



City of Sandy

Agenda

City Council Meeting

Meeting Date: Monday, November 16, 2020

Meeting Time: 6:00 PM

Page

1. MEETING FORMAT NOTICE

The City Council will conduct this meeting electronically using the Zoom video conference platform. Members of the public may listen, view, and/or participate in this meeting using Zoom. Using Zoom is free of charge. See the instructions below:

- To login to the electronic meeting online using your computer, click this link: <https://us02web.zoom.us/j/83300776317>
- If you would rather access the meeting via telephone, dial (253) 215-8782. When prompted, enter the following meeting number: 833 0077 6317
- If you do not have access to a computer or telephone and would like to take part in the meeting, please contact City Hall by Friday November 13 and arrangements will be made to facilitate your participation.

2. CITY COUNCIL WORK SESSION - 6:00 PM

- | | | |
|------|---|---------|
| 2.1. | <u>Wastewater Rate Model and Funding Plan Update</u> | 3 - 27 |
| | Wastewater Rate Model and Funding Plan Update - Pdf | |
| 2.2. | <u>Master Fee Schedule Update</u> | 28 - 39 |
| | Master Fee Schedule Update - Pdf | |

3. CITY COUNCIL REGULAR MEETING - 7:00 PM

4. PLEDGE OF ALLEGIANCE

5. ROLL CALL

6. CHANGES TO THE AGENDA

7. PUBLIC COMMENT

The Council welcomes your comments at this time. Please see the instructions below:

- If you are participating online, click the "raise hand" button and wait to be recognized.
- If you are participating via telephone, dial *9 to "raise your hand" and wait to

be recognized.

8. CONSENT AGENDA

- 8.1. **City Council Minutes** 40 - 44
[City Council - 02 Nov 2020 - Minutes - Pdf](#)

9. NEW BUSINESS

- 9.1. **Award Contract for Engineering Services for the Existing Waste Water Treatment Plant Condition Assessment Improvements** 45 - 111
[Staff Report and Contract - Pdf](#)
- 9.2. **COVID-19 Statewide Freeze**

10. REPORT FROM THE CITY MANAGER

11. COMMITTEE /COUNCIL REPORTS

12. STAFF UPDATES

- 12.1. [Monthly Reports](#)

13. ADJOURN



Staff Report

Meeting Date: November 16, 2020

From Jordan Wheeler, City Manager

SUBJECT: Wastewater Rate Model and Funding Plan Update

BACKGROUND:

As part of the City's letter of interest for the WIFIA program and to prepare for the next phases of the wastewater system improvement project, staff worked with consultants from FCS Group and Piper Sandler to update our wastewater rate model and project funding plan. The intent of the work session is to present and discuss with Council the updated rate models for water and wastewater and the wastewater system improvements project funding plan.

Wastewater System Improvement Project Overview

The wastewater system improvement project will address our system's significant deficiencies and challenges with reliably meeting our permit requirements. The city's aging infrastructure at the existing wastewater treatment plant has degraded treatment performance, and the aging collection system experiences high infiltration and inflow into the sewer pipes. Our treated wastewater currently discharges to Tickle Creek, a small stream with limited assimilative capacity and stringent regulatory oversight. Tickle Creek is subject to the Oregon Department of Environmental Quality's (DEQ) Three Basins Rule, which prohibits discharge increases regardless of treated wastewater volumes.

Because of these challenges, Sandy's wastewater system is subject to an Oregon DEQ Mutual Agreement and Order for violating permitted discharge levels during the permitted season, and for discharges during the unpermitted season. The completed and adopted Wastewater System Facilities Plan outlines the corrective measures the city will be taking to address our wastewater system needs. The total estimated cost for the project is \$65 million, making it the largest project in city history.

The project involves a multi-year, multi-phased system-wide upgrade and expansion to achieve compliance with Sandy's NPDES permit, further protect water quality, and plan for a growing community. The project has four major elements:

- **Collection System Improvements:** Rehabilitation of approximately 55,000 feet of aging pipelines in the two worst leaking basins in the collection system. These improvements will reduce the volume of water treated and discharged from the WWTP, while also reducing the risk of sanitary overflows. The City has contracted with Oxbow Construction for this work.

- Existing Treatment Plant Improvements: This work includes replacing aging treatment equipment and installing new equipment at the plant in order to achieve permit compliance. The upgrades will improve treatment performance and energy efficiency. The preliminary design report was completed this summer and the City Council will be considering approving the engineering contract on November 16.
- New Membrane Bioreactor (MBR) treatment plant and Diversion Pump Station: The construction of new state of the art treatment plant will expand treatment capacity and produce Class A recycled water. The new 7 million gallons per day plant will treat approximately 50% of flows and be designed for future expansion to accommodate Sandy's growing population.
- New Outfall and Effluent Pump Station: The construction of new pipes and pump station from the MBR treatment plant that will discharge high-quality effluent to the Sandy River, which has a greater assimilative capacity than Tickle Creek. The new facilities will be designed to accommodate long term needs for expanded treatment capacity. This element of the project includes the construction of wetlands to greatly reduce the discharge volumes into the Sandy River.

The city is currently working on phase 1 of the project which includes the collection system improvements and the improvements to the existing wastewater treatment plant.

Updated Rate Model

The utility rate model is a financial planning tool that outlines needed wastewater rate increases based on the operating and capital budget inputs and assumptions regarding financing (WIFIA and Revenue Bonds), and the project's capital spending plan. An objective is to ensure that the city's revenue will cover our debt coverage ratios, fund balance minimums, and cash flow for operations and capital expenses.

Two scenarios were developed for the updated rate model:

1. The city successfully receives the WIFIA loan;
2. The city does not receive a WIFIA loan and the project is funded entirely with Revenue Bonds.

In both scenarios, a revenue bond is needed in 2021 and the rate increase effective January 2021 is 13%. The 13% results in a monthly base fee increase of \$2.68 and an increase of \$0.69 for volume charges.

Since last year, with more work on the project schedule, preliminary designs, and funding options, the projected rate increases have decreased from the prior rate model. Future rate increases, subject to change, show annual increases of 8% for 3 years followed by 4% increases and leveling out by 2030.

Funding Plan

With the assistance of our financial advisor, we have developed a funding plan for the project and updated the rate model accordingly. The plan includes:

- State Revolving Loan Fund loans: total \$ 6,025,000, interest rate 1.59% annual payments commencing in year 2023. This loan has already been obtained by DEQ and is funding the first phase of the project (collection system and treatment plant improvements).
- WIFIA loan: \$31,862,000, 35-year loan, assumed interest rate 2.48%, with substantial completion and final draw in 2025. Repayment commencing in 2030, with interest capitalized.
- Revenue bond 1: Issue \$13,449,385 in 2021 with repayment beginning the following year. Assumes and interest rate of 4.0% with 1.0% issuance costs, 30 year term.
- Revenue bond 2: Issue \$14,425,064 in 2025. Repayment begins with interest-only payments in the following year with principal payments beginning in FY 2031. Also assumes an interest rate of 4.0% with 1.0% issuance costs and 30 year term.

Receiving the WIFIA loan results in substantial savings to the city and ratepayers due to the favorable terms and interest rates. Without the loan, we estimate that the total cost to the city would be \$14 million more if we funded it with revenue bonds only.

The other variable is if the city was successful in receiving additional state funds. These funds would reduce future rate increases as the amount of debt financing would decrease. The consultants from FCS Group will be presenting the rate model updates at the worksession and will be able to answer questions about these scenarios and others.

LIST OF ATTACHMENTS/EXHIBITS:

City of Sandy Water and Sewer Rate Study - FCS Group

City of Sandy Water and Sewer Rate Study



**Presented to the Sandy City
Council**

Monday, November 16, 2020

Prepared by FCS GROUP





Agenda

- **Water utility revenue requirement**
- **Sewer utility revenue requirement**
 - » Scenario with WIFIA financing
 - » Scenario without WIFIA financing
 - » Effects of increased outside funding
- **Utility rates comparison**



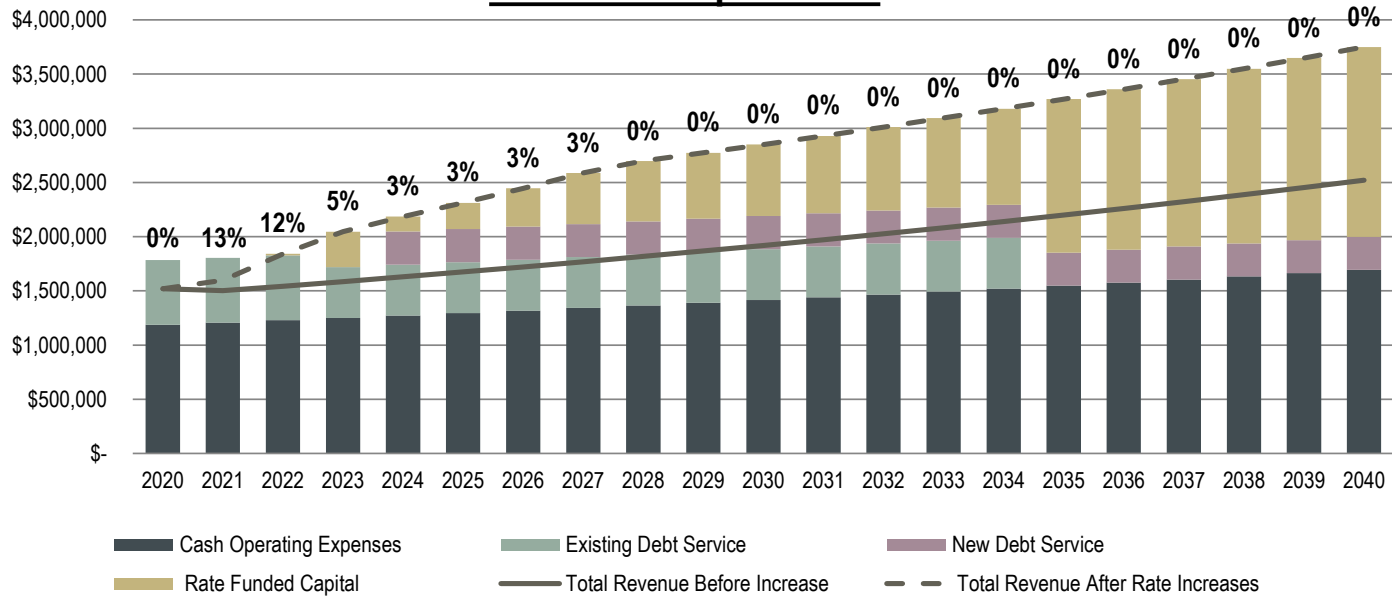
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Revenue Requirement Forecast: Water

Revenue Requirement



- **Rate increases are required to keep with up new debt service, to maintain fund balances, and to provide for rate funded capital**



Water Rates: Class and Meter

Class Rates	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
ATB Increases		13%	12%	5%	3%	3%	3%	3%	0%	0%	0%
Implementation Date:		1/1/2021	1/1/2022	1/1/2023	1/1/2024	1/1/2025	1/1/2026	1/1/2027	1/1/2028	1/1/2029	1/1/2030
Single Family	\$ 7.23	\$ 8.17	\$ 9.15	\$ 9.61	\$ 9.90	\$ 10.19	\$ 10.50	\$ 10.81	\$ 10.81	\$ 10.81	\$ 10.81
Outside City Single Family	10.87	12.28	13.76	14.44	14.88	15.32	15.78	16.26	16.26	16.26	16.26
Multi-Family	7.23	8.17	9.15	9.61	9.90	10.19	10.50	10.81	10.81	10.81	10.81
Commercial/Industrial	7.23	8.17	9.15	9.61	9.90	10.19	10.50	10.81	10.81	10.81	10.81
Wholesale	8.65	9.77	10.95	11.49	11.84	12.19	12.56	12.94	12.94	12.94	12.94

Meter Rates	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
ATB Increases		13%	12%	5%	3%	3%	3%	3%	0%	0%	0%
Implementation Date:		1/1/2021	1/1/2022	1/1/2023	1/1/2024	1/1/2025	1/1/2026	1/1/2027	1/1/2028	1/1/2029	1/1/2030
Inside City											
5/8"	\$ 0.26	\$ 0.29	\$ 0.33	\$ 0.35	\$ 0.36	\$ 0.37	\$ 0.38	\$ 0.39	\$ 0.39	\$ 0.39	\$ 0.39
3/4"	0.39	0.44	0.49	0.52	0.53	0.55	0.57	0.58	0.58	0.58	0.58
1"	0.67	0.76	0.85	0.89	0.92	0.94	0.97	1.00	1.00	1.00	1.00
1 1/2"	1.28	1.45	1.62	1.70	1.75	1.80	1.86	1.91	1.91	1.91	1.91
2"	2.05	2.32	2.59	2.72	2.81	2.89	2.98	3.07	3.07	3.07	3.07
3"	3.89	4.40	4.92	5.17	5.32	5.48	5.65	5.82	5.82	5.82	5.82
4"	6.45	7.29	8.16	8.57	8.83	9.09	9.37	9.65	9.65	9.65	9.65
6"	12.93	14.61	16.36	17.18	17.70	18.23	18.78	19.34	19.34	19.34	19.34
8"	20.68	23.37	26.17	27.48	28.31	29.15	30.03	30.93	30.93	30.93	30.93
10"	29.75	33.62	37.65	39.53	40.72	41.94	43.20	44.50	44.50	44.50	44.50
Outside City											
5/8"	\$ 0.38	\$ 0.43	\$ 0.48	\$ 0.50	\$ 0.52	\$ 0.54	\$ 0.55	\$ 0.57	\$ 0.57	\$ 0.57	\$ 0.57
3/4"	0.60	0.68	0.76	0.80	0.82	0.85	0.87	0.90	0.90	0.90	0.90
1"	0.98	1.11	1.24	1.30	1.34	1.38	1.42	1.47	1.47	1.47	1.47
1 1/2"	1.94	2.19	2.46	2.58	2.66	2.74	2.82	2.90	2.90	2.90	2.90
2"	3.06	3.46	3.87	4.07	4.19	4.31	4.44	4.58	4.58	4.58	4.58
3"	5.77	6.52	7.30	7.67	7.90	8.13	8.38	8.63	8.63	8.63	8.63
4"	9.61	10.86	12.16	12.77	13.15	13.55	13.95	14.37	14.37	14.37	14.37
6"	19.20	21.70	24.30	25.51	26.28	27.07	27.88	28.72	28.72	28.72	28.72
8"	32.03	36.19	40.54	42.56	43.84	45.16	46.51	47.91	47.91	47.91	47.91
10"	44.19	49.93	55.93	58.72	60.48	62.30	64.17	66.09	66.09	66.09	66.09



Water Rates: Volume

Volume Charges per CCF	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
ATB Increases		13%	12%	5%	3%	3%	3%	3%	0%	0%	0%
Implementation Date:		1/1/2021	1/1/2022	1/1/2023	1/1/2024	1/1/2025	1/1/2026	1/1/2027	1/1/2028	1/1/2029	1/1/2030
Single Family	\$ 2.90	\$ 3.28	\$ 3.67	\$ 3.85	\$ 3.97	\$ 4.09	\$ 4.21	\$ 4.34	\$ 4.34	\$ 4.34	\$ 4.34
Outside City Single Family	4.35	4.92	5.51	5.78	5.95	6.13	6.32	6.51	6.51	6.51	6.51
Multi-Family	2.73	3.08	3.46	3.63	3.74	3.85	3.96	4.08	4.08	4.08	4.08
Commercial/Industrial	2.50	2.83	3.16	3.32	3.42	3.52	3.63	3.74	3.74	3.74	3.74
Outside City Commercial/Industrial	3.89	4.40	4.92	5.17	5.32	5.48	5.65	5.82	5.82	5.82	5.82
Wholesale	3.06	3.46	3.87	4.07	4.19	4.31	4.44	4.58	4.58	4.58	4.58
Skyview Acres	0.75	0.85	0.95	1.00	1.03	1.06	1.09	1.12	1.12	1.12	1.12



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Key Assumptions

Annual Cost Inflation

- Personnel: 2.11%
- Materials & Equipment: 1.56%
- Transfers: 1.56%
- Services: 1.56%
- Interest: 2.75%

Annual Growth Rate

- 2.8% per year

Operating Forecast

- Rate revenue based on the BN 19-21 budget, escalated by the anticipated customer growth
- Operating costs and non-rate revenues based on BN19-21 budget, adjusted for inflation in future years

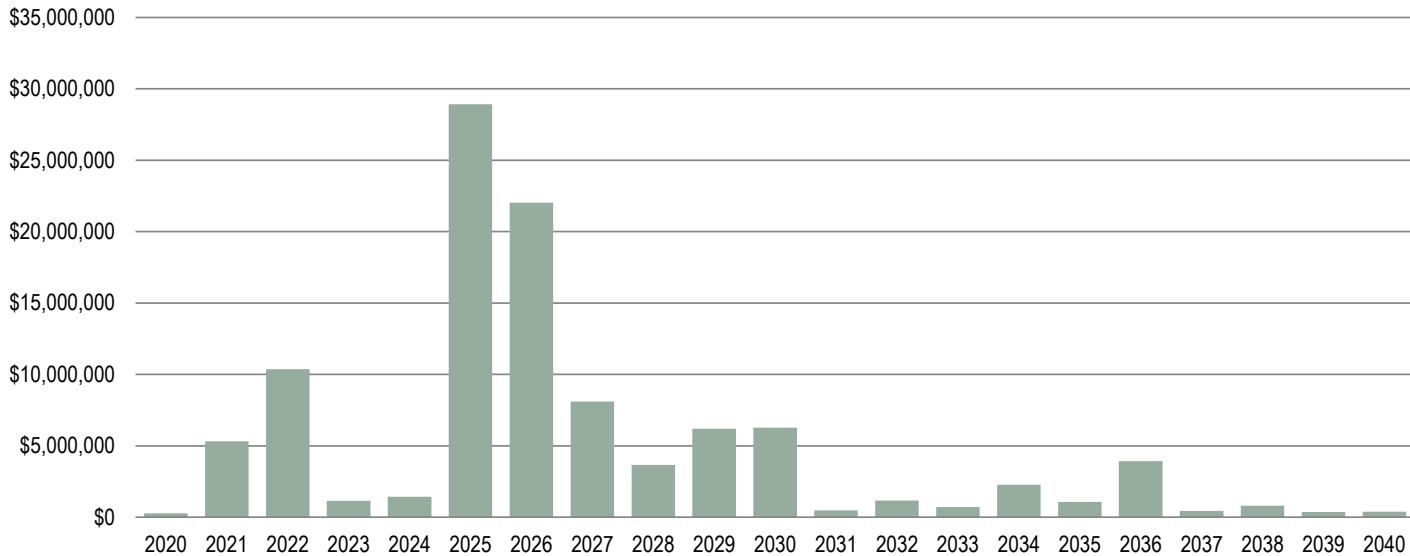
Financial Policies

- Min. Fund Balance Target: 45 days of O&M
- Annual system reinvestment funding



Capital Needs Forecast

Capital Spending (Escalated)

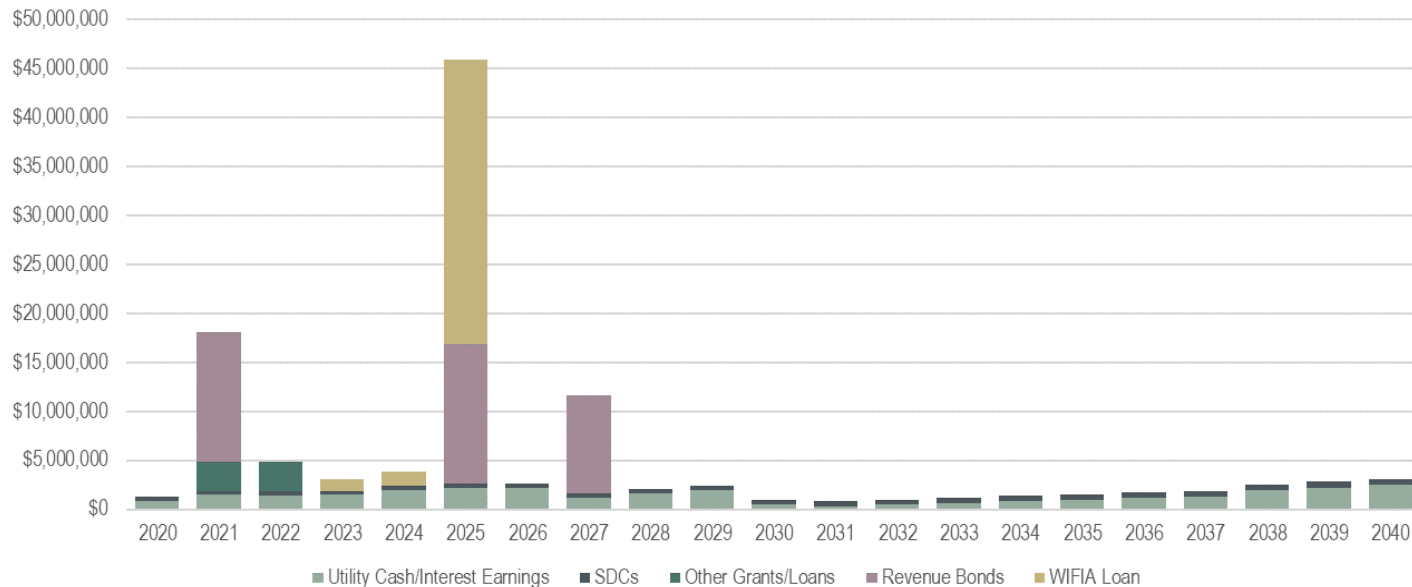


- **\$65.0 million in WIFIA-related projects from 2020 to 2026**
- **\$40.2 million in other projects from 2020 to 2040**
- **\$105.2 million in total projects from 2020 to 2040**



Capital Funding Assumptions: With WIFIA

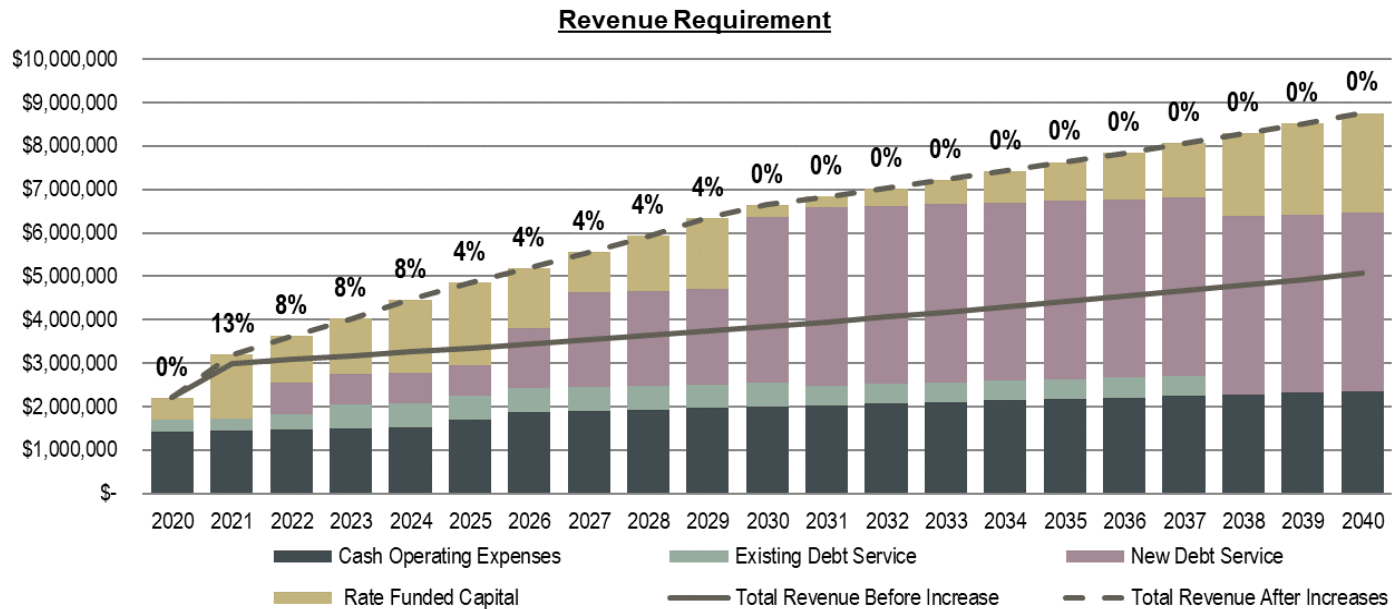
Capital Funding



- **\$37.4 million in revenue bonds between 2020 and 2027**
- **\$31.9 million in WIFIA financing between 2023 and 2025**
- **Other loans, SDCs, utility cash, and interest earnings make up the difference**



Revenue Requirement Forecast: With WIFIA

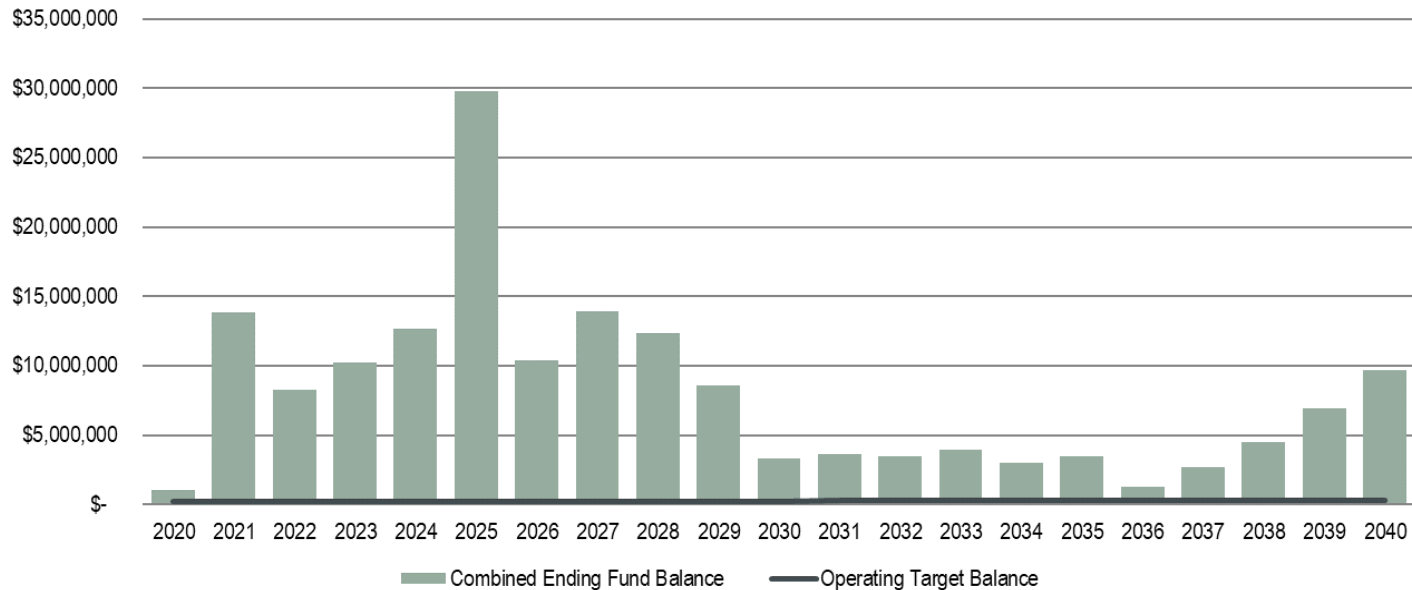


- **Rate increases are required to keep with up debt service, coverage requirements, and the cash-funded portion of the CIP**



Fund Balances: With WIFIA

Ending Fund Balances



- **Fund balance spikes with injections of revenue bonds and WIFIA financing and then levels off as capital is paid for**



Sewer Rates: With WIFIA

Rates	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
ATB Increases		13%	8%	8%	8%	4%	4%	4%	4%	4%	0%
Implementation Date:		1/1/2021	1/1/2022	1/1/2023	1/1/2024	1/1/2025	1/1/2026	1/1/2027	1/1/2028	1/1/2029	1/1/2030
Residential											
Base	\$ 20.61	\$ 23.29	\$ 25.15	\$ 27.16	\$ 29.34	\$ 30.51	\$ 31.73	\$ 33.00	\$ 34.32	\$ 35.69	\$ 35.69
Volume (CCF)	5.29	5.98	6.46	6.97	7.53	7.83	8.14	8.47	8.81	9.16	9.16
Outside City Flat Rate	74.34	84.00	90.72	97.98	105.82	110.05	114.46	119.03	123.80	128.75	128.75
Single Family - Reduced											
Base	\$ 10.31	\$ 11.65	\$ 12.58	\$ 13.59	\$ 14.68	\$ 15.26	\$ 15.87	\$ 16.51	\$ 17.17	\$ 17.86	\$ 17.86
Volume	2.65	2.99	3.23	3.49	3.77	3.92	4.08	4.24	4.41	4.59	4.59
Commercial/Industrial											
Base	\$ 9.82	\$ 11.10	\$ 11.98	\$ 12.94	\$ 13.98	\$ 14.54	\$ 15.12	\$ 15.72	\$ 16.35	\$ 17.01	\$ 17.01
Volume (CCF)	7.18	8.11	8.76	9.46	10.22	10.63	11.05	11.50	11.96	12.43	12.43

- **Rate increases start at 13%, decrease to 8% for three years, 4% for five years, and then are no longer necessary**



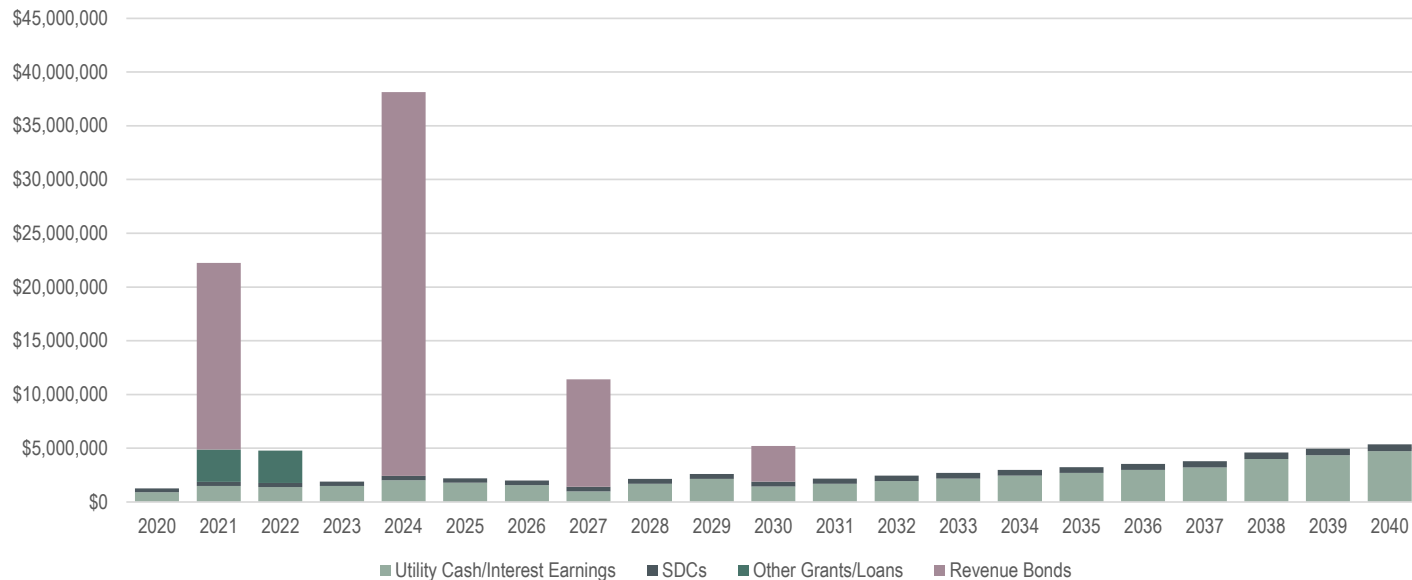
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Capital Funding Assumptions: Without WIFIA

