

Clark County Clean Water Program 2008 SUMMARY



Protecting water through stormwater management

2008 CLARK COUNTY CLEAN WATER PROGRAM SUMMARY CONTENTS



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Clark County Public Works administers the Clean Water Program to safeguard the quality of our water and comply with the federal Clean Water Act.

Clean Water Program staff work to ensure program activities support Clark County's commitment to keep our waterways clean for people, fish, and wildlife, as well as meet requirements of the county's stormwater permit issued by the Washington State Department of Ecology.

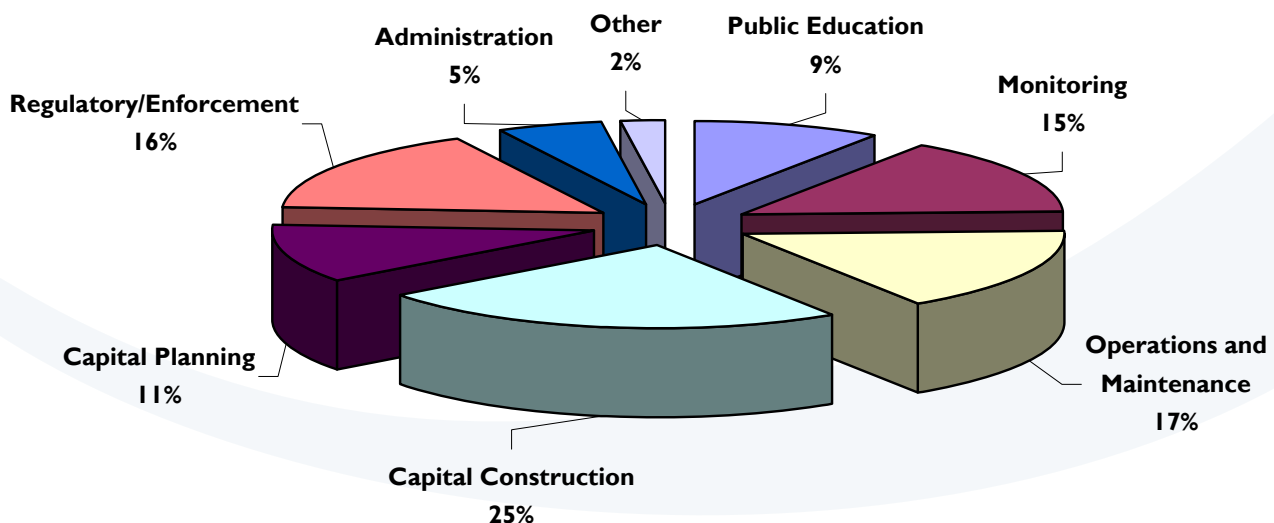
Primary program responsibilities include stormwater construction projects, water quality monitoring of local streams, public education and outreach, development and enforcement of water quality regulations, and maintenance of the county's stormwater system.

Funding & Budget

The Clean Water Program is funded by annual stormwater fees charged to developed parcels in the unincorporated area of the county. Clark County collects approximately \$4.9 million annually from approximately 65,000 fee payers.

Fee revenues are the sole source of funding for expanding the public stormwater infrastructure (capital construction projects) and the primary source of funding for maintaining catch basins, detention ponds, bioswales, and other public storm sewer infrastructure. In addition, the fee pays for code enforcement and development regulations related to water quality, educating the public and businesses on ways to reduce pollution in runoff, and assessment of surface water conditions through water quality monitoring.

2008 Clean Water Program Expenditure Distribution By Program Area



Stormwater Construction Projects



Planting the curb extension project at NE 113th Avenue and NE 96th Street.

Quick Fact: A floodplain is flat land bordering a river made up of sand, silt, and clay deposited during floods. When a river overflows, the floodplain is covered with water.

