



# Lake Whatcom Water & Sewer District Board Meeting Access Information

**Next Meeting:**

**Wed September 14, 2022  
6:30 pm — 8:30 pm**

Join the meeting from your computer, tablet smartphone: <https://meet.goto.com/404632365>

You can also dial in using your phone.

Call: [+1 \(872\) 240-3311](tel:+18722403311) Access Code: 404-632-365 Press \*6 to mute/unmute your microphone

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<https://meet.goto.com/install>

## ATTENDING A MEETING

*How to Participate*

### MEETINGS ARE VIRTUAL

Our meetings are currently held in a virtual format using the GoTo platform. We'll begin offering hybrid meetings (in-person + virtual) in the near future.



### COMMUNICATING WITH US



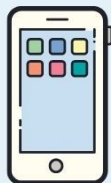
If you wish to make a public comment, you may submit it in written form via email or the contact form on our website, or utilize the public comment periods during the District's regular meetings.

### ATTENDING ANONYMOUSLY

If you wish to observe a meeting, but do not plan to actively participate, you may attend anonymously. Turn off your mic & camera, and change display name to "Observation Only."



### ACCESS INFORMATION



We use the GoTo platform for virtual meetings. Download the app, sign in through your browser, or use a phone to call in for audio-only participation. Access information for specific meetings is in the meeting packet.

### QUESTIONS?

If you have questions about attending an upcoming meeting, please contact Administrative Assistant Rachael Hope at [rachael.hope@lwwsd.org](mailto:rachael.hope@lwwsd.org) or 360-734-9224.



## Public Comment Periods

Lake Whatcom Water & Sewer District's Board of Commissioners values feedback, questions, and concerns from our constituents. The public comment period is....



### Our Meetings

Regular Meetings of the Board of Commissioners are held on the second Wednesday of each month at 6:30 pm and the last Wednesday of each month at 8:00 am.



## LAKE WHATCOM WATER AND SEWER DISTRICT

1220 Lakeway Drive  
Bellingham, WA 98229

### REGULAR MEETING OF THE BOARD OF COMMISSIONERS

## AGENDA


*September 14, 2022*  
6:30 p.m. – Regular Session

1. CALL TO ORDER
2. ROLL CALL
3. CONFIRMATION OF COMPLIANCE WITH REMOTE MEETING ATTENDANCE PROTOCOLS
4. PUBLIC COMMENT OPPORTUNITY  
At this time, members of the public may address the Board of Commissioners. Please state your name prior to making comments.
5. ADDITIONS, DELETIONS, OR CHANGES TO THE AGENDA
6. CONSENT AGENDA
7. SPECIFIC ITEMS OF BUSINESS
  - A. Utility Local Improvement District No. 18 Reconciliation Discussion
  - B. General Facilities Charges Asset Inventory Cost Methodology Discussion
8. OTHER BUSINESS
9. STAFF REPORTS
  - A. General Manager
10. PUBLIC COMMENT OPPORTUNITY
11. EXECUTIVE SESSION  
*Executive Session per RCW 42.30.110(1)(g): To review the performance of a public employee (General Manager performance evaluation) – 30 minutes*
12. ADJOURNMENT



**AGENDA  
BILL  
Item 6**

**Consent Agenda**

DATE SUBMITTED:	September 8, 2022	MEETING DATE:	September 14, 2022
TO: BOARD OF COMMISSIONERS	FROM: Rachael Hope		
GENERAL MANAGER APPROVAL			
ATTACHED DOCUMENTS	1. See below		
TYPE OF ACTION REQUESTED	RESOLUTION <input type="checkbox"/>	FORMAL ACTION/ MOTION <input checked="" type="checkbox"/>	INFORMATIONAL /OTHER <input type="checkbox"/>

**\*\*TO BE UPDATED 09.14.2022\*\***

**BACKGROUND / EXPLANATION OF IMPACT**

- Minutes for the 8/24/22 Special Board Meeting
- Minutes for the 8/31/22 Regular Board Meeting
- Payroll for Pay Period #18 (08/20/2022 through 09/02/2022) totaling \$48,725.28
- Payroll Benefits for Pay Period #18 totaling \$53,900.68
- Accounts Payable Vouchers total to be added

**FISCAL IMPACT**

Fiscal impact is as indicated in the payroll/benefits/accounts payable quantities defined above. All costs are within the Board-approved 2022 Budget.

**RECOMMENDED BOARD ACTION**

Staff recommends the Board approve the Consent Agenda.

**PROPOSED MOTION**

A recommended motion is:

"I move to approve the Consent Agenda as presented."



## LAKE WHATCOM WATER AND SEWER DISTRICT

1220 Lakeway Drive  
Bellingham, WA 98229

### SPECIAL SESSION OF THE BOARD OF COMMISSIONERS

## Minutes

*August 24, 2022*

Board President Laura Abele called the Special Session to order at 6:00 p.m.

**Attendees:** Commissioner Laura Abele  
Commissioner Todd Citron  
Commissioner John Carter  
Commissioner Bruce Ford  
General Manager Justin Clary  
Recording Secretary Rachael Hope

Attendees participated in person, or remotely by phone or video conferencing.

#### **Commissioner Position No. 4 Candidate Interviews**

The Board conducted interviews with three candidates for appointment to Commissioner Position No. 4. Candidates were Jeff Knakal, Larry Brown, and Enoch Ledet.

#### **Executive Session Per RCW 42.30.110(1)(h): Qualifications of a Candidate for Appointment to Elective Office – 30 Minutes**

Abele recessed the Regular Session to Executive Session at 8:45 p.m. It was estimated that the Executive Session would take 30 minutes. The purpose of the Executive Session was to evaluate the qualifications of a candidate for appointment to public office.

Abele recessed the Executive Session and reconvened the Special Session at 9:10 p.m. No action was taken.

With no further business, Abele adjourned the Special Session 9:10 p.m.

\_\_\_\_\_  
Board President, Laura Abele

Attest: \_\_\_\_\_  
Recording Secretary, Rachael Hope

Minutes approved by motion at ☐ Regular ☐ Special Board Meeting on \_\_\_\_\_  
Date Minutes Approved



## LAKE WHATCOM WATER AND SEWER DISTRICT

1220 Lakeway Drive  
Bellingham, WA 98229

### REGULAR SESSION OF THE BOARD OF COMMISSIONERS

## Minutes

*August 31, 2022*

Board President Laura Abele called the Regular Session to order at 8:00 a.m.

<b>Attendees:</b>	Commissioner Laura Abele	General Manager Justin Clary
	Commissioner Todd Citron	Assistant GM/District Engineer Bill Hunter
	Commissioner John Carter	Finance Manager/Treasurer Jenny Signs
	Commissioner Bruce Ford	Operations & Maintenance Manager Brent Winters
	Commissioner Jeff Knakal	Recording Secretary Rachael Hope

Also in attendance were Eric Johnston; Public Works Director – City of Bellingham; Kirsten McDade & Alexander Harris of RE Sources; and Rick Eggerth, member of the public

All attendees participated remotely by phone or video conferencing.

#### Roll Call

General Manager Justin Clary performed a roll call to identify those in attendance, and then verbally confirmed that the meeting was noticed in accordance with Resolution No. 859 allowing remote meeting attendance, as well as in compliance with current statutory requirements. It was confirmed that all participants were able to be heard and hear each other clearly.

#### Consent Agenda

##### Action Taken

Carter moved, Citron seconded, approval of:

- Minutes for the 7/27/22 Regular Board Meeting
- Payroll for Pay Period #16 (07/23/2022 through 08/05/2022) totaling \$48,688.68
- Payroll Benefits for Pay Period #16 totaling \$53,569.96
- Accounts Payable Vouchers totaling \$129,126.56
- Payroll for Pay Period #17 (08/06/2022 through 08/19/2022) totaling \$50,053.06
- Payroll Benefits for Pay Period #17 totaling \$53,674.10
- Accounts Payable Vouchers totaling \$141,700.69

Motion passed.

#### Board of Commissioners Position No. 4 Appointment and Oath of Office

Clary recalled that Commissioner Leslie McRoberts resigned from Position No. 4 during a regularly scheduled board meeting on June 29, 2022. Following her resignation, the District began advertising for applications for appointment to Position No. 4 during the week of July 4, 2022. The individual appointed by the Board will hold

the position until the general election in November 2023, at which point the individual elected to Position No. 4 will hold the office for the remainder of the current term (through December 31, 2027). The District received three applications from residents of the Position No. 4 district. The Board of Commissioners conducted interviews of the three applicants during a special meeting of Board held on August 24, 2022.

**Action Taken**

**Citron moved, Carter seconded to appoint Jeff Knakal to Position No. 4 of the Lake Whatcom Water and Sewer District Board of Commissioners. Motion passed.**

**Oath of Office**

Rachael Hope, Recording Secretary & Public Notary, witnessed the Oath of Office for appointed Commissioner Jeff Knakal.

**RE Sources Post Point Resource Recovery Project Concerns Presentation**

Clary briefly explained that the City of Bellingham owns and operates the Post Point Wastewater Treatment Plant, which receives and treats the District's wastewater through an interlocal agreement between the City and District. Within this interlocal agreement, the District is responsible for financing 4.8% of capital projects required for continued operation of the plant.

In 2017, the City started looking at the solids handling equipment, concluding that it is reaching the end of its useful life and requires replacement. Currently solids are incinerated, and ash is trucked to Eastern Washington for landfill disposal. In alignment with the City's climate action plan, the City ultimately landed on implementation of an anaerobic digestion process. Since that selection, there have been some shifts, including recent interest pertaining to per- and polyfluoroalkyl substances (PFAS) within the compostable end product of the proposed digestion process.

Eric Johnston of the City of Bellingham gave a brief update on the project status, including information about a recent statement from Bellingham Mayor Seth Fleetwood regarding the status of the project.

Based upon the community's concern with the potential for PFAS, the City has held significant discussion pertaining to the current Resource Recovery Project. RE Sources, a Bellingham-based non-profit organization whose focus is protection of the environment and communities of the central Salish Sea, issued a letter dated July 19, 2022 highlighting their concerns. Kirsten McDade, Pollution Prevention Specialist with RE Sources, gave a presentation to the Board regarding concerns and alternative solutions. Discussion followed.

**2022 Budget Amendment No. 1**

Signs summarized that the 2022 Annual Budget was adopted at the regularly scheduled Board of Commissioner's meeting on December 8, 2021. On December 17, 2021, the Washington State Auditor's Office released its annual update to the Budgeting, Accounting and Reporting System (BARS) Cash Manual, which included updates to the BARS Chart of Accounts. This amendment updates the District's chart of accounts to remain in compliance to State guidelines, as well as accounting for funds received from FEMA as reimbursement of expenses incurred in response to the November 2021 flood event. Also included in the amendment are revenue and expenditures associated with the theft of the District's utility van. Discussion followed.

**Action Taken**

**Carter moved, Citron seconded to approve Amendment No. 1 to the 2022 Annual Budget as presented. Motion passed.**

### **Division 30 Booster Pump Station & Sudden Valley Sewer Pump Station PLC and UPS Improvements**

Hunter explained that in June 2017, the Allen Bradley PLC-5 (Programmable Logic Controller) Control System was discontinued by the manufacturer, Rockwell Automation, and is no longer available or supported. Two remaining District facilities use these outdated PLCs; the Division 30 Water Booster Pump Station (Div 30 Booster) and the Sudden Valley Sewer Pump Station (SVSPS).

Staff presented a proposed Task Order for Div 30 Booster and SVSPS based on the prior year's work with RH2 Engineering and experience improving the Beaver and Flat Car Sewer Pump Stations. Staff requested additional scope items to be included which would increase the engineering services fees from the previous project. The System Reinvestment Plan in the 2022 Budget included funds for PLC and UPS Improvements at the two remaining facilities, however conceptual construction cost estimates have increased due to the updated scope, inflation, and the current bidding environment. Discussion followed.

#### **Action Taken**

**Ford moved, Citron seconded authorize the General Manager execute Task Order 2022-1 with RH2 Engineering, Inc. for the Division 30 Booster and Sudden Valley PS PLC and UPS Improvements for time and materials not to exceed \$94,643. Motion passed.**

Commissioner Abele exited the meeting at 9:49 am due to a prior commitment, and Commissioner Citron assumed control of the meeting.

#### **General Manager's Report**

Clary updated the Board on several topics including Commissioner Knakal's upcoming orientation day, interviews for the Operations & Maintenance Manager position, the Washington Association of Sewer and Water Districts upcoming fall conference, and impending discussion of moving from virtual to hybrid meetings. Discussion followed.

#### **Engineering Department Report**

Hunter provided an update on district projects, including increased activity in the development community and an open bid for a Site Security Assessment. Discussion followed.

#### **Finance Department Report**

Signs reported that water and sewer funds are tracking on trend as of the end of July and provided a brief update on the Local Government Investment Pool's interest rates.

#### **Operations & Maintenance Department Report**

Winters gave a report on field crew operations, including the addition of new skill sets to the crew with the most recent Maintenance Worker I hires, installation of new fire hydrants in the Geneva neighborhood, and an update on the camera van which is currently out of commission for repairs and updates.

With no further business, Citron adjourned the Regular Session at 10:08 a.m.

\_\_\_\_\_  
Board President, Laura Abele

Attest: \_\_\_\_\_  
Recording Secretary, Rachael Hope

Minutes approved by motion at ☐ Regular ☐ Special Board Meeting on \_\_\_\_\_  
Date Minutes Approved



# CHECK REGISTER

# PAYROLL

Lake Whatcom W-S District


Time: 13:28:13 Date: 09/06/2022

09/08/2022 To: 09/08/2022

Page: 1

Trans	Date	Type	Acct #	Chk #	Claimant	Amount	Memo
2676	09/08/2022	Payroll	5	EFT		3,551.49	08/20/2022 - 09/02/2022 PR 18
2677	09/08/2022	Payroll	5	EFT		2,620.81	08/20/2022 - 09/02/2022 PR 18
2678	09/08/2022	Payroll	5	EFT		4,445.72	08/20/2022 - 09/02/2022 PR 18
2679	09/08/2022	Payroll	5	EFT		2,973.31	08/20/2022 - 09/02/2022 PR 18
2681	09/08/2022	Payroll	5	EFT		1,872.98	08/20/2022 - 09/02/2022 PR 18
2682	09/08/2022	Payroll	5	EFT		3,015.81	08/20/2022 - 09/02/2022 PR 18
2683	09/08/2022	Payroll	5	EFT		2,261.67	08/20/2022 - 09/02/2022 PR 18
2684	09/08/2022	Payroll	5	EFT		3,468.96	08/20/2022 - 09/02/2022 PR 18
2685	09/08/2022	Payroll	5	EFT		2,155.37	08/20/2022 - 09/02/2022 PR 18
2686	09/08/2022	Payroll	5	EFT		2,387.62	08/20/2022 - 09/02/2022 PR 18
2687	09/08/2022	Payroll	5	EFT		2,600.92	08/20/2022 - 09/02/2022 PR 18
2688	09/08/2022	Payroll	5	EFT		1,349.79	08/20/2022 - 09/02/2022 PR 18
2689	09/08/2022	Payroll	5	EFT		2,178.26	08/20/2022 - 09/02/2022 PR 18
2690	09/08/2022	Payroll	5	EFT		3,352.51	08/20/2022 - 09/02/2022 PR 18
2691	09/08/2022	Payroll	5	EFT		2,163.45	08/20/2022 - 09/02/2022 PR 18
2692	09/08/2022	Payroll	5	EFT		1,256.11	08/20/2022 - 09/02/2022 PR 18
2693	09/08/2022	Payroll	5	EFT		2,961.70	08/20/2022 - 09/02/2022 PR 18
2694	09/08/2022	Payroll	5	EFT		2,618.98	08/20/2022 - 09/02/2022 PR 18
2680	09/08/2022	Payroll	5	13237		1,489.82	08/20/2022 - 09/02/2022 PR 18
401 Water Fund						14,082.63	
402 Sewer Fund						34,642.65	
						48,725.28	Payroll: 48,725.28

I do hereby certify, under penalty of perjury, that the above is an unpaid, just, and due obligation as described herein, and that I am authorized to certify this claim.