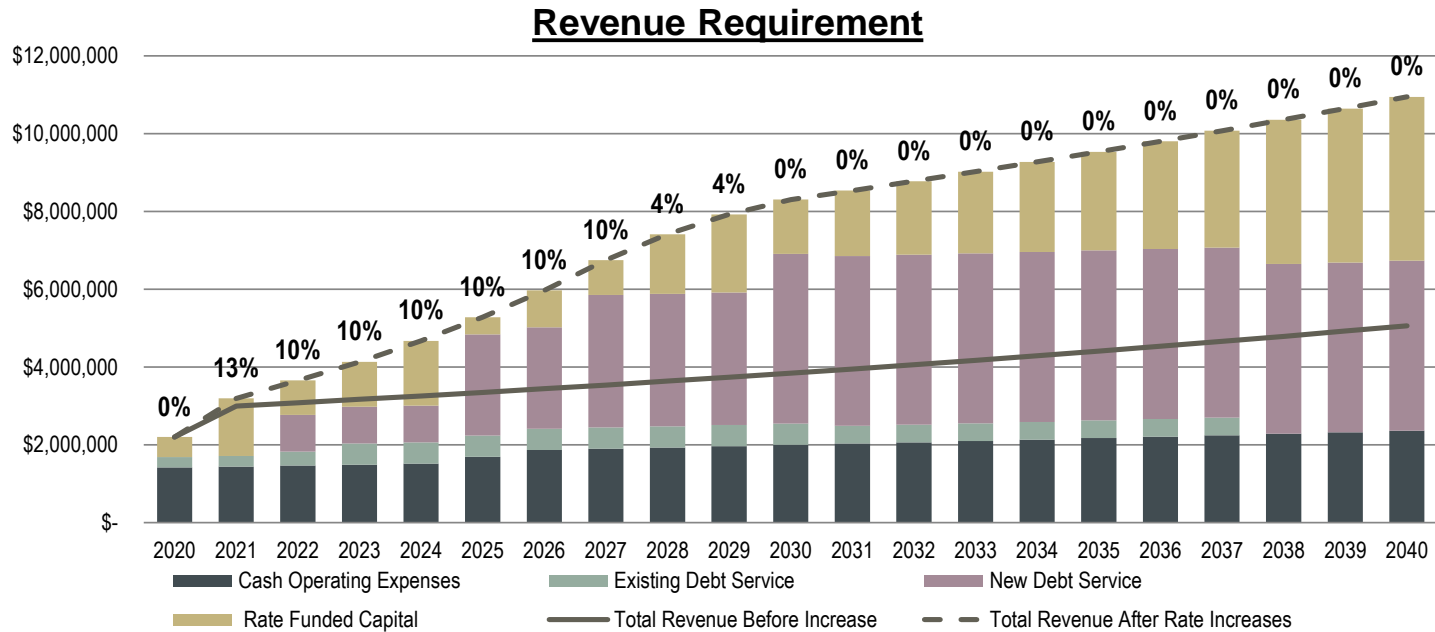
Capital Funding



- **\$66.4 million in revenue bonds between 2020 and 2030**
- **Other loans, SDCs, utility cash, and interest earnings make up the rest**



Revenue Requirement Forecast: Without WIFIA



- **Larger rate increases are required to keep with up greater debt service, higher coverage requirements, and the cash-funded portion of the CIP**



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Increased Outside Funding Scenarios

Rate Increases Scenario	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
With WIFIA	13.00%	8.00%	8.00%	8.00%	4.00%	4.00%	4.00%	4.00%	4.00%	0.00%
WIFIA + \$1 million	13.00%	8.00%	8.00%	8.00%	4.00%	4.00%	4.00%	4.00%	0.00%	0.00%
WIFIA + \$5 million	13.00%	8.00%	8.00%	8.00%	4.00%	4.00%	4.00%	0.00%	0.00%	0.00%
WIFIA + \$10 million	13.00%	8.00%	8.00%	8.00%	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%

- **Funding is assumed to arrive in FY 22**
- **Increased outside funding reduces or eliminates rate increases in the out-years**



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Water Rates Comparison

City	Population	Water Rates (6 CCF)
Tigard	52,785	\$52.16
Sherwood	19,505	\$48.00
Lake Oswego	38,215	\$46.05
Cornelius	11,935	\$42.27
Beaverton	97,000	\$37.42
Monmouth	9,890	\$35.64
Oregon City	34,860	\$34.32
Wilsonville	25,250	\$33.51
Milwaukie	20,525	\$32.72
Hillsboro	101,920	\$31.16
Canby	16,800	\$29.71
Tualatin	27,154	\$28.24
Sandy (FY 2020-21 Proposed)	10,990	\$28.14
Sandy (Existing)	10,990	\$24.89
West Linn	25,830	\$24.85
Gladstone	11,880	\$23.09



Sewer Rates Comparison

City	Population	Wastewater Rates (6 CCF)
Lake Oswego	38,215	\$72.55
Oregon City	34,860	\$59.79
Sandy (FY 2020-21 Proposed)	10,990	\$59.16
Milwaukie	20,525	\$58.84
Wilsonville	25,250	\$55.24
Sandy (Existing)	10,990	\$52.35
Tigard	52,785	\$46.57
Canby	16,800	\$46.20
West Linn	25,830	\$45.55
Gladstone	11,880	\$45.52
Sherwood	19,505	\$44.46
Tualatin	27,154	\$44.26
Beaverton	97,000	\$44.14
Hillsboro	101,920	\$43.44
Cornelius	11,935	\$41.97
Monmouth	9,890	\$37.81

Thank you! Questions?

Doug Gabbard – Project Manager
(503) 252-3001
DougG@fcsgroup.com

www.fcsgroup.com





Staff Report

Meeting Date: November 16, 2020
From Tyler Deems, Finance Director
SUBJECT: Master Fee Schedule Update

BACKGROUND:

All fees that the city charges are adopted via resolution and included on the Master Fee Schedule. In 2019 staff began proposing fee adjustments to the Council on a more consistent and regular schedule. Attached you will find a summary of all proposed changes. The proposed effective date of the changes is listed below, with additional information on each item:

- **Miscellaneous Charges** (effective January 1, 2021)
 - *Business License Renewal Last Fee* - Increasing the amount to encourage timely payment.
 - *Maps & Comprehensive Plan* - Increasing the amount to more closely reflect the actual cost of these items.
 - *Records Request* - Increasing the amount charged per hour for processing records request. These charges are calculated using the average cost of the employees who would be tasked with completing the records request, at either the administrative level (administrative staff) or executive level (department director).
- **Planning Charges** (effective January 1, 2021)
 - As previously adopted by Council, all Planning charges are to be increased annually by CPI or 2%, whichever is greater. The CPI for the prior twelve month period, as identified by the CPI-W Western Region B/C (the same CPI we use to determine cost of living adjustments and other increases), was 1.6%. These charges will be increased by 2% to keep up with the overall cost of providing these services.
- **Building Charges** (effective March 2021)
 - Updating various fees to either reflect the actual cost of the service (inspections, for example) or to be more in line with other agencies in our general area charge for similar services. It has been a number of years since any of these charges have been reviewed or updated.
- **System Development Charges** (effective March 2021)
 - *Water & Transportation* - The proposed rate increase is based on the Engineering News Record Construction Cost Index (ENR-CCI) for Seattle, which shows an increase of 6.1% since our last update in May 2019. This is the same unit of measurement that has been used in the past.

- Sewer - Similar to the above referenced changes, the proposed rate increase is based on the ENR-CCI, which has increased 5.5% since the last rate increase in October 2019.
- **Public Works Charges** (effective January 1, 2021)
 - Remove the "Initial Read" and "Meter Re-Read" fees. The new software that is used with the AMR meters makes obtaining a current meter read extremely easy and no longer requires a Utility Worker to physically go to the address to read the meter.
- **Water Rates** (effective with January 2021 billing)
 - Increase all rates (base fee, meter fee, and volume charge) by 13% as indicated in our rate model. This is required to keep up with new debt service and maintain fund balances at the required level. Detailed information on this is provided in the other work session item at the November 16th meeting.
- **Sewer Rates** (effective with January 2021 billing)
 - Increase rates by 13% as indicated in our rate model to provide keep up with debt service and coverage requirements, as well as maintaining adequate cash reserves to pay for the cash-funded portion of future capital improvements. Detailed information on this is provided in the other work session item at the November 16th meeting.
- **Library Fees** (effective January 1, 2021)
 - Add Library of Things items to the fee schedule, as they were previously not listed.

Attached you will find a line-by-line listing of our current and proposed fees. All changes are identified with red text. Please note that the effective date on these proposed increases differs due to the implementation timeline required. For example, utility rate increases coincide with the start of a new billing period. Additionally, it takes time for the State to update our fees within the Accela software that we currently use in the Development Services department.

A resolution adopting these changes will be brought back to Council at the December 7th meeting for all of the above mentioned increased, with the exception of the building charges which will need to be adopted at a later date to meet the Oregon Building Code Division noticing requirements (45 days before any changes are adopted).

RECOMMENDATION:

Provide staff direction on implementing the changes to the Master Fee Schedule.

LIST OF ATTACHMENTS/EXHIBITS:

Exhibit A - Master Fee Schedule update December 2020

EXHIBIT A

Fee Name	Amount	Proposed	Description
1. MISCELLANEOUS CHARGES			
A. Business License			
a. Business License, 0-2 employees	\$41.00		0-2 employees
b. Business License, 3-5 employees			\$41 + \$10 per employee over 2
c. Business License, 6-10 employees			\$71 + \$7 per employee over 5
d. Business License, 11-25 employees			\$106 + \$2.10 per employee over 10
e. Business License, 26+ employees			\$137.50 + \$1.40 per employee over 25
f. Rental License	\$10.00		per unit, per year (no exemption)
g. Mobile Home Space	\$5.00		per unit, per year (no exemption)
h. Auctioneer			Business license fee, as listed above
i. Hawker/Peddler			Business license fee, as listed above
j. Circus/Carnival			Business license fee, as listed above
k. Amusement Rides			Business license fee, as listed above
l. Sidewalk Use Vendor Fee			Business license fee, as listed above
m. Business License Renewal Late Fee	\$25.00	\$39.00	If renewal is submitted after March 1 st
B. Copies, Maps, and Documents			
a. Copy: 8.5 x 11	\$0.25		
b. Copy: 8.5 x 14	\$0.25		
c. Copy: 11 x 17	\$0.35		
d. Blueline Maps	\$5.00		
e. Comprehensive Plan Map	\$2.50	\$3.00	
f. Zoning Map	\$2.50	\$3.00	
g. Comprehensive Plan	\$10.00		
h. Development Code	\$22.00	\$25.00	
i. Transportation System Plan (grey scale)	\$18.00		
j. Transportation System Plan (colored)	\$38.00		
C. Events			
a. Highway Banner	\$50.00		per week
b. Major Community			Actual cost + 20%
D. Liquor License			
a. Initial/Business Change	\$75.00		
b. Renewal	\$25.00		
E. Miscellaneous			
a. Finding Fee	\$20.00		
b. Interest Past Due			Annual interest rate set by Finance Director at the time the past due balance is accrued. Rate shall be fixed and based on current yields for long-term investments.
c. Lien Search	\$30.00		
d. Returned Item Fee	\$25.00		
F. Park Use			
a. Residents	\$0.00		
b. Non-Residents	\$25.00		
c. Meinig Park Gazebo	\$200.00		\$300 deposit, with \$100 refund, per user agreement
G. Records Request			
a. Administrative Fee	\$39.00	\$42.00	per hour
b. Executive Fee	\$68.00	\$73.00	per hour
c. Legal Fee			actual cost
2. PLANNING CHARGES			
A. Addressing			
a. Addressing	\$41.00	\$42.00	plus \$5 per lot
b. Readdressing - Residential	\$206.00	\$210.00	per lot (not exceeding two units)
c. Readdressing - Multi-family, commercial/industrial	\$206.00	\$210.00	plus \$5 per unit
B. Administrative			
a. Administrative Fee			10% of total planning and public works fees assessed, excluding building, plumbing, and mechanical structural specialty code permit fees.
b. Land Use Compatibility Statement	\$123.00	\$125.00	
c. Review of Non-Conforming Use	\$493.00	\$503.00	
d. Public Hearing - Type I	\$411.00	\$419.00	review not specifically listed elsewhere
e. Public Hearing - Type II	\$514.00	\$524.00	review not specifically listed elsewhere
f. Public Hearing - Type III	\$1,027.00	\$1,047.00	review not specifically listed elsewhere

g. Third-Party Review			Deposit in the amount of \$1,500 for each anticipated third-party review shall be collected in conjunction with the initial application fee. Additional charges, if any, shall be assessed and shall be a lien against the property until paid in full.
h. Zoning Verification	\$103.00	\$105.00	Bank/Loan Letter
C. Accessory Dwelling Unit			
a. Accessory Dwelling Units	\$221.00	\$225.00	
D. Adjustments and Variances			
a. Type I Adjustment	\$329.00	\$336.00	less than 10% a quantifiable provision
b. Type II Adjustment	\$442.00	\$451.00	less than 20% a quantifiable provision
c. Type II Variance	\$657.00	\$670.00	
d. Type III Special Variance	\$1,099.00	\$1,121.00	
e. Type III Variance - Land Division	\$1,099.00	\$1,121.00	
f. Type III Design Deviation	\$442.00	\$451.00	
g. Sign Variance	\$442.00	\$451.00	
E. Amendments			
a. Comprehensive Plan Map Amendment	\$3,184.00	\$3,248.00	
b. Comprehensive Plan Text Amendment	\$2,963.00	\$3,022.00	
c. Zoning Map Amendment	\$2,413.00	\$2,461.00	
F. Annexation Type IV			
a. Type A	\$2,194.00	\$2,238.00	assign conceptual zoning
b. Type B	\$3,071.00	\$3,132.00	Type A, plus Zoning Map Change
c. Type C	\$6,033.00	\$6,154.00	Type A and B, plus Plan Map
G. Appeal			
a. Type I to Type II	\$123.00	\$125.00	Notice
b. Type II to Type III	\$329.00	\$336.00	Planning Commission appeal
c. Type III to Type IV	\$770.00	\$785.00	City Council appeal
H. Conditional Uses			
a. Modification, Major	\$878.00	\$896.00	
b. Modification, Minor	\$442.00	\$451.00	
c. Outdoor Display & Storage	\$329.00	\$336.00	
d. Type II	\$878.00	\$896.00	
e. Type III	\$1,648.00	\$1,681.00	
I. Design Review			
a. Type I: \$0.00 - \$10,000.00	\$205.00	\$209.00	staff review only; no notice
b. Type I: \$10,000.01 - \$25,000.00	\$359.00	\$366.00	staff review only; no notice
c. Type I: \$25,000.01 - \$100,000.00	\$549.00	\$560.00	staff review only; no notice
d. Type I: \$100,000.00 and above	\$770.00	\$785.00	staff review only; no notice
e. Type II: \$0.00 - \$10,000.00	\$329.00	\$336.00	
f. Type II: \$10,000.01 - \$25,000.00	\$549.00	\$560.00	
g. Type II: \$25,000.01 - \$100,000.00	\$1,540.00	\$1,571.00	
h. Type II: \$100,000.00 - \$1,000,000.00	\$3,292.00	\$3,358.00	
i. Type II: \$1,000,000.00 and above	\$7,682.00	\$7,836.00	
j. Type III: \$0.00 - \$10,000.00	\$549.00	\$560.00	
k. Type III: \$10,000.01 - \$25,000.00	\$770.00	\$785.00	
l. Type III: \$25,000.01 - \$100,000.00	\$1,756.00	\$1,791.00	
m. Type III: \$100,000.00 - \$1,000,000.00	\$3,949.00	\$4,028.00	
n. Type III: \$1,000,000.00 and above	\$7,682.00	\$7,836.00	
o. Design Review Minor Modification	\$442.00	\$451.00	
p. Design Review Major Modification: \$0.00 - \$25,000.00	\$549.00	\$560.00	
q. Design Review Major Modification: \$25,000.01 - \$100,000.00	\$770.00	\$785.00	
r. Design Review Major Modification: \$100,000.01 and above	\$1,099.00	\$1,121.00	
J. Erosion Control			
a. Single Family/Duplex Addition - Permit Fee	\$103.00	\$105.00	
b. Single Family Dwelling/Duplex - Permit Fee	\$123.00	\$125.00	
c. Multi-Family - Permit Fee	\$144.00	\$147.00	per structure
d. Commercial/Industrial, Subdivisions - Permit Fee	\$277.00	\$283.00	per acre
a. Single Family/Duplex Addition - Plan Review	\$41.00	\$42.00	
b. Single Family Dwelling/Duplex - Plan Review	\$72.00	\$73.00	
c. Multi-Family - Plan Review	\$103.00	\$105.00	per structure
d. Commercial/Industrial, Subdivisions - Plan Review	\$113.00	\$115.00	per acre
K. Final Plat Review			
a. Property Line Adjustment Final Review	\$308.00	\$314.00	
b. Partition Final Plat Review	\$493.00	\$503.00	
c. Subdivision Final Plat Review	\$719.00	\$733.00	
L. Food Cart Permit			
a. Initial Permit Review for new site or new pod	\$329.00	\$336.00	

b. Cart in an approved pod	\$164.00	\$167.00	
M. FSH Overlay			
a. Type I FSH Review	\$221.00	\$225.00	in addition to fees listed, required deposit toward cost of any third-party reviews
b. Type II FSH Review	\$442.00	\$451.00	in addition to fees listed, required deposit toward cost of any third-party reviews
c. Type III or Type IV FSH Review	\$770.00	\$785.00	in addition to fees listed, required deposit toward cost of any third-party reviews
N. Hardship Trailer			
a. Type III Initial Review	\$246.00	\$251.00	
b. Type II Renewal	\$164.00	\$167.00	
O. Historic or Cultural Resource			
a. Type IV Designation of Resource	\$514.00	\$524.00	
b. Type I Minor Alteration	\$103.00	\$105.00	
c. Type II Major Alteration	\$308.00	\$314.00	
P. Interpretation of Code			
a. Type II, Director	\$329.00	\$336.00	
b. Type III, Quasi-Judicial	\$657.00	\$670.00	
c. Type IV, Legislative	\$657.00	\$670.00	
d. Interpretation of Previous Approval			half of original fee
e. Modify Previous Approval II or III			half of original fee
f. Revocation of Previous Approval			half of original fee
Q. Land Division			
a. Type I Property Line Adjustment	\$390.00	\$398.00	
b. Type I Land Division (Minor Partition)	\$657.00	\$670.00	
c. Type II Land Division (Major Partition)	\$988.00	\$1,008.00	plus \$32 \$33 per lot
d. Type II Land Division (Minor Revised Plat)	\$988.00	\$1,008.00	plus \$32 \$33 per lot
e. Type III Land Division (Major Partition)	\$1,099.00	\$1,121.00	plus \$32 \$33 per lot
f. Type III Major Replat (revised plat)	\$1,099.00	\$1,121.00	plus \$32 \$33 per lot
g. Type II Subdivision 4 to 10 lots	\$2,634.00	\$2,687.00	plus \$76 \$77 per lot
h. Type II Subdivision 11 or more lots	\$2,855.00	\$2,912.00	plus \$76 \$77 per lot
i. Type III Subdivision 4 to 10 lots	\$3,081.00	\$3,143.00	plus \$76 \$77 per lot
j. Type III Subdivision 11 or more lots	\$3,297.00	\$3,363.00	plus \$87 \$88 per lot
k. Re-naming of Tentative Subdivision	\$308.00	\$314.00	
R. Planned Unit Development			
a. Conceptual Development Plan	\$4,390.00	\$4,478.00	
b. Detailed Development Plan	\$657.00	\$670.00	plus subdivision fees
c. Combined Review			less 25% of individual subdivision fees
d. Minor Modification	\$411.00	\$419.00	
e. Major Modification			calculated as a new application
S. Pre-Application Conference			
a. Type I	\$103.00	\$105.00	
b. Type II	\$308.00	\$314.00	
c. Type III/IV	\$514.00	\$524.00	
T. Request for Time Extension			
a. Type I	\$103.00	\$105.00	
b. Type II	\$221.00	\$225.00	
c. Type III/IV	\$442.00	\$451.00	
U. Specific Area Plan			
a. Development Process: Type IV	\$3,081.00	\$3,143.00	plus \$54 \$52 per acre, plus subdivision fees
b. Administrative Amendment: Type I	\$221.00	\$225.00	
c. Minor Amendment: Type II	\$442.00	\$451.00	
d. Major Amendment: Type III	\$719.00	\$733.00	
V. Street Vacation			
a. Street Vacation			Cost plus 20% (\$1,800 deposit required)
W. Temporary Permits			
a. Structure: Type I - Initial	\$123.00	\$125.00	
b. Structure: Type II - Renewal	\$164.00	\$167.00	
c. Use Permit	\$103.00	\$105.00	
X. Tree Removal			
a. Type I	\$103.00	\$105.00	
b. Type II	\$164.00	\$167.00	
c. Type III	\$442.00	\$451.00	
Y. Zoning Administration Fee			
a. Single Family Dwelling Addition	\$103.00	\$105.00	
b. Single Family Dwelling	\$154.00	\$157.00	
c. Duplex	\$257.00	\$262.00	
d. Multi-Family	\$257.00	\$262.00	plus \$43 \$44 per unit
e. Commercial/Industrial	\$103.00	\$105.00	minimum; 20% of design review fee

3. BUILDING CHARGES

A. Building Permit (valuation)

a. \$0.01 - \$500.00	\$65.00	\$75.00	
b. \$500.01 - \$2,000.00	\$65.00	\$75.00	First \$500.00, plus \$3.00 for each additional \$100 or fraction thereof to and including \$2,000
c. \$2,000.01 - \$25,000.00	\$110.00	\$120.00	First \$2,000.00, plus \$9.00 for each additional \$1,000 or fraction thereof to and including \$25,000
d. \$25,000.01 - \$50,000.00	\$317.00	\$327.00	First \$25,000.00, plus \$7.00 for each additional \$1,000 or fraction thereof to and including \$50,000
e. \$50,000.01 - \$100,000.00	\$492.00	\$502.00	First \$50,000.00, plus \$5.00 for each additional \$1,000 or fraction thereof to and including \$100,000
f. \$100,000.01 and above	\$742.00	\$752.00	First \$100,000.00, plus \$4.00 for each additional \$1,000 or fraction thereof
g. Permit Fee Valuation			The determination of the valuation for permit fees shall be based on the most current ICC Building Valuation Data Table as specified in OAR 918-050-0100 and 918-050-0110.

B. Demolition Permits

a. Demolition Permits, general - State of Oregon			Commerical demolition fees are calculated on the total value of the demolition and are assessed using the building permit fees schedule. Residential demolition fees are based on a flat charge to include building and mechanical elements.
b. Commercial: Building	\$70.00	\$75.00	minimum
c. Commercial: Public Works	\$70.00		minimum
d. Residential: Building	\$70.00	\$75.00	
e. Residential: Public Works	\$70.00		

C. Derelict Buildings and Structures

a. Appeal Fee	\$300.00		
b. Application Fee for Rehabilitation Plan	\$150.00		per application

D. Fire Sprinkler Plan Review and Inspection Fee

a. Home Size: 0 - 2,000 square feet	\$103.00		
b. Home Size: 2,001 - 3,600 square feet	\$137.00		
c. Home Size: 3,601 - 7,200 square feet	\$173.00		
d. Home Size: 7,201 square feet and greater	\$213.00		

E. Foundation Permit

a. Single Family Dwelling or Addition	\$50.00		
b. Duplex/Multi-Family	\$50.00		per dwelling unit
c. Commercial/Industrial	\$100.00		Minimum. Fees will be calculated by the Building Official based on the size and scope of the project and overall project value.

F. Grading Permit

a. 50 cubic yard or less	\$40.00		
b. 51 - 100 cubic yards	\$65.00		
c. 101 - 1,000 cubic yards	\$69.00		First 100 cubic yards, plus \$25 each additional cubic yard
d. 1,001 - 10,000 cubic yards	\$270.00		First 1,000 cubic yards, plus \$26 each additional 1,000 cubic yards
e. 10,001 - 100,000 cubic yards	\$500.00		First 10,000 cubic yards, plus \$99 each additional 10,000 cubic yards
f. 100,001 cubic yards and above	\$1,400.00		First 100,000 cubic yards, plus \$50 each additional 10,000 cubic yards

G. Grading Plan Review

a. 50 cubic yard or less	\$25.00		
b. 51 - 100 cubic yards	\$50.00		
c. 101 - 1,000 cubic yards	\$80.00		
d. 1,001 - 10,000 cubic yards	\$100.00		
e. 10,001 - 100,000 cubic yards	\$100.00		First 10,000 cubic yards, plus \$30 each additional 10,000 cubic yards
f. 100,001 - 200,000	\$300.00		First 100,000 cubic yards, plus \$16 each additional 10,000 cubic yards
g. 200,001 cubic yards and above	\$450.00		First 200,000 cubic yards, plus \$8.50 each additional 10,000 cubic yards

H. Manufactured Dwellings

a. Manufactured Dwelling Installation Fee	\$253.00	\$300.00	
b. Manufactured Dwelling Park Fees			Per OAR 918-600-0030.
c. Manufactured Dweilling State Fees	\$30.00		
d. Recreational Park and Camps			Per OAR 918-650-0030.