The Clean Water Program engineering team is responsible for the technical aspects of managing the county's stormwater facilities:

- Identifies, selects, designs, and constructs, with the assistance of the Public Works engineering program, stormwater facilities to manage stormwater and improve water quality.
- Inventories the county's stormwater system (inlets, pipes, ditches and ponds) providing for an effective maintenance program, as well as monitoring the system performance.
- Provides engineering support activities including solving drainage issues, answering citizen inquiries and requests for engineering data from outside agencies and firms, coordination with Development Review, engineering elements of fee appeals, and support for the county in legal cases and damage claims.

Prioritizing Stormwater Capital Projects

The Stormwater Capital Improvement Program Involvement Team (SCIPIT) is an advisory group composed of public agency staff, community representatives, and county staff that helps guide the Stormwater Capital Improvement Program.

The SCIPIT meets every two years to discuss identified stormwater projects, and develop or revise evaluation criteria used to prioritize them.

2008 Construction Projects

- Floodplain restoration, stream reconstruction, and placement of large woody material as part of Phase One of the Curtin Creek Enhancement Area Project. Phase Two will restore wetland function by planting 68,000 native trees and shrubs. When completed, this two-phase project will provide much needed water quality treatment and detention storage to reduce peak discharges and downstream channel erosion.
- Whipple Creek Meadows stormwater facility retrofit project was completed in October 2008.



Monitoring and Assessment



The monitoring program conducts environmental monitoring projects to meet the needs of Clark County’s NPDES municipal stormwater permit and other environmental programs.

Data is collected using standardized methods and detailed quality assurance plans. Whenever possible, data collection and monitoring efforts are coordinated with other local and state agencies.

Stormwater Needs Assessment (SNAP)

The Stormwater Needs Assessment Program (SNAP) is a systematic approach to assessing stream basins, identifying problems and opportunities, and recommending specific actions to help meet the Clean Water Program mission of protecting water quality through stormwater management.

In 2008, assessments were completed for 22 stream basins, including portions of lower Salmon Creek and the majority of the East Fork Lewis River watershed. Over 400 potential improvement actions were identified, ranging from stormwater facility construction to riparian restoration, livestock fencing, and trash removal (see sidebar).

The program has completed 19 reports covering 35 stream basins to date and plans to complete the remainder of county subwatersheds by the end of 2010. Reports and executive summaries are available on the CWP Web site.

Volunteer Monitoring Program

Volunteer work supports SNAP implementation and complements the work of staff by helping to identify problems, long-term trends, and opportunities for improvement or source control. Trained volunteers work in teams to support Clean Water Program monitoring projects. During 2008, projects included bacteria monitoring in the Gee Creek watershed and lower Salmon Creek tributaries, general water quality characterization in Morgan Creek, Lacamas and Vancouver Lake monitoring, and assisting staff with collection of macroinvertebrate biological samples.

Water Quality Data and Information

The Clean Water Program maintains a database to manage water quality and biological data collected by the program. Reports are distributed to other departments and local agencies and published on the Web at www.clark.wa.gov/water-resources. Monitoring and Assessment staff also respond to numerous data requests each year. In 2008, staff answered 56 requests for monitoring data from local and regional students, groups, government agencies, and consultants.

Long-term Stream Health Monitoring

Monthly water quality data, summer water temperatures, and annual biological data were collected at 10 stations county-wide to characterize overall stream health and identify potential trends. The program also monitored general water quality at five additional

2008 SNAP Highlights	
97	Sites identified offering opportunities to improve water quality through stormwater construction or repair.
67	Trash locations identified for clean up through homeowner and community-organized events.
21	Routine maintenance and repair referrals made to county operations crews.
13	Clogged or crushed road culverts located and referred for repair.
167	Locations identified for riparian restoration projects and referred to other agencies for follow-up.
57	Agriculture or livestock issues impacting water quality referred to other agencies and county staff for follow-up.

Monitoring & Assessment

continued



Program staff check for signs of illicit discharges to the stormwater system.

stations in the Salmon Creek watershed under an agreement with Clark Public Utilities. Based on available data for these 15 stations, nine have poor to very poor water quality, four are fair to good, and two are in excellent condition. Trend analysis indicates water quality is getting worse at seven stations, and the remaining stations show no trends. No stations indicate improving water quality.

