Clark County, Washington

National Pollutant Discharge Elimination System (NPDES) Annual Report for 2003

Submitted in compliance with National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge Permit No. WA-004211-1

June 30, 2004

Clark County Public Works Department
Vancouver, Washington

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STATEMENT OF CERTIFICATION

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature: _____

County Administrator

INTRODUCTION

Clark County's National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit includes a requirement for an annual report to verify compliance with the permit requirements to perform the tasks of the stormwater management program (SWMP) and specific permit requirements.

This document is the annual report for the reporting period of January 1, 2003 to December 31, 2003. It is the fifth annual report under Clark County's permit. The Washington Department of Ecology (Ecology) extended Clark County's permit coverage from its expiration date of December 31, 2000 to issuance of the next permit. The county filed a notice of intent to receive permit coverage as a part of the June 2000 annual report.

ANNUAL REPORT REQUIREMENTS

The following section lists the permit requirements for the annual report (Special Condition S.8.) and subsequent sections describe how the county meets the annual report requirements. Permit compliance reporting is made complex by overlapping permit requirements, multiple departments performing different parts of permit components, and the reality that specific permit components are parts of broader county work programs. The following section quotes the permit requirements for the annual report.

S8. Stormwater Management Program Annual Report Requirements

A. *The permittee shall submit an annual report by July 1, 2000 and annually thereafter. Any information in the report readily distinguished by water quality management areas should be presented as such.*

B. *The report shall include the following sections:*

1. *Status of implementing the components of the approved Stormwater Management Program (SWMP), including the status of compliance with the approved implementation schedule described in Special Condition S9, and a description and rationale of any program modifications made, other than those submitted for approval under Special Condition S5.A;*

2. *Notification of any recent or proposed annexations or incorporations resulting in an increase or decrease in permit coverage area, and implications for the SWMP;*

3. *Differences between planned and actual expenditures with a breakdown for the components of the SWMP and the budget since permit issuance. The report shall reflect numeric expenditures for the components of the SWMP;*

4. *Revisions, if necessary, to the fiscal analysis reported in the SWMP;*

5. *A summary and analysis of the cumulative monitoring data collected throughout the term of the permit;*

a. *If the permittee monitors any pollutant more frequently than required by the SWMP, then the results of this monitoring shall be included in the report.*

b. *If the permittee conducts any other stormwater monitoring in addition to that required in the SWMP, then it shall provide a description of the additional monitoring in the report.*

6. *A summary describing compliance activities, including the nature and number of official enforcement actions, inspections, and types of public education activities;*

7. *Identification of known water quality improvements or degradation; and*

8. *The status of watershed-wide coordination and activities which the permittee has undertaken individually or jointly. The report shall include proposed management measures to enhance regional coordination and/or address regional stormwater problems that will be implemented during the term of the next permit.*

1. STATUS OF PERMIT COMPONENTS

The numbered sections of this report correspond with the numbered permit requirements described in the National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge Permit No. WA-004211-1, with the exception that annual report content requirements S8.B.1 (status of permit components), S8.B.5 (summary of monitoring results), and S8.B.6. (summary of compliance measures) are combined to simplify presentation.

The permit-defined stormwater management program components are listed, followed by a description of the status of compliance, including a section for activities scheduled under Condition S9.

The stormwater management program, submitted to Ecology in 1998 as the permit application, included permit-mandated activities and several water resource and habitat protection and enhancement activities not required by the permit. This report focuses on stormwater management program activities that meet NPDES permit requirements, largely excluding activities that do not meet permit requirements.

S5.B.1. Comprehensive Planning Process

Permit Requirement

A description of a comprehensive planning process used to develop the stormwater management program including public participation, intergovernmental coordination, and the relationship to other planning processes.

Summary of Compliance Activities

The requirement for a comprehensive planning process to develop the stormwater management program was met by developing the 1999 NPDES stormwater management program submitted as the Part 2 application. When Ecology issues a new permit, the county will be required to revise its stormwater management program.

This component also includes the ongoing activities of the Clark County Clean Water Commission, appointed by the Clark County Board of County Commissioners to advise them on issues related to stormwater fee expenditures.

S5.B.2. Management Needs and Priorities

Permit Requirement

An analysis of stormwater management needs, a system for prioritizing needs, a description of the basis for the priority system, and an implementation plan and schedule for the term of the permit that reflect the priority needs. The stormwater management program must have an appropriate balance between prevention and correction based upon available information about sources of pollution and discharges from municipal separate storm sewers owned or operated by the permittee.

Summary of Compliance Activities

This requirement was performed for the 1999 NPDES stormwater management program submitted for the Part 2 application. The stormwater management program implements the highest priority activities. The next permit will likely cause a new needs assessment following the method prescribed by the permit.

S5.B.3. Legal Authority

Permit Requirement

Adequate legal authority to control discharges to and from municipal separate storm sewers owned or operated by the permittee. This legal authority, which may be a combination of statute, ordinance, permit, contract, order, or inter-jurisdictional agreements with other permittees which have existing legal authority, shall include the ability to:

1. *Control the contribution of pollutants to municipal separate storm sewers owned and operated by the permittee from stormwater discharges associated with industrial activity, and control the quality of stormwater discharged from sites of industrial activity;*
2. *Prohibit illicit discharges to the municipal separate storm sewer owned or operated by the permittee;*
3. *Control the discharge of spills and the dumping or disposal of materials other than stormwater into the municipal separate storm sewers owned or operated by the permittee;*

4. *Control through interagency agreements or inter-jurisdictional agreements among permittees, the contribution of pollutants from one municipal separate storm sewer to another;*
5. *Require compliance with the conditions in ordinances, permits contracts, or orders; and*
6. *Within the limitations of state law, carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance with local ordinances.*

Summary of Compliance Activities

In 1998, Clark County adopted an ordinance prohibiting illicit discharges into its stormsewer system. This ordinance has been kept in effect and enforced since 1998.

S5.B.4. Monitoring Program

Permit Requirement

A program to monitor the effectiveness of the stormwater management program in reducing pollutants discharged and reducing impacts to surface waters, ground waters, and sediments. The monitoring program, based upon the priorities identified in Special Condition S5.B.2. and specific actions required in Special Condition S9.C., shall address field evaluation, sampling, and analysis to:

1. *Estimate concentrations and loads from representative areas or basins to be used in evaluating overall program effectiveness;*
2. *Evaluate the effectiveness of selected Best Management Practices (BMPs);*
3. *Identify specific sources of pollution; and*
4. *Identify the degree to which stormwater discharges are impacting selected receiving waters and sediments.*

The monitoring program shall include a quality assurance/quality control plan.

Summary of Compliance Activities and Summary Cumulative Data

The Water Resources Section of the Clark County Public Works Department performs the monitoring program. During 2003, the Water Resources Section monitoring program continued current monitoring activities, completed one older project, and began several new projects and activities. Each project or activity follows a quality assurance/quality control plan. Most have a Quality Assurance Project Plan following the Washington Department of Ecology guidance manual.

Many of the QAPPs and reports from projects are on the Monitoring Reports and Publications Web-page:
http://www.co.clark.wa.us/water-resources/monitoring/reportspublic.html

Along with projects by Public Works, the Clark County Endangered Species Act (ESA) program is undertaking a program to describe baseline stream conditions at the watershed scale.

Continuous Stream Flow Gauges

Stream flow gauges provide a means to measure stream flow continuously. This information is used to describe drainage basin hydrology for various purposes and develop computerized models needed for designing new stormwater facilities and predicting stream flow for proposed development conditions. Flow data at monthly water quality monitoring sites can also be used to estimate instantaneous loads and approximate loads for longer periods of time. As part of the SWMP and a Washington Department of Ecology Centennial Grant for Watershed Characterization, Water Resources completed a project to upgrade older gauges and add several new gauges. Three of the new gauges are permanent sites. Six project gauges are sited at Long-Term Index Sites and one is located in China Ditch subwatershed. The project gauges will operate for at least five years. The Index Site gauge locations focus on urbanizing basins and a forested reference area.

Clark County Stream Gauge Location	Site Name	Watershed
Lacamas Creek at NE 217th Avenue	LAC080	Lacamas Creek
Lacamas Creek Goodwin Road	LAC050	Lacamas Creek
Matney Creek at NE 68th Street	MAT008	Lacamas Creek
China Ditch upstream of NE Ward Road	CHD012	Lacamas Creek
Breeze Cr. upstream of LaCenter Bottoms Bridge	BRZ008	East Fork Lewis River
Gee Creek at Abrams Park	GEE028	Gee Creek
Whipple Creek at NW 179th Street	WPL048	Whipple Creek
Little Washougal at Blair Road	LWG013	Little Washougal River
Jones Creek Camas Property	JNS058	Little Washougal River
Curtin Creek at NE 139th Street	CUR022	Salmon Creek
Mill Creek at Salmon Creek Avenue	MIL008	Salmon Creek
Cougar Creek at NW 119th Street	CGR018	Salmon Creek
Salmon Creek at Klineline Foot Bridge	SMN020	Salmon Creek
Salmon Creek at NE 156th Street	SMN045	Salmon Creek

Continuous Rain Gauges

Continuous rain gauges provide an incremental record of rainfall with time. This information is used to analyze rainfall patterns and develop computerized models needed for designing stormwater facilities and stormwater basin plans. Under the SWMP and the Watershed Characterization Grant, Water Resources completed a project to upgrade existing gauges and add new gauges to fill gaps in coverage.

Clark County Rain Gauge Site	Watershed
Goodwin Road	Lacamas Creek
Yacolt Town	East Fork Lewis River
Ridgefield Treatment Works	Gee Creek
Orchards at Whatley decant facility	Burnt Bridge Creek
Cape Horn School	Washougal River
Salmon Creek Treatment Works	Salmon Creek
Venersborg	Salmon Creek
Salmon Creek at 156th Street	Salmon Creek

Lacamas Lake Loading

Water Resources completed the fifth and final year of a project to estimate nutrient loading to Lacamas Lake. The project began under the Lacamas Lake Restoration Program and was completed by the stormwater management program. The project collected hourly rainfall, stream stage, conductivity, and temperature. An automatic sampler collected storm flow samples which were analyzed for total phosphorus and total suspended solids to calculate loading. Weekly samples at the lake inlet and outlet augment the storm samples. After completion of the loading project the site is retained as a permanent stream flow and rain gauge monitoring station.

