

# Annual Report to Washington State Department of Health Drayton Harbor Shellfish Protection District 2007

Efforts continue in the Drayton Harbor Shellfish Protection District to affect change in the water quality over the shellfish beds and throughout the district as a whole. The following is a summary of 2007 activities organized by the objectives of the shellfish recovery plan. The summary includes both on-going tasks and progress made on specific recommendations identified in the 2007 plan.

## **Objective 1: Establish Coordinated Program for Drayton Harbor**

### On-Going Elements

- Program Support-Whatcom County Public Works has one FTE and an annual budget of \$85,000 to apply to marine resources projects. Staff time and resources are primarily applied to the two shellfish protection districts. Staff time is dedicated to technical and administrative support to the advisory committee, coordination with the advisory committee and agencies, reviewing water quality data, and developing and managing projects, contracts, and grants.
- Advisory Committee-The Drayton Harbor Shellfish Advisory Committee generally meets every other month. The advisory committee completed an update to the shellfish recovery plan with a series of recommendations under eight objectives (Appendix A). The County Council adopted the updated plan by resolution in May 2007.
- Milestones Reached:
  - *County staff and budget dedicated to shellfish district for 2007.*
  - *Updated shellfish recovery plan adopted by Council.*
  - *Four advisory committee meetings in 2007 and multiple project meetings.*

### Plan Recommendations

- Dedicated Funding Source- The advisory committee recommended a dedicated funding source for the shellfish protection district as a part of the updated recovery plan. The County Council held discussions around proposals for a shellfish district assessment and an increase of the flood tax to support the proposed projects. Neither proposal was approved prior to the development of the 2008 budget. The County is currently pursuing a comprehensive water resources integration project that will include evaluation of funding sources for a variety of water resources projects. This project is scheduled to be complete prior to planning for the 2009 budget.
- Grant Funding Sources- Whatcom County Public Works (on behalf of the Drayton Harbor Shellfish Protection District) received a grant from the Department of Ecology for \$75,000 to implement a pilot stormwater retrofit project in East Blaine designed to reduce bacteria levels. The City of Blaine recently completed a feasibility study for this project and these funds combined with additional funds from the county and city will allow final design and construction of the pilot project.
- Milestones Reached:
  - *Acquired an additional \$75,000 to support a high priority stormwater project identified in the updated shellfish recovery plan.*

## Objective 2: Identify Pollution Sources and Monitor Water Quality

### On-Going Elements

- Historic Sampling Sites- Whatcom County contracted with the Northwest Indian College to continue monthly water quality monitoring at ten freshwater locations throughout the Drayton Harbor watershed to extend the long-term monitoring that began in 1998. An interlocal agreement to continue this work in 2008 has been established.

The following table summarizes results for fecal coliform analysis in 2007. Twelve samples were collected at each site in 2007, with seven samples collected during the wet months (January-April, October-December) and five samples collected during the dry months (May-September). All Dakota Creek sites, except D3 met water quality standards. D3 exceeded the 90<sup>th</sup> percentile standard of not more than 10 % of samples exceeding 200fc/100mL. California Creek sites C2 and C3 also exceeded the 90<sup>th</sup> percentile standard. The geometric means for wet months at California Creek sites were higher than for dry months, indicating that bacteria concentrations in this subwatersheds may be more impacted by rainfall events and soil saturation. Cain Creek, which discharges to Semiahmoo Bay and is classified as extraordinary for aquatic uses, exceeded both geometric mean and 90<sup>th</sup> percentile standards in 2007. Cain Creek also appears to have higher bacteria concentration in the wet months, versus the outfall site, which had higher counts during the dry months.

Watershed	Site	Annual Geomean (n=12)	% Samples Exceeding 200 *	Dry Season GM (n=5)	Wet Season GM (n=7)
Dakota	D1 (mouth)	71.8	8%	76.3	68.7
Dakota	DG	69.3	0%	71.9	67.5
Dakota	D2	47.6	8%	52.2	44.5
Dakota	D3	72.9	25%	73.5	72.5
Dakota	D4	43.8	0%	57.1	36.2
California	C1 (mouth)	44.9	8%	33.9	54.9
California	C2	56.9	17%	46.5	65.6
California	C3	91.2	25%	75.7	104.2
Cain	CC (mouth)	74.6	58%	41.0	114.5
Cain	CCO (outfall)	175.8	83%	290.1	122.9

\* Cain Creek is classified as extraordinary for aquatic uses, therefore standards are geometric mean of 50 fc/100mL and 90<sup>th</sup>% of 100 fc/100mL.

