

Attachment A



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CLARK COUNTY
WASHINGTON

2009 Stormwater Management Program Plan for Clark County, Washington

Prepared by
Clark County Public Works Department, Clean Water Program



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Acronyms and Glossary

- AKART** – all known, available, and reasonable methods of prevention, control and treatment
- BMP** – best management practices (controls for stormwater runoff)
- BOCC** – Board of Clark County Commissioners
- CIP** – capital improvement project
- Ecology** – Washington State Department of Ecology
- GIS** – geographic information system
- IDDE** – illicit discharge detection and elimination
- Illicit discharge** – a non-stormwater discharge or illegal connection to the storm sewer system (e.g. a sanitary sewer line connected to storm sewer system)
- LID** – low impact development
- LiDAR** – light detection and ranging
- MS4** – municipal separate storm sewer system
- NOAA Fisheries** - National Oceanic and Atmospheric Administration, National Marine Fisheries Service
- NOI** – Notice of Intent
- NPDES** – National Pollutant Discharge Elimination Systems
- PPGS** – potential pollutant generating site
- RFP** – request for proposals
- SCIP** – Stormwater Capital Improvement Program
- SCIPIT** – Stormwater Capital Improvement Program Involvement Team
- SNAP** – Stormwater Needs Assessment Program
- StormwaterClk** – a GIS database the county maintains for storm sewer infrastructure
- SWMMPSB** – 1992 Stormwater Management Manual for the Puget Sound Basin
- SWMMWW** – 2005 Stormwater Management Manual for Western Washington, published by Ecology
- SWMP** – stormwater management program
- SWPPP** – stormwater pollution prevention plan
- Tidemark** – a database the county maintains to track permits and code enforcement activities
- TMDL** – total maximum daily load
- UIC** – underground injection control

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:

Peter Capen

Title:

PUBLIC WORKS DIRECTOR

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Purpose of the Stormwater Management Program Plan

Under the NPDES phase I municipal stormwater permit for Western Washington, each permittee is required to implement a stormwater management program (SWMP) designed to reduce pollutant discharges to the maximum extent practicable, meet AKART requirements, and protect water quality.

In addition to meeting the permit requirement to submit a written program description to Ecology, the SWMP plan provides a vehicle for public input under S5.C.4 Public Involvement and Participation, and a means to coordinate and direct permit implementation under S5.C.3. Coordination.

Scope of the Stormwater Management Program Plan

The permit requires Clark County to submit a written report documenting the SWMP with each year's annual report to Ecology. This annual SWMP update describes ongoing program activities and to the extent possible, actions planned for implementation during the permit term.

The actions described in this report address S5.C. Stormwater Management Program and S7 TMDLs. Monitoring activities under S8 and those not specifically performed to meet requirements of S5 and S7 are described separately in the annual monitoring report and Quality Assurance Project Plans submitted to Ecology.

The level of detail in the SWMP is intended to provide a simple description of how Clark County manages stormwater under the NPDES permit. In contrast, the annual report provides specific information on permit compliance during the previous calendar year.

Layout of the Stormwater Management Program Plan

The SWMP follows the format of the NPDES permit components in S5.C., listing the component, a summary of compliance measures, and a detailed description of the compliance measures by permit subcomponent, including permit deadlines.

Stormwater Management Program by Permit Component

S5.C.1. Legal Authority to Control Discharges to and from the MS4

Summary of Compliance Measures

Clark County maintains the legal authority required by the permit to control discharges to and from its MS4.

Detailed Description of Compliance Measures

Permit Deadlines:

Legal authority to control discharges to and from MS4	February 2007
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Authority to Control Industrial Discharges, Prohibit Illicit Discharges, and Control Spills into the MS4 (S5.C.1.b.i., ii., iii.)

In 1998, Clark County adopted an ordinance, codified as Chapter 13.26A Clark County Code, Water Quality, prohibiting illicit discharges and spills into its storm sewer system, controlling industrial site runoff, and adopting a source control best management practices (BMP) manual. This ordinance remains in effect since 1998 and is enforced by Clark County.

Ability to Control Inter-System Discharges Under Agreements with Other Permittees (S5.C.1.b.iv.)

Clark County has the ability to enter into contracts and intergovernmental agreements with other permittees and secondary permittees for the purpose of controlling pollutants entering or leaving the county MS4.

Require Compliance with County Regulations and Conduct Enforcement Actions (S5.C.1.b.v., vi.)

The county has a system of ordinances and enforcement procedures to conduct inspection, surveillance, and monitoring needed to determine compliance with county illicit discharge and connection prohibitions. These include primarily Title 32 Enforcement for all enforcement, Chapter 13.26A Water Quality for existing sites, and Title 40 for new development and redevelopment standards.

S5.C.2. Municipal Separate Storm Sewer System Mapping and Documentation

Summary of Compliance Measures

Clark County maps and documents storm sewer infrastructure in a GIS database referred to as StormwaterClk. This database is actively maintained by Clean Water Program and GIS Department personnel. During 2009, the county will largely complete stormwater

system mapping and will initiate systems to add storm infrastructure to the database as it is built.

Detailed Description of Compliance Measures

Outfall, Receiving Water, Structural Stormwater Facility, and MS4 Connection Point Mapping (S5.C.2.b.i.)

Permit Deadlines:

Complete outfall mapping	February 2009
Complete receiving water mapping	February 2009
Complete county-owned facility mapping	February 2009
Initiate program to map all connections to other municipal storm sewers	February 2009

Outfall Mapping

Outfalls are mapped as new infrastructure is built and previously unknown outfalls are discovered. Several thousand ditch outfalls were mapped during 2008.

Receiving Water Mapping

County-wide receiving waters maps are derived from standard GIS data distributed by the Washington State Department of Natural Resources. The original source for this information is US Geological Survey 1:24,000 scale (1 inch = 2,000 feet) quadrangles. In some areas, such as the Whipple Creek watershed, water bodies are mapped at a much larger scale using available LiDAR data. Additional work is underway to create detailed drainage maps using LiDAR data, including a detailed county-wide drainage map created using computer analysis of LiDAR topography.

County Stormwater Facility Mapping

County stormwater facilities generally are those owned or operated by the Public Works Department, such as dedicated facilities in subdivisions, road projects, and facilities in county parks. It also includes stormwater facilities owned by other county departments that operate sites such as the fairgrounds and downtown campus. Stormwater treatment and flow control facilities are mapped in StormwaterClk as they become known through new construction. All projects completed during 2008 are expected to be in the system by the end of 2009, and a system put in place to maintain the inventory after 2009. In 2009, procedures for mapping newly built facilities are under review to improve data transfer from engineering drawings to the GIS.

Municipal Storm Sewer Connection Mapping

StormwaterClk includes a point feature called “Connections” with an attribute for connection type, one of which is municipal connection points. Mapping of existing connection points between Clark County’s system and other permitted municipal systems began in 2008 and is expected to be completed during 2009.

Private Facility Mapping

Although it is not required by the permit, the Clean Water Program maps known private stormwater facilities regulated by Clark County. They are mapped in StormwaterClk using the same procedures as county facilities.

Stormwater Attribute Mapping For Larger Urban and Urbanizing Sub-watersheds (S5.C.2.b.ii.)

Permit Deadlines:

Complete catchment data mapping	February 2011
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The permit requires that catchment boundary, land use, and tributary conveyance systems be mapped for each outfall having a nominal diameter of 24 inches or greater within sub-watersheds designated as urban and higher density rural. Conveyance mapping is part of the project to complete mapping of the storm sewer system. Catchment boundaries will also be mapped. Catchment land use is defined in various GIS map layers such as zoning, land cover, and digital aerial photographs, and can be summarized or portrayed as needed using GIS tools.

Begin Mapping All Connections Allowed after February 16, 2007 (S5.C.2.b.iii.)

Permit Deadline:

Begin mapping all new connections	February 2007
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To map new connections to the MS4, a new point feature called “Connections” was added to StormwaterClk. Connections are mapped using development project record drawings provided by Community Development. Connection points include roof drains, yard drains, foundation drains, private storm sewers, municipal systems, and unknown connections. Private stormwater facility connections are mapped when the facilities are added to StormwaterClk.

Map Existing Connections Greater than 8 Inches Diameter (S5.C.2.b.iv.)

