-31	Gen Admin Supplies/Equipment	22,314	23,715	21,000	25,000
401-53X-10-31-01	Meetings/Team building	1,511	1,993	1,500	1,500
401-53X-10-40	Web pay/Bank Fees	17,405	27,760	20,000	20,000
	Interlocal - Lake Whatcom Management Program				
	Interlocal - Invasive Species				
	Interlocal - Lake Whatcom Tributary Monitor				
401-534-10-41-00	Water Quality Assurance Programs (TOTAL)	60,134	53,274	65,000	65,000
	County Auditor Filing Fees (Simplifile)				4,500
	Data Bar (Statement processing)				21,000
	Answering Service				1,700
	Data Pro (Time clock system)				1,500
	BIAS Financial Software				20,000
	Web Check services				5,000
	WA State Auditor				22,000
	CPA (Internal audit and Financial statements)				6,000
	Docuware/Web site maintenance and upgrade				5,000
	Legal Counsel				60,000
	3D - Computer support				20,000
	Watchguard				1,000
	Building security for offices				1,500
	Building custodial				7,700
	Pest control				800
	Landscaping service				5,500
	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 - Engineering				1,000
	GIS Partnership				1,000
	Rockwell - Engineering/Operations				500
	IT Pipes				1,500
	ESRI - ARC GIS				1,500
	Innovyze - Engineering				2,500
	Master Meter				2,000
	Generator Load Testing				22,000
	Cyberlock software				1,000
	Whatcom County Emergency Management				20,000
	Misc (Bld notices etc.)				3,000
401-53X-10-41-01	Professional Services (TOTAL)	300,258	227,893	231,500	270,000
401-53X-10-42	Communication	49,212	47,297	46,000	50,000
401-53X-10-43	Memberships/Dues	14,760	-	-	-
401-53X-10-44	WA State Dept of Revenue Taxes	166,468	-	-	-

	Description	Actual 2014	Actual 2015	Adopted 2016	Budget 2017
401-53X-10-45	Admin Lease	2,310	1,796	2,000	2,000
401-53X-10-46	Property Insurance	105,538	121,322	125,000	138,000
401-53X-10-49	Admin Misc.	800	712	1,000	1,000
401-53X-10-49-01	Memberships/Dues	-	11,077	12,000	15,000
401-53X-10-49-02	WA State Dept of RevenueTaxes/Permits	-	186,096	191,500	208,000
401-53X-40-43	Training & Travel	20,118	28,446	35,000	35,000
401-53X-40-44	Tuition reimbursement	-	-	1,000	1,000
401-53X-50-31	Maintenance Supplies	140,958	142,319	145,000	180,000
401-53X-50-48	Operations Repair/Maint	65,735	72,502	65,000	100,000
401-53X-50-49	Insurance Claims	5,360	11,633	5,000	5,000
401-53X-60-41	Operations Contracted	10,485	8,748	10,000	9,000
401-534-60-47	Water City of Bellingham	34,595	37,083	40,000	40,000
401-535-60-47	Sewer City of Bellingham Treatment Fee	674,017	584,405	600,000	615,000
401-53X-80-10	Operations Payroll (2% cola plus step increases - 2017)	-	967,141	908,270	951,544
401-53X-80-20	Operations Personnel Benefits (Medical, Retirement etc)	-	349,954	355,900	414,930
401-53X-80-32	Fuel	32,839	27,817	30,000	20,000
401-53X-80-35	Safety Supplies	6,121	17,346	12,000	10,000
401-53X-80-35-01	Safety Supplies Boots	2,208	1,898	2,500	2,500
401-53X-80-47	Emergency Preparedness	202,182	188,528	195,000	10,000
401-53X-80-49	General Utilities	1,911	2,829	3,000	208,000
401-591-35-77	Laundry	-	69,560	73,213	4,000
401-592-35-83	Post Point Principal Payments	-	124,080	120,426	-
	Post Point Interest Payments	-	-	-	-
	OPERATING EXPENDITURES	3,882,548	4,052,551	4,154,383	4,310,556
TRANSFERS					
	Transfers Out to System Reinvestment Fund 420	947,000	392,000	530,000	1,385,000
	Transfers Out to Sewer/Storm Water Contingency Fund 425				200,000
	Transfers Out to Water Contingency Fund 426			600,000	-
	Transfers Out to DWSRF Projects Fund 440		85,095		-
	Transfers Out to Debt Service Fund 450	447,450	448,252	443,050	890,172
	Transfers Out to Bond Reserve Fund 460			250,000	-
	Transfers Out to Water Loan Debt Service Fund 470	65,339	117,185	215,470	-
	TOTAL EXPENDITURES	5,342,337	5,095,083	6,192,903	6,785,728
OPERATING FUND					
	OPERATING REVENUES				
	EXPENDITURES	5,470,742	5,470,741	6,049,026	6,303,256
	2016 BALANCE CARRYOVER	(5,342,337)	(5,095,083)	(6,192,903)	(6,785,728)
	2017 YEAR END ALLOCATED TO OPERATING RESERVES				1,750,000
	PROPOSED AVAILABLE 2017 YEAR END BALANCE				(800,000)
					467,530

