



Everett Water Pollution Control Facility

Everett Public Works
November 30, 2023



EVERETT
WASHINGTON

Agenda

- Plant overview
- Operational strategy
- Industrial pre-treatment control: PBDE



Homolog summary

Chemical of concern	Units	INFLUENT				
		2020 Q1	2020 Q2	2020 Q4	2021 Q2	2022 Q3
Polybrominated Diphenyl Ethers (Homologs)						
Dibromodiphenyl ethers	pg/L	23	22	16	0	41.3
Tribromodiphenyl ethers	pg/L	588	321	221	324	563.0
Tetrabromodiphenyl ethers	pg/L	24999	15464	12119	14293	32092
Pentabromodiphenyl ethers	pg/L	28186	18857	13418	17735	37398
Hexabromodiphenyl ethers	pg/L	4655	3369	2323	2949	5124.8
Heptabromodiphenyl ethers	pg/L	620	403	218	315	694
Octabromodiphenyl ethers	pg/L	799	454	363	731	1448
Nonabromodiphenyl ethers	pg/L	4347	1988	1584	2753	2848
Decabromodiphenyl ether	pg/L	105500	29500	22100	46900	34900
SCE-100						
Dibromodiphenyl ethers	pg/L	0.0	31.2	37.6	0.0	25.6
Tribromodiphenyl ethers	pg/L	159.6	236.0	211.2	124.4	150.1
Tetrabromodiphenyl ethers	pg/L	4769	5836	4154	2449	5496
Pentabromodiphenyl ethers	pg/L	5506	6399	4889	3119	5975
Hexabromodiphenyl ethers	pg/L	864.0	1157.3	973.2	559.0	773.0
Heptabromodiphenyl ethers	pg/L	83	96	92	54	97
Octabromodiphenyl ethers	pg/L	72	165	163	112	165
Nonabromodiphenyl ethers	pg/L	505	565	606	204	329
Decabromodiphenyl ether	pg/L	4360	4830	5640	2580	2490
FEN-015						
Dibromodiphenyl ethers	pg/L	210.8	49.9	109.0	206.4	349.8
Tribromodiphenyl ethers	pg/L	389.9	378.8	597.0	482.9	719.0
Tetrabromodiphenyl ethers	pg/L	2434	2638	5436	4868	4925
Pentabromodiphenyl ethers	pg/L	4200	4373	10799	8242	6622
Hexabromodiphenyl ethers	pg/L	1823.1	1734.1	4648.0	1666.0	1803.0
Heptabromodiphenyl ethers	pg/L	285	441	928	328	410
Octabromodiphenyl ethers	pg/L	880	998	2452	982	1420
Nonabromodiphenyl ethers	pg/L	1947	2049	5860	1655	2827
Decabromodiphenyl ether	pg/L	14700	10200	61300	7600	18900



