

Strait Priority Areas Pollution Identification and Correction Project

Jefferson County Public Health

WQC-2017-JeCoPH-00167

March 1, 2017 – June 30, 2020

Final Total Project Cost: \$ 429,273.21

Final Ecology Grant Contribution: \$ 321,955.21

Project Description

The goal of this project was to protect human health from risks of waterborne pathogens, keep shellfish beds open, and ensure water safety for recreational use.

Specific project goals included:

- Conduct four shoreline monitoring surveys for *E. coli*: two in the wet season and two in the dry season.
 - Extension: Additional six months of *E. coli* sampling.
- Conduct one year of quarterly marine monitoring at six marine stations for *Enterococcus* and two stations for nutrients.
- Conduct monthly river surveys for one year for fecal coliform at 19 stream sites and nutrients at 2 stream sites.
- Investigate all areas of concern through resampling and sanitary surveys.
- Complete a minimum of 350 sanitary surveys.
 - Amendment: Reduced to 200 sanitary surveys.
- Conduct education and outreach through factsheets, one-on-one interactions during sanitary surveys, and two public meetings.

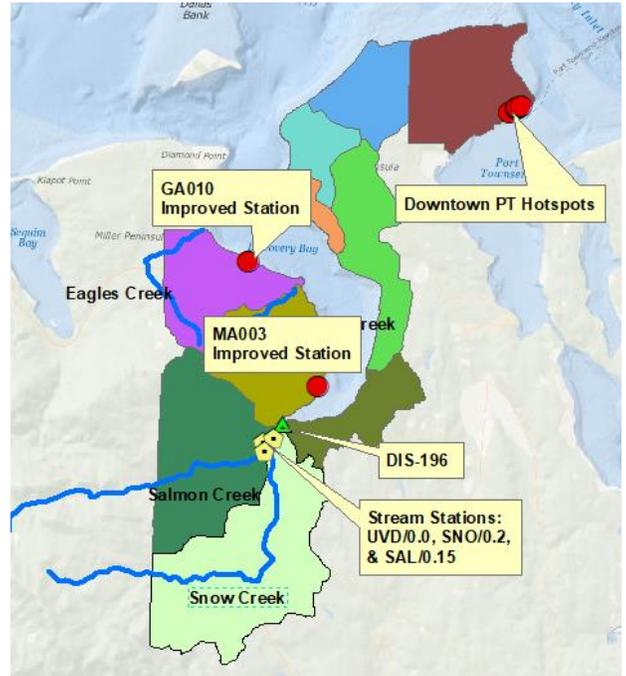


Figure 1. Hotspots, Streams, and significant repairs



Figure 2. Autosampler at SNO/0.2

Project Accomplishments

Staff monitored freshwater inputs along the shoreline for *E. coli* during three wet seasons and two dry seasons from 2017 to 2020. Staff took over 600 bacteria samples. Staff sampled six marine stations for *Enterococcus* quarterly in 2018, two of which were sampled for nutrients. Staff monitored 19 stream stations for fecal coliform monthly from November 2017 through October 2018, and collected nutrient samples at Snow Creek and Salmon Creek quarterly. When monitoring results yielded high bacteria concentrations, staff followed up with resampling. If resamples resulted in high bacteria geomeans, the area surrounding each hot spot was prioritized for sanitary surveys. Staff completed 203 sanitary surveys during the project period, and contacted nearly 300 property owners regarding completing sanitary surveys.

JCPH held two public meetings to discuss the project: one in September 2017 to announce the project, and a final meeting in January 2020 to disseminate findings from the project. JCPH also gave educational presentations for two local environmental groups: one to the Jefferson County Marine Resources Committee and one to the Jefferson Beach Naturalists.

Water Quality Improvements

The stream sampling resulted in 7 out of 19 sites passing both parts of the Washington State water quality standard for fecal coliform, 1 failing both parts of the standard and 11 failing just part 2 of the standard. Staff found lower concentrations of bacteria during the wetter months of the year, October through March. Stream nutrient levels were below levels of concern. Snow Creek and Salmon Creek results were analyzed using a non-parametric test (Mann-Kendall) and found no significant trends in bacteria concentrations. JCPH marine *Enterococcus* sampling resulted in low bacteria levels, with 95% of the samples being non-detects. Our *Enterococcus* sampling confirms similar results from DOH *Fecal coliform* sampling, overall low bacteria and the improving status of marine station DIS-196. The site DIS-196 is no longer considered, "Threatened" for commercial shellfish growing areas. Nutrient levels for DIS-196 and DIS-62 showed no levels of concern.

Shoreline monitoring resulted in high bacteria at 37 stations. Resampling and calculating the geometric averages resulted in 17 confirmed hot spots: 10 in Port Townsend, 4 in Maynard, 1 in Gardiner, 1 in Fairmount, and 1 in Cape George. Some of these stations were along the downtown Port Townsend shoreline and could be attributed to pipes draining rainwater from rooftops which are likely affected by bird waste. Hot spots in Gardiner and Maynard as well as Uncas Valley Ditch (UVD/0.0) have seen noticeable declines in bacteria, likely due to septic repairs. Water quality concerns found through community complaints and Operations and Maintenance inspections were also addressed with septic repairs or decommissioning. Microbial source tracking sampling at Zerr drain (Zerr/0.11) indicated a prevalence of avian bacteria as opposed to human or livestock.

The Next Steps for Continued Success

It is important for staff to perform public outreach regarding the reduction of nonpoint pollution entering surface water. One critical step will be continuing to provide homeowner septic classes. These have proven effective at increasing Operations and Maintenance inspection rates throughout Jefferson County. Staff will continue to monitor high bacteria sites and work with the City of Port Townsend and homeowners to address pollution. Staff will work on rectifying past septic records within the sewered area of Port Townsend. New property owners within this sewered area are sometimes unaware that there are still on-site septic system components that are potential sources of bacteria pollution or public safety concerns. Another step for JCPH is to continue monitoring streams and shorelines as part of an upcoming county-wide Foundational Monitoring Project.

Lessons Learned

Public knowledge and understanding of water quality impacts from pollution is critical to pollution correction. In the future we can improve and expand our outreach tactics by providing open houses, attending more public events, and being more present in the public eye. Increased public support could lead to additional pollution correction success. Another lesson we learned was combining multiple deliverables per trip will increase completed work without additional labor costs. Finally, JCPH water quality staff should have knowledge regarding each grant and project area to maximize efficiency when completing tasks.

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Figure 3. MA003 Improved Hotspot