Sign  Date 9/6/2022  
General Manager, Justin Clary

Board Authorization - The duly elected board for this district has reviewed the claims listed and approved the payment by motion at the meeting listed below:

\_\_\_\_\_  
Board President, Laura Abele

Attest : \_\_\_\_\_  
Recording Secretary, Rachael Hope

Approved by motion at \_\_\_\_\_ Regular \_\_\_\_\_ Special Board Meeting on \_\_\_\_\_  
Date Approved



# CHECK REGISTER

# BENEFITS

Lake Whatcom W-S District

Time: 15:54:32 Date: 09/06/2022

09/08/2022 To: 09/30/2022

Page: 1

Trans	Date	Type	Acct #	Chk #	Claimant	Amount	Memo
2695	09/08/2022	Payroll	5	EFT	UNITED STATES TREASURY	17,934.58	941 Deposit for Pay Cycle(s) 09/08/2022 - 09/08/2022
2696	09/08/2022	Payroll	5	EFT	WA ST SUPPORT ENFORCEMENT REGISTRY	543.87	Pay Cycle(s) 09/08/2022 To 09/08/2022 - SUP ENF
2697	09/08/2022	Payroll	5	13238	AFLAC	354.85	Pay Cycle(s) 09/08/2022 To 09/08/2022 - AFLAC Pre-Tax; Pay Cycle(s) 09/08/2022 To 09/08/2022 - AFLAC Post-Tax
2698	09/08/2022	Payroll	5	13239	AFSCME LOCAL	379.20	Pay Cycle(s) 09/08/2022 To 09/08/2022 - Union Dues; Pay Cycle(s) 09/08/2022 To 09/08/2022 - Union Fund
2699	09/08/2022	Payroll	5	13240	DEPARTMENT OF RETIREMENT SYSTEMS	4,985.50	Pay Cycle(s) 09/08/2022 To 09/08/2022 - DCP
2700	09/08/2022	Payroll	5	13241	HRA VEBA TRUST (PAYEE)	590.00	Pay Cycle(s) 09/08/2022 To 09/08/2022 - VEBA
2701	09/08/2022	Payroll	5	13242	VANTAGEPOINT TRANSFER AGENTS - 306798	100.00	Pay Cycle(s) 09/08/2022 To 09/08/2022 - ICMA
2702	09/08/2022	Payroll	5	13243	WA ST HEALTH CARE AUTHORITY	16,627.45	Pay Cycle(s) 09/08/2022 To 09/08/2022 - PEBB Medical; Pay Cycle(s) 09/08/2022 To 09/08/2022 - PEBB ADD LTD; Pay Cycle(s) 09/08/2022 To 09/08/2022 - PEBB SMK Surcharge; Pay Cycle(s) 09/08/2022 To 09/08
2703	09/08/2022	Payroll	5	13244	WA ST PUBLIC EMP RET PLAN 2	9,186.46	Pay Cycle(s) 09/08/2022 To 09/08/2022 - PERS 2
2704	09/08/2022	Payroll	5	13245	WA ST PUBLIC EMP RET PLAN 3	3,198.77	Pay Cycle(s) 09/08/2022 To 09/08/2022 - PERS 3
401 Water Fund						39,760.24	
402 Sewer Fund						14,140.44	

53,900.68 Payroll: 53,900.68

## CHECK REGISTER

Lake Whatcom W-S District

Time: 13:54:32 Date: 09/06/2022

09/08/2022 To: 09/30/2022

Page: 2

Trans	Date	Type	Acct #	Chk #	Claimant	Amount	Memo
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I do hereby certify, under penalty of perjury, that the above is an unpaid, just, and due obligation as described herein, and that I am authorized to certify this claim.

Sign  Date 9/6/2022  
General Manager, Justin Clary

Board Authorization - The duly elected board for this district has reviewed the claims listed and approved the payment by motion at the meeting listed below:

\_\_\_\_\_  
Board President, Laura Abele


Attest : \_\_\_\_\_  
Recording Secretary, Rachael Hope

Approved by motion at \_\_\_\_\_ Regular \_\_\_\_\_ Special Board Meeting on \_\_\_\_\_  
Date Approved



**AGENDA  
BILL  
Item 7.A**

**Utility Local Improvement District  
(ULID) No. 18 Reconciliation  
Discussion**

DATE SUBMITTED:	September 8, 2022	MEETING DATE:	September 14, 2022
TO: BOARD OF COMMISSIONERS	FROM: Justin Clary, General Manager		
GENERAL MANAGER APPROVAL			
ATTACHED DOCUMENTS	1. ULID No. 18 Issue Summary		
	2. ULID No. 18 Benefiting Area Map		
TYPE OF ACTION REQUESTED	RESOLUTION <input type="checkbox"/>	FORMAL ACTION/ MOTION <input type="checkbox"/>	INFORMATIONAL /OTHER <input checked="" type="checkbox"/>

**BACKGROUND / EXPLANATION OF IMPACT**

As a Washington State special purpose district, the Lake Whatcom Water and Sewer District (District) has from time-to-time established utility local improvement districts (ULIDs) under [RCW 36.94.230](#) as a means of financing needed capital improvements. ULIDs are special assessments on properties determined to benefit from the associated capital improvement project.

The sole remaining active District ULID is ULID No. 18, which was created in 2001 to finance the Lake Louise Road Sewer Interceptor project. The District Board of Commissioners (Board) confirmed the final assessment roll for ULID No. 18 via adoption of Resolution No. 668 during a regularly scheduled meeting held on January 30, 2003. The original assessment on each benefiting property of ULID No. 18 was \$2,792.78.

As allowed under statute, some owners of properties located within the ULID No. 18 benefiting area exercised the option to “opt out” of paying the assessment, which resulted in a restrictive covenant being recorded on the property that prohibits its development until January 30, 2028 (25 years). However, the District later determined that there were a number of undeveloped properties within the benefiting area that were neither charged the ULID No. 18 assessment, nor had a restrictive covenant recorded against them due to “opting out” of the ULID assessment. To address this issue, the Board adopted Resolution No. 672 during a regularly scheduled meeting held on March 28, 2003, which created a charge in lieu of the ULID assessment that allowed the subject properties to connect to District infrastructure through payment of the ULID No. 18 assessment escalated through a 9.5% multiplier applied annually through the date of connection application. The charge in lieu of assessment created through Resolution No. 672 expires December 31, 2022 (approximately 20 years).

With the expiration of the charge in lieu of assessment fee approaching, the question was recently raised as to whether these properties whose owner neither formally “opted out” of ULID No. 18, nor paid the ULID No. 18 assessment, will have the ability to develop after the December 31, 2022, expiration of the charge in lieu of assessment. District staff and counsel have determined that these properties may develop after expiration of the charge in lieu of assessment, with no additional

financial obligations (beyond general District connection charges and fees). This, in turn, has created a question of fairness for these properties relative to the properties whose owners formally “opted out” of ULID No. 18, which remain undevelopable for the next five years, and those that paid the ULID assessment for the right to develop their property.

District staff wish to discuss this issue with the Board and identify a potential path forward from a District policy perspective. Attached is a summary sheet defining the issue and potential policy options.

**FISCAL IMPACT**

Revenues associated with payment of the charge in lieu of assessment for development of properties not included in the final assessment roll are minor. Should the board with to allow the charge to expire without imposing additional fees, there would be an approximately \$10,000 loss in revenue for each associated parcel that is developed over the next five years.

**APPLICABLE EFFECTIVE UTILITY MANAGEMENT ATTRIBUTE(S)**

Customer Satisfaction

Financial Viability

**RECOMMENDED BOARD ACTION**

No action recommended at this time.

**PROPOSED MOTION**

Not applicable.

## **Utility Local Improvement District (ULID) No. 18 Lake Whatcom Water and Sewer District**

### **ULID Purpose**

Created in 2001 to finance the Lake Louise Road Sewer Interceptor Project.

### **Property “Groups” in ULID No. 18 Benefiting Area**

- 1) Developed as of ULID No. 18 creation (or vested connection assigned to parcel)
- 2) Undevelopable (e.g., conservation easement, etc.)
- 3) Undeveloped—paid assessment in full or over 20-year payment plan
- 4) Undeveloped—exercised formal “opt out” of assessment
- 5) Undeveloped—benefitting property not assessed (missed) in final assessment roll

### **Current Development Options by Group (not applicable to Groups 1 and 2)**

Group 3:

- May develop any time once current GFCs/connection fees are paid (and outstanding ULID 18 assessment balance paid for properties on 20-year payment plan)

Group 4:

- 25-year restrictive covenant
- Only development option (until restrictive covenant expiration in 2028) is transfer of development rights with a Group 3 property

Group 5:

- May develop subject to charge in lieu of ULID 18 assessment paid per Resolution 672 or transfer of an assessment.
- May develop like Group 3 properties in 2023 (without paying assessment plus interest)

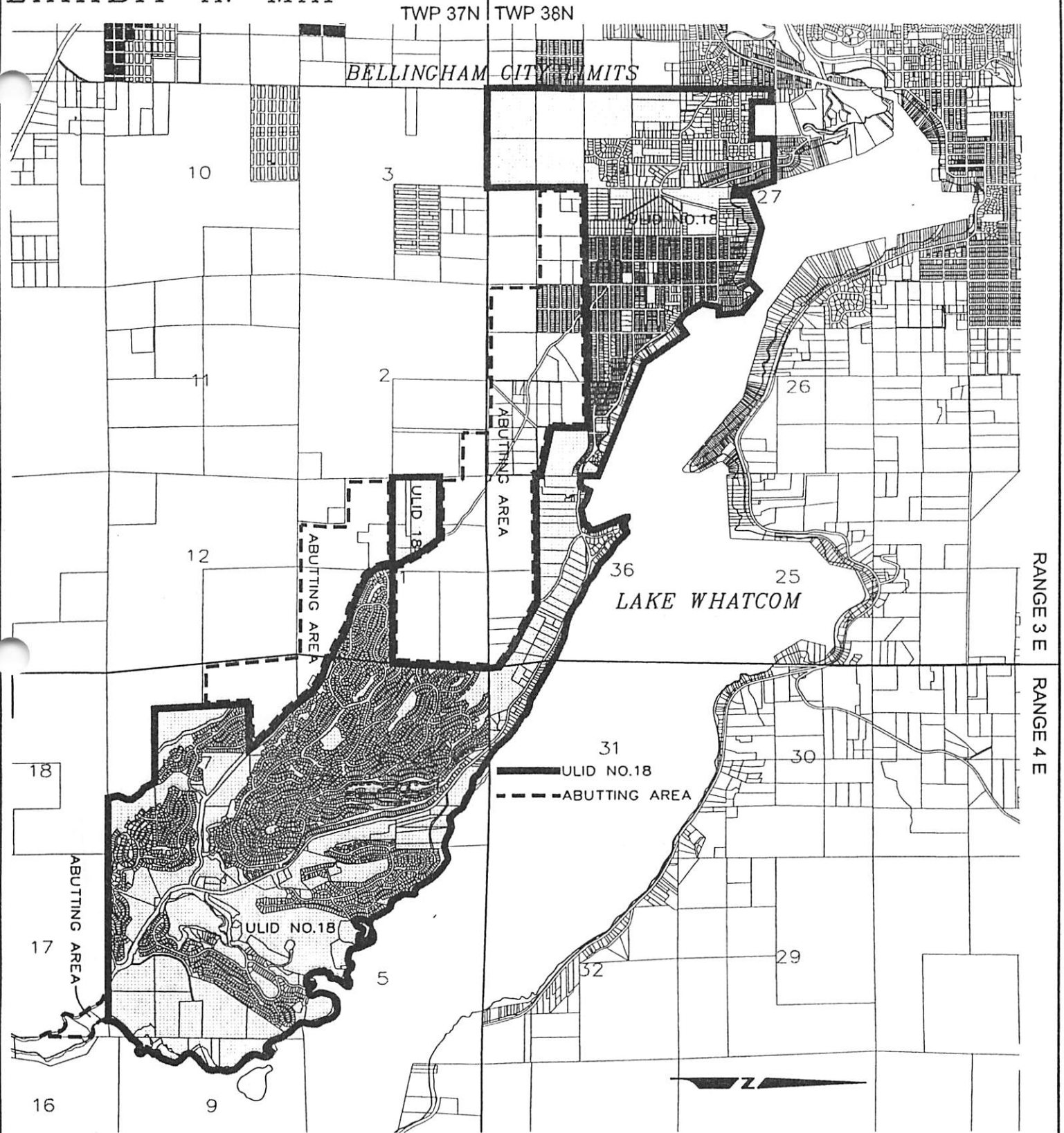
### **Issue**

Owners of properties that formally “opted out” of ULID 18 during its formation will remain unable to develop until 2028 (25 years), while owners of properties that were missed during the final fee assessment (not charged the ULID assessment) will be able to develop without financial repercussion effective January 1, 2023.

### **Policy Options**

- 1) Do Nothing. Group 5 property owners may develop without paying assessment fees starting in 2023 and Group 4 property owners will remain restricted from development until the 25-year development restriction expires in 2028.
- 2) Extinguish Restrictive Covenant (specific to Group 4 properties). Group 4 property owners may develop following removal of the 25-year restrictive covenant.
- 3) Create Customer Group (specific to Group 5 properties). Impose a fee consistent with the original ULID assessment plus interest that carries forward an additional five years (consistent with 25-year restrictive covenant expiration).

# EXHIBIT A: MAP



PARCELS INSIDE THE ULID NO. 18 AREA WHICH ALREADY HAVE A PUBLIC SEWER CONNECTION ARE EXCLUDED FROM ULID NO. 18. EXCLUDED PARCELS WILL NOT BE ASSESSED. EXCLUDED PARCELS ARE LISTED ON ACCOMPANYING 87 PAGES.

**Wilson**  
ENGINEERING, L.L.C.  
CONSULTING ENGINEERS & SURVEYORS

805 DUPONT STREET  
BELLINGHAM, WA 98225  
(360) 733-6100 • FAX (360) 647-9061  
www.wilsonengineering.com

WHATCOM COUNTY WATER DISTRICT NO. 10  
LAKE LOUISE ROAD SEWAGE INTERCEPTOR

WHATCOM COUNTY

WASHINGTON

UTILITY LOCAL IMPROVEMENT DISTRICT NO. 18  
AND ABUTTING AREA


Page 14 of 44

DATE AUGUST 2001	SHEET 1
SCALE N.T.S.	OF
JOB NUMBER 2001-053	1



**AGENDA  
BILL  
Item 7.B**

**General Facilities Charges  
Cost Basis Analysis**

DATE SUBMITTED:	September 7, 2022	MEETING DATE:	September 14, 2022
TO: BOARD OF COMMISSIONERS	FROM: Bill Hunter		
GENERAL MANAGER APPROVAL			
ATTACHED DOCUMENTS	1. GFC Cost Basis Analysis Memo		
TYPE OF ACTION REQUESTED	RESOLUTION <input type="checkbox"/>	FORMAL ACTION/ MOTION <input type="checkbox"/>	INFORMATIONAL /OTHER <input checked="" type="checkbox"/>

**BACKGROUND / EXPLANATION OF IMPACT**

Under [Revised Code of Washington 57.08.005 \(11\)](#), the Lake Whatcom Water and Sewer District may fix rates and charges to property owners seeking to connect to the District's water and sewer systems using reasonable connection charges so that property owners bear their equitable share of the cost of the system. For purposes of calculating a connection charge, the Board determines the share of the cost of existing facilities and facilities planned for expansion over the next ten years.

