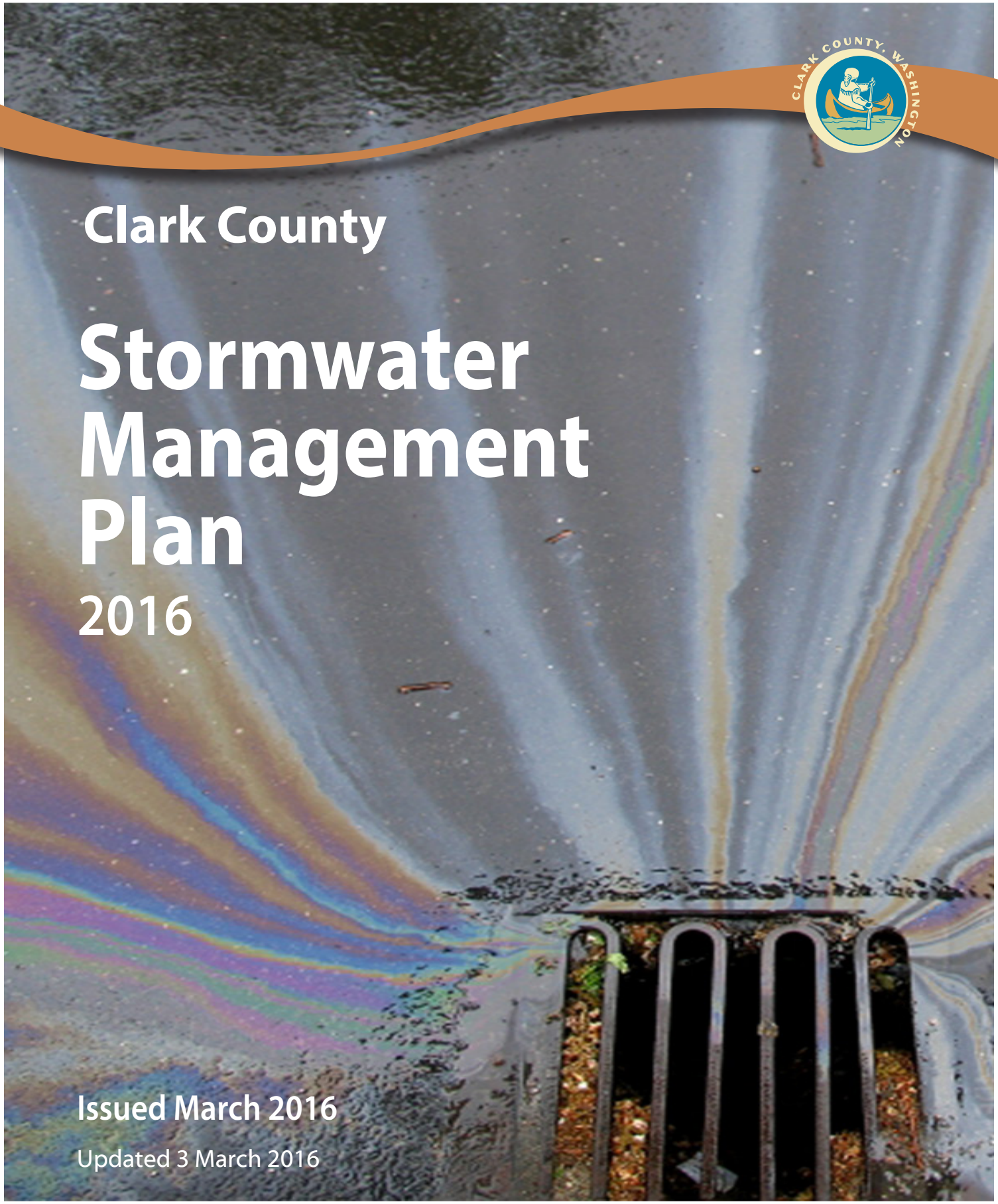

Clark County

Stormwater Management Plan

2016

Issued March 2016

Updated 3 March 2016

Protecting water through stormwater management

Stormwater Management Plan Update 2016

Prepared by Clark County Environmental Services, Clean Water Division

1300 Franklin St., Vancouver, WA 98666-9810
www.clark.wa.gov/stormwater

updated 3 March 2016

For other formats, contact the Clark County ADA Office
Voice (360) 397-2000, **Relay** 711 or (800) 833-6388,
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Appendix A: Clark County Stormwater Capital Projects List 2012 – 2018

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S8 – Monitoring	Chapter 3, Section 1

Acronyms and Glossary

- **AKART –** all known, available, and reasonable methods of prevention, control and treatment as the Ecology standard for the effort required to meet waste water discharge and NPDES permit requirements.
- **BMP** – best management practices (controls for stormwater runoff)
- **BOCC** – Board of Clark County Councilors
- CCSM – *Clark County Stormwater Manual 2015*
- **CCSWMP** – *Clark County Stormwater Management Plan*
- **CIP** – Capital Improvement Program
- **County Manager** – Executive officer for Clark County
- **CWD** – the Clean Water Division, a division of Clark County Environmental Services
- **DES** – the Clark County Department of Environmental Services
- **Ecology** – Washington State Department of Ecology
- **EPA** – Environmental Protection Agency
- **GIS** – geographic information system
- **GMS** – grounds maintenance specialist
- **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
- **MEP** – maximum extent practicable
- **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
- **NRS** – natural resources specialist
- **PPGS** – potential pollutant generating site
- **RCW** – Revised Code of Washington
- **SCIP** – Stormwater Capital Improvement Plan
- **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, published by Department of Ecology
- **SMMWW** – 2014 *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
- **TMDL** – total maximum daily load
- **UIC** – underground injection control
- **WAC** – Washington Administrative Code
- **WQDB** – *Water Quality Database*

Responsibility Index

CD = Community Development
DES = Department of Environmental Services
PW = Public Works

Abbreviation	Full Staff Title	Job Description
Applicant	(as stated)	Customer who utilizes the municipal code and stormwater manual to guide development projects
Assessment and GIS	(as stated)	Supports the county's GIS system
BOCC	Board of County Councilors	Legal authority for permit compliance
CD Building Official	(as stated)	Oversees customer application for development, all building permits and permit counter
CD Dev. Services Mgr.	Development Services Manager	Coordinates a pre-application conference with potential applicants and provides planning approvals
CD Permit Tech	Permit technician	Processes permit applications
CD Building Safety	(as stated)	Enforces erosion control regulations and stormwater for residential building permits
CD Permit Services	(as stated)	Coordinates review of development applications
CD Planner	(as stated)	Supports the pre-application process and land use approvals
County Mngr.	County Manager	Executive official for Clark County
CRWWD	Clark Regional Wastewater District	Supports the coordination of illicit discharge protection
DES Director	(as stated)	Designated director for permit compliance
DES CWD Mgr.	Clean Water Division Manager	Oversees and manages the Clean Water Division
DES CWD NPDES Mgr.	Clean Water Division National Pollution Discharge Elimination System Permit Manager	Oversees compliance with the County's Phase 1 Municipal Stormwater Permit
DES CWD Infrastructure Mgr.	Clean Water Division Infrastructure Manager	Oversees / manages stormwater capital planning and infrastructure mapping, coordinates stormwater infrastructure inspection and maintenance
DES Enhancement & Permitting Mgr.	Enhancement and Permitting Manager	Coordinates environmental permitting for the department

DES CWD Eng.	Clean Water Division Engineer	Coordinates design and engineering of Clean Water projects
DES CWD Eng. Tech	Clean Water Division Engineering Technician	Inventory and maps the stormwater system
DES Source Control Specialist	Source Control Specialist	Technical assistance with citizens and businesses to comply with facility maintenance and source control regulations
DES Code Enforcement	(as stated)	Coordinates citizen complaints and code compliance
DES Natural Res. Spec.	Natural Resource Specialist	Performs monitoring and illicit discharge field work and analysis
DES Project Coordinator	(as stated)	Coordinates specific project tasks and work products
DES CWD Professional staff	(as stated)	Supports various work projects and products
DES Office Assistant (OA)	(as stated)	Coordinates document control and record-keeping
DES CWD Admin.	Clean Water Division Administration	Supports document control and record keeping
DES Environmental Education Manager	(as stated)	Oversees the education and outreach tools used to comply with the permit requirements
DES Vegetation Mgmt. Mgr.	Vegetation Management Manager	Oversees the operations and maintenance of the vegetation management program
DES Vegetation Mgmt. Crew	Vegetation Management Crew	Performs all tasks associated with operations of the program
General Services Facilities Mgr.	Facilities Manager	Oversees the facilities program for county properties
General Services Facilities Crews	(as stated)	Performs all tasks associated with the operations of the program on county properties
Public Health	(as stated)	Coordinates illicit connection/discharge issues with DES staff
PW Answering Service	(as stated)	Coordinates after business hours service calls
PW Engineering Program Mgr.	Engineering Program Manager	Oversees PW engineer activities
PW Eng. Project Manager	Engineering Project Manager	Manages engineering related projects
PW Eng. Program Staff	Engineering Program Staff	Develops engineering related materials
PW Public Information Officer	(as stated)	Supports the development and delivery of public outreach and educational materials
PW Real Property Services	(as stated)	Coordinates property related information, such as titles, legal information, etc.
PW Survey	(as stated)	Coordinates all necessary survey data required for a project
PW Dev. Engineering Mgr.	Development Engineering Manager	Oversees the engineering review of development applications
PW Dev. Engineering Planning Tech	Development Engineering Planning Technician	Reviews development applications for compliance with county code and regulations. Coordinates bonds, compliance and final plat