e. Related Fees: Electrical Feeder	\$100.00		
I. Mechanical Permit			
a. Mechanical Permit Review Fee			25% of permit issuance fees.
J. Mechanical Permit - Commercial (value)			
a. \$1 - \$1,000	\$65.00	\$75.00	
b. \$1,000.1 - \$10,000.00	\$65.00	\$75.00	First \$1,000 plus \$1.20 \$1.30 for each additional \$100 or fraction thereof to and including \$10,000
c. 10,000.01 - \$25,000.00	\$190.00	\$192.00	First \$10,000 plus \$12.00 \$15.00 for each additional \$1,000 or fraction thereof and including \$25,000
d. \$25,000.01 - \$50,000.00	\$400.00	\$417.00	First \$25,000.00, plus \$12.50 \$13.00 for each additional \$1,000 or fraction thereof to and including \$50,000
e. \$50,000.01 - \$100,000.00	\$712.00	\$742.00	First \$50,000.00, plus \$12.00 for each additional \$1,000 or fraction thereof to and including \$100,000
f. \$100,000.01 and above	\$1,312.00	\$1,342.00	First \$100,000.00, plus \$6.00 for each additional \$1,000 or fraction thereof
K. Mechanical Permit - Residential			
a. Minimum Permit Fee	\$65.00	\$75.00	
b. HVAC	\$14.00	\$16.00	
c. Air conditioning	\$14.00	\$16.00	
d. Alteration of existing HVAC	\$13.00		
e. Boiler, compressor	\$37.50		
f. Fire/smoke damper/duct smoke detectors	\$8.00		
g. Heat pump	\$16.00		
h. Install/replace furnace burner	\$15.00		
i. Install/replace/reloacte heater/suspend wall/floor	\$14.00		
j. Vent for appliance other than furnace	\$9.00		
k. Refrigeration (absorption unit)	\$31.50		
l. Refrigeration (chillers)	\$17.00		
m. Refrigeration (compressors)	\$17.00		
n. Environmental exhaust and ventilation (appliance vent)	\$8.00		
o. Dryer exhaust	\$8.00		
p. Hoods Type I/II residential kitchen/hazmat hood fire suppression	\$9.00		
q. Exhaust fan with single duct (bath fan)	\$8.00		
r. Exhaust system apart from heating/AC	\$8.00		
s. Fuel piping and distribution (up to four outlets)	\$11.00		
t. Fuel piping each additional outlet over four	\$2.00		
u. Process piping (up to four outlets)	\$11.00		
v. Process piping each additional outlet over four	\$2.00		
w. Decorative fireplace	\$25.00		
x. Fireplace insert	\$25.00		
y. Wood/pellet stove	\$25.00		
L. Movement of Buildings			
a. Movement of Buildings Fee	\$83.00		
M. Other Inspections and Fees			
a. Inspections outside of normal business hours	\$55.00	\$120.00	per hour
b. Reinspection fees	\$55.00	\$75.00	
c. Inspection for which no fee is specifically indicated	\$55.00	\$75.00	
d. Additional plan review required by changes/additions	\$55.00	\$75.00	per hour
e. Permit reinstatement fee (Note: This fee is for renewal of a permit that has been expired for six months or less provided no changes have been made in the original plans and specifications for such work.)		\$75.00	
f. Temporary certificate of occupancy		\$200.00	
g. Penalty for work commencing before permit issuance		\$100.00	
N. Plan Review			
a. Building			65% of permit issuance fees (residential and commercial)
b. Fire & Life Safety Plan Review Fee			40% of permit issuance fees
c. Seismic Plan Review			1% of permit issuance fees
d. Complex plumbing permits			25% of plumbing permit issuance fees
e. Mechanical			25% of mechanical permit issuance fees
f. Phased permit plan review fee	\$250.00		
g. Deferred submittals	\$250.00		
h. Simple one and two family dwelling plans	\$130.00		
i. Solar Photovoltaic Installation Prescriptive Path Fee	\$130.00		
O. Plumbing Permit			
a. Maximum Minimum Permit Fee	\$65.00	\$75.00	
b. Each fixture	\$25.00		
c. Catch basin	\$35.00		each

d. Drywall	\$35.00		each
e. Fire hydrant	\$35.00		each
f. Footing drain	\$0.25		per foot
g. Manhole/OWS	\$35.00		each
h. Manufactured home set-up plumbing fee	\$80.00		
i. Rain drains connector	\$25.00		per 100 feet
j. Residential fire sprinkler	\$10.00		per head
k. Sanitary sewer	\$25.00		per 100 feet
l. Single family one bath	\$400.00		New 1 and 2 family dwellings includes 100 feet for each utility
m. Single family two bath	\$500.00		New 1 and 2 family dwellings includes 100 feet for each utility
n. Single family three bath	\$580.00	\$600.00	New 1 and 2 family dwellings includes 100 feet for each utility
o. Single family additional bath or kitchen	\$100.00		
p. Storm sewer	\$25.00		per 100 feet
q. Water service	\$25.00		per 100 feet
P. State Surcharge			
a. State Surcharge Fee			All building, plumbing, and mechanical permits are subject to a State of Oregon surcharge of 12% payable with the payment of the permit. This surcharge is subject to change at the State's discretion
4. SIGN CHARGES			
A. Penatly			
a. Signs installed without permit			All sign permit fees doubled if the sign is installed or displayed prior to obtaining a permit.
B. Permanent Sign			
a. Sign Permits - Permanent	\$65.00	\$75.00	Plus, fees based on the valuation of the sign, using the building permit fee schedule.
C. Temporary Signs			
a. Temporary sign penalty	\$50.00		Fee is waived if the permit is obtained before the sign is installed
b. Copy change or change in panel	\$15.00	\$20.00	
c. A-Frame Signs	\$50.00	\$10.00	Fee is waived if the permit is obtained before the sign is installed
d. Garage Sale Sign		\$3.00	per sign
d. Garage Sale Sign Deposit (three signs)	\$20.00		
D. Zoning Review Fee			
a. Zoning Review Fee - Permanent Sign	\$20.00	\$22.00	Does not include banners, A-Frames, or change in panel
5. PUBLIC WORKS CHARGES			
A. Right-of-Way Fees			
a. Electric Utilities			5% of gross revenues
b. Natural Gas Utilities			5% of gross revenues
c. Garbage Utilities			3% of gross revenues
d. Telephone Utilities			7% of gross revenues
e. Cable Utilities			5% of gross revenues
f. Utilites that do not provide retail service within City	\$2.00		per lineal foot of facility
B. Plan Review			
a. Place Check Fee	\$72.00		per hour
C. Street Approach/Sidewalks			
a. Single Family	\$50.00		
b. Duplex	\$50.00		
c. Multi-Family/Commercial/Industrial	\$300.00		deposit. The deposit shall be collected in conjunction with the permit fee. Additional charges, if any, shall be assessed and paid prior to issuance of any certificates of occupancy.
D. Street Sweeping			
a. Street Sweeping Fee			Actual cost + 20%
E. Water/Sewer			
a. Customer requested meter re-read			No charge if misread. One free re-read per year, otherwise \$10 per re-read
a. Dye Test & Letter	\$25.00		
b. Water Meter Test Fee	\$25.00		
d. Initial Meter Read Fee	\$10.00		
c. Penatly Fee	\$5.00		per month
d. Shut-Off Fee	\$50.00		each occurrence

e. Meter Tampering Fee	\$50.00		each occurrence
f. Damange Padlock Fee	\$65.00		each occurrence
F. Public Improvement Plan Review and Inspection Fees (valuation)			
a. Initial Fee	\$150.00		
b. \$0.01 - \$10,000.00	12%		plus \$150
c. \$10,000.01 - \$50,000.00	8%		plus \$150
d. \$50,000.01 - \$100,000.00	6%		plus \$150
e. \$100,000.01 - \$500,000.00	5%		plus \$150
f. \$500,000.01 - \$1,000,000.00	2.5%		plus \$150
g. \$1,000,000.01 and above	2%		plus \$150
6. SYSTEM DEVELOPMENT CHARGES			
A. Water			
a. Equivalent Dwelling Unit (EDU)	\$3,407.55	\$3,615.41	
b. 5/8" x 3/4" Meter	\$3,407.55	\$3,615.41	
c. 3/4" Meter	\$5,111.21	\$5,422.99	
d. 1" Meter	\$8,518.87	\$9,038.52	
e. 1 1/2" Meter	\$17,037.75	\$18,077.05	
f. 2" Meter	\$27,259.80	\$28,922.65	
g. 3" Meter	\$50,610.36	\$53,697.59	
h. 4" Meter	\$85,186.52	\$90,382.90	
i. 6" Meter	\$170,373.04	\$180,765.80	
j. Meters greater than 6"			calculated based on EDU
k. Meter Cost: 3/4 inch or 1 inch meter and meter box	\$340.00		Larger meters are assessed based on time and material costs.
			Costs + 20%
I. Water Taping Fees			
B. Sewer			
a. City wide	\$4,889.00	\$5,157.90	per equivalent residential unit
b. North Bluff Sewer Basin	\$2,338.96	\$2,467.60	per equivalent residential unit
c. South UGB Sewer Basin	\$1,979.00	\$2,087.85	per equivalent residential unit
d. Southeast UGB Sewer Basin	\$2,648.00	\$2,793.64	per equivalent residential unit
e. Sewer Taping Fees			Costs + 20%
C. Park			
a. Single Family			
i.	\$3,717.00		per dwelling unit
ii.	\$4,647.00		per dwelling unit
iii.	\$4,581.00		per dwelling unit
iv.	\$5,511.00		per dwelling unit
b. Multi-Family			
i.	\$2,495.00		per dwelling unit
ii.	\$3,114.00		per dwelling unit
iii.	\$3,071.00		per dwelling unit
iv.	\$3,691.00		per dwelling unit
b. Congregate Multi-Family			
i.	\$1,967.00		per dwelling unit
ii.	\$2,431.00		per dwelling unit
iii.	\$2,369.00		per dwelling unit
iv.	\$2,863.00		per dwelling unit
D. Payment in Lieu of Park Land Dedication			
a. Payment in Lieu of Park Land Dedication, Not Deferred	\$241,000.00		per acre
b. Payment in Lieu of Park Land Dedication, Deferred	\$265,000.00		per acre
E. Street			
a. Residential	\$3,829.60	\$4,063.21	per single family dwelling unit
b. Transportation	\$241.31	\$256.03	per adjusted average daily person trip
7. WATER RATES			
A. Base by Customer Class			
a. Single Family	\$7.23	\$8.17	per month
b. Mutli-Family	\$7.23	\$8.17	per month
c. Commercial/Industrial	\$7.23	\$8.17	per month
d. Wholesale	\$8.65	\$9.77	per month
e. Single Family - outside City limits	\$10.87	\$12.28	per month
B. Charge by Meter Size - inside city limits			
a. 5/8" Meter	\$0.26	\$0.29	per month
b. 3/4" Meter	\$0.39	\$0.44	per month
c. 1" Meter	\$0.67	\$0.76	per month
d. 1 1/2" Meter	\$1.28	\$1.45	per month
e. 2" Meter	\$2.05	\$2.32	per month
f. 3" Meter	\$3.89	\$4.40	per month
g. 4" Meter	\$6.45	\$7.29	per month
h. 6" Meter	\$12.93	\$14.61	per month

i. 8" Meter	\$20.68	\$23.37 per month
j. 10" Meter	\$29.75	\$33.62 per month
C. Charge by Meter Size - outside city limits		
a. 5/8" Meter	\$0.38	\$0.43 per month
b. 3/4" Meter	\$0.60	\$0.68 per month
c. 1" Meter	\$0.98	\$1.11 per month
d. 1 1/2" Meter	\$1.94	\$2.19 per month
e. 2" Meter	\$3.06	\$3.46 per month
f. 3" Meter	\$5.77	\$6.52 per month
g. 4" Meter	\$9.61	\$10.86 per month
h. 6" Meter	\$19.20	\$21.70 per month
i. 8" Meter	\$32.03	\$36.19 per month
j. 10" Meter	\$44.19	\$49.93 per month
D. Volume Charge by Customer Class		
a. Single Family	\$2.90	\$3.28 per 100 cubic feet
b. Mutli-Family	\$2.73	\$3.08 per 100 cubic feet
c. Commercial/Industrial	\$2.50	\$2.83 per 100 cubic feet
d. Wholesale	\$3.06	\$3.46 per 100 cubic feet
e. Single Family - outside City limits	\$4.35	\$4.92 per 100 cubic feet
f. Commercial/Industrial - outside City limits	\$3.89	\$4.40 per 100 cubic feet
g. Skyview Acres	\$0.75	\$0.85 per 100 cubic feet, plus COP pass through
E. Metered Use From Fire Hydrant		
a. Deposit	\$300.00	
b. Set-up/take-down/billing fee	\$60.00	
c. Meter Rental (day 1 to day 30)	\$2.00	per day
d. Meter Rental (day 31 and beyond)	\$5.00	per day
e. Water Rate		calculated based on consumption
F. Fire Hydrant Flow Test		
a. Set-up and observe (without neutralization)	\$75.00	per test
b. Set-up and observe (with neutralization)	\$200.00	per test
8. SEWER RATES		
A. Base by Customer Class		
a. Single Family	\$20.61	\$23.29 per month
b. Single Family - Reduced	\$10.31	\$11.65 per month
c. Mutli-Family	\$20.61	\$23.29 per month
d. Commercial/Industrial	\$9.82	\$11.10 per month
B. Volume Charges by Customer Class		
a. Single Family	\$5.29	\$5.98 per 100 cubic feet
b. Single Family - Reduced	\$2.65	\$2.99 per 100 cubic feet
c. Mutli-Family	\$5.29	\$5.98 per 100 cubic feet
d. Commercial/Industrial	\$7.18	\$8.11 per 100 cubic feet
e. Residential - No water service	\$74.34	\$84.00 per month
9. STORMWATER RATES		
A. Utility Fee		
a. Equivalent Residential Unit (ERU)	\$3.25	per month, per ERU (ERU = 2,750 sq. ft. of impervious surface)
10. SANDYNET CHARGES		
A. Miscellaneous		
a. Installation Fee	\$100.00	
b. Shut-Off Fee	\$50.00	
B. Wireless		
a. Residential - 5 mbps	\$24.95	per month
b. Residential - 10 mbps	\$34.95	per month
c. Rural - 5 mbps	\$29.95	per month
d. Rural BIP - 5 mbps	\$39.95	per month
e. Rural Enhanced - 10 mbps	\$49.95	per month
C. Fiber		
a. Residential - 300 mbps	\$41.95	per month
b. Residential - 1 gbps	\$59.95	per month
c. Business - 300 mbps	\$41.95	per month
d. Business - 1 gbps	\$59.95	per month
e. Business - other		per contractual agreement, authorized by department director and/or City Manager
D. Digital Voice		
a. Residential	\$20.00	per month
b. Business	\$28.95	per month
E. Other		

a. Static IP address	\$10.00	per month
b. Fax line	\$11.95	per month
c. Mesh unit	\$5.00	per month
11. MUNICIPAL COURT		
A. Administrative		
a. File Review Fee	\$25.00	
b. Payment Arrangement Fee	\$50.00	
c. Suspension Fee	\$15.00	
12. PARKING		
A. Citations		
a. Parking in area not allowed	\$50.00	
b. Parking in excess of posted time	\$30.00	
13. POLICE		
A. Impound		
a. Vehicle Impound Fee	\$100.00	
B. Reports		
a. Copy of accident report	\$10.00	
b. Copy of other police report	\$15.00	
C. Alarm Registration		
a. Residential	\$20.00	no charge for 65 or older with primary resident
b. Business	\$50.00	
c. Government		no charge
d. Penalty Fee	\$75.00	failure to obtain registration within 30 days of alarm installation
e. False Alarm - first		
f. False Alarm - second	\$50.00	
g. False Alarm - third	\$100.00	
h. False Alarm - fourth	\$150.00	after the four false alarm the registration is suspended for one year
D. Miscellaneous		
a. Fingerprinting Fee	\$20.00	for first card, \$10 for each additional card
b. Local background check letter	\$5.00	additional \$5 for notarized letter
c. DVD	\$20.00	each
d. Photo CD	\$15.00	each
14. TRANSIT		
A. Fares		
a. SAM Gresham, Estacada, and Shopper Shuttle (in town)		no charge in city limits
b. SAM Commuter Route to Gresham or Estacada	\$1.00	per trip (one-way origin-to-destination including transfers)
c. STAR Dial-A-Ride	\$1.00	per trip (one-way origin-to-destination including transfers)
d. STAR - Seniors or disabled	\$1.00	round trip (in town)
e. STAR Dial-A-Ride Complementary Paratransit	\$1.00	per trip (one-way origin-to-destination including transfers)
f. ED Dial-A-Ride (out of town)	\$2.00	per trip (one-way origin-to-destination)
B. Fare Media		
a. Multi-Trip Pass (24 trips)	\$20.00	per pass
b. Monthly Pass	\$30.00	per month
c. All Day Pass	\$5.00	Redemable on SAM and Mt. Hood Express
15. LIBRARY		
A. Damaged Items		
a. Damaged book, audio/visual material, or Library of Things item		Full replacement cost
B. Library Fines		
a. Overdue Fines	\$0.25	per day
b. Maximum Overdue Fine	\$5.00	
c. Library of Things item		\$1.00 or \$5.00 per day, depending on item
d. All lost Items		Full replacement cost
e. Cultural Pass - overdue	\$5.00	per day
C. Meeting Space		
a. Community Room	\$25.00	Individual
b. Community Room	\$25.00	per hour - for-profit organizations or groups, no charge for non-profits
D. Non-Resident Fees		
a. Out of District Fee	\$95.00	per year
b. Three month temporary card	\$25.00	per quarter
E. Prints and Copies		
a. Copies (grey scale)	\$0.10	per side
b. Copies (color)	\$0.25	per side

16. COMMUNITY SERVICES

A. Rental Fees - Community Center

a. Auditorium	\$35.00	
b. Dining Room	\$35.00	
c. Kitchen	\$15.00	
d. Art Room	\$10.00	
e. Conference Room	\$10.00	
f. Lounge	\$10.00	
g. Total Floor	\$55.00	per floor, plus \$100 deposit
h. Non-profit		no charge

B. Rental Fees - Community Campus

a. Upper Field	\$20.00	per hour, \$200 daily
b. Lower Field/Track	\$20.00	per hour, \$200 daily
c. Gym	\$40.00	per hour, \$400 daily
d. 25 Yard Pool	\$60.00	per hour, \$600 daily
e. Shallow Pool	\$15.00	per hour, \$150 daily
f. Deep Pool	\$15.00	per hour, \$150 daily
g. Kiddie Pool	\$15.00	per hour, \$150 daily
h. Pool (all aspects)	\$75.00	per hour, \$750 daily
i. Long Term or Specialty Rentals		per contractual agreement, authorized by department director and/or City Manager



MINUTES
City Council Meeting
Monday, November 2, 2020 6:30 PM

COUNCIL PRESENT: Stan Pulliam, Mayor, Jeremy Pietzold, Council President, John Hamblin, Councilor, Laurie Smallwood, Councilor, Jan Lee, Councilor, Carl Exner, Councilor, and Bethany Shultz, Councilor

COUNCIL ABSENT:

STAFF PRESENT: Jordan Wheeler, City Manager, David Doughman, City Attorney, Ernie Roberts, Police Chief, Mike Walker, Public Works Director, Tyler Deems, Finance Director, Greg Brewster, IT/SandyNet Director, and Jeff Aprati, City Recorder

MEDIA PRESENT: Sandy Post

1. MEETING FORMAT NOTICE

The City Council conducted this meeting electronically using the Zoom video conference platform. A video recording of the meeting is available on the City's YouTube channel: https://www.youtube.com/channel/UCbYEclgC6VW_mV2UJGyvYfg

2. CITY COUNCIL WORK SESSION - 6:30 PM

2.1. Multi-Family and Manufactured Home Park Tenant Utility Bill Assistance / Pandemic Impact to Utility Funds

Staff Report - 0335

The **Public Works Director** summarized his report on the Customer Assistance Program, including the results of a recent survey of landlords and property managers of multi-family buildings and manufactured home parks. At issue was the question of whether staff should amend the program to include multi-family and manufactured home park tenants, who are not billed directly by the City. He indicated that most survey respondents stated they charge rents below the County's fair market level, and that they have not increased rents to account for increased sewer rates. Staff's recommendation was to not include multi-family and manufactured home park tenants in the Customer Assistance Program until more information could be obtained regarding past due rents, sub-metered rates, below-market rental rates, and whether rents have actually been adjusted to account for the increased sewer rates.

Councilor Exner asked what percentage of multi-family units do not include low-flow toilets. The **Public Works Director** stated the answer is unclear, but that most such housing stock in the city is newer. **Councilor Exner** suggested more property owners could be interested in installing such fixtures if the city provided more than an \$85 rebate.

Mayor Pulliam asked whether staff plan to proactively notify major utility customers of upcoming rate increases, giving more warning than was given for the previous adjustment. The **Public Works Director** agreed this would be prudent.

Council President Pietzold asked when the City would begin collecting past-due utility accounts.

The **Finance Director** stated that there are currently about 221 accounts (209 Residential, 3 Multi-family and 9 Commercial / Industrial) that are in arrears since the City suspended late fees and service termination for nonpayment in March. The total amount in arrears is \$102,100.70; this includes Water, Sewer, Storm, SandyNet and the Public Safety Fee. The duration of the past due bills range from 30 to 240 days. He suggested three possible options for addressing this situation:

- Choose a day to resume shutoffs for non-payment; work with each account holder to try to resolve the unpaid balance using payment plans, incentives, or similar arrangements
- Require full payment immediately (not recommended)
- Waive all outstanding balances and resume shutoffs going forward (also not recommended)

Mayor Pulliam suggested it may be prudent to see whether further financial assistance may be forthcoming from the federal government.

Councilor Lee expressed support for the idea of setting up payment plans for customers. She suggested that AntFarm could potentially use City business grant funds to assist individuals with outstanding utility balances.

Councilor Smallwood stated she did not support the idea of waiving past-due balances, out of a sense of fairness for other rate payers.

Councilor Exner stated that many individuals are struggling to pay other bills as well. He suggested the State may look into some kind of assistance.

The consensus of the Council was that payment plans should be arranged with

account holders, rather than waiving balances, and that the Council should review the draft plan in approximately 30 days.

3. CITY COUNCIL REGULAR MEETING - 7:00 PM

4. Pledge of Allegiance

5. Roll Call

6. Changes to the Agenda

7. Public Comment

None.

8. Consent Agenda

8.1. **City Council Minutes** - October 19, 2020

Moved by Jeremy Pietzold, seconded by John Hamblin

Adopt the Consent Agenda.

CARRIED. 7-0

Ayes: Stan Pulliam, Jeremy Pietzold, John Hamblin, Laurie Smallwood, Jan Lee, Carl Exner, and Bethany Shultz

9. Old Business

9.1. **Award CM/GC Contract for the Collection System Rehabilitation Project**

Staff Report - 0330

The **Public Works Director** stated that this item was being brought back before the Council because a protest that had been received by a bidder shortly before the October 19th Council meeting (at which the contract was therefore not awarded), had been resolved. Staff recommended that the Council award the contract to Oxbow Construction (as originally recommended).

Moved by Carl Exner, seconded by Jan Lee

Authorize staff to enter into the proposed agreement with Oxbow Construction.

CARRIED. 7-0

Ayes: Stan Pulliam, Jeremy Pietzold, John Hamblin, Laurie Smallwood, Jan Lee, Carl Exner, and Bethany Shultz

10. Report from the City Manager

The **City Manager** noted the significance of the Council approving the first construction contract for the wastewater improvement project. He asked the Council whether they were available for a special meeting on November 30th at 6:00 p.m. for a public hearing on the Bull Run Terrace development application. The consensus of the Council was to go ahead with a special meeting on that date and time. He mentioned an upcoming tour of the wastewater treatment plant that may be attended by local watershed council members. There may be opportunities for joint work sessions in the future as well. He noted that Election Day was following day. **Mayor Pulliam** and **Council President Pietzold** noted the absence of Staff Updates from the agenda packet, and indicated their desire to see them.

11. Committee /Council Reports

Councilor Shultz stated the Library Board would meet later in the week. She praised the success of the recent Trick or Treat Trail.

Councilor Exner noted the interest of watershed council members in touring the wastewater treatment plant, and support for the City's improvement efforts. He asked where local residents would replace missing ballots. Staff stated such requests would need to be handled directly with the County Elections Office.

Councilor Lee stated a draft of the Resiliency Plan is complete and is under review by the committee.

Councilor Hamblin: none

Councilor Smallwood asked the **Police Chief** whether he has seen a recent rise in the number of homeless individuals in the area, and whether any public safety issues have arisen. The **Police Chief** stated that he has noticed a rise in numbers and that there has been a workload impact on the department, though not beyond their ability to handle it.

Council President Pietzold stated that OBAC submitted their biannual report to the Legislature recently. He noted the upcoming ad hoc committee meeting to consider the new round of COVID-19 business grants. He noted the upcoming Economic Development Committee meeting later in the week.

Mayor Pulliam also praised the Trick or Treat Trail event, as well as the Police Department which handed out candy. He praised **Councilor Lee** ahead of the

impending election and expressed his hope that she remains on the Council. He thanked all the candidates for being willing to step forward to run for office and serve the community. He expressed hope that the unsuccessful candidates will continue to serve the community in other capacities.

12. Adjourn

Mayor, Stan Pulliam

City Recorder, Jeff Aprati

Draft



Staff Report

Meeting Date: November 16, 2020

From Mike Walker, Public Works Director
Award Contract for Engineering Services for the Existing WWTP

SUBJECT: Condition Assessment Improvements

BACKGROUND:

The City solicited proposals for engineering services for the existing WWTP Condition Assessment Improvements Project on September 16th. We conducted a walkthrough at the WWTP site attended by four firms on September 23rd. We received proposals from two firms: Murraysmith and West-Yost on October 9th. A selection committee consisting of City, Leeway Engineering and Veolia staff contacted references, reviewed and ranked the proposals. Since we received only two responses we requested price proposals and interviewed the firms on November 4th. The firms were ranked on their submittals, references, interview responses and price proposals. West-Yost was the highest-ranked firm in all three steps of the process. West-Yost has performed work of this type in California, Oregon and Washington for many years and their proposed project manager had worked on our Facilities Plan and is familiar with our plant and system.

BUDGETARY IMPACT:

The price proposal from West-Yost totaled \$464,096. This project will be funded by the Clean Water State Revolving Fund (SRF) loan from DEQ.

RECOMMENDATION:

Authorize City and Leeway Engineering staff to negotiate a scope of work and fee for the required services not to exceed \$464,096 and enter into an agreement with West-Yost. The estimated cost of engineering services and construction for the entire project is approximately \$3,000,000.

SUGGESTED MOTION:

"I move to authorize staff to negotiate a scope of work and fee with West-Yost not to exceed \$464,096 and enter into an agreement with West-Yost to provide these services."

LIST OF ATTACHMENTS/EXHIBITS:

West-Yost RFP submittal and price proposal.



CITY OF SANDY

Engineering Consulting Services for Sandy Wastewater Treatment Plant Condition Assessment Improvements Project

PRICE PROPOSAL





5 Centerpointe Drive
Suite 130
Lake Oswego OR 97035

503.451.4500 phone
530.756.5991 fax
westyost.com

November 3, 2020

SENT VIA: EMAIL

Mr. Mike Walker
Director of Public Works
City of Sandy
39250 Pioneer Boulevard
Sandy, OR 97055

SUBJECT: Price Proposal for Engineering Services for the City of Sandy Existing WWTP Condition Assessment Improvements Project

Dear Mike:

This letter summarizes West Yost's detailed Price Proposal for providing engineering services for planned immediate needs upgrades at the City's existing wastewater treatment plant. The letter proposal includes the following attachments:

Attachment A: Scope of Services

Scope Attachment 1: Preliminary Drawing Sheet List

Attachment B: Project Budget

Attachment C: Preliminary Project Schedule

SCOPE OF SERVICES

West Yost's detailed Scope of Services, included as **Attachment A**, is based on the project being completed through a standard Design-Bid-Build (DBB) delivery approach.

- Task 1** Project Management
- Task 2** Project Initiation and Data Collection Activities
- Task 3** Final Design and Bidding Services
- Task 4** Engineering Services During Construction (ESDC)
- Task 5** (Optional Task) DEQ CWSRF Documentation

Optional Task 5 would be included in the project if desired by the City. It may be more efficient for West Yost to provide the DEQ CWSRF Documentation based on our experience developing those documents for CWSRF-funded projects.

Mr. Mike Walker
November 3, 2020
Page 2

PROJECT BUDGET

West Yost's detailed estimate of labor hours and budget for completing the Scope of Services is included as **Attachment B** and summarized in Table 1 below. West Yost will perform the Scope of Services for a not-to-exceed budget of **\$464,096**. If desired, West Yost will provide additional services related to preparing DEQ-required documentation associated with the City's CWSRF loan for an additional \$31,221. Additional services not included in this Scope of Services will only be completed by West Yost based on prior written authorization by the City.

Task	Level of Effort, hours	Estimated Budget, dollars
Task 1. Project Management	108	\$28,042
Task 2. Project Initiation and Data Collection Activities	33	\$26,396
Task 3. Final Design and Bidding Services	1,016	\$280,370
Task 4. Engineering Services During Construction	584	\$129,288
Total Labor Hours and Budget for Base Tasks 1-4	1,741	\$464,096
Task 5. (Optional Task) DEQ CWSRF Documentation	167	\$31,221
Total Labor Hours and Budget for Base and Optional Tasks	1,908	\$495,317

SCHEDULE

West Yost's proposed project schedule is included as **Attachment C**. The schedule provides durations and milestone dates for the proposed Scope of Services and generally conforms to the preliminary timelines provided in our proposal for completing the project in Fall 2022.

Thank you for providing West Yost the opportunity to serve the City of Sandy. We look forward to working with you on this important project. Please call Preston Van Meter at 503.784.9536 or Bob Ward 503.250.3831 if you have any questions or require additional information.

Sincerely,

WEST YOST



Preston Van Meter, PE
Principal Engineer
RCE #51615PE

WEST YOST



Bob Ward, PE
Principal-in-Charge | Authorized Representative
RCE # 58810PE

Attachment(s): Attachment A. Scope of Services
With Scope Attachment 1: Preliminary Drawing Sheet List
Attachment B. Project Budget
Attachment C. Preliminary Project Schedule

WEST YOST

Attachment A: Scope of Services

Attachment 1: Preliminary Drawing Sheet List

WEST YOST



5 Centerpointe Drive
Suite 130
Lake Oswego OR 97035

503.451.4500 phone
530.756.5991 fax
westyost.com

ATTACHMENT A SCOPE OF SERVICES

The following tasks are included in West Yost's proposed Scope of Services for the City of Sandy Existing WWTP Condition Assessment Improvements Project:

- Task 1.** Project Management
- Task 2.** Project Initiation and Data Collection Activities
- Task 3.** Final Design and Bidding Services
- Task 4.** Engineering Services During Construction
- Task 5.** DEQ CWSRF Documentation (Optional Task)

Assumptions for these tasks are summarized within the detailed scope of services. West Yost has developed the Scope of Services and Budget based on the following "project-level" assumptions:

1. West Yost's Scope of Services is based on the developing final design for project elements summarized in the City's Request for Proposals and included in the City of Sandy WWTP Immediate Needs Upgrades Project Preliminary Design Report (Pre-Design Report) dated July 2020.
2. The City's funding source is primarily through Oregon's Clean Water State Revolving Fund (CWSRF) program administered by Oregon Department of Environmental Quality (DEQ).
3. Final design for the project will be completed in one (1) final design effort (Task 3) and one (1) Contractor will be selected to complete the WWTP upgrades over two (2) phases of construction in in 2021 (six (6) months) and 2022 (four (4) months).
4. The Preliminary Drawing Sheet List used for budgeting purposes is included as Scope of Services Attachment 1 (**Attachment 1**).
5. The City's Owner's Representative will lead bidding of the project with West Yost providing technical support.

Task 1. Project Management

Project management includes coordination of West Yost's internal team and sub-consultants, quality assurance and quality control (QA/QC) activities and preparation of monthly project updates and invoices.

Task 1.01. Project Management Plan (PMP) and Contracts

Coordinate with the City and Owner's Representative to finalize contracts for West Yost and our subconsultants. Prepare a Project Management Plan to guide completion of the project summarizing team coordination activities, reporting requirements, project scope, key schedule milestones, staffing plan, contingency planning for unforeseen changes in project scope and other related project elements.

Task 1.02. Monthly Project Status Reports and Invoices

Prepare monthly project updates including a summary of project status, monthly invoice for services performed and earned value analysis (EVA), assessing project completion versus budget utilized, key upcoming project milestones and any anticipated issues that may impact project budget or schedule.

Task 1.03. Team Coordination Activities

West Yost Project Manager and key team members will conduct monthly project check-in conference calls with key project team members from the City, Owner's Representative, General Contractor and West Yost. Meetings will review progress compared with schedule milestones, review budget status, identify and discuss issues to be addressed along with follow-up activities, discuss outstanding issues or requests for information and review related items related to overall project progress. For budgetary purposes, 16 monthly team check-in calls are budgeted for West Yost's Project Manager and Project Engineer and other key team members.

Task 1 Assumptions

- The anticipated project duration is six (6) months for final design, six (6) months of project activities during 2021 construction and four (4) months of onsite construction activities during 2022 construction. Therefore, 16 monthly project progress reports and invoices are budgeted.
- Action items from monthly project check-in conference calls will be sent to attendees via email.

Task 1 Deliverables

- West Yost will provide one (1) electronic (PDF) copy of monthly progress reports with invoices.
- West Yost will provide one (1) electronic (email) copy of bi-monthly meeting summaries and action items from monthly project check-in conference calls.

Task 2. Project Initiation and Data Collection Activities

Project initiation and data collection activities includes background data collection, project kickoff meeting and field data collection for geotechnical and survey information required for final design.

Task 2.01. Collect and Review Background Information

Prior to the project kickoff meeting, West Yost will provide a Request for Background Information that will be needed in order to efficiently complete the design and delivery of the City's project. Information may include:

- Discharge Monitoring Reports (DMRs) in electronic (MS Excel) format for the past three (3) years;
- WWTP record drawings in electronic (AutoCAD) format;
- Preliminary design drawings in electronic (AutoCAD) format; and
- Other information determined to be needed as part of the project.

Task 2.02. Project Kickoff Meeting

West Yost will conduct a Project Kickoff Meeting with City staff to review the project scope and assumptions, discuss the project schedule and key project milestones/deadlines, review communications procedures and protocols and review other key discussion topics related to the project. The meeting will

be attended by West Yost's Project Manager, Project Engineer, staff engineer, structural lead and electrical lead. The meeting will be conducted via Microsoft Teams.

Task 2.03. Geotechnical Investigation and Recommendations Report

Complete geotechnical soil borings using a trailer-mounted drilling rig at two (2) locations:

1. The proposed alkalinity addition concrete containment area; and
2. The aeration basin flow split structure expansion.

Soil borings will document soil conditions to a depth of 50 feet (boring logs) and a geotechnical report will be prepared, summarizing findings and recommendations to, in part, support structural design of the new concrete structures.

Task 2.04. Field Surveying

Conduct survey field work in the area of proposed new structures included in the preliminary design, including the alkalinity addition area and at the aeration basin flow split structure. Other spot checks of critical elevation data will be obtained in support of the design, including secondary clarifier launder weirs, the outfall manhole rim and invert elevations and other areas determined to be needed for completion of the design. For budgeting purposes, one (1) day of field data collection and four (4) hours survey office support are included.