While the District has some flexibility to define an equitable share of system costs, it is important that the District follows a rational approach to consistently implement cost-based General Facilities Charges (GFCs). The most recent review of District GFCs was conducted in 2017, with an annual escalation of 2.5% applied to each (water and sewer) GFC since. Recognizing that much has changed in regards to the water and sewer capital improvement programs over the past five years, the Board authorized within the 2022 Budget funding to review the District's GFCs. FCS Group is assisting the District in reviewing the current GFC rates to determine what the fair and equitable share of those costs should be, and to make recommendations to the Board for GFC rate revisions in subsequent years.

Similar to prior studies, the District has developed a long-range financial forecast that will ensure GFCs recover a proportionate share of the cost of existing and future system assets from new customers as growth occurs. By not updating GFCs, growth doesn't fully pay its equitable share of costs and shifts a portion of those costs to existing rate payers.

At the July 27, 2022 board meeting, the board requested additional information on the increase in the proposed sewer GFC relative to the current GFC. Information describing the methodology, including contributing factors for the changes between the 2017 and current GFC analyses was requested.



Attached is a memorandum prepared by staff that provides additional information and proposed considerations for the next iteration of GFC original cost basis calculations.

**FISCAL IMPACT**

The fiscal impact will be dependent upon what the Board sets each GFC at and when they are effective.

**APPLICABLE EFFECTIVE UTILITY MANAGEMENT ATTRIBUTE(S)**

Financial Viability

**RECOMMENDED BOARD ACTION**

No action is recommended at this time.

**PROPOSED MOTION**

Not applicable.



## LAKE WHATCOM WATER & SEWER DISTRICT

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# MEMORANDUM

To: Justin Clary Date: September 7, 2022  
From: Bill Hunter  
RE: Asset Inventory and Valuation for 2022 General Facilities Charge (GFC) Study

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As requested, this memo documents:

1. The methodology used to develop the asset inventory and valuation used for the June 2022 iteration of the 2022 GFC Study for both sewer and water utilities.
2. Investigation of contributing factors and/or assumptions that impacted the original costs basis between the 2017 and 2022 GFC analyses.
3. In addition to the above requested documentation, Section 3 provides considerations for the next iteration of GFC calculations by the rate study consultant.

### Executive Summary

The GFC rate study model is highly sensitive to unit prices used to estimate the original cost basis of assets.

Recent public works projects that bid in May and June 2022 were utilized to estimate current replacement costs for sewer mains and manholes. Local unit prices for sewer mains in 2022 are nearly double of what similar public works projects were bidding pre-covid in the 2019 timeframe.

In addition to changes in unit pricing, there is a significant difference in objective and cost between a "replacement cost estimate" and "original cost basis estimate." For the purposes of asset management, budgeting, and future project planning a "replacement cost estimate" attempts to capture the cost to replace existing assets built to current design and construction standards. This contrasts with an "original cost basis estimate" which attempts to estimate the original installation cost designed and constructed to meet historical standards (up to 50 years ago for District assets).

For example, sewer mains installed in Sudden Valley constructed in the 1970's have minimal pea gravel bedding and were backfilled with native material. Backfill using native trench material costs approximately 1/2 of what is considered standard design and construction in 2022 which includes imported gravel backfill in and near traffic areas.

Ideally for the purposes of the GFC rate study, unit price cost estimates should be adapted to match how assets were constructed in the past, rather represent a “replacement cost estimate” to meet current design and construction standards.

## **Background**

The following information is intended to provide perspective while evaluating the 2022 GFC rate study effort.

From internal and consultant emails dating back to 2008 as part of this documentation process, prior to the 2017 GFC study the original cost basis was data pulled from an accounts payable system years ago. In 2008 District staff noted that the data is very outdated and not a very accurate picture of the District’s fixed assets. The data only provided a generalized description of each expense accrued over time with no way to identify a specific expense to a physical asset in the field. The descriptions consisted of things such as “Sudden Valley”, “Geneva”, “North Shore”, etc. The 2008 data was the basis for a GFC study that set charges for nearly a decade.

In 2013 District staff developed the 1<sup>st</sup> replacement value estimate based on an asset inventory. The inventory consisted of individual assets in the District’s asset management system called Cartegraph. The initial dataset in Cartegraph was digitized from paper drawings and knowledge of the infrastructure by staff starting around 2000. Assets were digitized to overlay parcel data from Whatcom County Assessor’s parcel maps. The parcel maps were very inaccurate dimensionally and were stretched to fit the actual square mile sections. As a result, length-of-pipe numbers in the District’s asset registry were rough. From what engineering staff recalls from almost a decade ago in 2013, unit price replacement cost estimates were developed using public works project bid tabulations, construction cost data books, recent project costs, and other available information. A record of those unit prices couldn’t not be found. Those unit prices combined with the Cartegraph assets produced the 1<sup>st</sup> inventory-based replacement value estimate of both water and sewer infrastructure.

In 2017 the GFC rate study consultant asked for the 2013 data and any updates. Essentially the same 2013 data was confirmed to be the latest and greatest available at the time. The consultant used the data to back into the original cost basis of the fixed assets, which was ultimately used to calculate the 2017 GFC rates.

Over the past decade, District staff have been improving the completeness and accuracy of the asset inventory. Since the 2013 dataset, a few noteworthy improvements should be highlighted: Nearly all the sewer manhole locations have updated positions based on GPS field surveying, along with positions for sewer air relief valves, sewer pump stations, water meters, fire hydrants, pressure reducing valves, water booster stations, water sample stations, and many water gate valves. GPS field survey equipment continues to improve in accuracy. District staff is working to further improve position accuracy using this new technology. In addition, over the last several years staff is improving the asset registry by creating hierarchical relationships between assets and sites.

The point is the asset inventory is continuously improving in completeness and accuracy.

Theoretically, once the original cost basis is calculated it should never change. However, major assumptions must be made until all numerous details of the infrastructure is cataloged and associated cost estimates developed. For example, the depth of a pipe significantly affects the installation costs as well as whether there is imported trench backfill or native backfill used among many other substantial parameters. Backing into an original cost basis using replacement cost estimates is a very rough estimate that relies on highly cost sensitive assumptions. It is staff's goal to provide the most accurate replacement cost estimate of District infrastructure with the best available data that is both rational and defensible.

### **1. Methodology to Estimate Original Cost Basis**

The concept to estimate the original cost basis utilized in 2017 and 2022 datasets is the same. A specific example will be used to illustrate the concept.

The Division 30 Reservoir was constructed in 1974. The capacity is 0.147 million gallons (MG).

First, a cost estimate is determined in a specific year. In 2017 the 0.626MG Division 22 No. 2 reservoir was completed for a total project cost of \$1,671,000. The unit price per million gallons is \$2,669,329 (\$1,671,000 / 0.626 MG). The Division 30 Reservoir is 0.147 MG so the estimated cost to construct the Division 30 Reservoir in 2017 is 0.147 MG x \$2,669,329 = \$392,391.

To estimate the original cost in 1974, the Engineering News Record (ENR) Construction Cost Index is used to factor the cost from 2017 to 1974.

ENR Construction Cost Index

Year 2017	=	10,737
Year 1974	=	2,020

Adjustment factor =  $2,020 / 10,737 = 0.188$

Convert 2017 dollars to 1974 dollars

$\$392,291 \text{ (2017 dollars)} \times 0.188 = \$73,751 \text{ (1974 dollars)}$

The estimated original total project cost in 1974 to build the Division 30 Reservoir is \$73,751 dollars.

As a cross check to the ENR Index, the US Bureau of Labor Statistics has a web-based inflation calculator ([https://www.bls.gov/data/inflation\\_calculator.htm](https://www.bls.gov/data/inflation_calculator.htm)). This calculator estimates that \$392,291 dollars in January 2017 has the same buying power as \$75,279 in January 1974. It appears that the ENR and US Bureau of Labor Statistics indices provide similar results.

This same concept is used for the thousands of individual assets in the inventory to back into an original cost basis for both the 2017 GFC model and 2022 GFC model.

## Unit Price Bid Analysis

### Sewer Unit Prices

Staff utilized recent public works project bid tabulations, with an emphasis on most recent and nearest projects to develop sewer infrastructure unit prices. Bid tabulations analyzed included:

Bid Opening	Agency	Project Title
6/1/2022	City of Burlington	2022 Sanitary Sewer Replacement Project
5/24/2022	Whatcom County	Marigold Drive Stormwater Project in Sudden Valley
5/10/2022	Oregon City	2022 Sanitary Sewer Rehab Project

Plans and specifications were reviewed for the City of Burlington and Whatcom County projects that were bid in 2022 to consider infrastructure depth, trench backfill, existing site conditions, traffic control, restoration, project scope, etc.

The objective was to develop current (summer 2022) replacement unit price cost estimates. Each bid was analyzed and general items such as mobilization/demobilization, erosion control, sales tax, etc were prorated to unit price items like pipe and manholes by line-item amount. An additional 25% was added to the unit prices to include design, permitting, contract administration, inspection, and testing costs. The result is unit prices that include total project costs.

### Water Unit Prices

There are several relevant and recent District water projects to utilize for unit price development (as was not available for sewer infrastructure). Staff utilized the same methods as for sewer, but with actual District water projects. Bid tabulations analyzed included:

Bid Opening	Agency	Project Title
6/22/2016	LWWSD	Division 22 Reservoir No. 2
2/26/2015	LWWSD	Geneva AC Mains Replacement
5/2/2012	LWWSD	Lowell & Oriental Pressure Reducing Valve Vault

## Assumptions and Simplifying Measures

For the 2022 GFC original cost basis model there were several key assumptions and simplifying measures utilized to complete the task. A summary of each asset class's assumptions and simplifying measures is provided below:

## Sewer

**Sewer Pump Stations.** Actual District project cost data, where available, was used for the replacement cost estimates. Actual cost data was utilized for 19 pump stations, ranging from 2005 to today. The remaining 7 stations were estimated by finding similarly matched size/type of stations within the dataset for the 19 pump stations with cost data.

**Sewer Laterals.** Laterals for the 4086 sewer customers were simplified since a complete itemized dataset is not yet available in Cartegraph. Two major assumptions were made to simplify the analyses. First assumption is that 50% of the laterals are shared (two residences share one lateral. This reduced the quantity down to 3064 laterals. Second assumption estimated the number of laterals installed by decade: 40% in 1970's, 30% in the 1980's, 10% in the 1990's, 14% in the 2000', 5% in the 2010's, and 1% in the 2020's. A 2022 replacement cost of \$12,500 per lateral was used.

**Sewer Air Release Valves.** An itemized list of 38 valves from Cartegraph was used. A 2022 replacement cost of \$18,750 per valve was used.

**Sewer Manholes.** An itemized list of 2,246 manholes from Cartegraph was used. Costs were estimated using 2022 replacement unit price comparisons for different manhole depth ranges. There are 770 manholes with depth information in Cartegraph. The remaining 1476 manholes were assumed to be 10 feet deep. Unit prices were developed using recent public works project bid tabulations from several Pacific Northwest locales including City of Bellingham, City of Sedro Woolley, and Whatcom County's Marigold Drive Stormwater Improvements Project in Sudden Valley. 2022 unit price replacement costs used were:

<u>MH Depth (FT)</u>	<u>2022 Unit Price (EA)</u>
5	\$8,125
10	\$12,500
15	\$31,250
20	\$43,750
25	\$56,250

**Sewer Mains.** An itemized list of 2,233 sewer mains from Cartegraph was used. 2022 replacement lineal foot (LF) unit price costs varied by pipe diameter and material. Unit prices were developed using recent public works project bid tabulations from several Pacific Northwest locales including City of Bellingham, City of Sedro Woolley and Whatcom County's Marigold Drive Stormwater Improvements Project in Sudden Valley. It was assumed that 80% of the sewer trenches were backfill with import gravel (under roads) and 20% with native backfill (not under roads). 2022 LF unit price replacement costs used were:

Pipe Diameter/Type	2022 Unit Price (LF)
Polyvinyl Chloride	\$280
Vitrified Clay	\$290
10 in Cast Iron	\$300
10 in Ductile Iron	\$300
10 in High Density Polyethylene	\$300
10 in Polyvinyl Chloride	\$300
10 in Vitrified Clay	\$300
12 in Cast Iron	\$310
12 in Ductile Iron	\$310
12 in High Density Polyethylene	\$310
12 in Polyvinyl Chloride	\$310
12 in Polyvinyl Chloride C900	\$310
12 in Vitrified Clay	\$310
14 in Ductile Iron	\$320
14 in High Density Polyethylene	\$320
15 in Polyvinyl Chloride	\$330
16 in Ductile Iron	\$340
18 in Polyvinyl Chloride	\$350
2 in High Density Polyethylene	\$200
4 in Cast Iron	\$225
4 in Ductile Iron	\$225
4 in High Density Polyethylene (HDPE)	\$225
4 in Polyvinyl Chloride	\$225
6 in Cast Iron	\$280
6 in Polyvinyl Chloride	\$280
6 in Vitrified Clay	\$280
8 in Cast Iron	\$290
8 in Ductile Iron Pipe	\$290
8 in HDPE	\$290
8 in Polyvinyl Chloride	\$290
8 in Polyvinyl Chloride C900	\$290
8 in Steel Pipe	\$290
8 in Vitrified Clay Pipe (VCP)	\$290

## Water

**Treatment Plants.** The Sudden Valley Water Treatment Plant 2022 replacement cost estimates were developed by Gray & Osborne at the request of District staff in June 2022 for this GFC study. Agate Heights Water Treatment Plant 2021 upgrades used actual project cost data. An order of magnitude estimate of \$1M (in 2022 dollars) was used to represent the initial construction of the Agate Heights Water Treatment Plant in year 2000.



**Water Booster Stations.** An order of magnitude estimate (in 2022 dollars) was used to represent a replacement value for each station.

**Water Reservoirs.** The 7 reservoir replacement cost estimates were calculated using a unit price of \$2.669/MG of capacity based on the actual 2017 total project costs for the Division 22 No. 2 Reservoir. The Division 22 No. 2 Reservoir total project cost was \$1,671,000 and has a capacity of 0.626MG which results in a unit price of \$2,669,329/MG (\$1,671,000 / 0.626 MG).

**Water Meters and Service Lines.** Meters and service lines for the 3744 connections (not to be confused with equivalent residential units) were simplified since a complete itemized dataset is not yet available in Cartegraph. The assumption made to simplify the analyses was to estimate the number of meters and services lines installed by decade: 40% in 1970's, 30% in the 1980's, 10% in the 1990's, 14% in the 2000's, 5% in the 2010's, and 1% in the 2020's. A 2022 replacement cost of \$2,000 meter and service line was used which is the amount charged by the District for installation per the current adopted Master Fees and Charges.