Permit Deadline:

Map connections in one half of urban and urbanizing sub-watersheds	February 2011
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The permit requires mapping of existing connections over 8 inches in diameter for one half of the unincorporated area in urban or urbanizing sub-watersheds. This requirement only applies to areas draining to 24 inch nominal diameter outfalls. The Clean Water Program maps all known stormwater pipe connections as part of the project to complete countywide storm sewer system. For the remainder of the permit term, this inventory will be maintained as new connections are made or discovered. County projects are not considered connections because they are part of the MS4.

Mapping Areas of the MS4 that do not Drain to Surface Water (S5.C.2.b.v.)

Permit Deadline:

Map areas of MS4 not draining to surface water	February 2011
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Areas of the county storm sewer system that do not drain to surface water bodies will be mapped after the drainage system is completely mapped in 2009. This mapping effort will focus on areas within the Vancouver Urban Growth Area where Class V injection wells and retention basins are most common. Areas of the MS4 outside the urban area served by roadside ditches will not be mapped.

Storm Sewer Mapping and Documentation Availability (S5.C.2.b.vi., vii.)

The StormwaterClk GIS is an ESRI SDE database that is routinely converted to shape file layers for a variety of users. The shape files are viewable on the internet using the county’s Digital Atlas or can be acquired from the Assessment and GIS Department for cost of reproduction. Clark County municipalities have the option of participating in the StormwaterClk GIS as subscribers. Many plans and record drawings for development projects are available on the county internet site.

S5.C.3. Interdepartmental and Permittee Coordination

Summary of Compliance Measure

An executive memorandum was issued in February 2008 instructing each county department to coordinate with the Clean Water Program to develop and implement the SWMP. The Public Works Operations and Maintenance Program implements parts of the SWMP under a signed agreement. The GIS department also has an agreement to provide support for permit implementation. There is also an agreement with the Department of Community Development to perform work to enforce stormwater and erosion control regulations. In 2009, these agreements are under review and being revised to more clearly define responsibilities and financial obligations for implementing the SWMP.

Detailed Description of Compliance Measures

Establish and Implement Written Agreements and/or Executive Orders (S5.C.3.b.i.)

Permit Deadline

Directives or agreements to implement SWMP actions	February 2008
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A number of agreements are being revised in 2009 to implement the newly adopted (January 2009) stormwater code and manuals. New agreements within Public Works will define roles and responsibilities for activities such as development project design review, inspection and reporting.

Operations and Maintenance Program Agreement

Public Works completed an intra-departmental agreement to implement requirements under S5.C.9. Operations and Maintenance Program, including:

- Standards and schedules for stormwater facility and catch basin maintenance
- Practices for operating streets, roads and highways
- Spill response practices
- Private facility inspection and enforcement
- Water quality BMPs for maintaining public land
- Training
- Stormwater Pollution Prevention Plans (SWPPPs) for maintenance facilities
- Reporting requirements for the NPDES annual report

This agreement is being revised in 2009 to better define responsibilities for implementing the SWMP.

Community Development Department Agreement

The Clean Water Program and Department of Community Development coordinate SWMP implementation using an ongoing interdepartmental agreement. During 2008, Community Development programs that review, approve and inspect stormwater development projects were largely transferred to Public Works, leaving Community Development with limited functions of code enforcement and stormwater development regulation compliance for residential building permit sites. Accordingly, intergovernmental agreements are under revision in 2009.

GIS Department Agreement

The Clean Water Program has an agreement with the GIS Department for various GIS services including administration of StormwaterClk GIS database, stormwater fee database maintenance, software support, GIS data used for capital planning, and database development.

Establish Mechanisms to Coordinate SWMP Implementation Among Local Permittees (S5.C.3.b.ii.)

Permit Deadline:

Coordination of interconnected MS4s	February 2009
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Roles and Responsibilities for Interconnected MS4s

The Clean Water Program has identified many interconnection points between the county MS4 and other permitted municipal storm sewers systems as part of outfall screening and storm sewer system mapping. The Clean Water Program assesses the potential for intersystem pollutant discharges using IDDE procedures. Where a potential illicit source or higher than typical amount of potential pollutant generating sites occur, the Clean Water Program will attempt to coordinate solutions.

Clark County contacted phase II permittees to discuss establishing written agreements on roles and responsibilities for control of pollutants between systems. The planned approach is to create agreements between municipal public works departments using a template developed by phase I permittees.

Coordinate Activities for Shared Water Bodies

Clark County coordinates to some degree with most of the phase II permittees including:

- Salmon Creek and Gibbons Creek TMDL implementation (Battle Ground and Washougal)
- Burnt Bridge Creek TMDL development (Vancouver)
- Shared education and outreach programs (Vancouver)
- Operation of the regional street waste decant facility (WSDOT, Vancouver, Battle Ground, Camas, and Washougal)
- Supporting the Vancouver Lake Watershed Partnership (Vancouver and Port of Vancouver)

- Developing agreements with Vancouver to implement uniform approaches for land use planning, annexation, and development regulation

Coordinated stormwater management for shared water bodies is also part of the Stormwater Needs Assessment Program where the focus is mainly sub-watershed assessment and identifying potential stormwater mitigation projects.

S5.C.4. Public Involvement in SWMP Development

Summary of Compliance Measures

The Western Washington phase I municipal permit is prescriptive and in practice limits the ability of permittees to tailor their programs to local needs and priorities. Public involvement may be useful for identifying priority activities that go beyond permit requirements or additional tools to meet permit requirements. The draft SWMP is presented for public review and comment before a final revision is submitted to Ecology.

Implementing the SWMP includes review and comment on various actions such as ordinance updates and CIP ranking. The Clean Water Commission holds monthly public meetings and provides input to the Board of Clark County Commissioners and the Clean Water Program. Public involvement to implement the SWMP also includes education and outreach actions under S5.C.10.

Detailed Description of Compliance Measures

Process for Public Comment on the SWMP Development and Implementation (S5.C.4.b.i.)

Permit Deadline:

Begin process to involve public in SWMP development, implementation, and updates	August 2007
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The current program is based largely on the original SWMP submitted to Ecology in September 1998. That program underwent extensive public review and approval by the Board of Clark County Commissioners.

The permit format provides little latitude to respond to public input related to developing a SWMP to meet the minimum requirements. The Clean Water Commission provides a forum for gathering input for development, implementation and updates of the SWMP. The Clean Water Commission hosts a monthly public meeting where the public can hear updates and provide input on the stormwater program. The public also learns about program actions from the Clean Water Web page, newsletters, and media releases. That process will be further developed during the permit term.

Public involvement processes are in place to implement the SWMP, including:

- Clean Water Commission meetings (S5.C.4.)
- Stormwater capital improvement project ranking by the SCPIT (S5.C.6.)
- Public involvement in ordinance revisions for development regulation equivalence to the SWMMWW (S5.C.5.)
- Public involvement in ordinance revisions to adopt LID standards (S5.C.5.)
- Public involvement to update ordinances regulating source control BMPs, prohibited discharges, and stormwater facility maintenance standards (S5.C.7., S5.C.8., and S5.C.9.)
- The Development Engineering Advisory Board to provide feedback to the development engineering staff on implementation of stormwater code (S5.C.5.)
- Volunteer Monitoring Equipment Lending Library (S5.C.10.)
- Watershed Stewards Program (S5.C.10.)
- Education and outreach to reduce stormwater impacts (S5.C.10.)

Make SWMP Materials Available on the County Web Page (S5.C.4.b.ii.)

Permit Deadline:

Ecology submittals on Web page	March 2008
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Submittals to Ecology are posted on the Clean Water Program Web site at www.clark.wa.gov/water-resources/administration/index.html.

The Clean Water Program Web site includes public involvement pages where SWMP-specific information is posted. This page also includes links to public involvement processes to implement specific permit components such as revising stormwater and erosion control ordinance.

www.clark.wa.gov/water-resources/SWMP/stormwater%20public%20involvement.html.

S5.C.5. Development Regulations to Control Runoff from New Development and Redevelopment

Summary of Compliance Measures

Clark County has a system of ordinances, plan review, inspection and enforcement put in place during the 1990s and updated for its first NPDES permit. After adoption of updated code and BMP manual in January 2009 by the Clark County Board of County Commissioners, the code and manuals become effective in April 2009. The code revisions also promote runoff volume reduction practices such as low impact development.