PW Dev. Engineering Review Engineer	(as stated)	Conducts the engineering development review and participates in application meetings
PW Development Inspectors	(as stated)	Coordinates inspections and education
PW Construction Supervisor.	Construction Management	Oversees the compliance of development construction with approved plans and code
PW Construction Management Engineer	(as stated)	Reviews PW construction projects for compliance with approved plans and applicable regulations
PW Construction Management Supervisor	(as stated)	Oversees the compliance with inspections of development construction
PW Construction Management Inspectors	(as stated)	Conducts on-site construction inspections to ensure compliance with approved plans and applicable regulations
PW Construction Management OA	Construction Management Office Assistant	Coordinates document management associated with project approvals
PW Ops Mgr	Operations Manager	Oversees all operation and maintenance responsibilities
PW Ops Road Super	Operations Road Supervisor	Oversees all elements associated road maintenance and operations
PW Ops Crew Chief	Operations Crew Chief	Leads and coordinates road crew activities
PW Ops Road Crews	Operations Road Crews	Perform all necessary road maintenance and operations activities to meet applicable standards and regulations
PW Ops Administration	Operations Administration	Provides support to various tasks, such as spill response and citizen complaints
PW Parks Mgr	Parks Manager	Oversees all of the administration, customer service, maintenance and operations of parks
PW Parks Super	Parks Superintendent	Oversees the maintenance and operations of the parks
Contract Services	Outside firm or agency contracted with Clark County	Hired to meet specific scope of work items per the appropriate fund and need

Chapter 1
Introduction and Background

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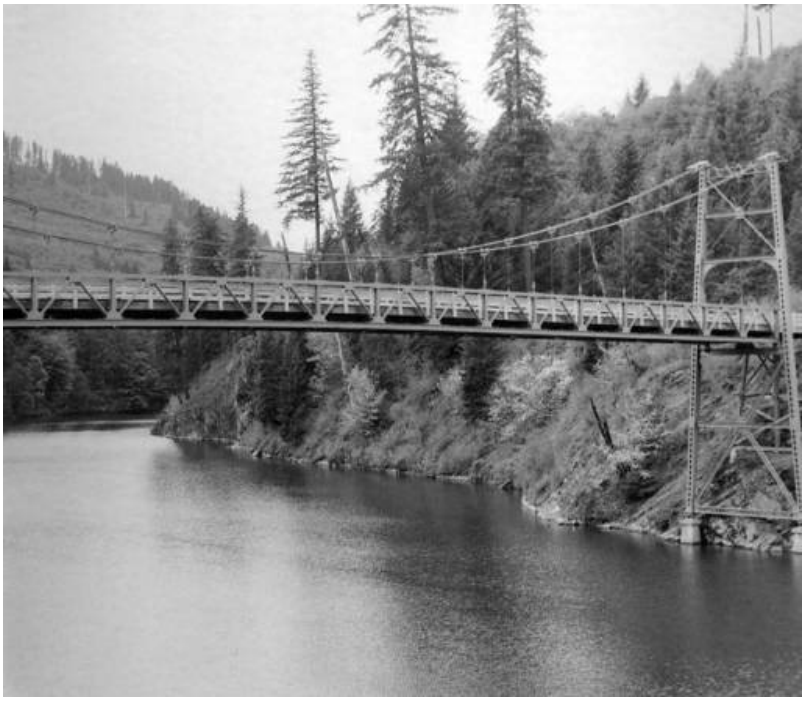


Historic Bridge Over Lewis River (source: Clark County Historic Museum)

Clark County Stormwater Management Plan

The *Clark County Stormwater Management Plan* (*CCSWMP*) describes the various ways that Clark County manages stormwater and related water resources issues in the unincorporated area. It acts as a resource for the public to learn about the county's efforts to reduce pollution in stormwater, an informative guide for staff, and a compliance measure for the county's municipal stormwater permit under permit requirement S5.C.3.a.

Introduction

As the county's population continues to increase (over 443,800 in 2013), Clark County is committed to responsible stormwater management to keep our waterways clean for people, fish, and wildlife.

The Clark County Department of Environmental Services (DES) administers the Clean Water Division (CWD) to protect surface water and groundwater resources from polluted stormwater and to coordinate compliance with state and federal water pollution laws.

Primary responsibilities of the overall stormwater program include planning and building stormwater control facilities, watershed scale stormwater planning, water quality monitoring of stormwater and streams, public education and outreach, development and enforcement of water quality regulations, coordination with other municipalities, and maintenance of the county's stormwater system.

Stormwater and the NPDES Permit

Much of the pollution in Washington State's waters comes from many different, hard-to-trace sources with no obvious point of collection and discharge. It is called "nonpoint source pollution" and it travels to our streams, lakes, and other water bodies through polluted stormwater runoff carried by the county's storm sewer system.

Most U.S. cities and counties that collect stormwater runoff in municipal separate storm sewers and discharge it to surface waters are required to obtain a permit under the federal Clean Water Act. Clark County qualifies under the Environmental Protection Agency (EPA) stormwater regulations for the National Pollutant Discharge Elimination Systems (NPDES) Phase I Municipal Stormwater Permit program. In Washington State,

EPA has delegated the Washington Department of Ecology (Ecology) the authority to develop and administer the NPDES permitting program.

Ecology issued a NPDES Phase I Municipal Stormwater Permit to Clark County and other larger western Washington jurisdictions in August 2012 with an effective date of August 1, 2013. This permit is for a five-year period expiring on July 31, 2018, when it is expected that Ecology will issue a revised permit.

Phase I permittees are cities and counties that operate large and medium municipal separate storm sewer systems (MS4s). Governmental bodies within their boundaries, such as state universities, public school districts and drainage districts, are also required to meet permit requirements. The permit regulates discharges to waters of Washington State from the permittees' MS4s in compliance with Washington Water Pollution Control Law (Chapter 90.48 RCW) and the federal Clean Water Act (Title 33 USC, Section 1251 et seq.).

Permit Compliance

The NPDES Permit prescribes a variety of requirements and actions. It lists 21 general conditions; these include, among others, a requirement to notify Ecology of spills, a duty to avoid bypassing water quality treatment and flow control facilities, and a requirement to notify Ecology of a failure to comply with the permit.

The permit also lists nine special conditions that, among other things, specify permit coverage, list permittee responsibilities, and under Special Condition S5, prescribe a ten-component stormwater management program (SWMP).

The SWMP consists of actions meeting the ten required components and any additional actions and activities necessary to comply with Total Maximum Daily Load (TMDL) requirements. Clark County's SWMP is designed to reduce pollutant discharges to the federal maximum extent practicable (MEP) standard, meet state requirements for managing stormwater using all known, available, and reasonable methods of prevention, control and treatment (AKART), and protect water quality.

The county is required to prepare a stormwater management program plan to inform the public of planned program activities for the upcoming calendar year. The SWMP plan must be updated at least annually to include any program changes or revisions that occur and be submitted in part or in whole with the annual report to the Department of Ecology.

The Clark County Stormwater Management Plan and Stormwater Management Program

This *Clark County Stormwater Management Plan* (*CCSWMP*) encompasses efforts undertaken by Clark County, primarily in the Department of Environmental Services Clean Water Division, for the protection and monitoring of water quality and the management of stormwater and related concerns. The *Plan* includes, as chapter 2, the NPDES stormwater management program required by Ecology.

The Clean Water Division

The Clean Water Division (CWD) in Clark County's Department of Environmental Services is responsible for a majority of the county's NPDES compliance actions and activities, coordination and reporting. The program coordinates with a variety of county departments to achieve and facilitate compliance. The CWD is the primary author of reports and other documents required by Ecology.

In addition to activities addressing NPDES Permit compliance and surface water resource management, the CWD manages other important stormwater-related activities, including registering and managing stormwater injection wells regulated under the state's Underground Injection Control Rules (173-218 WAC) pursuant to the federal Safe Drinking Water Act, and giving engineering advice and support on flooding and drainage problems.

Funding & Budget

The Clean Water Division is funded primarily by an annual stormwater fee charged to developed parcels in the unincorporated area of the county. The county collects approximately $7.60 million annually from approximately 68,103 rate payers. Other sources of funding may include grants and the General Fund. The Road Fund provides support for stormwater management associated with county roadways.

Clean Water Fee

Residential and multifamily properties pay a fee based on each residential unit. Commercial properties, roads, churches, and schools are assessed a fee based on the number of ERUs measured on the parcel.

