Jefferson County Water Quality Performance Measures
2015 Year-end Report

MISSION: The mission of the Water Quality Department is to protect public health by monitoring and responding to threats to water quality for protection of human health and wildlife habitat by using available local, state, and federal funding effectively and efficiently.

This department implements the following strategic objectives for the 2014 Budget:

- Addressing locally identified public environmental health issues.
- Protecting and ensuring adequate clean water supplies for citizens, the shellfish industry and wildlife.
- Protecting and enhancing natural resources.
- Operating within a business plan based on sustainable resources, measured performance, and outstanding customer service.

Goal	Objective	Task	Performance Measure	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Planned	2015 Actual
Goal 1: Recreationalists at popular lakes such as Anderson Lake, Gibbs Lake and Lake Leland will be increasingly aware of toxic algae threats to human and animal health.	Monitor all lakes with public access from April through September for toxins. Maintain and improve JCPH water quality webpage and other outreach activities.	Sample public access lakes for presence/ absence of algae blooms and biotoxins. Update website with pertinent information when found.	# of lakes monitored for cyanobacteria	6	6	3	3	3	3
			Pass/Fail	Pass	Pass	Pass	Pass	Pass	Pass
Goal 2: Better understand water quality trends for parameters such as fecal coliform, dissolved oxygen and temperature.	Use funds awarded by the state Centennial Clean Water Fund to carry out Clean Water projects. Monitor stream flow data from high priority streams.	Sample existing water quality stations for fecal coliform, dissolved oxygen and temperature and conduct trend analysis. Sample freshwater discharges to beaches in wet season and dry season. Review data collected by other agencies.	# of marine water quality stations monitored	17	9	0	0	0	0
			# of water quality stations monitored: Chimacum Creek	0	28	0	0	30	31
			# of water quality stations monitored: Salmon & Snow Creeks	19	0	19	0	0	0
			# of water quality stations monitored: Hood Canal watershed	0	18	19	20	36	44
			Miles of shoreline surveyed for pollution	89	45	60	94	68	94
			# of stream gauges maintained	7	0	0	0	0	0

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Goal	Objective	Task	Performance Measure	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Planned	2015 Actual
Goal 3: High priority sites for pollution identification and correction will be identified and corrected.	Condition, status and use of approximately 300 more septic systems will have been surveyed in project areas.	Conduct educational outreach to septic system owners in the form of sanitary surveys of septic systems.	# of sanitary surveys completed	418	414	506	390	300	349
Goal 3.5: Land use and its effects on water quality in project areas will be better understood.	Investigate public complaints about water quality or septic systems within 72 hours.	Update PIC protocol and sanitary survey form.	Pass/Fail	--	--	Pass	Pass	Pass	Pass
	Incorporate agricultural survey data from JCCD into sanitary survey process.								
Goal 4: Improve Leland Creek habitat and water quality.	Initiate Leland Creek restoration actions.	Choose a site on Leland Creek to conduct restoration activities.	Pass / Fail	--	--	Pass	Pass	Pass	Pass
Goal 5: Residents in eastern Jefferson County will be more aware of project activities and actions they can take to protect water quality in their neighborhood.	Prepare reports on the status and trends of water quality in Jefferson County.	Send newsletters to project area residents.	# of newsletters mailed	6,000	12,250	1,300	500	1,000	2,200
	Maintain and improve JCPH water quality webpage and other outreach activities.	Distribute literature in person during fieldwork.	# water quality brochures distributed				500	500	575
		Post informational materials, water quality results and reports on website.	# of water quality reports posted on JCPH webpage	1	6	0	1	2	2
Goal 6: Recreationalists at Jefferson County marine beaches will be notified of the status of water quality in a timely and efficient manner.	Monitor water quality at public swimming beaches on a weekly basis during the swimming season to protect public health.	Take water samples of marine beaches and test for water quality	# of swimming beaches monitored	6	3	3	3	3	4
	Continue public education on the importance of clean water in Jefferson County	Interact with the public and partners in order to efficiently deliver information							