- DOH Ambient Data- Whatcom County shellfish staff reviewed and analyzed DOH marine water quality data on a monthly basis to evaluate patterns in water quality and provide updates to advisory committee members. This review assists in determining areas of focus for follow up monitoring and actions in the watershed.
- Phase 1 Microbial Source Tracking Project- The Puget Sound Restoration Fund (PSRF), Whatcom County, Trillium, and the Environmental Protection Agency (EPA) partnered to conduct a pilot microbial source tracking project for the California Creek watershed and several DOH marine sites. Whatcom County contracted with the Institute of Environmental Health (IEH) to conduct ribotyping and PCR analysis of water samples. The EPA conducted PCR analysis on additional samples. A technical meeting was held with key partners and agencies in December to discuss the preliminary results from EPA. In attendance were representatives from the Whatcom Conservation District, State Department of Health, State Department of Ecology, Whatcom County Health, Whatcom County Public Works, EPA

Manchester Lab, Puget Sound Restoration Fund, and Hirsch Consulting Services. EPA results indicate the presence of ruminant at marine stations (no human detections) and ruminant, human/ruminant mix at freshwater stations in California Creek. EPA has expressed interest in continuing this partnership in 2008 in high priority locations in the California Creek drainage and in Drayton Harbor. A preliminary review of results from IEH identified sewage/human, cattle, horse and several other sources at marine and freshwater stations. A final project report will be prepared by PSRF in 2008. This data is being used to help target sources in priority drainage areas.

- *Milestones Reached:*
  - *Historic monitoring sites were sampled monthly throughout 2007.*
  - *State DOH data was reviewed monthly to guide follow up actions and provide updates to the advisory committee on marine water quality.*
  - *A pilot MST project was completed.*
  - *Data collected through each of these projects is being used to prioritize areas for follow up actions.*

#### Plan Recommendations

- California and Dakota Creek Monitoring- Whatcom County contracted with PSRF and Hirsch Consulting Services (HCS) to monitor water quality at ten California Creek tributary sites in the upper California Creek watershed from April 2006 to May 2007. Whatcom County staff continued monitoring water quality at these sites through December 2007. The Department of Ecology (DOE) began a TMDL study in the Drayton Harbor watershed in November 2007. The County is coordinating with DOE to conduct the sampling in the California Creek watershed that includes some stations from the previous monitoring project as well as additional stations. DOE is also sampling at numerous stations in the Dakota and Cain Creek watersheds. This work will continue for at least a one-year period. See also “Follow Up to Monitoring Findings” section below.
- Follow Up to Monitoring Findings- Following a full review of data collected through the California Creek monitoring project in May 2007, a threshold of 1000fc/100mL was identified for immediate follow up actions. This threshold was set to initially guide and develop communications between agencies to help identify and address sources of bacteria in the system. Results for water quality monitoring are reviewed by County Public Works within one week of collection (optimal within 2 days). Any results that exceed 1000fc/100mL are forwarded to County Health, County Planning and Development Services (PDS), Department of Agriculture (WSDA), and DOE. Agency representatives are asked to review records for any known sources and to follow up in the field, if possible. Public Works staff conducts follow up sampling at upstream, downstream, and standard sites within the week. Public Works staff reviews maps and drainage information to characterize potential sources within the drainage area. Results that exceed 500fc/100 ml are also forwarded to the above listed groups. Previous site results and future monitoring schedule are reviewed to determine if follow up sampling will be conducted at that time. Results exceeding 200fc/ 100mL in high agriculture land use drainages are also reported to WSDA and DOE. More details regarding specific follow up actions taken are summarized in Appendix B.
- Wet-Weather Marine Monitoring- Whatcom County contracted with PSRF in 2006/2007 to conduct water quality monitoring in Drayton Harbor during rain events to assist in the evaluation of the rainfall criteria for temporary closures under the DOH Conditional Approval classification. The DOH lab analyzed the samples for fecal coliform. A final project report was provided to DOH.

- Blaine Harbor Monitoring- The Port of Bellingham has continued the marine sampling program that was a required element of the permit to expand the marina. The Port's sampling program exceeds the number and frequency of samples outlined in the permit requirements. Water quality in the marina continues to exceed the standards for bacteria.
- Circulation Studies- Additional monitoring and evaluations of circulation patterns are being considered for the nearshore areas adjacent to Marine Drive and Dakota and California Creeks in 2008. Whatcom County Public Works sent out a Request for Proposals in late 2007.
- *Milestones Reached:*
  - *Completed two short-term, focused monitoring projects.*
  - *Created and began implementing a strategy to follow up on water quality monitoring results.*
  - *Expanded focused watershed monitoring through the TMDL study.*