During 2009, revisions will be made to plan review, inspection, and enforcement to implement the revised code. Any needed changes to current record keeping associated with code revisions will be made. Personnel training will be performed to provide a sound basis for implementing the revised code.

Detailed Description of Compliance Measures

Ongoing Program to Control Stormwater Impacts from Development, Redevelopment, and Construction (S5.C.5.a.)

Stormwater and Erosion Control

Clark County development regulations broadly apply to development projects that discharge to county storm sewers and waters of the state. Construction of buildings and impervious area for agricultural activity is regulated under stormwater code if projects discharge to the county storm sewer system and do not have an approved habitat protection plan that addresses stormwater runoff. The Stormwater and Erosion Control Ordinance, Chapter 40.380 was repealed and replaced by Chapter 40.385 in January 2009. The new code will become effective on April 13, 2009.

During 2009, major revisions in the county's approach to stormwater development regulation implementation will take place as the impacts of the financial downturn continue to play out. Public Works is reorganizing its development review and inspection approaches to more effectively use limited engineering and inspection personnel. Stormwater and erosion control engineering design plans are only approved after engineering review for conformance to the stormwater code. Building permits are not issued until a subdivision's stormwater controls are complete.

The Community Development Department Building Safety Division reviews, approves, and inspects projects requiring residential building, mobile home placement, plumbing, and mechanical permits in unincorporated Clark County. Building Safety will enforce county stormwater and erosion control code for single family residence projects under Chapter 40.385.

County Capital Projects

County capital improvement projects such as roads and parks follow similar review, approval and inspection processes as private development projects. Design review is provided by Public Works engineering staff. Construction inspection is managed by Public Works Engineering Program Construction Management. County 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. The standard construction contract includes individual bid items for erosion and sediment control, and stormwater pollution prevention BMPs. There are also bid items and payment schedules for individual water quality items, such as a construction entrance and wash rack, or an erosion control blanket.

Utility Permits

Clark County Public Works issues and enforces permits for utility construction in county right-of-way under Chapter 13.12A. These projects are also subject to construction BMP requirements under the Stormwater and Erosion Control Ordinance.

Habitat Protections

Along with stormwater controls under Chapter 40.385, other chapters regulate stormwater facilities in relation to wetlands (Chapter 40.450, Wetlands Protection

Ordinance) and GMA designated habitat areas (Chapter 40.440, Habitat Preservation Ordinance).

Adopt Stormwater and Erosion Standards Equivalent to the 2005 Stormwater Management Manual for Western Washington (S5.C.5.b.i., ii., iv.)

Permit Deadlines:

Submit draft standards and enforcement process to Ecology	February 2008
Adopt and implement standards, BMP manual, and enforcement procedures	August 2008

The Clark County Public Works Engineering Program, Project Management section led a project to adopt revised development standards. Revised code was adopted on January 13th, 2009 and becomes effective on April 13th, 2009. After county adoption of the code revisions and manuals, Ecology must modify the phase I municipal stormwater permit to include them before they become effective under the NPDES permit.

Revise Development Code to Allow Low Impact Development Projects (S5.C.4.b.iii.)

Permit Deadline:

Submit draft LID standards and enforcement process to Ecology	February 2008
LID included in development code	August 2008

Clark Count Code 40.385 adopted an LID manual as part of the January 2009 code revisions.

Clark County and the City of Vancouver completed a study that evaluated regulatory and institutional barriers to green or sustainable development, including LID practices. A report is available on the City of Vancouver web page:

<http://www.cityofvancouver.us/environmentalOrd.asp?menuid=10463&submenuid=10487>

Process to Enforce Maintenance Standards for Private Stormwater Facilities Approved by Clark County (S5.C.5.b.v.)

Permit Deadline:

Method to enforce maintenance requirements	August 2008
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Private stormwater facility maintenance standards and enforcement procedures were put in place in 1994 and updated in 2000. This process includes requirements for county inspection and maintenance easements as conditions of approval for facilities where maintenance is regulated by Clark County. Standards were updated to be equivalent to Ecology’s 2005 Stormwater Management Manual for Western Washington in January 2009. County code also includes a maintenance security to ensure new facilities are maintained to county standards.

Process of Permits, Plan Review, Inspections and Enforcement of Standards Equivalent to the 2005 SWMMWW (S5.C.5.b.vi.)

Permit Deadline:

System to review all plan submittals meeting thresholds	August 2008
Pre-clearing inspection for sites having high sediment damage potential	August 2008
Inspection and enforcement program for construction BMPs	August 2008
Post-construction inspection and maintenance plan	August 2008
Record-keeping procedures in place	August 2008
Enforcement strategy for non-compliance response	August 2008

System to Review all Plan Submittals Meeting Thresholds

Public Works reviews all plans meeting thresholds specified in Clark County Code. After the April 13, 2009 effective date of revised code, county engineering personnel will review all development and construction plans subject to the code. Community Development Building Safety Division plan reviewers may review residential projects that only trigger minimum requirements 1 through 5.

Pre-clearing Inspection for Sites having High Sediment Damage Potential

This requirement will be implemented when code revisions become effective in April 2009.

Inspection and Enforcement Program for Construction BMPs

Public Works inspects each development project to ensure that erosion control BMPs are properly installed and maintained. Residential building projects are inspected by Community Development Building Safety Division personnel. If necessary, additional erosion control enforcement is provided by Community Development Code Enforcement. Public Works Operations and Maintenance Program enforces erosion control requirements for utilities permits. Public Works capital improvement projects are inspected by the department’s Construction Management section. During 2009, the approach for construction project erosion and sediment control inspection is under review and will be modified to improve effectiveness of available resources.

Post-construction Inspection and Maintenance Plan

Public Works inspects each development project at completion. Stormwater facilities slated to be dedicated to the county for ongoing maintenance are placed on a warranty bond of at least two years. At the end of that period, the facility is inspected for conformance to design drawings and maintenance standards. If defects are found, they are required to be repaired before the facility is accepted for county ownership. In cases where the owner is unable to make the repairs the warranty bond may be cashed and the county will make the needed repairs.

Public Works capital improvement projects are inspected by Construction Management section personnel or contracted professional services.

Under code adopted in 2000 and updated in 2009, all privately maintained stormwater facilities are required to submit maintenance plans following county standards as a

condition of approval. Responsibility for private facility maintenance falls to the land owner or homeowners association for residential developments.

Stormwater facilities assigned to Public Works for maintenance follow inspection and maintenance standards adopted by county code and equivalent to those required by the NPDES permit under condition S5.C.9.

Record-keeping Procedures in Place

The Building Safety Division inspectors complete and log an erosion control inspection at each site visit. Each inspection result and any required enforcement are recorded in the county permit tracking database, Tidemark.

Public Works inspectors prepare daily inspection records of all field visits. The records are kept electronically and associated with the underlying development project.

Enforcement Strategy for Non-compliance Response

The county has a system of enforcement measures that include notices, stop work orders, citations, and civil penalties. The first approach is to provide education to achieve voluntary compliance. Title 32 of the Clark County Code defines enforcement procedures. Public works manages contractor compliance through construction contracts.

Notice of Intent (NOI) Forms for Construction and Industrial Activity Stormwater General Permits (S5.C.5.b.vii.)

Notice of Intent forms available	February 2007
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Public Works informs applicants of the need for a NPDES construction activity industrial stormwater permit as part of the application and submittal process. In addition, NOI forms are kept at the permitting counter.

Training for Development and Construction Personnel (S5.C.5.b.viii.)

Permit Deadline:

Training program and tracking in place	August 2008
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Training is planned for plan review, inspection, and enforcement personnel in the Public Works Department and Building Safety Division and Planning in Community Development before code revisions are effective in April 2009. Follow-up training will be provided when there are staffing changes, and for changes in procedures or standards.

Training for field inspectors includes Certified Erosion and Sediment Control Lead (CESCL) certification through completion of the Ecology-approved course. Any inspectors not currently certified will obtain certification.

Current training for Community Development Code Enforcement personnel includes CESCL certification.

The Public Works Engineering Program has been using the SWMMWW for project design for several years and staff are familiar with that manual. Engineering staff are

largely licensed professional engineers and receive training as needed to conduct their work. The Engineering Program has a system to track training and may use the countywide learning management system in the future.

