

OAK BAY MATS MATS POLLUTION IDENTIFICATION AND CORRECTION

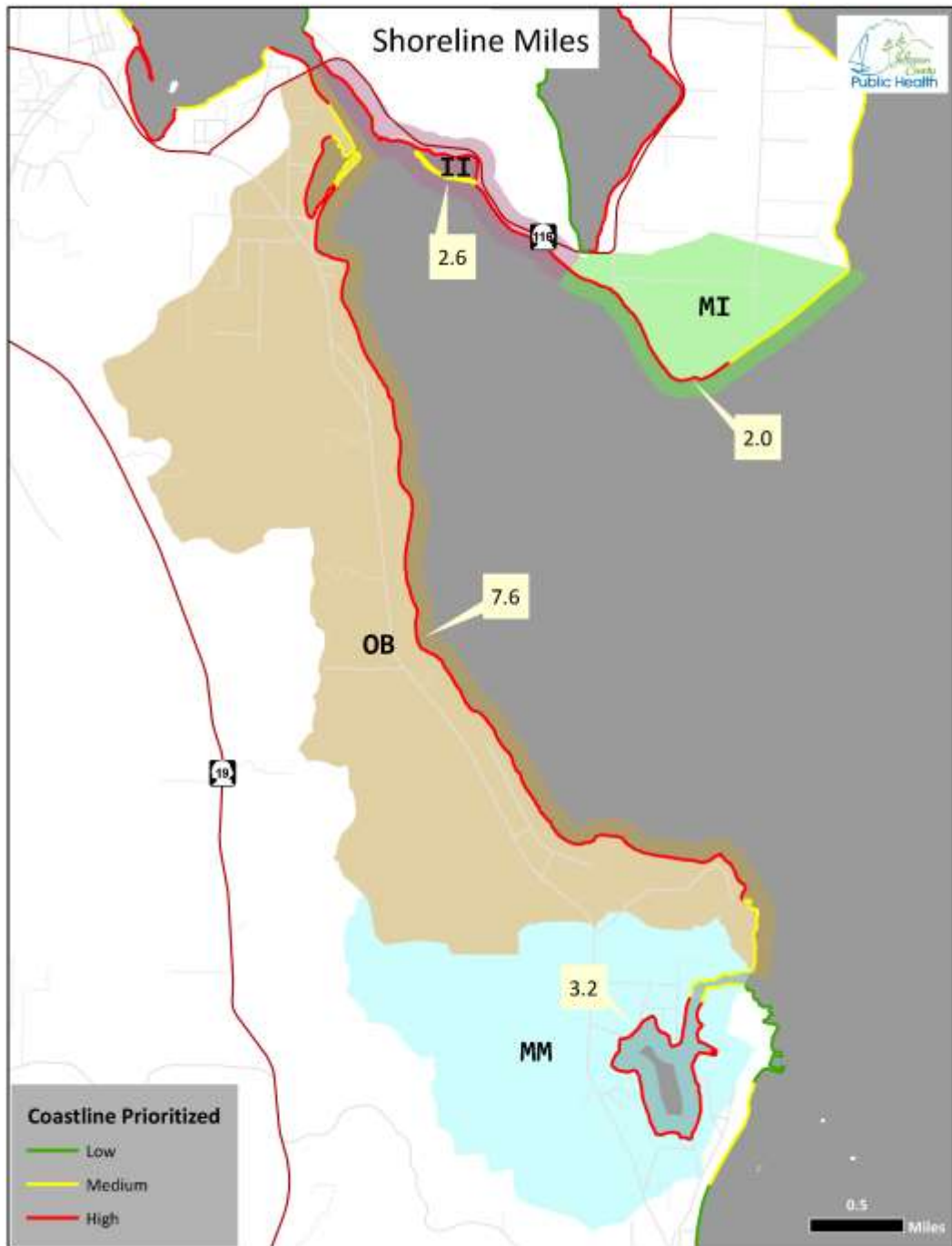
March 2022

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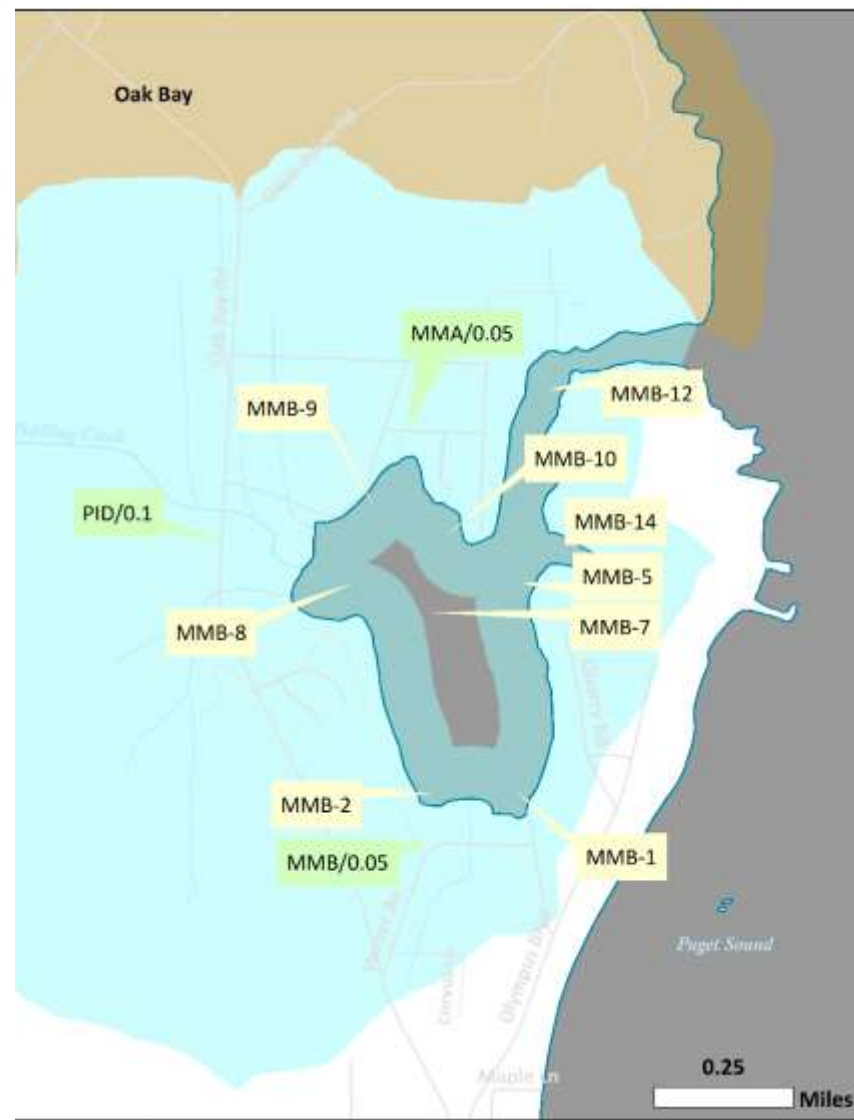
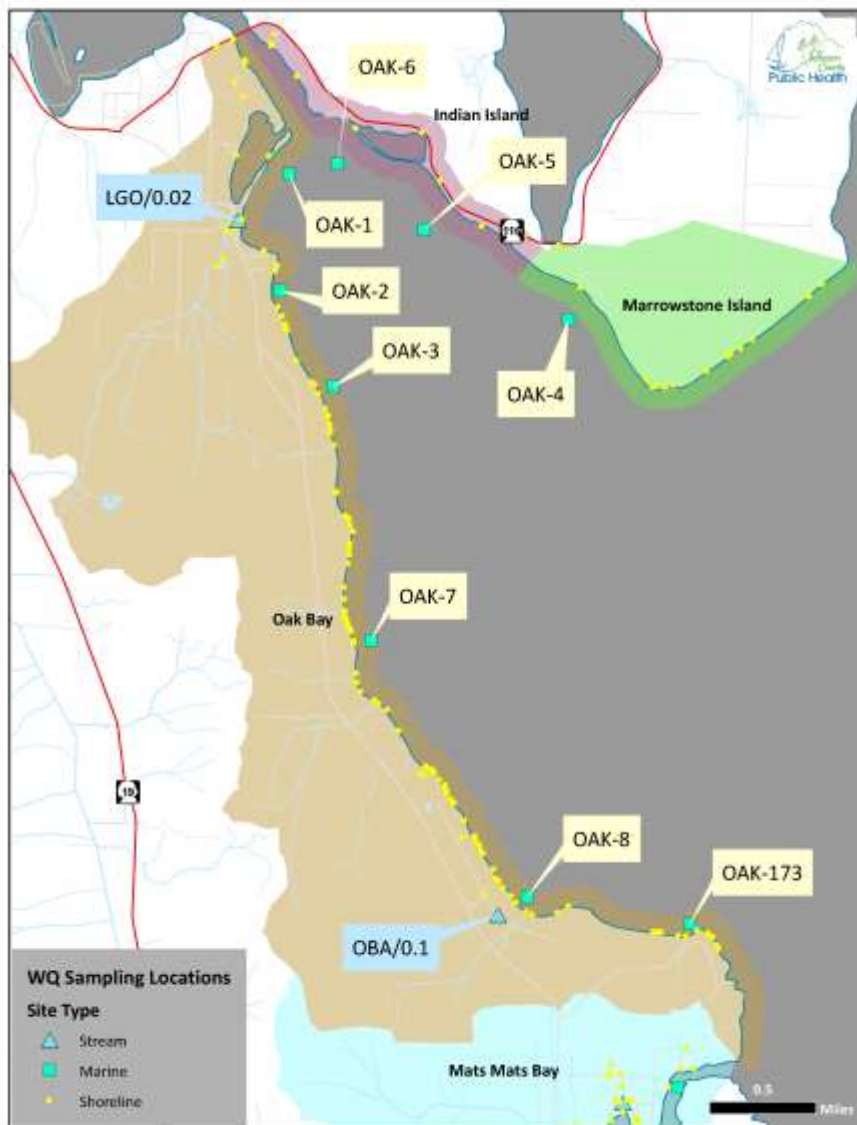
OAK BAY MATS MATS PROJECT AREA

- 4 neighborhoods
- 13.5 miles of shoreline
- 386 shoreline sampling sites
- 4 stream sites

PROJECT TASKS 2018-2022

- Water Quality Monitoring
 - Shoreline surveys: *E. coli*, *Enterococcus*
 - Stream monitoring: *E. coli*, nutrients (N,TKN, P, NH3) dissolved oxygen, temperature, specific conductance, pH
 - Marine monitoring: *Enterococcus*, turbidity
 - Mussel monitoring deployment 2019-2020 with WDFW
 - Two auto-sampling events
- Pollution Identification and Correction
 - Hot spot investigations
 - Septic system sanitary surveys
 - On-site septic code enforcement
- Outreach and Education
 - Newsletters
 - Fact sheets