In July 2014, the Board of County Councilors adopted an update to the Clean Water Fee. Updated fees took effect in 2015 tax bills. The fee varies for residents in the Urban Growth Boundary versus rural areas. The program also includes an annual surcharge of $5 on each base unit for 2015 through 2019 to cover lawsuit settlement costs.

Per Clark County Code 13.30A, fee revenues are used to fund stormwater management activities.

Clean Water Fund

Revenues from the Clean Water Fee, from grants awarded to the Clean Water Division, and from fines are deposited into the Clean Water Fund by the Clark County Treasurer. Revenues in excess of annual operating expenses for maintenance, repair, enforcement, assessment, monitoring, and education remain in the fund balance for use in constructing new public storm sewer infrastructure or in retrofitting inadequate stormwater control facilities.

Grants: LSC, other?

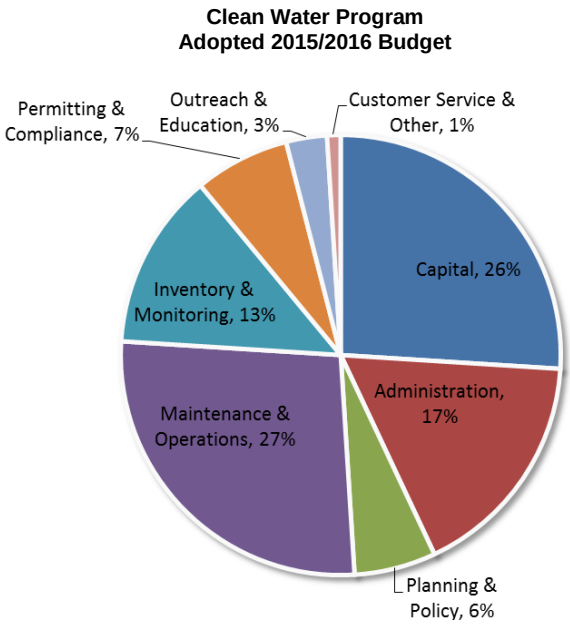
Budget

Clark County budgets on a two-year cycle. The Clean Water Division budget is set at the beginning of each cycle and modified, if necessary, through requests for additional appropriations from the Clean Water Fund during the biennium.

The budget is approved by the elected Board of Clark County Councilors (BOCC). The BOCC sets the Clean Water Division budget in response to state priorities, expressed through the NPDES Municipal Stormwater Permit, and local priorities.

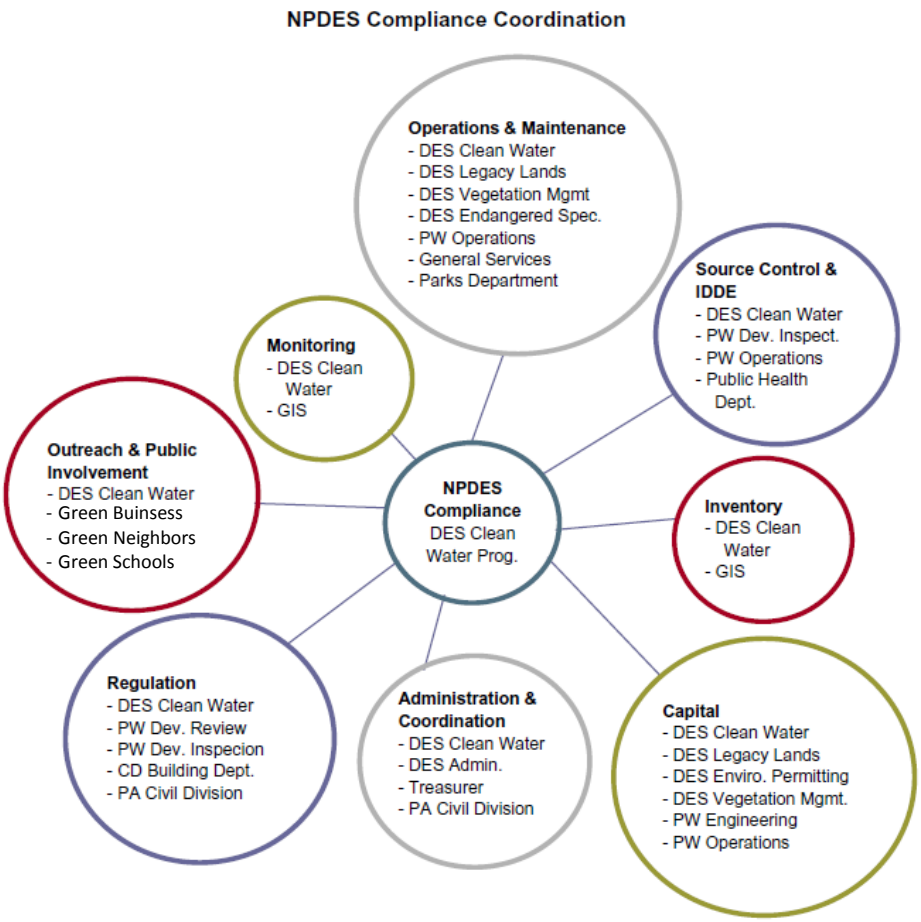
Areas of greatest expenditure include stormwater capital construction, maintenance and operation of storm sewer infrastructure, watershed scale stormwater planning and assessment and monitoring of surface water and stormwater.

In recent years, a focus on building new stormwater facilities in under-served areas and on enhancing existing facilities has increased the overall budget and the proportion dedicated to capital construction. During the 2015-2016 biennium, an additional $1.5 million is expected to be spent on new permit requirements for code revisions and watershed planning.



Organization & Staffing

The Clean Water Division employs a staff of 18 scientists, engineers, technical specialists, program coordinators and administrators who perform essential stormwater management functions. The program also coordinates with other county departments for additional essential stormwater services that fit within those department's core services. This organizational structure allows the Clean Water Division to minimize expenses by engaging technical and professional experts such as design engineers, road maintenance crews, and educators employed by other county departments to complement a core staff of stormwater specialists.



CD = Community Development Department
DES = Department of Environmental Services
GIS = Geographic Information Systems Department
PA = Prosecuting Attorney
PW = Public Works Department

Clean Water Division staff is directly responsible for storm sewer system inventory; code and manual updates; watershed scale planning; source control inspections; illicit

connection and discharge inspections; stormwater capital planning; coordination with other jurisdictions and entities; and surface water and stormwater assessment and monitoring.

The program coordinates with other county departments to collect and process the Clean Water Fee; operate, inspect and maintain the storm sewer system; manage the design and construction of stormwater capital improvements; enforce development and building regulations related to NPDES Permit compliance; inform and educate the public about stormwater problems and solutions; and support the Clean Water Division with database programming and analysis.

County departments are responsible for complying with NPDES Permit requirements in their operational activities under the adopted stormwater plan and by interdepartmental agreements.

Ongoing

- ✔ The Clean Water Division administers the NPDES Municipal Phase I Stormwater Permit for Clark County

2013-2018

2015

- ✓ Clark County will administer an increase in the Clean Water Fee program to increase revenues

For more information on the county's Clean Water Division, contact:

Dean Boening, Clean Water Division Manager, 397-2121, x4264
dean.boening@clark.wa.gov

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Stormwater Management Program

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Turbid flow from Cougar Creek into Salmon Creek

Section 1
Legal Authority

Regulatory Requirements Summary

NPDES Permit S5.C.1 – Legal Authority

The NPDES Permit requires the county to demonstrate that it has the legal authority to control discharges to and from its municipal separate storm sewer system (MS4).

Legal Authority to Regulate

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

Clark County Code Chapter 13.26A – Water Quality

Chapter 13.26A prohibits illicit discharges and spills into the county's MS4, requires the control of industrial site runoff, and adopts source control requirements in the *Clark County Pollution Control Manual*. It maintains the county's authority to inspect and enforce its provisions.

Clark County Code Title 32 – Enforcement

Title 32 permits Clark County to enforce any of its civil codes through inspection, surveillance, monitoring, and enforcement actions.

Clark County Code Title 40 – Unified Development Code

Title 40 contains a suite of requirements regulating the design, construction, and operation of stormwater controls on development and re-development sites that will discharge to the MS4 or to waters of the state. Stormwater and erosion control measures are outlined in Chapter 40.385. Revisions to multiples codes occurred in 2015. CCC 40.385 was repealed and replaced by Chapter 40.386 Stormwater and Erosion Control.

Legislative Authority of the Board of Clark County Councilors

Through the legislative authority of the Board of Clark County Councilors (BOCC), 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.

TIMELINE

Ongoing

- Maintain legal authority to control discharges to and from the MS4
- Update code for compliance with 2013 permit

2013-2018

FOR MORE INFORMATION ON THE COUNTY'S LEGAL AUTHORITY TO CONTROL DISCHARGES TO AND FROM THE MS4

DEAN BOENING, CLEAN WATER DIVISION MANAGER, 397-2121, X4264
DEAN.BOENING@CLARK.WA.GOV

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Inventorying and Mapping the Storm Sewer Infrastructure

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Other permit-required mapping/inventory 20
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Underground Injection Control (UIC) Registration 23
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Clark County operates a municipal separate storm sewer system (MS4) within unincorporated Clark County. This system includes stormwater drainage ditches and pipes in county right-of-way and county-operated conveyances on easements.