Lacamas Lake Loading Trends: Results show a significant decrease (approximately 50 percent) in phosphorus loading since the early 1980's. This reduction was between the early 1980's baseline study and when current data gathering began in fall 1998. Since the latest project began, sediment and phosphorus concentrations in Lacamas Creek have remained unchanged.

Lacamas Lake Monitoring

Water Resources performs monthly monitoring in Lacamas Lake to track lake health over time and provide information to design future lake management actions. Vertical profiles collect dissolved oxygen, temperature, pH, conductivity, and turbidity at 1-meter intervals. Secchi-disk readings are also recorded and water samples collected from several depths for nutrient analyses. In 2003, additional sampling was performed for phytoplankton and chlorophyll a.

Lacamas Lake Monitoring Trends: Results showed a significant decrease in total phosphorus between the 1984 baseline assessment and data collected beginning in 1992. Since 1992, no trend is apparent. Lacamas Lake continues to be classified as eutrophic.

Illicit Discharge Detection and Elimination

In previous years, Water Resources conducted a dry weather storm sewer screening and follow up of problem spots. After doing this for several years, it became apparent that a year-round program was needed to find ongoing contaminated dry weather discharges carried by groundwater infiltration into storm lines. During 2003, the program researched current methods for illicit discharge detection and developed a draft quality assurance project plan and map tools.

Measured characteristics, indicators, and procedures

The stormwater management program has a standardized set of biological, water quality, and physical habitat characteristics, indicators, and standard procedures to collect them. The characteristics form the basic environmental measurement tools for the stormwater program. Along with developing the standard operating procedures, Water Resources implemented a training program for county field staff and an equipment maintenance program.

Long-Term Index Sites Project (LISP)

Long-term Index Site Project monitoring began in August 2001. The LISP goal is to assess current conditions and trends in stream health at nine stormwater-influenced stream stations and a reference site. A suite of stream health characteristics are monitored at each site, including measures of physical habitat, biological condition, water quality, and hydrology. Characteristics and protocols are selected to produce data comparable to those collected by other agencies. Data are analyzed using standardized, regionally appropriate metrics to facilitate comparability. During 2003, monthly water quality monitoring continued, temperature loggers were deployed, and eight sites were fitted with stream flow gauges. Reports summarizing results of physical habitat measurements and the first year's data are available at: http://www.co.clark.wa.us/water-resources/monitoring/reportspublic.html.

LISP Summary: After two years of data collection, sufficient data are available to characterize the current site conditions. Longer periods of time, possibly five to ten years, may be required to discern trends. Nitrate concentrations and total solids cause a low score for Curtin Creek, which otherwise had fair to good water quality scores.

Site ID	Stream	Watershed	BIBI Score Rating (Ave.)	Oregon DEQ Water Quality Index
BRZ010	Brezeee Creek	East Fork Lewis River	36 (Fair)	75 (Poor)
RCN050	Rock Creek North	East Fork Lewis River	32 (Fair)	77 (Poor)
CHL010	Chelatchie Creek	Cedar Creek	33 (Fair)	89 (Good)
GEE050	Gee Creek	Gee Creek	21 (Poor)	64 (Poor)
WPL050	Whipple Creek	Whipple Creek	21 (Poor)	60 (Poor)
CGR020	Cougar Creek	Salmon Creek	21 (Poor)	50 (Very Poor)
CUR020	Curtin Creek	Salmon Creek	22 Poor)	41 (Very Poor)
MIL010	Mill Creek	Salmon Creek	28 (Fair)	77 (Poor)
MAT010	Matney Creek	Lacamas Creek	34 (Fair)	87 (Good)
JNS060	Jones Creek	Little Washougal River	46 (Excellent)	94 (Excellent)

Salmon Creek Monitoring Project

The intent of the Salmon Creek Monitoring Project is to provide high-quality water quality information about the Salmon Creek watershed to Clark Public Utilities and Clark County decision-makers. In 2002, Water Resources and Clark Public Utilities agreed to consolidate ambient monitoring in Salmon Creek, standardize monitoring methods, and eliminate overlapping activities. As a result, Water Resources assumed responsibility for collecting water quality data at eight sites and Clark Public Utilities, in return, provides contracted maintenance and operation for two Clark County stream flow gauges and three continuous rainfall gauges.

Summary of Salmon Creek Site Results: The five sites in the table below are Clark Public Utilities sites. The LISP summary includes three other Salmon Creek Watershed Sites.

Site	Location Stream	Oregon DEQ Water Quality Index Rating
SMN010	Salmon Creek @ NW 36th Avenue	74 (Poor)
SMN030	Salmon Creek above Mill Cr.	76 (Poor)
SMN050	Salmon Creek @ NE 122nd Avenue	82 (Fair)
WDN010	Woodin Creek @ NE 122nd Avenue	78 (Poor)
SMN080	Salmon Creek @ NE 199th Street	90 (Excellent)

Volunteer Monitoring Project

Volunteer-collected data from this project support the monitoring objectives of the Long-Term Index Site Project and the SWMP. Sites are selected to increase the coverage of Water Resources' monitoring network. In addition, the program provides opportunities for citizens and trained watershed stewards to volunteer their time studying and evaluating the health of local streams. The data are for: 1) comparison of physicochemical data to water quality standards and aquatic life criteria; 2) calculation of water quality and biological integrity indices; and 3) comparison of calculated stream-habitat characteristics to regional reference values. The data will also serve as the baseline for comparison in future studies.

Summary of Volunteer Results:

Site	Stream	Watershed	B-IBI Score	Oregon DEQ Water Quality Index Rating
GEE030	Gee Creek	Gee Creek	26 (Poor)	81 (Fair)
BRZ010	Brezee Creek	East Fork Lewis River	34 (Fair)	82 (Fair)
JEN010	Jenny Creek	East Fork Lewis River	44 (Good)	86 (Good)
FPL050	Fifth Plain Creek	Lacamas Creek	26 (Poor)	85 (Good)
LWG015	Little Washougal River	Little Washougal River	28 (Fair)	93 (Excellent)

Stream Health Report

Water Resources completed a project to summarize existing monthly water quality data and macroinvertebrate data for Clark County streams. When the stream health report is completed, it will provide observed stream health ratings using the Oregon Water Quality Index or probable stream health ratings based on land cover for the approximately 100 subwatersheds in Clark County. The final report is being completed by the Public

Information and Outreach Office and is expected to be completed during summer 2004. Attachment A is a countywide map showing the results of the stream health report.

Temperature Monitoring LISP, Salmon Creek, Stream Gauges, and Volunteer sites

Temperature loggers were placed at the ten LISP sites and four volunteer sites during summer 2003. In 2002, the LISP sites were monitored. Also, in 2003, Clark County coordinated a temperature monitoring project with Clark Public Utilities in Salmon Creek watershed. The objective was to monitor the main subwatershed tributaries near their confluence with Salmon Creek and to gather data at points along Salmon Creek from its headwaters to near its mouth.

2002 LISP Site temperature data logger results as numbers of days exceeding standard temperatures

Site Name	Stream	Watershed	Days > 55° F	Days > 64° F	Days > 70° F
CUR020	Curtin Creek	Salmon Creek	89	0	0
CGR020	Cougar Creek	Salmon Creek	103	1	0
MIL010	Mill Creek	Salmon Creek	91	23	0
BRZ010	Breeze Creek	East Fork Lewis River	104	22	0
RCN050	Rock Creek North	East Fork Lewis River	104	37	6
CHL010	Chelatchie Creek	Cedar Creek	97	12	0
JNS060	Jones Creek	Little Washougal River	69	0	0
MAT050	Matney Creek	Lacamas Creek	95	39	4
GEE050	Gee Creek	Gee Creek	99	56	9
WPL050	Whipple Creek	Whipple Creek	94	23	0

2003 Temperature data logger results as numbers of days exceeding standard temperatures

Site Name	Stream	Watershed	Days > 55° F	Days > 64° F	Days > 70° F
CGR020	Cougar Creek	Salmon Creek	132	0	0
TEN010	Tenny Creek	Salmon Creek	102	0	0
TEN050	Tenny Creek	Salmon Creek	104	0	0
TEN055	Tenny Creek	Salmon Creek	99	0	0
MIL010	Mill Creek	Salmon Creek	124	36	0
MOR010	Morgan Creek	Salmon Creek	122	67	5
CUR022	Curtin Creek	Salmon Creek	119	0	0
SMN010	Salmon Creek	Salmon Creek	129	94	50
SMN020	Salmon Creek	Salmon Creek	142	89	26
SMN045	Salmon Creek	Salmon Creek	115	74	27
SMN075	Salmon Creek	Salmon Creek	115	43	0
RCK010	Rock Creek	Salmon Creek	119	64	6
JEN019	Jenny Creek	East Fork Lewis	114	52	1
BRZ010	Brezee Creek	East Fork Lewis	116	33	0
RCN050	Rock Creek North	East Fork Lewis	116	40	1
CHL010	Chelatchie Creek	Cedar Creek	114	24	0
JNS060	Jones Creek	Little Washougal River	94	0	0
LWG013	Little Washougal River	Little Washougal River	138	83	31
LAC050	Lacamas Creek	Lacamas Creek	128	78	8
LAC080	Lacamas Creek	Lacamas Creek	135	77	11
MAT010	Matney Creek	Lacamas Creek	124	66	6
FPL050	Fifth Plain Ceek	Lacamas Creek	120	87	28
GEE050	Gee Creek	Gee Creek	122	65	4
WPL050	Whipple Creek	Whipple Creek	122	47	0

ESA Program Environmental Template Project

During late 2001, the Clark County ESA Program began a project to characterize an environmental baseline for stream conditions in Clark County watersheds. During 2003, the watershed template conceptual model for terrestrial systems was completed. Both the fluvial and terrestrial models were run using data from the Salmon Creek system. Model flaws were identified for further analysis, which will be completed in 2004.

S5.B.5. Fiscal Analysis

Permit Requirement

A fiscal analysis, covering the term of the permit, of the capital, and operation and maintenance expenditures necessary to implement the stormwater management program, and a description of staff, equipment, and support capabilities to implement the stormwater management program. The fiscal analysis shall include a description of the source of funds that are available or are proposed to meet the necessary expenditures.

Summary of Compliance Activities

The fiscal analysis requirement applies to submittal of the stormwater management program in the 1998 NPDES Part 2 application (revised in 1999). Each program element in the SWMP and the Special Condition S9 included a description of the estimated annual budget for each current and proposed new activity. Funding sources were specified for current activities. A new stormwater fee, termed the Clean Water Program Fee was established to fund new activities.