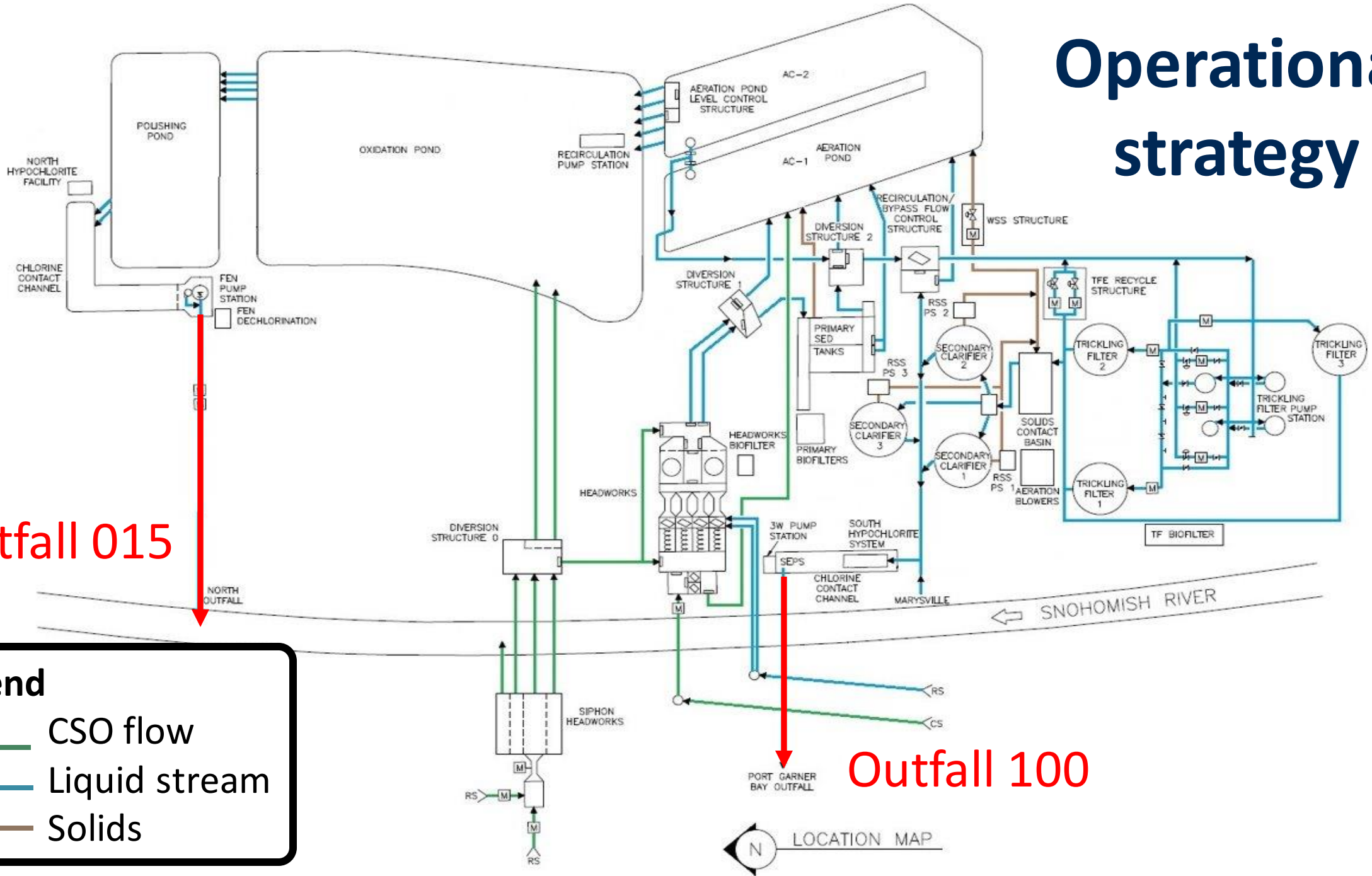
Operational strategy

Outfall 015

Outfall 100

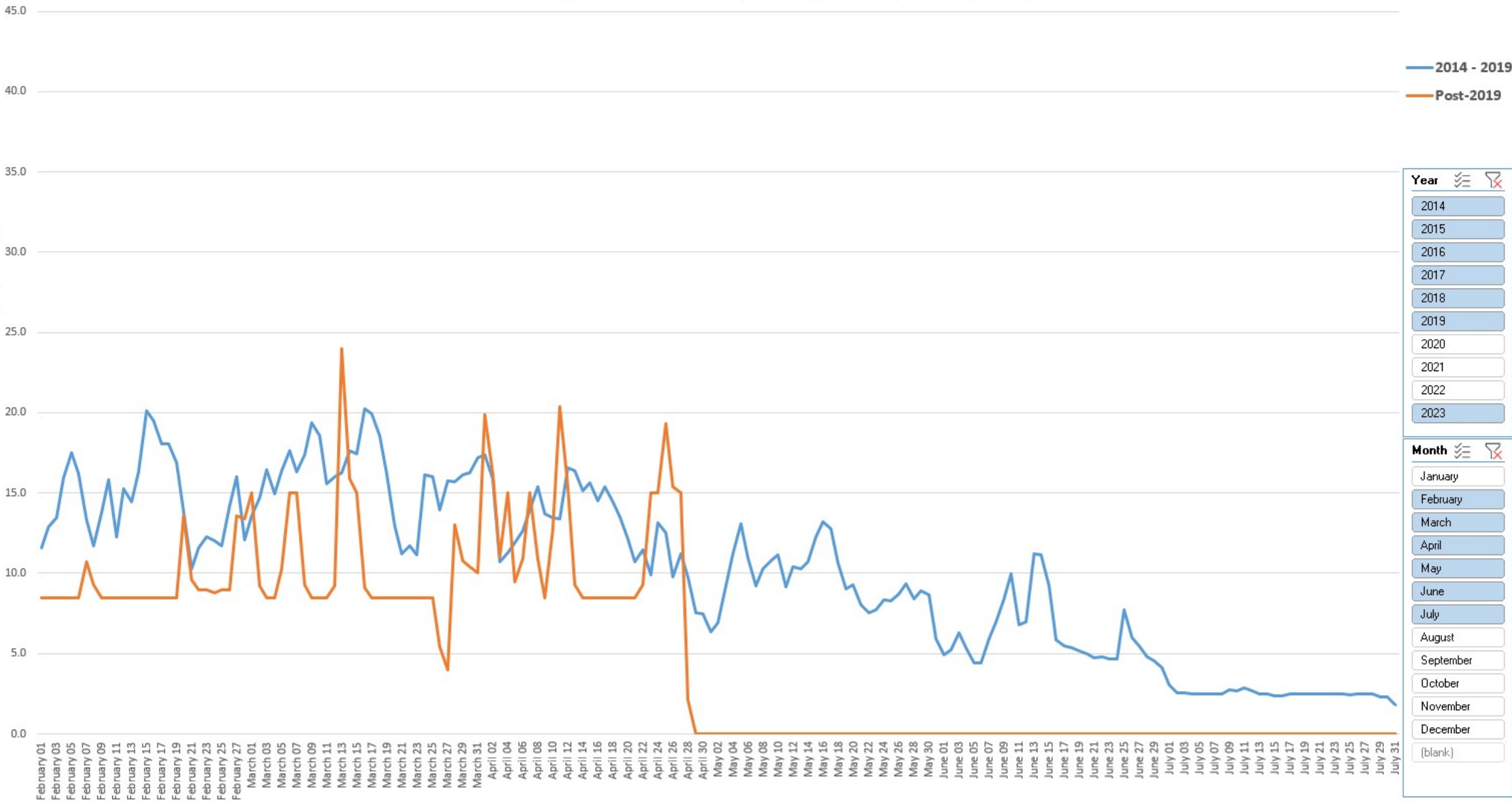
Legend

- CSO flow
- Liquid stream
- Solids



Outfall 015 (Snohomish River) Averaged Daily Flows (MGD)

Outfall 015 Flow Average (MGD)