An MS4 is a conveyance or system of conveyances that meets all of the following criteria:

1. Owned by a state, city, town, village, or other public entity that discharges to waters of the U.S.
2. Designed or used to collect or convey stormwater (including storm drains, pipes, ditches, etc.).
3. Not a combined sewer.
4. Not part of a publicly owned treatment works (sewage treatment plant).

A related type of infrastructure used to manage stormwater is a Class V stormwater injection well, which allows stormwater to be disposed directly into the ground instead of to a surface water body.

Clark County inventories and maps its storm sewer infrastructure and Class V injection wells to serve a variety of purposes. The inventory is a primary source of information for inspection, operation and maintenance of the MS4, illicit discharge detection and removal, drainage and source control support, stormwater assessment and monitoring, and capital planning.

Clark County administers a comprehensive program to inventory the storm sewer system in a geographic information system (GIS) database called *StormwaterClk*. All known existing infrastructure is inventoried and mapped. An ongoing program inventories and maps storm sewer infrastructure built in the course of development and public capital improvement projects. The inventory includes all stormwater infrastructure inside of and outside of the county MS4, including:

- Flow control and water quality treatment facilities
- UIC-regulated Class V injection wells
- County outfall locations
- Conveyances (pipes, ditches, and culverts)
- Interconnections with other municipal systems
- Connections to the county MS4

Regulatory Requirements Summary

NPDES Permit – S5.C.2. Municipal Separate Storm Sewer Mapping and Documentation

The NPDES Permit requires the county to map and document components of the MS4 including stormwater control facilities, receiving waters, and land uses within the MS4.

Chapter 173-218 WAC – Underground Injection Control (UIC) Program

Pursuant to Chapter 90.48 RCW, Washington Administrative Code requires owners of Class V injection wells (underground drywells and infiltration trenches with perforated pipes that dispose stormwater into the ground) to comply with regulations designed to protect groundwater quality for use as public water supplies. Clark County owns approximately 2,200 wells that are regulated under this rule.

County Policies, Rules and Regulations

Clark County Code Chapter 40.386 – Stormwater and Erosion Control

Chapter 40.386 describes county regulations for ownership of stormwater facilities and the lands on which they are located. Section 40.386.030 sets forth requirements to submit record drawings for completed projects and sets forth requirements to document facility ownership.

Section 40.386.030(G) requires developers to submit record drawings to the county prior to 1) the issuance of building permits for single-family/duplex residential

subdivisions, 2) the issuance of occupancy permits for site plan reviews (commercial development), and 3) within sixty days following completion of construction for other types of development.

Clark County Code Chapter 40.540.070 – Final Plat

Chapter 40.540.070 describes county regulations for information about dedications and easements for utilities that must be contained on a plat.

Revised Code of Washington Chapter 58.17.165 – Plats – subdivisions – dedications

Washington state code prescribes information that must be shown on a plat when land is subdivided, including dedications of roadways and utilities and stormwater easements, tracts, or lots.

Public Project Record Drawings Policy

Clark County Public Works Engineering Program maintains a policy for the preparation and distribution of record drawings, also known as as-built drawings, after completion of county capital improvement projects such as roads, parks, and stormwater facilities.

Tools

StormwaterClk

Clark County Environmental Services maintains a stormwater database called *StormwaterClk* within its GIS. The database is administered by the GIS Department, while data is maintained and updated by the Clean Water Division.

Tidemark

Clark County Community Development and Public Works maintain *Tidemark*, a database of regulatory and enforcement cases, including permits for land division and development projects.

Annexation Tracker

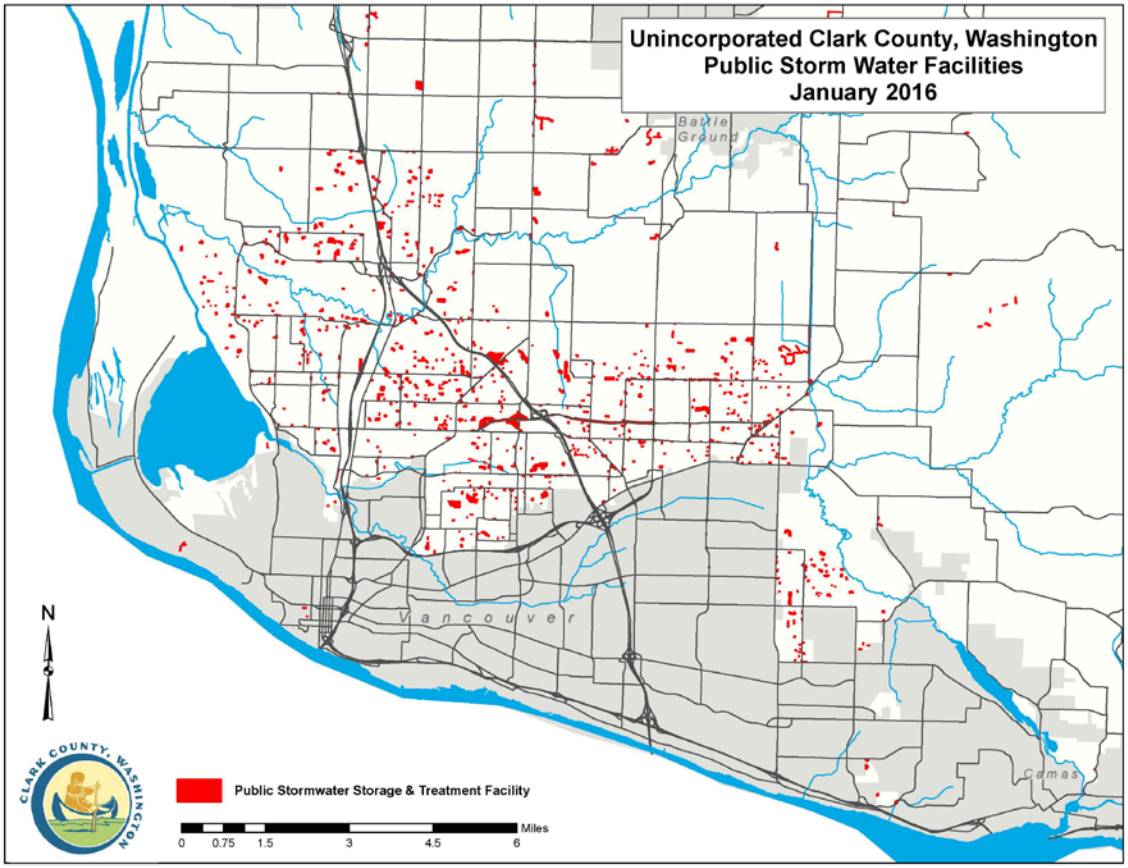
Annexation Tracker is an application developed by the GIS Department that helps county departments track annexations.

On-going Inventory and Mapping

Purpose

Clark County maps and inventories stormwater treatment and control infrastructure because an accurate and complete inventory is critical to a successful program to inspect, maintain and regulate stormwater conveyances, and stormwater treatment and flow control facilities.

As part of the process, new outfalls, Class V injection control wells, and connections also are documented.



Clark County has been inventorying the MS4 in a GIS since 1999

Responsibilities Matrix

Task	DES CWD Mgr	DES CWD Infra. Mgr	DES CWD Eng. Tech	PW Dev. Engineering Planning Tech	PW Dev. Engineering Mgr	PW Construction Management Engineer	PW Construction Mgmt. OA	PW Construction Manager	PW Engineering Program Manager	PW Survey	PW Real Property Services
Notify CWD of new private development completion	O	O	I	P	A	O	O	O	O	O	O
Notify CWD of new county capital improvement project physical completion	O	O	I	O	O	O	P	A	O	I	O
Notify CWD of new county capital improvement project final acceptance	O	O	I	O	O	O	P	A	O	I	O
Gather project information	O	A	P	C	O	C	O	O	A	C	C
Notify CWD of county project As-built location	O	O	I	O	O	S	O	S	O	A/P	O
Make final decision on maintenance owner	O	A	S	O	P	C	O	O	O	C	C
Inventory/ Map infrastructure	O	A	P	O	O	O	O	O	O	O	O
Track progress	O	A	P	O	O	O	O	O	O	O	O
Transfer information to Operations	O	A	P	O	O	O	O	O	O	O	O

A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted

Background

Most stormwater infrastructure and conveyances in the county are built by the private sector during residential and commercial development. Other facilities are built by the county to retrofit previously developed areas or to handle runoff from new roads, parks, and other construction projects. The Clean Water Division builds some stormwater facilities to retrofit developed areas that lack adequate flow control or treatment. (See County Capital Improvements on page 62.)