	Description	Actual 2014	Actual 2015	Adopted 2016	Budget 2017
SEWER/STORM WATER CONTINGENCY FUND - 425					
425-361-11-00-25	Investment Interest .5%				
425-397-10-00-10	Transfers In from Operating Fund 401	869	4345	5,020	3,750 200,000
	TOTAL REVENUES	869	4,345	5,020	203,750
425-535-10-41	Stormwater Comp Plan (See Active Projects C1315 PH2)				
425-535-10-89	Investment Service Charges	9,654	-	-	-
	SVCA Culverts	190	197	200	200
	SV Sewer Pump Station Emergency Repairs			10,000	
	North Shore Sampling			25,000	
	Cedar Hills Storm Drain Relocate			20,000	75,000
				135,000	135,000
425-594-38-64	Machinery/Equipment		1,300		-
	TOTAL EXPENDITURES	9,844	1,497	190,200	210,200
SEWER/STORM WATER CONTINGENCY FUND					
	REVENUES	869	4,345	5,020	203,750
	EXPENDITURES	(9,844)	(1,497)	(190,200)	(210,200)
	CASH/INVESTMENTS BALANCE CARRYOVER				760,000
	PROPOSED 2017 YEAR END BALANCE				753,550
WATER CONTINGENCY FUND 426					
426-361-11-00-26	Investment Interest .5%				
426-397-10-00-26	Transfers In from Operating Fund 401			-	2,500
	TOTAL REVENUES	-	-	600,000	-
				600,000	2,500
426-535-10-89-26	Investment Service Charges				
426-594-38-63-26	Capital Outlay - Water Systems				
426-597-10-00-26	Transfer Out to Operating Fund 101			-	-
	TOTAL EXPENDITURES	-	-	160,000	-
				160,000	-
WATER CONTINGENCY FUND					
	REVENUES				
	EXPENDITURES			600,000	2,500
	CASH/INVESTMENTS BALANCE CARRYOVER			(160,000)	-
	PROPOSED 2017 YEAR END BALANCE				440,000
					442,500