The Operations and Maintenance Program includes construction and repair projects. Operations personnel training is described under S5.C.9. Operations and Maintenance Program.

S5.C.6. Program to Plan and Build Structural Stormwater Control to Reduce Stormwater Impacts

Summary of Compliance Measures

Clark County Public Works conducts a stormwater capital improvement program that consists of three main elements:

- identify potential capital projects (Stormwater Needs Assessment Program)
- develop and rank proposed projects (Stormwater Capital Improvement Program)
- design and build funded projects (Public Works Engineering Program)

Potential projects are identified during sub-watershed-scale Stormwater Needs Assessments conducted by the Clean Water Program. Needs Assessments consider current and future watershed conditions then propose several projects aimed at improving stream conditions and reducing impacts from stormwater runoff. The first assessment was completed in 2006 on Whipple Creek. A description of the Stormwater Needs Assessment Program can be found at this web page: <http://www.clark.wa.gov/water-resources/snap.html>

The Stormwater Capital Improvement Program (SCIP) maintains a list of prioritized projects for funding by stormwater fees and other sources. The SCIP began in 2006 and follows a two-year cycle to add projects and re-rank them following a public involvement process similar to that used to rank road projects. The 2008 cycle concluded in early 2009. The stormwater capital project planning Web page is at www.clark.wa.gov/water-resources/basin.html.

County construction projects, such as roads, parks, bridges, stormwater facilities and habitat improvements are handled by the Public Works Engineering Program.

Detailed Description of Compliance Measures

Initiate a Structural Stormwater Control Program (S5.C.6.b.i.)

Permit Deadline:

Initiate a structural stormwater control program	February 2008
Begin implementing the structural stormwater control program	August 2008

Initiate a Structural Stormwater Control Program

Clark County established a systematic stormwater capital improvement project identification and ranking system in 2006. The 2007-2012 Stormwater Capital Improvement Program Report, published in summer 2006, included 31 proposed projects. Projects are built subject to available funding from the Clean Water Fund and other sources. The 2008 SCIP included 35 ranked proposed projects.

Begin Implementing the Structural Stormwater Control Program

The SCIP describes projects that are prioritized for construction subject to available funding. The SCIP ranks a variety of projects that include regional facilities, retrofit of stormwater facilities serving existing development, stream bank stabilization projects, grade/velocity control projects, riparian habitat improvements, wetland and habitat preservation, and other projects intended to improve the quality of degraded waterways. The program also includes smaller stormwater CIPs and maintenance projects not listed on the ranked SCIP list.

The SCIP includes a six-year plan, but the projects and their ranks are revised significantly with each biennial update because:

- New projects are added to the list as Stormwater Needs Assessments are completed
- Ranking systems are revised over time
- Mandated maintenance projects under S5.C.9. that qualify as CIPs may be identified at any time

Description of the Structural Stormwater Control Program (S5.C.6.b.ii.)

Permit Deadline:

Structural Stormwater Control Program goals	March 2008
Structural Stormwater Control Program Planning Process	March 2008

Structural Stormwater Control Program Goals

The Stormwater Capital Improvement Program includes:

- Planned and ranked projects in the SCIP intended to mitigate for stormwater impacts
- Capital projects that maintain or repair existing stormwater facilities to bring them into compliance with permit and county maintenance standards

Stormwater mitigation projects are ranked using the following criteria:

- Provide mitigation for stormwater impacts from existing development
- Provide stormwater facilities for future development and redevelopment
- Promote regional planning objectives and multiple uses
- Protect and improve natural watershed functions
- Feasibility and cost considerations

Structural Stormwater Control Program Planning Process

The capital program covers the entire urban and rural area of unincorporated Clark County. Stormwater Needs Assessments began in 2007 and will evaluate approximately 15 to 20 sub-watersheds each year to produce reports that describe potential management

actions, summarize watershed information and problem areas, and identify potential stormwater capital improvement projects for the SCIP.

The primary purpose of the Needs Assessments and SCIP is to address stormwater problems caused by existing development. In addition to meeting NPDES stormwater management requirements, results and products of capital project planning promote more effective implementation of other county programs under the Growth Management Act, Underground Injection Control rules, and the Endangered Species Act.

Needs Assessments provide a means to conduct a focused application of stormwater assessment actions at individual subwatershed scale drainage basins. The overall goals of SNAP are to:

- Analyze and recommend the best and most cost-effective mix of improvement actions to protect existing beneficial uses, and to improve lost or impaired beneficial uses
- Inform county efforts to address problems related to altered hydrology, habitat, and water quality

The level of effort varies depending on watershed conditions. Generally, a suite of assessment tools is applied to any sub-watershed that contains county storm sewer systems. The highest level of data gathering and analysis takes place in urban and urbanizing areas with decreasing levels of effort in more rural or forested areas.

Potential projects identified by the Needs Assessments are evaluated in greater detail by the Clean Water Program to determine if they are feasible and suitable for inclusion the SCIP review.

The SCIP ranking occurs every two years and involves the public in ranking projects through the Stormwater Capital Improvement Program Involvement Team (SCIPIT). The team is a stakeholders group including county personnel and members of the community that reviews existing ranking criteria, establishes points and weights for the criteria, and then ranks proposed projects.

Funding for planning and building capital projects is largely from Clark County's stormwater fee and grants from Ecology. The proposed capital budget for the 2009-2010 biennium is approximately \$8,000,000.

All capital improvement projects are designed and built by the Clark County Public Works Engineering Program.

Capital Project Descriptions (S5.C.6.b.iii.)

Permit Deadline:

Description of each project in annual report	March 2008
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Capital project descriptions are updated for each annual report. Projects completed, under construction, or planned for construction during the 2009-2010 budget biennium are included in the following table. No schedule is provided for the 2011 to 2012 biennium

because new projects from the 2010 SCIP will be added to the list of projects planned for construction.

The Clean Water Program estimated total suspended solids removal for each treatment project using an EPA-developed model "Spreadsheet Tool for Estimating Pollutant Load (STEPL)". While the estimates may not reflect all of the complexities of the real world, they do provide a relative measure of load reduction by project.

Project Name	Treatment Metric	Estimated TSS Load Reduction	Flow Control Outcome	Other Environmental Benefits	Status
NE 152 nd St/NE 20 th Ave	Water quality treatment of runoff from 135 acres of developed area through treatment wetland.	TSS reduction 12.7 tons/year	Approx.9 acre-feet of detention storage. 62% reduction of 100 yr peak 67% reduction of 2-year peak	Create wetland. Removal of non-native plants.	Bid and construct in 2009
NE Hazel Dell Ave WQ Project	Treat 70% of the 2-year rainfall from 1.84 acres of road surface.	TSS reduction 0.6 tons/year	No intended flow control.		Bid and construct in 2009
NE Minnehaha St WQ Project	Treat 70% of the 2-year rainfall from 1.98 acres of road surface.	TSS reduction 0.7 tons/year	No intended flow control.		Bid and construct in 2009
NE 76 th St WQ Project	Treat 70% of the 2-year rainfall from 1.51 acres of road surface.	TSS reduction 0.5 tons/year	No intended flow control.		Bid and construct in 2009
Whipple Creek Stream Restoration	No designed treatment but should trap sediment on flood plain.		Store stormwater in flood plain to attenuate peak flows.	Stop headcuts and limit future channel incision. Enhance aquatic and riparian habitat.	Design and permitting in 2009
Mill Creek Tributary Outfall Redesign	No designed treatment. This is a maintenance project.		No intended flow control.	Minimize stream bank erosion and reduce turbidity.	Design and construct 2009
Upper Mill Creek Regional Facility	Treatment capacity not yet estimated.	TSS reduction 12.7 tons/year *	Flow control not yet estimated.		Planning level in 2009.
Padden Parkway/I-205 Outfall	Treatment capacity not yet estimated.			Minimize erosion in the stream bed and turbidity in the stream.	Design in 2010
Teal Pointe SWF Retrofit	Treatment capacity not yet estimated.	TSS reduction 12.4 tons/year	Flow control not yet estimated.		Design and construct in 2009
Felida Knolls SWF Retrofit	Treatment for approximately 15 acres of residential development.	TSS reduction 1.4 tons/year	Flow control not yet estimated.		Design and construct in 2009
West Mill Creek Headwater Enhancement	No designed treatment.			Minimize erosion. Flood plain storage.	Possible 2010 construction

S5.C.7. Source Control Program for Existing Development

Summary of Compliance Measures

Beginning in April 2009, Clark County will apply a water quality BMP manual equivalent to the 2005 Stormwater Management Manual for Western Washington to all existing businesses and government agency activities.