Task 2 Assumptions

- The project kickoff meeting will be conducted via Microsoft Teams.
- Record drawings from the past WWTP upgrades will be provided in AutoCAD format.
- Copies of past geotechnical reports will be provided by the City to support the development of the geotechnical recommendations and correlate findings of new soil borings.
- Limited field surveying will be provided to spot check elevations and underground utilities shown on the existing base maps. No detailed plant surveying is anticipated to be required based on the overall scope of the project.

Task 2 Deliverables

- One (1) electronic (PDF) copy of the Background Data Collection Request.
- One (1) electronic (PDF) copy of the agenda and minutes from the Project Kickoff Meeting.
- One (1) electronic (PDF) copy of the draft and final Sandy WWTP Geotechnical Investigations and Recommendations Report.

Task 3. Final Design and Bidding Services

Final design of the elements included in the preliminary design report using a traditional design-bid-build delivery approach.

Task 3.01. Prepare 60% Drawings and Specifications

Complete 60% final design of the planned Sandy WWTP condition assessment improvements, including approximately 50% of the drawings included in the Preliminary Drawing Sheet List (**Attachment 1**). The 60% final design will include a detailed specification list and draft critical equipment specifications.

Task 3.02. Prepare 60% Design Submittal

Prepare the 60% Design Submittal for City review, compile 60% drawings, draft technical specifications for critical equipment, provide Engineer's Opinion of Probable Construction Cost (OPCC) and provide updated project schedule.

Task 3.03. 60% Design Review Workshop

Conduct a workshop with City staff at the City's Public Works offices to review the 60% design submittal. For budgeting purposes, the workshop will be attended by West Yost's Principal-in-Charge, Project Manager, Staff Engineer, Electrical Lead, Instrumentation/SCADA Lead and Structural Lead. The 60% Design Review Workshop will be conducted via Microsoft Teams.

Task 3.04. Prepare 90% Drawings and Specifications

Complete 90% final design of the planned Sandy WWTP condition assessment improvements, including all drawings as summarized in the Preliminary Drawing Sheet List (**Attachment 1**) and a Project Manual with all specifications, including Division 0 and 1 "front end" specifications.

Task 3.05. Prepare 90% Design Submittal

Prepare the 90% Design Submittal for City review compiling all drawings as summarized in the Preliminary Drawing Sheet List (**Attachment 1**), Project Manual with all front end and technical specifications, Engineer's OPCC and updated construction schedule.

Task 3.06. 90% Design Review Workshop

Conduct a workshop with City staff at the City's Public Works offices to review the 90% design submittal. For budgeting purposes, the workshop will be attended by West Yost's Principal-in-Charge, Project Manager, Staff Engineer, Electrical Lead, Instrumentation/SCADA Lead and Structural Lead. The 90% Design Review Workshop will be conducted via Microsoft Teams.

Task 3.07. Prepare Final Contract Documents

Incorporate comments from the 90% Design Review Workshop and prepare Final Contract Documents for the design in two (2) bid packages as detailed in the Pre-Design Report.

Task 3.08. Bid Support Services

Provide bid support services to City and Owner's Representative staff. Anticipated services include attendance at the Pre-Bid Meeting, preparation of two (2) addenda and responding to Bidder requests for information. It is assumed the City or Owner's Representative will lead project bidding with support provided by West Yost.

Task 3.09. Prepare Conformed Contract Documents

Following bidding, prepare conformed contract documents to incorporate design changes and clarifications issued via Addenda during bidding.

Task 3 Assumptions

- The 60% and 90% Design Submittals will be submitted electronically in PDF format. No hard copies will be provided.
- No hard copy printing of bid documents except for the hard copies as proposed is included in West Yost's Scope of Services. It is anticipated the City will partner with a local print shop for distribution of Final Contract Documents to Bidders and Conformed Contract Documents to the General Contractor.
- Drawings will be developed for printing and readability based on 11x17 half-size reductions.
- Bid correspondence and addenda will be submitted in electronic (PDF) format.
- One (1) Contractor will be awarded all work for 2021 and 2022 construction seasons.
- The Automation Group (TAG) will provide Design-Phase SCADA/HMI design and integration services only and will not be precluded from providing Construction-Phase SCADA/HMI programming (integration) either through Owner-supplied software or as part of the General Contractors' team.

Task 3 Deliverables

- One (1) electronic (PDF) copy of the 60% Design Submittal, including 11x17 drawings, specifications, Engineer's OPCC and project schedule.
- One (1) electronic (PDF) copy of the 90% Design Submittal, including 11x17 drawings, specifications, Engineer's OPCC and project schedule.
- Three (3) hard copies and one (1) electronic (PDF) copy of the Final Contract Documents.
- One (1) hard copy and one (1) electronic (PDF) copy of the Conformed Contract Documents to be used for construction.

Task 4. Engineering Services During Construction

Engineering Services During Construction (ESDC) is for engineering services provided following completion of bidding and contracting by the City with the lowest responsive and responsible bidder.

Task 4.01. Pre-Construction Conference

Attend a pre-construction conference to be led by the City's Owner's Representative. Therefore, one (1) pre-construction conference is budgeted to be attended by West Yost's Project Engineer, Staff Engineer, Electrical Lead and Instrumentation/SCADA Lead.

Task 4.02. Construction Site Visits

Attend 12 site visits during construction. Site visits will be attended by West Yost's Project Engineer and Staff Engineer. Two (2) site visits will be attended by West Yost's Project Manager, Structural Lead, Electrical Lead and SCADA/Instrumentation Lead. For budgetary purposes, site visits are budgeted for four (4) hours.

Task 4.03. Office Engineering Support Services

Provide office engineering services including monthly schedule reviews and tracking, Contractor Requests for Clarification or Information (RFI/C) reviews and responses, Submittal/Re-submittal reviews and responses, change order reviews and negotiation support. West Yost's proposed budget for office engineering support services during construction in 2021 and 2022 assumes the following:

- Requests for Information and Clarification (RFI/C) – three (3) RFI/Cs budgeted

- Submittal reviews and responses – 24 Submittal/Re-submittals budgeted
- Change Orders – six (6) Change Orders budgeted

Task 4.04. Final Inspections, Start-up Support and Contract Closeout

- Attend semi-final (substantial) completion inspection and final completion inspection along with the project team. Inspections to be attended by West Yost’s Project Engineer, Staff Engineer, Electrical Lead and Instrumentation/SCADA Lead. Inspection site visits are budgeted for four (4) hours.
- Maintain the punch list of corrections and coordinate overall completion with the City and Owner’s Representative.
- Provide start-up support to City staff, WWTP staff and the Owner’s Representative. For budgeting purposes, eight (8) hours of startup support is included for West Yost’s Project Engineer and Staff Engineer with no additional site visits.
- Support the City’s Owner’s Representative with preparation of the final payment estimate.
- Prepare Notices of Substantial and Final Completion in coordination with the City and Owner’s Representative.

Task 4.05. Record Drawings

Prepare Record Drawings for the project from mark-ups provided by the City or the City’s Construction Manager. West Yost will not field verify the information provided on the mark-ups. Provide one (1) electronic (PDF) copy and three (3) 11x17 hard copies of the Record Drawings.

Task 4.06. WWTP O&M Manual Updates

Update the existing WWTP O&M Manual for new process equipment installed as part of the WWTP upgrades. Section updates will consolidate vendor information (equipment submittals, O&M requirements and schedule, etc.) along with other operating details such as instrumentation and SCADA screens. O&M Manual updates may be required by DEQ for the headworks screens, alkalinity addition, process water chlorination, blowers and UV disinfection.

Task 4 Assumptions

- Due to the unknowns of construction, West Yost’s budget for Engineering Services During Construction (ESDC) is anticipated to be provided on a time and materials (T&M) basis.
- An electronic construction document management system (e.g. Sharepoint, Bentley or Procore) will be utilized for all construction correspondence. Setup and fees for this system are not included in West Yost’s budget.
- No full-time construction observation is included for the project.
- Construction site visits will be attended in person at the WWTP site.
- O&M Manual updates will be hard-copy only for WWTP unit processes updated as part of the WWTP Condition Assessment Improvements Project. No electronic O&M Manual will be provided.

Task 4 Deliverables

- One (1) electronic (PDF) copy of the Pre-Construction Conference agenda and minutes.
- One (1) electronic (email) copy of notes from weekly construction meetings summarizing discussions and containing action items.
- One (1) electronic (PDF) copy of all construction-related office engineering correspondence.

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- One (1) electronic (PDF) copy of minutes from the semi-final and final completion inspection reports.
- One (1) electronic (PDF) copy of the punch list of corrections and regular updates as the punch list items are completed following the semi-final and final completion inspections.
- One (1) electronic (PDF) copy of the Notice of Substantial Completion and Notice of Final Completion.
- Two (2) 11x17 hard copies and one (1) electronic (PDF) copy of the Record Drawings prepared after the completion of all construction activities.
- One (1) electronic (PDF) copy and three (3) hard copies of WWTP O&M Manual Update.

Task 5. DEQ CWSRF Documentation (Optional Task)

As an optional task, West Yost can prepare CWSRF documentation as required by Oregon Department of Environmental Quality (DEQ) for all CWSRF-funded construction projects in Oregon.

Task 5.01. CWSRF Monthly Reports

Prepare monthly project updates and payment recommendations to be submitted to DEQ for disbursements from the CWSRF program. For budgeting purposes, 10 monthly reports are assumed.

Task 5.02. CWSRF Plan of Operations

Prepare a Plan of Operations detailing the approach for completing the existing WWTP upgrades while maintaining operation and NPDES Permit compliance. Key elements of the plan will include bypass operations and temporary facilities and controls to be utilized by the Contractor. It is anticipated that the Contractor will prepare detailed construction sequencing and bypass plans for the Plan of Operations.

Task 5.03. CWSRF Performance Evaluation Review (PER) Standards

Prepare the Performance Evaluation Review standards for existing WWTP upgrades used to determine if the completed upgrades meet the design criteria and other project design requirements.

Task 5 Assumptions

- Task 5 is optional and will be provided by West Yost if requested by the City.
- CWSRF monthly reports will require coordination with City and Owner's Representative for financial information. Monthly reports will be provided during construction only.
- CWSRF Plan of Operations shall be developed for those elements of the project that impact WWTP operations.
- CWSRF Performance Evaluation Standards shall be developed only for unit processes with major changes that require comparison with design criteria. Anticipated unit processes to be included are the headworks screen, aeration blowers and UV disinfection system.
- The CWSRF Performance Evaluation Review (PER) required 10 months following project completion is not included in this optional task.

Task 5 Deliverables

- One (1) electronic (PDF) copy of monthly CWSRF reports.
- One (1) electronic (PDF) copy of the draft and final CWSRF Plan of Operations.
- One (1) electronic (PDF) copy of the draft and final CWSRF Performance Evaluation Standards.

**Scope of Services
 Attachment 1
 Preliminary Drawing Sheet List**

Sheet #	Drawing#	Drawing Title
1	G001-A	Cover Sheet, Region and Vicinity Maps, Drawing Index
2	D100	Headworks Demolition
3	D200	Aeration Basin (AB) Area Demolition
4	D210	Blower Room Demolition Plan
5	D220	Clarifier Area Demolition Plan
6	D310	UV Disinfection Area Demolition Plan
7	D400	ASSB Demolition Plan
8	C001	Civil Legends, Symbols and Abbreviations
9	C002	Civil Standard Details I
10	C002	Civil Standard Details II
11	C100	Civil Site Plan
12	C101	Headworks Area Plan with Notes
13	C102	Storm Water Upgrades Plan & Details
14	M001	Mechanical Legends, Symbols and Abbreviations
15	M100	Headworks Screen and Grit Removal Plan with Notes
16	M120	Alkalinity Addition System Plan & Details
17	M201	AB Flow Control Structure Plan & Details
18	M210	Blower Replacement Mechanical Plan & Details
19	M220	Clarifier Rehabilitation Plan
20	M300	Process Water Chlorination Improvements Plan
21	M310	UV Disinfection Improvements Plan
22	M311	UV Disinfection Sections and Details
23	M400	ASSB Davit Crane Replacement Plan & Details
24	S001	Structural Legends, Symbols and Abbreviations
25	S100	Headworks Screen Hoist
26	S200	AB Flow Control Structure Sections & Details
27	S101	Alkalinity Containment Area Details
28	S201	Blower Installation and Anchorage Details and Notes
29	S200	AB Flow Control Structure Sections & Details
30	S310	UV Disinfection Structural Modifications Plan
31	S311	UV Disinfection Structural Modifications Sections and Details
32	S400	ASSB Walkway, Railings and Davit Crane Plan
33	S401	ASSB Walkway & Railings Sections and Details
34	E001	Electrical Legends, Symbols & Abbreviations
35	E002	Electrical Schematics, Conduit and Wire Schedule
36	E003	PLC Replacement Location Plan and Notes
37	E004	Combustible Gas Detection and CCTV Plan
38	E005	BFP Control Panel Replacement Plan and Details
39	E100	Headworks Electrical Plan & Details
40	E101	Alkalinity Addition System Electrical Plan & Details
41	E200	Blower Building Electrical Room Single Line Diagram
42	E201	Aeration Basin and Blowers Power and Signal Plan and Schematics
43	E300	UV Disinfection Electrical Power and Signal Plan
44	P001	P&ID Legends, Symbols and Abbreviations
45	P100	Alkalinity Addition System P&ID
46	P200	Aeration Basin and Blowers P&ID
47	P300	Process Water Chlorination P&ID

Attachment B: Project Budget

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Sandy WWTP Condition Assessment Improvements Project
Attachment B
Project Budget
November 3, 2020

West Yost Associates	P/V/P \$289 Ward	PE/PS/PG II \$265 Van Meter	SE/SS/SG II \$234 Hewitt	ESG I \$156 Lang	CAD II \$150	TS I \$151	ADM II \$99	EM/SM/GM II \$287 Banyai	Labor			Sub. ACE <small>formulas updated</small>	Sub. LCE <small>formulas updated</small>	Sub. TAG <small>formulas updated</small>	MCMJ	BUSH	Costs		
									Hours	Fee	Technology & Admin 6%						Sub. w/ markup 5%	Other Direct	Total Costs
PROJECT: Sandy WWTP Condition Assessment Improvements Project																			
Task 1 Project Management																			
1.01 Contracts and PMP	2	8					8		18	\$ 3,490	\$ 209	\$ 200					\$ 210		\$ 3,909
1.02 Monthly Project Status Reports and Invoices	2	16					16		34	\$ 6,402	\$ 384	\$ 700	\$ 1,200	\$ 700			\$ 2,730		\$ 9,516
1.03 Team Coordination Activities		24	16	16					56	\$ 12,600	\$ 756	\$ 500		\$ 700			\$ 1,260		\$ 14,616
Subtotal, Task 1 (hours)	4	48	16	16	0	0	24	0	108										
Subtotal, Task 1 (\$)	\$ 1,156	\$ 12,720	\$ 3,744	\$ 2,496			\$ 2,376			\$ 22,492	\$ 1,350	\$ 1,400	\$ 1,200	\$ 1,400			\$ 4,200		\$ 28,042
Task 2 Project Initiation and Data Collection																			
2.01 Collect and Review Background Information		1	2	4	2				9	\$ 1,657	\$ 99	\$ 150	\$ 200	\$ 2,300			\$ 2,783	\$ 100	\$ 4,639
2.02 Project Kickoff Meeting	2	2	2	4	1		1		12	\$ 2,449	\$ 147	\$ 250	\$ 600	\$ 2,300			\$ 3,308		\$ 5,903
2.03 Geotechnical Investigation and Recommendations Report		1	2	1	1		1		6	\$ 1,138	\$ 68				\$ 10,000		\$ 10,500	\$ 1,000	\$ 12,706
2.04 Field Surveying		1	1	2	2				6	\$ 1,111	\$ 67					\$ 1,400	\$ 1,470	\$ 500	\$ 3,148
Subtotal, Task 2 (hours)	2	5	7	11	6	0	2	0	33										
Subtotal, Task 2 (\$)	\$ 578	\$ 1,325	\$ 1,638	\$ 1,716	\$ 900		\$ 198			\$ 6,355	\$ 381	\$ 400	\$ 800	\$ 4,600	\$ 10,000	\$ 1,400	\$ 18,060	\$ 1,600	\$ 26,396
Task 3 Final Design & GMP Development Services																			
3.01 60% Drawings and Specifications	0	11	41	126	172	9	0	13	372	\$ 63,055	\$ 3,783	\$ 10,000	\$ 11,500	\$ 10,600	\$ 500	\$ 300	\$ 34,545		\$ 101,383
3.02 60% Design Submittal		4	16	24	8	4	4	4	64	\$ 11,896	\$ 714	\$ 1,000	\$ 400	\$ 500			\$ 1,995	\$ 150	\$ 14,755
3.03 60% Design Review Workshop		4	4	6	6	2	2	2	22	\$ 4,030	\$ 242	\$ 500	\$ 400	\$ 500			\$ 1,470		\$ 5,742
3.04 90% Drawings and Specifications	0	6	23	69	94	5	0	7	204	\$ 34,600	\$ 2,076	\$ 10,000	\$ 11,500	\$ 10,600	\$ 250		\$ 33,968		\$ 70,644
3.05 90% Design Submittal		4	16	24	8	4	4	4	64	\$ 11,896	\$ 714	\$ 1,000	\$ 400	\$ 500			\$ 1,995	\$ 150	\$ 14,755
3.06 90% Design Review Workshop		4	4	8	8	2	2	2	26	\$ 4,642	\$ 279	\$ 500	\$ 400	\$ 500			\$ 1,470		\$ 6,391
3.07 Prepare Final Contract Documents		8	32	54	52	3	8	7	164	\$ 29,086	\$ 1,745	\$ 2,500	\$ 7,500	\$ 3,600			\$ 14,280	\$ 500	\$ 45,611
3.08 Bid Support Services		2	8	16	8	2	4	2	42	\$ 7,370	\$ 442	\$ 500	\$ 1,000		\$ 250		\$ 1,838		\$ 9,650
3.09 Prepare Conformed Contract Documents		2	6	16	24	4	4	2	58	\$ 9,604	\$ 576	\$ 400	\$ 400	\$ 400			\$ 1,260		\$ 11,440
Subtotal, Task 3 (hours)	0	45	150	343	380	31	28	39	1016										
Subtotal, Task 3 (\$)		\$ 11,925	\$ 35,100	\$ 53,508	\$ 57,000	\$ 4,681	\$ 2,772	\$ 11,193		\$ 176,179	\$ 10,571	\$ 26,400	\$ 33,500	\$ 27,200	\$ 1,000	\$ 300	\$ 92,820	\$ 800	\$ 280,370
Task 4 Engineering Services During Construction																			
4.01 Pre-Construction Conference			6	6			2		14	\$ 2,538	\$ 152	\$ 500	\$ 400	\$ 500			\$ 1,470		\$ 4,160
4.02 Construction Site Visits		8	48	48			8		112	\$ 21,632	\$ 1,298	\$ 1,500	\$ 1,000	\$ 1,200			\$ 3,885	\$ 660	\$ 27,475
4.03 Office Engineering Support Services		8	54	156	20	12	12	4	266	\$ 46,240	\$ 2,774	\$ 1,500	\$ 5,400	\$ 500	\$ 500		\$ 8,295		\$ 57,309
4.04 Final Inspections, Startup Support and Contract Closeout		8	16	24	4	4	4	2	62	\$ 11,782	\$ 707	\$ 1,000	\$ 800	\$ 1,000			\$ 2,940	\$ 100	\$ 15,529
4.05 Record Drawings		2	4	16	28		2	2	54	\$ 8,934	\$ 536	\$ 250	\$ 400		\$ 100		\$ 788	\$ 500	\$ 10,758
4.06 WWTP O&M Manual Updates		2	8	32	24	4	4	2	76	\$ 12,568	\$ 754		\$ 200	\$ 500			\$ 735		\$ 14,057
Subtotal, Task 4 (hours)	0	28	136	282	76	20	32	10	584										
Subtotal, Task 4 (\$)		\$ 7,420	\$ 31,824	\$ 43,992	\$ 11,400	\$ 3,020	\$ 3,168	\$ 2,870		\$ 103,694	\$ 6,222	\$ 4,750	\$ 8,200	\$ 3,700	\$ 500	\$ 100	\$ 18,113	\$ 1,260	\$ 129,288
Task 5 CWSRF Documentation (Optional Task)																			
5.01 CWSRF Monthly Reports		5	11	22			11		49	\$ 8,420	\$ 505								\$ 8,925
5.02 CWSRF Plan of Operations		2	12	24	8	4	6	2	58	\$ 10,054	\$ 603		\$ 200	\$ 200			\$ 420		\$ 11,077
5.03 CWSRF Performance Evaluation Stds.		4	12	24	8	4	6	2	60	\$ 10,584	\$ 635								\$ 11,219
Subtotal, Task 5 (hours)	0	11	35	70	16	8	23	4	167										
Subtotal, Task 5 (\$)		\$ 2,915	\$ 8,190	\$ 10,920	\$ 2,400	\$ 1,208	\$ 2,277	\$ 1,148		\$ 29,058	\$ 1,743		\$ 200	\$ 200			\$ 420		\$ 31,221
TOTAL (hours)	6	137	344	722	478	59	109	53	1,908										
TOTAL (\$)	\$ 1,734	\$ 36,305	\$ 80,496	\$ 112,632	\$ 71,700	\$ 8,909	\$ 10,791	\$ 15,211		\$ 337,778	\$ 20,267	\$ 32,950	\$ 43,900	\$ 37,100	\$ 11,500	\$ 1,800	\$ 133,613	\$ 3,660	\$ 495,317



Attachment C: Preliminary Project Schedule

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Sandy WWTP Condition Assessment Improvements Project
Attachment C: Preliminary Project Schedule



WE SUPPORT OUR COMMUNITIES
WE ARE WATER FOCUSED
WE TAKE PRIDE IN WHAT WE DO
WE STRIVE TO BECOME OUR BEST
WE DO WHAT'S RIGHT
WE BELIEVE IN QUALITY
WE LISTEN
WE SOLVE CHALLENGING PROBLEMS
WE SEE THE BIGGER PICTURE
WE TAKE OWNERSHIP
WE COLLABORATE
WE HAVE FUN

WE ARE WEST YOST





CITY OF SANDY

**Engineering Consulting Services for Sandy
Wastewater Treatment Plant Condition
Assessment Improvements Project**



01 // COVER LETTER



5 Centerpointe Drive 503.451.4500 phone
Suite 130 530.756.5991 fax
Lake Oswego, OR 97035 westyost.com

October 9, 2020

Mike Walker

Director of Public Works
City of Sandy
39250 Pioneer Boulevard
Sandy, OR 97055

RE: Engineering Consulting Services for Sandy Wastewater Treatment Plant Condition Assessment Improvements Project

Dear Mike:

West Yost Associates (West Yost) is pleased to submit our proposal for supporting the City of Sandy (City) in completing a series of vitally important upgrades at your existing wastewater treatment plant (WWTP). West Yost is the right firm for your project, offering the following key benefits:

- **An experienced Project Manager you know and trust who is committed to supporting your community and helping to address the challenges at your existing WWTP.** Preston Van Meter served as Treatment Lead for the City's Wastewater System Facilities Plan (WSFP) project and is committed to continuing to support the City in implementing one of the first projects coming out of the WSFP Recommended Plan adopted by City Council.
- **Focus on Construction Manager/General Contractor (CM/GC) delivery to direct more of your available funds toward real WWTP upgrades rather than engineering.** The existing WWTP upgrades, as currently scoped, are largely equipment replacement projects perfectly aligned for engaging a contractor early and limiting engineering design to details required by the CM/GC for installation and startup.
- **An approach offering potential changes in the planned upgrades to address equipment replacement needs, address safety issues, improve plant performance, and minimize National Pollutant Discharge Elimination System (NPDES) Permit violations.** Our approach highlights areas of the current Preliminary Design Report that could potentially be modified to continue focusing on the replacement of aging equipment, while also targeting investments to improve plant performance and eliminate NPDES Permit violations to the maximum extent possible.
- **A strong, local team focused on delivering your existing WWTP upgrades project.** West Yost is focused on delivering water, wastewater and stormwater projects for communities like Sandy. Our water focus and size offer you a unique combination of responsive and cost-effective service of smaller firms and the deep bench of technical experts offered by larger firms.

As requested in the City's Request for Proposals (RFP), we certify that our proposal is valid for a period of 90 days. West Yost is licensed to provide engineering services in the State of Oregon, and we certify that our firm is not disbarred, suspended, or otherwise prohibited from practice by any local, state, or federal agency. Other requested information is contained in **Table 1** on the following page.

WEST YOST

City of Sandy | Engineering Consulting Services for Sandy Wastewater Treatment Plant
Condition Assessment Improvements Project | October 9, 2020

Not in Page Count

Table 1. Required Firm Information

REQUIRED INFORMATION	
Project Title	Engineering Consulting Services for Sandy Wastewater Treatment Plant Condition Assessment Improvements Project
Full Legal Name of Proposing Entity	West Yost Associates
Type of Business Entity	S Corporation
Name of Authorized Representative	Bob Ward, PE
Name of Contract Signer	Bob Ward, PE
Contact Person	Preston Van Meter, PE 5 Centerpointe Drive, Suite 130 Lake Oswego, OR 97035 503.784.9536 (cell) 530.756.5991 (fax) pvanmeter@westyost.com

West Yost and our subconsultant partners currently have or will have an active System for Award Management (SAM) registration by the time a contract is awarded. There are no known issues associated with the ability of all West Yost team members to have an active SAM registration at the time required by the City.

We have reviewed the City’s sample agreement and have a few comments we would like to discuss with you. We are confident we can come to an agreement during negotiations.

West Yost appreciates this opportunity to serve the City of Sandy, and we look forward to sharing our ideas and energy. If you have any questions or need additional information, please call Preston at 503.784.9536.

Sincerely,
WEST YOST



Preston Van Meter, PE
Project Manager

503.784.9536 (cell)
pvanmeter@westyost.com



Bob Ward, PE
Principal-in-Charge | Authorized Representative

503.250.3831 (cell)
bward@westyost.com

02 // PROJECT UNDERSTANDING AND APPROACH



Understanding

Sandy’s population is projected to double over the next 20 years to over 20,000 residents, making it one of the fastest growing communities in Clackamas County and the State of Oregon. This explosive growth requires careful planning to strike a delicate balance of increasing wastewater system capacity to support growth while maintaining reasonable wastewater rates for the City’s existing ratepayers. The City’s plan for striking this balance is detailed in the City’s WSFP, adopted by the Sandy City Council in October 2019.

The WSFP Recommended Plan provides a forward-thinking approach balancing long-term investments in the City’s wastewater collection and treatment systems, while retaining use of the City’s existing assets to the maximum extent possible. Key elements of the WSFP Recommended Plan include:

1. **Collection System rehabilitation** to reduce inflow and infiltration (I/I) and peak wastewater system flows required to be treated.
2. Constructing a **Satellite MBR Facility** with year-round discharge of highly treated water to the new outfall to the Sandy River.
3. Upgrading and maintaining the City’s **existing WWTP** and highly-successful and award-winning water recycling program.

For a community of 10,000 people, solving these challenges and positioning the City for the future comes with a steep price tag of over \$85M in wastewater system investments over the next 20 years! In order to maintain affordable wastewater rates, the implementation of the WSFP Recommended Plan is spread out over 3 major phases to be completed over the next 20 years.

Implementation of the plan is underway with an initial investment of \$7M that includes collection system rehabilitation in the City’s two largest sewer basins and a series of “immediate needs” WWTP upgrades. The proposed Existing WWTP Immediate Needs Upgrades are detailed in a July 2020 Preliminary Design Report, identifying \$3M in planned upgrades intended to bring the existing WWTP into consistent compliance with the City’s NPDES Permit. These upgrades are summarized in **Table 2** below.

Table 2. Immediate Needs Upgrades

NO.	ITEM	TOTAL
1	Fine Screen	\$358,000
2	Vortex Grit Removal System	\$356,000
3	Alkalinity Feed System	\$138,000
4	Aeration Basin Splitter Box	\$217,000
5	Aeration Basin Blowers	\$355,000
6	Secondary Clarifiers	\$350,000
7	Process Water Chlorination	\$53,300
8	UV Disinfection System	\$690,000
9	Stormwater Control	\$65,000
10	ASSB Walkway and Railing	\$95,000
11	Davit Cranes	\$35,100
12	Combustible Gas Detector	\$23,700
13	SCADA System Upgrade	\$111,180
14	PLC Replacement	\$182,000
15	Electrical Equipment Personal Safety Improvements	\$11,520
Total		\$3,040,800

Approach

The following sections highlight West Yost’s project approach, focused on the following key elements:

1. Maximize the City’s wastewater investments using **CM/GC delivery**
2. **Address operator needs for improved safety**, process control and communications
3. Review scope to focus upgrades on **minimizing NPDES Permit violations**

Maximize the City’s Wastewater Investments Using CM/GC Delivery

Currently planned WWTP Immediate Needs Upgrades detailed in the Preliminary Design Report are heavily focused on in-kind equipment replacement and O&M upgrades that lend themselves to a CM/GC delivery approach that is familiar to the City. CM/GC is also approved by Oregon Department of Environmental Quality (DEQ) for Clean Water State Revolving Fund (CWSRF)-funded projects, which is the source of funds for completion of the planned WWTP upgrades. Benefits of using a CM/GC process for the WWTP Immediate Needs upgrades include:

1. **Reduced design engineering cost.** The planned WWTP upgrades are primarily “in-kind” equipment replacement requiring minimal additional design engineering beyond the current preliminary design drawings. Detailed specifications, vendor submittals and shop drawings can be utilized for pricing by the CM/GC.
2. **Expedited construction schedule.** Engaging the CM/GC early will allow construction activities to begin quickly and finished by September 2021, as desired by Oregon DEQ.
3. **Ability to accommodate changes in construction scope quickly.** Operator needs and required plant upgrades continue to evolve as issues at the existing WWTP arise. A CM/GC process offers flexibility for the City to offer additional support as needs arise at the plant during construction.

Recommended GC/CM QBS Selection Requirements for the WWTP Immediate Needs Upgrades:

- GC/CM to self-perform >50 percent of the work
- Obtain minimum 3 quotes for all sub-contracted work
- If requested by City, GC/CM to bid against subs for self-performed work
- Utilize “open book” cost accounting
- Provide mark-ups for General Conditions (GCs) and Overhead and Profit (OHP)

ALTERNATIVE DELIVERY

THE WEST YOST TEAM IN ACTION!

PORTLAND WATER BUREAU - WASHINGTON PARK RESERVOIR
CM/GC | \$155M CONSTRUCTION COST

Project includes the replacement of the existing historical Washington Park Reservoirs No. 3 and No. 4 with a 14 MG concrete reservoir, support structures, facilities, and up to 30-inch welded steel piping and modifications required to disconnect Reservoir No. 4.