**Fire Hydrants.** The 522 fire hydrants in Cartegraph were itemized, then grouped by the decade in which installed. There were 381 installed in the 1970's, 86 installed in the 1980's, 21 in the 1990's, 12 in the 2000's, and 22 in the 2010's. A 2022 replacement cost estimate unit price of \$6,250 was used and based on actual unit prices in the 2015 LWWSD Geneva AC Main Replacement project.

**Sample Stations.** The 30 sample stations were assumed to be installed in the decades as follows: 12 in the 1970's, 9 in the 1980's, 3 in the 1990's, 4 in the 2000's, and 2 in the 2010's. A 2022 replacement cost estimate unit price of \$3,125 was used and based on actual unit prices in the 2015 LWWSD Geneva AC Main Replacement project.

**Water Air Release Valves.** An itemized list of 51 valves from Cartegraph was used. A 2022 replacement cost of \$2,750 per valve assembly was used and based on actual unit prices in the 2015 LWWSD Geneva AC Main Replacement project.

**Pressure Reducing Valves.** An itemized list of 54 valves from Cartegraph was used. A 2022 replacement cost of \$68,750 per valve assembly was used and based actual unit prices in the 2013 LWWSD Lowell and Oriental PRV's project.

**Gate Valves.** The 266 gate valves currently in Cartegraph (there are a lot more to be added) were assumed to be installed in the decades as follows: 106 in the 1970's, 80 in the 1980's, 27 in the 1990's, 37 in the 2000's, 13 in the 2010's and 3 in the 2020's. A 2015 replacement cost estimate unit price of \$1,625 was used and based on actual unit prices in the 2015 LWWSD Geneva AC Main Replacement project.

**Water Mains.** An itemized list of 930 water mains from Cartegraph was used. 2015 replacement lineal foot (LF) unit price costs varied by pipe diameter and material. 2015

replacement cost estimate unit prices were developed based on the actual unit prices in the 2015 LWWSD Geneva AC Main Replacement project. 2015 LF unit price replacement costs used were:

Pipe Diameter/Type	2015 Unit Price (LF)
10in Ductile Iron	\$138
12in Ductile Iron	\$156
1in Polyethylene	\$56
2in Cast Iron	\$56
2in Ductile Iron	\$56
2in Galvanized	\$56
2in Polyethylene	\$56
2in Polyvinyl Chloride	\$56
3in Asbestos Cement	\$69
3in Cast Iron	\$69
3in Ductile Iron	\$69
3in Polyvinyl Chloride	\$69
4in Asbestos Cement	\$81
4in Cast Iron	\$81
4in Ductile Iron	\$81
6in Cast Iron	\$94
6in Ductile Iron	\$94
6in High Density Polyethylene	\$106
8in Cast Iron	\$106
8in Ductile Iron	\$106
8in High Density Polyethylene	\$119

## 2. Factors Impacting Original Cost Basis between 2017 and 2022 GFC Analyses

Below is a summary of the differences in cost basis between the 2017 (labeled 2016 in the tables below) and 2022 GFC analyses:

Sewer Fixed Assets	2016 Study	2022 Study	Difference	Water Fixed Assets	2016 Study	2022 Study	Difference
Mains	\$ 7,022,120	\$ 27,642,750	\$ 20,620,630	Mains	\$ 5,079,102	\$ 10,281,163	\$ 5,202,061
Laterals	4,605,696	12,742,968	8,137,272	Laterals	2,246,566	2,489,510	242,944
Manholes	2,162,334	5,305,353	3,143,019	Hydrants	404,323	1,013,696	609,373
Pumps	12,878,708	18,730,634	5,851,926	Valves	1,527,798	3,335,347	1,807,549
Auxiliary	1,511,359	349,966	(1,161,392)	Pumps	1,042,155	495,158	(546,996)
Vehicles	-	787,500	787,500	Storage	1,331,013	3,188,672	1,857,659
Property Assets	-	1,141,584	1,141,584	Meter	-	-	-
Contractor Equip	-	243,305	243,305	Auxiliary	6,541,525	3,841,052	(2,700,473)
EDP Assets	-	444,073	444,073	Property Assets	-	1,141,584	1,141,584
Post Point Contribution	-	2,362,364	2,362,364	Vehicles	-	787,500	787,500
<b>Total</b>	<b>\$ 28,180,217</b>	<b>\$ 69,750,498</b>	<b>\$ 41,570,281</b>	Contractor Equip	-	243,305	243,305
				EDP Assets	-	444,073	444,073
				<b>Total</b>	<b>\$ 18,172,481</b>	<b>\$ 27,261,061</b>	<b>\$ 9,088,580</b>

For the sewer utility the largest variations are Mains, Laterals, Manholes, & Pumps.

For the water utility the largest variations are Mains, Hydrants, Valves, and Storage.

These are discussed below to provide insight as to why these lines significantly increased in cost basis. Section 3 provides considerations to utilize in next iteration that refine the cost basis numbers.

## Analysis of Cost Differences

### Sewer

**Sewer Mains.** The number of sewer mains between 2017 and 2022 is close. There were 3990 in the 2017 dataset versus 4086 in the 2022 dataset. Total lengths for the 2017 dataset are not available so a total length comparison could not be made. It appears the difference in replacement value is the unit price used in each model.

The 2022 replacement unit prices for sewer mains were estimated using 3 recent public works project bids (bid tabulations attached for reference):

6/1/2022	City of Burlington	2022 Sanitary Sewer Replacement Project
5/24/2022	Whatcom County	Marigold Drive Stormwater Project in Sudden Valley
5/10/2022	Oregon City	2022 Sanitary Sewer Rehab Project

As an example, to illustrate the high escalation seen in these recent bids, an 8" PVC Sewer Main will be analyzed.

\$/LF Unit Price (Installed with tax, not including 25% engineering)

	Burlington	Whatcom County	Oregon City	Average
8" PVC Sewer	\$178	\$335	\$330	\$281

To compare with pre-covid similar public works project bids (bid tabulations attached for reference):

8/30/2018	City of Sedro Woolley	W Bennet, W Nelson & Batey Sewer Extension
1/23/2020	City of Bellingham	2016 Sewer Placement – EU-0178

\$/LF Unit Price (Installed with tax, not including 25% engineering)

	Sedro Woolley	Bellingham	Average
8" PVC Sewer	\$141	\$171	\$156

The 2022 dataset used \$290/LF for 8" sewer mains to represent the total cost for installation, including an additional 25% for design, permitting, contract administration, inspection, and testing costs.

The large difference in unit pricing for public works project bids from pre-covid 2019 timeframe to May/June 2022 appears to be a significant contributing factor to the variations of replacement cost estimates between the 2017 and 2022 datasets.

Also, the type of assumed trench backfill (import gravel or native material) is another significant factor. See Section 3 for a more detailed discussion and analysis.

**Sewer Manholes.** The number of sewer manholes between 2017 and 2022 is close. There were 2148 in the 2017 dataset versus 2245 in the 2022 dataset. It appears the difference in replacement value is the unit price used in each model.

**Sewer Laterals.** FCGC's GFC rate model appears to not utilize any expenses for sewer laterals. This makes sense because bonded side sewer contractors hired by developers install the lateral and make the connection to the sewer main. For GFC's no further work is needed since these costs are not utilized in the GFC model.

**Sewer Pump Stations.** As noted in Section 1, for the 2022 dataset actual District project cost data, where available, was used for the replacement cost estimates. Actual cost data was utilized for 19 pump stations, ranging from 2005 to today. The remaining 7 stations were estimated by finding similarly matched size/type of stations within the dataset for the 19 pump stations with cost data. The 2022 valuation is the most accurate to date.

Some of the reasons why the original cost basis may have increased are:

- The 2022 dataset used the actual year the station was replaced, rather than the original construction year some 30 to 40 years earlier. There were 7 sewer pump stations replaced between 2013 (the data used in the 2017 dataset) and today (\$4.9M of replacements).
- Numerous new stationary generators installed
- 2022 replacement cost estimates include an additional 25% for design, permitting, contract administration, inspection, and testing costs.

**Other Items.** \$2.6M added for Property Assets, Vehicles, Contractor Equipment, EDP Assets. Also, another \$2.36M added to sewer utility for Post Point Contribution

## Water

**Water Mains.** The number of water mains between 2017 and 2022 is close. There were 1028 in the 2017 dataset versus 930 in the 2022 dataset (yes, a reduction). Total lengths for the 2017 dataset are not available so a total length comparison could not be made. It appears the difference in replacement value is the unit price used in each model.

The 2015 Geneva AC Mains Replacement project is probably one of the best representative projects for unit pricing water distribution infrastructure in the District. The \$1.9M project included 11,415 LF of 8" ductile iron water main, 3,145 LF of 1" water service line, 14 fire hydrants, and 54 8" gate valves along with numerous other water system appurtenances.

Some of the reasons why the original cost basis may have increased are:

- \$1.9M of new water mains installed in 2015
- 2022 replacement cost estimates include an additional 25% for design, permitting, contract administration, inspection, and testing costs.

**Fire Hydrants.** The number of fire hydrants mains between 2017 and 2022 is close. There were 531 in the 2017 dataset versus 522 in the 2022 dataset (yes, a reduction). It appears the difference in replacement value is the unit price used in each model. As discussed above for water mains the 2015 Geneva AC Mains Replacement project is probably one of the best representative projects for unit pricing water distribution infrastructure in the District. The original cost basis may have increased due to higher unit price cost estimate and including additional 25% for design, permitting, contract administration, inspection, and testing costs.

**Valves (Air Release Valves, Pressure Reducing Valves, Gate Valves).** The number air release valves and pressure reducing valves was close, 98 vs 105 in 2017 and 2022 datasets respectively. Gate valves are a new asset type that was added to the system. There are 266 in the 2022 dataset, but there are many more that need to be located with GPS and added to the system. The original cost basis for the general category of Valves is probably an updated unit price cost estimate of \$68,750/EA for the 54 Pressure Reducing Valves. The unit price data for the 2022 dataset is based on the 2013 Lowell and Oriental PRV project as described in Section 1.

**Storage.** The increase in cost basis appears to be the addition of the new Division 22 No.2 constructed in 2017 for a total project cost of \$1,671,000.

**Other Items.** \$2.6M added for Property Assets, Vehicles, Contractor Equipment, EDP Assets

### 3. Considerations for Next Iteration of 2022 GFC Analyses

Following are several proposed adjustments presented for consideration to implement in the next iteration of the GFC analyses.

#### Sewer Mains

##### Proposed Assumptions

- Undeveloped forested land, no traffic control
- Includes pipe bedding (Sudden Valley has pea gravel bedding)
- Native material for trench backfill
- 8.5' deep trench (approximately 8' deep invert)
- 4' wide trench with trench box, common earth, no dewatering

The above assumptions were utilized to develop a detailed unit price cost estimate model using published 2012 RSMeans Heavy Construction Cost Data that provides national average cost estimates. The cost estimate was checked and calibrated to match the average unit price for an 8" sewer main installation for two pre-covid public works projects. An all-inclusive multiplier factor was calculated to apply to RSMeans cost estimate models to include mobilization/demobilization, general requirements, sales tax, general contractor overhead and profit, contingency, bonds, location adjustment factor, ENR historical cost escalation factor, and includes 25% for design, permitting, construction administration, testing, and record drawings. The two public works project bids used for the calibration are:

8/30/2018	City of Sedro Woolley W Bennet, W Nelson & Batey Sewer Extension
1/23/2020	City of Bellingham 2016 Sewer Placement – EU-0178

\$156/LF	Average unit price 8" PVC Sewer Main (w/ import gravel backfill)
<u>\$39/LF</u>	<u>Additional 25% for eng, construction admin, etc</u>
\$195/LF	Total project unit price estimate

Compare this with the June 2022 iteration which was:

\$290/LF	8" PVC Sewer Pipe (with Import gravel backfill)
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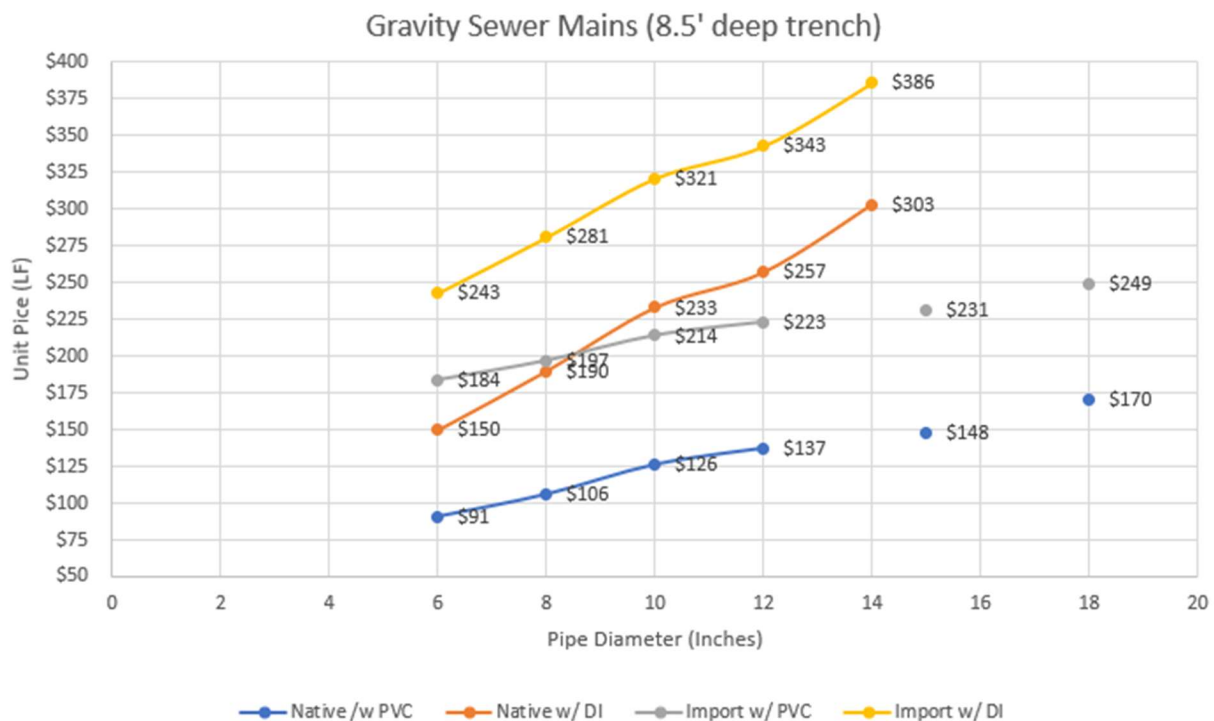
The adjusted unit price using native backfill using the calibrated RSMeans cost estimate in 2019 dollars is:

\$73/LF	Trench and Backfill with Native Material
<u>\$33/LF</u>	<u>8" PVC Sewer Pipe</u>
\$106/LF	Total Assembly Cost for 8" PVC Sewer Main

The resulting cost is about 36% of the June 2022 iteration. This should result in a much smaller sewer main cost basis in the next GFC iteration.

Example spreadsheet calculations are attached that were used for the 8" PVC Sewer Main RSMeans calibration.

Similar unit price cost estimates have been calculated for a range of pipe sizes from 6" to 18" as well as the various pipe materials. The chart below summarizes those calculations.