Part 3 of this report, "Differences between planned and actual expenditures by component" provides detail about estimated and actual budgets and total expenditures.

The county uses financial tracking systems to account for stormwater fee revenue expenditures by permit component for most new activities. However, some ongoing pre-permit activities are almost impossible to track by component because they are not billed to a unique expense code that can be matched to the permit component.

Ongoing pre-permit activity funding

Development fees, the General Fund, the Solid Waste Program Fund, and the Road Fund are generally the revenue source for ongoing pre-permit activities.

Clean Water Program Fund for New Activities

Clark County established a stormwater fee (Clean Water fee) to pay for increased stormwater management under the permit (the permit condition S9 activities). The fee was approved in October 1999 and the first annual billing was mailed on June 20, 2000. All Clean Water fee and water quality grant revenue is placed in a special fund called the Clean Water Program Fund. Stormwater program expenses are coded and tracked so that they can be matched to specific projects or program activities, program elements such as monitoring or administration, and the most applicable permit component.

S5.B.6. Data Maintenance

Permit Requirement

A mechanism for gathering, maintaining, and using adequate information to conduct planning, priority setting, and program evaluation activities. The information and its form of retention shall include but not be limited to:

1. *Mapping of known municipal separate storm sewer outfalls;*
2. *Mapping of tributary conveyances, and the associated drainage areas of major municipal separate storm sewer outfalls;*
3. *Maps depicting existing land use;*
4. *A Map depicting zoning; and*
5. *A data base, including at least the following information: precipitation records; stormwater quality and quantity records; water quality and physical characteristics of receiving water that may be impacted by stormwater; and a description and location of major structural BMPs and other structural controls for stormwater discharges.*

Summary of Compliance Activities

The Department of Assessment and GIS collects and maintains the largest amount of county GIS information. Public Works Water Resources Section maps storm sewer infrastructure and maintains GIS data for the storm sewer system and specific stormwater management information. The Water Resources Section maintains stormwater program monitoring data.

Urban Storm Sewer Systems

Urban storm sewer system mapping consists of creating an inventory and GIS map of storm sewer systems in urban areas of unincorporated Clark County. The overall goal is to use the best available information to complete the storm sewer GIS inventory and mapping. During 2003, Public Works completed field mapping to fill gaps or reconcile inconsistencies in the first complete field inventory. Subsequent work focused on auditing engineering plans for subdivisions and road projects to find the best available plans to improve the completeness and accuracy of the GIS data.

Public Stormwater Facilities Inventory and Mapping

During 2003, work continued on mapping and describing public stormwater facilities. Public Works maintains GIS information describing facility type, design and flow criteria, and catchment area treated by the facility. During 2003, the public facilities database was expanded to include 474 sites. Design criteria for flow and quality were recorded for 196 of these sites.

Private Facilities Inventory and Mapping

During 2003, mapping work from engineering plans continued to add private stormwater facilities to the GIS storm sewer database. The total number of private facilities was increased to 726 sites.

Rural Roadside Ditches

Rural drainage system mapping consists of inventorying and mapping roadside ditches along county right-of-way in areas lacking storm pipe systems. Due to a priority on mapping urban storm sewer systems, no ditches were added to the database in 2003. However, over 5,200 ditch segments are entered into the GIS database.

Development Project Record Drawings and Plan Sheets

The Department of Assessment and GIS continued to scan and index record drawings and preliminary plan sheets for historic projects lacking record drawings. The total numbers of plan sheets in the system are:

- 5,255 Subdivision and Short Plat Record Drawings;
- 1,791 Site Plan Record Drawings;
- 8,031 Preliminary Subdivision and Short Plat Plans; and
- 738 Preliminary Site Plans.

All of the scanned documents are indexed and linked to internet-based maps. These maps are available for public viewing and were used by Public Works to verify storm sewer and facility mapping in the GIS database.

GIS Land Use and Water Resource Data

The Department of Assessment and GIS has a library that includes land use descriptions, zoning classifications, basin boundaries, water bodies, and other information useful for stormwater management. Some of this information may be viewed through the county web site. GIS data other than storm sewer systems, that are maintained and updated periodically by the GIS Department or Public Works include:

- Parcel boundaries and attributes including land use and zoning
- Administrative boundaries
- Urban growth boundary
- Comprehensive land use plan for GMA
- Zoning
- Easements from quarter sections
- Subdivision boundaries
- Public and private roads
- Orthophotographic images of the entire county
- 2-foot topography for urban and rural areas
- 4-foot topography in predominately forest areas
- Stormwater Fee Parcels
- Commercial, industrial, public facility, and road impervious area measurement
- Public Works sample points
- Assorted LiDAR layers
- Watershed and subwatershed boundaries

GIS data at the GIS Department or Public Works Department that may or may not be periodically updated:

- Land cover from a July 2000 Landsat image
- Sanitary sewer lines
- Land use
- DNR/SSHIAP water bodies
- Wetlands
- Conservation easements
- State and federally owned lands

Regional Wetland Inventory

In 2003, an RFP for professional wetland consulting services was issued and a consulting firm was selected to begin work. The county GIS department performed preliminary analysis of LiDAR and infrared remote sensing for defining vegetation cover and possible wetland areas.

Stormwater Fee Database

In 2000, Clark County created a county-wide storm sewer fee database which includes every tax lot in unincorporated Clark County that has assessed improvements valued at $10,000 or more. It also includes the amount of impervious area for each non-residential lot (businesses, industries, public facilities, county roads, state highways, and government facilities).

Centralized Water Quality and Quantity Database

Clark County continued to maintain databases for each monitoring project using revised data formats to ease transfer into a central database. Water Resources maintained a Microsoft Access database for recording and reporting private storm sewer maintenance inspections and source control BMP implementation. Historic water quality and water resource reports are compiled into a set in Water Resources Section files. A data repository is established on Water Resources' network computer where digital data is compiled.

Water Resources developed a prototype Microsoft Access database to store water quality, biological, hydrological, and physical habitat data. The submittal guidelines of Ecology's Environmental Information Management System (EIMS) were used as a data standard. Data input forms and report forms were created and tested. Water Resources acquired and installed a server designated for environmental data. Work began on "migrating" the prototype Access database into a Microsoft SQL Server database on the Water Resources Server. Microsoft Access is retained as a 'front-end' for adding, editing, deleting, and reporting environmental data. Data entry for current and legacy projects began.

A separate volunteer monitoring database was established for the Clark County Volunteer Monitoring Program. The volunteer database is a Microsoft Access Database that allows the storage of habitat survey data, volunteer information, and equipment lending through

the monitoring resource center. The database follows the same standard as the central Water Resources database.

Along with development of the central database for monitoring data, Water Resources continued development of the ESRI GIS data model called ArcHydro for displaying and modeling environmental data.

S5.B.7. Watershed-wide Coordination

Permit Requirement

Consider opportunities for watershed-wide coordination mechanisms to address the following during the term of the permit:

1. *Development of coordinated stormwater management programs for shared water bodies;*
2. *Coordination of data management and mapping activities for compatibility; and*
3. *Coordination of monitoring and modeling activities to develop comparable data sets among permittees when estimating pollutant concentrations and loads, evaluating impacts, and addressing controls.*

Summary of Compliance Actions

Clark County endeavors to coordinate with local municipalities and agencies that play a role in water resource or stormwater management. Examples from 2003 include:

- Periodic meetings with the City of Vancouver and other Clark County municipal stormwater programs;
- Maintaining a centralized, county-wide GIS system for local storm drainage mapping (currently Clark County and the City of Camas use the system);
- Promoting standardized monitoring parameters and standard procedures for data gathering in Clark County;
- Implementing an intergovernmental agreement with Clark Public Utilities for Salmon Creek watershed data gathering;
- Technical assistance and coordination with Clark Public Utilities' monitoring program in Cedar Creek and East Fork Lewis River.
- Informal agreements with Yacolt and Ridgefield for placing rain gauges and stream on city property;
- Implementing an intergovernmental agreement with the Lower Columbia Fish Recovery Board to identify priority salmon restoration and preservation streams and conduct field work to characterize their condition;
- Holding monthly Clean Water Commission meetings on stormwater issues;
- Operation of Public Works' street waste decant facility which is utilized by Vancouver, Camas, Woodland, and WSDOT, and is available to other Clark County municipalities;
- Funding the cooperative Watershed Stewards education program at WSU Vancouver;
- Coordinated planning with WSDOT for stormwater retrofit capital improvement projects;

- Active participation in the Lower Columbia Fish Recovery Board;
- Active participation on the WRIA 27/28 planning unit;
- Coordination with Ecology TMDL programs in Salmon Creek and Gibbons Creek watersheds;
- Participating in the Regional Coalition for Clean Rivers and Streams which includes Clark County, Vancouver, and jurisdictions throughout the Portland, Oregon metropolitan area; and
- Active participation by the ESA coordinator on the Board of Directors for Clark County Habitat Partners, a public-private organization promoting habitat preservation and restoration.

S5.B.8.a. New Development, Redevelopment and Construction Site Runoff

Permit Requirement

A program to control runoff from new development, redevelopment and construction sites that discharge to the municipal separate storm sewers owned or operated by the permittee. The program must include: ordinances, minimum requirements, and best management practices (BMPs) equivalent to those found in Volumes I through IV of Ecology's Stormwater Management Manual for the Puget Sound Basin (1992 edition), permits, inspections, and enforcement capability. The program must also include a process to make available copies of the "Notice of Intent for Construction Activity" and copies of the "Notice of Intent for Industrial Activity" to representatives of proposed new development and redevelopment.

Summary of Compliance Activities

Clark County development regulations apply to project sites that discharge to county storm sewers or waters of the state. Clark County Community Development Department implements the following development regulations to control stormwater's adverse influence on streams, wetlands, lakes, groundwater, and wildlife habitat:

- Stormwater and Erosion Control Ordinance;
- Wetlands Protection Ordinance;
- Habitat Preservation Ordinance; and
- Critical Aquifer Recharge Areas Ordinance.

Clark County Public Works Department issues and enforces permits for utility construction in county right-of-way. These projects are also subject to the Stormwater and Erosion Control Ordinance.