Stream flow and rainfall data are collected from a network of 14 stream gauges and eight rainfall gauges. Stream gauge and rainfall data are posted on the Web site. Real-time data is available for seven of the stream gauges and all of the rain gauges.

Stormwater Facility Inspection

During 2008, the monitoring program conducted maintenance inspections for public stormwater facilities in SNAP subwatersheds. Stormwater outfalls discharging to critical areas were assessed for potential downstream impacts.

Nearly 250 routine maintenance inspections were performed, consisting of almost 2,000 individual stormwater system components. Overall, 69% of those components met maintenance standards and the remainder were referred for needed maintenance. Over 200 outfalls to critical areas were assessed, resulting in ten referrals for outfall maintenance or potential stormwater capital improvement projects. As part of the effort to improve procedures and coordination, CWP staff also performed nearly 300 inspections of facilities about to be transferred to county ownership.

Monitoring Resource Center

The Monitoring Resource Center provides a range of monitoring support services to the community. Volunteers and local agency staff can check out monitoring equipment, receive assistance with project design, or attend training on data collection techniques and proper equipment usage.

During 2008, the MRC provided support to Columbia River Keeper, Clark Public Utilities, Columbia Springs Environmental Education Center, Washington State University, Clark County Community Development, Clark County Public Works, Clark County Public Health, Washington Department of Ecology, Watershed Stewards, the Lower Columbia Fish Enhancement Group, Clark Conservation District, and local high school students.

Identifying and Eliminating Sources of Water Pollution

The Illicit Discharge Detection and Elimination (IDDE) Project detects, isolates, and eliminates illicit discharges to Clark County's stormwater drainage system of pipes and ditches. Illicit discharges are broadly defined as polluted, non-stormwater discharges entering the stormwater system. Examples include improper sewer connections, leaking sewer lines or septic systems, and illegal dumping of materials such as waste water, automotive products, oil, paint, and litter.

The project checked for illicit discharges at over 1,100 pipe and roadside ditch outfalls, and collected samples at 21 outfalls with suspected illicit discharges. Four significant pollution sources were eliminated, including two direct illicit connections and two polluted non-stormwater discharges.

Development Inspection



Engineering inspectors monitor the construction of projects built by private developers, such as subdivisions and commercial centers. Inspectors ensure that the permanent stormwater drainage and treatment facilities are built according to plans that comply with county code.

Inspectors also monitor erosion control measures throughout the construction process to ensure that no soil leaves the project site. When construction is complete, inspectors make a final visit to make certain all bare soils are covered and that storm inlets and ponds are protected from debris and sediment.

Inspectors also respond to citizen erosion control complaints related to construction projects, issue correction notices and stop work orders as necessary, and refer some code violation complaints to Clark County Code Enforcement for action.

2008 Inspections:

- 642 stormwater facility inspections
- 2,163 erosion control inspections
- 57 erosion control complaint responses
- 10 erosion control correction notices issued
- One (1) erosion control stop work orders issued
- One (1) referral to Clark County Code Enforcement

Code Enforcement



Clark County's Code Enforcement Division enforces building, development, and environmental regulations. One Code Enforcement officer works full time on erosion control, the Water Quality Ordinance, and other environmental regulations.

In 2008, the two highest complaint areas were erosion control and wetland/habitat. About 90% of complaints are related to residential development and home improvement projects.

Complaints and violations may be resolved by personal contact and education, letters, correction notices and stop work orders, and citations. Close to 69 percent of code enforcement actions involve education and personal contact by a Code Enforcement officer. No citations were issued in 2008, and violations were resolved through notice and orders and stop work orders.

Nature of Complaint	Number of Complaints and Inspections	Number of Violations
Grading	143	57
Erosion Control	439	81
Water Quality	10	1
Surface Water	42	11
Wetland Habitat	234	102
Other	4	0
Total	872	252

Public Outreach & Education



From education to personal action.....