After a project is constructed, Clean Water Division staff inventory the new facility and its related conveyance infrastructure including pipes, catch basins and connections in *StormwaterClk*.

Notification and Tracking

The first step of inventorying is becoming aware that a new development or county project, potentially with stormwater infrastructure, has been completed. Clean Water Division staff will receive different notifications depending on the source of the project (see below).

Upon receipt of a notification, the Clean Water Division engineering technician in charge of stormwater inventory will begin tracking the project. The engineering technician will create a folder for the project on the Clean Water Division's network drive, where copies of relevant documents relating to the project's storm sewer infrastructure will be stored.

Private Sector Projects Notification

The Public Works Development Engineering planning technician will notify the Clean Water Division engineering technician that a new residential or commercial development has been completed by forwarding a copy of the completion of construction letter sent to the developer.

In some cases, the first notification to the Clean Water Division may be a different document, such as notice of a plat recording. In those cases, the engineering technician will begin tracking the project as documented above.

County Projects Notification - Physical Completion

The Public Works Engineering Program Construction Management section will notify the engineering technician that a new public project is physically complete as a copy of the letter sent to the construction contractor. At this stage, the project's stormwater facilities are functional and will be added to StormwaterClk using the best available information.

Notification of Existing Projects

Infrequently, the engineering technician will discover engineering drawings or other evidence of an existing project that does not appear in the inventory. In those cases, the engineering technician will begin the mapping process as though it were a new facility by researching information about the project (see below), potentially using legacy data storage systems not discussed here.

Research

The engineering technician will research and assemble relevant documentation about the project from various sources, including Public Works Development Engineering and the Auditor.

To inventory and map the stormwater infrastructure, the engineering technician needs:

- Engineering drawings of the project
- For private sector projects, the preferred source is a record drawing (sometimes also called an as-built). An acceptable alternate source is an approved construction plan.
- For county projects, the preferred source is a record drawing; however, most projects will be documented initially from the final construction plan with as-built notes from the construction manager.
- Geographic location of the infrastructure.
- Maintenance responsibility for the infrastructure.
- Ownership of tracts or parcels containing the facilities, if any.
- Location of easements containing the facilities and related infrastructure, if any.

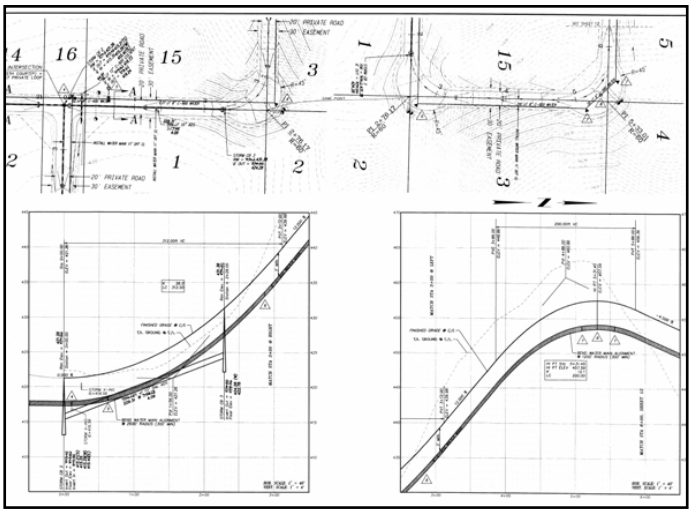
Finding documentation may take several steps, outlined below.

Locate and Verify Engineering Drawings

For private sector projects, record drawings are submitted by the private developer to the Development Engineering program. The engineering technician is then notified of the availability of record drawings.

For county capital improvement projects, Public Works Survey section maintains electronic copies of county projects and places them on the county Olympus server where they are accessible to the engineering technician. In cases where record drawings are not available, the engineering technician will verify the accuracy of construction as-built plan notes by the construction manager.

Select Sheets



Once engineering drawings have been located, the engineering technician will review the entire plan set and select sheets relevant to the storm system from the set. Relevant sheets may include:

- One or more plan views of the storm system and facilities (variously called storm sewer plan, street and storm plan, drainage plan, utility plan, or similar name).
- One or more profile views of the storm system and facilities.
- One or more detail views of particular storm system components.

The engineering technician will scan selected paper sheets or copy selected sheets of electronic engineering drawings to the project's folder on the Clean Water Division's network directory.

Determine Ownership and Maintenance Responsibility

The engineering technician will look for several types of information, including:

- The party responsible for maintaining the stormwater infrastructure.
- The owner of parcel(s) underlying any treatment or flow control facilities.
- The existence of easements for access to stormwater facilities and conveyances.

Responsibility for maintaining facilities may change over time. At this stage, the engineering technician will determine the current maintenance responsibility.

The engineering technician will evaluate information on the plat, final site plan, engineering drawings, and other documents as necessary to determine maintenance responsibility of the facility and ownership of the parcel, if any, on which it is sited.

If the engineering technician cannot determine maintenance responsibility due to conflicting or missing information, then the Clean Water Infrastructure manager will make the determination.

Inventory and Map (Digitize)

The engineering technician will find the project's location in the GIS. Using the assembled information, the technician will digitize the project's stormwater facilities and related infrastructure, such as conveyance and drywells, in *StormwaterClk.*

The engineering technician also will enter attributes of storm system features in the database. Attributes are unique to each feature type. Some of the most important attributes that are common to most types of features include:

- Subwatershed (auto-populated)
- Custodial county department
- Service status
- Installation date
- Elevations
- Dimensions (pipe diameter, length, etc.)
- Facility name (for facility polygons only)
- Serial number of the parcel containing the facility (if relevant)

Transfer Information

Information in *StormwaterClk* is weekly uploaded electronically into the Public Works

Maintenance Management System (MMS) database which is used to track and schedule inspection and maintenance activities for stormwater infrastructure.

Outputs

- Updates to *StormwaterClk*

Other permit-required mapping/inventory

Background

The NPDES Permit requires both continuation of ongoing inventory/mapping activities (S5.C.2.a) and completion of several additional mapping tasks no later than December 31, 2017 (S5.C.2.b).

Specific requirements under permit section S5.C.2.a are addressed through already completed mapping efforts and the ongoing inventory and mapping program includes updates as new development is inventoried.

Most new mapping requirements under S5.C.2.b are addressed through already completed mapping efforts; additional efforts to address specific requirements are described below.

Responsibilities Matrix

Task	DES CWD Mgr	DES CWD Infrastructure Mgr	DES CWD Eng. Tech	Assessment and GIS Department
Map land use	O	O	O	A/P
Map connections to tributary conveyances	O	A	P	O
Map connections between BMPs and tributary conveyances	Completed – updated as needed (DES CWD Eng Tech)			
Map receiving waters	* Completed *			
Map areas not draining to outfalls	* Completed *			
Map outfall catchments	Completed – updated as needed (DES CWD Eng Tech)			
Map tributary conveyances	Completed – updated as needed (DES CWD Eng Tech)			
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted				

Procedures

Map Tributary Conveyances

Clark County completed an inventory of the conveyance system in early 2010.

Map Connections to Tributary Conveyances

No later than December 31, 2017, connections equal to 8 inches nominal diameter to tributary conveyances will be mapped. This effort primarily involves mapping private road ditch connections to public road ditches, and applies only to areas within the UGA where the public ditch leads to an outfall with nominal diameter of at least 24”.

Map Connections between BMPs and Tributary Conveyances

Existing connections between BMPs and tributary conveyances are mapped, and new connections will be mapped as part of the ongoing inventory and mapping program.

Map Outfall Catchments

In 2010, the Clean Water Division completed mapping catchments to most outfalls. This includes nearly 500 outfalls, most of which are smaller than 24” nominal diameter. Catchments to new outfalls will be mapped as outfalls are added.

Map Outfall Land Use

Known outfalls are mapped, and new outfalls will be mapped as part of the ongoing inventory and mapping. Outfall catchments for most of the Urban Growth Areas

(UGAs) are now mapped. As a result of Clark County's function as a land use regulator, the Clark County Assessor maintains land use data at the parcel scale in a GIS.

To produce a map of land uses for outfalls, Clean Water Division staff or GIS Department staff will overlay land use data with outfall catchments in the GIS upon request or as needed.

Map Areas Not Draining to Outfalls

In 2010, the CWD and GIS Department mapped areas served by the MS4 that do not drain to surface water.

Outputs

- Updated inventory of Stormwater infrastructure in *StormwaterClk*
- Inventory of connections to tributary conveyances in *StormwaterClk*

Inventory Quality Assurance and Reporting

Purpose

To continuously improve accuracy and data completeness in *StormwaterClk* and the Maintenance Management System.

Responsibilities Matrix

Task	DES CWD Mgr	DES CWD Infrastructure Mgr	DES CWD Eng. Tech	Assessment and GIS Department
Ongoing Data Updates	O	A	P	O
Reporting	O	A	P	S
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted				

Ongoing Data Updates

The CWD Infrastructure Manager and the Engineering Technician will routinely and periodically verify accuracy of stormwater infrastructure in the GIS as annexations occur and as more accurate project plans are produced or discovered.