Equivalence to the Stormwater Management Manual for the Puget Sound Basin (Washington Department of Ecology, Feb. 1992)

The county stormwater and erosion control code was revised for equivalence to the state manual and adopted by the Clark County Board of County Commissioners in July 2000. In April 2001, Ecology formally acknowledged that Clark County code meets the permit equivalency requirement. In November 2003, Chapter 13.29 Clark County Code was combined with other development regulations to create the new Title 40 Unified

Development Code. The code revision was performed to simplify and better organize development regulations and is policy neutral. No revisions influenced stormwater and erosion control code equivalence to the 1992 Ecology stormwater manual. Stormwater and erosion control are now covered under Chapter 40.380 CCC.

Erosion Control Certification

Beginning January 1, 2001, County code requires all development contractors to be trained and certified in erosion and sediment control by an organization recognized by the Community Development Department Director. The program has certified 834 people in Clark County as of early 2004.

Regulatory Program Compliance Measures

Stormwater and erosion control engineering design plans are only approved after detailed engineering review for conformance to stormwater code. Building permits are not issued until the subdivision stormwater system is complete. The low number of Development Services project inspections that noted erosion control certifications is because this was verified before the projects begin construction and then rarely noted in follow-up field inspections.

2003 Stormwater and Erosion Control Engineering Plan Review

Plans Submitted	Number with Stormwater Features	Plans Approved	Stormwater Features in Compliance
143	80	80	80

2003 Development Services Inspections

Reporting Item	Totals
# of active construction projects	314
# projects with initial inspection for buffer stakes and sediment control	42
# projects with monthly erosion control log	78
# erosion control inspections	1,065
# projects with erosion control certification (became effective Jan. 2001)	98
# stop work orders for erosion control violations	8
# citations for erosion control violations	0
# stormwater control inspections	961
# stop work orders for storm control violations	1
# citations for storm control violations	0
# construction acceptances	84
# maintenance warranty inspections	103
# projects receiving maintenance warranty inspection at 22 months (for county ownership)	47
Percent projects receiving maintenance warranty inspection at 22 months (for county ownership)	100%
# warranty inspections where notice of deficiencies sent out	13
Percent warranty inspections where notice of deficiencies sent out	28%
# final warranty release	47

2003 Building Division Erosion Control Compliance Measures

MONTH	INSPECTIONS	CORRECTION ORDERS	STOP WORK ORDERS	CITATIONS
Jan.- March	4,512	153	1	0
Apr. - June	2,811	128	0	0
July – Sept.	1,622	66	3	0
Oct. – Dec.	1,804	142	3	0
Totals	**10,749**	**489**	**7**	**0**

Public Works Utility Permit Inspections

All public utilities permit work in right-of-way is required to have a utilities permit and follow the design specifications. These projects are also subject to erosion control requirements of Chapter 40.380 CCC, Stormwater and Erosion Control. Generally, statistics for the reporting period suggest each permitted activity received an average of about three inspections. Generally, there are few stop work orders because education actions solved problems.

2003 Utility Inspection Compliance Measures

Permits Issued	Inspections	Stop Work Orders	Projects Lacking Permit	Erosion Control Violations	Erosion Control Education Actions
1,108	2,720	1	1	0	40

Public Works Road Program Plan Review

During 2003, all Public Works Department project design plans are submitted to Community Development for review and approval. The process is identical to private development projects.

Public Works Road Program Construction Compliance

County road project contractors are required to conform to local and state codes and laws by contract. This includes construction of stormwater facilities and erosion control measures. A staff person is dedicated to each project from the engineering and design to construction. A Public Works site inspector visits the site early in the process to identify potential problems long before they become issues and to recommend field changes in the construction process.

The standard construction contract includes individual bid items for erosion and sediment control, and stormwater pollution prevention BMPs. There are charges to individual water quality items, such as a construction entrance and wash rack, or an erosion control blanket.

2003 Code Enforcement Division Compliance Measures

Code Enforcement Division enforces building, development, and environmental regulations. Two Code Enforcement Officers work full time on erosion control, the Water Quality Ordinance, and other environmental regulations.

2003 Code Enforcement Division Inspections and Violations

Type of Inspection	Grading	Erosion	Water Quality	Stormwater	Wetland/ Habitat	Other	TOTAL
Complaints	79	0	21	42	118	11	271
Proactive Inspection	0	568	1	0	0	1	570
Subdivision Monitor	0	1618	0	2	0	0	1,620
Public Relations	1	5	2	5	3	2	18
TOTAL	**80**	**2,191**	**24**	**49**	**121**	**14**	**2,479**

	Grading	Erosion	Water Quality	Stormwater	Wetland/ Habitat	Other	TOTAL
Violations	**44**	**432**	**4**	**11**	**40**	**1**	**532**

2003 Code Enforcement Resolutions

Type of Resolution	Grading	Erosion	Water Quality	Stormwater	Wetland/ Habitat	Other	TOTAL
Correction Notice	2	187	1	0	0	0	190
Letter	35	17	1	9	51	1	114
Personal Contact	66	497	19	45	88	9	724
Education	61	259	14	20	81	0	435
Citation	0	2	0	0	0	0	2
Notice and Order	6	0	0	0	0	0	6
Stop Work Order	7	20	0	0	4	1	32
Hearing	0	0	0	0	0	0	0
Referral to Water Resources	0	0	0	0	0	0	0
TOTAL	**177**	**982**	**35**	**74**	**224**	**11**	**1,503**

Notice of Intent forms

Development and redevelopment projects that would be subject to NPDES industrial construction permits and industrial stormwater permits typically trigger stormwater and erosion control requirements under Chapter 40.380 CCC. Community Development engineering staff's project review identifies the state and local permits that each project would require, including state stormwater permits. Applicants that appear to require an industrial NPDES stormwater permit are referred to the Department of Ecology Web page for the current application forms.

Regulatory Program Monitoring

Community Development implemented a set of criteria to monitor implementation of the Stormwater and Erosion Control Ordinance. These are included as reporting items in this permit component.

S5.B.8.b. Control of Runoff from Existing Residential and Commercial Development (includes retrofitting)

Permit Requirement

Appropriate treatment and source control measures to reduce pollutants in runoff from existing commercial and residential areas that discharge to municipal separate storm sewers owned or operated by the permittee.

Summary of Compliance Activities

Ecology further defines this requirement in condition S9.E., as a stormwater capital program to plan and build stormwater facilities to retrofit existing development. During 2003, the county stormwater management program continued the process to identify, prioritize, and build stormwater retrofit projects. Additionally, stormwater retrofit facilities were designed and built as a part of the County Road Capital Improvement Program.

Stormwater program capital improvement activities

The stormwater program's capital activities in 2003 included capital plan preparation, preliminary project engineering, and construction of five retrofit projects. A capital framework was assembled including a group of projects for approval to be constructed in 2004 and 2005. The stormwater program is also partnering with the Road Program to plan and build regional facilities in the urbanizing Curtin Creek and Mill Creek subwatersheds of Salmon Creek watershed.

Clean Water Fund Stormwater Projects completed, under construction or planned during 2003

Project #	Name	Description	Treatment Standard and treated impervious area	Flow Control Standard and impervious area treated	Estimated Total NPDES Cost	Actual cost 2003	Status
392312	LaLonde Creek Stormwater Improvements	Adds treatment and flow control for a subdivision draining to LaLonde Creek in Salmon Creek watershed.	70 % of 2 yr peak discharge (9.8 acres)	½ predevelopment 2 yr 24 hr peak (9.8 acres)	262,000	508,175	Completed
400110	Thomas Lake Facility	Adds stormwater flow control and treatment for subdivisions that generally lack it. This project also includes wetland rehabilitation as mitigation for County Road Program projects.	Increase wetland treatment residence time from 0.7 hr to 6.7 hr and pollutant removal by 30 % (147.4 acres)	Decrease the 2 yr peak by 29 % for (147.4 acres)	404,000	385,393	Completed
400117	Interstate 205 Stormwater Treatment at Salmon Cr.	This joint Clark County and WDOT project collects untreated freeway runoff and treats it before discharge to Salmon Creek.	70 % 2 yr peak /5.0	None other than effects of swales	180,000	174,117	Completed
400116	Salmon Cr. and Hwy 99 Stormwater Treatment Facility	Untreated runoff from Highway 99 commercial highway land uses is routed to a 26 cartridge Stormfilter® facility before discharge to Salmon Creek.	6 month -24 hr storm/2.26 acres imp.	None	141,000	75,796	Completed
400282	Salmon Creek Historic Channel	Adds treatment for 114th St Tributary using a man-made channel in Salmon Creek flood plain which is now disconnected from the creek.	NA (about 80 acres)	NA	385,000	0	Preliminary
400119	Cougar Creek Infiltration Project	Retrofit residential area piped system with Class V injection wells and sediment trapping manholes to reduce stream bank erosion and increase groundwater recharge. The goal is to completely infiltrate the 2 yr storm event plus parts of less frequent larger events.	Pretreatment for infiltration (31.6 acres)	Eliminate runoff up to the 2-yr event (reduce EIA to 0 for 31.6 acres of TIA)	340,000	267,796	Completed

An additional set of projects was drawn up for approval by the Clark County Board of County Commissioners for design and construction during 2004 and 2005.

Road project retrofits

Public Works road improvement and widening projects include stormwater controls that retrofit existing drainage systems under two main circumstances:

- The replacement of existing roadway that lacks stormwater treatment and flow controls.
- The addition of treatment and flow control capacity for existing county stormwater systems that drain into a road project site.

The policies that drive road project retrofits are compliance with county stormwater code requirements to add stormwater controls for "redeveloped" roads and compliance with ESA requirements. In some cases, Public Works road projects will add stormwater treatment and flow control capacity for existing drainage routed into the project area.

Retrofits mainly occur as part of road widening projects where an existing road lacks stormwater treatment and flow controls. Typically, 30 to 45 percent of the road project replaces the existing road and retrofits it to current stormwater standards. The following table is a cost estimate for road projects that include stormwater treatment and flow control retrofitting for projects that incurred more than $1,000 expenses in 2003. The original stormwater management program did not include this type of stormwater capital project.