### Sewer Manholes

Rather than using May/June 2022 unit prices from public works project bids, the RSMeans unit pricing is proposed. For example:

For the June 2022 iteration the unit price for a 10' deep manhole was:

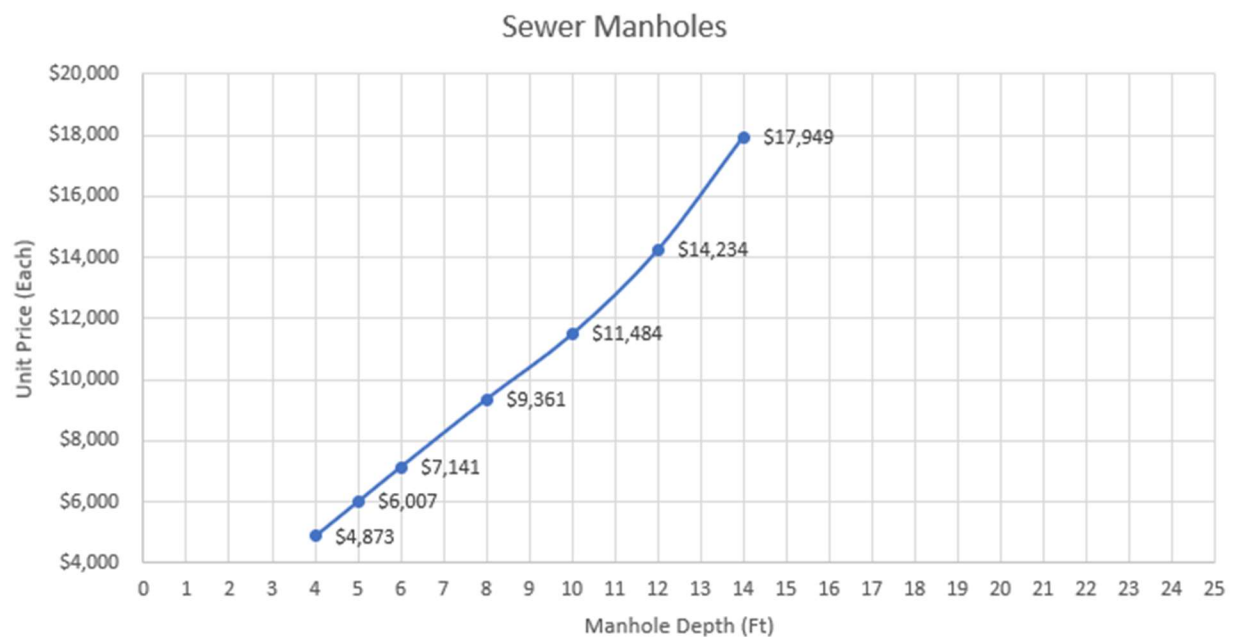
\$12,500/EA

The adjusted unit price using RSMeans cost estimate in 2019 dollars is:

\$11,500/EA

This should result in a slightly smaller sewer manhole cost basis.

Similar unit price cost estimates have been calculated for a range of manhole depths from 4' to 14' deep using RSMeans cost data. Further research in the RSMeans data book is needed for manholes deeper than 14'. The chart below summarizes calculations for manholes to date.



	BIDDER			ENGINEER'S ESTIMATE	SRV CONSTRUCTION, INC.	
	BIDDER ADDRESS				P.O. Box 507	
					Anacortes, WA 98221	
	WASHINGTON STATE WORKMAN'S COMP. ACCT. NO.				810,875-00	
	WASHINGTON STATE CONTRACTOR'S REG. NUMBER				SRVCOI*990QA	
	BID BOND OR OTHER GOOD FAITH TOKEN				5% BID BOND	
NO.	ITEM	QUANTITY	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
1	Minor Change	1 CALC	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00
2	Survey	1 LS	\$4,000.00	\$4,000.00	\$3,500.00	\$3,500.00
3	Record Drawings (Minimum Bid \$1,000)	1 LS	\$2,000.00	\$2,000.00	\$1,000.00	\$1,000.00
4	SPCC Plan	1 LS	\$2,000.00	\$2,000.00	\$400.00	\$400.00
5	Mobilization, Cleanup and Demobilization	1 LS	\$73,000.00	\$73,000.00	\$140,350.00	\$140,350.00
6	Project Temporary Traffic Control	1 LS	\$18,000.00	\$18,000.00	\$24,000.00	\$24,000.00
7	Sawcutting	750 LF	\$8.00	\$6,000.00	\$5.00	\$3,750.00
8	Dust Control	1 LS	\$3,000.00	\$3,000.00	\$4,000.00	\$4,000.00
9	Relief Pits	4 EA	\$1,000.00	\$4,000.00	\$4,400.00	\$17,600.00
10	Locate Existing Utilities	1 LS	\$10,000.00	\$10,000.00	\$23,000.00	\$23,000.00
11	Controlled Density Fill	30 CY	\$200.00	\$6,000.00	\$244.00	\$7,320.00
12	Crushed Surfacing Repair	310 TN	\$50.00	\$15,500.00	\$48.00	\$14,880.00
13	Commercial HMA	140 TN	\$220.00	\$30,800.00	\$297.00	\$41,580.00
14	Manhole, 48 In. Diam.	8 EA	\$7,000.00	\$56,000.00	\$20,450.00	\$163,600.00
15	Manhole, Additional Height, 48 In.	35 LF	\$500.00	\$17,500.00	\$400.00	\$14,000.00
16	Connection to Existing Manhole	1 EA	\$5,000.00	\$5,000.00	\$23,400.00	\$23,400.00
17	Removal of Unsuitable Material	40 CY	\$60.00	\$2,400.00	\$55.00	\$2,200.00
18	Foundation Gravel	240 TN	\$50.00	\$12,000.00	\$38.00	\$9,120.00
19	Bank Run Gravel for Trench Backfill	2,190 TN	\$35.00	\$76,650.00	\$17.50	\$38,325.00
20	Trench Excavation Safety Systems	1 LS	\$15,000.00	\$15,000.00	\$4,000.00	\$4,000.00
21	Maintaining Sewage Flow	1 LS	\$20,000.00	\$20,000.00	\$62,000.00	\$62,000.00
22	PVC Sanitary Sewer Pipe and Fittings, 8 In. Diam., Incl. Bedding Material	680 LF	\$120.00	\$81,600.00	\$97.00	\$65,960.00
23	PVC Side Sewer Pipe and Fittings, 6 In. Diam., Incl. Bedding Material	380 LF	\$100.00	\$38,000.00	\$115.00	\$43,700.00
24	Side Sewer Connection, Open Cut	15 EA	\$1,500.00	\$22,500.00	\$3,900.00	\$58,500.00
25	Side Sewer Connection, Pipe Burst	6 EA	\$1,500.00	\$9,000.00	\$8,375.00	\$50,250.00
26	Side Sewer Cleanouts	20 EA	\$1,000.00	\$20,000.00	\$650.00	\$13,000.00
27	HDPE Sanitary Sewer Pipe and Fittings for Pipe Bursting, 12 In. Diam.	1,450 LF	\$150.00	\$217,500.00	\$89.50	\$129,775.00
28	Erosion Control and Water Pollution Prevention	1 LS	\$5,000.00	\$5,000.00	\$8,325.00	\$8,325.00
29	Seeding, Fertilizaing and Mulching	110 SY	\$40.00	\$4,400.00	\$32.00	\$3,520.00
30	Cement Concrete Driveway Repair	30 SY	\$150.00	\$4,500.00	\$200.00	\$6,000.00
31	Cement Concrete Sidewalk Repair	70 SY	\$100.00	\$7,000.00	\$114.00	\$7,980.00
	Subtotal:			\$808,350.00		\$1,005,035.00
	Sales Tax @ 8.6%			\$69,518.10		\$86,433.01
	<b>TOTAL CONSTRUCTION COST</b>			\$877,868.10		\$1,091,468.01
	Sealed bids were opened at the City of Burlington, 833 South Spruce Street, Burlington, Washington 98233 on Wednesday, June 1, 2022, at 2:00 p.m. (local time).					
	I hereby certify that, to the best of my knowledge, the above tabulations are true and correct transcriptions of the unit prices and total amounts bid.					
	<b>ADAM MILLER, P.E.</b>					

DATE: 6/2022  
DRAWN: SC  
CHECKED: BS  
APPROVED: AM

CITY OF BURLINGTON, WASHINGTON  
2022 SANITARY SEWER REPLACEMENT PROJECT  
GRAY & OSBORNE #22494

GRAY & OSBORNE, INC.  
CONSULTING ENGINEERS

Bid Item #	Specification Reference	Item Description	Estimated Quantity	Unit	ENGINEER'S ESTIMATE		PREMIUM SERVICES <i>W/C</i>	
					Unit Cost	Amount	Unit Cost	Amount
1	1-05.7	Mobilization		LS	\$48,364.00	\$48,364.00	\$48,000.00	\$48,000.00
2	1-07.15(1)	S.P.C.C. Plan		LS	\$1,000.00	\$1,000.00	\$1,200.00	\$1,200.00
3	1-10	Protect Temporary Traffic Control		LS	\$10,000.00	\$10,000.00	\$8,000.00	\$8,000.00
4	1-10.3	Flare	900	HR	\$65.00	\$58,500.00	\$55.00	\$49,500.00
5	2-01	Grass and Gravel		LS	\$6,500.00	\$6,500.00	\$5,000.00	\$5,000.00
6	2-02	Removal of Structures and Construction		LS	\$6,000.00	\$6,000.00	\$10,000.00	\$10,000.00
7	2-02.4	Sanctuary	75	LF	\$4.00	\$3,044.00	\$4.00	\$3,044.00
8	2-02	Asphalt Concrete Removal (incl. haul)	846	SY	\$30.00	\$25,380.00	\$10.00	\$8,460.00
9	2-07.5	Water	10	M GAL	\$100.00	\$1,000.00	\$150.00	\$1,500.00
10	2-09.3(1)E	Cherry Birch (incl. construction materials)	30	Ten	\$20.00	\$2,000.00	\$30.00	\$3,000.00
11	2-09.5	Massive Excavation Excavation (incl. haul)	25	CY	\$80.00	\$2,000.00	\$80.00	\$2,000.00
12	5-04.2	Shoring or Extra Excavation Class B		LS	\$71,000.00	\$71,000.00	\$4,000.00	\$4,000.00
13	2-09.5	Rock Excavation (9-5 CY)	10	CY	\$200.00	\$2,000.00	\$300.00	\$3,000.00
14	4-04.5	Crushed Surfacing Top Course	634	Ton	\$40.00	\$25,360.00	\$60.00	\$38,040.00
15	5-04.5	Gravel Under	18	Ton	\$300.00	\$5,400.00	\$500.00	\$9,000.00
16	5-04.5	Asphalt Decking	7	Ton	\$350.00	\$2,450.00	\$500.00	\$3,500.00
17	5-04.7	HMA CL 1/2" PD SM-22	241	Ton	\$250.00	\$60,250.00	\$200.00	\$48,200.00
18	7-04.5	12-inch PE Storm Sewer pipe (incl. excavation)	321	LF	\$60.00	\$19,260.00	\$180.00	\$57,780.00
19	7-04.5	10-inch PE Storm Sewer pipe (incl. excavation)	125	LF	\$85.00	\$10,625.00	\$170.00	\$21,250.00
20	7-04.5	8-inch CMP Storm Sewer pipe (incl. excavation)	5	LF	\$85.00	\$425.00	\$250.00	\$1,250.00
21	7-05.5	Catch Basin Type 1	4	EA	\$1,800.00	\$7,200.00	\$1,800.00	\$7,200.00
22		Catch Basin Type 1L	1	EA	\$2,100.00	\$2,100.00	\$2,000.00	\$2,000.00
23	7-05.5	Catch Basin Type 2-42 in. DIA	0	EA	\$5,000.00	\$0.00	\$5,000.00	\$0.00
24	7-05.5	Drain Barrier	4	EA	\$800.00	\$3,200.00	\$600.00	\$2,400.00
25	7-05.5	Drain Barrier (for Full Length)	451	LF	\$25.00	\$11,275.00	\$17.00	\$7,667.00
26	7-10	Local Owner-Furnished Preliminary Vault		LS	\$4,500.00	\$4,500.00	\$20,000.00	\$20,000.00
27	7-05	Local Owner-Furnished Water Quality Treatment Vault		LS	\$73,000.00	\$73,000.00	\$7,400.00	\$7,400.00
28	7-05.5	French Drain	14	EA	\$3,200.00	\$44,800.00	\$900.00	\$12,600.00
29	8-01.5	Gravel Bed		LS	\$6,000.00	\$6,000.00	\$2,500.00	\$2,500.00
30	8-01.5(1)	Temporary Storm Sewer Bypass		LS	\$25,000.00	\$25,000.00	\$1,000.00	\$1,000.00
31	8-01.5(2)	ESC Lead	52	DAY	\$55.00	\$2,860.00	\$40.00	\$2,080.00
32	8-01.5(3)	Street Cleaning	50	HR	\$88.00	\$4,400.00	\$60.00	\$3,000.00
33	8-01.5(4)	Check Dam	5	EA	\$250.00	\$1,250.00	\$300.00	\$1,500.00
34	8-01.5(2)	Gr Fence	57	LF	\$30.00	\$1,710.00	\$7.00	\$399.00
35	8-01.5(2)	Slam Wall	120	LF	\$12.00	\$1,440.00	\$5.00	\$600.00
36	8-01.5(2)	Explosion Control Barrier	226	SY	\$15.00	\$3,390.00	\$3.00	\$678.00
37	8-01.5(2)	Sign Protection	1	EA	\$325.00	\$325.00	\$40.00	\$40.00
38	8-01.5(4)	High Visibility Fence	211	LF	\$5.00	\$1,055.00	\$4.00	\$844.00
39	8-02.5	Roller Type A	17	CY	\$175.00	\$2,975.00	\$100.00	\$1,700.00
40	8-02.5	Seedling, Fertilizer and Mulch	221	RY	\$12.00	\$2,652.00	\$8.00	\$1,768.00
41	8-22.5	Gravel Bed		LS	\$3,800.00	\$3,800.00	\$1,000.00	\$1,000.00
42	8-24.5	Gravel Block Wall	264	SE	\$30.00	\$7,920.00	\$80.00	\$21,120.00
43	8-26	Landscaping Restoration		FA	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00
44	8-27	Rehabilitate Public and Private Facilities		FA	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00
45	8-28	Unanticipated Site Work		FA	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00
SUBTOTAL - Bid Amount (Bid Items 1-45)						\$563,004.00		\$497,648.00
Sales Tax (9.6%)						\$54,118.34		\$47,772.21
TOTAL - Bid Amount (Bid Items 1-45)						\$617,122.34		\$545,420.21

\* Note: Amount in bold and italic represent a correction to the contractor's submitted bid

I hereby certify that the amounts tabulated herein are correct and accurately represent the amounts contained in the Engineer's estimate and the respective bid proposals opened at 2:30 P.M. May 24, 2022 Marigold Drive Stormwater Improvements, Bid No. 22-18.

*Kraig Olson*  
Kraig Olson  
Stormwater Division Manager

*5-26-22*  
Date

STATE OF WASHINGTON )  
COUNTY OF WHATCOM )

On this day personally appeared before me, *Kraig Olson*, known to me to be the Stormwater Division Manager and the person described herein and who executed the within foregoing instrument on this *25* day of *May*, 2022.