Annexation Updates

Annually, the engineering technician will check *Annexation Tracker* to determine if stormwater infrastructure has been annexed to a city. The engineering technician will change facility ownership attributes and update county MS4 municipal connection points in *StormwaterClk* where infrastructure has been annexed.

The engineering technician also will provide Public Works Real Property with a list of county-operated stormwater facilities annexed into each city. A real property agent or a real property assistant will have responsibility for ensuring that property records are updated with the Assessor and for notifying the annexing municipality.

Ongoing Corrections

As possible mistakes in inventory data or needed revisions are discovered, the engineering technician will keep a list of possible corrections, then periodically research and, if necessary, correct *StormwaterClk*. Possible sources of discovery include discovery by Public Works Operations & Maintenance personnel, annual stormwater facility inspectors, and discovery by Clean Water Division engineers. These corrections are addressed in GIS and in updated links to facility assets in the Maintenance Management System.

Review of older paper plans

The engineering technician will systematically review the archive of older paper plan sets to fill gaps in mapping and attributes of existing infrastructure.

Reporting

Inventory status is updated quarterly as part of Clean Water Division performance measure reporting established in 2010.

Outputs

- Data updates in *StormwaterClk*
- Reports from *StormwaterClk*

UNDERGROUND INJECTION CONTROL (UIC) REGISTRATION

Purpose

Pursuant to the Safe Water Drinking Act and Chapter 90.48 RCW, Washington Administrative Code 173-218 requires new UIC-regulated stormwater disposal wells, also called Class V injection wells, to be registered with the Department of Ecology prior to construction.

Responsibilities Matrix

Task	DES CWD Infra. Mgr	DES CWD Eng. Tech	DES CWD Engineer	PW Project Mgr	PW Const. Mgr.	Applicant	PW Dev Eng Mgr
Map new Class V injection wells	A	P	O	O	O	O	O
Locate unregistered	A	P	I	O	O	O	O

Class V injection wells							
Submit private project registrations to Ecology	O	O	O	O	O	P	A
Submit public project registrations to Ecology	O	O	O	P	A	O	O
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted							

UIC registration for County projects

The DES CWD Engineering Technician will add new UICs to *StormwaterClk* upon project completion as part of ongoing inventory and mapping activities.

UIC registration for private projects having public UICs

For privately-built projects that include new UICs in the public ROW or that are intended to be turned over to the County, the developer will register the UICs with the Washington Department of Ecology. For all such UICs, Clark County will be designated the owner on the registration form. Registration materials must be submitted to Ecology prior to construction.

When a developer submits plans for review, Public Works Development Engineering staff will confirm if UIC-regulated systems are included, and inform the applicant of registration requirements. Registrations are verified prior to construction by Development Engineering at the pre-construction conference.

The DES CWD Engineering Technician will add new UICs to *StormwaterClk* upon project completion as part of ongoing inventory and mapping activities.

Outputs

- Updates to *StormwaterClk*
- UIC wells registered with Ecology

TIMELINE

Ongoing

- ✔ Map all known MS4 outfalls and receiving waters, and structural stormwater treatment and flow control BMPs operated by Clark County
- ✔ Map connection points between the MS4 and other municipalities
- ✔ Map existing 8" and greater connections to the MS4
- ✔ Map tributary conveyances and associated drainage areas
- ✔ Map geographic areas served by the MS4 that do not drain to surface water
- ✔ Map connections between BMPs and tributary conveyances

2016 - 2018

- ❑ Continue ongoing inventory and mapping
- ❑ Map connections to tributary conveyances

FOR MORE INFORMATION ON MAPPING THE MS4

JEFF SCHNABEL, CLEAN WATER DIVISION INFRASTRUCTURE MANAGER, 397-2121, X 4583
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Section 3
Operating and Maintaining the Storm Sewer System, County Property and Roadways

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The county inspects and maintains storm sewer infrastructure to maintain its ability to convey, detain, infiltrate, and treat stormwater. Clark County also manages its properties and roadways to reduce stormwater impacts from potential pollutant sources such as erosion, fertilizers, and pesticides.

County crew replacing filters in a stormwater filter vault system

Regulatory Requirements Summary

NPDES Permit – S5.C.9 Operations and Maintenance

The NPDES Permit requires the county to manage its maintenance activities and regulate non-county stormwater facilities to prevent or reduce stormwater impacts. The program must include:

- Maintenance standards and schedules for public and private stormwater facilities including catch basins.
- Street operation and maintenance practices that reduce stormwater impacts.
- Policies and procedures to reduce pollution from pesticides, herbicides, and fertilizers used by the county.
- Operational practices that reduce stormwater impacts for equipment yards and storage facilities.
- Staff training.

Stormwater Management Manual for Western Washington

The permit requires the use of source control BMPs equivalent to Volume IV of the *Stormwater Management Manual for Western Washington* (Ecology, 2014) (*SMMWW*).

The permit also requires a stormwater facility maintenance inspection program equivalent to Chapter 4 of Volume V of the *SMMWW*.

Chapter 173-218 WAC – Underground Injection Control (UIC) Program

Pursuant to Chapter 90.48 RCW, Washington Administrative Code requires the county to comply with regulations controlling the discharge of fluids, such as stormwater, into Class V injection wells. Examples of wells that handle stormwater include drywells and infiltration trenches. The stormwater management program addresses the UIC Program requirement to maintain and address pollutant sources.

Endangered Species Act 4(d) Rule

The federal Endangered Species Act prohibits “take" of threatened or endangered salmon. Take is harassment, harm, wounding, or killing of an ESA-listed salmon, or harming the critical habitat upon which it depends. The 4(d) rule directly prohibits take without authorization. However, the prohibition is limited under 13 different programs that describe procedures and processes by which an activity may be conducted to contribute to the conservation of the species overall. Road maintenance is an activity that, when

conducted according to the Regional Road Maintenance Forum guidelines, is certified by National Marine Fisheries Service to contribute to the conservation of listed salmon.

County Policies, Rules and Regulations

Clark County Code Chapter 40.386 – Stormwater and Erosion Control

Chapter 40.386 requires newly constructed stormwater treatment facilities to be maintained in accordance with the *Clark County Stormwater Manual, Book 4 – Operations and Maintenance*, and it gives the county authority to inspect privately-operated facilities for compliance.

The chapter also requires ownership and maintenance responsibility of private facilities to be noted on subdivision final plats.

The *Clark County Stormwater Manual's Book 3* adopts source control and treatment standards for public and private properties equivalent to Volume IV of the 2014 *SMMWW*.

Clark County Code Chapter 13.26A – Water Quality

Chapter 13.26A requires inspection and maintenance of all public and private stormwater facilities and Class V injection wells in accordance with the *Stormwater Facility Maintenance Manual*, and adopts the *Clark County Stormwater Pollution Control Manual* that provides BMPs for business and public agency activities such as materials handling, landscape management, trash management and building exterior maintenance.

Enforcement Procedures for Un-maintained Private Stormwater Facilities

Clark County Clean Water Division has a written procedure for responding to non-compliant private regulated stormwater facilities.

Environmentally Responsible Purchasing Policy

Clark County adopted its Environmentally Responsible Purchasing Policy in 2004. One element addresses purchase of landscaping and vegetation maintenance products, including pesticides. The policy establishes a set of criteria, any of which will disqualify a pesticide from purchase, and a waiver system, allowing chemicals with no equivalent that is more environmentally-friendly to be used within specific limiting guidelines.

ESA Regional Road Maintenance Forum

Clark County Public Works has been a member of the ESA Regional Road Maintenance Forum since 2003. The group assisted the county in developing a regional road maintenance program designed to meet the requirements of the Endangered Species Act (ESA). In 2004, NOAA Fisheries approved the program and determined that it was compliant with the ESA 4(d) rule. The program seeks to protect salmon and steelhead by relying on the extensive use of pre-approved BMPs for routine maintenance activities.

TOOLS

Maintenance Management System (MMS)

The *Maintenance Management System* (MMS) is a database operated by Public Works for tracking infrastructure assets, recording condition, and scheduling inspections and maintenance. The MMS was implemented in 2011 and continues to evolve. The MMS will be used to prioritize, schedule, and track stormwater infrastructure inspections and maintenance by Public Works crews, as well as track asset condition.

For stormwater facilities and related infrastructure, the inventory in MMS is provided directly from *StormwaterClk* (see Inventorying and Mapping the Storm Sewer System on page 12).

INSPECTIONS

Purpose

Clark County inspects both county-owned and regulated non-county stormwater facilities to evaluate condition and function and to determine if maintenance or repairs are warranted. In the case of regulated non-county facilities, follow-up actions include technical support to the BMP owner and, in some cases, enforcement.