MARINE AND STREAM SAMPLING SITES



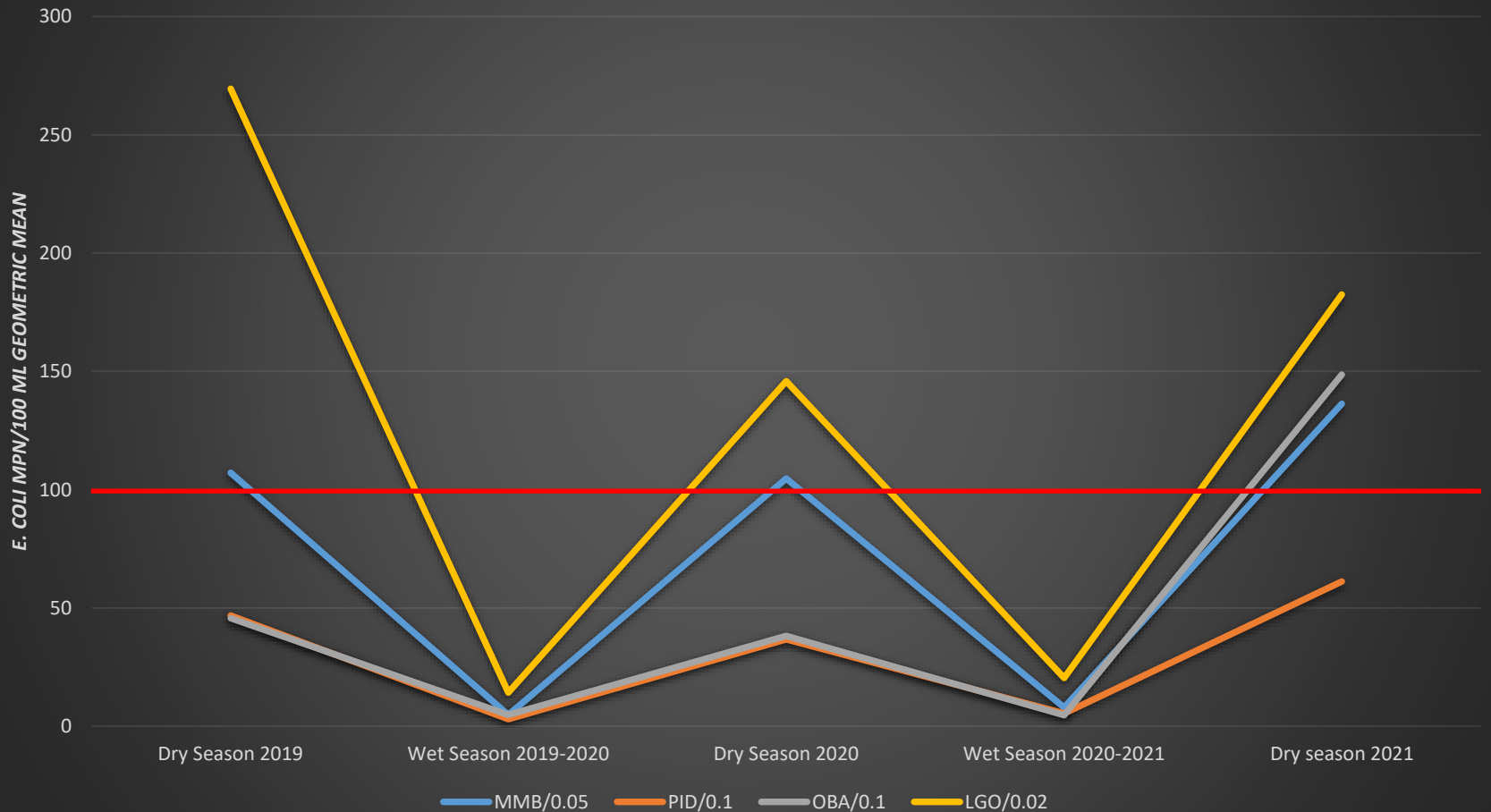
WATER QUALITY MONITORING: STREAMS



- Stream monitoring: *E. coli*, temperature, dissolved oxygen, conductivity, pH
- Little Goose, Oak Bay A, Piddling, Mats Mats B