### **Objective 3: On-Site Sewage Systems (OSS)**

#### On-Going Elements

- New OSS Regulations- On April 2, 2007, more stringent OSS Operation and Maintenance (O&M) regulations went into effect in Whatcom County. These new regulations require an OSS evaluation:
  - Once every three years for conventional gravity OSS
  - Annually for all other systems
  - Annually for OSS serving food service establishments
 Currently, these OSS evaluations must be completed by a Whatcom County licensed O&M specialist. At the completion of the evaluation, a Report of System Status (ROSS) is submitted to the Whatcom County Health Department (WCHD). In addition, the new OSS regulation requires that a current ROSS be on file with WCHD before a residence is put up for sale. If the OSS is found to be failing, as per the ROSS, WCHD will follow up to insure that the failing OSS is repaired. Beginning in 2008, if the ROSS indicates that maintenance is needed, WCHD will follow up to insure that the maintenance has been performed on the system.
- OSS Local Management Plan- The WCHD has prepared a draft OSS Local Management Plan that will outline how OSS O&M will be implemented within Whatcom County. The draft plan designates the Drayton Harbor watershed as a Marine Recovery Area. In a Marine Recovery Area, all OSS must be identified and evaluated by 2012, as per DOH. There are approximately 3,000 known OSS in the Drayton Harbor watershed.
- Follow Up for ROSS Submissions- The majority of ROSS's submitted to WCHD in 2007 were related to property sales. In 2008, WCHD will begin more pro-active implementation and enforcement of OSS O&M regulations. When failing OSS's are encountered, the WCHD takes enforcement action to insure that the failure is repaired in a timely manner. In 2007, 61 OSS were evaluated, 11 systems needing maintenance were identified, and 2 failing systems were identified in the Drayton Harbor watershed. One of these failures has been repaired; the other is in the process of repair. In 2008, WCHD will begin follow-up on ROSS submissions that indicate maintenance is needed on the OSS.
- O&M Education- OSS O&M information is given out to the public whenever a new OSS permit is purchased. WCHD held meetings with realtor groups to update them on the new OSS O&M requirements and set up an OSS O&M display at various public venues, including the NW Washington Fair and the Salmon Summit.
- Follow Up to Water Quality Monitoring- Public Works coordinates with Environmental Health to identify priority drainage areas for immediate ROSS's when high bacteria counts have been observed. In late 2006, Health conducted surveys of OSS adjacent to DOH shoreline survey site 1. One failing system was identified in this drainage and repaired in 2007. Another system in this drainage had a temporary holding tank that was replaced with a new OSS. Additionally, Health required ROSS's from landowners in another priority drainage in November 2007. These evaluations were to be

complete by the end of January 2008. Two other drainage areas have been identified through water quality monitoring as high priorities for ROSS's in 2008.

- *Milestones Reached:*
  - *61 OSS evaluated for system status.*
  - *Failing systems identified and repairs initiated or completed.*

#### Plan Recommendations

- Establish and Inspection and O&M Program- The new County regulations for OSS O&M establish this program. The draft O&M Local Management Plan identifies the Drayton Harbor watershed as a Marine Recovery Area, placing a high priority on implementation of the program in this watershed.
- Annual Summary- A summary of the number of OSS evaluated and maintenance and failures identified was prepared by the Health Department. See "Follow Up for ROSS Submissions" above.
- *Milestones Reached:*
  - *New regulations establishing OSS O&M and system status reports associated with real estate transactions were adopted in 2007.*

### **Objective 4: Control Urban Stormwater Sources**

#### Plan Recommendations

- Pilot Stormwater Retrofit Project- The City of Blaine completed a feasibility study for a stormwater retrofit project to specifically target the removal of bacteria from stormwater runoff discharged directly into Drayton Harbor. In fall 2007, the County received a grant from DOE to complete design work and construct this retrofit project. This phase of the project is scheduled to begin in early 2008.
- Monitor Water Quality in West Blaine- The Whatcom County Marine Resources Committee established a volunteer water quality monitoring program in 2006. Through this program five sites in west Blaine have been sampled for six to eighteen months. A summary of the results of this sampling program is included as Appendix C. Additional sampling of outfalls discharging to the harbor is being conducted through the shoreline element of the Drayton Harbor TMDL study.
- *Milestones Reached:*
  - *Completed grant agreement and interlocal agreement for stormwater retrofit project.*
  - *Established and implemented a volunteer water quality monitoring program at five shoreline sites on the southwest shoreline of the harbor.*