Road Program Stormwater Retrofits

WO #	Project	New Imp. Area Treated (ac.)	Existing Imp. Area Treated (ac.)	Ratio Existing/Total Imp.	Retrofit Design Cost	Retrofit Construction Cost	Retrofit R-O-W Cost	Total Retrofit Cost
301022	NE Covington Rd (NE 102nd Ave-NE 76th St)	2.7	5.1	0.65	$7,980	$221,566	$0	$229,546
301422	St. Johns Rd (NE 50th Ave-NE 72nd Ave)	11.07	11.67	0.51	$33,843	$0	$0	$33,843
310122	NE 72nd Ave (NE 99th St-St Johns)	2.94	3.1	0.51	$24,531	$0	$170,653	$195,185
311022	NE 76th St (SR 503-144th St)			0.41	$7,320	-$17	$0	$7,303
311522	NE 10th Ave Phase II	1.1	3.5	0.76	$27,071	$41	$0	$27,113
312122	NE Hazel Dell Ave (NE 99th St-NE 114th St)			0.41	$3,354	$0	$70,725	$74,079
320222	NW 179th St (I-5 to NW 11th St)			0.29	$6,819.21	$0	$0	$6,819
320322	NE 117th St (NE Bassel Rd-NE Hwy 99)			0.41	$22,413	$3	$0	$22,416
320722	NE 78th St @ NE 5th Ave			0.40	$806	$8,208	$13,800	$22,814
320822	NE 99th St @ NE 130th Ave			0.40	$1,143	$8,470	$0	$9,613
320922	NE 76th St (NE 94th-NE 107th Ave)			0.41	$14,059	$0	$0	$14,059
321022	NE 88th St (St Johns-Andresen Rd)			0.41	$41,463	$0	$0	$41,463
321122	NE 137th Ave (NE 4th Plain-NE 76th St)			0.41	$3,135	$0	$0	$3,135
330222	NE 88th St (Hwy 99-St Johns)			0.41	$48,190	$0	$0	$48,190
330322	NE 139th St Overcrossing (NE 10th-20th Ave)			0.41	$8,018	$0	$0	$8,018
330422	NE 63rd St (NE Andresen Rd-I 205			0.29	$23,138	$0	$0	$23,138
330522	NE 99th St (NE 117th Ave-NE 137th Ave)			0.41	$3,009	$0	$0	$3,009
330622	NE 23rd Ave (NE 134th St to NE 139th St)			0.41	$1,515	$979	$0	$2,494
330722	NE Heisson Rd (City limits to NE 244th St)			0.60	$4,057	$0	$0	$4,057
331311	Old Deifel Road			0.40	$464	$3,684	$0	$4,148
331822	NE 172nd Ave (NE 18th-SE Corner of Pacific Park)			0.41	$1,003	$0	$0	$1,003
331922	Padden Parkway/NE 53rd-Andresen (west)			0.40	$0	$228,734	$0	$228,734
341622	NE 117th/119th St Realignment			0.40	$0	$278,193	$0	$278,193
350422	NE Ward Rd/NE 172nd Ave			0.60	$7,154	$11	$0	$7,165
360322	NE 10th Ave (NE 219th St) SR502-NE Carty			0.40	$2,742	$2,742	$0	$5,484
360822	NE Covington Rd (NE 102nd Ave-4th Plain)			0.40	$0	$1,036	$0	$1,036
361922	NE Fourth Plain Blvd (NE 102nd/NE 53rd)			0.40	$529	$15,934	$0	$16,463
370822	La Center Br #21	0.5	1.5	0.75	$4,000	$4,000	$0	$8,000
380122	NE 199th St/SR503-NE 142nd Ave)	4.4	6	0.58	$23,106	$808,302	$0	$831,408
381022	NW 119th St (NW 7th Ave-Hazel Dell Ave)	10.77	6.32	0.37	$7,383	$0	$0	$7,383
381122	NE 179th St (NE 10th Ave-NE 50th Ave)			0.29	$19,675	$0	$174,000	$193,675
381422	NE 134th St (Rockwell Dr to WSU)	2.7	4.5	0.63	$17,494	$436,105	$37,800	$491,399
382722	NE 25th Ave (NE 78th St-NE 99th St)			0.40	$0	$25,462	$0	$25,462
382922	Padden Parkway (NE 117th-Ward Rd) (east)			0.40	$0	$14,108	$0	$14,108
383022	Ward Road, SR 500 to NE 88th			0.40	$162	$7,724	$0	$7,886
392722	Padden Parkway (Andresen-NE 94th Ave)			0.40	$14	$442,954	$0	$442,969
392922	Hwy 99 Realignment Project ***April 13 Bid***			0.69	$35,100	$0	$464,025	$499,125
393622	NE 76th St (NE 107th Ave-NE 117th Ave)			0.40	$0	$1,169	$0	$1,169
393722	NE 162nd Ave (NE 39th St-Ward Rd)	8.6	11.6	0.57	$10,191	$4,805	$103,021	$118,019
393922	NE 32nd/33rd Avenue			0.40	$648	$12,171	$0	$12,820
				44%	**$411,529**	**$2,526,384**	**$1,034,024**	**$3,971,943**

S5.B.8.c. Operation and Maintenance of Municipal Storm Sewers

Permit Requirement

Operation and maintenance programs for new and existing stormwater facilities owned or operated by the permittee, and an ordinance requiring and establishing responsibility for operation and maintenance of other stormwater facilities that discharge into municipal separate storm sewers owned or operated by the permittee. The programs shall include a strategy for addressing the disposal of street waste, decant, and cooperative efforts with Ecology and other entities to develop decant solutions.

Summary of Compliance Activities

Public Works' Operations Division maintains all county-owned storm sewers and roadside ditches. Private facilities and storm sewer systems are maintained by the owner or operator. The Stormwater Facility Maintenance Manual adopted by reference under Chapter 13.26A CCC has standards and practices for maintaining both public and private storm sewer systems. The county owns and operates a decant facility which also serves other governments' maintenance programs.

County Storm Sewer Maintenance

During 2003, Clark County operated and maintained storm sewers according to schedules and standards established for the approved NPDES stormwater management program. The Stormwater Facility Maintenance Manual includes source control, erosion control, and vegetation management standards and practices which apply to all private and public stormwater facilities. In addition, the Water Quality BMP Manual for Operation and Maintenance of Publicly Owned Property includes source control, erosion control, and vegetation management standards and practices for activities that maintain roads, stormwater facilities, public facilities, and park lands.

Stormwater Treatment Facility Condition Inventory

During 2003, Maintenance and Operations, in coordination with the Water Resources infrastructure group, performed a complete inventory on 478 public storm water facilities to fully implement facility maintenance requirements under Chapter 13.26A CCC. Each site was visually inspected to observe and note function and condition. The sites were scored with an index value to document the condition of the system and to identify problem locations. Facilities were evaluated using the following categories and weight: meeting design function (63%), vegetation condition (18%), maintenance accessibility (12%), aesthetics (6%), and safety (1%). Safety rating is related to the condition of fences and gates that prevent unauthorized access.

Approximately five percent of the sites were found to be in a failure condition. Sites with low index scores were either immediately repaired or are under review for possible repair alternatives. Any safety problems are repaired immediately.

2003 Stormwater Facility Maintenance Compliance Measures

Facility/Activity	NPDES-Required Activity	Performance Measures	Number of Activity
Catch basins	Inspect 1x/yr clean following maintenance standards	# catchbasins owned by CC # catchbasins inspected # catchbasins cleaned percent catchbasins cleaned	Approx. 7,500 all inspected 7,856 cleaned 100 percent cleaned
Manholes	Inspect 1 x/yr clean following maintenance standards	# manholes owned # manholes inspected # manholes cleaned percent cleaned	Approx. 2400 all inspected 4 cleaned <1 percent
Drywells	Inspect /clean every 3-5 years	# drywells owned # drywells inspected # drywells cleaned percent cleaned	Approx. 900 all inspected 28 cleaned 3 percent
Detention/Retention facilities	Mow 3 or 4 x/yr or maintain vegetation as natural	# R/D facilities owned # mowings # other maintenance done percent compliance	180 789 all weeded 100 percent
Biofiltration swales	Mow 3 or 4 x/yr other activities as per manual	# swales owned # times swales mowed description of other activity percent compliance	356 5 times each cleaned/weeded 100 percent
Spill response-stormwater facilities	Procedures in place	# of kits in vehicles # of vehicles percent of vehicles w/spill kits # of spills reported to Ecology	158 170 93 percent -
Storm sewer pipe	Inspect/maintain as necessary	# feet cleaned	10,048
Maintenance tracking	Use computer based system to track activities	Activity Tracking Database still in use	

Maintenance Tracking System

The county currently uses a Microsoft Access® database to track maintenance activities for the permit.

Private Stormwater Systems Inspection

Public Works has an inspector who checks private storm sewer facilities for compliance with maintenance standards. The position was vacant for part of 2003, causing fewer facilities to be inspected than in previous years. Also, Operations reported that information from over 100 field inspection reports was not entered into the database and was apparently lost while the position was vacant.

Public Works stormwater education staff inspects sites that are more likely to require source controls and provides source control technical assistance.

2003Compliance Measures for Private Storm Sewer Maintenance and Source Controls

Number	Reporting Item
58	Private stormwater systems had **maintenance** inspections
26	Private stormwater systems meeting **maintenance** requirements
26	Private stormwater systems not meeting **maintenance** requirements
20	Private stormwater systems referred/provided **maintenance** info/education
0	Private stormwater systems referred to Code Enforcement for **maintenance**
80	Private stormwater systems had **source control** inspections
28	Private stormwater systems meeting **source control** requirements
52	Private stormwater systems not meeting **source control** requirements
80	Private stormwater systems referred/provided **source control** info/education
1	Private stormwater systems referred to Code Enforcement for **source control**

Decant Facility Operation

Clark County operates a storm sewer sludge decant facility to manage materials pumped from catch basins, drywells, and other storm sewer components. Liquids are treated and discharged to small, clay-lined retention ponds, which can be emptied to the sanitary sewer. Solids are managed and disposed of, or reclaimed under a solid-waste handling permit issued by the Clark County Health Department. The City of Vancouver, City of Camas, City of Woodland, and WSDOT also use the facility. Other Clark County municipalities have the option of contracting to use the facility.

S5.B.8.d. Operation and Maintenance of Roads and Highways

Permit Requirement

Practices for operating and maintaining public streets, roads and highways, including rest areas, to reduce stormwater runoff impacts.

Summary of Compliance Activities

Clark County maintained roads and streets according to schedules and standards established for the approved NPDES stormwater management program. Public Works Operations Division and Parks Maintenance Section follow standards and practices in the Water Quality BMPs for Operation and Maintenance of Publicly Owned Property manual. The manual was adopted as county policy in July 2000 for the use of pesticides and fertilizer on county lands and by Public Works for road maintenance activities.