STREAM SAMPLING BACTERIA

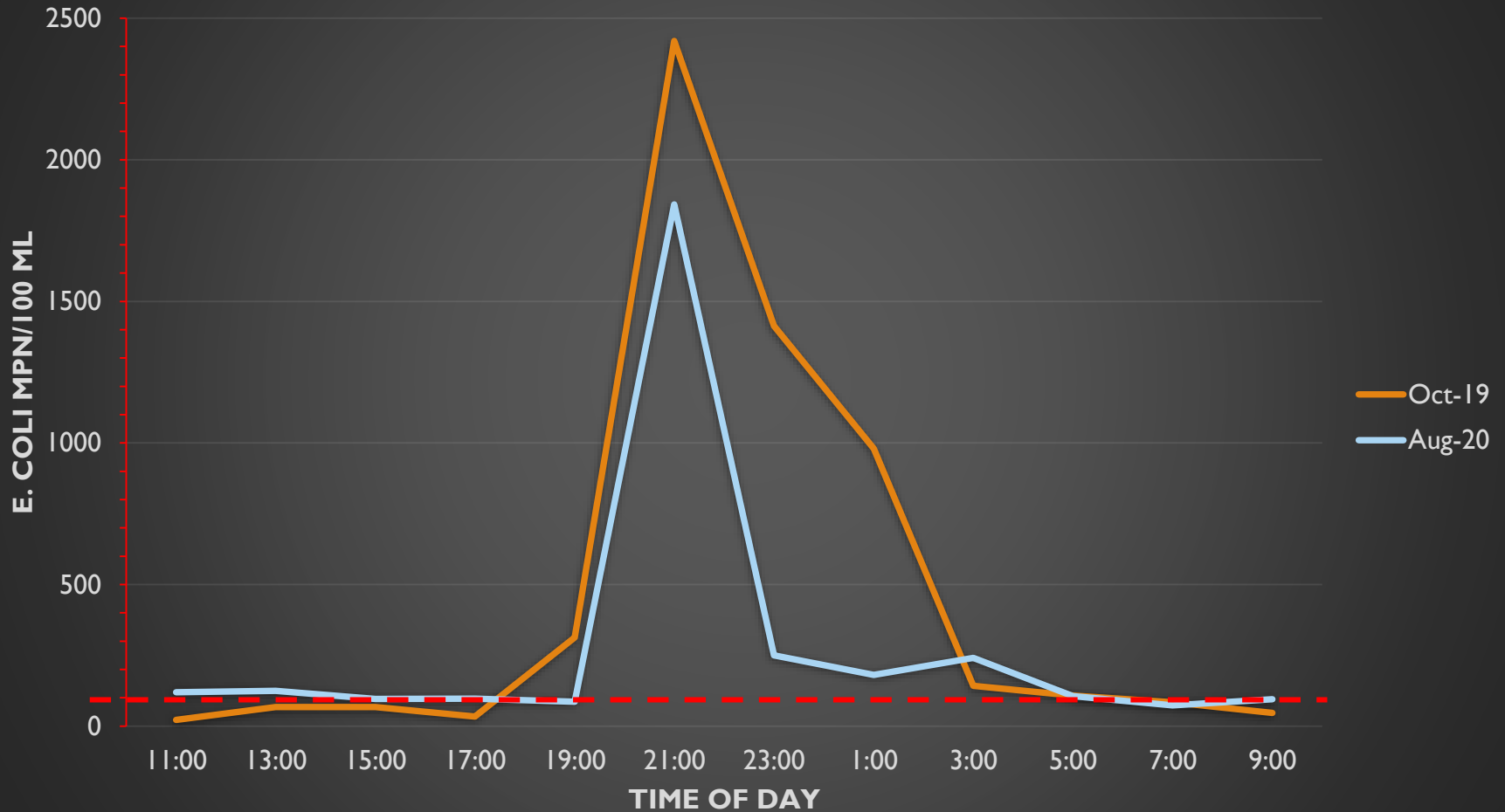
Oak Bay Mats Mats Stream Seasonal Geomeans 2019-2021



STREAM SAMPLING

	Mats Mats Creek B MMB/0.05		Oak Bay Creek A OBA/0.1		Pidling Creek PID/0.1		Little Goose Creek LGO/0.02	
	Part 1	Part 2	Part 1	Part 2	Part 1	Part 2	Part 1	Part 2
Dry 2019	FAIL	PASS	PASS	PASS	PASS	PASS	FAIL	FAIL
Wet 2019-2020	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
Dry 2020	PASS	PASS	PASS	PASS	PASS	PASS	FAIL	FAIL
Wet 2020-2021	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
Dry 2021	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL
Total	2	1	1	1	1	1	3	3

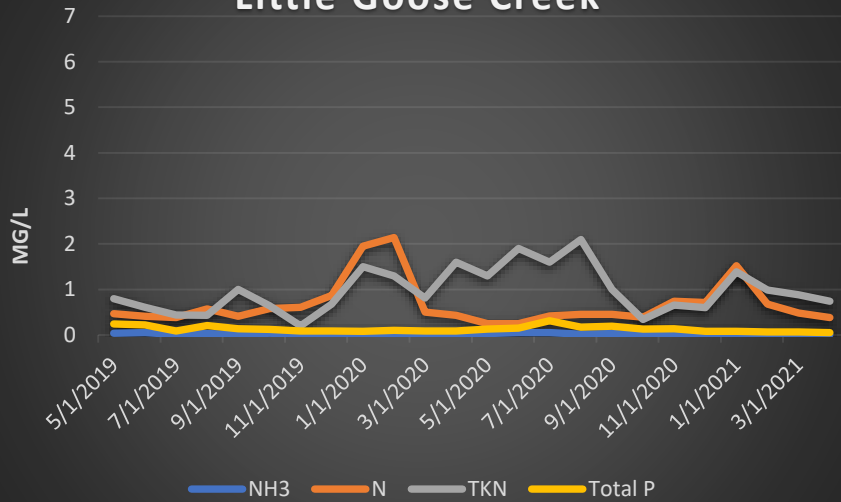
Little Goose Creek Autosampling



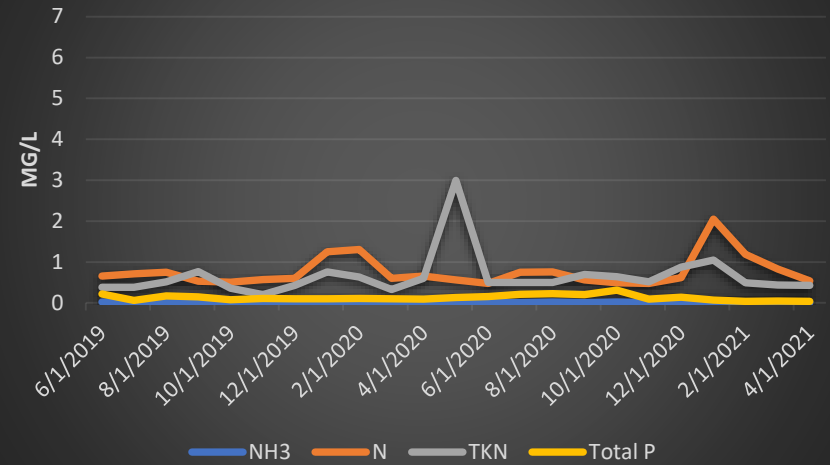
- Sampled every 2 hours over 24 hours
- Dashed red line represents threshold of 100 MPN per 100mL *E. Coli*
- Orange = pre replacement of a failed septic, blue = post replacement