	Description	Actual 2014	Actual 2015	Adopted 2016	Budget 2017
	DEBT SERVICE FUND - 450				
450-391-20-00-50	2016 Bond Proceeds			5,508	
450-397-10-00-70	Transfers In from Operating Fund 401 - Water loan projects	65,339	117,185	215,470	264,987
450-397-10-00-50	Transfers In from Operating Fund 401 - Bond payments	447,450	448,252	443,050	625,185
	TOTAL REVENUES	512,789	565,437	664,028	890,172
450-535-10-41-50	Bond Admin Fee		503	100	100
450-591-34-77-41	Redemption of Long Term Debt Geneva AC Mains				43,023
450-591-34-77-42	Redemption of Long Term Debt Div 22 Reservoir				119,937
450-591-34-77-72	Redemption of Long Term Debt Loan 119	8,940	62,583	47,252	-
450-591-34-77-73	Redemption of Long Term Debt Loan 064	47,252	47,252	41,624	47,252
450-592-34-83-41	Debt Service Interest Geneva AC Mains				14,923
450-592-34-83-42	Debt Service Interest Div 22 Reservoir	715	417	-	34,182
450-592-34-83-72	Debt Service Interest Loan 119	8,505	6,930	6,615	-
450-592-34-83-73	Debt Service Interest Loan 064				5,670
450-591-35-72-50	2009 Bond Principal Payments	235,000	245,000	250,000	265,000
450-591-35-72-51	2016 Bond Principal Payments				125,000
450-592-35-83-50	2009 Bond Interest Payments	212,150	202,750	192,950	30,900
450-592-35-83-51	2016 Bond Interest Payments				227,175
	TOTAL EXPENDITURES	512,562	565,435	538,541	913,162
	REVENUES				
	EXPENDITURES	512,789	565,437	664,028	890,172
	CASH/INVESTMENTS BALANCE CARRYOVER	(512,562)	(565,435)	(538,541)	(913,162)
	PROPOSED 2017 YEAR END BALANCE				22,990
					-
	BOND RESERVE FUND (RESTRICTED) - 460				
460-361-11-00	Investment Interest .5%				
460-397-10-00-60	Transfers In from Operating Fund 401	2,860	9,813	10,000	3,850
	TOTAL REVENUES	2,860	9,813	260,000	3,850
460-535-10-89	Investment Service Charges	205	197	200	200
	TOTAL EXPENDITURES	205	197	200	200
	REVENUES				
	EXPENDITURES	2,860	9,813	260,000	3,850
	CASH/INVESTMENTS BALANCE CARRYOVER	(205)	(197)	(200)	(200)
	PROPOSED 2017 YEAR END BALANCE				773,200
					776,850

Active Capital Improvement Projects

(values updated 11/8/2016)					
Category	Project #	Project Title / Tasks	Projected Budget to Completion	Spent to Date	Amount Remaining Notes
Grant, Loan, and Bond Funded Projects					
Water	C1401	Division 22 Reservoir			
		Permit fees, advertising, legal, printing	\$ 35,000.00	\$ 32,934.58	\$ 2,065.42
		Engineering Consultant - Gray & Osborne	\$ 288,414.00	\$ 185,652.27	\$ 102,761.73
		Construction - T Bailey	\$ 1,402,525.00	\$ 594,580.00	\$ 807,945.00
		DWSRF Loan Fee	\$ 9,850.00		
		DWSRF Loan Fee - Amendment	\$ 3,000.00		
		Total Project Cost	\$ 1,738,789.00	\$ 813,166.85	\$ 912,772.15
		DWSRF Loan	\$ 994,850.00		
		DWSRF Loan Amendment	\$ 303,000.00		
		Balance Funded by 2016 Revenue Bond	\$ 440,939.00		
		Total Project Funding	\$ 1,738,789.00		
					Amendment application in progress
Water	C1613	Northshore Water System Consolidation	\$ 30,000.00	\$ 304.00	\$ 29,696.00
		Funding by DOH Grant	\$ 30,000.00		
Sewer/Storm Water Contingency Fund Projects					
Sewer	C1607	Northshore Water Quality Sampling			
		PH1 - Herrera Sampling & Analysis Plan	\$ 19,052.00	\$ 11,956.80	\$ 7,095.20
		PH2 - Herrera Implement Sampling & Analysis	\$ 68,295.00	\$ -	\$ 68,295.00
		Project Total	\$ 87,347.00	\$ 11,956.80	\$ 75,390.20
Storm	C1612	Cedar Hills Water Main Relocation	\$ 134,012.15	\$ -	\$ 134,012.15
					County storm water treatment project
		Grand Total for Sewer/Storm Water Contingency Fund Projects	\$ 221,359.15	\$ 11,956.80	\$ 209,402.35
Rate Funded Projects					
Sewer Water Water	C1407 C1504 C1505	Low Sewer PS VFD	\$ 10,000.00	\$ 6,548.68	\$ 3,451.32
		Reservoir Site Security	\$ 5,000.00	\$ -	\$ 5,000.00
		Reservoir Seismic Vulnerability Assessment			
		BHC Consultants	\$ 35,018.00	\$ 35,018.00	\$ -
		GeoTest	\$ 3,953.11	\$ 3,953.11	\$ -
Sewer	C1506B	Whatcom Falls MH Repair			
		PH1 - Wilson Design	\$ 35,228.00	\$ 23,724.55	\$ 11,503.45
		CON - Construction - Carman	\$ 126,886.39	\$ 121,039.09	\$ 5,847.30
Sewer Water	C1603 C1605	Marina-Tomb Stationary Generator	\$ 40,000.00	\$ 33,217.21	\$ 6,782.79
		Water System Plan Update	\$ 100,000.00	\$ -	\$ 100,000.00
Water Sewer	C1606 C1610 C1611	Replace SCADA Workstation Hardware	\$ 10,000.00	\$ 7,328.48	\$ 2,671.52
		Little Strawberry Water Leak on Bridge	\$ 10,000.00	\$ -	\$ 10,000.00
		Country Club Sewer Pump Station	\$ 153,093.00	\$ 999.70	\$ 152,093.30
		PH1 - BHC Design, Permitting, Bidding	\$ 80,000.00	\$ -	\$ 80,000.00
		Services During Construction - Estimate	\$ 400,000.00	\$ -	\$ 400,000.00
		Construction - Estimate			
		Grand Total for Rate Funded Projects	\$ 1,009,178.50	\$ 231,828.82	\$ 777,349.68