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Goal	Objective	Task	Performance Measure	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Planned	2015 Actual
	focusing on actions citizens can take to keep our water clean and productive.	Issue press releases when relevant information needs to quickly disseminated.							
Goal 7: The public will stay informed about the safety of recreational shellfish beaches relative to biotoxin threats and will be educated on emerging threats such as Diarrhetic Shellfish Poisoning.	Organize a volunteer network of shellfish samplers to monitor for shellfish biotoxins in a timely and cost effective manner. Coordinate with Washington Department of Health to communicate risks from the recreational harvest of shellfish to the public. Maintain and improve JCPH water quality webpage and other outreach activities.	Take shellfish samples from marine beaches and test for biotoxins. Interact with the public and partners in order to efficiently deliver information. Issue press releases and post signs when relevant information needs to quickly disseminated. Update website with pertinent information when found.	# of beaches monitored for shellfish safety	7	7	7	7	7	7
Goal 8: Stormwater inputs into Port Townsend Bay will be better known.	Monitor stormwater discharges to Port Townsend Bay for pathogens.	Conduct Pollution Identification and Control activities in program areas.	# of shoreline stormwater outfalls screened for pollution	0	0	6	43	28	0
Goal 9: Clean Water District activities will be evaluated for effectiveness and recommendations for future work will be made.	Clean Water District Advisory Council meetings will be held and evaluation and recommendations submitted to the Board of County Commissioners. Use funds awarded by the state Centennial Clean Water Fund to carry out Clean Water projects.	Facilitate Clean Water District Advisory Council Meetings.	# of Clean Water District Advisory Council meetings held	0	4	1	3	4	4

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STUDY/ANALYSIS

Water Quality work was primarily focused on Clean Water Projects in 2015. Clean Water Projects are funded using Clean Water District funds as match to Ecology Centennial Clean Water grant funds. This allows Clean Water District funds to be leveraged at a 1 to 3 ratio with state funds, allowing projects a much greater scope of work. Contract negotiations with Ecology began on the Quilcene – Dabob Clean Water Project, with work anticipated to begin in 2016.

The Northeast Jefferson Clean Water Project was completed at the end of 2015. All grant deliverables were met or surpassed, although more work in the project area remains to be done. For example, although the goal of sanitary surveys was 400, and 489 were completed, several thousand systems remain unsurveyed. In particular, it became evident during the surveys that many more septic systems than are currently documented exist in the City of Port Townsend. A future project will be needed to complete documenting them.

Stream monitoring in the Chimacum Creek basin began in October through the Hood Canal Priority Basins project and will continue through 2016. The Water Quality team has partnered with the Jefferson County Conservation District to share the monitoring task so that the entire basin can be sampled during the course of one day each month. This coverage over a greater area allows a clearer picture of water quality at the time of monitoring and avoids some of the variability from changing environmental conditions over multiple days.

The Hood Canal Clean Streams project continued monitoring Quilcene area streams for fecal coliform and temperature. 2015 was a challenging year for stream flows and temperature due to the smallest winter snowpack on record, drought conditions and high summer temperatures. Several monitoring stations failed to meet state standards for fecal coliform, temperature, dissolved oxygen and pH. Still, Quilcene streams fared slightly better than some Puget Sound region streams, perhaps due to proximity to extensive forested areas in Olympic National Forest.

Restoration of Leland Creek riparian areas continued in 2015, with last year's plantings maturing well.

The Jefferson County Lakes Toxic Cyanobacteria project was completed in June, 2015. This project was funded primarily by the Ecology Freshwater Algae Control Program, with additional support from Jefferson County. Anderson Lake closed for most of the season due to high toxin levels. No illnesses were reported and the public seems to have become more aware of the potential risks. Very little state funding for fiscal year 2016 was offered for lake monitoring and Water Quality's grant application was denied. From July onwards Water Quality maintained a minimal monitoring effort with county funding, but a long-range solution needs to be found for not only monitoring but further research into causes and control of toxic cyanobacteria.