Responsibilities Matrix

Task	DES CWD Infrastructure Mgr	DES CWD Admin	DES CWD Eng. Tech	PW Construction Management OA	PW Construction Management Supervisor	PW Construction Management Inspectors	PW Ops Road Crews	PW Ops Road Super
Inspect Regulated Facilities	I	O	S	S	A	P	O	O

Inspect Facilities During Heaviest Home Construction	I	S	S	S	A	P	O	O
Inspect County-owned Facilities	I	O	S	S	A	P	O	O
Inspect Catch Basins	I	O	S	O	O	O	P	A
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted								

Inspect Regulated Facilities

Regulated facilities are treatment and flow control facilities including low impact development BMPs owned and operated by private parties and non-county governmental bodies. Clark County will annually inspect at least 80% of regulated facilities.

County responsibility for inspecting regulated facilities will begin at issuance of the completion of construction letter by Public Works Development Engineering. (See Regulatory Program for Development, Redevelopment, and Construction Projects on page 73.)

For facilities not in compliance with maintenance standards, the county will follow procedures to compel compliance through follow-up technical assistance and enforcement actions if needed.

Track and Schedule Annual Inspections

Public Works Construction Management will use MMS to schedule and track regulated facility inspections.

Inspection

Inspections will be completed by Public Works Construction Management engineering technicians. The inspectors will compare facility condition with maintenance standards from the Clark County *Stormwater Manual*.

Contact Owners of Non-Compliant Facilities

If an inspection shows that a facility is out of compliance, the lead engineering tech will send a mailing to the owner(s) and/or responsible party. The mailing packet will include:

Facility inspection

- Introductory letter.
- Property identification.
- Postcard to return for technical assistance.
- Facility defect report.
- *Managing Stormwater Facilities* pamphlet with links to additional information.

Recipients will be referred to Construction Management for questions or problems.

Facility ownership or Homeowner Association leadership may change. In some cases, no viable Homeowner Association exists. Construction Management will refer these facilities to the Clean Water Division source control specialist.

Contact Owners of Compliant Facilities

If an inspection shows that a facility is compliant, the owner will be sent a postcard stating that the facility is compliant and thanking them.

Follow-Up Technical Assistance

The Construction Management inspectors will assist owners who reply to the initial letter by giving advice on maintenance, including referrals to the City of Vancouver MRSC rosters for small works (www.mrscrosters.org) for construction and maintenance companies. The assistance may include phone calls, additional correspondence and site visits. The inspector will facilitate compliance and use professional judgment to set deadlines for compliance activities.

Facilities will be referred to the Clean Water Division source control specialist for further action after owners are non-responsive to two letters, if solutions are beyond the ability of inspection staff to coordinate, if facilities remain non-compliant after deadlines, or by owner request. At this point, the case is entered into *Tidemark* as a code enforcement case.

Further Enforcement

If the owner or owners of a non-compliant facility are unresponsive, then the source control specialist will refer the case to the code enforcement officer.

The code enforcement officer will use progressive enforcement methods, terminating with a Notice and Order and issuance of fines and liens in cases of severe non-compliance.

Alternate Compliance Strategy

The county retains the option of maintaining the facility and billing the owner at any point after an inspection demonstrates that a facility is out of compliance.

Compliance Tracking

Public Works Construction Management will update facility records in the MMS with compliance information on a regular basis, including inspection results, contact information and other relevant facility information. A spread sheet system tracks correspondence to regulated facility owners and assistance provided. Follow-up and enforcement actions will be tracked by the Clean Water source control specialist and entered into *Tidemark* as code enforcement cases.

Facility Ownership Transfer

While it rarely occurs, the county has a policy, criteria and procedures for accepting ownership of private stormwater facilities serving residential subdivisions. Facilities must meet county maintenance, safety and access standards before acceptance.

Inspect Facilities During Heaviest Home Construction

Clark County will inspect permanent stormwater treatment and flow control facilities, including catch basins, in new residential developments every six months during the period of heaviest construction. The NPDES permit defines the period of heaviest construction as the time until 90 percent of the lots are built-out (see condition S5.C.9.b).

Create and Maintain Inspection List

The Clean Water Division office assistant will maintain a spreadsheet of potentially relevant subdivisions from *Tidemark*, including the number of lots in the subdivision and the number of lots having active building permits. The Clean Water Division office assistant will forward the list to the Public Works Construction Management inspection lead.

Schedule Inspections

The Public Works Construction Management lead inspector will consult the spreadsheet monthly and schedule project sites requiring inspection for the following month. Any subdivision with less than 90 percent of the lots built out will be scheduled. The Public

Works Construction Management lead inspector will schedule six-month inspections for each project using the spreadsheet.

Inspection

Public Works Construction Management inspectors will inspect project sites using standards from the *Clark County Stormwater Manual* and fill out a paper field inspection sheet printed from the MMS.

Track Inspections

The Public Works Construction Management inspector or office assistant will enter the inspection results into Tidemark under the DIN (development inspection number). The electronic field inspection form is attached to the DIN case.

If the project is past warranty and owned by Clark County, the results will be entered into the MMS.

Enforcement

The method used to enforce maintenance compliance of a facility found to be out of compliance will depend on its ownership.

When a private facility or catch basin is out of compliance, the standard process for enforcement on a regulated facility will be followed.

When a county-owned facility or catch basin on maintenance warranty is out of compliance, the inspector will refer the violation to the Public Works development inspector assigned to that development project.

When a county-owned facility or catch basin is out of compliance after the warranty period, the facility will be treated as any other county-owned facility.

Inspect County-owned Facilities

The Clark County Public Works Construction Management Program annually will inspect at least 95% of county-owned stormwater treatment and flow control facilities. Facilities with known problems may be spot-checked by Public Works Operations and Maintenance after significant storm events in addition to routine inspections.

- For county capital improvement projects, inspection responsibility will transfer to the county at the issuance of the final acceptance letter to the contractor by Public Works Construction Management.
- For facilities constructed as part of a private-sector development project that did not include a warranty period, maintenance responsibility will transfer to the county at issuance of the completion of construction letter to the developer.

(See Regulatory Program for Development, Redevelopment, and Construction Projects on page 73.)

Inspection

Public Works Construction Management will inspect facilities using standards from the *Clark County Stormwater Manual*. Crews will note compliance and defects on paper field forms.

Spot Checks

After significant storms, Public Works crews will inspect facilities that are on a list of facilities with known problems associated with heavy rainfall.

Tracking

Public Works Construction Management inspectors or office staff will enter inspection records from the paper field forms into MMS.

Inspect and Clean Catch Basins

The Clark County Public Works Operations and Maintenance Program will inspect catch basins in road right-of-way annually. Each catch basin is inspected and those exceeding sediment depth standards are scheduled for cleaning. Annual inspections may also be conducted on a circuit basis whereby 25% of catch basins and inlets are inspected, as described in permit section S5.C.9.d.

Catch basins in parks and other county facilities will be inspected and cleaned as part of routine maintenance by the custodial department.

Outputs

- MMS records of regulated facility inspections
- Updates to six-month inspection list
- Spot checks of public facilities after severe storms
- Catch basin cleaning
- MMS records of public facility inspections

County Stormwater Facility and Class-V Injection Well Maintenance

Purpose

Maintenance of stormwater facilities and stormwater disposal wells ensures that facilities continue to perform their important environmental and drainage functions. Clark County Public Works is responsible for maintenance of most county stormwater

infrastructure when it fails to meet a maintenance standard established by permit and county standards.

Responsibility for maintaining county-owned stormwater treatment and flow control facilities will begin at issuance of the final acceptance letter for those constructed as part of a county capital improvement and at the end of the maintenance warranty period for those built as part of a private-sector development project. (See Regulatory Program for Development, Redevelopment, and Construction Projects on page 73.)

The county does not maintain private stormwater facilities except in emergency situations or when pursuing an alternate compliance strategy for a non-compliant facility, whereby the county maintains the private facility at the owner's expense.

Responsibilities Matrix

Task	DES CWD Infrastructure Manager	DES CWD NPDES Mgr	DES CWD Eng. Tech	PW Road Ops and Parks Supers	PW Ops Roads and Parks Crews	Contract Services
Routine Facility Maintenance	I	I	S	A	P	O
Non-routine Facility Maintenance	C	C	S	A	P	P
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted						

Typical Facility Maintenance

Clark County will perform routine maintenance, such as litter removal, mowing, and weed control, on swales, ponds, filter strips and LID BMPs that it owns. Typical maintenance is regular activities that maintain a facility's function that can be accomplished primarily with hand tools, lawn mowers, and weed whackers, and do not require engineering evaluation or heavy equipment. It does include cleaning sediment traps using vacuum trucks.

The following procedure applies to stormwater facilities maintained by Public Works, such as those in subdivisions and road right-of-way. Maintenance of other county

stormwater facilities located in parks and on county campuses is covered in the section pertaining to operation of county lands (below).

Schedule and Prioritize

Most of the typical facility maintenance will occur during the growing season (April to September). The Clark County Public Works water quality crew chief will schedule the work.