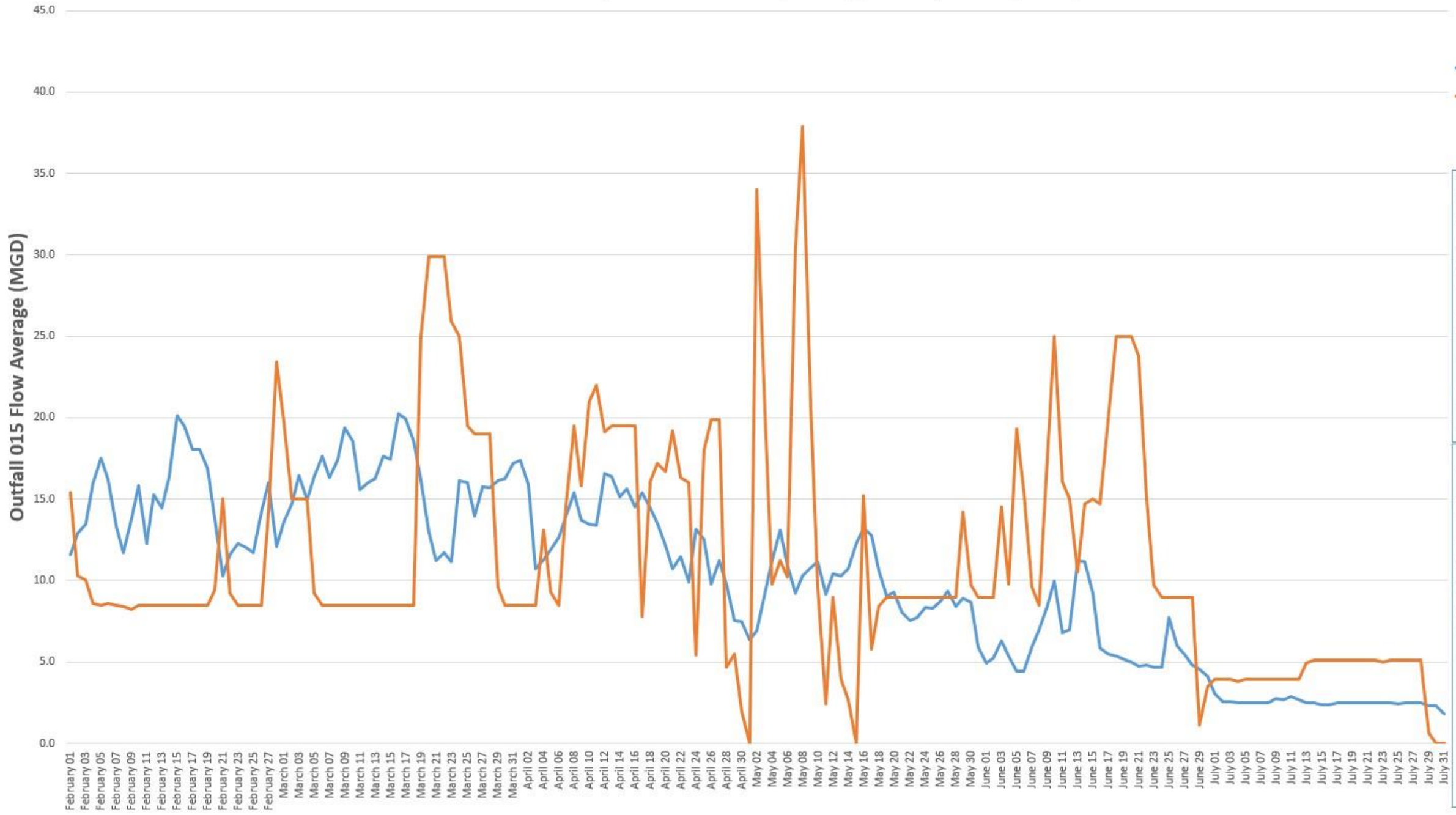
Year

- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023

Month

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December
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Outfall 015 (Snohomish River) Averaged Daily Flows (MGD)