The Implementation Phase of the Hood Canal Regional Pollution Identification and Correction project was begun in 2015. This is a joint effort of the Hood Canal Coordinating Council, and the Kitsap County, Jefferson County and Mason County health departments to create a regional framework for similar pollution control projects. Shoreline monitoring and targeted sanitary surveys were done in Irondale/Port Hadlock, Oak Bay, Paradise Bay/Hood Head, Brinnon, Pleasant Harbor and Duckabush.

The Recreational Shellfish Biotoxin Monitoring project found early and extensive marine harmful algae blooms, impacting recreational shellfish harvesting in areas that hadn't previously experienced closures during prime harvesting season, such as Hood Canal. A large outreach and education effort was made by Jefferson County Public Health, and no biotoxin-related illnesses were reported from Jefferson County. In spite of the outreach

effort, staff still encountered members of the public with misunderstandings about toxin health risks, indicating a need for much more education and outreach. Unfortunately state funding for Shellfish Biotoxin work has stayed steady despite increasing frequency and severity of harmful algae blooms. Funding levels from the state only allow a very limited effort from the Water Quality team with a heavy reliance on volunteers.

The BEACH monitoring project has been funded by the state at a minimal level in the last few years, however Jefferson County Public Health was able to obtain additional funding to add North Beach to the other monitoring sites – Fort Worden, Irondale Beach and Mystery Bay. Water quality remained acceptable during the summer swimming season.

The Clean Water District Advisory Council met and completed a Water Quality Monitoring Plan for the county as well as draft a Prioritized Work Plan, to be adopted in 2016. Water Quality assisted Central Services in contracting with consultants to upgrade the county's GIS capabilities to enable better data collection, analysis, mapping and distribution of results. This work will be continued in 2016.

New Water Quality staff were hired in 2015 and additional Environmental Health staff were trained to perform sanitary surveys for the Water Quality team. This will help Water Quality achieve its sampling and survey goals for 2016.

Conservation Futures

In 2015, the Conservation Futures Citizen Oversight Committee recommended four projects for funding by the BoCC. The 2015 QWC Addition project received $14,626 towards the acquisition of five parcels within the Quimper Wildlife Corridor totaling 1.11 acres of vacant land near Winona Wetland. The Bishop Dairy Preservation project received $56,225 towards the acquisition of a conservation easement on 264 acres that comprise a historic farm and dairy. The Lower Big Quilcene River Riparian Protection project received $31,440 towards the purchase of 14.16 acres of vacant land along the lower Big Quilcene River to benefit Hood Canal Summer Chum and other fish and wildlife species. This project also closed in September of 2015. The Midori Farm project received $94,626 towards the acquisition of a conservation easement on 29 acres of prime soils for agriculture with pockets of mature forest. Jefferson Land Trust is sponsoring each of these project. The Irvin Property, part of the Snow Creek Watershed Acquisitions Project approved in 2014, closed in August.

Floodplain Acquisitions

Himalayan blackberry and solid waste were removed from the Powerlines Reaches of the Duckabush and Dosewallips Rivers and replanted with native plant seedlings by the Washington Conservation Corps as part of a WA State Recreation and Conservation Office (RCO) grant initiated by EH in 2012. In a separate RCO effort, also initiated in 2012, the Henderson property was acquired on Rodgers St. in Quilcene. The mobile home on the property will be removed and the site returned to native vegetation. A successful grant application to the RCO in 2015 will fund at least three additional acquisitions north of the Big Quilcene River that have been impacted by flooding. Staff participated in a series of stakeholder/trustee meetings, in partnership with The Nature Conservancy and the Hood Canal Salmon Enhancement Group, that are leading towards a "master plan" for restoration of the lower mile of the river.