An inventory of potential pollutant generating sites was generated in 2008 and is updated annually. The program includes inspection and enforcement procedures to respond to complaints and sites found during illicit discharge screening. Clark County follows a progressive enforcement process that focuses on compliance through education, then enforcement as appropriate. Generally, the program applies county water quality code on all sites that discharge to the county storm sewer or waters of the state. In cases where other agencies have direct authority, such as industrial sites that discharge to Class V stormwater disposal wells regulated by the state underground inject control program or sites requiring a waste discharge permit, the county defers to the state for enforcement.

Detailed Description of Compliance Measures

Code Revisions to Equivalence with the 2005 SWMMWW (S5.C.7b.i.)

Permit Deadline:

Equivalence to the 2005 SWMMWW	August 2008
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Equivalence to the 2005 Stormwater Management Manual for Western Washington

Source control manual updates are part of the code revision project managed by the Public Works Engineering Program. The existing manual was updated to equivalence with Volume IV of the 2005 Stormwater Management Manual for Western Washington and will become effective in April, 2009.

Create and Maintain an Inventory of Potential Pollutant Generating Sites (S5.C.7b.ii)

Permit Deadline:

Potential pollutant generating site inventory completed	August 2008
Complaint-based response system	August 2008

Inventory of Potential Pollutant Generating Sources

Permittees are required to create and maintain a list of potential pollutant generating sites as defined in Appendix 8 of the January 2007 permit. The Clean Water Program and Clark County GIS Department created an inventory by using Assessor's property type information. Property type data is accurate and maintained as a property tax assessment tool.

Potential pollutant generators include tax lots that have property types corresponding to SIC codes identified as potential pollutant generating activities and have mapped impervious area for the Clean Water Program Service Fee.

Complaint-based Response System

The Clean Water Program’s complaint response system takes action to address all water quality complaints. It also addresses problems associated with transient or home-based pollutant sources not typically associated with fixed business sites, such as carpet cleaners. The Clean Water Program, Operations and Maintenance Program, Code Enforcement, and Public Health each receive water quality complaints, then respond directly or refer them to the appropriate department or agency.

The Clean Water Program and Community Development Code Enforcement respond to most of the complaints that impact surface water, stormwater or ground water. Code Enforcement uses the county enforcement and permit tracking system, Tidemark, to track complaints and responses. The Clean Water Program will begin to use Tidemark in 2009. While they are not part of the Stormwater Management Program, Clark County Public Health responds to complaints and referrals that involve public health regulations including septic systems, sewage, and waste management activities such as composting.

Audit/Inspection System for Potential Pollutant Generating Sites (S5.C.7.b.iii.)

Permit Deadline:

Begin providing information to all PPGS	February 2009
Begin inspecting 20 percent of sites per year	February 2009
Complete inspections of all sites identified through complaints	February 2009

Begin Providing Information to all PPGS

The technical assistance program provides information directly to businesses through site visits and non-targeted education programs. The Clean Water Program will develop an approach to provide information to all PPGS during the permit term.

Begin Inspecting 20 Percent of Sites per Year

The program visited approximately 300 sites in 2008 as a targeted outreach program in specific subwatersheds. The county estimates that there are as many as 3,000 businesses on 1030 taxlots that could qualify for PPGS inspection under the permit. The county will continue site visits to include approximately 600 businesses each year.

Complete Inspections of all Sites Identified through Complaints

The source control technical assistance specialist provides inspection and enforcement in response to all legitimate water quality complaints.

Implement Progressive Enforcement Policy and Documentation (S5.C.7.b.iv.)

Permit Deadline:

Establish progressive enforcement system	February 2009
Establish system for tracking inspections and enforcement actions	February 2009

Establish Progressive Enforcement System

The technical assistance program follows a progressive enforcement policy. Responses progress from a phone call or site visit to letters and notices, to citations and stop work orders. Enforcement may include the Public Works Clean Water Program, Community Development Code Enforcement, Clark County Public Health, and non-county agencies including the Department of Ecology.

Establish System for Tracking Inspections and Enforcement Actions

The Clean Water Program will begin using the county permit and enforcement tracking system, Tidemark, to track inspections and compliance actions in 2009. Code Enforcement has used Tidemark for many years. Tidemark provides a standard approach across departments for applying progressive enforcement; maintaining records of inspection reports, warning letters, notices, and other records; and tracking site compliance status. Public Health will coordinate with the Clean Water Program to provide reporting and coordination of enforcement actions under Public Health regulations.

Training Program for Source Control Staff (S5.C.7.b.v.)

Permit Deadline:

Establish documentation system for training	February 2008
Complete training of appropriate personnel	February 2009

Establish Documentation System for Training

The county has a computerized system for tracking training. Tracking procedures will be put in place as a training system is developed by the technical assistance and source control enforcement program.

Complete Training of Appropriate Personnel

The Clean Water Program and Code Enforcement personnel have been performing source control enforcement work since 2000. New staff will be trained on enforcing the Water Quality Ordinance, including legal basis, BMPs, inspection procedures, enforcement process, and record keeping.

S5.C.8. Illicit Connection and Discharge Detection and Elimination (IDDE)

Summary of Compliance Measures

The Clean Water Program operates a comprehensive IDDE program integrating application of source controls, outfall screening, complaint response, and training. This component also includes minor ordinance revisions to Chapter 13.26A to amend prohibited discharges and specific BMPs associated with them. Response to illicit connections and discharges is typically coordinated by the Clean Water Program. In some cases, Clark County Community Development Code Enforcement or Clark County Public Health may discover and terminate discharges. Training is implemented through the Clean Water Program.

Detailed Description of Compliance Measures

Continue Existing Program and Address Other MS4s (S5.C.8.b.i.)

Permit Deadline:

Continue current IDDE program	February 2007
Develop procedures to address pollutants from interconnected MS4s	February 2009

Continue Current IDDE Program

The ongoing IDDE Screening Program is described in S5.C.8.b.vi. to S5.C.8.b.ix. The county IDDE program follows standard screening and follow-up procedures based on the 2004 Center for Watershed Protection guidance manual referenced in S5.C.8.b.vi.

During 2007 and 2008, the IDDE Screening Program completed screening and response for most of the Vancouver urban area and several rural subwatersheds. For the remaining permit term, work is expected to focus on problem areas and the few remaining urbanized areas where screening has not been completed.

Develop Procedures to Address Pollutants from Interconnected MS4s

Generally, the Clark County MS4 drains to other municipalities closer to the Columbia River. As MS4 connection points are mapped, screening of these locations is added to the IDDE field screening.

Update Code to Include New Prohibited Discharges and BMPs (S5.C.8.b.ii.)

Permit Deadline:

Revise Chapter 13.26A and BMP manual to include added prohibited discharges	August 2008
Add BMPs to S5.C.10. education for discharges not included in ordinance revision	August 2008

Revise Chapter 13.26A and BMP Manual to Include Added Prohibited Discharges

Chapter 13.26A Water Quality was amended to include prohibitions on discharges for which education is not an option allowed by the permit. Ordinance revisions, which are effective April 13, 2009, were made as part of the update of all stormwater codes under S5.C.5., S5.C.7., S5.C.8., and S5.C.9.

Add BMPs to S5.C.10. Education for Discharges not Included in Ordinance Revision

Educational approaches employed as an alternative to ordinance prohibitions on discharges from lawn watering, other irrigation water, and street and sidewalk wash water are part of broad education programs to address home owners and businesses under S5.C.10. Education and Outreach. Specific information, including use of required BMPs for building washing and site maintenance in the county source control manual is provided to businesses during site visits under S5.C.7. Source Controls.

Water distribution utilities are operated by the cities and Clark Public Utilities. These entities are responsible for water conservation education.

Training Program for IDDE Staff (S5.C.8.b.iii.)

Permit Deadline:

Complete training and documentation	August 2008
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The IDDE Screening project lead provides training for identification and investigation of illicit discharges. The source control program specialist coordinates termination using existing programs. The Public Works safety coordinator manages training for spill response.