STREAM SAMPLING NUTRIENTS

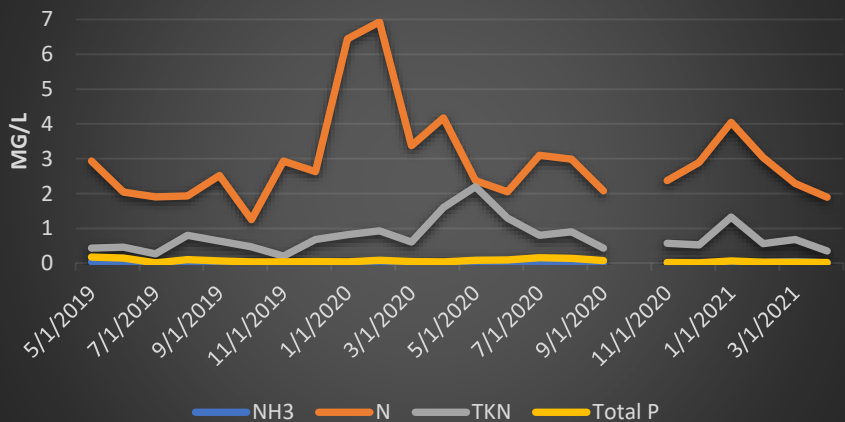
Little Goose Creek



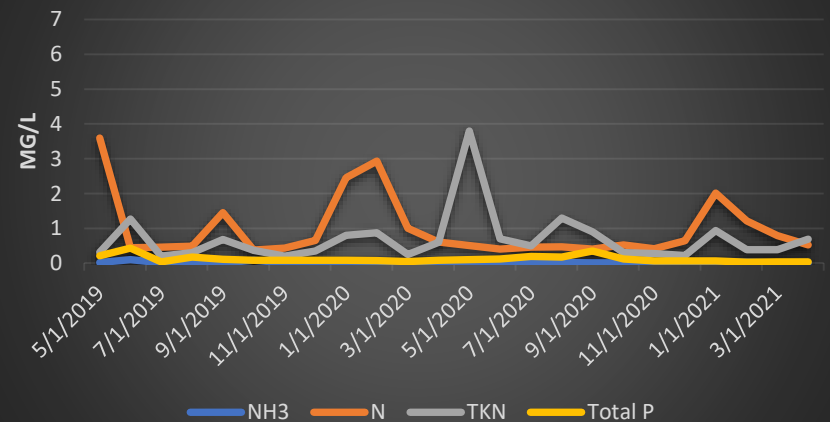
Mats Mats Creek B



Oak Bay Creek A



Piddling Creek



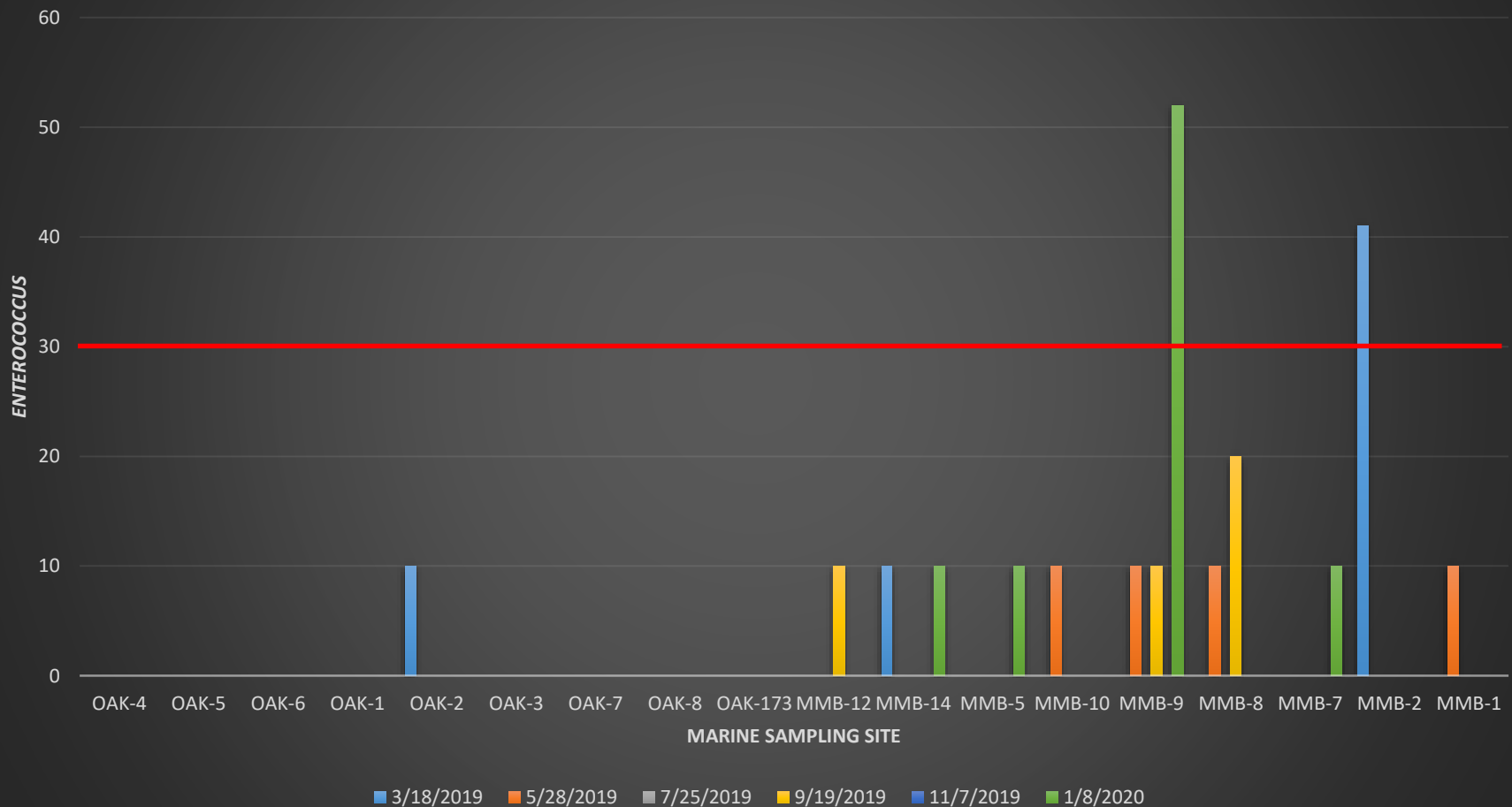
WATER QUALITY MONITORING: MARINE