TUALATIN VALLEY WATER DISTRICT (TVWD) - GRABHORN RESERVOIR
PDB | \$10M CONSTRUCTION COST

Project included replacing the existing reservoir with a new 5 MG, partially buried, AWWA D-110 concrete tank. West Yost prepared materials for a workshop with TVWD staff on project delivery options and a structured approach to assess and select the preferred project delivery method and developed the presentation for the Public Hearing and Board approval.

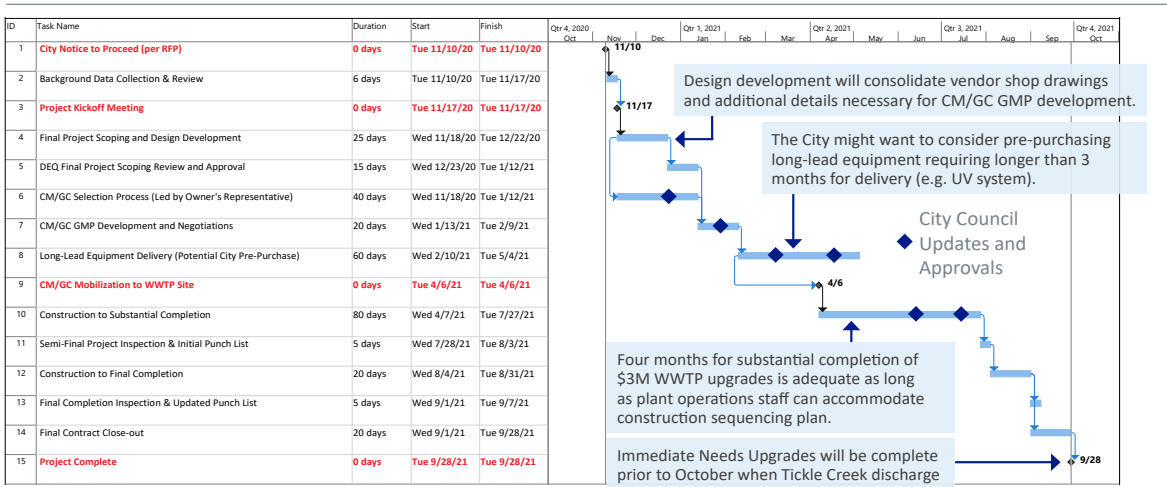


PROJECT SCHEDULE

Figure 1 is a preliminary project schedule showing the completion of the Existing WWTP upgrades in one construction season using the CM/GC delivery process. Key elements of West Yost’s preliminary schedule:

1. **Engage CM/GC Contractor Immediately.** Leeway Engineering could proceed immediately leading selection of a CM/GC contractor using the current preliminary design drawings.
2. **Mini-GMP Approach.** The scope and nature of the project lends itself to using smaller “mini-GMPs” rather than a large Guaranteed Maximum Price that would be typical for a CM/GC project.
3. **Early GMP Negotiation for Long-Lead Items.** Early GMP negotiations would be conducted for project elements involving long-lead items, such as the new UV disinfection system and blowers.
4. **City Council Updates and Approvals.** Regular check-ins with City Council are proposed for approving CM/GC mini-GMPs, authorizing equipment purchases and keeping elected officials updated on project progress.

Figure 1. Preliminary Project Schedule Using CM/GC



City review periods of 5 days will be provided for review of contract documents and mini-GMPs.

Address Operator Needs for Improved Safety with Better Tools for Operations

Maintaining the safety of plant staff and providing proper tools for monitoring and operating the facility are paramount to consistently meeting NPDES Permit requirements. Improvements in safety, automation, instrumentation and process control are needed throughout the plant. As with many things at the Sandy WWTP, the question boils down to where to start. There are two key questions for the City regarding supervisory control and data acquisition (SCADA) system recommendations in the Preliminary Design Report:

- The SCADA system is obsolete, so why continue with GE?** Over 90 percent of local WWTPs now use the Rockwell Automation (RA) platform because of its simple installation and large network of suppliers, programmers and technicians. The recommended SCADA system upgrades using RA could be completed for 25 percent less cost.
- Why install a new fiber optic backbone?** The current ethernet network has relatively short runs that are acceptable for plant operations. It would seem that the funds invested in a new fiber network could be better spent elsewhere in the plant.

Major safety, process control and communications improvements could be added to the project cost-effectively by adding the following items:

- Safety:** While there may not be a code requirement, there is a strong potential that an arc flash study should be completed. For under \$50,000, arc flash breakers could be installed in the four feeder breakers in the main plant switchboard that would dramatically reduce the potential arc flash hazards in the WWTP.
- Ventilation:** Under NFPA 820 Standard for Fire Protection in Wastewater Treatment and Collection Facilities (NFPA 820), the air must be turned over in the Solids Electrical Building 6 times per hour for an Unclassified NEC Area Electrical Classification. Inspection of the corrosion on the electrical panels in the room indicates poor ventilation that may require HVAC or structural modifications.
- Instrumentation:** The #1 issue impacting plant performance is the aeration basin. A single Dissolved Oxygen (DO) probes is simply not adequate for properly operating an MLE process. Adding a second DO probes in the aerobic zone and first anoxic zone as well as ORP probes in the second and third anoxic/anaerobic zones along with upgrades to the aeration system and automation will improve process performance and NPDES Permit compliance.
- Communications:** Adding a “Tosibox” for under \$5,000 will provide an encrypted communications hub that can be used with any mobile device, allowing plant staff to respond to alarms and operate the plant remotely.

Adding these relatively low-cost additional upgrades to the project will help improve process performance and give plant operators more tools to operate the facility proactively rather than reactively.

Focus WWTP Improvements to Improve Performance and Minimize NPDES Permit Violations

Clearly, the City and project team have spent considerable time in preparing the Preliminary Design Report for the WWTP Immediate Needs upgrades. Replacing aging equipment that is near the end of its useful service life is necessary and appropriate. However, given there is a relatively small \$3M budget available for the project, it is imperative that the upgrades deliver improved WWTP performance and consistent NPDES Permit compliance.

When reviewing the current project scope and preliminary design from the vantage point of NPDES Permit compliance, it may be advisable for the City to take a step back to ask some important questions from the vantage point of maximizing near-term investments and NPDES Permit compliance, including:

1. Headworks Equipment Replacement (\$852,000)

- ? Given the headworks will eventually be relocated to accommodate future primary clarifiers, is the level of investment in replacement equipment warranted at this time?
- ? Could alkalinity addition be relocated closer to the aeration basin near other chemical storage?
- ? Would a more cost-effective approach consisting of repairing the fine screen, replacing the grit pump and piping, and maintaining spare parts on site better utilize the City's budget?

2. Blower Replacement (\$355,000)

- ? Will replacement of the blowers actually overcome the issues with poor aeration header design and an inefficient complete mix aerobic zone improve process performance?
- ? Would a better approach be to replace the existing small PD blower with a higher efficiency blower and retain the existing 100 HP multi-stage centrifugal blowers that appear to be in very good condition?
- ? Would a more cost-effective approach consisting of installing inverter-duty motors and VFDs on the large 100 HP blowers with aeration header and controls upgrades better utilize the City's budget?

3. Aerated Sludge Storage Basin (ASSB) (\$95,000)

- ? Should more of the City's budget be spent on the ASSB to simplify operations, improve solids treatment performance and produce Class B Biosolids?
- ? Would a better approach be to complete a full ASSB remodel given the operational challenges, poor solids treatment performance and deteriorated condition of interior metal components?

Figure 2. The existing headworks will likely need to be relocated to accommodate future primary clarifiers.



Figure 3. The existing 100 hp blowers appear to be in good operating condition.



Figure 4. Solids treatment can be improved through a larger ASSB remodel.



4. UV Disinfection System Upgrades (\$690,000)

? The existing Trojan UV4000 medium pressure system uses a lot of energy and is on the trailing end of its useful service life. However, contrary to statements in the preliminary design report, the UV4000 system is still supported by Trojan and spare parts are available. The quote for just the equipment replacement is \$260,000.

? The preliminary design budget for UV system upgrades is \$690,000, meaning \$430,000 of the City's \$3M project budget (14 percent) is being allocated to other disinfection upgrades. Would it be better to continue using the UV4000 system until a later phase and re-direct that budget toward other improvements? Is there another UV system that would better fit in the existing channel to reduce the cost?

Figure 5. The existing UV system is still support by Trojan.



These four elements represent nearly \$2M of the City's \$3M budget! While the planned upgrades will clearly be helpful, it is not as clear how much these upgrades will contribute to improved treatment performance and eliminating NPDES Permit violations.

Potential Additional Elements

Without sacrificing the needed operational improvements, West Yost believes there is an opportunity to modify the scope for certain project elements in a way that will continue to address operator needs while freeing up funds within the City's \$3M budget to provide aeration basin and process control upgrades, ASSB rehabilitation, effective two-zone equalization storage and definitive summer season stormwater control that will clearly improve treatment performance and help eliminate NPDES Permit violations to the maximum extent possible. These potential additional elements, including issues and corrective actions, are described below.

AERATION BASIN AND PROCESS CONTROL UPGRADES TO IMPROVE TREATMENT PERFORMANCE

Issue: the aeration basin has a single stage, complete mix aerobic zone that is prone to short-circuiting and filament proliferation with inadequate mixing.

Potential Corrective Actions:

- Subdivide the aerobic zone into 2 zones with independent, metered air drops and DO gauges.
- Add spray nozzles in upstream selector zones.
- Provide step-feed to operate in contact stabilization mode during peak flow events.

Benefit: Improve BOD removal at all flows, improve mixing, reduce filament issues, and improve process performance.

Figure 6. Installation of proper air drops with butterfly valves and air mass flow meters will improve aeration system performance and help protect blowers.



ASSB REHABILITATION TO IMPROVE SOLIDS PROCESSING AND HANDLING

Issue: The ASSB is in poor condition, provides ineffective solids stabilization, and is difficult to operate.

Potential Corrective Actions:

- Pump BFP filtrate directly to the Headworks or Equalization Basin as is typical in most WWTPs.
- Demolish internal ASSB metal components, install FRP divider wall to create two solids storage zones with proper mixing and decant.
- Increase volatile solids destruction and improve solids dewaterability.

Benefit: Improve mixing and increase volatile solids destruction, improve solids dewaterability, address safety issues and eliminates problematic BFP filtrate storage.

EFFECTIVE EQUALIZATION STORAGE TO HELP PLANT STAFF SLEEP AT NIGHT!

Issue: depending on the time of year equalization storage is needed for both influent (peak flows) or effluent (no discharge).

Potential Corrective Actions:

- Divide the EQ basin into two zones by adding an asphalt berm with hydraulic bypass valve and pump station.
- Add level sensors so operators know how much storage is available through SCADA

Benefit: Improve NPDES Permit compliance by providing effective equalization storage of both high influent flows that exceed plant capacity and when discharge of treated effluent is not allowed.

STORMWATER CONTROL PUMP STATION

Issue: The existing effluent manhole serves as the discharge point for five different pipelines in the plant site, only one of which is the pipeline for which an overflow weir is proposed.

Potential Corrective Actions:

- Install 2 submersible pumps on rails in the MH outside the fence line where trash pumps are currently installed.
- Add sluice gate on MH outlet with extended shaft operator to eliminate manual plug installation/removal.

Benefit: Provides positive disconnection of outfall during non-discharge periods, eliminating the need for plant staff to install/remove the manual plug that is currently used.

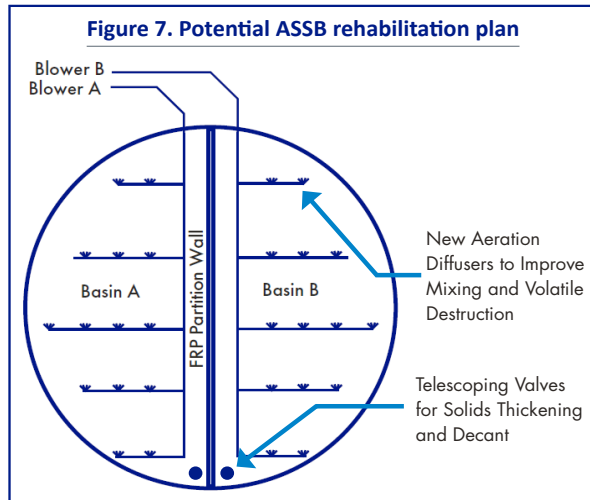


Figure 8. Potential plan for effective use of the existing equalization basin

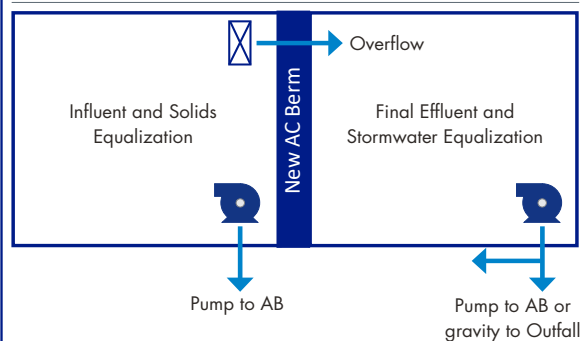
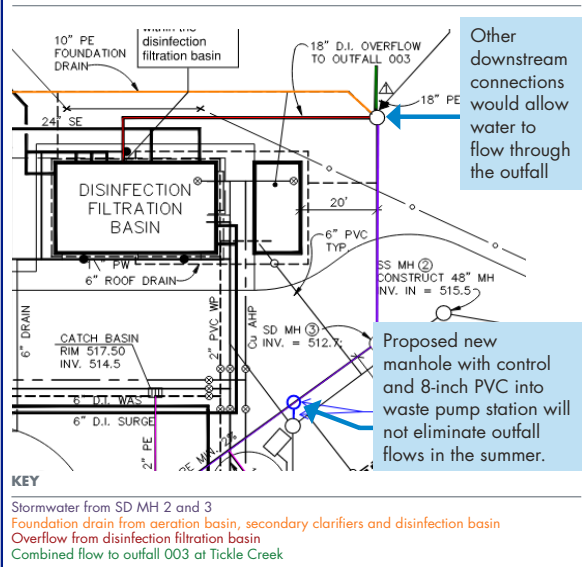


Figure 9. Proposed stormwater control upgrades would still allow flow through the outfall in the summer months when no discharge is allowed.



03 // FIRM PROFILE

OFFICE LOCATIONS

OREGON

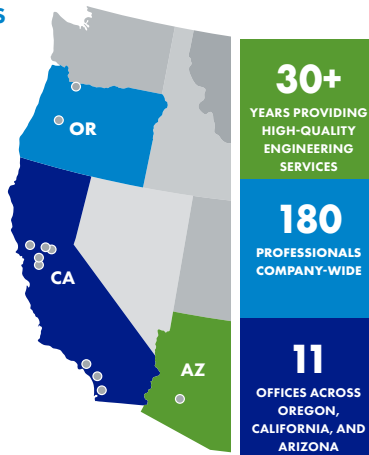
Eugene
Portland

CALIFORNIA

Concord
Davis (Corporate HQ)
Irvine
Oceanside
Pleasanton
Sacramento
San Diego
Santa Rosa

ARIZONA

Phoenix



Wastewater Services

West Yost's expertise covers every type of wastewater facility and process, from collection and treatment systems to disposal and reclamation facilities. We provide a full service approach across the entire spectrum of disciplines, including technical studies, modeling, regulatory and permitting assistance, advanced treatment plant design, funding assistance, and construction management. Our firm's unique ability and experience working with clients from permitting through construction bring intrinsic value to our projects and our clients. We bring knowledge gained from the permitting and regulatory process into the planning and design of facilities that meet our clients performance goals, and apply our construction knowledge to the design process to reduce cost and risk during construction.

Services

- Permitting and Regulatory Compliance
- Treatment Process Modeling
- Wastewater Facility Planning
- Treatment Plant Design
- Reuse/Recycling Planning and Design
- Funding Strategies and Assistance
- Infrastructure Rehabilitation
- Program Management
- Construction Management

Wastewater Treatment Experience

Oregon

- City of Creswell, Wastewater Treatment System Improvements
- City of Canyonville, Wastewater Treatment Plant Improvements
- City of Medford, Facilities Plan for the Regional Water Reclamation Facility
- City of Portland Bureau of Environmental Services, Columbia Boulevard Wastewater Treatment Plant Solids Improvements
- Metropolitan Wastewater Management Commission, Eugene/Springfield, Wastewater Treatment Plant Improvements
- City of Lebanon, Wastewater Facility Planning
- South Suburban Sanitary District, Wastewater Facilities Plan
- Clean Water Services of Washington County, West Basin Facilities Plan

California

- City of Corning, Wastewater Treatment Plant Expansion
- City of Davis, Strategic Master Plan, and Wastewater Treatment & Reuse Improvements
- City of Atwater, Regulatory Compliance, Facility Planning, and New Bert Crane WWTP Design
- City of Stockton, Wastewater Planning and Design
- City of Galt, Regulatory Compliance, Special Studies, Facility Planning, and Tertiary Improvement Project Design
- City of Lodi, White Slough Wastewater Treatment Plant Improvements, Facility and Reuse Master Planning, and Permitting Assistance
- City of Vacaville, Easterly Wastewater Treatment Plant Facility Planning, Expansion Design and NPDES Permit Assistance
- City of Vacaville, Easterly Wastewater Treatment Plant, Facility Planning and Design for Tertiary Treatment Improvements
- City of Woodland, Wastewater Treatment Plant Expansion and Tertiary Upgrade
- City of Fresno, Odor Control at Wastewater Treatment Plant Headworks
- City of St. Helena, Wastewater Treatment Facility Upgrade and Water Recycling Project
- Mt. View Sanitary District, Wastewater Treatment Plant Systems Reliability Evaluation
- San Joaquin County, Flag City Wastewater Treatment Plant Facilities Planning, NPDES Permit Assistance and Design
- California Department of Corrections and Rehabilitation, Wastewater Treatment Facilities (14 sites)
- Central Valley Clean Water Association, Permitting and Regulatory Advocacy Special Project
- City of Healdsburg, Recycled System

04 // PROJECT TEAM QUALIFICATIONS

Organizational Chart

To help you achieve your project goals, we have assembled a team with deep experience in WWTP improvements. Resumes for our team members are included in the **Appendix** of this proposal.

Our combined experience provides you with a team that can meet all your needs and provide you with an updated WWTP that solves current operational and maintenance issues and complies with NPDES permit allowances.



Availability and Level of Commitment

Preston and Bob will ensure that team members' availability will conform to the City's schedule to complete the WWTP improvements. West Yost commits each key personnel listed above to the full duration of the project.

Project Team

Preston Van Meter, PE PROJECT MANAGER

YEARS OF EXPERIENCE: 26; **EDUCATION:** MS, Civil Engineering, University of Michigan | BS, Civil Engineering, Oregon State University



Preston is a wastewater expert focused on the planning, design, and construction of wastewater treatment and reuse facilities. Preston's experience includes all types of treatment plant expansion projects, ranging from invasive plant retrofits to greenfield MBR facilities. Preston has delivered major WWTP upgrade projects for 12 PNW communities that have included initial planning, permitting, funding, design and construction. He has also participated and led value engineering studies for a number of wastewater treatment and infrastructure projects. Preston is known for his approach that engages plant operators during design and delivering innovative and cost-effective wastewater treatment facilities that are easy to operate and meet permit requirements. Preston has led many fast-track and alternate delivery projects, including serving as Design Lead for Oregon's first progressive design-build (PDB) municipal WWTP project in The Dalles, OR. He also managed an engineer-led design-build project for an industrial MBR facility constructed for a confidential client in the Portland Metro area. Preston has served as both an Owner's Agent and on the design team for CM/GC projects.

Bob Ward, PE PRINCIPAL-IN-CHARGE

YEARS OF EXPERIENCE: 37; **EDUCATION:** MS, Environmental Studies, University of Montana | BS, Civil Engineering, Montana State University



Bob is a West Yost Vice President with over 35 years of experience providing design, project management, and construction supervision on water and wastewater projects in the West. Bob is experienced in treatment, operation, and management and has been working on water and wastewater infrastructure projects throughout his career. Bob has served as project manager or principal-in-charge for work on the five largest water treatment facilities in Oregon as well as ten alternative deliver projects. Bob has also been involved in planning, design, and construction phase support for water storage reservoirs, water, and wastewater pumping facilities and wastewater treatment plant improvements.

Walt Meyer, PE QA/QC

YEARS OF EXPERIENCE: 50; **EDUCATION:** BS, Civil Engineering, Oregon State University



Walt offers extensive experience in the planning, design, and construction of wastewater treatment facilities and is one of Oregon's foremost wastewater treatment and regulatory experts. Walt has directed facilities planning for wastewater programs for many communities and also has extensive design experience including wastewater treatment plants, pumping stations, large diameter pipelines, and water facilities. He has managed infiltration/inflow assessments, sludge management evaluations, financial plans, environmental assessments, and rate studies for many communities. Walt is very familiar with Oregon's water quality standards and has a history of successful negotiation with regulatory agencies on behalf of clients.

REFERENCES

GREG SPRINGMAN

Public Works Director
City of Sweet Home
3225 Main Street
Sweet Home, OR 97386
541.367.6359
gspringman@ci.sweet-home.or.us

NATE CULLEN

Wastewater Treatment Department Director
Clean Water Services
2550 SW Hillsboro Highway
Hillsboro, OR 97123
503.547.8176
cullenn@cleanwaterservices.org

SUE LAWRENCE

Public Works Director
City of Rainier
106 West B Street
Rainier, OR 97048
503.396.1736
slawrence@cityofrainier.com

Greg Chung, PE

QA/QC

YEARS OF EXPERIENCE: 25; **EDUCATION:** MS, Civil and Environmental Engineering, University of California, Berkeley | BS, Civil Engineering, University of Hawaii



Greg has experience in a wide range of civil and environmental engineering disciplines; he specializes in wastewater treatment, biosolids management, and resource recovery at wastewater treatment plants. His experience includes planning, design, construction related services, and start-up and commissioning of wastewater treatment, water recycling facilities, and resource recovery facilities. Greg has also executed projects in a variety of project delivery methods, including design-bid-build, design-build, design-build-operate, and energy performance contracting.




Matt Hewitt, PE

PROJECT ENGINEER

YEARS OF EXPERIENCE: 12; **EDUCATION:** MS, Environmental Engineering, Colorado State University



Matt is a civil and environmental engineer who provides design for water and wastewater infrastructure, including pump stations, pipelines, and water and wastewater treatment facilities. His design experience includes advanced membrane treatment, chemical feed systems, water and wastewater pump stations, force mains, and other treatment processes. Matt has served as Resident Engineer during treatment plant start-up activates and provided construction oversight, pump system start-up, and operator training.

	NAME, ROLE	EXPERIENCE
	Thomas Hendrey, PE (CA) MECHANICAL/HVAC YEARS OF EXPERIENCE: 43	Tom is a civil, chemical, and mechanical engineer specializing in engineering design, construction services, start-up, operations, and troubleshooting of water and wastewater treatment plants and associated infrastructure. Tom’s areas of expertise include energy management and efficiency improvements to optimize energy consumption; equipment start-up, testing and diagnostics; hydraulics, pump system design, and troubleshooting; cogeneration, alternative and standby energy system; and systems design and testing.
	James Ham, EIT STAFF ENGINEER YEARS OF EXPERIENCE: 3	James has over three years of experience working on water and wastewater systems. His design project experience includes preparing cost estimates, drafting design drawings in AutoCAD and Microstation, coordinating with vendors/clients on product selection and specification development, and providing engineering services during construction. He has programmed sophisticated automated tracking logs to support RFI and submittal review process, resulting in hundreds of employee-hours saved on large projects with over 1,000 RFIs and submittals. Mr. Ham has also worked on planning projects for wastewater treatment plants, including biological process modeling and NPDES permit compliance assistance.
	KATHRYN GIES, PE (CA), ENV SP PROCESS ENGINEER YEARS OF EXPERIENCE: 21	Kathryn is an engineer with experience in planning and permitting wastewater treatment and recycled water projects. Kathryn’s areas of expertise include wastewater treatment facilities planning; treatment process design; biological nutrient removal (BNR) systems; natural wastewater treatment systems; sustainable infrastructure planning; NPDES regulatory permitting; recycled water and land disposal systems master planning; biosolids land application planning and permitting; and groundwater quality studies for regulatory compliance.

	<p>Monique Day, PE (CA) FUNDING YEARS OF EXPERIENCE: 16</p>	<p>Monique has over 15 years of experience in civil and environmental engineering and has provided similar funding services to many clients throughout her career. Most of her project work has involved multi-stakeholder planning and implementation processes and funding pursuits.</p>
	<p>Gary Jenks INSTRUMENTATION TAG YEARS OF EXPERIENCE: 30</p>	<p>Gary is responsible for PLC/HMI Programming, factory authorized AF Drive start-up, and project start-up and commissioning. Gary's previous experience ranges from project manager and foreman to controls division manager. Gary completed his Inside Wireman Apprenticeship from BOLI, is accredited through the Rockwell Automation System Integrator, and holds his General Journeyman license.</p>
	<p>Ben Perry, PE ELECTRICAL ENGINEERING Landis YEARS OF EXPERIENCE: 13</p>	<p>Ben leads electrical, instrumentation, and controls design for municipal water and wastewater projects. He has led projects at some of Oregon's largest wastewater treatment facilities, including Clean Water Services Durham and Rock Creek WRRFs and the City of Salem Willow Lake Water Pollution Control Facility (WLWPCF).</p>
	<p>Allan Goffe, PE, SE STRUCTURAL ENGINEERING ACE Engineering YEARS OF EXPERIENCE: 20</p>	<p>Allan is the founder of ACE Engineering, which provides consulting structural engineering services for all types of buildings, including treatment facilities, commercial, industrial, and residential. Allan is directly responsible for structural planning and design of each project, performing engineering calculations, and developing drawings and specifications.</p>
	<p>Wolfe Lang, PE, GE GEOTECHNICAL ENGINEERING McMillen Jacobs YEARS OF EXPERIENCE: 25</p>	<p>Wolfe has more than 25 years of geotechnical engineering experience, and his focus is on wastewater, water, and conveyance projects, including new treatment facilities and reservoirs, rehab of existing facilities/trunk lines, deep pump stations, new pipelines, and trenchless crossings. He has a strong background in analyzing and designing various foundations, ground improvement systems, and soil retaining structures.</p>
	<p>Ron Bush, PE, PLS SURVEY Ron Bush Engineering and Surveying YEARS OF EXPERIENCE: 50</p>	<p>Ron has 40 years of experience in a wide range of design and construction experience in the wastewater and water fields. Ron has performed survey work throughout his career as a contractor and engineer. As an Engineer, he has been involved in various projects from planning through design and construction administration. This background gives him a unique mix and insight to the industry.</p>
	<p>Alan Armstrong ARCHITECTURAL Strongwork YEARS OF EXPERIENCE: 19</p>	<p>Alan is an architect with strong experience leading the architectural design of buildings at municipal wastewater and water treatment plants. Alan served as lead architect for the City of Portland's award-winning Hannah Mason Pump Station and is currently supporting the Portland Water Bureau's Filtration Facility design. Alan is also leading the design of the new Administration and Lab Building for the Sweet Home WWTP.</p>

05 // SAMPLE PROJECTS



Below we have included five recent wastewater treatment projects with similar elements to the City's WWTP project.

Wastewater System Facilities Plan and Implementation CITY OF SANDY, OR

REFERENCE: Mike Walker, Director of Public Works, 503.489.2162, mwalker@ci.sandy.or.us; **TEAM:** Preston Van Meter (Treatment Lead); **DATES:** 2018-2020

Preston Van Meter served as Treatment Lead and primary author of the City of Sandy Wastewater System Facilities Plan (WSFP), leading the effort to identify a long-range solution to the significant challenges facing the City with its current wastewater treatment plant and severe limitations related to the City's current discharge to Tickle Creek. Working with the City, Preston and his team from a previous employer developed the City's adopted WSFP Recommended Plan that includes \$85M in wastewater system upgrades to be completed in 3 phases over the next 20 years. The key issue driving the City's wastewater program upgrades are strict limitations related to increasing discharge from the existing WWTP to Tickle Creek because it is a tributary of the Clackamas River, which has strict prohibitions on any increase in discharge mass loads under Oregon's Three Basin Rule.



Near-term upgrades include the currently proposed existing WWTP upgrades that will position the facility to meet the City's NPDES requirements over the next 5 years while other Recommended Plan elements are implemented. These other larger WSFP program elements will include:

1. Construction of a new "scalping" membrane bioreactor (MBR) treatment facility to be located on City-owned property for treating approximately 50 percent of the City's wastewater;
2. Installation of a new Sandy River outfall and permitting for a year-round discharge; and
3. Continued use of the City's existing WWTP to treat approximately 50 percent of the City's wastewater as well as solids from the new scalping MBR facility; and
4. Continued support for the City's highly successful, and award winning, water recycling program.

Following completion of the City's WSFP, Preston supported the review and approval of the plan by Oregon DEQ and also assisted City staff with adoption of the plan through a public process conducted by the Sandy City Council.

WWTP Upgrades and City Engineer of Record Services CITY OF SWEET HOME, OR

REFERENCE: Greg Springman, Public Works Director, 541.367.6359, gspringman@ci.sweet-home.or.us; **TEAM:** Preston Van Meter (Project Manager), Bob Ward (Principal-in-Charge), Walt Meyer (Project Engineer), Alan Armstrong - Strongwork (Architecture); **DATES:** 2018-Present



West Yost is currently serving as the City Engineer-of-Record for the City, providing support on a wide range of tasks, including water distribution and treatment plant upgrades, street and storm drain improvements and wastewater collection system upgrades. Current projects include design upgrades to the Sweet Home WWTP finished water and backwash pump systems, completing a range of WTP SCADA system upgrades, replacement of 2-inch water mains throughout the City's water distribution system and completion of a regional biosolids composting feasibility study in partnership with the nearby communities of Albany and Lebanon.

Preston Van Meter also served as Project Manager for the Sweet Home WWTP Upgrades through preliminary design, helping develop and implement a plan for WWTP upgrades that reduced the estimated project cost from \$45M to under \$30M through an approach focused on reusing, re-purposing and rehabilitating (3R approach) existing treatment plant structures and unit processes to the maximum extent possible. In his role as Project Manager, Preston also supported the City in securing funding including \$9M in earmarks for the Oregon legislature and other grant funds. In fact, over 70 percent of the project funding will ultimately come from non-loan revenues that will not impact user rates!

The Sweet Home WWTP Upgrades includes a new plant headworks with fine screens and grit removal, new primary clarifiers, reusing and reconfiguring the existing aeration basin for nutrient removal, new secondary clarifier, new

primary anaerobic digester, new tertiary filters, new UV disinfection system, conversion of the existing aerobic digester into a secondary anaerobic digester, new solids dewatering facility and covered biosolids storage area, new lab and office building and associated site improvements. Preston continues to support the WWTP final design through his continuing role as City Engineer.