Training is tracked using simple record keeping tools. The goal is to develop a training tracking system using the countywide learning management system.

Training Program for Field Staff Who Might Find Illicit Discharges/Connections (S5.C.8.b.iv.)

Permit Deadline:

Complete training and documentation	February 2009
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Public Works road operations field personnel were trained in illicit discharge awareness and how to report potential illicit discharges as part of routine crew meetings during February and March of 2009. Additional training may be provided to other personnel that may discover illicit discharges as a part of their field work. A simple presentation will provide information describing illicit discharges, appropriate responses, and referral options. Possible programs to receive training include:

- Department of Community Development, Code Enforcement
- Department of Community Development, Building Inspection
- Department of Community Development, Fire Marshal
- Department of Community Development, Animal Control
- Public Works, Solid Waste
- Public Works, Utility Inspection
- Public Works, Road Vegetation Maintenance
- Public Health, Environmental Services

Training is tracked using simple record keeping tools. The goal is to develop a training tracking system using the countywide learning management system.

Establish Publicly Listed Water Quality Problem Reporting Line (S5.C.8.b.v.)

Permit Deadline:

Establish water quality complaint line	August 2007
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Clark County advertises its 24-hour customer service line as a water quality complaint line. The county Web site and phone books include this listing.

Screening Program (S5.C.8.b.vi.)

Permit Deadline:

Complete screening for 1/2 urban area	February 2011
Complete screening for one rural sub-watershed	February 2011

Clark County expects to screen most, if not all, of the urban growth area during the permit term, as well as several rural sub-watersheds.

Response to Illicit Connections (S5.C.8.b.vii.)

Permit Deadline:

Initiate investigation following discovery or complaint	Within 21 days
Upon confirmation, terminate illicit connections	Within 6 months
Refer to Ecology if severe threat to environment or health exists	Immediately

The Clean Water Program IDDE Screening Program lead and source control technical assistance specialist work together to coordinate investigation and termination of illicit connections. The IDDE Screening Program uses a database to track steps in screening, investigation, referral to responsible agencies, enforcement, and termination. The source control technical assistance specialist coordinates responses to terminate illicit connections. Often, county departments such as Public Health and the Department of Community Development Code Enforcement, or other agencies such as the Clark Regional Wastewater District and Ecology are involved in both investigations and illicit connection termination.

In some cases, referral to Ecology is the best enforcement option because sites are regulated under state NPDES permits, waste discharge permits, or Underground Injection Control regulations.

Program to Respond to Illicit Discharges (S5.C.8.b.viii.)

Permit Deadline:

Program to respond to illicit discharges	August 2007
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Significant spills are referred to the Department of Ecology. Smaller spills, such as automotive fluids on roadways, are handled by the Public Works Operations and Maintenance Program.

The IDDE Screening Program and the Clean Water Program source control technical assistance specialist respond to complaints, reports, and monitoring information that indicate potential illicit discharges. Under the current program, potential and confirmed illicit discharges are handled using the same procedures as potential illicit connections (S5.C.8.b.vi.).

IDDE Record Keeping (S5.C.8.b.ix.)

Permit Deadline:

Continue IDDE record keeping	February 2007
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The Clean Water Program IDDE Screening Program uses a SQL database to manage field screening, follow-up investigation, referral information, and final enforcement outcome for each potential illicit discharge or connection.

The Clean Water Program source control technical assistance program tracks activities using case files but will begin using the county permit enforcement tracking system, Tidemark, in 2009. Water quality test data that is part of an enforcement action is stored with the case file.

Clark County Community Development Code Enforcement uses the county permit tracking software, Tidemark, to track each case responded to under the Water Quality Ordinance.

S5.C.9. Maintenance and Operations Program

Summary of Compliance Measures

Clark County Public Works performs most of the work to meet this requirement. Maintenance standards for public and private stormwater infrastructure were updated as part of code revisions in January 2009 and became effective April 13th, 2009. As part of implementing the new standards, approaches to performing and tracking stormwater facility inspections are under review and expected to be restructured to improve effectiveness. Road maintenance BMPs and practices, vegetation management practices, and pesticide and fertilizer application procedures are established by current code and county policy. While SWPPPs are under development, the county follows the standards of Chapter 13.26A Water Quality.

Detailed Description of Compliance Measures

Adopting Maintenance Standards Equivalent to the 2005 SMMWW (S5.C.9.b.i.)

Permit Deadline:

Adopt Maintenance Standards Equivalent to 2005 SWMMWW	August 2008
Perform needed maintenance within specified timelines	August 2008

Adopt Maintenance Standards Equivalent to 2005 SWMMWW

Maintenance standards for both public and private stormwater infrastructure were revised to equivalence with the 2005 Stormwater Management Manual for Western Washington. This task was completed as part of the larger code revision process for stormwater manual equivalence under S5.C.5., and the standards will become effective on April 13, 2009.

Perform Needed Maintenance within Specified Timelines

Starting in fall 2007, the Clean Water Program began inspecting public stormwater facilities using the 2005 manual standards. Repairs are made as budget and personnel resources allow.

Regulated Facility Inspection Program (S5.C.9.b.ii.)

Permit Deadline:

Adopt Maintenance Standards Equivalent to 2005 SWMMWW	August 2008
Inspection schedule for regulated facilities once during permit term	August 2008
Begin annual facility inspection	February 2011
Begin every six-month facility inspections for residential subdivision projects	February 2009
Catch basin cleaning required where identified by inspection	February 2007

Adopt Maintenance Standards Equivalent to 2005 SWMMWW

Private facility maintenance standards are the same as public facilities and included in county code for both existing and new development. The stormwater code revision process updated maintenance standards to be equivalent to the 2005 SWMMWW effective April 13th, 2009.

Inspection Schedule for Regulated Facilities Once During Permit Term

Regulated facilities are inventoried by the Clean Water Program, and since 2000, have been inspected by one full-time Operations and Maintenance Program employee. There are approximately 875 regulated facilities.

Begin Annual Facility Inspection

Clark County currently conducts annual facility inspections for about one half of the regulated facilities. This will be expanded to include all regulated facilities by the permit deadline.

Begin Every Six-month Facility Inspections for Residential Subdivision Projects

In fall 2007, the Clean Water Program began inspecting facilities in residential subdivisions that are nearing the end of their maintenance warranty bond periods. During spring 2009, the county will work to better organize the variety of stormwater facility inspections needed for compliance with county development code, water quality code, and maintenance needs. During the period before the inspection program is resolved, Public Works Operations performs the six-month subdivision inspections on regulated facilities and the Public Works Construction Management Program inspects facilities that will be dedicated to county ownership.

Catch Basin Cleaning Required where Identified by Inspection

Where source control BMP inspections, regulated facilities inspections, or IDDE work find catch basins below standards, cleaning is required.

Maintenance of Clark County Stormwater Facilities (5.C.9.b.iii.)

Permit Deadline:

Begin annual inspection for county facilities	February 2009
Take appropriate maintenance action	February 2009
Begin spot checks after large storms	February 2009

Begin Annual Inspection for County Facilities

The Operations and Maintenance Program and Parks Operations conduct routine visual operational inspections as part of scheduled mowing and cleaning activities. Many minor to significant defects are found and repaired using this approach.

In fall 2007 as a part of the Stormwater Needs Assessment Program, the Clean Water Program began inspecting Public Works-operated facilities for compliance with standards from the 2005 Stormwater Management Manual for Western Washington and additional criteria in the adopted county maintenance manual. Monthly reports were provided to the Operations and Maintenance Program to schedule maintenance or repairs. This activity ended in early 2009. Beginning in 2009, Public Works will revise the inspection program as part of a department effort to most effectively utilize the available pool of inspectors.

Facilities owned by Clark County but not operated by Public Works, for example the county fairgrounds, are classified as regulated facilities and subject to annual inspection and enforcement under S5.C.9.ii.

Take Appropriate Maintenance Actions

The Operations and Maintenance Program and Parks Operations take routine maintenance actions and make repairs to defects found by observations during work. In addition, a list of defects from facility inspections under the newly adopted standards is being compiled to plan future work as resources allow.

Begin Spot-checks After Large Storms

Spot-checks of problem facilities are part of routine maintenance. The Operations and Maintenance Program maintains a list of facilities having known problems associated with heavy rainfall or fall leaf drop. These sites will be inspected after extreme storm events such as the 10-year storm referenced in the permit.