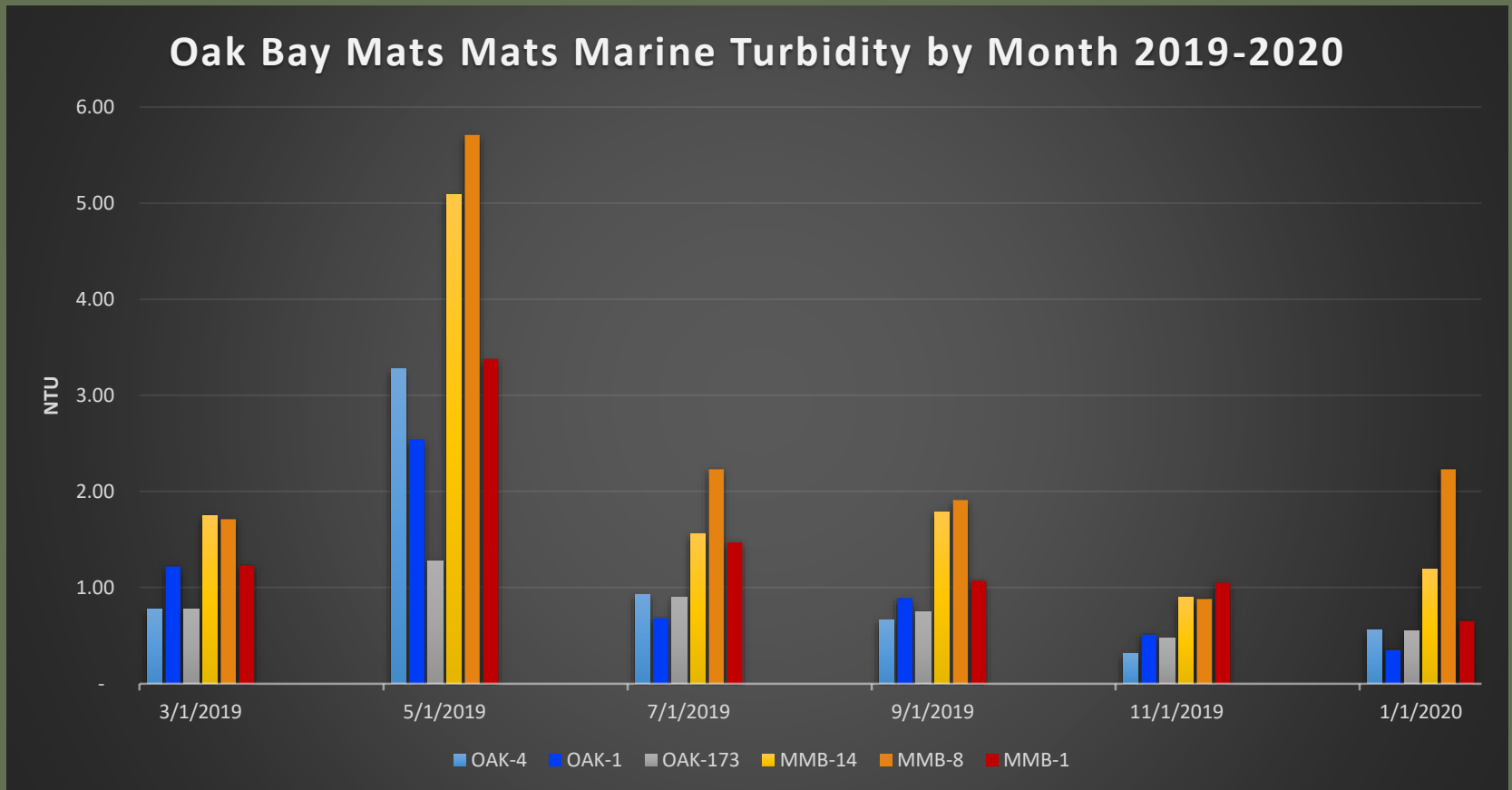
- Marine monitoring: *Enterococcus* and turbidity
- Oak Bay and Mats Mats Bay

MARINE SAMPLING BACTERIA

OBMM Marine Bacteria by Site



MARINE SAMPLING TURBIDITY



Turbidity often correlates with high bacteria, but it didn't correlate in this case.