Recycled Water System Expansion and Solids Treatment Upgrades CITY OF COTTAGE GROVE, OR

REFERENCE: Erich Schroeder, Wastewater Superintendent, 541.942.3152, wwsuper@cottagegrove.org; **TEAM:** Walt Meyer (Project Manager), Bob Ward (Principal-in-Charge); **DATES:** 2017-Present



The City of Cottage Grove hired West Yost Associates to design their expansion of the Wastewater Treatment Plant's recycled water system to reduce treated effluent discharge to the Coast Fork of the Willamette River during the dry weather season to stay in compliance with the City's National Pollutant Discharge Elimination System (NPDES) discharge permit limits.

The City has been using recycled water from the WWTP to irrigate an adjacent golf course and the grounds of the community hospital. The Design of the Recycled Water System Expansion Project includes the addition of four new irrigation sites that would provide operation flexibility for meeting discharge requirements and decrease the volume of potable water used for irrigation.

Project improvements include modifications to the existing effluent pump station to install two 7.5 horsepower (HP) high-volume, low-head pumps to transfer recycled water from the chlorine contact basin to the new, lined recycled water storage pond with 29 acre-feet of capacity. Recycled water stored at the pond will be pumped into the recycled water distribution systems using two 75 HP high-head pumps. The distribution piping consists of approximately 1.2 miles of 12-inch purple AWWA C900 DR 14 piping.

In a follow-on project, West Yost is currently working with the City and equipment suppliers to scope a major WWTP

solids expansion that would replace the existing belt filter press (BFP) with a new biosolids centrifuge and dryer within the existing solids building footprint. This solution will allow the City to consistently produce exceptional quality Class A biosolids.

Wastewater Treatment and Pump Station On-Call Contracts

PORTLAND BUREAU OF ENVIRONMENTAL SERVICES, PORTLAND, OR

REFERENCE: Jennifer Coker, Principal Engineer, 503.823.2689, jennifer.coker@portlandoregon.gov; **TEAM:** Walt Meyer (Project Manager), Bob Ward (Principal-in-Charge), Matt Hewitt (Project Engineer); **DATES:** 2000-Present



West Yost has completed the following projects through its on-call contracts:

- **CBWTP Digester 9 & 10 Transfer Pump Replacement:** Performed detailed hydraulic analysis of existing sludge transfer system in order to replace four existing positive displacement pumps with solids handling centrifugal pumps, providing improved reliability and ease of maintenance.
- **CBWTP Wet Weather Primary Sedimentation Tank Rehabilitation:** Evaluation and repair of existing concrete surfaces and structures within the sedimentation tanks. Including small scale testing and comparison of multiple repair products to determine the best site-specific alternatives.
- **Tryon Creek Wastewater Treatment Plant Disinfection Improvements:** Evaluation of existing chlorine contact tanks and chlorine injection system, followed by design of system improvements including feed pump replacement, new feed lines and injection downstream of secondary clarifiers, and secondary injection at aeration basins at high flow. Resulting in better mixing, reduced system feedback lag, and increased flexibility.
- **CBWTP Loop Tank Replacement:** Replacement of aging 12,500-gallon sodium hypochlorite bulk storage tanks and associated piping and valves within the secondary containment area and truck loading area.
- **Ankeny PS Odor Treatment System Rehabilitation:** Predesign evaluation and detailed design for the

replacement odor control system at the Ankeny wastewater pump station. Treating up to 7,500 cfm of foul air from the pump station using granular activated carbon.

- **SW Terwilliger at Northgate Lift Station Evaluation:** Feasibility study and alternatives analysis for a new wastewater lift station to bypass a section of failing gravity sewer due to unstable soil conditions. The study reviewed four different site locations and station configurations in an area with very limited space for a standard lift station layout, driving the need for alternative designs.
- **CBWTP Solids Improvements Design:** Evaluation of dewatering system enhancements including belt filter press (BFP) improvements; gravity belt thickener improvements and development of design document for the conversion of the BFPs to include high pressure zones; and evaluation of anaerobic digestion operations, including enhanced waste activated sludge thickening
- **CBWTP Biogas Turbine Feasibility Study:** Study to determine the technical feasibility and life-cycle cost of installing a small gas turbine or reciprocating engine to utilize digester gas for power production

Wastewater Treatment Plant Improvements

CITY OF JACKSON, CA

REFERENCE: Susan Peters, City Planner, 209.233.1646, speters@ci.jackson.ca.us; **TEAM:** Greg Chung (Project Manager), Kathryn Gies (Process Engineer); **DATES:** 2015-2019



This project included improvements to the wastewater treatment plant process to address new regulatory requirements and to address aging infrastructure. Improvements included conversion of existing oxidation ditches to simultaneous nitrification-denitrification with improved aeration control and instrumentation, construction of a new disc filter facility, conversion from chlorine disinfection to UV disinfection using an inclined lamp configuration, changing from belt press dewatering to screw press dewatering, construction of a new electrical building to increase MCC capacity, up-sizing electrical service to the facility, and installation of a new standby generator. The project was funded using SRF loans. West Yost was also the process design engineer for the project.

06 // REFERENCES



We invite you to contact the client references listed below for feedback on how our team performed.



CITY OF ALBANY

Staci Belcastro, PE

City Engineer

333 Broadalbin Street SW, Albany, OR 97321

541.917.7645

staci.belcastro@cityofalbany.net



CITY OF MEDFORD

Dustin Hagemann

Water Reclamation Division Manager

1100 Kirtland Road, Central Point, OR 97502

541.774.2750

dustin.hagemann@cityofmedford.org



CITY OF PORTLAND

Jennifer Coker

Principal Engineer

5001 N Columbia Boulevard, Portland, OR 97203

503.823.2689

jennifer.coker@portlandoregon.gov

07 // SIGNATURE PAGE



Certifications

As requested in the RFP, we are including the following assurances.

The proposal is valid for 90 days. West Yost is licensed to perform engineering services in the State of Oregon. We certify that the firm is not disbarred, suspended, or otherwise prohibited from professional practice by any federal, state, or local agency.

Bob Ward, PE
Principal-in-Charge | Authorized Representative

503.250.3831 cell
bward@westyost.com

08 // PROJECT FUNDING



Funding and Grants

One of West Yost's strengths is in assisting clients in identifying, applying for, capturing, and implementing project funds through loan and grant programs. Our success is based on maintaining relationships with funding agency staff, solid technical and writing skills, extensive grant/loan application and management experience, and attention to detail. Our expertise includes state and federal programs and working with multi-agency groups to identify funding mechanisms, define institutional relationships, and coordinate documentation and schedule requirements. The following summarize key services provided by our team:



West Yost has assisted over 20 clients in securing over \$450M in funding, and we are in the process of securing an additional \$200M+ for current projects.

Research and Strategy

- Identifying federal, state, local, and private funding opportunities
- Prioritizing opportunities based on timing/schedules and ranking/rating criteria
- Developing integration strategies to enhance and better tailor projects for specific funding programs
- Preparing Strategic Funding Plans that prioritize funding opportunities for a specific program or project

Application Preparation and Submittal

- Communicating and coordinating with funding agencies
- Identifying and coordinating required information for each proposal/application, including the writing and organizing of information
- Completing and submitting full proposals and application packages, on behalf of clients
- Seeking funding for groundwater, recycled water, drought relief and ASR projects, among others

Management and Reporting

- Managing funding disbursement requests
- Managing process of submitting post-award reports to funding agencies, assuring that ongoing funding requirements are met

System for Award Management (SAM) Registration

West Yost and its subconsultants will have active SAM registration by the time the contract is awarded. There are no issues associated with the ability to obtain a SAM registration for these valuable members of our team.

WEST YOST

City of Sandy | Engineering Consulting Services for Sandy Wastewater Treatment Plant
Condition Assessment Improvements Project | October 9, 2020

Not in Page Count

A1 // APPENDIX



Project Team Resumes

On the following pages, we have included one- to two-page resumes for all team members.

Table 5. Project Team Members

TEAM MEMBER	ROLE
Preston Van Meter, PE	Project Manager
Bob Ward, PE	Principal-in-Charge
Walt Meyer, PE	QA/QC
Greg Chung, PE	QA/QC
Matt Hewitt, PE	Project Engineer
Thomas Hendrey, PE (CA)	HVAC
James Ham, EIT	Staff Engineer
Kathryn Gies, PE (CA), ENV SP	Process Engineer
Monique Day, PE (CA)	Funding
Gary Jenks (TAG)	Instrumentation
Ben Perry, PE (Landis)	Electrical Engineering
Allan Goffe, PE, SE (ACE Engineering)	Structural Engineering
Wolfe Lang, PE, GE (McMillen Jacobs)	Geotechnical Engineering
Ron Bush, PE, PLS (Ron Bush Engineering and Surveying)	Survey
Alan Armstrong (Strongwork)	Architectural



Preston Van Meter, PE

Project Manager

Preston is a wastewater expert focused on planning, design, and construction of wastewater treatment and reuse facilities. Preston's experience includes all types of treatment plant expansion projects, ranging from invasive plant retrofits to greenfield membrane bioreactor facilities. Preston has delivered major upgrade projects for 12 Oregon communities that have included initial planning and conceptual design, permitting, final design, bidding, and construction administration. He has also participated in and led value engineering studies for a number of wastewater treatment and infrastructure projects. His collaborative approach and engagement of operators in the design process drives the delivery of innovative and cost-effective upgrades.

EXPERIENCE

Wastewater System Facilities Plan; City of Sandy, OR: Treatment Lead focused on evaluations of the City's existing wastewater treatment plant. The integrated planning effort involved a comprehensive evaluation of the City's wastewater collection system that has very high rainfall-derived inflow and infiltration (RDII) and the existing wastewater treatment plant. Evaluations focused on "balancing investments" between wastewater collection system rehabilitation and wastewater treatment to target the best value strategy for system upgrades. The evaluation led to a recommended \$80M wastewater program involving full rehabilitation of collection system mains and laterals in the City's two largest sewersheds, rehabilitation and expansion of the City's existing WWTP and construction of a satellite MBR treatment plant with a new outfall to the Sandy River.

Sandy Detailed Discharge Alternatives Study; City of Sandy, OR: Project Manager leading a follow-up study to evaluate discharge options for the recommended Sandy Eastside Satellite MBR WWTP and new Sandy River outfall. The study involved a review of potential outfall locations on the Sandy River, expansion of the City's water recycling program to utilize Class A Recycled Water produced by the new MBR facility, hyporheic discharge along the Sandy River and potentially constructing a wetland natural treatment system in nearby Roslyn Lake that was abandoned by PGE following removal of a dam and impoundment.

Wastewater Treatment Plant Progressive Design-Build, Influent Pump Station Upgrades, City of The Dalles, OR: Project Manager for Oregon's first progressive design-build wastewater treatment plant (WWTP) project partnering with Mortenson Construction. The project included rehabilitation and reuse of the existing influent pump station, removing the original dry pit centrifugal pumps and replacing them with Hidrostal screw centrifugal pumps that increased the firm capacity to 18 MGD as required in the WWTP Facilities Plan. The pumps were outfitted with a specialty pump base to replace the typical base elbow so that the pumps could fit in the tight



STAFF TITLE: Principal Engineer II

YEARS OF EXPERIENCE: 26

PROFESSIONAL REGISTRATIONS

- Professional Civil Engineer, Oregon No. 51615
Washington No. 43828

EDUCATION

- MS, Civil Engineering, University of Michigan
- BS, Civil Engineering, Oregon State University
- BS, Business Administration, Oregon State University

PROFESSIONAL AFFILIATIONS

- Oregon Association of Clean Water Agencies
- Pacific Northwest Clean Water Association
- Water Environment Federation

dry pit while maintaining access for plant operations staff. The project was completed in 2018.

Wastewater Treatment Plant Improvements Project; City of Sweet Home, OR: As project manager, Preston led the 20% Schematic Design and Final Design of the Sweet Home WWTP expansion project. The project focused on rehabilitation, reuse, and re-purposing of existing WWTP unit processes and upgrades to increase capacity from 7 MGD to 12 MGD. The approach developed by Preston eliminated the use of a high rate side stream treatment process to rehabilitation of the existing facility, reducing the project cost from \$45M to \$28M.

- Liquids stream upgrades included rehabilitation and capacity expansion of the existing IPS to 12 MGD, new headworks with multi-rake screens and grit removal, new primary clarifier, aeration basin rehabilitation and expansion targeting total nitrogen reduction to under 10 mg/l, new tertiary filters, conversion to UV disinfection, and a new outfall to the South Santiam River.
- Solids stream upgrades include solids thickening for co-thickening or WAS, new primary anaerobic digester, conversion of the aerobic digester to the secondary anaerobic digester, new screw press solids dewatering facility, and biosolids loadout for transfer to an offsite Class A biosolids composting facility.
- Other upgrades include a new Administration, Lab and Office Building, new gated entrance, major civil/site upgrades. Funding support was provided for this project that will receive nearly \$20M in non-loan funds through grants and local savings. Permitting support was also provided for the new outfall as well as re-negotiation of the City's NPDES Permit to provide for a mass load increase that will provide discharge capacity for the next 40-50 years.

Wastewater Treatment Plant Improvements Project, City of Sweet Home, OR: As project manager, Preston led the 20% Schematic Design and Final Design of the Sweet Home WWTP expansion project. The project focused on rehabilitation, reuse, and re-purposing of existing WWTP unit processes and upgrades to increase capacity from 7 MGD to 12 MGD. The approach developed by Preston eliminated the use of a high rate side stream treatment process to rehabilitation of the existing facility, reducing the project cost from \$45M to \$28M. Liquids stream upgrades included rehabilitation and capacity expansion of the existing IPS to 12 MGD, new headworks with multi-rake screens and grit removal, new primary clarifier, aeration basin rehabilitation and expansion targeting total nitrogen reduction to under 10 mg/l, new tertiary filters, conversion to UV disinfection, and a new outfall to the South Santiam River. Solids stream upgrades include solids thickening for co-thickening or WAS, new primary anaerobic

digester, conversion of the aerobic digester to the secondary anaerobic digester, new screw press solids dewatering facility, and biosolids loadout for transfer to an offsite Class A biosolids composting facility. Other upgrades include a new Administration, Lab and Office Building, new gated entrance, major civil/site upgrades. Funding support was provided for this project that will receive nearly \$20M in non-loan funds through grants and local savings. Permitting support was also provided for the new outfall as well as re-negotiation of the City's NPDES Permit to provide for a mass load increase that will provide discharge capacity for the next 40-50 years.

WWTP Improvements Project; City of Hubbard, OR: Project Manager for the design and construction of improvements at the City's wastewater treatment plant, including a new headworks, new aeration blower complex, conversion of an existing Schreiber Counter-Current Aeration Basin to a conventional activated sludge treatment process with an upstream anoxic selector and a new solids dewatering facility with a centrifuge and biosolids holding and loadout bay.

WWTP Improvements Project; City of Vernonia, OR: Project Manager leading the design and construction management of improvements at the City of Vernonia's wastewater treatment plant. Phase 1 includes the design and construction of 3 pump stations, a new 8,000-foot force main, new WWTP headworks and membrane pilot testing for production of Oregon Level IV reclaimed water. Phase 2 will include a major upgrade of the existing lagoon system, including lining the lagoons, a new lab and operations building, installation of a SCADA system for the WWTP and pump stations, construction of membrane facilities and a new chlorine contact chamber. The project also involves ongoing negotiations with DEQ, funding assistance and a rate study and construction of a mitigation wetland on City-owned property adjacent to the WWTP.

City Engineer-of-Record, City of Rainier, OR: Project Manager serving as contract City Engineer providing a broad range of services including construction support for the A Street Improvements Project through downtown, WTP evaluation and condition assessment, NPDES Permitting support, WWTP filter evaluation and upgrades, development of a wastewater collection system rehabilitation program to reduce inflow and infiltration (I/I), evaluation of the 84-inch Fox Creek culvert for meeting fish passage requirements for endangered salmonid species, attendance at City Council meetings and other miscellaneous projects and duties.



Bob Ward, PE

Principal-in-Charge

Bob is a West Yost Vice President with over 35 years of experience providing design, project management, and construction supervision on water and wastewater projects in the West. Bob is experienced in water treatment, operation, and management and has been working on water and wastewater infrastructure projects throughout his career. Bob has served as project manager or principal-in-charge for work on the five largest water treatment facilities in Oregon as well as ten alternative deliver projects. Bob has also been involved in planning, design, and construction phase support for water storage reservoirs, water, and wastewater pumping facilities and wastewater treatment plant improvements. Bob has provided leadership and support to projects and on-call contracts for major utilities, including Portland BES, King County, Seattle Public Utilities, City of Spokane, and San Francisco PUC.

EXPERIENCE

Wastewater Treatment On-Call, Portland Bureau of Environmental Services (BES), Portland, OR: Principal-in-Charge for the contract, which involves planning, design, and construction phase support for treatment projects at both BES WWTP and at remote sites with treatment systems. Bob's primary role is ensuring overall client satisfaction, compliance with the City of Portland's diversity goals, and supporting the West Yost team.

Grabhorn Reservoir Replacement Owner's Representative and Project Management, Tualatin Valley Water District (TVWD), Beaverton, OR: Principal-in-Charge, responsible for oversight of West Yost's Owner's Representative and Project Management services to assist TVWD with the Grabhorn Reservoir Replacement Project. Replacement of the existing reservoir with a new 5 MG, partially buried, AWWA D-110 concrete tank by March 2019 using Progressive Design Build is moving forward as scheduled. Prepared materials for a workshop with TVWD staff on project delivery options and a structured approach to assess and select the preferred project delivery method for the Grabhorn Reservoir. Developed the findings and Board resolution that meet Oregon Revised Statute 279C.335 supporting an exemption from the competitive bidding process. Worked closely with District staff to develop the presentation for the required Public Hearing and subsequent TVWD Board approval of Progressive Design Build (PDB). Preparing RFP for the selection of a PDB team.

Washington Park Improvements Project, Portland Water Bureau, Portland, OR: Principal-in-Charge. Project includes the replacement of the existing historical Washington Park Reservoirs No. 3 and No. 4 with a 14 MG concrete reservoir, support structures, facilities and up to 30-inch welded steel piping; and modifications required to disconnect Reservoir No. 4. Key elements include permitting facilities in an Olmsted-designed park and developing new water features to replace the existing open reservoirs. Developed documents for and assisted in the CM/GC procurement and selection of Hoffman Construction. Construction cost is \$152 million.



STAFF TITLE: Vice President

YEARS OF EXPERIENCE: 37

PROFESSIONAL REGISTRATIONS

- Professional Civil Engineer, Oregon No. 58810
Washington No. 43096

EDUCATION

- MS, Environmental Studies, University of Montana
- BS, Civil Engineering, Montana State University

PROFESSIONAL AFFILIATIONS

- American Water Works Association
- Water Environment Federation
- AWWA Microbial/Disinfection By-Product Technical Action Workgroup Member
- Chi Epsilon Civil Engineering Honorary Society

Pump Stations On-Call, Portland BES, Portland, OR: Principal-in-Charge for the contract, which involves planning, design, and construction phase support for pump station projects throughout the BES collection system. Bob's primary role is ensuring overall client satisfaction, compliance with the City of Portland's diversity goals, and supporting the West Yost team.

Yakima Regional Wastewater Treatment Plant Facility Plan, City of Yakima, WA: Project director for an interdisciplinary team that evaluated the impacts of future growth and food processing systems. Major points of evaluation and recommendation included trickling filter improvements, aeration basin modifications, blower replacement, additional secondary clarification, disinfection alternatives, reuse capability, odor control improvements, plant backup power capacity improvements, SCADA replacement, anaerobic digestion improvements, waste activated sludge thickening capacity increase, biosolids dewatering increase, and options for Class A biosolids production. A bond parity study was conducted to make recommendation of treatment and collection project funding and implementation.

Yakima Wastewater Treatment Plant, City of Yakima, WA: Project director for seven years, providing oversight of the design team for Phase 1 improvements and construction of the recommended first-phase facilities, including pre-procurement of single-stage blowers and centrifuge dewatering equipment. Major improvements included new solids handling building, new blower building, and other enhancements.

Elliott West CSO Control Facility Construction Support, King County Department of Natural Resources, WA: As Project Director, Bob oversaw construction support services on the Elliott West CSO Control Facility. This station is designed to treat and convey combined sewer overflow flows up to 250 mgd, ultimately 300 mgd, using six (to seven) variable speed pumps. This facility pumps CSO water from a 1.25-mile-long, 15-foot-diameter tunnel up to a treatment channel where combined wastewater is screened and disinfected and then dechlorinated prior to discharge to a marine outfall in Elliott Bay.

Sanitary Sewer, Stormwater, and Water Pipeline Renewal and Replacement Planning, City of Bellevue, WA: As project manager for this pipeline renewal and replacement planning project, Bob reviewed results of past planning efforts, provided a statistical evaluation of the city's pipeline condition data, and recommended improved procedures and tools. Data from the City's video sewer inspection program was evaluated to identify factors associated with failures. Criticality definitions were reviewed. Although past water system leak detection programs have not found many leaks, there was a concern about the structural integrity of some categories of water pipe, which will be further investigated. Project products included recommendations for service level goals, recommendations for prioritizing future

condition assessment work, recommendations for prioritizing individual pipe renewal or replacement, estimates of anticipated useful life for each major pipe material, and impact of variables, such as diameter, location, and soil condition.

Odor Study, City of Yakima, WA: Bob served as Project Director for a comprehensive odor control study for the City's regional wastewater treatment plant, which included multi-day on-site sampling activities, a relative ranking of odor sources, and preparation of recommended both short- and long-term actions. The short-term recommendations included pilot testing a liquid-phase nitrate-chemical addition to the plant influent. If this method of control is ineffective, long-term recommendations included covering odor sources and venting the source to the existing chemical scrubber system or new carbon treatment units, depending on the source location. In addition, a pilot test of an ozonation-based technology was accomplished, indicating that this technology was not effective for application at the site.

Speedway Interceptor, City of Yakima, WA: Bob served as the Project Director, conducting a route evaluation for a new 36-inch gravity interceptor sewer two miles long. The project was broken into two phases: the first was a mile long and the alignment was within the Washington State Department of Transportation (WS DOT) right-of-way. The design required close coordination with WS DOT to obtain the necessary permits and coordination with interstate and state highway improvements along the alignment. To streamline WS DOT construction activities associated with the highway improvements and construction of the new interceptor, the design of the sanitary sewer was incorporated into the WS DOT bid package for the highway improvements.

Alaskan Way Viaduct & Seawall Project, Washington State Department of Transportation, Seattle, WA: Bob served as the Project Manager for this joint effort by the WS DOT, the Federal Highway Administration, and the City of Seattle to replace two critical elements of Seattle's infrastructure: the Alaskan Way Viaduct and the City of Seattle Seawall. A field data calibrated hydraulic and hydrologic InfoWorks computer model of 455 acres of the downtown Seattle area provided the quantitative basis for exploring design and operational aspects of various combined sewer and stormwater system scenarios, as well as to facilitate impact assessment of re-plumbing the Seattle waterfront and Alaskan Way Viaduct project area. Located and sized pipelines and storage facilities for construction and long-term operation of the City of Seattle collection system. Bob was responsible for the overall project success, including setting goals, assigning staff, and ensuring deliverables met client expectations.



Walt Meyer, PE

QA/QC

Walt is an engineer with experience in water and wastewater planning, design, and construction. He has managed multi-disciplined project teams for various water, wastewater, storm water, and environmental services projects. Walt has directed facilities planning for wastewater programs for many communities and also has extensive design experience including wastewater treatment plants, pumping stations, large diameter pipelines, and water facilities. He has managed infiltration/inflow assessments, sludge management evaluations, financial plans, environmental assessments, and rate studies for many communities. Walt is very familiar with Oregon's water quality standards and has a history of successful negotiation with regulatory agencies on behalf of clients.

EXPERIENCE

Design and Construction Management of Various Wastewater Treatment Plants in the Pacific Northwest: As Principal-in-Charge, Project Manager and Project Engineer, projects include improvements such as pretreatment, influent pumping, headworks, screening, grit removal, primary sedimentation, secondary treatment process, odor control, sludge dewatering, sludge digestion, solids handling, ultraviolet disinfection, outfall and pipeline systems, energy conservation measures, and cogeneration facilities. Clients include:

- City of Corvallis
- City of Cave Junction
- City of Grants Pass
- City of Brookings
- City of Boise, ID
- City of Albany
- City of Medford
- City of Portland
- City of Salem
- Clackamas County
- City of Bandon
- City of Creswell
- Clean Water Services of Washington County
- City of McMinnville
- South Suburban Sanitary District

Headworks Rehabilitation, City of Salem, OR: Project manager to address ongoing problems with the City's influent pumps and headworks. Pump clogging and excessive operator intervention for de-ragging required innovative solutions for improvements that met the City's limited budget. Walt Meyer designed a new headworks with a capacity of 100 mgd including a climber screen and screening handling. All of the screenings were pulled to the top floor by the screen for handling and storage which avoided conveyors and their associated maintenance. This project eliminated the need for the operators to enter the wet well on a weekly basis which had been a dangerous duty.

Easterly Wastewater Treatment Plant Expansion Design, City of Vacaville, CA: Principal Engineer and QA/QC for design of \$66 million upgrade and expansion project to the City's wastewater treatment plant, from an average dry weather capacity of about 6 mgd to 15 mgd (peaks to 55 mgd). The project was planned, designed and constructed in two phases.



STAFF TITLE: Engineering Manager II

YEARS OF EXPERIENCE: 50

PROFESSIONAL REGISTRATIONS

- Professional Civil Engineer, California No. 22399

EDUCATION

- BS, Civil Engineering, Oregon State University

PROFESSIONAL AFFILIATIONS

- Oregon Association of Clean Water Agencies
- Pacific Northwest Clean Water Association
- Water Environment Federation

AWARDS

- Pacific Northwest Clean Water Association – 2009 President's Award
- 2012 ACWA Outstanding Member Agency Award for Advancing Water Quality Trading

The first phase consisted of an Interim Improvement project for the purpose of enhancing the capacity of the existing plant to meet treatment needs until the larger expansion project was completed. This includes a rehabilitation of the aging headworks facility. Design for the new facilities included headworks screening and pumping facilities, aerated grit removal, primary clarifiers, secondary treatment facilities, chlorine disinfection facilities, solids handling facilities, and foul air collection and treatment facilities.

Design-Build Owner's Representative, Wastewater Treatment Plant Improvements, City of Davis, CA: QA/QC Manager for Owner's Representative program that will manage the Design-Build procurement process for improving the City's 7.5 mgd treatment plant to meet NPDES requirements. These improvements represent approximately \$95 million in project costs. This includes QA/QC for preliminary design report, 30% design, and DB RFQ/RFP, documents.

Rock Creek Treatment Plant Expansion, Clean Water Services of Washington County, OR: As Project Manager, completed the design of the primary treatment expansion including influent pumping station and force mains, new headworks with screening and odor control, grit removal, new 25 mgd primary treatment, and upgrading of the existing primaries, flow control, and other miscellaneous plant improvements. This headworks provided a peak flow capacity of 100 mgd.

Ammonia Evaluation, City of Salem, OR: Prepared the plan of study for the Salem Ammonia Evaluation in compliance with the City's NPDES permit. Evaluated data including the in-river impacts.

Mixing Zone Study, Outfall and Diffuser Design, Albany Water Pollution Control Plant, City of Albany, OR: As Principal-in-Charge, provided oversight for this Willamette River study including field dye study and data collection. A new 54-inch diameter outfall with multi-port diffuser was designed and constructed.

Mixing Zone Study and Outfall Design, City of Portland Bureau of Environmental Services, OR: As Principal-in-Charge, provided oversight for the Columbia Boulevard Wastewater Treatment Plant outfall and dilution study, outfall design and construction, and negotiation for a larger regulated mixing zone.

Mixing Zone Study, Clean Water Services of Washington County, OR: As Principal-in-Charge, provided oversight for two Tualatin River studies, including dye studies and field data collection.

Planning and Design of Water Quality Control Plant Expansion, City of Medford, OR: Managed the design of the headworks bar screen, aerated grit removal, fine bubble aeration, blower replacement, trickling filter, secondary clarifiers,

retrofit and new clarifiers, pumping station, RAS pumping, anaerobic digesters, outfall, and cogeneration. Recently managed the design of the reclaimed water distribution pipeline.

Wastewater Treatment System Improvements, Winchester Bay Sanitary District: Principal-in-Charge and QA/QC for design of a new wastewater treatment plant. Improvements plant included a new screen, grit removal system, sequencing batch reactor (SBR) secondary treatment process, aeration system, sodium hypochlorite disinfection system, chlorine contact basin, sodium bisulfite dechlorination system, effluent pump station, aerobic digester, and operations building.

Columbia Boulevard Wastewater Treatment Plant NPDES Permit Negotiations and Facilities Plan, City of Portland Bureau of Environmental Services, OR: As Principal-in-Charge, Walt assisted the City in the negotiation of the NPDES permit required for the new Wet Weather Treatment Facility. Also lead the basis of planning task related to water quality impacts for the plant facilities plan.

West Basin Facilities Plan, Clean Water Services, OR: Project Manager for a comprehensive plan to evaluate the best long-term option to serve western Washington County. The project included facilities plans for both the Forest Grove and Hillsboro Facilities and integration of the planning with the Reclaimed Water Master Plan.

Facilities Planning: Various Oregon wastewater treatment plants, including the following:

- City of Coos Bay
- City of Canyonville
- City of Gresham
- City of Albany
- City of Medford
- City of Creswell
- City of Grants Pass
- City of Brookings
- City of Portland
- City of Lebanon
- South Suburban Sanitary District
- City of Cave Junction
- Winchester Bay Sanitary District
- Clean Water Services of Washington County

CSO Management Plan, City of Portland Bureau of Environmental Services, OR: Project Manager, Principal-in-Charge and Advisor for the plan that included extensive system modeling to define conveyance needs for Portland's combined sewer system. Initiated the planning effort as project manager. Provided technical review and guidance on regulatory issues in negotiations for the Stipulation and Final Order, which was negotiated between the city and the Oregon Department of Environmental Quality.



Greg Chung, PE

QA/QC

Greg has experience in a wide range of civil and environmental engineering disciplines; he specializes in wastewater treatment, biosolids management, and resource recovery at wastewater treatment plants. His experience includes planning, design, construction related services, and start-up and commissioning of wastewater treatment, water recycling facilities, and resource recovery facilities. Greg has also executed projects in a variety of project delivery methods, including design-bid-build, design-build, design-build-operate, and energy performance contracting.

EXPERIENCE

Wastewater Treatment Plant Improvements Phase 1 Upgrades, Schedule A.B.

– Solids, City of Pendleton, OR: Served as Technical Advisor and provided Quality Control for solids upgrades design project at the wastewater treatment plant that included digestion improvements, dewatering building improvements, and addition of a FOG receiving station. FOG receiving station includes 13,500 gallons of storage and mixing and metering equipment to dose the digestion system.