North Pacific Coast Marine Resources Committee (NPC MRC)

In 2015, EH continued to facilitate and coordinate the NPC MRC and holds the pass-through grant agreement with WDFW. The MRC represents a partnership with Clallam County (through an interlocal agreement) and meets monthly in Forks to promote citizen engagement in marine and coastal

issues and projects. This year's projects included marine education for coast schools through Feiro Marine Life Center, high school mentorships through the Natural Resources Program at the North Olympic Peninsula Skills Center, publication of the West End Natural Resources News, a film festival and trashion show during the River & Ocean Days of Forks' RainFest celebration, and support for the Washington Coast (beach) Cleanup.

Northeast Jefferson Septic System Sanitary Survey Results

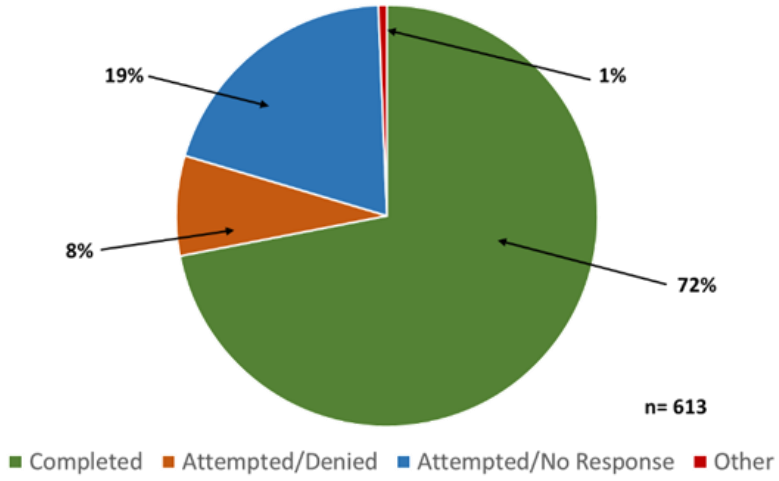

Figure 1, Survey Status; Number and Percent Completed

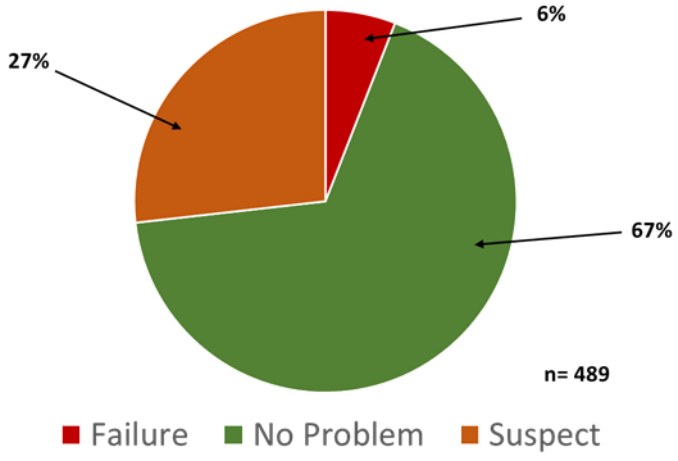

Figure 2, Survey Results

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PROGRAM STATISTICS

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Lakes monitored for cyanobacteria	9	9	9	4	3	5	4	3	3	3
Water quality stations monitored: Chimacum Creek	0	40	40	28	28	0	28	0	0	31
Water quality stations monitored: Salmon & Snow Creeks	0	17	0	19	19	19	17	19	0	0
Water quality stations monitored: Hood Canal watershed	0	0	0	0	0	17	17	19	20	44
Miles of shoreline surveyed for pollution	N/A	5	49	76	77	89	11	60	94	94
Marine water quality stations monitored	N/A	7	7	7	17	17	9	0	0	0
Sanitary surveys completed	N/A	N/A	N/A	259	241	350	553	506	390	349
Beaches monitored for shellfish safety	7	7	7	7	7	7	7	7	7	7
Swimming beaches monitored	0	2	3	4	3	6	3	3	3	4
Stream gauges maintained	8	8	9	8	8	7	0	0	0	0
Clean Water District Advisory Council meetings held	0	0	0	0	0	0	4	1	3	4