MUSSEL WATCH

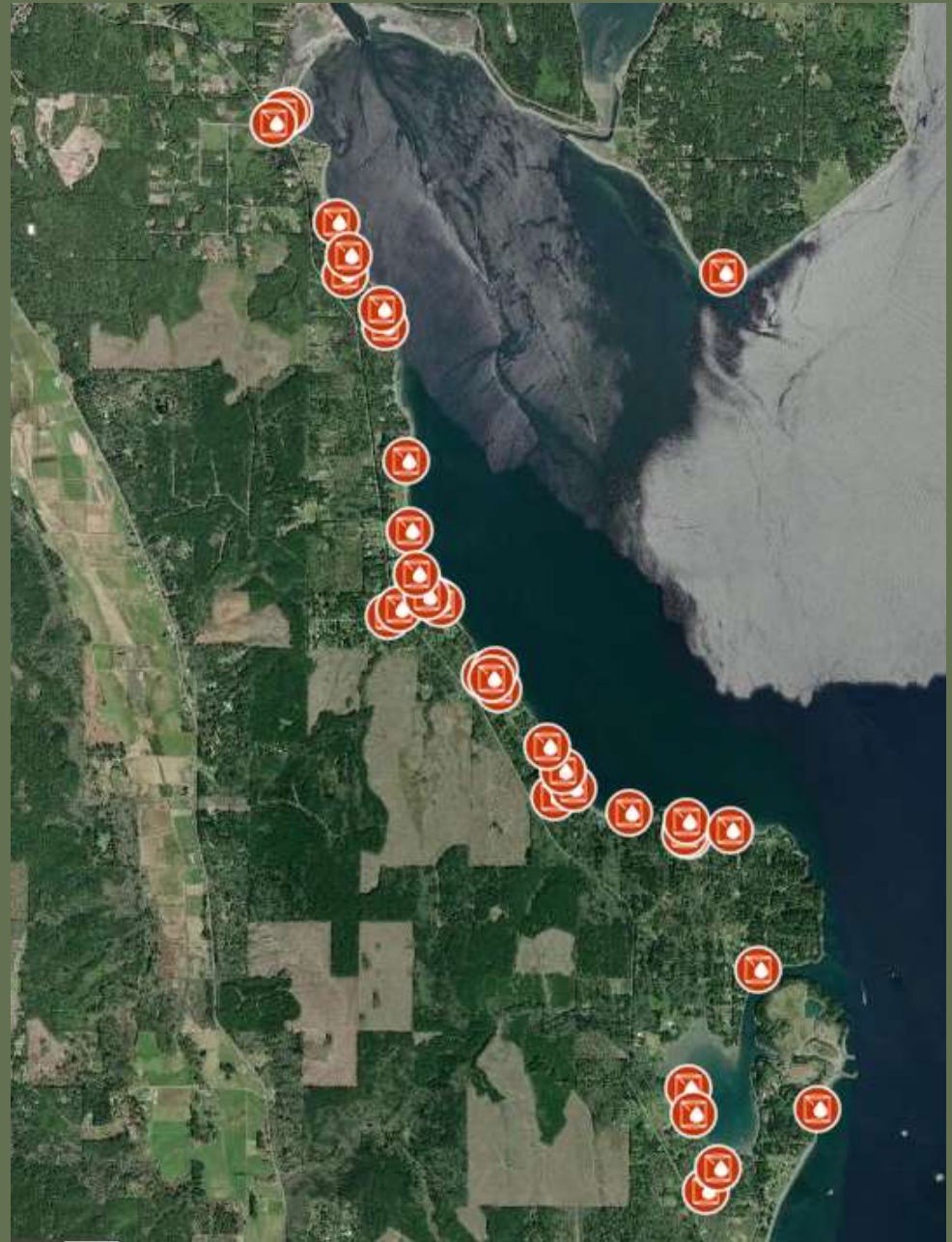


- We usually focus on shellfish collecting and concentrating bacteria, but they do the same with other contaminants
- Mussels were sampled for metals including: Mercury, Arsenic, Cadmium, Copper, Lead and Zinc.
- Also sampled for a selection of persistent organic pollutants and Polycyclic Aromatic Hydrocarbons (PAHs)
- None of the results were unusually high from our comparison, but we are awaiting the Washington State Fish and Wildlife report.

SHORELINE HOT SPOT INVESTIGATIONS

- Oak Bay: 14 hot spots
- Mats Mats: 3 hot spots
- Marrowstone: 1 hot spot
- Indian Island: 0 hot spots

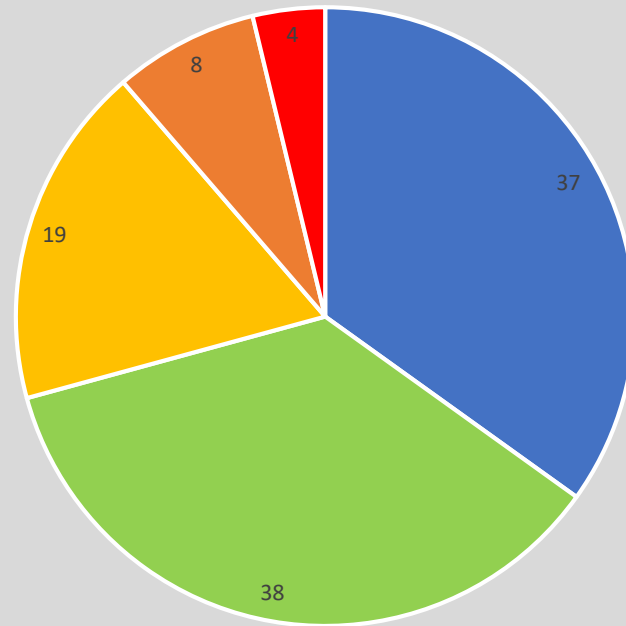
- Prioritization
- Sanitary Surveys
- Septic corrections



SANITARY SURVEYS

- Total survey count : 102
- By area:
 - Oak Bay : 83
 - Mats Mat: 17
 - Indian Island: 2
 - Marrowstone: 1