— 2014 - 2019
— Post-2019

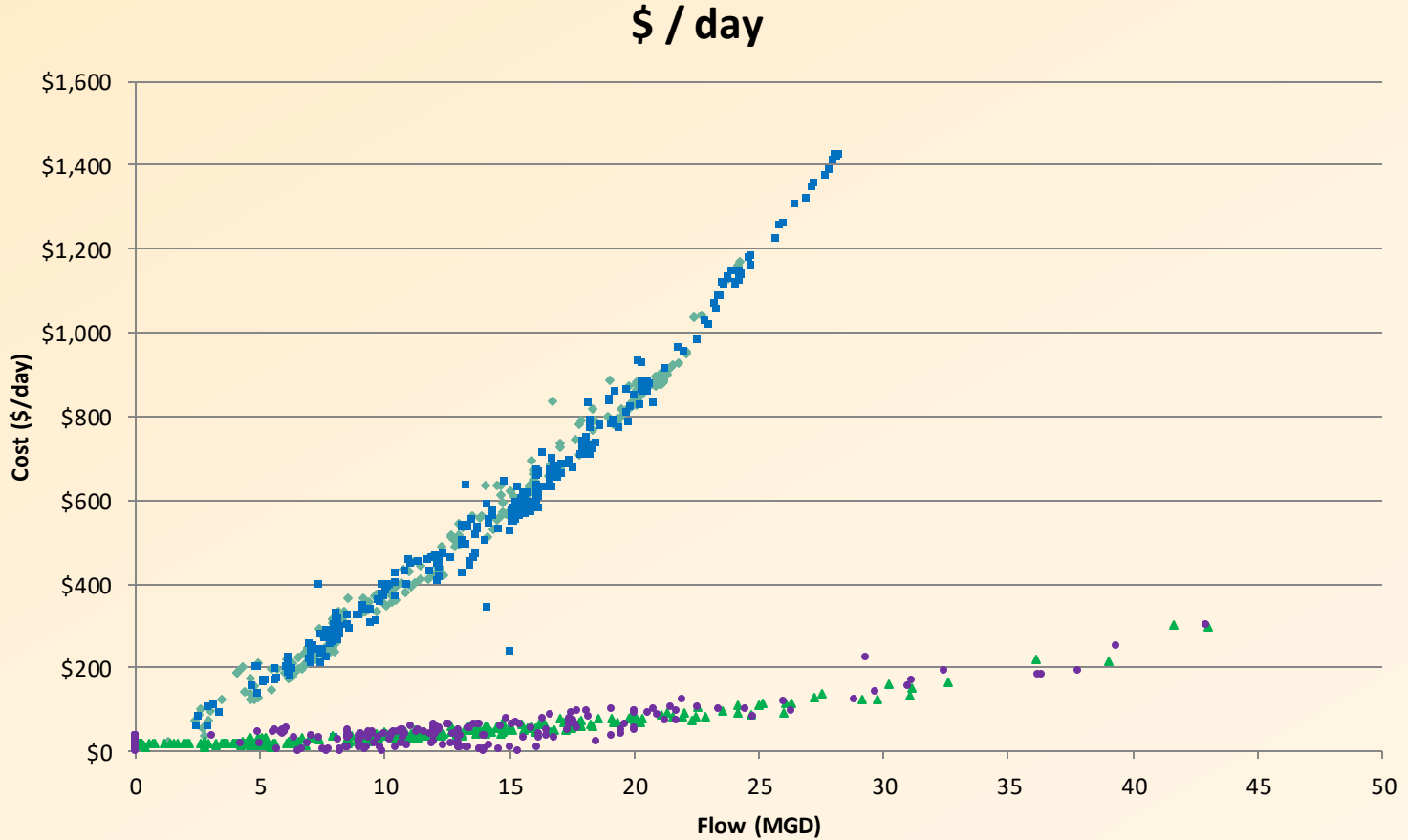
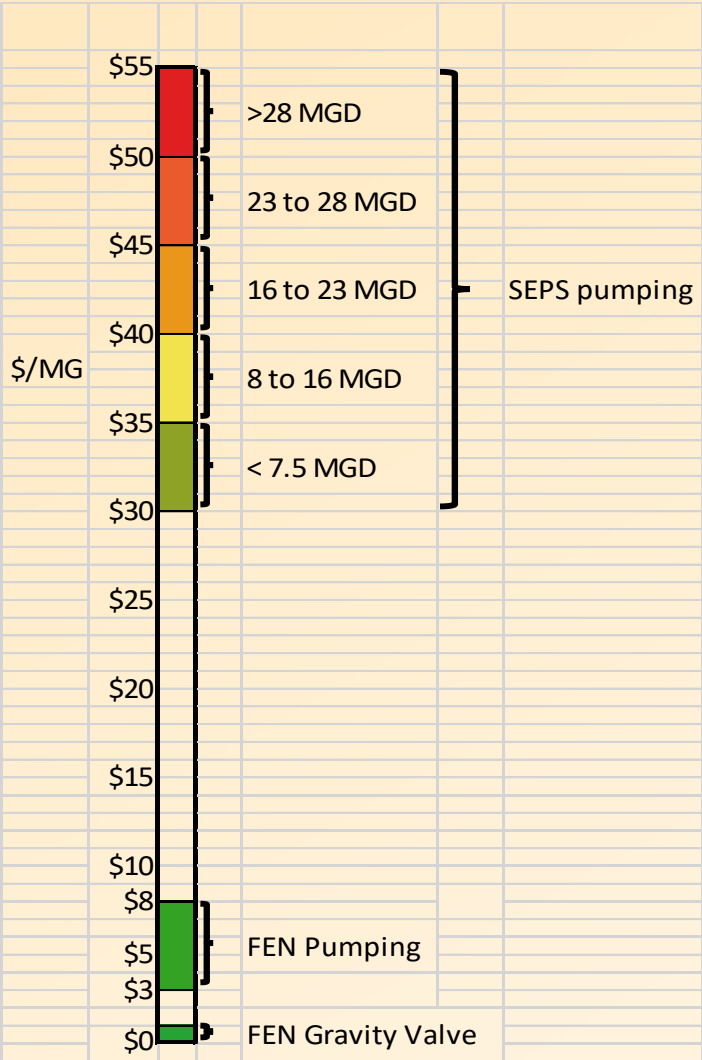
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Operational cost comparison – Deepwater vs river outfall



Pretreatment identification of PBDE

Existing PBDE data

- Quarterly Sampling 2020-2022
- 5 total samples covering all four quarters
- 3 sample sites
 - Final Effluent North
 - Secondary Effluent
 - Primary Influent

Industrial survey

- Update IU Inventory to include industry categories known or suspected to discharge PBDEs
- Will be performed through a survey of the entire industrial community
- Due with the annual report on April 1, 2025



Pretreatment control of PBDEs

Modify permits

- Legacy pollutant
- Historical usage / Current usage
- Contamination reduced or eliminated?
- Action Plan

Best Management Practices (BMPs)

- Evaluate BMPs and pollution prevention practices for use in permits to control PBDE discharge
- Product or equipment substitution
- Good housekeeping practices



Monitoring for PBDEs

- Monitor influent PBDE concentrations semiannually
- 2026 and 2027
- Results reported on semiannual DMRs
- Evaluate the results relative to previous sampling 2020-2022
- Evaluate effectiveness of Pretreatment Control Efforts



Contact us:

Derek Kerlee

Wastewater Quality Process Analyst

425.257-6790

dkerlee@everettwa.gov

Shane Sinclair

Industrial Pre-Treatment Manager

425.257.8247

SSinclair@everettwa.gov