*Beth Bushaw*  
NOTARY PUBLIC

Residing At *Whatcom County*  
My Commission Expires: *6/29/25*



Client  
Project  
Bid Tabulation  
Date:

City of Oregon City  
2022 Sanitary Sewer Rehab Project  
  
May 10, 2022

Apparent Low

Other Bidders

Item	Spec	Description	Units	Quantity
1	00197	Extra Work as Authorized	FA	1
2	00210	Mobilization	LS	1
3	00225	Temporary Work Zone Traffic Control, Complete	LS	1
4	00280	Erosion Control	LS	1
5	00290	Pollution Control Plan	LS	1
6	00305	Construction Survey Work	LS	1
7	00310	Removal of Structures and Obstructions	LS	1
8	00320	Clearing and Grubbing	LS	1
9	00405	Rock Excavation	CY	40
10	00405	Boulder Excavation	CY	40
11	00405	Trench Foundation	CY	10
12	00412	Service Line Reinstatement, CIPP	EA	29
13	00412	CIPP Liner, 8 Inch	LF	1,995
14	00415	Mainline Video Inspection	LF	4,348
15	00445	8-Inch D3034 PVC Sanitary Sewer Pipe, All Depths	LF	358
16	00445	6-Inch Sanitary Sewer Lateral	LF	55
17	00470	Concrete Sanitary Sewer Manhole	EA	6
18	00470	Sanitary Sewer Mainline Cleanout	EA	1
19	00490	Sanitary Sewer Manhole Repair	LS	1
20	00490	Bypass Pumping	LS	1
21	00490	Connection to Existing Structures	EA	5
22	00490	Filling Abandoned Structures, Pipes	CY	6
23	00490	Sewer Mainline Point Repairs, OR-99E	LS	1
24	00490	Sewer Mainline Point Repairs, Dimick Street	LS	1

Engineers Estimate		Western Construction, Inc		ORR Inc	
Unit Price	Extended	Unit Price	Extended	Unit Price	Extended
\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00
\$ 69,000.00	\$ 69,000.00	\$ 58,000.00	\$ 58,000.00	\$ 80,064.15	\$ 80,064.15
\$ 85,000.00	\$ 85,000.00	\$ 30,000.00	\$ 30,000.00	\$ 190,402.92	\$ 190,402.92
\$ 3,500.00	\$ 3,500.00	\$ 7,500.00	\$ 7,500.00	\$ 15,300.23	\$ 15,300.23
\$ 1,000.00	\$ 1,000.00	\$ 2,500.00	\$ 2,500.00	\$ 7,366.78	\$ 7,366.78
\$ 6,000.00	\$ 6,000.00	\$ 8,391.60	\$ 8,391.60	\$ 16,689.72	\$ 16,689.72
\$ 17,000.00	\$ 17,000.00	\$ 8,500.00	\$ 8,500.00	\$ 32,664.77	\$ 32,664.77
\$ 1,500.00	\$ 1,500.00	\$ 12,000.00	\$ 12,000.00	\$ 15,646.73	\$ 15,646.73
\$ 200.00	\$ 8,000.00	\$ 47.80	\$ 1,912.00	\$ 622.82	\$ 24,912.80
\$ 150.00	\$ 6,000.00	\$ 58.50	\$ 2,340.00	\$ 625.54	\$ 25,021.60
\$ 50.00	\$ 500.00	\$ 42.00	\$ 420.00	\$ 271.59	\$ 2,715.90
\$ 500.00	\$ 14,500.00	\$ 4,665.58	\$ 135,301.82	\$ 552.79	\$ 16,030.91
\$ 50.00	\$ 99,750.00	\$ 68.77	\$ 137,196.15	\$ 124.35	\$ 248,078.25
\$ 3.00	\$ 13,044.00	\$ 4.50	\$ 19,566.00	\$ 9.34	\$ 40,610.32
\$ 140.00	\$ 50,120.00	\$ 251.00	\$ 89,858.00	\$ 301.66	\$ 107,994.28
\$ 130.00	\$ 7,150.00	\$ 205.00	\$ 11,275.00	\$ 269.17	\$ 14,804.35
\$ 7,000.00	\$ 42,000.00	\$ 2,500.00	\$ 15,000.00	\$ 15,164.49	\$ 90,986.94
\$ 1,500.00	\$ 1,500.00	\$ 2,500.00	\$ 2,500.00	\$ 8,974.47	\$ 8,974.47
\$ 6,000.00	\$ 6,000.00	\$ 10,500.00	\$ 10,500.00	\$ 13,913.61	\$ 13,913.61
\$ 20,000.00	\$ 20,000.00	\$ 10,000.00	\$ 10,000.00	\$ 34,000.52	\$ 34,000.52
\$ 2,000.00	\$ 10,000.00	\$ 1,250.00	\$ 6,250.00	\$ 1,852.92	\$ 9,264.60
\$ 500.00	\$ 3,000.00	\$ 250.00	\$ 1,500.00	\$ 689.21	\$ 4,135.26
\$ 53,500.00	\$ 53,500.00	\$ 32,000.00	\$ 32,000.00	\$ 25,761.00	\$ 25,761.00
\$ 7,200.00	\$ 7,200.00	\$ 18,500.00	\$ 18,500.00	\$ 10,697.16	\$ 10,697.16

Client  
Project  
Bid Tabulation  
Date:

City of Oregon City  
2022 Sanitary Sewer Rehab Project  
  
May 10, 2022

Apparent Low

Other Bidders

Item	Spec	Description	Units	Quantity
25	00495	Permanent Asphalt Pavement Restoration, 7 Inch Depth	SY	335
26	00495	Permanent Asphalt Pavement Restoration, 4 Inch Depth	SY	35
27	00495	Temporary Asphalt Pavement Restoration, 2 Inch Depth	SY	227
28	00748	2 Inch Depth Asphalt Concrete Pavement Repair	SY	1,623
29	00754	Plain Concrete Pavement Repair, 7 Inch Thick	SY	525
30	00759	Concrete Curbs, Standard Curb	LF	40
31	00759	Concrete Walks	SF	57
32	00865	Roadway Pavement Marking Restoration	LS	1
33	00990	Detector Installation, Washington Street	LS	1
34	01020	Landscape Restoration, Complete	LS	1
TOTAL (ITEMS 00197 TO 01020)				

Engineers Estimate	
Unit Price	Extended
\$ 80.00	\$ 26,800.00
\$ 45.00	\$ 1,575.00
\$ 25.00	\$ 5,675.00
\$ 45.00	\$ 73,035.00
\$ 180.00	\$ 94,500.00
\$ 55.00	\$ 2,200.00
\$ 35.00	\$ 2,002.00
\$ 7,500.00	\$ 7,500.00
\$ 8,000.00	\$ 8,000.00
\$ 2,500.00	\$ 2,500.00
	\$ 769,051.00

Western Construction, Inc	
Unit Price	Extended
\$ 75.00	\$ 25,125.00
\$ 75.00	\$ 2,625.00
\$ 60.00	\$ 13,620.00
\$ 75.00	\$ 121,725.00
\$ 125.00	\$ 65,625.00
\$ 90.00	\$ 3,600.00
\$ 15.00	\$ 858.00
\$ 15,000.00	\$ 15,000.00
\$ 6,500.00	\$ 6,500.00
\$ 5,000.00	\$ 5,000.00
17.1%	\$ 900,688.57

ORR Inc	
Unit Price	Extended
\$ 215.00	\$ 72,025.00
\$ 216.44	\$ 7,575.40
\$ 236.50	\$ 53,685.50
\$ 135.00	\$ 219,105.00
\$ 16.51	\$ 8,667.75
\$ 97.55	\$ 3,902.00
\$ 75.88	\$ 4,340.34
\$ 13,600.21	\$ 13,600.21
\$ 11,333.51	\$ 11,333.51
\$ 15,110.00	\$ 15,110.00
90.5%	\$ 1,465,381.98

Note: Items in Red are corrections from the original bid proposal form.



W Bennett, W Nelson & Batey Sewer Extenson Project  
Prepared by: David Lee, PE  
Date: August 30, 2018

FINAL

Bid Tabualtion

				Engineer's Opinion of Probable Construction Cost		SRV Construction, Inc. Anacortes, WA		Strider Construction Co Inc. Bellingham, WA		P & P Excavating LLC Bellingham, WA		Faber Construction Lyden, WA		Dawson Construction LLC Bellingham, WA		Laser Underground & Earthworks Snohomish, WA	
ITEM NO.	ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT	UNIT PRICE	TOTAL AMOUNT
1	SPCC PLAN	LS	1	\$1,000.00	\$1,000.00	200.00	200.00	1,000.00	1,000.00	1,000.00	1,000.00	1,014.00	1,014.00	841.00	841.00	1,500.00	1,500.00
2	MOBILZATION	LS	1	\$34,000.00	\$34,000.00	48,000.00	48,000.00	40,000.00	40,000.00	18,000.00	18,000.00	61,205.00	61,205.00	36,892.43	36,892.43	50,000.00	50,000.00
3	PROJECT TRAFFIC CONTROL	LS	1	\$15,000.00	\$15,000.00	13,650.00	13,650.00	7,500.00	7,500.00	14,330.50	14,330.50	19,226.00	19,226.00	30,870.91	30,870.91	25,000.00	25,000.00
4	REMOVE EXISTING ASPHALT	SY	2,375	\$10.00	\$23,750.00	5.50	13,062.50	2.60	6,175.00	1.35	3,206.25	8.00	19,000.00	8.61	20,448.75	20.00	47,500.00
5	TRIMMING AND CLEANUP	LS	1	\$7,500.00	\$7,500.00	5,250.00	5,250.00	2,000.00	2,000.00	4,500.00	4,500.00	9,543.00	9,543.00	12,835.00	12,835.00	7,500.00	7,500.00
6	GRAVEL BASE, INCL. HAUL TRENCH	TN	5,075	\$15.00	\$76,125.00	5.00	25,375.00	10.00	50,750.00	25.00	126,875.00	22.00	111,650.00	17.12	86,884.00	20.00	101,500.00
7	CRUSHED SURFACING TOP COURSE	TN	265	\$35.00	\$9,275.00	55.00	14,575.00	60.00	15,900.00	48.35	12,812.75	27.00	7,155.00	53.77	14,249.05	30.00	7,950.00
8	HMA CL 1/2" PG 64-22	TN	420	\$165.00	\$69,300.00	134.00	56,280.00	130.00	54,600.00	126.50	53,130.00	147.00	61,740.00	134.20	56,364.00	180.00	75,600.00
9	MANHOLE 48-In. DIAM. TYPE 1	EA	6	\$4,000.00	\$24,000.00	3,375.00	20,250.00	4,500.00	27,000.00	4,750.00	28,500.00	2,839.00	17,034.00	5,926.95	35,561.70	6,500.00	39,000.00
10	CONNECT TO EXISTING MANHOLE	EA	2	\$1,000.00	\$2,000.00	1,290.00	2,580.00	500.00	1,000.00	3,500.00	7,000.00	4,072.00	8,144.00	2,750.05	5,500.10	3,500.00	7,000.00
11	TRENCH OVER EXCAVATION	CY	50	\$30.00	\$1,500.00	33.90	1,695.00	20.00	1,000.00	25.00	1,250.00	52.00	2,600.00	35.84	1,792.00	30.00	1,500.00
12	FOUNDATION MATERIAL	TN	50	\$30.00	\$1,500.00	44.50	2,225.00	20.00	1,000.00	28.00	1,400.00	61.00	3,050.00	41.57	2,078.50	30.00	1,500.00
13	TRENCH EXCAVATION SAFETY SYSTEM	LS	1	\$2,500.00	\$2,500.00	2,750.00	2,750.00	2,000.00	2,000.00	3,500.00	3,500.00	12,905.00	12,905.00	13,380.00	13,380.00	12,500.00	12,500.00
14	SANITARY SEWER PIPE 8-IN. DIAM.	LF	1,949	\$55.00	\$107,195.00	79.00	153,971.00	78.00	152,022.00	52.20	101,737.80	46.00	89,654.00	53.78	104,817.22	100.00	194,900.00
15	SANITARY SEWER PIPE 6-IN. DIAM.	LF	600	\$45.00	\$27,000.00	10.25	6,150.00	45.00	27,000.00	45.23	27,138.00	44.00	26,400.00	57.19	34,314.00	90.00	54,000.00
16	SIDE SERVICE	EA	22	\$1,000.00	\$22,000.00	1,105.00	24,310.00	450.00	9,900.00	1,960.00	43,120.00	1,165.00	25,630.00	1,488.98	32,757.56	500.00	11,000.00
17	SEWER CLEANOUT	EA	24	\$650.00	\$15,600.00	585.00	14,040.00	750.00	18,000.00	790.00	18,960.00	466.00	11,184.00	272.17	6,532.08	800.00	19,200.00
18	INLET PROTECTION	EA	2	\$150.00	\$300.00	100.00	200.00	100.00	200.00	75.00	150.00	101.00	202.00	63.55	127.10	150.00	300.00
19	FORCE ACCOUNT-UNANTICIPATED CONFLICTS	EST	1	\$10,000.00	\$10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00
SUB-TOTAL					\$449,545.00		\$414,563.50		\$427,047.00		\$476,610.30		\$497,336.00		\$506,245.40		\$667,450.00
State Sales Tax				8.50%	\$38,211.33		\$35,237.90		\$36,299.00		\$40,511.88		\$42,273.56		\$43,030.86		\$56,733.25
TOTAL SCHEDULE A					\$487,756.33		\$449,801.40		\$463,346.00		\$517,122.18		\$539,609.56		\$549,276.26		\$724,183.25

% under/over Engr Est

7.8%

5.0%

-6.0%

-10.6%

-12.6%

-48.5%





BID TABULATION - BID #78B-2019  
 BIDS OPENED: January 23, 2020; 11:00 a.m.  
 PROJECT: 2016 Sewer Replacement - EU-0178