Energy Independence Project, Oregon Association of Clean Water Agencies,

Portland, OR: Team Leader. Purpose of project was to investigate how domestic wastewater treatment plants could most effectively eliminate purchase of electricity and become energy-independent. This included identifying energy efficiency measures, determining WWTP energy profile, assessing and evaluating renewable resources, ranking resources, and developing recommendations. Possible renewable resources that were identified included digester gas fuel cells, digester gas reciprocating engines, digester gas microturbines, micro-hydropower turbines, solar PV, on-site wind turbines, and fats, oils, and grease (FOG) and food scrap waste co-digestion for additional digester gas production. Served as alternative energy engineer responsible for evaluating and quantifying benefits of digester rehabilitation and co-digestion of FOG and food scrap waste streams for the purposes of maximizing digester gas production.

Wastewater Treatment Plant Improvements, City of Jackson, CA: Project Manager for improvements to the plant to address new regulatory requirements and aging infrastructure, including conversion of oxidation ditches to simultaneous nitrification-denitrification with improved aeration control and instrumentation, construction of a disc filter facility, conversion from chlorine disinfection to UV disinfection using inclined lamp configuration, changing from belt-press to screw-press dewatering, construction of an electrical building and MCC capacity, up-sizing electrical service, and installation of a standby generator.

Mule Creek Wastewater Treatment Facility, California Department of Corrections & Rehabilitation (CDCR), Amador County, CA: Quality Control Reviewer for design of WWTP Improvements including new mixed liquor flow splitter structure, new secondary



STAFF TITLE: Vice President

YEARS OF EXPERIENCE: 25

PROFESSIONAL REGISTRATIONS

- Professional Civil Engineer, California No. 58710, Oregon No. 91820, Hawaii No. PE-9870

EDUCATION

- MS, Civil and Environmental Engineering, University of California, Berkeley
- BS, Civil Engineering, University of Hawaii, Manoa, Hawaii

PROFESSIONAL AFFILIATIONS

- Water Environment Federation
 - Municipal Wastewater Treatment Plant Design Committee
- California Association of Sanitation Agencies
- California Water Environment Association
 - Past Chair Santa Clara Valley Section
- Hawaii Water Environment Association
 - Past Annual Conference Co-Chair
- Chi Epsilon
 - Past Alumni Association President, Hawaii Chapter

clarifier, new chlorine contact basin and new operations building. Facility utilizes oxidation ditch and on-site dewatering with belt filter press.

Energy Performance Contracting for Wastewater

Treatment Facilities, County of Kauai, HI: Project Manager for project working for Chevron Energy Solutions to develop an Investment Grade Audit for energy savings projects at three domestic wastewater treatment facilities owned and operated by Kauai County. Process-energy audits were conducted for each facility and a range of energy savings and renewable energy measures were developed. Measures included waste-to-energy utilizing existing anaerobic digesters, high-efficiency blowers for aeration, conversion to fine bubble aeration, conversion from DAF to mechanical sludge thickening, and primary sludge pumping improvements.

Schofield Barracks Wastewater Treatment Plant, Digester Rehabilitation Project, Aqua Engineers, Wahiawa, HI:

Project manager for design of digester rehabilitation. Project included digester cover upgrades, digester mixing improvements, digester heating improvements, a new cogeneration system, and a new hot water loop system. Digester volume is 330,000 gallons and improvements were designed to allow the facility to co-digest hauled organic waste streams.

Lake Wildwood WWTP Upgrade, Nevada County, CA:

Project Engineer for the development of a preliminary design report for upgrading chlorine disinfection system to UV, replacing an existing aerobic digester with new digestion system, providing facilities for septage receiving, upgrading existing lab facilities, improving odor control, upgrading existing pressure filtration system, upgrading non-potable water distribution system, and improvements to existing emergency storage pond.

Many Glacier Sewer System and Wastewater Treatment Plant, Glacier National Park, West Glacier, MT:

Process engineer for the evaluation of an aerated lagoon wastewater treatment plant. The aerated lagoon is 14 feet deep with a 3:1 side slope and a surface area of 1.13 acres. The pond was designed to contain 12 aerators and is lined with the original 45-mil PVC liner. Project included condition assessment of existing wastewater treatment facilities as well as providing recommendations for process improvements to meet regulatory discharge requirements. The treatment system consists of the headworks, aerated lagoon and control building. The control building contains an office, a power supply and panel, control panel, two air pumps, a recirculation pump, a chlorine injector and two 5,500-gallon subsurface chlorine contact tanks.

Lake of the Pines Wastewater Treatment Plant Design, Nevada County Sanitary District 1, Nevada City, CA:

Project engineer for the development of detailed design documents for the upgrade of an existing 0.6 mgd (ADWF) wastewater treatment plant to meet new stringent limitations for ammonia, nitrate, nitrite, aluminum, total coliform, and turbidity prior to surface water discharge. Project design was completed in nine months to meet an aggressive regulatory deadline. Project included the following elements:

- Retrofit of the existing influent pump station including new wet well, pumps, variable frequency drives and magnetic flow meter
- Installation of preliminary treatment consisting of fine screening and grit removal
- Installation of a biological treatment system consisting of various anaerobic, anoxic, aerobic and MBR tanks
- Conversion of half of the existing chlorine contact tank to a UV disinfection tank
- Installation of aerobic sludge digesters
- Installation of a centrifuge dewatering system and building
- Installation of 350 kW emergency standby generator and building

El Portal Wastewater Treatment Plant UV Disinfection System, National Park Service Yosemite National Park, CA:

Project Engineer. Designed UV disinfection system to replace existing gaseous chlorine disinfection system. The existing treatment plant treated wastewater generated from Yosemite National Park and flows varied significantly between summer and winter. Facility was sized for 1.0 mgd flow rate with 2 channels to be used to manage varying flow conditions. Project included evaluation of disinfection alternatives to eliminate the use of chlorine gas at the wastewater treatment plant. Alternatives investigated included sodium hypochlorite, ozone, and UV disinfection.

Memorial Park Wastewater Treatment Plant Preliminary Engineering Report, County of San Mateo Loma Mar, CA:

Project Engineer. Report investigated replacement and rehabilitation options for the existing 30,000 gpd extended aeration wastewater treatment facility. Replacement options investigated included package extended aeration plants and a decentralized treatment system consisting of septic tanks and recirculating sand filters. The report evaluated alternatives based on ability to effectively treat wastewater, cost of construction, cost of operation and maintenance, and impacts to the environment and park users.



Matt Hewitt, PE

Project Engineer

Matt is a civil and environmental engineer who provides design for water and wastewater infrastructure, including pump stations, pipelines, and water and wastewater treatment facilities. His design experience includes advanced membrane treatment, chemical feed systems, water and wastewater pump stations, force mains, and other treatment processes. Matt has served as Resident Engineer during treatment plant start-up activities and provided construction oversight, pump system start-up, and operator training.

EXPERIENCE

Tryon Creek Water Treatment Plant Disinfection Improvements – Phase 1, Bureau of Environmental Services, OR: Project Engineer/Internal Project Manager for the development of design documents for improvements to the sodium hypochlorite injection system, including pump replacement, yard piping, and injection points.

Columbia Boulevard Water Treatment Plant DG 9 and 10 Transfer Pump Replacement, Bureau of Environmental Services, OR: Engineer/Internal Project Manager for evaluation and preliminary design, followed by the detailed design of replacement of digester transfer pumps.

Wastewater Treatment Plant Biogas Cogeneration Conceptual Design, Clean Water Services, Portland, OR: As Project Engineer, provided valuation and schematic design of a biogas cogeneration system utilizing brown grease at a municipal wastewater facility. Tasks included preliminary sizing, cost estimating, payback calculation, and extensive assistance with the client to generate the application material for state and federal renewable energy grants.

Washington Park Reservoir Improvements, Portland Water Bureau, OR: Project Engineer for civil and mechanical design modifications during construction, including detailed design documents for reservoir outlet pipelines, site stormwater pipelines, and other process mechanical and civil design changes. Additional engineering services during construction included submittal review and responses to contractor requests for information.

Combined Sewer Overflow Air Venting Facilities, Portland Bureau of Environmental Services, OR: Design Lead for mechanical and civil design of air venting structures to safely relieve periodic bursts of pressurized air traveling through existing CSO tunnels. Design included buried vaults, valves, and vent grating in the roadway at three separate urban locations, constrained by existing buried utilities and structures.



STAFF TITLE: Senior Engineer II

YEARS OF EXPERIENCE: 12

PROFESSIONAL REGISTRATIONS

- Professional Civil Engineer, Oregon No. 86320PE

EDUCATION

- MS, Environmental Engineering, Colorado State University, Fort Collins, Colorado
- BS, Biology, Colorado State University, Fort Collins, Colorado

PROFESSIONAL AFFILIATIONS

- Pacific Northwest Clean Water Association
- American Water Works Association, Pacific Northwest Section

Water Treatment Plant Expansion, City of Cottage Grove,

OR: Project Manager for the evaluation and design of the 2 million gallon per day (mgd) expansion to the existing membrane filtration process. The expansion included ultrafiltration membranes, pre-screens, process piping, and yard piping.

30,000 GPD Water Treatment Plant Design Lead, United States General Services Administration, Piegan, MT:

Lead Process Designer for a new membrane treatment plant that includes a packaged microfiltration system, chemical injection system, finished water distribution pumps, and ancillary treatment plant systems. The project serves a small federal facility in a remote, cold-weather location. Responsibilities included preparing calculations and developing construction drawings and specifications for design-build delivery.

430 MGD Wastewater Treatment Plant Upgrade, Annacis Island Wastewater Treatment Plant, Metropolitan Vancouver, BC:

Project Engineer for the mechanical design of new automatic level control gates and large automated isolation gates for the expansion of effluent chlorine contact basins and a new outfall. Additional responsibilities included preliminary design of a large (580 mgd build-out) effluent pump station and civil design of 120-inch buried effluent conduits.

17.4 MGD Water Treatment Plant Design and Construction, Bay County Department of Water and Sewer, Bay City, MI:

Project Engineer and Lead Designer for a membrane wastewater recovery system. Work included performing calculations and developing bid drawings and specifications for parallel plate clarifiers, wash water pumping systems, and sludge pumping systems. Led engineering services during construction, including submittal coordination and review and requests for information review and management.

105 MGD Rinconada Water Treatment Plant Reliability Improvement Project, Santa Clara Valley Water District, Los Gatos, CA:

Project Engineer and Lead Designer for a sodium hypochlorite containment and metering facility. Responsible for preparing design drawings, calculations, and specifications for eight metering pumps and associated equipment, feeding six application points. Also developed designs for a caustic soda metering system retrofit and a flocculation basin foam suppression system.

Reverse Osmosis Industrial Water Treatment Plant, Confidential Client, Umatilla, OR:

Project Engineer and served as Resident Engineer during plant start-up activities. Responsibilities included construction oversight, pump system startup, and operator training.

Riverfront Interceptor Lift Station and Forcemain Project, City of Albany, OR:

Engineer/Internal Project Manager for the design of a 12,500 gpm wastewater lift station and over 7,000 feet of 30-inch forcemain.

Crescent Valley Lift Station Replacement Project, Corvallis, OR:

Engineer/Internal Project Manager for the design of a 200 gpm replacement wastewater lift station.

Avery Lift Station Replacement Project, Corvallis, OR:

Engineer/Internal Project Manager for the design of a 100 gpm replacement wastewater lift station.

Wet Weather Lift Station and Forcemain, City of Albany, OR:

Project Engineer for the Riverfront Sewer Interceptor Lift Station and Forcemain project. The project includes design of a new 12,500 gpm lift station and 1 1/3 miles of 30-inch force main. The project will provide the City with the necessary peak flow capacity during high-flow conditions and will be integrated into the City's wastewater utility to eliminate sewage overflows into the Willamette River.

Foothill Raw Water Pipeline – Phase 2, Placer County Water Agency, Auburn, CA:

Project Engineer for the design of approximately 14,000 feet of 39-inch and 33-inch steel raw water pipeline, 7,000 feet of 18-inch DIP-treated water pipeline, hydraulic stand pipe, energy dissipation structure with sleeve valves, other associated control valves and meters, and small booster pump station and hydropneumatic tank.

24-Inch Water Main Replacement, Seattle Public Utilities, WA:

Project Engineer, providing civil design of 1,400 feet of water main replacement through an extremely congested metropolitan area. Design included: pipe material alternatives analysis; water main plans, profiles, and connection details; and temporary service connections.

Port of Portland Airport Deicing Fluid Collection and Treatment System Enhancement, Portland, OR:

Project Engineer for mechanical design of new and upgraded stormwater pumping systems, ranging in size from 200 gpm to 24,000 gpm. Tasks included: hydraulic calculations; preliminary, detailed, and bid set drawings and specifications; cost estimating reviews; and coordination with other disciplines. Provided design services for buried industrial wastewater force mains ranging in size from 2 to 32 inches, including hydraulic calculations, preliminary, detailed, and bid set drawings.



Thomas Hendrey, PE

Mechanical/HVAC

Tom is a civil, chemical, and mechanical engineer specializing in engineering design, construction services, start-up, operations, and troubleshooting of water and wastewater treatment plants and associated infrastructure. His experience includes serving as a lead mechanical engineer providing constructability and quality reviews. Tom's areas of expertise include energy management and efficiency improvements to optimize energy consumption at water and wastewater treatment plants; equipment start-up, testing and diagnostics; hydraulics, pump system design, and troubleshooting; cogeneration, alternative and standby energy system; and odor master plans, systems design, and testing. For 12 years, Tom was a member of Hydraulic Institute technical committees for new national pump standards for intake design, performance testing, NPSH margin, and mechanical testing (vibration). His experience also includes "green" energy projects including pipelines, pump stations, pump testing and troubleshooting, cogeneration engines, microturbines, gas turbines, anaerobic digesters and gas collection systems, digester heating systems, compressors, aeration blowers, cranes, conveyors, heat loops, odor systems, and HVAC systems.

EXPERIENCE

Engine Projects, Various Clients: Project manager and design engineer multiple on-site power projects including: Two 1-mW gas engine-generators at Vallejo SFCD, three 500 kW standby systems for the City of Pittsburg, CA, a 1,000 kW standby power engine for Union SD's Irvington Pump Station, five 1,500-kW engine generators for the Sacramento Regional Wastewater Treatment Plant and two 1,600-kW diesel units at Central Contra Costa Sanitary District.

Various Energy Projects, Dublin San Ramon Services District, CA: Lead Engineer for energy projects over last 11 years. Cogeneration master plan; Plant heat balances; Air emissions testing; Air permitting; Air permit violation analysis (proved no violation); Digester gas treatment; Fuel cell project; Engines converted to rich burn with catalysts; Developed cogeneration cost model (for buy gas versus buy power decisions); and Developed recycled water system pump operating strategies to minimize energy consumption.

Maintenance Building HVAC, City of San Mateo, CA: Project manager and design engineer for preparation of construction documents for replacement of the failed maintenance building HVAC system. The new system provided high energy efficiency and improved locker room humidity control.

Cogeneration Electrical Improvements and Service Relocation, Dublin San Ramon Services District, CA: Project Manager. Led team with TJC & Associates providing detailed engineering to replace and upgrade the 2 mW cogeneration electrical system and relocate the 21 kV plant service facilities.



STAFF TITLE: Principal Engineer II

YEARS OF EXPERIENCE: 43

PROFESSIONAL REGISTRATIONS

- Professional Civil Engineer, California No. C51550
- Professional Chemical Engineer, California No. CH4479
- Professional Mechanical Engineer, California No. M33235

CERTIFICATIONS

- Qualified Instructor for Pump Systems Matter Energy Efficiency Initiative, Hydraulic Institute
- Qualified US DOE Pump PSAT Specialist

EDUCATION

- MS, Civil/Environmental Engineering, University of California, Berkeley
- BS, Chemical Engineering, University of New Mexico, Albuquerque

PROFESSIONAL AFFILIATIONS

- California Water Environment Association, 2012 Board, President of San Francisco Bay Section

Wastewater Plant Evaluation, City of San Mateo, CA: Project Manager for the evaluation of the 21kV electrical service. TJC & Associates provided electrical engineering.

Digester Gas Piping System, Delta Diablo Sanitation District, CA: Lead Engineer for all new digester gas (DG) piping system, a DG chiller and a DG siloxane removal system for cogeneration at Delta Diablo Sanitation District. Mechanical Engineer for new mixing, heating, and covers. Also wrote Operations and Maintenance Manual.

FOG Receiving Station, Silicon Valley Clean Water, Redwood City, CA: Project Manager/Engineer for FOG receiving station and for two new flares at SVCW in Redwood City. Evaluated gas pipes & flares for City of Hayward.

Energy Audits, CalPOP, Rodeo and South San Francisco, CA: Lead engineer for CalPOP energy audits at Rodeo and South San Francisco. Lead engineer for two turbo blower projects at South San Francisco.

Wastewater Treatment Plant Upgrade, Clark County, NV: Design engineer for aeration blower technical specifications and performed QC review for 1200 hp aeration blower.

Plant Upgrade, Reno/Sparks Truckee Meadows Water Reclamation Facility, NV: Design engineer for the evaluation of digester gas gathering and alternative cogeneration systems for the Reno/Sparks Truckee Meadows Water Reclamation Facility.

Coney Island Engine Upgrades-Value Engineering, City of New York, Department of Environmental Protection, NY: Tom was part of a team providing value engineering for the City of New York, Department of Environmental Protection for a \$120 million cogeneration and standby power project at the 80 mgd Coney Island Wastewater Treatment Plant. Provided mechanical engineering review of the 30 percent design that included two 1.8 megawatt gas cogeneration engines, two 2.2 megawatt diesel standby engines, digester gas treatment, building ventilation and supporting auxiliary systems.

Chemical System Upgrades, Various Clients, CA: Design engineer for chemical systems projects including Contra Costa Water District (CCWD). Upgrades to various chemical systems for Dublin San Ramon Services District (DSRSD). Upgrades to ferrous chloride storage and injection system for the City of Daly City North San Mateo County Sanitary District (in Daly City). Upgrades to chemical systems for recycled water project for the City of Fresno. Hypochlorite system upgrades for the City of Durham, OR. Hypochlorite system upgrades for Orange County Sanitation District. Upgrades for ferrous chloride injection to 16 digesters for the City of San Jose. Ferrous chloride station designs and chemical systems associated with odor control projects for the Sewer Authority Mid-Coastside

(Half Moon Bay), City of Santa Cruz, City of Riverside, City of South Lake Tahoe, Sanitary District #5 of Marin County (Tiburon), and others.

Chemical System Upgrades, Various Clients, CA: Chemical systems associated with odor control projects in Sewer Authority Mid-Coastside (Half Moon Bay), City of Santa Cruz, City of Riverside, City of South Lake Tahoe, Sanitary District #5 of Marin County (Tiburon) and others.

Digester Upgrade, Union Sanitation District (USD), CA: Design engineer. Provided construction inspection and start-up assistance for an expansion to the digester gas and cogeneration heat loop pump system. Also provided engineering for aeration capacity improvements, air filtration systems, and digester improvement.

Cogeneration Support Project, Orange County Sanitation District, CA: Lead design engineer for a 4,800-scfm digester gas compressor station feeding low emission engine generators. Provided operator training for start-up.

Gas Turbine Cogeneration Project, Contra Contra Costa Sanitary District (CCCSO), CA: Senior quality control reviewer of the design documents for the CCCSO's 3 megawatt landfill and natural gas turbine cogeneration facility.

Wastewater Treatment and Biosolids Facilities Master Plan, Dublin San Ramon Services District, Dublin, CA: Project Engineer for development of a comprehensive Wastewater Treatment and Biosolids Facilities Master Plan to identify the major improvements needed through the 2035 planning horizon. Prepared plant wide energy evaluations including cogeneration, hot water heat and an evaluation of solar energy.

Digester Gas Dryer System Upgrades, City of Stockton, CA: Design engineer for a new digester gas dryer system that improved gas drying and reduced energy consumption from 25 hp to just 5 hp by implementing better use of heat exchange and water cooling. The City implemented a slightly modified system using in-house forces and achieved the energy efficiency gain.

80 mgd Upgrade, City of Fresno, CA: Design engineer for aeration blowers as part of project to upgrade to 80 mgd capacity and for the building of a plant wide air system and backup boiler system as part of the same project.



James Ham, EIT

Staff Engineer

James is a water resources engineer with experience primarily with sewer and water infrastructure projects. His experience includes designing a wastewater lift station, engineering services during construction, permitting compliance assistance, developing cost estimates, and performing water quality calculations. James has experience with several software applications, including AutoCAD, Microstation, ArcGIS, and SolidWorks. He has also automated various tasks using VBA and is proficient in several other programming languages including C/C++, Fortran, Python, and Matlab.

EXPERIENCE

Washington Park Reservoir Improvements Project, Portland Water Bureau, OR:

Staff Engineer for the Washington Park Reservoir Improvements for the Portland Water Bureau (PWB). The project included the demolition of an open reservoir in PWB's distribution system and its replacement with a buried reinforced concrete reservoir. Several years ago, this site, containing two open reservoirs, historic dams and gate house structures, was placed on the national historic registry, requiring PWB to obtain out of the ordinary permits prior to construction. To meet the historic permitting requirements, a reflecting pond with cascading water was designed on top of the buried reservoir. The gate houses, dams, historic fences and other items were planned for restoration. A pond was designed against the lower dam in conjunction with the stormwater/overflow basin. James reviewed requests for information (RFIs) and reviewed submittals, assisted with the redesign for construction change directives (CCDs), and provided CCD quality assurance/quality control (QA/QC) review. James drafted civil and mechanical site piping in MicroStation and AutoCAD, provided QA/QC review of the documents, and managed CAD files and provided document control. James wrote Visual Basic Scripts enabling automation of repetitive tasks including data entry into tracking logs, form creation for RFIs and submittals, and email correspondence with subconsultants.

Graham Hill Water Treatment Plant Tank Improvements, City of Santa Cruz, CA:

Staff Engineer for the new UV system at the Graham Hill Water Treatment Plant. The project included significant upgrades to address regulations, reliability concerns, and aging infrastructure. The conventional 20 mgd plant was originally completed in 1960 and needs improvements to treat higher-turbidity water to address disinfection byproducts and provide higher Giardia, and Cryptosporidium inactivation credit. West Yost is providing design, and construction phase support for the improvements. James provided quality assurance/quality control review of the design drawings and communicated with representatives from the California Water Board to confirm compliance with regulations and provide an efficient validation process. He also communicated with vendors to develop appropriate specifications and first specifications drafts, and he communicated with vendors to select dewatering equipment and select the preferred options.



STAFF TITLE: Engineer II

YEARS OF EXPERIENCE: 3

PROFESSIONAL REGISTRATION

- Engineer-in-Training, Oregon No. 94518EI (*passed Professional Engineer licensure exam and will be licensed in Oregon in 3-6 months*)

EDUCATION

- MS, Civil and Environmental Engineering, University of California, Berkeley
- BS, Engineering Physics, Colorado School of Mines

PROFESSIONAL AFFILIATIONS

- Oregon Association of Clean Water Agencies

Expansion of Recycled Water System, City of Cottage Grove, OR: Staff Engineer for the expansion of the City of Cottage Grove's Wastewater Treatment Plant's recycled water system to reduce or eliminate treated effluent discharge to the Coast Fork of the Willamette River during the dry weather season. Design includes improvements to the plant pumping system to increase system redundancy, additional monitoring, controls and alarms for ease of operation and pipeline design. James assisted with the development of water balance to determine recycled water demand during dry and wet seasons and entered data for Discharge Monitoring Reports.

Crescent Valley Lift Station Rehabilitation, City of Corvallis, OR: Staff Engineer for the design of the wetwell for a new lift station. James reviewed City specifications to confirm that the new lift station conformed to design criteria, made on-site measurements for the plan documents, drafted the mechanical and civil drawing sheets in AutoCAD, performed hydraulic calculations to generate pump and system curves, coordinated with structural and electrical disciplines, and completed design cost estimates at every design phase.

Riverfront Interceptor Wet Weather Lift Station and Force Main, City of Albany, OR: Staff Engineer assisting with the design of a new 12,500 gallons per minute lift station and 1.25 miles of 21-inch force main. The project addresses significant operational and regulatory risks from sanitary sewer overflows (SSOs). West Yost's design will provide the City with the necessary peak flow capacity during high-flow conditions. James conducted a review of previous hydraulic capacity analyses to size the pumps, drafted mechanical and civil sheets in AutoCAD, performed hydraulic calculations, coordinated with vendors to determine product selections, prepared contract specification documents, and provided support as needed on other aspects of the project, including finalizing the forcemain alignment, determining high priority potholing locations, checking clearances of proposed equipment, and coordinating with other disciplines to finalize design components.

Special Studies, Compliance Support, City of Galt, CA: Staff Engineer assisted with the preparation of Annual Report and Nutrient Management Plan that analyzed hydraulic loadings, nitrogen loadings, and metals loadings from land application of reclaimed irrigation water, biosolids and fertilizers. James assisted in the preparation of the Annual EPA Biosolids report using nutrient management spreadsheets created by West Yost for the City. The nutrient management spreadsheets utilize irrigation, biosolids, and fertilizer data and to calculate the hydraulic, nitrogen, and metals loadings to fields. The spreadsheets output the calculations into easy to understand tables to be submitted as required by their permit.

Regulatory Services Financial Year 2018–2020, Cropping and Irrigation and Biosolids Application Reports, White Slough Water Pollution Control Facility, City of Lodi, CA: Staff Engineer assisting in the preparation of the Annual Cropping and Irrigation report. Using data from City and spreadsheet tool developed by West Yost, the report was prepared to analyze hydraulic, biological oxygen demand, nitrogen, and TSS loadings from irrigation water. James assisted with the preparation of annual Biosolids Application Report to assess nitrogen loadings and comply with metals loadings and fecal coliform from land application of biosolids.

Row River Water Treatment Plant Expansion Project, City of Cottage Grove, OR: Staff Engineer for the expansion of the City of Cottage Grove's Water Treatment Plant to increase plant capacity, improve treatment efficiency and improve the reliability of the system. The design includes an additional microfiltration membrane skid to supplement the existing two membrane units, which will increase plant capacity from 4-mgd to 6-mgd. James completed the hydraulic analysis of the existing treatment system, prepared design drawings in AutoCAD, and coordinated with vendors and subconsultants during the predesign and design phases.



Kathryn Gies, PE, ENV SP

Process Engineer

Kathryn is an engineer with experience in planning and permitting wastewater treatment and recycled water projects. Kathryn's areas of expertise include wastewater treatment facilities planning; treatment process design; biological nutrient removal (BNR) systems; natural wastewater treatment systems; sustainable infrastructure planning; NPDES regulatory permitting; recycled water and land disposal systems master planning; biosolids land application planning and permitting; and groundwater quality studies for regulatory compliance purposes. She has completed facilities planning studies for many wastewater treatment plants, including BioWIN process modeling of biological nutrient removal activated sludge treatment systems. She has also prepared several studies in association with NPDES permits, such as reasonable potential analyses, treatment feasibility studies, pollution prevention plans and source control studies, salinity evaluation and minimization plans, and reports of waste discharge. She has performed analyses for several projects using agricultural lands for effluent reuse, including the development of comprehensive water balances for complex reuse sites to assess water use efficiency; specialty spreadsheet tools for biosolids and water reuse management; nutrient management plans for land application of recycled water, biosolids, and food processing wastewater; Title 22 Engineer's Reports for water reuse; and pilot-scale percolation studies.

EXPERIENCE

Wastewater Treatment Plant Upgrade Project, City of Jackson, CA: Lead Process Design Engineer for the oxidation ditch improvements at the City of Jackson's wastewater treatment plant. The process design involved using BioWin modeling to define the requirements for modifying the oxidation ditch treatment system to allow for simultaneous nitrification/denitrification.

Tertiary Treatment Project Facilities Master Plan, Easterly Wastewater Treatment Plant, City of Vacaville, CA: Project Engineer for the evaluation and development of a Facilities Master Plan. The goals were to identify alternatives for implementing facility upgrades to the existing Easterly Wastewater Treatment Plant to achieve compliance with specific new permit provisions. Served as the Lead Project Engineer for the BioWin evaluation of the activated sludge secondary treatment processes. Analysis included model development, calibration, and evaluation. The purpose of this effort was to define the improvements needed to provide enhanced nitrogen removal for the wastewater facilities.

Wastewater Treatment and Biosolids Facilities Master Plan, Dublin San Ramon Services District, Dublin, CA: Assistant Project Manager and Project Engineer for the development of a comprehensive Wastewater Treatment and Biosolids Facilities Master Plan to identify the major improvements needed through the 2035 planning horizon. Issues considered include: (a) increasing demands for the District's recycled water, including recent interest in direct and/or indirect potable reuse; (b) future



STAFF TITLE: Engineering Manager II

YEARS OF EXPERIENCE: 21

PROFESSIONAL REGISTRATIONS

- Professional Civil Engineer, California No. 65022
- Envision™ Sustainability Professional

EDUCATION

- PhD Candidate, Bioresource Engineering, Oregon State University
- BS, Agricultural and Biological Engineering, Clemson University
- Wetland Treatment and Design Course, Humboldt State University
- BioWin® Process Modeling Training Workshop

PROFESSIONAL AFFILIATIONS

- California Association of Sanitation Agencies
- California Water Environment Association
- Institute for Sustainable Infrastructure
- Water Environment Federation
- WaterReuse Association

nutrient removal requirements; and (c) biosolids disposal/reuse opportunities. Using a comprehensive visioning and future scenarios mapping process, West Yost helped the District to identify a long-term strategy that considers how the opportunities and constraints associated with each of these outside factors.

Owner's Representative, Design-Build Wastewater Treatment Plant Improvements, City of Davis, CA: Design-Build (DB) Procurement Task Manager for West Yost's Owners' Representative contract for a DB Wastewater Treatment Plant (WWTP) Improvements Project representing approximately \$95 million in constructed treatment plant improvements for the City's Water Pollution Control Plant (WPCP) to provide biological nutrient removal and tertiary filtration. Kathryn served as the task manager for the development of the planning documents that identified key project criteria to be applied to the DB process. She was also the Project Engineer for the development of a preliminary design of biological nutrient removal facilities using BioWin modeling software. Another key task completed was the identification of a preferred strategy for long-term uses of existing ponds to minimize system sizing and eliminate the need for redundant treatment units.

Work also included developing a detailed influent flows and loads analysis, evaluating potential reuse facilities, and determining the role of the City's habitat wetlands as part of the future wastewater treatment plant project. Finally, Kathryn served as the team leader for the developing the sustainability strategy for the project and implementing the steps necessary to obtain a Silver recognition under the Envision rating system.

Wastewater Treatment Plant Facilities Planning and Secondary Process Design, City of Galt, CA: Project Engineer for facilities planning for the City's Wastewater Treatment Facility. Natural and conventional treatment alternatives were evaluated to meet increasingly stringent effluent discharge requirements. Alternatives for long-term management of the City's recycled water storage ponds and biosolids land disposal system were also evaluated. Developed a calibrated BioWin modeling analysis of oxidation ditch treatment alternatives, which include a simultaneous nitrification/denitrification process and a primary influent screening system. Kathryn completed the simultaneous nitrification/denitrification oxidation ditch process design for the selected alternative. Construction of that project was completed in 2018.