County Catch Basin Maintenance (S5.C.9.b.iv.)

Permit Deadline:

Begin annual catch basin inspection and maintenance	February 2009
Decant water management	February 2007

Begin Annual Catch Basin Inspection and Maintenance

Clark County cleans catch basins yearly on a circuit basis. Circuits are sweeper areas where every known catch basin is cleaned and inspected. Parks are also inspected and cleaned annually. This procedure will continue until replaced by a system where individual assets are tracked in a maintenance management system. Public Works also cleans catch basins yearly at county facilities such as the downtown campus operated by the General Services Department.

Decant Water Management

The standard procedure is to discharge all liquid street wastes to a county operated decant facility. Any water not retained by the decant facility is discharged to sanitary sewer under permit. As a cost saving measure, the Operations and Maintenance Program is

considering the use of stormwater facilities and sanitary sewer lines to conduct field decant procedures under the standards of Appendix 6 on the permit.

Inspection and Maintenance Records (S5.C.9.b.v.)

Permit Deadline:

Maintain records of inspection and repair activities	February 2007
Provide records of maintenance or repairs over \$25,000 in annual report	March 2008

Inspection and maintenance records for regulated facilities are maintained in an Access database created specifically for tracking compliance and NPDES permit reporting. The regulated facility inventory is maintained in the database. New facilities are added as plans are recorded. The existing system will be updated to include standards adopted in 2009 and as revisions are made to the county approach for conducting all stormwater-related inspections during 2009.

Public facility maintenance records are kept in a system developed for the Operations and Maintenance Program to enable routine maintenance tracking and NPDES permit reporting. A more elaborate facility inspection database was created to track defects under the 2005 SWMMWW standards and report facilities requiring repairs under S5.C.9.b.iii. The database can also track repairs and maintenance actions reported by Public Works Operations. Public Works is planning to make greater use of its maintenance management system for tracking maintenance of stormwater assets once they are completely inventoried in 2009.

Provide Records of Small CIPs in Annual Report

Repair projects over \$25,000 are generally considered capital projects and included in the in the Stormwater Capital Improvement Program. In the past, very few maintenance projects have risen to that level. The 2009-2014 SCIP includes one repair project, “Mill Creek Tributary Outfall Redesign” in the structural stormwater control component description (S5.C.6.).

Pollution Reduction BMPs for County Roads, Streets, and Parking Lots (S5.C.9.b.vi.)

Permit Deadline:

Establish practices to reduce stormwater impacts from county roads and other traveled surfaces	February 2008
Begin implementing practices	August 2008

Establish Practices to Reduce Stormwater Impacts from County Roads and Other Traveled Surfaces

Clark County follows pollution reduction practices established under the 1999 NPDES stormwater management program and as defined by the ESA Regional Road Maintenance Forum. The Public Works Operations and Maintenance Program and Parks Operations follow standards and practices in the Water Quality BMPs for Operation and Maintenance of Publicly Owned Property Manual. This manual covers each of the

actions listed in this permit subcomponent. The manual was adopted as county policy in July 2000 county lands and by Public Works for road maintenance activities and is at: www.clark.wa.gov/water-resources/documents/Publications/WQBMP-M&O.pdf.

Clark County Public Works has been actively involved with the ESA Regional Road Maintenance Forum since 2003. This group assisted the county in developing a Regional Road Maintenance Program that is designed to meet the requirements of the Endangered Species Act (ESA). On August 7, 2004 NOAA Fisheries approved Clark County’s Regional Road Maintenance Program and determined that it was compliant with the ESA. The Program seeks to protect salmon and steelhead by relying on the extensive use of pre-approved BMPs for routine maintenance activities.

Begin Implementing Practices

Clark County began implementing the county Operations and Maintenance BMP manual in July 2000 and the ESA Regional Road Maintenance Program in 2004.

Pollutant Reduction from County Lands (S5.C.9.b.vii.)

Permit Deadline:

Establish policies and practices to reduce stormwater impacts from County owned or operated lands	August 2008
Implement policies and practices to reduce stormwater impacts	August 2008

Establish Policies and Practices to Reduce Stormwater Impacts from County-owned or Operated Lands

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 for stormwater facility, road, and park maintenance. During 2009 and 2010, Clark County will work to transition all pesticide applications to the Clark County Weed Control Department, which periodically updates the BMP manual to current standards.

Clark County adopted an Environmentally Responsible Purchasing Policy in 2004 with a section addressing the purchase of landscaping and vegetation maintenance products, which includes pesticides. The policy established a set of criteria, any of which will disqualify a pesticide from purchase. A waiver process requires further examination of the pesticide by the Environmentally Responsible Purchasing Team to determine if a more environmentally friendly alternative exists. If no alternative is found, the pesticide can be purchased and used within specific limiting guidelines.

All land disturbing activities are subject to the requirements of Chapter 40.385 Clark County Code, Stormwater and Erosion Control, which specifies erosion control BMPs.

Under Chapter 13.26A Clark County Code, Water Quality, the Water Quality BMP Manual for Businesses and Government Agencies provides required BMPs for sediment and erosion control for non-development projects, landscape management, trash management, and building exterior maintenance. This manual was updated to

equivalence with Ecology’s 2005 SWMMWW by code revisions and will become effective April 13, 2009.

Additionally, the Water Quality Best Management Practice Manual for Operation and Maintenance of Publicly-Owned Property (July 2000) includes BMPs for almost every county activity including landscape maintenance. This manual was adopted as county policy by executive order in July 2000.

Implement Policies and Practices to Reduce Stormwater Impacts

Policies and practices were implemented for most of the lands owned or operated by Clark County in 2000 to 2004. Clark County is working to develop a complete inventory of all county properties and the custodial department. Once this is completed, it should be possible to identify properties where practices are not yet applied.

Training for County Operations Personnel (S5.C.9.viii.)

Permit Deadline:

Develop and implement a program to train Operations personnel	February 2009
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Road maintenance personnel are trained under the ESA Regional Road Maintenance Tracks 2 and 3. Track 2 coursework describes the biology of endangered fish and how road and park maintenance activities can harm them; it is generally provided to supervisors and managers. Track 3 provides crew chiefs and crew members with maintenance guidelines and procedures to protect endangered species during maintenance work. Clark County contracts with approved vendors to provide this training. Records are kept for all Regional Forum Training.

Implement SWPPPs for County Maintenance Facilities (S5.C.9.ix.)

Permit Deadline:

Develop and implement SWPPPs for unpermitted maintenance yards	February 2009
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During 2009, county will identify all facilities subject to this requirement that are not covered by another NPDES permit including:

- heavy equipment maintenance areas
- heavy equipment storage areas
- material storage areas

The Public Works Operations and Maintenance Program will develop and implement SWPPPs during 2009.

S5.C.10. Education and Outreach Program

Summary of Compliance Measures

Public Works, the ESA Program, and the Department of Community Development perform activities to promote awareness of stormwater and water resources, pesticide and

fertilizer reduction, proper waste disposal, and use of source control BMPs. Several activities, such as Watershed Stewards and Living on the Land, promote pollution reduction and stormwater quality improvement through watershed stewardship and better management of rural property. A program is planned to educate local development industry professionals about stormwater requirements adopted under the permit.

The Public Works Solid Waste Program conducts activities aimed at proper management and disposal of hazardous waste and reducing hazardous or toxic material use. Several of these activities focus on promoting water resources protection and sound environmental practices by businesses and homeowners. The county also supports and participates in regional partnerships such as Columbia Springs Environmental Education Center, The Regional Coalition for Clean Rivers and Streams, and numerous special events.

Detailed Description of Compliance Measures

Implement a program that uses a variety of methods to target the General Public, Businesses, Homeowners, Landscapers, Property Managers, the Development Community, and Development Review Staff (S5.C.10.b.i.)

Permit Deadline:

Begin education program on stormwater impacts for the general public	February 2008
Begin education on source controls and illicit discharge impacts	February 2008
Begin education on business and landscaping activities	February 2008
Begin education on development requirements	February 2008

Begin Education Program on Stormwater Impacts for the General Public

Children’s Education on Pesticide Reduction - Puppet Shows

Since 2000, Clark County has operated a traveling puppet show that brings fertilizer and pesticide-reduction education to over 6,000 elementary school students each year. In addition to the presentations, classroom materials are distributed.