				ENGINEER'S ESTIMATE		Faber Construction Corp.			RAM Construction General Contractors, LLC			Tiger Construction, LTD			Colacurcio Bros. Inc.	
ITEM	Bid Schedule A - Street DESCRIPTION	QTY	UNIT	UNIT PRICE	EXTENSION	UNIT PRICE	EXTENSION		UNIT PRICE	EXTENSION		UNIT PRICE	EXTENSION		UNIT PRICE	EXTENSION
1	Mobilization	1	LS	\$ 140,000.00	\$140,000.00	\$128,384.00	\$128,384.00	92%	\$217,000.00	\$217,000.00	155%	\$320,000.00	\$320,000.00	229%	\$170,000.00	\$170,000.00
2	Construction Surveying	1	LS	\$ 4,000.00	\$4,000.00	\$4,086.00	\$4,086.00	102%	\$2,500.00	\$2,500.00	63%	\$4,500.00	\$4,500.00	113%	\$5,000.00	\$5,000.00
3	Record Drawings (Minimum Bid \$3000)	1	LS	\$ 3,000.00	\$3,000.00	\$3,347.00	\$3,347.00	112%	\$3,000.00	\$3,000.00	100%	\$3,000.00	\$3,000.00	100%	\$3,000.00	\$3,000.00
4	Stormwater Management Permit	1	LS	\$ 1,000.00	\$1,000.00	\$706.00	\$706.00	71%	\$1,000.00	\$1,000.00	100%	\$650.00	\$650.00	65%	\$5,000.00	\$5,000.00
5	Project Temporary Traffic Control	1	LS	\$ 28,000.00	\$28,000.00	\$29,069.00	\$29,069.00	104%	\$20,000.00	\$20,000.00	71%	\$27,500.00	\$27,500.00	98%	\$45,000.00	\$45,000.00
6	Flaggers	2,250	HR	\$ 46.00	\$103,500.00	\$56.00	\$126,000.00	122%	\$57.00	\$128,250.00	124%	\$62.00	\$139,500.00	135%	\$57.50	\$129,375.00
7	Spill Prevention Control and Countermeasure Plan	1	LS	\$ 1,400.00	\$1,400.00	\$941.00	\$941.00	67%	\$250.00	\$250.00	18%	\$500.00	\$500.00	36%	\$2,000.00	\$2,000.00
8	Minor Changes	1	FA	\$ 10,000.00	\$10,000.00	\$10,000.00	\$10,000.00	100%	\$10,000.00	\$10,000.00	100%	\$10,000.00	\$10,000.00	100%	\$10,000.00	\$10,000.00
9	Bypass Sewage Pumping	1	LS	\$ 32,000.00	\$32,000.00	\$28,599.00	\$28,599.00	89%	\$44,000.00	\$44,000.00	138%	\$65,000.00	\$65,000.00	203%	\$20,000.00	\$20,000.00
10	Erosion and Sediment Control	1	LS	\$ 10,000.00	\$10,000.00	\$17,608.00	\$17,608.00	176%	\$4,000.00	\$4,000.00	40%	\$10,000.00	\$10,000.00	100%	\$6,000.00	\$6,000.00
11	Landscape Restoration and Clean-Up	1	FA	\$ 20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	100%	\$20,000.00	\$20,000.00	100%	\$20,000.00	\$20,000.00	100%	\$20,000.00	\$20,000.00
12	Pothole Existing Underground Utility	12	EA	\$ 500.00	\$6,000.00	\$562.00	\$6,744.00	112%	\$325.00	\$3,900.00	65%	\$425.00	\$5,100.00	85%	\$300.00	\$3,600.00
13	Removal of Structure and Obstruction - Manhole	4	EA	\$ 2,500.00	\$10,000.00	\$3,054.00	\$12,216.00	122%	\$475.00	\$1,900.00	19%	\$1,350.00	\$5,400.00	54%	\$900.00	\$3,600.00
14	Removal of Structure and Obstruction - Concrete	118	CY	\$ 50.00	\$5,900.00	\$64.00	\$7,552.00	128%	\$105.00	\$12,390.00	210%	\$55.00	\$6,490.00	110%	\$80.00	\$9,440.00
15	Removal of Structure and Obstruction - Asphalt	135	CY	\$ 40.00	\$5,400.00	\$52.00	\$7,020.00	130%	\$98.00	\$13,230.00	245%	\$35.00	\$4,725.00	88%	\$50.00	\$6,750.00
16	Roadway Excavation and Embankment Including Haul	135	CY	\$ 16.00	\$2,160.00	\$18.00	\$2,430.00	113%	\$40.00	\$5,400.00	250%	\$54.00	\$7,290.00	338%	\$35.00	\$4,725.00
17	Gravel Base (Road)	481	TON	\$ 20.00	\$9,620.00	\$24.00	\$11,544.00	120%	\$24.50	\$11,784.50	123%	\$40.00	\$19,240.00	200%	\$20.00	\$9,620.00
18	Sawcut Pavement	#####	IN-FT	\$ 0.50	\$7,492.00	\$1.00	\$14,984.00	200%	\$1.00	\$14,984.00	200%	\$0.30	\$4,495.20	60%	\$1.00	\$14,984.00
19	Hot Mix Asphalt PG 64-22	137	TON	\$ 200.00	\$27,400.00	\$218.00	\$29,866.00	109%	\$205.00	\$28,085.00	103%	\$210.00	\$28,770.00	105%	\$210.00	\$28,770.00
20	Cold Mix Asphalt	117	TON	\$ 180.00	\$21,060.00	\$239.00	\$27,963.00	133%	\$160.00	\$18,720.00	89%	\$225.00	\$26,325.00	125%	\$180.00	\$21,060.00
21	Cement Concrete Pavement	693	SY	\$ 105.00	\$72,765.00	\$84.00	\$58,212.00	80%	\$100.50	\$69,646.50	96%	\$93.00	\$64,449.00	89%	\$115.00	\$79,695.00
22	Storm Sewer Pipe - 8" Diameter	20	LF	\$ 50.00	\$1,000.00	\$48.00	\$960.00	96%	\$57.00	\$1,140.00	114%	\$87.00	\$1,740.00	174%	\$70.00	\$1,400.00
23	Sanitary Sewer Manhole - Type I-48" Diameter	7	EA	\$ 5,000.00	\$35,000.00	\$4,288.00	\$30,016.00	86%	\$6,000.00	\$42,000.00	120%	\$5,100.00	\$35,700.00	102%	\$6,000.00	\$42,000.00
24	Shoring	1,676	LF	\$ 10.00	\$16,760.00	\$8.00	\$13,408.00	80%	\$0.01	\$16.76	0%	\$0.35	\$586.60	4%	\$1.00	\$1,676.00
25	Pipe for Sanitary Sewer - 8" Diameter	1,299	LF	\$ 50.00	\$64,950.00	\$40.00	\$51,960.00	80%	\$87.50	\$113,662.50	175%	\$100.00	\$129,900.00	200%	\$76.00	\$98,724.00
26	Pipe for Sanitary Sewer - 10" Diameter	397	LF	\$ 60.00	\$23,820.00	\$41.00	\$16,277.00	68%	\$90.00	\$35,730.00	150%	\$91.00	\$36,127.00	152%	\$95.00	\$37,715.00



27	Sanitary Sewer Main - Trenchless Replacement - 8" Diameter	6,087	LF	\$	30.00	\$182,610.00	\$41.00	\$249,567.00	137%	\$39.50	\$240,436.50	132%	\$45.00	\$273,915.00	150%	\$46.00	\$280,002.00
28	Sanitary Sewer Main - Trenchless Replacement - 10" Diameter	150	LF	\$	50.00	\$7,500.00	\$100.00	\$15,000.00	200%	\$95.50	\$14,325.00	191%	\$108.00	\$16,200.00	216%	\$100.00	\$15,000.00
29	Sanitary Sewer Main - Trenchless Replacement - 12" Diameter	478	LF	\$	60.00	\$28,680.00	\$48.00	\$22,944.00	80%	\$45.50	\$21,749.00	76%	\$53.00	\$25,334.00	88%	\$50.00	\$23,900.00
30	Manhole Renewal	147	VF	\$	300.00	\$44,100.00	\$558.00	\$82,026.00	186%	\$700.00	\$102,900.00	233%	\$795.00	\$116,865.00	265%	\$600.00	\$88,200.00
31	Manhole Ring and Cover	17	EA	\$	1,400.00	\$23,800.00	\$512.00	\$8,704.00	37%	\$750.00	\$12,750.00	54%	\$1,100.00	\$18,700.00	79%	\$980.00	\$16,660.00
32	Side Sewer Reconnection	18	EA	\$	450.00	\$8,100.00	\$1,523.00	\$27,414.00	338%	\$550.00	\$9,900.00	122%	\$1,500.00	\$27,000.00	333%	\$2,200.00	\$39,600.00
33	Side Sewer Reconnections - Tophat Liners	126	EA	\$	2,000.00	\$252,000.00	\$1,393.00	\$175,518.00	70%	\$1,375.00	\$173,250.00	69%	\$1,400.00	\$176,400.00	70%	\$3,300.00	\$415,800.00
34	Catch Basin Insert	10	EA	\$	80.00	\$800.00	\$53.00	\$530.00	66%	\$75.00	\$750.00	94%	\$60.00	\$600.00	75%	\$80.00	\$800.00
35	Lawn Installation with Sod	112	SY	\$	75.00	\$8,400.00	\$40.00	\$4,480.00	53%	\$26.50	\$2,968.00	35%	\$38.00	\$4,256.00	51%	\$40.00	\$4,480.00
36	Reestablish City Monument	3	EA	\$	2,500.00	\$7,500.00	\$1,395.00	\$4,185.00	56%	\$2,000.00	\$6,000.00	80%	\$1,000.00	\$3,000.00	40%	\$1,300.00	\$3,900.00
37	Sidewalk and Driveway Replacement	20	SY	\$	60.00	\$1,200.00	\$84.00	\$1,680.00	140%	\$115.00	\$2,300.00	192%	\$160.00	\$3,200.00	267%	\$150.00	\$3,000.00
38	Pavement Marking - Crosswalk	30	LF	\$	45.00	\$1,350.00	\$33.00	\$990.00	73%	\$25.50	\$765.00	57%	\$26.00	\$780.00	58%	\$26.00	\$780.00
39	Pavement Marking - Stop Bar	40	LF	\$	45.00	\$1,800.00	\$28.00	\$1,120.00	62%	\$25.50	\$1,020.00	57%	\$26.00	\$1,040.00	58%	\$26.00	\$1,040.00
40	Crushed Surfacing, Top Course	185	TON	\$	25.00	\$4,625.00	\$34.00	\$6,290.00	136%	\$85.00	\$15,725.00	340%	\$68.00	\$12,580.00	272%	\$40.00	\$7,400.00
41	Bank Run Gravel for Trench Backfill	5,595	TON	\$	20.00	\$111,900.00	\$29.00	\$162,255.00	145%	\$22.00	\$123,090.00	110%	\$13.25	\$74,133.75	66%	\$14.60	\$81,687.00
42	4" Sanitary Sewer Service, PVC	240	LF	\$	20.00	\$4,800.00	\$39.00	\$9,360.00	195%	\$43.00	\$10,320.00	215%	\$63.00	\$15,120.00	315%	\$44.00	\$10,560.00
43	Connection to Structure	8	EA	\$	500.00	\$4,000.00	\$4,070.00	\$32,560.00	814%	\$1,000.00	\$8,000.00	200%	\$1,100.00	\$8,800.00	220%	\$750.00	\$6,000.00
44	Clearing and Grubbing	1	LS	\$	4,000.00	\$4,000.00	\$1,562.00	\$1,562.00	39%	\$6,000.00	\$6,000.00	150%	\$2,200.00	\$2,200.00	55%	\$5,000.00	\$5,000.00
45	Erosion Control Fabric	108	SY	\$	10.00	\$1,080.00	\$12.00	\$1,296.00	120%	\$2.50	\$270.00	25%	\$1.75	\$189.00	18%	\$11.00	\$1,188.00
46	Seeding, Fertilizing	108	SY	\$	10.00	\$1,080.00	\$5.00	\$540.00	50%	\$5.50	\$594.00	55%	\$4.75	\$513.00	48%	\$5.00	\$540.00
SUBTOTAL						\$1,361,552.00		\$1,467,913.00			\$1,575,701.76			\$1,757,813.55			\$1,784,671.00
8.7% SALES TAX						\$118,455.02		\$127,708.43			\$137,086.05			\$152,929.78			\$155,266.38
TOTAL						\$1,480,007.02		\$1,595,621.43			\$1,712,787.81			\$1,910,743.33			\$1,939,937.38

These bid tabs have been analyzed for unbalanced bid items in accordance with Standard Specification 1-02.13(2)(b). It is the Project Engineer's intent to award the bid and all alternatives, unless otherwise indicated in writing below, to

Faber Construction Corp.

Contractor

C. J. Muller  
Project Engineer

## Lake Whatcom Water and Sewer District

### 8" PVC Gravity Sewer Main Cost Estimate - Import Gravel Backfill - Factor Calibration

Using RSMeans Heavy Construction Cost Data 2012

Revision 9/7/2022

#### Key Assumptions:

- Undeveloped forested land, no traffic control
- Import screened bank run gravel backfill
- Haul and dispose of native material
- Trench depth 6' to 10' deep with trench box, common earth, no dewatering

#### Trench and Pipe Parameters for Quantity Calculations

Trench Width	4	FT
Trench Depth	8.5	FT
Trench Length	400	LF
Trench Volume	503.7	BCY
Pipe Diameter	8	Inches
Pipe Section Area	0.35	SF
Bedding Depth, 6" below and above pipe	1.67	FT
Bedding Section Area Less Pipe Section Area	6.32	SF
Bedding Volume for Trench Length	93.6	ECY
Backfill Depth	6.83	FT
Backfill Volume for Trench Length	404.9	ECY
Swell Factor - assume native material is loam	25%	
Trench Volume Loose Stockpile	629.6	LCY
Backfill Volume for Trench Length Loose Stockpile	453.5	LCY
Swell Factor - borrow, gravel	12%	

RSMeans Line	Item	Qty	Unit	Unit Price	Include	Amount	Cost Per LF
<b>Trenching</b>							
31 23 16.13 1362	Excavating, trench, 6' to 10' deep, 3/4 CY bucket w/ trench box	503.7	BCY	\$ 8.70	1	\$ 4,382.22	
31 23 23.14 2020	Backfill and load spoil, from stockpile	629.6	LCY	\$ 1.30	1	\$ 818.52	
31 23 23.20 0118	Remove excess spoil, 8 CY dump truck, 2 mile roundtrip	629.6	LCY	\$ 4.89	1	\$ 3,078.89	
31 23 23.16 0050	Crushed or screened bank run gravel	453.5	LCY	\$ 40.50	1	\$ 18,368.00	
31 23 23.23 7040	Compaction by vibrating plate 18" wide, 6" lifts, 4 passes	404.9	ECY	\$ 3.34	1	\$ 1,352.49	
	<b>Subtotal</b>					<b>\$ 28,000.12</b>	\$ 70.00
<b>Pipe Bedding</b>							
31 23 23.16 0100	Fill by Borrow and Utility Bedding, crushed stone 3/4" to 1/2"	104.83	LCY	\$ 46.50	1	\$ 4,874.38	
31 23 23.16 0500	Compacting bedding in trench	93.59	ECY	\$ 5.20	1	\$ 486.69	
	<b>Subtotal</b>					<b>\$ 5,361.07</b>	\$ 13.40
<b>Sewer Pipe Pipe and Fittings</b>							
33 31 13.25 2080	8" diameter, PVC SDR 35	400	LF	\$ 12.95	1	\$ 5,180.00	
33 31 13.25 3910	8" tee	6	EA	\$ 260.00	1	\$ 1,560.00	
	<b>Subtotal</b>					<b>\$ 6,740.00</b>	\$ 16.85
<b>Misc</b>							
01 71 23.13 1100	Construction layout, survey crew for trenching or pipe laying, 2 person crew	0.25	Day	\$ 1,150.00	1	\$ 287.50	
	<b>Subtotal</b>					<b>\$ 287.50</b>	\$ 0.72
	<b>Subtotal</b>					<b>\$ 40,388.69</b>	\$ 100.97
	Mobilization/Demobilization	5.0%				\$ 2,019.43	\$ 5.05
	General Requirements	5.0%				\$ 2,019.43	\$ 5.05
	Sales Tax	8.6%				\$ 3,473.43	\$ 8.68
	<b>Subtotal</b>					<b>\$ 47,900.99</b>	<b>\$ 119.75</b>
	GC O&P	5.0%				\$ 2,395.05	\$ 5.99
	<b>Subtotal</b>					<b>\$ 50,296.04</b>	<b>\$ 125.74</b>
	Contingency	2.0%				\$ 1,005.92	\$ 2.51
	<b>Subtotal</b>					<b>\$ 51,301.96</b>	<b>\$ 128.25</b>
	Bonds	1.0%				\$ 513.02	\$ 1.28
	<b>Subtotal</b>					<b>\$ 51,814.98</b>	<b>\$ 129.54</b>
	Location Adjustment Factor (Everett, WA)	-0.70%				\$ (362.70)	\$ (0.91)
	<b>Subtotal</b>					<b>\$ 51,452.27</b>	<b>\$ 128.63</b>
	Historical Cost Escalation Adjustment, ENR CCI 2012 ==> 2019	0.21				\$ 10,906.25	\$ 27.27
	<b>Subtotal</b>					<b>\$ 62,358.52</b>	<b>\$ 155.90</b>
	Design, Permitting, Construction Administration, Testing, Record Drawings	25%				\$ 15,589.63	\$ 38.97
	<b>Grand Total</b>					<b>\$ 77,948.15</b>	<b>\$ 194.87</b>
	<b>All Inclusive Multiplier</b>	<b>1.93</b>					