Wastewater Master Plan, City of Modesto, CA: Lead Engineer for the majority of the wastewater treatment plant evaluation tasks for the City's Wastewater Master Plan. This \$1.8 million project involves evaluating the needs of

the City's collection system and two wastewater treatment plants (Sutter Avenue Plant and Jennings Road Plant). With an average dry weather flow capacity of approximately 35 mgd, the Sutter Avenue Plant provides primary treatment and solids processing for the City's municipal wastewater, and the Jennings Road Plant provides secondary treatment, effluent filtration, and disinfection of the City's municipal wastewater, and also has an effluent storage facility and a land application system for discharge of treated municipal effluent, cannery process water, and biosolids. Responsible for the development of flow and load projections for domestic and commercial dischargers; preparing a detailed water balance analysis for the City's storage and irrigation facilities to identify the long-term needs given planned reuse operation changes; identification and evaluation of treatment alternatives; and development of a strategic plan for addressing potential future discharge requirements.

Wastewater Master Plan, City of Yuba City, CA: Assistant Project Manager and treatment evaluation lead for the preparation of the City's Wastewater Master Plan. She has worked closely with City staff to develop an understanding of recent operational changes and their impacts on treatment process capacities.

BioWIN Process Modelling, Design-Build Wastewater Treatment Plant Improvements, City of Davis, CA: Project Manager for the development of a calibrated BioWIN model of the City's recently constructed Modified Ludzack-Ettinger (MLE) treatment process. Work included developing a comprehensive sampling plan, coordination of sampling efforts, and development of a calibrated model. Ongoing work includes working with the City to use the model to assess potential operational changes to optimize performance.

Pond Treatment System Evaluation, South Suburban Sanitary District, Klamath Falls, OR: Project Manager for an evaluation of the pond treatment system at the South Suburban Sanitary District's Wastewater Treatment Plant. The project involved developing a model of the pond treatment system, so that several alternatives for meeting the treatment objectives could be evaluated. The District was interested in determining the most efficient and cost effective means of meeting the treatment goals by reducing aeration and avoiding costly improvements.



Monique Day, PE

Funding

Monique is an engineer with experience in civil and environmental engineering. She has a master's degree in environmental engineering with a focus in water quality and water resources management. Monique's experience includes water reuse planning, water transfers, conservation, water quality, surface and groundwater storage, conjunctive use, permitting, water rights, and integrated regional water management and urban water management planning. Much of Monique's project work has involved multi-stakeholder planning and implementation processes, project management, and funding strategy and pursuits.

EXPERIENCE

Grant Strategy Services, Alameda County Water District, CA: Project Manager and Project Engineer for grant strategy services 2016-2019. Services included reviewing the District's top priority CIP projects and evaluating potentially applicable grant and loan opportunities. Deliverables included a projects summary matrix, grant opportunities and strategic plan. Services included grant opportunity research, periodic matrix updates and check-in conference calls. Since implementing the strategic funding plan, ACWD has been awarded nearly \$15 million through a combination of five different funding programs.

Grant Strategy Services, Moulton Niguel Water District, Laguna Niguel, CA: Project Engineer for grant strategy services. Services included reviewing the District's top priority CIP projects and evaluating potentially applicable grant and loan opportunities. Services included grant opportunity research regular matrix updates and check-in conference calls.

Funding Strategy, Stanislaus Regional Water-Authority: Project Manager for the funding strategy component of program management services. Evaluated grant and loan opportunities for the surface water supply project. Prepared funding strategy technical memorandum, met with funding agencies, worked with a lobbyist, and conducted workshops with the technical advisory committee to both establish and implement the funding strategy.

Drinking Water State Revolving Fund (SRF) Construction Loan Application, Stanislaus Regional Water Authority, Stanislaus County, CA: Project Manager and Reviewer of Drinking Water SRF General Information (submitted December 2016), Environmental (submitted October 2018), and Technical (submitted February 2019) application packages. Met with Division of Financial Assistance (DFA) project manager and other DFA staff quarterly since early 2017 to coordinate the application process and ensure project compliance with SRF requirements. Total requested funding is about \$200 million, which is expected to include nearly \$30 million in grant funds through Prop. 68.



STAFF TITLE: Principal Engineer I

YEARS OF EXPERIENCE: 16

PROFESSIONAL REGISTRATIONS

- Professional Civil Engineer, California No. 69793

EDUCATION

- MS, Environmental Engineering, University of California, Berkeley
- BA, Environmental Studies, University of California, Santa Cruz
- BS, Civil and Environmental Engineering, University of California, Berkeley

PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers Environmental Water Resources Institute
- Association of California Water Agencies
- California Water Environment Association – Annual Conference Transportation Chair (2006, 2008)
- Northern California Water Association
- WaterReuse – Central Valley/Sierra Foothills Chapter Secretary (2019)
- Water For People – Sacramento Committee Chair (2006 – 2008)

Drinking Water SRF Planning Loan Application, City of Modesto, Stanislaus County, CA: Project manager and lead application writer for Drinking Water SRF application submitted for planning funds for the town of Grayson's water infrastructure replacements and upgrades. Prepared and submitted General Information application package; coordinated, reviewed, and submitted Environmental and Financial application packages; coordinated, reviewed, and submitted Technical application package (submitted November 2018). Coordinated with DFA project manager to verify steps in the application process and ensure project compliance with SRF requirements. Total requested funding is \$500,000 in grant funds for this severely disadvantaged community.

Clean Water SRF Construction Loan Applications, Sacramento Area Sewer District, Sacramento County, CA: Project manager and reviewer of Clean Water SRF applications submitted for construction funds for the communities of Hood, Franklin, Linda Manor, Old Florintown, and Orange Park Cove to convert from septic to sewer systems. Submitted General Information application packages for each community, coordinated Environmental application packages with District and Sacramento County Planning and Environmental Review, and prepared Technical application packages for two communities (planned to be submitted in early 2020). Coordinated with DFA project managers to verify steps in the application process and inquire about availability and applicability of funds from the Small Community Wastewater Program and the Prop. 1 Groundwater Grant Program. Total requested funding is about \$29,749,000 in grant funds for these disadvantaged communities.

Cal OES Hazard Mitigation Grant Program Grant Application, Moulton Niguel Water District, Laguna Niguel, CA: Primary author of Risk Analysis Summary TM which served as a key application reference document. Prepared project schedule, scope of work, and other components of application. Application was submitted for the Regional Sewer Lift Station Force Mains Replacement and Relocation Project in November 2017. Grant request was \$3 million for the \$12 million project.

WaterSMART Drought Response Program, Stanislaus County, CA: Drought Resiliency Grant Application, Stanislaus Regional Water Authority, Stanislaus County, CA: Project Manager and Reviewer of grant application for \$750,000 submitted to U.S. Bureau of Reclamation in October 2019. Project to be funded is the Turlock Regional Finished Water Transmission Main.

Riverine Stewardship Program, Stanislaus County, CA: San Joaquin Fish Population Enhancement Program Grant Application, Stanislaus Regional Water Authority, Stanislaus

County, CA: Project Manager and Reviewer of grant application for \$19,282,379 submitted to Department of Water Resources in November 2019. Project to be funded is the Water Supply Raw Water Pump Station and Raw Water Transmission Main.

Water Recycling Funding Program Grant Application, City of Rialto, CA: Project Engineer and Grant Writer for a successful \$75,000 recycled water feasibility study grant application through the State Water Resources Control Board. Monique prepared the scope of work, budget, and schedule portion of the grant application through the State Board's Water Recycling Funding Program. The scope included defining up to five recycled water project alternatives, evaluating existing and planned facilities, and evaluating the defined alternatives.

WaterSMART Drought Response Program Drought Contingency Planning Grant Application, City of Rialto, CA: Grant Writer for a \$200,000 grant application through the United States Bureau of Reclamation to produce a Drought Contingency Plan. Application included a detailed scope, schedule, and budget.

CALFED Water Use Efficiency Grant Application, Yolo County Flood Control and Water Conservation District: Prepared a grant application for the Yolo County Flood Control and Water Conservation District for \$300,000 for a flow measurement and automated canal facilities project.

DWR AB 303 Local Groundwater Assistance Grant Application, Yolo County Flood Control and Water Conservation District, City of Davis, UC Davis: Prepared a successful joint Local Groundwater Assistance grant application for the Yolo County Flood Control and Water Conservation District, City of Davis, and UC Davis for \$250,000 for a Regional Conjunctive Use Enhancement Study.

DWR Region Acceptance Process Grant Eligibility Application, Water Resources Association of Yolo County, Solano County Water Agency, Napa County Flood Control and Water Conservation District, Lake County Watershed Protection District, and Colusa County Resource Conservation District: Prepared a successful joint Region Acceptance Process application for IRWM grant eligibility for the Water Resources Association of Yolo County, Solano County Water Agency, Napa County Flood Control and Water Conservation District, Lake County Watershed Protection District, and Colusa County Resource Conservation District. These agencies joined together to form the Westside Regional Water Management Group based on the Putah and Cache Creek watersheds.

Gary Jenks

President of The Automation Group

Experience

2006 - PRESENT The Automation Group, Inc. Eugene, OR

President

- PLC/HMI Programming
- Factory Authorized AF Drive Start-up
- Project Start-up and commissioning



2001 - 2006 LH Morris Electric, Inc. Springfield, OR

Controls Division Manager

- PLC/HMI Programming
- Factory Authorized AF Drive Start-up
- Project Start-up and commissioning
- Responsible for the Daily operations of the Controls Division

1995 - 2001 NW Industrial Electric Springfield, OR

Project Manager/Foreman

- PLC/HMI Programming
- AF Drive Start-up
- Project Start-up and commissioning
- Electrical Installations

1990 - 1995 Emerald Industrial Electric Springfield, OR

Foreman

- PLC/HMI Programming
- Electrical Installations

Education

1990 - 1993 BOLI Salem, Oregon

Inside Wireman Apprenticeship

Summary of qualifications

1993
 General Journeyman License

Accreditations

- Rockwell Automation System Integrator
- Certified Drive Start-up Technician: Allen Bradley, ABB, Cutler Hammer
- Advisory Board for Electronic Technology at Lane Community College

BEN PERRY, P.E. | Electrical Engineering
PRESIDENT



Ben Perry is the Engineer of Record for Landis Consulting. He manages projects for the municipal water and wastewater industries as well as K-12 and healthcare projects in the AEC Industry. His designs are clear, simple, and practical. They weave together cost-efficiency, constructability, and technical expertise. Ben Perry and Landis Consulting have earned a reputation in the AEC industry for client service, thoughtful designs, creativity, constructability, and minimal change orders.

Percentage of time available for projects 30-40%
Role: Engineer of Record, Principal Engineer

YEARS OF EXPERIENCE
13

LICENSES
Professional Engineer:
2020 / Oregon / No. 86683
2021 / Washington / No. 51868
2020 / California / No. 20963
2020 / Arizona / No. 58937

EDUCATION
BSEE / 2007 /
Electrical Engineering
Grove City College,
Grove City PA

KEY EXPERTISE
Project Management
Electrical, Instrumentation & Control
Design
Start-up & Commissioning
Constructability & Quality Control

CONTACT INFORMATION
5335 Meadows Road
Suite #388
Lake Oswego, OR 97035
Phone: (503)-606-8657
Cell: (503)-580-9600
Fax: NA
Email: ben_perry@landisconsulting.com
Website: landisconsulting.com

Key Project Experience

- Reuse & Electrical Complex, Forest Grove, OR (Clean Water Services, Current). Jennifer To, Clean Water Services, EI&C Manager. toj@cleanwaterservices.org. (503)-547-8182.
- Aeration Blower Upgrades, Durham & Hillsboro, OR (Clean Water Services, 2016-2018). Jennifer To, Clean Water Services, EI&C Manager. toj@cleanwaterservices.org. (503)-547-8182.
- Thickening Centrifuge Upgrades, Durham, OR (Clean Water Services, 2017). Jennifer To, Clean Water Services, EI&C Manager. toj@cleanwaterservices.org. (503)-547-8182.
- Washington Park Reservoir Improvements, Portland, OR (Portland Water Bureau and West Yost & Associates, 2017-Current). Jerry Moore, Project Manager Portland Water Bureau. Jerry.Moore@portlandoregon.gov
- Main Sewage Pump Station, Dayton, Oregon (City of Dayton & Westech Engineering, 2019). Denny Muchmore, Engineer of Record, Westech Engineering. (503)-585-2474. DennyM@westech-eng.com
- Willow Lake Medium Voltage Transformer Replacements (City of Salem, 2018). Keith Kuenzi, PE. City of Salem Assistant City Engineer. (503)-588-6211. khkuenzi@cityofsalem.net
- Electrical & Clearwell Improvements, Vine St Treatment Plant, Albany, OR (City of Albany, 2017). Nolan Nelson, Engineer III, City of Albany. (541)-791-0130. Nolan.Nelson@cityofalbany.net
- Emergency Electrical Systems Upgrades, Hayden Bridge Treatment Plant, Eugene, OR (EWEB, 2018). Laura Farthing, Senior Project Manager, (541)-685-7464. Laura.Farthing@EWEB.org
- Dillard 975 Pump Station, Eugene, OR (EWEB, 2018). Laura Farthing, Senior Project Manager, (541)-685-7464. Laura.Farthing@EWEB.org

5335 Meadows Road, Suite 388 • Lake Oswego, OR 97035
6446 Fairway Ave SE, Suite 220 • Salem, OR 97306



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541.552.1417 . ace-engineeringllc.com

Allan T Goffe, P.E., S.E. | Structural Engineering

Having worked as a structural engineer for 20 years, Allan has the resources and experience necessary to successfully complete the structural design for any building project thoroughly, timely, and economically. Allan takes great pride in each project, meaning you can expect prompt, accurate service and every effort to earn your continued confidence.

Education

California State University Sacramento, Sacramento, CA – May 1996

Bachelor of Science in Civil Engineering

Professional Registration

Registered Professional Civil and Structural Engineer in the State of Oregon

Registration Number: 64239PE

Registered Professional Civil Engineer in the State of California

Registration Number: C 60262

Professional Memberships

Structural Engineers Association of Oregon, Member

Professional Engineers of Oregon, Member.

American Institute of Steel Construction, ID 1012096

Relevant Experience

- **Riverfront Interceptor Wet Weather Lift Station & Force Main**, Albany, Oregon: Structural engineering services were provided to West Yost Associates of Lake Oswego, Oregon for the electrical building, 28'-6" deep concrete lift station wet well and 23'-6" deep concrete diversion structure that are located adjacent to an active railroad line. The construction was completed in the summer of 2020.
- **Concrete Repairs**, Corvallis, Oregon: Structural engineering services were provided to West Yost Associates of Eugene, Oregon for the repairs to cracks and surfaces of concrete tanks at the Taylor Water Treatment Plant and the North Hills 1st Level Reservoir. The construction was completed in the summer of 2016.
- **Vine Street Water Treatment Plant Solids Contact Clarifier Improvements**, Albany, Oregon: Structural engineering services were provided to West Yost Associates of Eugene, Oregon for repair and replacement of stair, catwalk and platform structures at an accelator tank at the Vine Street Water Treatment Plant. The construction was completed in the fall of 2019.
- **Recycled Water Storage Pond and Pump Station Project**, Cottage Grove, Oregon: Structural engineering services were provided to West Yost Associates of Lake Oswego, Oregon for the 18' deep pump station and equipment shelters outside the existing solids handling building. The construction is scheduled to be completed in the summer of 2020.
- **Row River WTP Expansion Project**, Cottage Grove, Oregon: Structural engineering services were provided to West Yost Associates of Lake Oswego, Oregon for the addition of a membrane filter and pipe bracing inside the existing process building. The construction is scheduled to be completed in the summer of 2020.



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- **Ridgecrest Water Pump Station**, Corvallis, Oregon: Structural engineering services were provided to West Yost Associates of Lake Oswego, Oregon for the pump station building at SW 53rd Street, including the pump room, pipe trench and back up generator room. The construction is scheduled to be begin in the summer of 2020.
- **Avery Lift Station**, Corvallis, Oregon: Structural engineering services were provided to West Yost Associates of Lake Oswego, Oregon for the improvements made to the existing lift station including modifications to the existing wet wall, installation of a new wet well, equipment shelter, site retaining walls and backup generator support. The construction was completed in the spring of 2020.
- **Crescent Valley Lift Station Rehabilitation**, Corvallis, Oregon: Structural engineering services were provided to West Yost Associates of Lake Oswego, Oregon for the rehabilitation of the wastewater lift station located at NW Highland Drive including a 12' deep concrete wet well, manhole and equipment shelter. The construction is scheduled to be completed in the summer of 2020.
- **High Service Pump and Metering Structure**, Corvallis, Oregon: Structural engineering services were provided to West Yost Associates of Eugene, Oregon for installation of a high service pump and metering structure at the Taylor Water Treatment Plant. The construction was completed in the summer of 2018.
- **Redding Foothill WTP**, Redding, California: Structural engineering services were provided to West Yost Associates of Eugene, Oregon for the addition of a concrete flow equalizing basin and pump station at the City of Redding's Foothill Water Treatment Plant. The construction was completed in the summer of 2016.
- **Oregon International Port of Coos Bay**, Coos Bay, Oregon: Structural engineering services were provided to Partney Construction of North Bend, Oregon for the Tunnel 19 Drainage Rehabilitation Project. Precast Concrete channels were designed to be cast and lifted into place adjacent to an active railroad line. The construction was completed in the spring of 2020.
- **36th & Grant Pump Station**, Corvallis, Oregon: Structural engineering services were provided to West Yost Associates of Eugene, Oregon for the new pump station. The single story concrete and CMU block building houses essential infrastructure utilities on a compact site. The construction was completed in the summer of 2013.
- **Medford Vector Receiving Station**, Medford, Oregon: Structural engineering services were provided to West Yost Associates of Portland, Oregon for the concrete and steel framed structure for receiving waste from large collection vehicles. The construction was completed in the summer of 2009.
- **Medford Aeration Basin Improvements**, Medford, Oregon: Structural engineering services were provided to West Yost Associates of Portland, Oregon for the improvements to the existing concrete aeration basins and gate replacements at the Regional Water Reclamation Facility. The construction was completed in the summer of 2009.
- **Medford RAS System Improvements**, Medford, Oregon: Structural engineering services were provided to West Yost Associates of Portland, Oregon for the improvements to the existing RAS system at the Regional Water Reclamation Facility. The construction is expected to begin in the summer of 2009.



Yuxin (Wolfe) Lang, PE, GE

Geotechnical Engineer

Wolfe Lang has more than 25 years of geotechnical engineering experience, and his focus is on water, wastewater and conveyance projects. He has an extensive experience working in the various geologic/geotechnical conditions in Oregon, and a strong background in analyzing and designing various foundations, ground improvement systems, and soil retaining structures. His water, wastewater, and conveyance projects include new treatment facilities and reservoirs, rehab of existing facilities/trunk lines, deep pump stations, new pipelines and trenchless crossings.

Relevant Experience

Metropolitan Wastewater Management Commission Seismic Resilience Study, Eugene and Springfield OR (2018–2019)

Wolfe led the seismic hazard study and developed detailed hazard maps along the backbone system and at the critical treatment facilities and pump stations. In consistence with Oregon Resilience Plan, the seismic hazard study was conducted for the earthquake scenario of M=9 Cascadia Subduction Zone event. The developed hazard maps include strong ground shaking, soil liquefaction, lateral spreading, and landslide hazards. Extensive background geotechnical information and DOGAMI maps were reviewed, and site-specific reconnaissance and analyses were conducted to assess the liquefaction settlement magnitude, lateral spreading movement and landslide potentials. Wolfe also evaluated site specific hazards at the treatment plant and reuse facilities

Springfield Water System Seismic Resilience Study, Springfield, OR (2019)

Wolfe was the geotechnical and seismic hazard lead in the City's water system seismic resiliency study. Specific tasks include seismic hazard study and hazard map development, critical reservoir and pump station seismic condition assessment. In consistence with Oregon Resilience Plan, the seismic hazard study was conducted for the earthquake scenario of M=9 Cascadia Subduction Zone event. The seismic hazard evaluations include strong ground shaking, soil liquefaction, lateral spreading, landslide hazards and associated effects on the backbone pipelines and critical reservoirs and pump stations.

Rock Creek AWWTF Secondary Clarifier, Hillsboro, OR (2019–2020)

Wolfe is the geotechnical lead for the design of the new secondary clarifier at the Rock Creek Advanced Wastewater Treatment Facility. This project includes a larger new secondary clarifier and deep pipe gallery. Geotechnical services include field explorations (borings and CPTs, piezometers, in-situ vane shear testing and seismic shear wave testing), geotechnical and seismic analyses and evaluations for seismic soil liquefaction, ground motion amplification, and foundation design; excavation/shoring evaluation; and groundwater control assessment.

Spring Street Sewage Treatment Upgrade, Klamath Falls, OR (2017–Present)

This is a design-build project. Wolfe is the geotechnical task lead for the design-build of the sewage treatment plant upgrade in Klamath Falls, Oregon.

Years of Experience

- 25 years

Education

- MS, Civil Engineering, University of Waterloo, Ontario, 2002
- BS, Geological Engineering, Hebei Institute of Civil Engineering, China, 1993

Registrations

- Professional Civil Engineer (Geotechnical): OR, #78866, 2007
- Professional Civil Engineer: WA, #44381, 2008; Ontario, Canada, #100049788, 2004; British Columbia, Canada, #32134, 2008
- Geotechnical Engineer: OR, #78866, 2009

Areas of Expertise

- Foundations
- Ground improvement systems
- Soil retaining structures
- Trenchless crossings/Tunnel
- Shoring design
- Groundwater control
- Slope stabilization
- Landslide remediation
- Soil improvement
- Construction consultation



Yuxin (Wolfe) Lang, PE, GE

This project consists of a new Headworks, new aeration basin and improvements for the existing facilities. Wolfe developed the field exploration program, evaluated the subsurface condition, and led the design of pile foundations to mitigate the static settlement and liquefaction issues at the site. During construction, he also led the design for groundwater control and implemented settlement monitoring program to assess the excavation slope/shoring performance.

Willamette River Crossing, Portland Water Bureau, Portland, OR, (2013–Present)

Wolfe was the lead geotechnical engineer for both the preliminary feasibility study and the current design-build owner's engineering service of a new 4,501-foot-long, 3-foot steel water line crossing of the Willamette River using HDD. The main geotechnical challenges include soil liquefaction and lateral spreading on the riverbanks and soft alluvium at the bottom; open-graded flood gravel with boulders; competent but deep Troutdale Formation; and potential conflicts with existing bridge foundations and other deep tunnels in the project area. McMillen Jacobs conducted on-land and in-water explorations; developed soil liquefaction and ground deformation models and soil-pipe interaction models to optimize the HDD alignment and depth; and developed a geotechnical baseline report as essential parts of risk mitigation approaches.

Geren Island WTP Improvements, Stayton, OR, (2019–Present)

Wolfe was the principal geotechnical engineer for both the new Ozone Facility and a Ranney Collector Intake at the City of Salem's Geren Island Water Treatment Plant. The main geotechnical challenges include open-graded flood gravel with boulders; localized loose sand and silt zones, and very shallow groundwater. After extensive geotechnical explorations and laboratory testing, we conducted seismic liquefaction evaluations and riverbank stability analyses. In general, the soil liquefaction and seismic stability hazards are low at the proposed improvement locations. Currently, we're conducting the design for the Ranney Collector Intake. Caisson method is selected for the Collector well design.

WWSP Transmission Pipeline Seismic Hazard Evaluation and Design, Tualatin Valley Water District and City of Hillsboro, Washington County, OR (2014–present)

Wolfe was the task lead for the geotechnical and seismic hazard evaluation along the new 36-mile-long (57 m), 1.2 m to 1.7 m transmission pipelines during the preliminary design of the Willamette Water Supply Program (WWSP). Wolfe is also the lead geotechnical engineer for multiple pipe sections in the detailed design stage including PLM_1.0, PLM_4.0, MPE_1.0 & PLW_2.0. Wolfe is evaluating the subsurface conditions, seismic hazards of liquefaction and lateral spreading displacements at major river/creek crossing locations, seismic hazard mitigation approaches and pipeline geohazard mitigation approaches. He also led multiple pipeline seismic analyses and modeling to assess the induced strains in the steel pipe from differential ground deformation. Numerical modeling used include FLAC free field ground deformation analyses and Abaqus non-linear soil/pipeline analyses for the steel pipe under large ground deformations.

BES Resiliency Master Plan, City of Portland, OR (2017)

Wolfe was the geotechnical and seismic hazard lead in the BES's system resiliency study. Specific tasks included seismic hazard study and hazard map development, pump stations and water treatment facilities seismic condition assessment for the City of Portland's wastewater and stormwater system. In consistence with Oregon Resilience Plan, the seismic hazard study was conducted for the earthquake scenario of M=9 Cascadia Subduction Zone event. The seismic hazard evaluations include strong ground shaking, soil liquefaction, lateral spreading, landslide hazards and associated effects on the pipelines, pump stations and treatment plant structures.

Hillsboro WWTP Influent Pump Station Upgrade, Hillsboro, OR (2009–2011)

Wolfe was the lead geotechnical engineer for the upgrade design and construction of the wastewater treatment plant influent pump station, a deep vault structure, and an electrical building. Geotechnical services included field explorations of one soil boring, geotechnical analysis and recommendations for seismic soil liquefaction, ground improvement, foundation design, and shoring and dewatering, preparation of geotechnical reports, and review/input during preparation of plans and specifications.



Ronald Bush, P.E., P.L.S.

Surveying

Education

B.S., Civil Engineering, Oregon State University, 1980

Registration

Professional Engineer, Oregon (12,848), Alaska (CE 9536), and Washington (34050)
Professional Land Surveyor, Oregon (41486LS)

Professional Summary

Ron Bush has a wide range of design and construction experience dating back to 1970 including transportation, water, wastewater, and storm drainage facilities. As an Engineer, he has been involved in various projects from planning through design and construction administration. Ron has worked in the private consulting industry for the majority of his career but has also worked with the City of Gresham and Eagle Crest Resorts as a Project and Development Engineer. Ron's background prior to becoming an Engineer was in construction working with his father who is a general contractor working in the Public Works construction industry. This background gives him a unique mix and insight to the industry.

Ron has been performing survey work throughout his career as a contractor and engineer. For the past 16 years Ron has also purchased state of the art surveying equipment and has been performing engineering design surveys and, after licensing in 1999, property survey work as a private surveyor.

Surveying Services

- Ron has been in the business of developing design surveys for engineers, architects and landscape architects for 20 years. He has state of the art equipment including land survey class total stations and GPS capabilities to meet all surveying needs and challenges. He has developed land surveys and topographic maps for numerous projects including public developments, private developments, and wetland/stream/park corridors. He has worked for engineers, architects, landscape architects, cities, counties, the State of Oregon and the Federal Government.

Survey for Wastewater Treatment Plant Upgrades and Reconstructions

- Ron Bush Engineering and Surveying has performed design surveys on several wastewater treatment plant with several engineering design organizations, including:
 - City of Pendleton, OR
 - City of Hubbard, OR
 - City of Dundee, OR

Ron Bush Engineering and Surveying

Ronald A. Bush

Page 2

- Washington County, Clean Water Services – Durham WWTP Improvements
- Washington County, Clean Water Services – Rock Creek WWTP Upgrade
- City of Scappoose, OR
- City of Astoria, OR
- City of Hermiston, OR
- City of Irrigon, OR
- City of Cannon Beach, OR
- City of Molalla, OR
- Warm Springs Reservation
- City of Portland, Columbia Blvd WWTP Improvements

Wastewater Treatment Plant Design

- Ron has been responsible for the design of 12 wastewater treatment plants during his career. He has also assisted on numerous upgrades to specific unit processes at other treatment plants as well.

Wastewater Pumping Design

- Ron has been responsible for the design of over 25 pump stations ranging in design flows from a few hundred gallons per day to over 30 million gallons per day.

Wastewater Pipeline Design

- Ron has worked on wastewater collection system ranging in size from a single unit to the design of systems up to 12-foot in diameter.

Wastewater Planning

- Ron has been responsible for the development of wastewater planning documents for communities/districts ranging in size of a few hundred individuals to some of the largest wastewater agencies in Oregon.

\\wya.local\corporate\marketing\clients\city of sandy\proposals\2020_sandy_wwtp\resumes\12 ron bush, pe, pls_ron bush.doc **Ronald A. Bush Engineering**



STRONGWORK ARCHITECTURE

ALAN ARMSTRONG

Licenses + Certifications

- Oregon ESB Certification
- Licensed Architect: OR,WA
- Living Future Accreditation
- Certified Sustainable Building Advisor

Education

- Bachelor of Architecture
University of Oklahoma,
2001

Professional Experience

- Strongwork Architecture, LLC; Owner, Architect; 2009 - Present
- MWA Architects; PM, Associate; 2010 - 2014
- PCC Instructor; 2010
- Litmus Design + Architecture; Designer; 2005 - 2008
- Vizwerks, Inc; Designer, 2001 - 2004

PROJECT EXPERIENCE

Public Work

Portland Water Bureau Filtration Facility – Portland, OR
Beaverton Cooper Mt ASR Pump Station – Beaverton, OR
Redmond Booster 1A Pump Station – Redmond, OR
Parkdale WWTP – Parkdale, OR
Sweet Home WWTP – Sweet Home, OR
Portland Water Bureau CCIP – Portland, OR
Hannah Mason Pump Station – Portland, OR*
Green River Filtration Facility – Tacoma, WA*
Oak Harbor Clean Water Facility – Oak Harbor, WA*
Hillsboro Waste Water Facility – Hillsboro, OR*
JWC Backup Power Facility – Forest Grove, OR*
BPA North Ampere Building – Vancouver, WA*
BPA Celilo Desgassing Room – The Dalles, OR*
BPA Telecom Buildings – Oregon*
TVA Shelby Substation Rehab – Tennessee*
Tri-Cities WWTP Admin Bldg Remodel – Clackamas, OR*

Residential

Jones Duplex	Sellwood Addition and Remodel
Duke St Triplex	South Tabor Remodel
Sherrett St ADU**	SW Taylors Ferry Remodel
Arbor Lodge ADU	Bluecrest Apartments
North Tabor ADU	
Bogdan ADU	

*work performed while employed with previous firm

**Accessory Dwelling Unit

WE SUPPORT OUR COMMUNITIES
WE ARE WATER FOCUSED
WE TAKE PRIDE IN WHAT WE DO
WE STRIVE TO BECOME OUR BEST
WE DO WHAT'S RIGHT
WE BELIEVE IN QUALITY
WE LISTEN
WE SOLVE CHALLENGING PROBLEMS
WE SEE THE BIGGER PICTURE
WE TAKE OWNERSHIP
WE COLLABORATE
WE HAVE FUN

WE ARE WEST YOST