Regional Road Maintenance ESA Program

In October 2003, Clark County applied to become a member of the Regional Road Maintenance ESA Program. The program was started by municipalities in the Puget Sound region in 1999 as a response to ESA listings of salmon as threatened. The program seeks to protect salmon by implementing a program of BMPs for road and storm sewer maintenance. The primary revision for Clark County will be increased reporting and tracking of BMP implementation.

Critical Areas Atlases

Clark County critical areas such as stream buffers and wetlands are mapped in a special county road atlas. Each crew chief has a copy and operators of mowers and mechanical brush cutters are also provided copies. Crews and operators are instructed to stop work when approaching a critical area and seek advice on the allowed maintenance actions.

2003 Compliance Measures for Road and Street Maintenance

Facility/Activity	NPDES-Required Activity	Performance Measures	# Activities Completed
Sweeping streets	Residential 9 x/yr.; arterial 12 x/yr.	# arterial sweeper sections # neighborhood sweeper sections # times each arterial section swept # times each neighborhood section swept percent compliance	40 42 14 9 100 percent
Spill response-stormwater facilities	Procedures in place	# of kits in vehicles # of vehicles percent of vehicles w/spill kits # of spills reported to Ecology	158 170 93 percent 2
Litter removal	4 x/yr. On arterials, as needed	# times litter picked up on arterial roads	277
Roadside ditches/culverts	Preventative Maintenance on all	# ditches inspected # ditches cleaned # culverts inspected # culverts cleaned	all inspected 8 percent all inspected 8 percent

S5.B.8.e. Consideration of Water Quality in Flood Control Projects

Permit Requirement

A program to include water quality management considerations into flood management projects, including a schedule for retrofitting existing projects to the extent possible.

Summary of Compliance Activities

Clark County flood control projects are limited to small drainage maintenance and repair activities. The projects include stream-bank erosion control and water quality treatment where feasible. There were few drainage projects during the reporting period and none of a scale that made it feasible to add water quality retrofits.

S5.B.8.f. Reduction of Water Pollution from Pesticides, Herbicides, and Fertilizers

Permit Requirement

A program to reduce pollutants associated with the application of pesticides, herbicides, and fertilizer discharging into municipal separate storm sewers owned or operated by the permittee.

Summary of Compliance Activities

Plan and Schedule for Minimizing WQ Impacts from Pesticides and Fertilizers

The Clark County Water Quality BMP Manual for Operation and Maintenance of Publicly Owned Property includes standards and practices for use of pesticides and fertilizers. It was adopted as county policy in July 2000 and is being implemented by Public Works. The manual is also followed by Vancouver/Clark Parks, which manages parks and open space owned or operated by Clark County.

The Stormwater Facility Maintenance Manual, adopted as code in July 2000, provides guidelines for vegetation management of public and private stormwater facilities. A stormwater facility inspector inspects private facilities and provides the public with maintenance information (see S5.B.8.c.).

Public Works Integrated Pest Management Policy Development

The Clark County Public Works Integrated Pest Management Policy Committee continued meeting throughout 2003 to develop an acceptable IPM Policy. A Draft Policy was written and presented to the Clark County Public Works Continuous Improvement Program Leadership Team. The Continuous Improvement Leadership Team made revisions and forwarded the draft IPM policy to the Public Works Director for consideration.

Solid Waste Program Hazardous Waste Drop Off Sites

Public Works Solid Waste Section continued (non-education) projects to encourage proper disposal of hazardous waste including pesticides and fertilizers. The household hazardous waste and small generator waste collection and disposal program is a primary tool for reducing the amount of pesticides and fertilizers in the environment. It is discussed in greater detail under "S5.B.8.g. Illicit Discharge, Improper Disposal, and Spill Abatement".

S5.B.8.g. Illicit Discharge, Improper Disposal, and Spill Abatement

Permit Requirement

A ongoing program to detect, remove and prevent illicit discharges and improper disposal, including spills, into the municipal separate storm sewers owned or operated by the permittee.

1. *Each permittee shall effectively prohibit illicit discharges to the municipal separate storm sewers owned or operated by the permittee other than those authorized under a separate NPDES permit. Unless identified by either the permittee or Ecology as significant sources of pollution to water of the state, the illicit discharges listed in 40 CFR 122.26(d)(2)(iv)(B)(1) need not be prohibited from entering the municipal separate storm sewers owned or operated by the permittee. As necessary, the permittee shall incorporate control measures in the stormwater management*

program to ensure these discharges are not significant sources of pollutants to waters of the state.

2. *The program shall include ongoing field screening, using the methods required in 40 CFR 122.26(d)(1)(iv), or alternative methods that have been approved by Ecology. The field screening program shall focus on urbanized areas.*
3. *The program shall incorporate best management practices and procedures to prevent, contain, and respond to spills or improper disposal into the municipal separate storm drains owned or operated by the permittee.*

Summary of Compliance Activities

Clark County continues to enforce the Water Quality Ordinance adopted in November 1998. The storm sewer screening program annually inspected and tested water in storm sewers, focusing on high risk areas. Public Works has spill kits in many vehicles. Public Works also works with businesses and the general public to collect and dispose/recycle oil, hazardous waste, and moderate waste.

Water Quality Ordinance

The Community Development Department's Code Enforcement Division and the Public Works Department implement the Water Quality Ordinance. Code Enforcement responds to complaints and uses both education and enforcement actions. Public Works compliance approach is to provide source control BMP information and education.

The reporting for source control and storm sewer maintenance is under component S5.B.8.c. Storm sewer O and M.

Storm Sewer Screening

Storm sewer screening is described as part of the monitoring program under condition S5.B.4.

Waste Collection and Disposal Programs

Public Works Solid Waste Section operates several programs to collect and properly dispose of hazardous waste material. Clark County believes these programs reduce the amount of waste that is improperly disposed of to storm drains, the ground, or water bodies.

Mobile/Satellite Hazardous Waste Collection

	Jan. - Dec. 2003
Number of Sites	12
Number of participants	582
Amount of Household Hazardous Waste	41,551 Pounds

Motor Oil Recycling

	Jan. - Dec. 2003
Amount of used oil collected at household hazardous waste sites	4,781 pounds
Amount of used oil collected curbside	359,760 pounds
Amount of used oil collected at used oil collection sites	136,620 pounds

Moderate Risk Waste Collection Sites

	Jan. -Dec. 2003
Number of Sites	3
Number of participants	3,777
Total hazardous waste collected at fixed sites (and paint from satellite events	1,139,971 pounds
Amount of latex paint collected for recycling	306,497 pounds
Amount of latex paint recycled	225,497 pounds

Curbside Pickup

Solid waste contracts provided for curbside pick up of oil and antifreeze during 2003. This greatly reduces the chance that these materials will be dumped into a storm sewer or enter a water body by another route.

Spill Response

Public Works follows practices described in the Water Quality BMPs for Operation and Maintenance of Publicly Owned Property manual. Public Works has limited capacity for responding to hazardous materials spills; however, spill response kits are provided for most of the Operations Division's vehicles. Awareness training is performed annually. In addition, twenty employees, representing each service area and the Salmon Creek Treatment Plant, underwent eight hours of Hazardous Materials (296-834-30005 Operations Level) training.

Spill response is coordinated through the Clark Regional Emergency Services Agency and the Department of Ecology. Policy is in place for notification of the appropriate responder for abandoned materials. Spills other than small vehicle fluid spills are referred to the Department of Ecology through the 911 system.

2003 Spill Response Measures

Facility/Activity	**NPDES-Required Activity**	**Performance Measures**	**# Activities Completed**
Spill Response-stormwater facilities	Procedures in place	# of kits in vehicles # of vehicles percent of vehicles w/spill kits # of spills reported to Ecology	158 170 93 percent 2

S5.B.8.h. Industrial Stormwater Pollution Reduction

Permit Requirement

A program to reduce pollutants in stormwater discharges from industrial facilities that discharge into municipal separate storm sewers owned or operated by the permittee, and ensure compliance with local ordinances. The program shall include, but not be limited to:

1. *Procedures to identify industrial facilities that discharge into the municipal separate storm sewers owned or operated by the permittee.*
2. *A field inspection program to assess compliance with local ordinances adopted in accordance with Special Condition S5.B.3; and*
3. *A program to monitor and control pollutants in stormwater discharges to municipal separate storm sewers owned and operated by the permittee, from industrial facilities that the permittee determines are contributing a substantial pollutant loading to municipal separate storm sewers. For industrial facilities which require coverage under Ecology's "Baseline General Permit for Stormwater Discharges Associated with Industrial Activity," this program shall be developed jointly with Ecology.*

Summary of Compliance Activities

There is relatively little industrial area in unincorporated Clark County. Industrial sites are generally scattered individual operations, small industrial areas, or gravel mining and processing facilities covered by state waste discharge permits. County actions are limited to those described here and actions described for private storm sewer inventory, inspection, and maintenance requirements for Component S5.B.8.c. and Component S5.B.8.g.

Inventory

Water Resources maintains an inventory of businesses subject to the Water Quality Ordinance using the stormwater fee billing database and Assessor's office records of parcel land use. The stormwater fee billing database identifies every non-residential parcel for stormwater facility maintenance and source control requirement tracking.

Field Inspection

The storm sewer maintenance and source control inspections described under S5.B.8.c. meet this requirement.

Industrial Stormwater Compliance

Dry weather storm sewer screening, source control inspections, and storm sewer maintenance inspections suggest that there are few if any industrial sites that *"contribute substantial pollutant loading"* beyond typical commercial sites.

Pollution problems for facilities covered by NPDES industrial stormwater permits are referred to the Department of Ecology for enforcement. Water Resources informally coordinates compliance with the Ecology Southwest Region NPDES industrial

stormwater permit inspector and Vancouver Field Office staff. Clark County made no industrial stormwater permit referrals to Ecology during 2003.

S5.B.8.i. Education to Reduce Stormwater Pollution

Permit Requirement

An education program aimed at residents, businesses, industries, and employees of the permittee whose job functions may impact stormwater quality. An education program may be developed locally or regionally. The program shall include: Education on the proper use and disposal of pesticides, herbicides, and fertilizers; training of construction contractors and developers on developing stormwater site plans and BMPs for construction activities; efforts to explain the definition and impacts, and promote proper management and disposal of used oil and toxic materials.

Summary of Compliance Activities

The Solid Waste Section, Water Resources Section, and ESA Program perform numerous activities to promote pesticide and fertilizer reduction, proper waste disposal, and source control BMPs through education. The Community Development Department has a certification program for erosion control contractors. No program exists for training regarding site plans because they are required to be signed by licensed professional engineers. Several activities promote watershed stewardship.