Cost Estimate Calibration Target  
(Average of Calibration Bids) **\$ 156.00**

## Lake Whatcom Water and Sewer District

### Gravity Sewer Main Cost Estimate - Native Backfill - Pipe Costs Separate

Using RSMeans Heavy Construction Cost Data 2012

Revision 9/7/2022

Key Assumptions:

Undeveloped forested land, no traffic control

Native material backfill

Trench depth 6' to 10' deep with trench box, common earth, no dewatering

#### Trench and Pipe Parameters for Quantity Calculations

Trench Width	4	FT
Trench Depth	8.5	FT
Trench Length	400	LF
Trench Volume	503.7	BCY
Pipe Diameter	8	Inches
Pipe Section Area	0.35	SF
Bedding Depth, 6" below and above pipe	1.67	FT
Bedding Section Area Less Pipe Section Area	6.32	SF
Bedding Volume for Trench Length	93.6	ECY
Backfill Depth	6.83	FT
Backfill Volume for Trench Length	404.9	ECY
Swell Factor - assume native material is loam	25%	
Trench Volume Loose Stockpile	629.6	LCY
Backfill Volume for Trench Length Loose Stockpile	506.2	LCY
Swell Factor - borrow, gravel	12%	
Excess Native - Loose Stockpile	123.5	LCY

RSMeans Line	Item	Qty	Unit	Unit Price	Include	Amount	Cost Per LF
<b>Trenching</b>							
31 23 16.13 1362	Excavating, trench, 6' to 10' deep, 3/4 CY bucket w/ trench box	503.7	BCY	\$ 8.70	1	\$ 4,382.22	
31 23 23.14 2020	Backfill and load spoil, from stockpile	629.6	LCY	\$ 1.30	1	\$ 818.52	
31 23 23.23 7040	Compaction by vibrating plate 18" wide, 6" lifts, 4 passes	404.9	ECY	\$ 3.34	1	\$ 1,352.49	
31 23 23.20 0118	Remove excess spoil, 8 CY dump truck, 2 mile roundtrip	123.5	LCY	\$ 4.89	1	\$ 603.70	
	<b>Subtotal</b>					<b>\$ 7,156.94</b>	\$ 17.89
<b>Pipe Bedding</b>							
31 23 23.16 0100	Fill by Borrow and Utility Bedding, crushed stone 3/4" to 1 1/2"	104.83	LCY	\$ 46.50	1	\$ 4,874.38	
31 23 23.16 0500	Compacting bedding in trench	93.59	ECY	\$ 5.20	1	\$ 486.69	
	<b>Subtotal</b>					<b>\$ 5,361.07</b>	\$ 13.40
<b>Clearing and Grubbing</b>							
31 11 10.10 0300	Clear and grub site, cut & chip heavy, trees to 24" diameter	0.09	Acre	\$ 14,600.00	1	\$ 1,340.68	
31 11 10.10 0350	Grub stumps and remove	0.09	Acre	\$ 7,525.00	1	\$ 691.00	
	<b>Subtotal</b>					<b>\$ 2,031.68</b>	\$ 5.08
<b>Misc</b>							
01 71 23.13 1100	Construction layout, survey crew for trenching or pipe laying, 2 person crew	0.5	Day	\$ 1,150.00	1	\$ 575.00	
	<b>Subtotal</b>					<b>\$ 575.00</b>	\$ 1.44
	<b>Subtotal</b>					<b>\$ 15,124.69</b>	\$ 37.81
	All Inclusive Multiplier	1.93					
	<b>Grand Total</b>					<b>\$ 29,190.65</b>	<b>\$ 72.98</b>

## Lake Whatcom Water and Sewer District

### Sewer Pipe Cost Estimates - Trenching/Backfill Separate

Using RSMMeans Heavy Construction Cost Data 2012

Revision 9/7/2022

Key Assumptions:


Approximately 3 laterals on each side of the 400' segment (typical lot spacing in Sudden Valley)

RSMeans Line	Item	Qty	Unit	Unit Price	Amount	Cost Per LF	All Inclusive Multiplier	Factored Cost Per LF
<b>PVC Pipe</b>								
33 31 13.25 2040	6" diameter, PVC SDR 35	400	LF	\$ 7.95	\$ 3,180.00			
33 31 13.25 3160	6" PVC wye	6	EA	\$ 178.00	\$ 1,068.00			
	<b>Subtotal</b>				<b>\$ 4,248.00</b>	\$ 10.62	1.93	\$ 20.50
33 31 13.25 2080	8" diameter, PVC SDR 35	400	LF	\$ 12.95	\$ 5,180.00			
33 31 13.25 3910	8" PVC tee	6	EA	\$ 260.00	\$ 1,560.00			
	<b>Subtotal</b>				<b>\$ 6,740.00</b>	\$ 16.85	1.93	\$ 32.52
33 31 13.25 2120	10" diameter, PVC SDR 35	400	LF	\$ 19.65	\$ 7,860.00			
33 31 13.25 3915	10" PVC tee	6	EA	\$ 455.00	\$ 2,730.00			
	<b>Subtotal</b>				<b>\$ 10,590.00</b>	\$ 26.48	1.93	\$ 51.10
33 31 13.25 2160	12" diameter, PVC SDR 35	400	LF	\$ 22.00	\$ 8,800.00			
33 31 13.25 3920	12" PVC tee	6	EA	\$ 605.00	\$ 3,630.00			
	<b>Subtotal</b>				<b>\$ 12,430.00</b>	\$ 31.08	1.93	\$ 59.97
33 31 13.25 2100	15" diameter, PVC SDR 35	400	LF	\$ 24.50	\$ 9,800.00			
33 31 13.25 3925	15" PVC tee	6	EA	\$ 760.00	\$ 4,560.00			
	<b>Subtotal</b>				<b>\$ 14,360.00</b>	\$ 35.90	1.93	\$ 69.29
33 31 13.25 2300	18" diameter, PVC SDR 35	400	LF	\$ 28.50	\$ 11,400.00			
33 31 13.25 3930	18" PVC tee	6	EA	\$ 1,175.00	\$ 7,050.00			
	<b>Subtotal</b>				<b>\$ 18,450.00</b>	\$ 46.13	1.93	\$ 89.02
<b>Ductile Iron Pipe</b>								
33 11 13.15 3020	Ductile iron pipe, class 50, 18' lengths, tyton push-on joint, 6" diameter	400	LF	\$ 27.00	\$ 10,800.00			
33 11 13.15 8220	Ductile iron pipe, wye or tee, 6" diameter	6	EA	\$ 920.00	\$ 5,520.00			
	<b>Subtotal</b>				<b>\$ 16,320.00</b>	\$ 40.80	1.93	\$ 78.74
33 11 13.15 3040	Ductile iron pipe, class 50, 18' lengths, tyton push-on joint, 8" diameter	400	LF	\$ 40.00	\$ 16,000.00			
33 11 13.15 8240	Ductile iron pipe, wye or tee, 8" diameter	6	EA	\$ 1,375.00	\$ 8,250.00			
	<b>Subtotal</b>				<b>\$ 24,250.00</b>	\$ 60.63	1.93	\$ 117.01
33 11 13.15 3060	Ductile iron pipe, class 50, 18' lengths, tyton push-on joint, 10" diameter	400	LF	\$ 52.00	\$ 20,800.00			
33 11 13.15 8260	Ductile iron pipe, wye or tee, 10" diameter	6	EA	\$ 1,975.00	\$ 11,850.00			
	<b>Subtotal</b>				<b>\$ 32,650.00</b>	\$ 81.63	1.93	\$ 157.54
33 11 13.15 3080	Ductile iron pipe, class 50, 18' lengths, tyton push-on joint, 12" diameter	400	LF	\$ 56.00	\$ 22,400.00			
33 11 13.15 8280	Ductile iron pipe, wye or tee, 12" diameter	6	EA	\$ 2,475.00	\$ 14,850.00			
	<b>Subtotal</b>				<b>\$ 37,250.00</b>	\$ 93.13	1.93	\$ 179.73
33 11 13.15 3100	Ductile iron pipe, class 50, 18' lengths, tyton push-on joint, 14" diameter	400	LF	\$ 63.50	\$ 25,400.00			
33 11 13.15 8300	Ductile iron pipe, wye or tee, 14" diameter	6	EA	\$ 3,500.00	\$ 21,000.00			
	<b>Subtotal</b>				<b>\$ 46,400.00</b>	\$ 116.00	1.93	\$ 223.88



**AGENDA  
BILL  
Item 9.A**

**General Manager's  
Report**

DATE SUBMITTED:	September 8, 2022	MEETING DATE:	September 14, 2022
TO: BOARD OF COMMISSIONERS	FROM: Justin Clary, General Manager		
GENERAL MANAGER APPROVAL			
ATTACHED DOCUMENTS	1. General Manager's Report		
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.



## LAKE WHATCOM WATER AND SEWER DISTRICT

### General Manager's Report

#### Upcoming Dates & Announcements

Regular Meeting – Wednesday, September 14, 2022 – 6:30 p.m.

#### Important Upcoming Dates

Lake Whatcom Water & Sewer District			
Regular Board Meeting	Wed Sep 28, 2022	8:00 a.m.	Remote Attendance
Employee Staff Meeting	Thu Sep 15, 2022	8:00 a.m.	Remote Attendance Commissioner Knakal to attend
Investment Comm. Meeting	Wed Oct 26, 2022	10:00 a.m.	Remote Attendance
Safety Committee Meeting	Thu Sep 22, 2022	8:00 a.m.	Remote Attendance
Lake Whatcom Management Program			
Policy Group Meeting	Wed Dec 7, 2022	3:00 p.m.	Remote Attendance
Joint Councils Meeting	March 2023	TBD	TBD
Other Meetings			
WASWD Section III Meeting	Thu Sep 29, 2022	7:00 a.m.	WASWD Fall Conference
Whatcom Water Districts Caucus Meeting	Wed Sep 21, 2022	2:00 p.m.	Remote Attendance
Whatcom County Council of Governments Board Meeting	Wed Oct 12, 2022	3:00 p.m.	Remote Attendance

#### Committee Meeting Reports

##### Safety Committee:

- The committee met on August 25. Discussion included the status on development of facility-specific fall protection work plans, review of safety programs and a soda ash mixing SOP, and the outcome of L&I inspection of the Sudden Valley WTP.

##### Investment Committee:

- No committee meeting has been held since last board meeting.

#### Upcoming Board Meeting Topics

- Utility Local Improvement District (ULID) No. 18 and associated development fees in lieu of assessment reconciliation
- General facilities charges (GFC) analysis asset inventory cost methodology discussion
- 2023-24 biennial budget development
- City of Bellingham Post Point Resource Recovery Project shift implications on District
- Glen Cove Water Association assumption consideration
- DISH Wireless proposed cell tower public hearing/resolution consideration

## 2022 Initiatives Status

### Administration and Operations

#### Capital Improvement Project Financing Plan

- Develop a financial plan that proactively prepares the District for significant capital projects on the near-term horizon while maintaining Board-defined operational levels-of-service.  
*The board adopted an updated rate structure in 2021 and a review of general facilities charges is underway, both of which incorporate anticipated CIP costs over the next decade. To lessen the financial impact of borrowing for anticipated large-scale projects, surplus reserves have been created in the water and sewer utility funds to build funds designated for these projects. In addition, external funding is aggressively being sought, primarily in the form of FEMA Hazard Mitigation Grants.*

#### General Facilities Charges Review

- Conduct a review of District water and sewer general facilities (connection) charges (GFCs) to ensure appropriate fees are being assessed to new development.  
*Project kick-off presentation was provided during the April 27 board meeting and a presentation on the analysis was provided during the July 27 meeting. Staff will present a memorandum describing the methodology used to update the infrastructure asset inventory during the September 14 meeting.*

#### Records Management System Overhaul

- Complete transition of the District's current records management system to a more robust system that ensures compliance with statutory requirements and gains efficiencies in document management.  
*District staff are evaluating the three records management software systems available under the State contract and are on track to proceed with procurement by yearend.*

#### Safety Program Update

- Continue systematic review and revision of District's safety programs by updating nine programs in 2022.  
*The safety committee has finalized updates to seven programs (PPE, safety responsibilities, slips, trips and falls, heat-related illness, wildfire smoke, respiratory protection, and back injury prevention) and is currently reviewing the medical emergencies program.*

#### Capital Improvement Program Support

- Support the Engineering Department through management of specific capital improvement project(s).  
*The general manger is managing the Eagleridge Water Booster Station Conversion (District Project No. C2011) and Division 30 Reservoir Hazardous Tree Removal (District Project No. M2226) projects, and completed the Commissioner Boundary update (District Project No. A2116).*

### Emergency Response/System Security

#### Emergency Readiness

- Re-engage with Whatcom County Department of Emergency Management to hold tabletop emergency response exercises, as well as a field exercise (pandemic-dependent).  
*District held a tabletop exercise May 25 at the Whatcom County Division of Emergency Management facility—topic was cybersecurity awareness.*

*Whatcom Conservation District staff conducted facility audits (SVWTP, Division 30 reservoir, Beaver sewer lift station) on May 16 regarding wildfire resilience preparedness. Recommendations are being applied to those facilities, and lessons learned will be applied to other District facilities.*

#### Cybersecurity Assessment

- Hire an IT-service provider to perform a third-party assessment of the District's vulnerability to cybercriminal attack.  
*To be initiated fall 2022.*

### **Community/Public Relations**

#### General

- Website  
*The District's web content is reviewed and updated on a regular basis.*
- Social Media  
*Posts are made to District Facebook and LinkedIn pages regularly; Nextdoor is regularly monitored for District-related posts.*
- Press Releases  
*Press releases were issued on March 2 (commissioner redistricting public hearing), March 21 (sewage overflow at North Point lift station), June 29 (Commissioner McRoberts resignation), and September 1 (Commissioner Knakal appointment).*

#### Intergovernmental Relations

- *J Clary served on the Olympic View Water District's general manager interview panel on August 23 and 25.*
- *J Clary attended the Bellingham City Council Public Works Committee meeting on August 29.*
- *J Clary and B Hunter scheduled to attend meeting on September 13 with Whatcom County Health Department regarding public notification protocol in the event of a sewage release.*

### **Lake Whatcom Water Quality**

#### Lake Whatcom Management Program

- Participate in meetings of Lake Whatcom Management Program partners.  
*J Clary attended the data group meeting on September 8, and is scheduled to attend the interjurisdictional coordinating team meeting on September 15.*

#### Onsite Septic System Conversion Program

- Pursue connection of the one remaining septic-served parcel located within 200 feet of District sewer system identified in the memorandum to the Board dated April 9, 2020.  
*To be initiated.*