The Snooey family purchased their five acre La Center farm, True North Alpacas, in November 2005. The family uses their property to breed and raise alpacas. The Snooey's also keep ducks and chickens and maintain a large family garden – all raised naturally.

The Snooey's contacted the Small Acreage Program for advice on earth friendly ways to manage their property. After touring the property, the program coordinator offered several suggestions, including fencing livestock away from a wetland in the front pasture to protect water quality and native wetland habitat.

Over the past two years, the family has fenced the wetland, implemented rotational grazing by subdividing pastures, created a manure composting system, and installed gutters, downspouts and french drains to collect and disperse roof runoff. They have seen an increase in native bird species around their home, along with reduced standing water and mud. The Snooeys eagerly adopted the recommended best management practices and share their results by hosting property tours in cooperation with the Small Acreage Program.

Quick Fact: A survey of Living on the Land participants since 2003 shows that 73% implement at least one clean water best management practice they learned during training and 40% implement three or more practices.

Educating individuals about how their personal actions contribute to stormwater pollution and impact our water quality is key to cleaning up our streams. The health of our water depends on our ability, as individuals and as a community, to reduce contaminants including oil and automotive fluids, yard care chemicals, detergents, and eroded soil from washing into our waterways.

The Clean Water Program offers a variety of outreach and educational programs and opportunities to adults, businesses, and students in our community. Funded by the annual Clean Water Fee, these programs made over 11,400 contacts with individuals and businesses in 2008.

Whenever possible, the Clean Water program partners with other local agencies and programs to provide public education and outreach. In 2008, partnerships with the City of Vancouver, Washington State University Extension, and Columbia Springs Environmental Education Center helped maximize resources and avoid duplication as well as provide a common “clean water” message.

Overview of Education Programs

Watershed Stewards is a partnership with WSU Extension. Volunteers receive training on a variety of topics from watershed protection to water quality monitoring. In return for their training, the Stewards perform outreach and education in the community, expanding and enhancing Clean Water Program outreach efforts.

2008 Watershed Stewards Highlights	
Volunteers	33 new / 125 total
Workshops & presentations	24 with 526 participants
Storm drains stenciled	361 by 112 volunteers
Outreach at community events	3,731 contacts
School outreach activities	849 students
Volunteer hours contributed	2,437
Value of volunteer hours*	\$47,545

*Estimate based on \$19.51/hour for volunteer service by the US Bureau of Labor and Statistics

Another partnership with WSU Extension, *The Small Acreage Program* aims to reduce pollution entering storm and surface water from residential and agricultural properties by giving property owners the knowledge and skills necessary to manage their land and animals in a way that will help keep water clean. The program offers workshops and other outreach to residents about water quality topics unique to rural properties.

Canines for Clean Water educates dog owners about the impact of pet waste on our streams and the importance of picking up after their dog.

Public Outreach & Education

continued

Technical assistance turns the “tide” on stormwater pollution

Clean Water Program staff periodically receives reports of foamy soap suds in local creeks which, if located, often turn out to be part of a natural decomposition process stirred up by stream currents. However, Public Works Operations crews were surprised to discover small mountains of foam floating from a stormwater discharge pipe into a small tributary of Salmon Creek. Wondering if a washer had overflowed into the stream, technical assistance staff tracked the source to a homeowner in a nearby neighborhood.

When contacted, the homeowner said he had just sprinkled some Tide™ on his roof to control moss, a recommendation he had found on an internet site. The homeowner was mortified and apologetic when informed about the impacts to the nearby stream, stating he actually cared a great deal about the environment and keeping streams healthy. Not only will he be more thoughtful about what he does in the future, but he vowed to help educate his neighbors.