### **Objective 5: Blaine Municipal Sewage Sources**

#### Plan Recommendations

- WWTP Improvements- The City of Blaine completed installation of a large detention tank under Marine Drive that replaces the temporary bladders that were being used to avoid sewage overflows during large rain events. The city applied for grants and loans to assist with the planned upgrade for the wastewater treatment plant.
- Reduce Inflow and Infiltration (I&I)- The City of Blaine continued to implement their systematic evaluation of the municipal sewer system to reduce inflow and infiltration issues.
- Evaluate Effluent Dispersion and Dilution Rates- The Department of Health worked with the Nooksack Tribe and city of Blaine to complete an evaluation of effluent dispersion and dilution rates with consideration of changes that would occur with the upgrade of Blaine's wastewater treatment plant.
- *Milestones Reached:*
  - *The City of Blaine has completed construction of a 400,000 gallon permanent equalization tank in advance of the mail Lift Station on Marine Drive. This will protect the system from overflow in a location where overflows historically occurred.*
  - *The City has completed design of the Lighthouse Point Water Reclamation Facility which will ultimately replace the existing treatment plan on Semiahmoo Spit. Construction is scheduled to begin Summer 2008.*

## **Objective 6: Agriculture**

### On-Going Elements

- Technical Assistance to Commercial Farms- WCD staff provided technical assistance to commercial dairies in the Drayton Harbor watershed, including engineering design, cost-share related assistance, nutrient management plan updates, and other technical assistance. The Washington Conservation Commission provides funding to WCD to work with commercial agriculture producers. There are 144 commercial dairies in Whatcom County, with about 8% of dairy land in the Drayton Harbor watershed.
- Technical Assistance to Landowners with Small Farms- The WCD hosted four landowner workshops and one farm tour with a total of 140 landowners countywide participating. The workshops and farm tour focused on best management practices landowners can implement on their own land to promote the health of our water resources as well as their animals. The Small Farm Best Management Practices Tips Handbook was sent to 500 residents in the Drayton harbor watershed.
- *Milestones Reached:*
  - *Workshops for landowners with small farms had 140 participants and are leading to additional workshops.*
  - *Technical assistance was provided for commercial dairies in the watershed.*

### Plan Recommendations

- Critical Areas Ordinance- Conservation Program on Agricultural Lands (CAO-CPAL)- Whatcom County and the WCD entered an interlocal agreement in December 2007 providing the framework for the roles each agency will fill in providing technical assistance to landowners with small farms in order to gain compliance with the CAO. The County has dedicated \$110,000 in funding to the WCD through 2008 for technical assistance to landowners. Staff from the two agencies will be working collaboratively to develop outreach and education materials; develop farm planning templates; and develop a database, tracking system, and violation referral protocols.
- Nutrient Management Plans- The Washington Department of Agriculture is the lead agency in inspecting commercial dairies and permitted livestock facilities. In 2007, a total of one routine inspection, eight follow up inspections, and six investigations were conducted in the Drayton Harbor watershed. Enforcement actions in the district included one notice of violation, two administrative orders, and one penalty, resulting from two discharge events in January. Additionally, five of eleven dairies were visited in the watershed through this year's lagoon assessment site visits in September. One of the farms still needed to apply a significant amount of manure in October and the other four were well prepared for the wet season by September. WSDA staff conducted watershed tours in early October and November to check for late land applications and none were observed. One new producer was referred to the Whatcom Conservation District for development of a Nutrient Management Plan.
- *Milestones Reached:*
  - *Interlocal agreement between Whatcom County and Whatcom Conservation District was established to provide and proactive program to reach landowners with small farms and provide technical assistance to gain CAO compliance.*
  - *Nutrient Management Plan inspections and manure lagoon assessments were conducted by WSDA in 2007.*

## **Objective 7: Boats and Marinas**

### On-Going Elements

- Pumpout Stations- Four pumpout stations all replaced with the peristaltic system in August 2007. The Port intends to conduct dye-testing of the Blaine Harbor pumpout stations in 2008.
- Street and Dock Sweeping- The Port conducts street and dock cleaning several times during the year around the Blaine Harbor facilities.
- Stormwater- The Port is creating stormwater management best management practices language to be included in the Scheme of Harbor Improvements (master plan).

### Plan Recommendations

- Routine Reporting of MSDs- Port staff inspects the MSDs of new liveaboards and conducts occasional inspections of non-liveaboards. The port is working to improve documentation of inspections. Every moorage customer in Blaine Harbor has signed the Port's Best Management Practices, which state that customers understand the "No Discharge" policy and agree to use pump out facilities.

### **Objective 8: Other Recommendations**

#### Plan Recommendations

- Community Involvement and Education- Initiated project planning for development of watershed newsletter that will be distributed to all watershed residents. The newsletter will include a watershed description; water quality, water quantity, and habitat issues; solutions that address these issues and opportunities for community members to become involved.