Lake Whatcom Water and Sewer District - Capital Improvement Plan 2017 thru 2022

Program Area / CIP Project # / CIP Project Name	Fund	Total	2017	2018	2019	2020	2021	2022
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Both Water and Sewer

A0005	Accounting & Administration Server - Replace/Update Hardware, Network Security, & OS	30,000	15,000			15,000		
E0001	Replace Backhoe (budget estimate for new unit)	166,108				166,108		
V0001	Replace Tool Truck (6 tool trucks in fleet)	130,000	65,000			65,000		
V0002	Replace Administrative Staff Vehicle (3 cars in fleet)	26,000	26,000					
V0003	Replace Locator / Meter Reading Van	28,000	28,000					
V0004	Replace Light Truck	30,000		30,000				

Subtotal

		410,108	134,000		30,000	246,108		
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Sewer System

0032a	Agate Bay Pump Station - Predesign and Shorelines Permitting	100,000		100,000				
0032b	Agate Bay Pump Station - Design and Bidding	100,000				100,000		
0032c	Agate Bay Pump Station - Construction	500,000					500,000	
0038a	Geneva Pump Station - Predesign and Shorelines Permitting	100,000	100,000					
0038b	Geneva Pump Station - Design and Bidding	100,000	100,000					
0038c	Geneva Pump Station - Construction	475,000		475,000				
0044a	Edgewater Pump Station - Predesign and Shorelines Permitting	100,000						100,000
0050a	Par Lane Pump Station - Permitting, Design, Bidding	75,000		75,000				
0050b	Par Lane Pump Station - Construction	400,000		400,000				
0053a	Dellesta Pump Station - Predesign and Shorelines Permitting	100,000				100,000		
0053b	Dellesta Pump Station - Design and Bidding	100,000					100,000	
0055a	Rocky Ridge Pump Station - Predesign and Shorelines Permitting	100,000		100,000				
0055b	Rocky Ridge Pump Station - Design and Bidding	100,000			100,000			
0055c	Rocky Ridge Pump Station - Construction	500,000				500,000		
0056a	Lakewood Pump Station - Predesign and Shorelines Permitting	100,000				100,000		
0056b	Lakewood Pump Station - Design and Bidding	100,000					100,000	
0056c	Lakewood Pump Station - Construction	475,000						475,000
0128b	Procure Additional Backup Generator - Strawberry Canyon Extension Cord	10,000	10,000					
0128c	Procure Additional Backup Generator - 82KW Portable Generator	61,800		61,800				
0150	Beaver and Flat Car Level Transmitter Replacement	50,000	50,000					
A0010	Update Sewer Comprehensive Plan (Current Plan Dated 6-14-2014)	68,959			68,959			
S0001a	EPA Capacity, Management, Operations, & Maintenance (CMOM) Projects - Sewer I&I	820,000		164,000	164,000	164,000	164,000	164,000
S0001b	EPA Capacity, Management, Operations, & Maintenance (CMOM) Projects - Sewer I&I	25,000	25,000					
	Subtotal	4,560,759	285,000	875,800	832,959	864,000	864,000	839,000