2008 Small Acreage Program Highlights	
Living on the Land 12-week training	41 participants 22 properties/229 acres
Living on the Land total acreage impacted since 2003	1,977 acres
Workshops - Wells and Septics, composting & Mud Management	11 workshops 239 participants
Farm Tours	2 tours 36 participants
Small Acreage Expo	69 participants
Recognition signage	5 farms

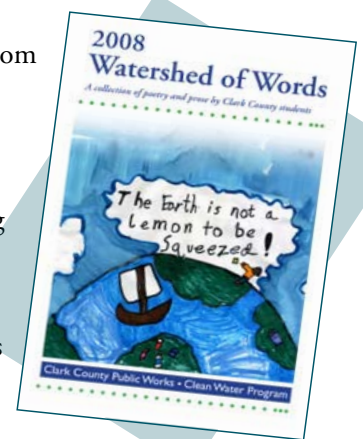
The Student Monitoring Program is a partnership with the City of Vancouver. Teachers and students receive training in water quality monitoring and ongoing mentoring in the classroom and at a monitoring site.

Living Streams - Stories for Healthy Watersheds is a one-hour school assembly program for grades K-5 featuring environmental storytelling.

River Rangers is an interactive classroom presentation targeting 4th graders.

The Children’s Clean Water Billboard Art Contest invites students to help educate the community by designing billboards with a clean water focus.

The Watershed of Words Contest inspires students to creatively express their feelings and experiences related to water.



Technical Assistance

Clean Water Program staff provide stormwater technical assistance and outreach to both residents and businesses. Staff provide routine education and respond to stormwater complaints and incidents, often working with county code enforcement staff and the Department of Ecology to facilitate a resolution.

In 2008, staff visited 230 businesses to provide free education and assistance on stormwater-friendly maintenance practices.

2008 School Programs: (Reported for the 2007-2008 school year*)	Schools Participating	Classroom Presentations	Student Contacts	Teacher Contacts
Living Streams Assembly Program	22	43	3,492	189
River Rangers Presentations	2	5	107	5
Student Monitoring Program	14	82	1,235	26
Clean Water Billboard Art Contest	38	3	942	73
Watershed of Words (pilot program)	4	0	47	4

* For consistency, school program activities are tracked and reported by school year rather than calendar year.

Maintenance & Operations



In 2008, Clark County continued ongoing maintenance of county stormwater systems for effective flow control and pollutant treatment. Maintenance crews clean storm drains, pipes, and ditches, keeping them clear to allow water to flow. Detention ponds, drywells, bioswales, and other facilities are cleaned on a regular schedule to ensure they can trap and clean stormwater. Street sweeper crews sweep neighborhood streets and main arterials nine to 12 times a year, picking up contaminants and debris before they enter the stormwater system or streams.

Stormwater infrastructure and facilities include catch basins, manholes, drywells, detention/retention facilities, storm sewer pipe, and biofiltration swales.



Crews replace stormwater filter cartridges.



Maintenance crews repair a bioswale.

2008 Stormwater Facility Maintenance	
7,299	Catch basins cleaned
1,835	Manholes cleaned or inspected
691	Drywells cleaned or inspected
693	Storm-filter cartridges exchanged in 50 vaults
202	Detention/retention facilities mowed four-plus times
421	Biofiltration swales mowed four-plus times
50	Storm-filter units and three sand filters inspected
14,000	Feet of storm sewer pipe cleaned; 393 cubic yards of debris collected.
621	Private stormwater facilities inspected
Road and Street Maintenance	
10,700	Miles of roadway swept - 7,700 cubic yards of debris collected
252	Times litter picked up on arterial roads
27	Miles of ditches cleaned



Litter from streets and parking lots clog drywells.

Clean Water Commission

The Clean Water Commission is a nine-member advisory group to the Board of County Commissioners that provides oversight for the Clean Water Program. In 2008, the Clean Water Commission held monthly public meetings to discuss program activities. The Commission worked with staff on public education, promoted the concept of low impact development and its potential to improve water quality in Clark County, and made recommendations to the Board of County Commissioners regarding septic systems pertaining to water quality.

Staff:

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