Watershed of Words Contest

Clark County conducts a children’s water-related writing and art contest each fall. Entry forms and rules are distributed to school districts and private schools in unincorporated Clark County. Winning entries (~100) are published in a booklet for distribution to the schools and the community. The Watershed of Words booklet is also posted on the county’s website.

Columbia Springs Environmental Education Center

Clark County is one of several partners that support the Columbia Springs Environmental Education Center, which provides coordinated environmental education. The Center provides programs to school children and teachers throughout Clark County, including coordination of annual children’s watershed festivals for 4th and 5th grade classes.

Watershed Stewards Program

Clark County funds one full-time position to implement the Watershed Stewards Program at Washington State University Clark County Extension. The Watershed Stewards program offers two 10-week training sessions each year to train volunteers in stormwater concerns and 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.

Volunteer Monitoring Program

Volunteers are used to conduct short-term studies as part of the Stormwater Needs Assessment Program. An equipment lending library allows volunteer monitors or agency staff to pursue their own projects.

Student Monitoring Program

Clark County contracts with the City of Vancouver to offer a student monitoring program to schools in unincorporated Clark County. Teachers and students receive mentoring in water quality and macroinvertebrate monitoring, both in the classroom and in the field. Students share their data with peers, the general public and decision makers at an annual student watershed congress.

Living Streams School Assembly Program

Since 2004, over 30,000 Clark County students have seen *Living Streams*, an entertaining story-telling assembly offered to students in grades K-5. All schools in unincorporated Clark County have received this assembly program. Future school assembly offerings will occur as funding allows, and assembly programs will continue to be featured at Columbia River Watershed Festival.

Regional Coalition for Clean Rivers and Streams

Clark County actively participates in the Regional Coalition for Clean Rivers and Streams. The campaign includes stormwater education messages that vary from year to year but may include major newspaper ads, ads in weekly papers, Tri-Met and C-Tran bus "tailboards," and interior bus cards in the Portland-Vancouver area. The Coalition also creates a radio advertisement to run on local stations. More information is available at www.cleanriversandstreams.org.

ESA Web Pages

The ESA Program maintains web pages to provide information about the importance of protecting water quality for salmon recovery.

Pet Waste Program

Information on proper management and disposal of pet waste is currently available on the Clean Water Program Web pages and the Regional Coalition for Clean Rivers and Streams Web pages. Clark County's Canines for Clean Water Program was implemented in fall of 2008. Pet waste information is also interwoven into general educational publications and programming, including the Watershed Stewards and Small Acreage programs, River Rangers classroom presentations, and *Living Streams* assembly program. An expanded pet waste program targeting dog owners will be implemented in early 2008. An outreach program was adapted from successful programs in Snohomish County, Washington and Clean Water Services in Hillsboro, Oregon. The program includes a new Web page, signed pledges by pet owners to pick up waste, and distribution of educational materials at events and workshops by Watershed Steward volunteers.

E-Newsletter

In summer 2007, the Clean Water Program began a service to periodically send electronic newsletters to a broad cross-section of the community. The newsletter targets individuals and organizations with an interest or a responsibility for managing stormwater.

Stormwater Needs Assessment Reports

Stormwater Needs Assessments identify potential capital projects and management recommendations, and summarize information about sub-watershed conditions. The reports are available on the Clean Water Program Web page and in print.

Water Resources Outreach on the Web

The Clean Water Program maintains pages on the Clark County Web site devoted to water quality and the Clean Water Program. Topics include county watersheds, stormwater basin planning, engineering, monitoring, education, enforcement and regulation, and technical assistance as well as information about Clean Water Program administration. The Web site also includes a list of departments and agencies to contact for water quality and stormwater-related questions or problems.

Begin Education on Source Controls and Illicit Discharge Impacts

Source Control Technical Assistance Visits

The Clean Water Program presents information to business owners and property managers during source control site visits required by S5.C.7. The intent is to make business owners and property managers more aware of the importance of their role to protect streams and reduce stormwater pollution.

Solid Waste Program Hazardous Waste Reduction

The Public Works Solid Waste Program performs technical assistance visits and outreach to promote proper handling and disposal of toxic and hazardous materials.

Begin Education on Business and Landscaping Activities

Naturally Beautiful Backyard Program and Master Composter Recycler Program

The Clark County Solid Waste Program, through a contract with Columbia Springs Environmental Education Center, offers the Naturally Beautiful Backyard Program and the Master Composter Recycler Program, providing workshops on natural gardening and rain gardens. Messages include a focus on pesticide and fertilizer reduction.

Small Acreage Program – Living on the Land

The Clean Water Program, in partnership with Washington State University Clark County Extension and the Clark Conservation District, funds a full-time position to implement an outreach program for small acreage land owners. This program uses *Living on the Land: Stewardship for Small Acreages* curriculum and 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.

Source Control Technical Assistance Visits

The Clean Water Program presents information to business owners and property managers during source control site visits required by S5.C.7. The intent is to make business owners and property managers more aware of the importance of their role to protect streams and reduce stormwater pollution.

Private Facility Maintenance Inspections

Each private stormwater facility regulated by Clark County is inspected annually. Part of this work includes explaining any maintenance and repairs that need to be made and the reasons for doing them.

Begin Education on Development Requirements

General Information for Development Community

Public Works and Community Development provide information to help promote compliance with county code, including stormwater, erosion control, and water quality. Outreach is delivered primarily through Web-based information for applicants and then direct contact between county permitting, plan review and inspection personnel and project engineers and contractors. Following adoption of revised stormwater and erosion control standards in early 2009, workshops for consultants and the development community will be held to promote compliance with new standards.

Pre-application Conference Information

Considerable education occurs at pre-application conferences where applicants review their proposed projects with county permitting staff. At this point, a checklist of requirements is reviewed with the applicant and applicable stormwater submittals are described.

Development Engineering Advisory Board

The Development Engineering Advisory Board (DEAB) functions mainly as a technical and policy review body reporting to the county commissioners. The DEAB also serves as mechanism for collaboration between the county and the private sector, for example to provide training on new stormwater code and manuals to consulting engineers.

Training

Public Works plans to make training sessions developed for county staff available to the development community.

Measure Understanding and Adoption of Targeted Behaviors by Target Audiences (S5.C.10.b.ii.)

Permit Deadline:

Begin survey of public knowledge	February 2008
Begin effort to measure BMP understanding and adoption by businesses and home owners	February 2008
Begin effort to measure BMP understanding and adoption by development community	February 2008

Survey of Public Knowledge

The Clean Water Program conducted a statistically valid survey of 400 county residents in November 2007 and January 2008 to measure the public’s baseline understanding of stormwater problems. The program plans to repeat the survey later in the permit term.

Measure BMP Understanding and Adoption by Businesses and Homeowners

BMP Implementation Tracking

Site inspections conducted under S5.C.7. Source Controls, will measure the rate of BMP adoption by businesses and property managers. Additionally, private stormwater facility inspections under S5.C.9. Operation and Maintenance, directly measure adoption of stormwater facility maintenance practices by businesses, property managers, and home owners’ associations responsible for maintaining them. Evaluation techniques will be developed in 2009 and reviewed yearly.

Stewardship Programs

The Clean Water Program began incorporating efforts to measure adoption of targeted behaviors into existing outreach programs. An example is checking back with Living on the Land participants over time to determine if specific practices are implemented. Additional evaluation techniques vary by activity and may include online and email surveys, pre- and post- workshop tests, and post-workshop evaluations.

Effectiveness of Targeted Homeowner Outreach

As part of the monitoring requirements under permit condition S8.E., Clark County plans to measure the effectiveness of an outreach program targeting homeowners in a monitored drainage catchment. The project will include stormwater quality data collected for permit requirement S8.D., a targeted pesticide and nutrient reduction campaign, and surveys. Stormwater monitoring will assess if there are changes in stormwater pesticide and fertilizer characteristics that may be associated with the targeted outreach and the survey will assess if the targeted outreach produced a change in understanding or behavior in the catchment target group compared to the broader public.

Measure BMP Understanding and Adoption by Development Community

Measures of development community understanding are being created for implementation as the new stormwater regulations take effect in spring of 2009. Examples of possible metrics include percent of application submittals that are complete, number of reviews per plan set, and number of projects that include LID practices.

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