Sanitary Survey Results



■ No problems ■ Low ■ Medium ■ High ■ Violation

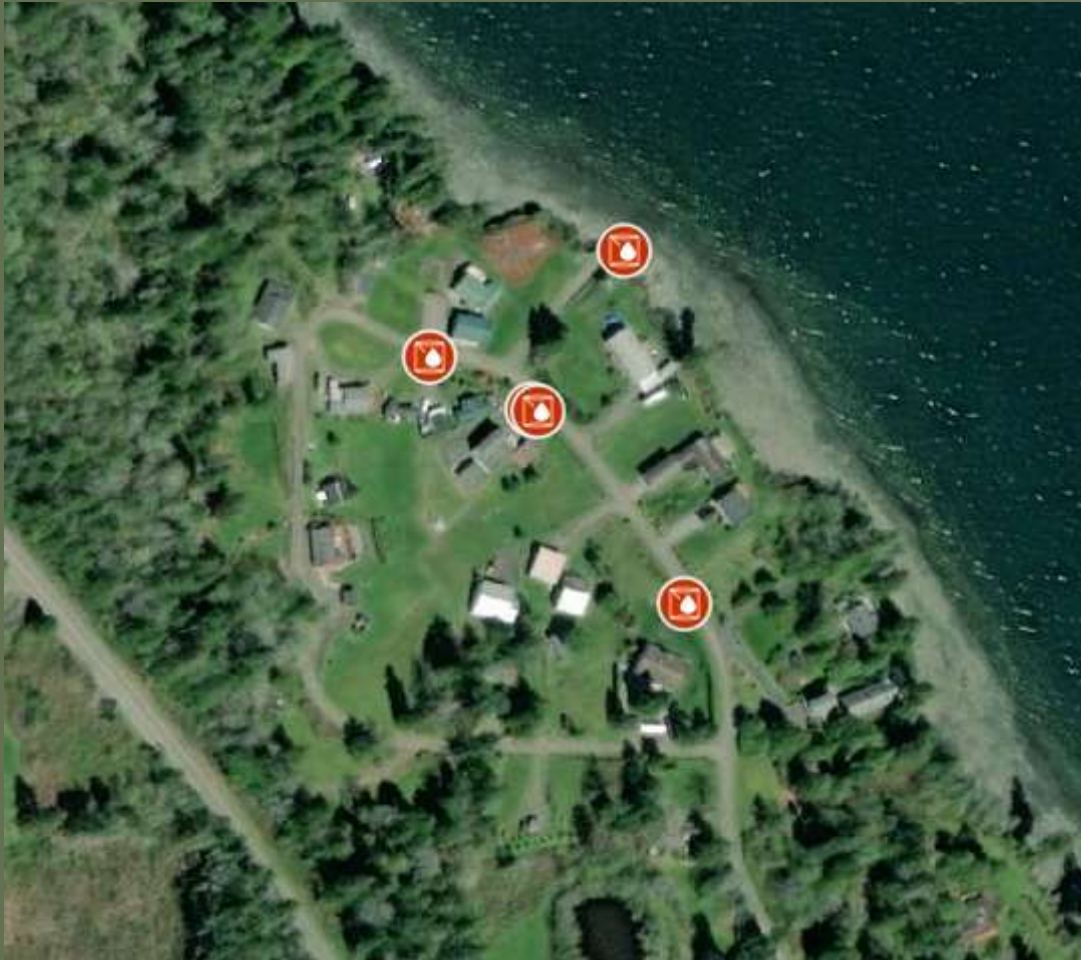
HOT SPOT INVESTIGATIONS

Rank	Site ID	Status
1	LGO/0.02	Ongoing
2	OB046	Ongoing
3	OB031	Ongoing
4	OB049	Ongoing
5	OB018	Ongoing
6	OB070	Ongoing
7	OB013	Ongoing
8	MM147	Ongoing
9	OB095	Ongoing
10	OB209/207	Concluded
11	MM132	Concluded
12	OB197	Concluded
13	MM121	Concluded
14	OB053	Concluded
15	OB074	Concluded
16	MI007	Concluded
17	OB042	Concluded
18	OB045	Concluded

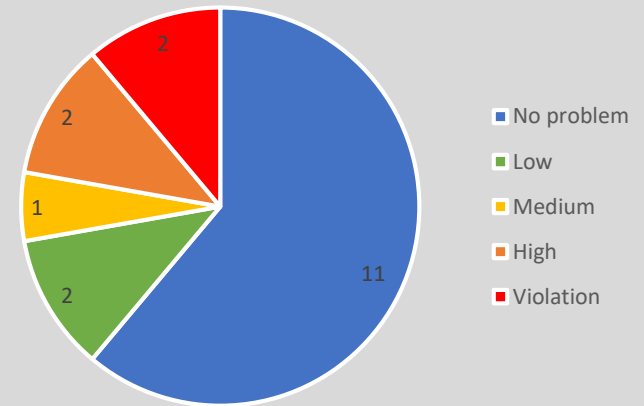
Sites 1-5 are the current highest priority.

Ongoing investigations will continue under the Foundational Monitoring Grant

HOT SPOT INVESTIGATION: OAK BAY 053



N Bay Way Hot Spot (OB053)



Two failures corrected
Bacteria is lower, but still high
Investigating other suspect OSS
Otters present

SEPTIC ENFORCEMENT CASES

- 15 Enforcement or complaint cases
- 5 Septic repairs or decommissioning completed
- 4 Septic repairs with permits to install
- 4 water quality complaints discovered to be no problem
- Other cases have continuing work.

OUTREACH

- 122 Outreach mailers sent with factsheets about high bacteria areas to homeowners
- 28 door to door sanitary surveys pre- Covid19
- Outreach performed while doing fieldwork
- Two public meetings

WHAT YOU CAN DO

- Maintain your septic system
- Talk to your friends and neighbors
- Call us with water quality and septic concerns
 - 360-385-9444
- Encourage others to do the same!

QUESTIONS?

- This project is funded by a Centennial Clean Water grant from the Washington State Department of Ecology with matching funds from the Jefferson County Clean Water District.
- Learn more about our other projects at jeffersoncountypublichealth.org.