Water System

0060a	Eagleridge Fire Pump Control Upgrade - Develop project scope and estimate	10,000	10,000					
0060b	Eagleridge Fire Pump Control Upgrade - Construction	40,000		40,000				

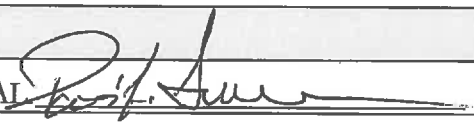
Program Area / CIP Project # / CIP Project Name		Fund	Total	2017	2018	2019	2020	2021	2022
0108	Replace SVWTP Booster Station Roof		26,523	26,523					
0125	Mechanical Staff Gauge for SVWTP Cleanwell Reservoir		5,000	5,000					
0130	Eagleridge Booster Station Controls Reconfiguration and PLC Programming		51,500	51,500					
0149	SVWTP Chemical Feed Pumps, Benchtop Turbidimeter, Benchtop Analyzer		15,000	15,000					
W0002a	Water System Rehab and Replacement Projects		400,000			100,000	100,000	100,000	100,000
W0002b	Water System Rehab and Replacement Projects		80,000	40,000	40,000				
W0002d	Water Meters - Radio Read Module Replacement		660,000	110,000	110,000	110,000	110,000	110,000	110,000
W0003	SVWTP Filter 3&4 Media - Replace		22,148				22,148		
W0005	Reservoirs - Inspection & Maintenance		25,000		25,000				
W0007	SVWTP Filter 1&2 Media - Replace		22,148					22,148	
Subtotal			1,357,318	258,023	215,000	210,000	232,148	232,148	210,000
Grand Total			6,328,185	677,023	1,090,800	1,072,959	1,342,256	1,096,148	1,049,000

* Note: Cost Estimates in 2017 Dollars



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 21, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL 		
MEETING AGENDA DATE:	November 30, 2016		
AGENDA ITEM NUMBER:	5.F.		
SUBJECT:	FCS Group Rate Study Update Presentation		
LIST DOCUMENTS PROVIDED ⇒ NUMBER OF PAGES INCLUDING AGENDA BILL: _____	1. Power Point From FCSG. To Be Delivered via Email on 11-29-16 & at Meeting.		
	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

Every 5 years the District reviews its rates and fees in order to insure that we address both inflationary and projected operating and capital costs into the future. District rates were last reviewed during the summer of 2014 and approved in September of that year for a 5 year time period. The approved rate/fee structure went into effect in January 2015 with scheduled annual adjustments in January of each year. The last adjustment of this cycle is scheduled to go into effect on January 1, 2019.

FCS Group was asked to look "under the hood" this fall in order to evaluate the status of our rates and budget practices. This is a practice we undergo mid-term during the approved life of the rate structure. The rate structure is tied into both the water and sewer comprehensive plans and our CIP. Staff met with the consultants regarding their review on November 21. Overall the results are positive. FCS Group will be making a presentation to the Board at your meeting.

FISCAL IMPACT

To be presented to the Board at your meeting on November 30.

RECOMMENDED BOARD ACTION

To be determined following presentation and discussion.

PROPOSED MOTION

There is no proposed action required at this time.



LAKE WHATCOM WATER AND SEWER DISTRICT

AGENDA BILL

DATE SUBMITTED:	November 21, 2016		
TO BOARD OF COMMISSIONERS			
FROM: Patrick Sorensen	MANAGER APPROVAL <i>Patrick Sorensen</i>		
MEETING AGENDA DATE:	November 30, 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

November 30, 2016

Board Meeting

8:00 a.m.