Waste Reduction and Environmental Information and Education

Public Works' Solid Waste Section conducts activities aimed at proper management and disposal of hazardous waste and reducing hazardous or toxic materials use. Several of these activities focus on promoting water resources protection and sound environmental practices by businesses. The county also supports and participates in regional programs such as the Environmental Information Cooperative and numerous special events.

Small Quantity Hazardous Waste Generator Assistance Program

Public Works Solid Waste Section collects and disposes of large amounts of household hazardous waste from Clark County residents. These activities are reported in collection activities. Solid Waste section staff also provide technical assistance to businesses that generate small quantities of hazardous waste.

Action	Jan. - Dec. 2003
Number of phone inquiries	56
Number of business site visits	13

Stormwater Specific Information and Education

Water Resources has one specialist working solely on stormwater technical assistance for businesses and homeowners and two Solid Waste Section staff who provide broader technical assistance for toxic material and waste reduction. This activity is also reported as a private stormwater system maintenance and source control requirement under S5.B.8.c. In addition, about 37 residential source control complaints were responded to.

Action	Jan. – Dec. 2001
Number of businesses visited	80

Pesticide Reduction Education/Mother Natures Garden Puppet Shows

Clark County has a traveling puppet show that brings fertilizer and pesticide reduction education to large numbers of elementary school students. In addition, approximately 170 sets of classroom materials and about 1,500 booklets were distributed.

Action	Number of presentations	Total Participants during Jan. - Dec. 2003
Mother Natures Presentations	74 at 33 sites	6,686

Environmental Information Cooperative

Clark County is one of six partners that support the Environmental Information Cooperative. The Environmental Information Cooperative provides coordinated environmental education. The EIC provides programs to school children and teachers throughout Clark County. This includes the River Rangers presentations to primary school classes.

Environmental Information Cooperative Activity	Total Participants during Jan. - Dec. 2003
Columbia River Watershed Festival participants	1,612
Watershed Congress participants	175
Number of Children reached by Enviroscape presentations	867
Number of Children reached by groundwater presentations	912
Number of Children reached by River Rangers Presentations	125
Number of Children/Adults reached by Aquatic Bugs educational kit	1588
Educators reached with Aquatic Bugs workshop	14

Watershed Stewards Program

Clark County funds a full-time position to implement the Watershed Stewards Program at Washington State University Extension. The Watershed Stewards Program trains volunteers in watershed and water quality protection. These volunteers, in turn, contribute back to the community by educating the public at community events and fairs, guiding students and adult volunteers in tree plantings, conducting stream monitoring projects, and a variety of other activities.

The Watershed Stewards program focuses mainly on adult involvement while the EIC is aimed at children. The Watershed Stewards program offers two 10-week training sessions during the year with 28 new stewards trained in 2003. The program currently boasts 87 active volunteers who contributed about 2,500 hours of volunteer time and provided outreach contacts to about 8,000 people in 2003. Note, this figure is smaller than 2002,

however, is based on actual contacts, rather than an estimate based on total attendance at large events.

Watershed Stewards

PROGRAM	TOTAL PARTICIPANTS DURING Jan. – Dec. 2003
Number of Watershed Stewards training groups	2
Number of Watershed Stewards trained	28

Regional Coalition for Clean Rivers and Streams

Clark County actively participates in the Regional Coalition for Clean Rivers and Streams. In 2003, a regional campaign entitled "Is your lawn chemical free? Maybe it should be" featuring a picture of a child laying in the grass ran in the Portland Metropolitan and Clark County areas. The campaign included slides at 37 cinema screens during the month of April, ten major newspaper ads, and 69 Tri-Met and C-Tran bus "tailboards" in the Portland-Vancouver area. More information is available at the internet site: http://www.cleanriversandstreams.org.

Small Acreage Program – Living on the Land

Clark County, in partnership with Washington State University Extension and the Clark Conservation District funds a full-time position to implement an outreach program for small acreage land owners. This program uses both the *Living on the Land: Stewardship for small acreages* curriculum and other stand-alone workshops to educate small acreage landowners about managing their properties to reduce quantity and improve the quality of stormwater runoff from their properties.

The program completed the first *Living on the Land* 12-week class series, nine septic system workshops, and six rural acreage stormwater best management practices workshops. The program also had booths at the Lacamas Watershed Festival, the Home and Garden Idea Fair, and the Clark County Fair.

Small Acreage Program

PROGRAM	TOTAL PARTICIPANTS DURING Jan. – Dec. 2003
Number of Living on the Land 12-week series	1
Number of participants	24
Number of septic and BMP workshops	15
Number of participants	180
Contacts at community events, specific to this program	3,000

Student Water Quality Monitoring Program

Clark County provides funding support to expand the city of Vancouver's Student Water Quality Monitoring Program into schools in unincorporated Clark County. Students and teachers are mentored during classroom and monitoring site visits as well as provided monitoring equipment. In 2003, students, facilitators and community members

participated at the annual Watershed Congress to share the results of their water quality monitoring projects.

In addition, Clark County funds the Student Watershed Research Project (SWRP) at three high schools in Clark County. SWRP staff work with students and teachers, providing support for upper-level water quality monitoring projects in the Portland and Clark County area. In addition to recruiting three teachers to participate, SWRP staff provided classroom instruction at participating schools in macroinvertebrates (4 sessions), habitat assessment (2 sessions), data analysis training (2 sessions), water quality training (10 sessions), and an introduction to watersheds and monitoring (2 sessions). A total of 370 students participate in the program.

Student Water Quality Monitoring Program

PROGRAM	**TOTAL PARTICIPANTS DURING Jan. – Dec. 2003**
Student classroom contacts – Vancouver monitoring program	1,300
Annual Watershed Congress participants	167
Students participating in the SWRP Program	370
Number of SWRP training session	20
Schools participating in the SWRP Program	3

Children's Clean Water Billboard Art Contest

Clark County initiated a children's billboard art contest in November 2003. Entry forms and rules were distributed to nine school districts and all private schools in unincorporated Clark County. The contest was completed in spring 2004 and results will be reported in the 2004 Annual Report.

Community Events

Outreach and education included several annual community events such as the Annual Home and Garden Fair (3 days), the Clark County Fair (10 days), and the Lacamas Watershed Festival (1 day).

Storm Drain Stenciling

Clark County provides materials and stencils to volunteers for an ongoing storm drain stenciling project. Coordination of this effort is now part of the Watershed Stewards Program.

Erosion Control Certification Training

Clark County requires certification for all contractors installing and maintaining erosion controls. This is accomplished through a locally operated training and certification program. The program is administered by the Building Industry of Southwest Washington. Clark County provides part of the training, including field techniques. The program trained and certified 86 persons in 2003, for a total of 834 since the program began.

Status of Condition S9 Scheduled Actions

Special Condition S9 listed specific new activities with implementation schedules before the current reporting period. This section lists the activities and their schedule status.

Requirement	***Schedule***	***Status***
S9.A.1. Stormwater equivalence to the Puget Sound Manual	Adopted by 7/31/00	In place 7/28/00
S9.A.2. Storm sewer maintenance ordinance	Adopted by 7/31/00	In place 7/28/00
S9.A.3. Add 1FTE code enforcement officer	In place 8/31/99,	In place 8/31/99
S9.A.3. Add 1FTE code enforcement officer if work load dictates	In place 2/28/00	In place 2/28/00
S9.A.4. Add 1 FTE erosion control inspector for Building	3/31/00	In place 3/31/00
S9.A.4. Add 1 FTE erosion control inspector for Dev. Serv.	3/31/00	In place 3/31/00
S9.A.5. Add 1 FTE stormwater facility inspector for new development	7/31/00	In place 7/00
S9.A.6. Implement Water Quality Ordinance	System in by 7/31/00	Began 7/00
S9.B.1. Increase street sweeping to specified standards	Start 8/31/99	Began 8/99
S9.B.2. Increase swale maintenance to standards	Start 8/31/99	Began 8/99
S9.B.3. Implement inspection and maintenance program for R/D facilities	Start 3/31/00	Began 3/00
S9.B.4. Implement roadside ditch and culvert maintenance standards	Start 3/31/00	Began 3/00
S9.B.5. Add 1FTE for private facilities inspection	Start 7/31/00	In place 6/00
S9.B.6. Develop spill response program	In place 7/31/00	Began 6/00
S9.B.7. Perform storm pipe maintenance to standards	Start 3/31/00	Began 3/00
S9.B.8. Begin yearly catch basin inspection and cleaning	Start 8/31/99	Began 8/99
S9.B.9. Begin 5-year drywell cleaning cycle	Start 3/31/00	Began 3/00
S9.B.10. Establish computer-based maintenance tracking	In place 12/31/00	System in Place 1/00
S9.B.11. Develop a program to map private storm sewers and track maintenance	In place 7/31/00	In place
S9.C.1. Establish a centralized SWMP database	In place 12/31/00	Work continued in 2002
S9.C.2. Establish GIS storm sewer maintenance program	In place 12/31/00	Data QC performed in 2002
S9.C.3. Regulatory program monitoring project	In place 7/31/00	Ordinance tracking in place 7/00
S9.C.4. Establish storm sewer screening	In place 7/31/00	In place 7/00
S9.C.5. Watershed Characterization program schedule	Drafted by 7/31/00	Started projects in summer 2001
S9.D.1. Permit funding strategy	Ordinance by 9/31/00	Completed 10/99
S9.D.2. Lawn campaign	In place 12/31/99	In place 12/99
S9.D.3. Add 2 FTE for stormwater specific education	In place 7/31/00	Completed 4/00
S9.D.4. Add 1 FTE for Watershed Steward program	In place 7/31/00	In place 11/99
S9.D.5. Add ½ FTE for River Ranger program	In place 3/31/00	In place 8/99
S9.D.6. County policy on pesticide and fertilizers	In place 7/31/00	In place 7/00
S9.E.1. Establish capital improvement program	Begin by 8/31/00	Project selection, design, and construction continued in 2003

2. NOTIFICATION OF CHANGE IN PERMIT AREA

During 2003, there were no annexations or changes in the permit area.

3. DIFFERENCES BETWEEN PLANNED AND ACTUAL EXPENDITURES BY COMPONENT.

The permit asks for a description of:

Differences between planned and actual expenditures with a breakdown for the components of the SWMP and the budget since permit issuance. The report shall reflect numeric expenditures for the components of the SWMP.

Summary of Compliance Actions

This report includes tables showing:

- Estimated budget and expenditures for 2003 by Program Element and
- Estimated yearly expenditures by Permit Component.