Important Upcoming Dates:

- **Meetings Associated with the Lake Whatcom Management Program:**
 - **Policy Group Meeting:** The previously scheduled **Monday, November 21, 2016** meeting has been cancelled. In addition the December 19 meeting has also been cancelled. The next meeting will be held in February 2017. The date and location has not been set.
 - **Management Meeting:** A meeting between the Mayor, County Executive and me has been set for December 8, 2016 at 1:30 p.m. in City Hall. The topic will be to reconcile city, county, and district budgets as they relate to our responsibilities for Lake Whatcom. We will also be addressing the potential for City and County participation in the District's North Shore water testing project.
- **Next Regular Board Meeting:** The next regular meeting will be held on **Wednesday, December 14, 2016** at 6:30 p.m.
- **Employee Staff Meeting:** The next staff meeting is set for **Thursday, December 15, 2016** at **8:00 a.m.** in the Board Room. Commissioner Weide is scheduled to attend this meeting.
- **Employee Safety Committee Meeting:** The next meeting is set for **December 15, 2016** at **9:00 a.m.** in the small conference room.

FYI, the District will be participating in a two day class sponsored by FEMA and Texas A & M University specifically for "Disaster Management for Water and Wastewater Utilities" on November 29 and 30th. The program is offered at no cost to the District and will be held at the Whatcom County Emergency Management Office. Commissioners are invited to attend. A copy of the program is attached.

- **Washington Association of Sewer & Water Districts (WASWD) Section III Meeting:** The next Section III meeting will be held at Bob's Burger & Brew in Tulalip off I-5 at **6:15 p.m. on December 13, 2016**.
- **Whatcom Water District's Caucus Meeting:** The next Caucus meeting is set for **December 21, 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.

Hosted in conjunction with DHS/FEMA National Training Program, Texas A&M Engineering Extension Service (TEEX), Texas A&M University System and the National Emergency Response and Rescue Training Center (NERRTC)

You are invited to Attend

MGT-343 Disaster Management for Water and Wastewater Utilities

November 29th & 30th 8:00 AM – 4:30 PM

Whatcom County Emergency Management, 3888 Sound Way, Bellingham, WA 98229



Disaster Management for Water and Wastewater Utilities: This course presents information regarding preparing for, responding to, and recovering from natural or man-made incidents affecting water and/or wastewater facilities. The course introduces the various hazards to which water and wastewater systems may be vulnerable and the potential effects hazards may induce. Participants are guided through portions of the Environmental Protection Agency's (EPA) Response Protocol Toolbox (RPTB) to identify steps in the response and recovery processes. Case studies on disasters and hypothetical water and wastewater incidents are examined. Participants also practice developing a response and recovery plan for a water or wastewater incident.

Topics:

- Threats to Water and Wastewater Facilities and Systems
- Disaster Planning and Management
- Disaster Mitigation
- Disaster Response
- Disaster Recovery

Participant Audience:

- Water and Wastewater Utility Personnel • Operators • Field Personnel • Lab Personnel • Directors • Department Heads • Supervisors • Superintendents • Customer Service • Inspectors • Engineers • State & Local Regulatory Personnel
- Environmental & Local Regulatory Personnel including:
 - Tribal Councils • Utility Board Members
 - City & County Elected Officials • City Managers
 - Senior Emergency Response Personnel

Registration is free! Please contact:

Name: Twila Fluaitte

Email: staff@waswd.org

Phone: 206.246.1299

Fax #: 206.246.1323

FEMA Student ID Requirement

Prior to course delivery, all participants are required to establish a FEMA Student Identification Number (SID). This can be accomplished by registering at FEMA's website. Participants will be asked to provide their SID when they arrive and complete the registration process for the course.

Recommended

Participants are also encouraged to have completed IS-100PWb, IS-200, IS-700 and IS-800. These courses can be found online at: <http://training.fema.gov/IS/NIMS.aspx>