It is not possible to track every dollar spent on NPDES permit compliance because no systems were in place to separately track many of the pre-permit stormwater activities. Also, the county budget does not have sufficient detail to report by permit component. For activities where there is a defined county budget, Clark County follows a biennial budget process (2003-2004 calendar years), forcing an estimate of the 2003 budget as one-half the biennial budget.

Ongoing pre-permit activities had a recognized revenue source in 1999. New activities had no established revenue source until October 1999, when the Board of Clark County Commissioners adopted a stormwater fee and established the Clean Water Program Fund. Ongoing, pre-permit activities are often difficult to separate from non-stormwater activities because that was not an issue when expense tracking systems were set up. New activities billed to the Clean Water Program Fund generally have expense reporting categories tagged to individual permit components. However, expenses for enhancements of ongoing pre-permit activities such as erosion control inspections on building projects are not tracked separately from other concurrent site inspections.

Estimated Budget and Expenditures by Program Element

The estimated 2003 budget includes ongoing pre-permit activities and new permit-required activities billed to the new Clean Water Program Fund. The county budget does not provide the level of detail required to separate budget by components or activity. Except for ongoing regulatory program activities and stormwater retrofits by road projects, expense tracking generally provides detail by component or the projects and activities within a component. Due to this, expense tracking is much more reliable than budgets for reporting purposes.

Ongoing pre-permit activities continue at about pre-permit levels. Costs for operation and maintenance of stormwater facilities and roads can vary by season and from year to year

depending on weather. For example, extremely wet weather can greatly increase costs for emergency actions and repairs, while dry weather decreases costs. Several late 1990's projects included in the pre-permit budget were completed in 2001 and dropped from subsequent budgets.

As of 2003, the Monitoring and Evaluation and Administrative Program Elements are entirely included in the Clean Water Program Fund budget. Program administration includes program costs such as manager's time, the annual permit fee, annual permit report to Ecology, and stormwater fee collection. The budgets for these program elements are one half the Clean Water Program Fund budget element for 2003-2004.

The stormwater capital improvement program is included in the Clean Water Fund budget. In addition, the Public Works Road Fund had estimated expenditures of about $4,000,000 to provide stormwater controls for older roads being completely replaced by new roads. Since the Road Capital Improvement Program does not have a specific budget for stormwater retrofits, no budget amount is provided for that activity.

The Regulatory, Operations and Maintenance, and Public Involvement and Education Program Elements include budget from the Clean Water Program Fund and other previously existing revenue sources such as development fees, the Road Fund, and the Solid Waste Fund. For these program elements, ongoing pre-permit activity budgets are estimated as the sum of NPDES-required activities from year-1 baseline in the Stormwater Management Program (April 1999) and one half of the 2003-2004 Clean Water Program Fund budget.

Expenditures for O and M, Monitoring and Evaluation, Public Involvement and Education, and Administration are from the county accounting system and project billings. The Regulatory Program and Capital Program include estimates for expenditures on projects and activities not tracked separately for the NPDES permit.

The Clean Water Program Fund had a reserve balance of $7,173,284 at the end of 2003. County regulations earmark the cash reserve for stormwater capital improvement projects.

Estimated SWMP Budget and Expenditures by Program Element

SWMP Program Element	***Est. 2000 Budget***	***Est. 2000 Expend.***	***Est. 2001 Budget***	***Est. 2001 Expend.***
Regulatory Program	$ 1,813,542	$ 1,621,799	$ 1,454,242	$2,016,242
Operation and Maintenance	1,895,997	2,085,268	2,325,858	2,250,005
Monitoring and Evaluation	434,180	204,874	595,883	428,763
Public Involvement and Education	1,050,327	776,589	923,124	1,058,034
Capital Improvements	670,610	2,240412	303,618	792,948
Program Administration/coord.	643,695	860,983	382,402	386,375
Totals	**$7,189,004**	**$7,789,925**	**$5,987,128**	**$6,934,368**
Accumulated Cash Reserve for Stormwater Projects		1,906,796		4,366,313

Estimated SWMP Budget and Expenditures by Program Element

SWMP Program Element	***Est. 2002 Budget***	***Est. 2002 Expend.***	***Est. 2003 SWMP Budget***	***Est. 2003 County Expend.***
Regulatory Program	1,745,555	2,005,196	1,439,392	2,282,283
Operation and Maintenance	2,453,506	1,653,523	2,254,483	1,804,015
Monitoring and Evaluation	597,608	590,480	676,408	784,973
Public Involvement, Education,	881,592	1,345,065	1,056,084	1,240,489
Capital Imp	559,124	622,939	1,562,127	5,540,192
Administration/Coord.	296,220	335,762	505,589	338,512
Totals	**$6,535,607**	**$6,552,965**	**$7,494,083**	**$11,990,464**
Cash Reserve for Stormwater Capital Improvement Projects		6,106,067		7,173,284

Estimated Annual Expenditures by Permit Program Component

Stormwater program components are defined by the permit as specific requirements to develop and implement the stormwater management program. Components S5.B.2., S5.B.3., and S5.B.5. had little or no expenses during 2003 because they were completed to develop the 1998 stormwater management program for the permit application. Other components had little or no expenses because activities are conducted under other components. For example, testing and screening for non-stormwater discharges from industrial facilities under component S5.B.8.h. is actually included in the monitoring program (S5.B.4.). Component S5.B.8.e., consideration of stormwater treatment in flood control projects usually has little or no expense because there are few significant flood control projects in Clark County. Condition S9 components are included in the broader S5.B. components.

Regulatory program expenditures continued to rise slightly.

Overall storm sewer and road O and M expenditures appear to be about $150,000 higher than in 2002. Generally, new O and M activities have been performed at less expense than anticipated when the original SWMP budget was drawn up.

The monitoring program continues to grow as new projects and program support activities are implemented. In 2003, there was a large one time cost to build and upgrade stream and rainfall gauging stations. Expenses related to the GIS inventory of stormwater infrastructure increased during 2003.

Education activities expanded slightly.

The stormwater capital improvements increased significantly in 2003 due to construction of planned projects by the stormwater program and full implementation of retrofit requirements for county road improvement projects that replace existing roads lacking stormwater treatment and flow control facilities.

Administrative expenses appear to have leveled off after establishment of the stormwater fee billing system in 2000.

Estimated Yearly Expenditures by Permit Component

Component	***Aug. to Dec. 1999***	***2000***	***2001***	***2002***	***2003***
Regulatory Program					
S5.B.8.a. New Development, Redevelopment and Construction Site Runoff	450,140	1,621,799	2,016,242	2,005,196	2,282,283
Operations and Maintenance					
S5.B.8.c. Operation and Maintenance of Municipal Storm Sewers	675,052	1,295,186	1,464,892	1,132,333	981,750
S5.B.8.d. Operation and Maintenance of Roads and Highways	312,621	790,082	785,113	521,190	822,265
Monitoring and Evaluation					
S5.B.4. Monitoring Program	58,306	102,926	174,527	452,868	555,207
S5.B.6. Storm Sewer Mapping and Data Maintenance	0	101,948	254,236	137,612	229,766
Public Involvement and Education					
S5.B.1. Comprehensive Planning Process	8,787	24,405	52,009	23,117	33,466
S5.B.2. Management Needs and Priorities	0	0	0	0	96
S5.B.7. Watershed-wide Coordination	0	160	3,599	12,016	11,749
S5.B.8.f. Reduction of water pollution from pesticides, herbicides and fertilizers	0	162	26,146	73,899	79,571
S5.B.8.g. Illicit Discharge, Improper Disposal, and Spill Abatement	166,573	286,658	319,184	350,292	321,506
S5.B.8.h. Industrial Stormwater Pollution Reduction	0	0	0	51	-
S5.B.8.i. Public Education	211,019	489,609	709,105	885,690	794,101
Capital Improvements					
S5.B.8.b. Control of Runoff from Existing Residential and Commercial Development (includes retrofitting)	21,113	2,237,646	785,804	622,505	5,540,192
S5.B.8.e. Consideration of Water Quality in Flood Control Projects	0	2,766	7,144	434	
Administration					
Program Administration/Coordination/Overhead (no component)	156,227	836,578	334,366	335,762	338,512
S5.B.3. Legal Authority	0	0	0	0	-
S5.B.5. Fiscal Analysis	0	0	0	0	-
Total	**$2,061,837**	**$7,789,925**	**$6,932,367**	**$6,552,965**	**$11,990,464**

4. REVISIONS TO THE SWMP FISCAL ANALYSIS

Clark County's 1998 SWMP included financial analysis for a five-year program. Ecology wrote a permit to cover the period of August 1999 to December 31, 2000 (subsequently extended until a replacement is issued). The 1999 permit included several proposed (not funded) activities in the five-year SWMP, and listed them in Special Condition S9. A new SWMP, including the five-year fiscal analysis will be drafted following issuance of the next permit.

5. SUMMARY AND ANALYSIS OF THE CUMULATIVE MONITORING DATA COLLECTED THROUGHOUT THE TERM OF THE PERMIT

All monitoring activities are described under Status of Permit Component S5.B.4. That section reports summary metrics for water quality, macroinvertebrates, and stream temperature loggers collected during the permit term.

In June 2003, Water Resources completed a informational map that summarizes analysis of stream and lake health data collected before and after permit issuance (Attachment A). Macroinvertebrate, water chemistry, and fecal bacteria data for many stream segments was reduced to a single stream health category. Where there was no field information, a probable health category was assigned from regression analysis of observed stream health scores, versus the percent drainage basin forest cover and percent drainage basin total impervious area.

6. SUMMARY OF COMPLIANCE ACTIVITIES

Information describing compliance activities, including the nature and number of official enforcement actions, inspections, and types of public education activities are included in the sections describing the status of each permit component.

7. IDENTIFICATION OF KNOWN WATER QUALITY IMPROVEMENTS OR DEGRADATION

During the reporting period, monitoring results did not show a change in water quality. Identification of water quality improvements or degradation (or no change) will probably require several years (or permit terms) of data collected specifically for that purpose. Long-term monitoring projects are described in the status of Permit Component S5.B.4. Monitoring Program.

8. WATERSHED-WIDE COORDINATION AND ACTIVITIES

Activities to coordinate watershed protection are listed in Status of Permit Component S5.B.7. WDOT is the only other municipal permittee in Clark County.

ATTACHMENT A. OBSERVED AND PROBABLE STREAM HEALTH