Maintenance

Mowing grass, controlling weeds by weed whacking or hand pulling, and litter or debris removal are the primary typical maintenance activities. Other maintenance for defects including sediment accumulation in sediment traps, minor erosion, presence of trees in pond or swale bottoms, etc., are also part of typical maintenance.

Capital Construction Facility Maintenance

Prioritization and Budget

The Clean Water Division and Public Works will develop an annual work plan for maintaining and repairing facilities that require capital construction under $25,000.

Individual maintenance projects estimated to cost more than $25,000 are referred to the Stormwater Capital Program (page 62).

Inspection Data Review

The Public Works NPDES road operations superintendent and crew chief will schedule facility maintenance requiring construction in consultation with the Clean Water Division Infrastructure Manager

Implementation

Maintenance requiring construction is accomplished as resources and weather allow within permit timelines.

Drywell Maintenance

Public Works Operations and Maintenance Roads crews will maintain drywells (Class V stormwater injection wells) as necessary based on a visual inspection of defects. Drywells in stormwater facilities will be inspected

annually as part of routine facility inspections. Drywells in streets and roads will be inspected at the time catch basins are inspected.

Outputs

- Stormwater facilities maintained and repaired to meet county standards.
- List of projects referred to the capital planning program for repairs greater than $25,000.
- Database records of facility maintenance work (MMS).

Use of Water Quality BMPs during Roadway and County Property Operation and Maintenance

Purpose

Clark County maintains its properties and roadways in a manner that prevents or reduces stormwater impacts.

Responsibilities Matrix

Task	DES CWD Infra-structure Mgr	DES CWD Permit Mgr	DES CWD Source Control Specialist	PW Ops and Parks Managers	PW Road Ops Super	PW Ops Roads Crews	PW Parks Super	PW Parks Crews	DES Vegetation Mgmt. Mgr	DES Vegetation Mgmt. Crews	General Services, Facilities Mgr	General Services, Facilities Crews
Annually inspect and maintain catch basins in parks	I	I	O	A	O	O	A	P	O	O	O	O
Annually inspect and maintain catch basins on campuses	I	I	O	C	O	O	A	P	O	O	A	O
Road maintenance practices	I	I	O	A	C	P	O	O	O	O	O	O
Landscape maintenance on campuses	I	I	C	C	O	O	A	P	O	O	A	O
Landscape maintenance in parks	I	I	C	A	O	O	A	P	O	O	O	O
Noxious weed removal practices	I	I	C	O	O	O	O	S	A	P	O	O
Exterior building and grounds maintenance	I	I	C	O	O	O	O	S	O	O	A	P
Training road maintenance crews	I	S	S	A	P	I	O	O	O	O	O	O
Training parks maintenance crews	I	S	S	A	O	O	P	I	O	O	O	O
Training weed management crews	I	S	S	O	O	O	O	O	A	P	O	O
Training Facilities Maintenance crews	I	S	S	O	O	O	O	O	O	O	A	P
Check SWPPPs	I	S	O	A	O	P	O	O	O	O	O	O

A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted

Maintain Roadways

Road maintenance and operation will be conducted by the Public Works Operations and Maintenance program.

Clark County will maintain roadways and other traveled surfaces using pollution reduction practices defined by the ESA Regional Road Maintenance Program and in *Clark County Stormwater Manual Book 3*.

Specific pollution-reduction activities include:

- Periodic removal of litter from conveyances, such as ditches.
- Catch basin cleaning.

Practices to prevent pollution will be implemented whenever the following maintenance activities are conducted:

- Pipe cleaning
- Culvert cleaning
- Ditch maintenance
- Street cleaning
- Road repair and resurfacing, including pavement grinding
- Snow and ice control
- Utility installation
- Maintaining roadside areas, including vegetation management
- Dust control
- Pavement striping maintenance
- Application of fertilizers, pesticides, and herbicides
- Sediment and erosion control
- Landscape maintenance and vegetation disposal
- Trash and pet waste management
- Building exterior cleaning and maintenance

Maintain Parks

Parks may contain any or all of the following types of land cover: pavement, landscaped areas,

natural areas, structures, and stormwater facilities. Parks will be maintained by Public Works, Parks Division.

Clark County will maintain park vegetation and structures according to *Clark County Stormwater Manual* and current pesticide application rules. Pesticides will be purchased according to the county's Environmentally Responsible Purchasing Policy. Parks maintenance crew members are trained under the ESA Regional Forum and are state licensed pesticide operators.

Parks crews will inspect catch basins within parks during routine park maintenance and will clean them as needed.

Parks crews will mow and remove litter from stormwater facilities within parks frequently during routine park maintenance. Public Works Road Operations will provide the balance of the maintenance.

Maintain County Property

County campuses are managed by the General Services department. General Service's personnel maintain pavement and building exteriors; General Services has an agreement with Public Works, Parks Division for most outdoor vegetation management activities.

Clark County will maintain landscaping and hard surfaces on its campuses according to the *Clark County Stormwater Manual Book 3*. Pesticides will be purchased according to the county's Environmentally Responsible Purchasing Policy. Parks maintenance crew members are trained under the ESA Regional Forum and are state licensed pesticide operators.

Parks crews will inspect and maintain catch basins on county campuses.

Parks crews will mow and remove litter from stormwater facilities on county campuses as needed based on visual inspection.

Clark County implements a Stormwater Pollution Prevention Plan (SWPPP) for each of its seven heavy equipment and materials storage yards, operated by Public Works. Copies of the SWPPPs are kept at each site.

Control Weeds on County Property

State regulated noxious weed control on county properties is provided by the Environmental Services, Vegetation Management Division.

Clark County will control weeds according to current pesticide application rules. Pesticides will be purchased and used according to the county's Environmentally Responsible Purchasing Policy.

Vegetation Management field crews are state licensed pesticide operators.

For some areas, such as mitigated wetlands and properties with legacy lands designation, Vegetation Management will compose a Site Specific Plan to ensure that compliance with all environmental regulatory requirements, including NPDES permit requirements, will be achieved.

Employee Training

Crews from Public Works Operations and Maintenance, Public Works Parks, and Environmental Services Vegetation Management 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.

Train New Personnel

Clark County Public Works will provide ESA Regional Road Maintenance training using an approved vendor for new or promoted staff, as necessary.

Outputs

- Maintenance of county property using proper BMP manuals
- Employee training
- Stormwater Pollution Prevention Plan at each heavy equipment and storage yard

TIMELINE

Ongoing

- ✔ Spot check facilities with known problems after significant storms
- ✔ Annually inspect and clean, if needed, county-owned catch basins
- ✔ Implement established practices to reduce stormwater impacts from county road maintenance activities
- ✔ Implement established practices to reduce stormwater impacts from property and landscape maintenance activities for county property
- ✔ Employee training
- ✔ Implement updated SWPPPs for county equipment yards
- ✔ Adopt and implement maintenance standards equivalent to the SMMWW
- ✔ Require maintenance of regulated facilities to the SMMWW
- ✔ Implement program to annually inspect all regulated facilities
- ✔ Inspect all new facilities in new residential developments every 6 months during the period of heaviest construction
- ✔ Inspect all county-owned facilities annually

2016-2018

- ❑ Continue the above

FOR MORE INFORMATION ON COUNTY OPERATION AND MAINTENANCE OF THE MS4

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Section 4
Detecting and Reducing Pollutants and Contamination

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Contaminants may enter the MS4 through improper connections and through discharge of contaminants from sites with private storm systems that are connected to the MS4. Eliminating improper connections and reducing the discharge of contaminants is an important part of the county's Stormwater Management Program.

Improper connections may be discovered through routine screening of the system, site inspections or by complaint. When an improper connection is discovered, removal and disconnection is a high priority.

Regular and wide-spread inspections of business and multi-family sites helps ensure that sites are properly managing potential contaminants, maintaining catch basins and conveyance systems, and preventing non-stormwater discharges into their private systems that discharge to the MS4. Above NPDES Permit requirements, the program also addresses sources that do not discharge to the Permit-regulated MS4, including discharges to Class V injection wells, non-county storm drains and other conveyances to surface water and groundwater.

Source Control Program

Regulatory Requirements Summary

NPDES Permit S5.C.7 – Source Control Program for Existing Development

The NPDES Permit requires the county to reduce pollutants in runoff from areas that discharge to the MS4 by applying operational, structural source control, and treatment Best Management Practices (BMPs); enforcing proper BMPs on commercial, industrial and multifamily properties; enforcing water quality ordinances; and reducing pollutants from pesticides, herbicides and fertilizers entering the MS4.

County Policies, Rules and Regulations

Clark County Code Chapter 40.386 – Stormwater and Erosion Control

Chapter 40.386 adopts the *Clark County Stormwater Manual* 2015 as the technical manual for meeting the Minimum Requirements of the Permit, including Minimum Requirement 3, Source Control of Pollution.

Clark County Code Chapter 13.26A – Water Quality

Clark County prohibits non-stormwater discharges to the MS4 and regulates the discharge of contaminants to surface water, stormwater, and groundwater to protect the county's surface and groundwater quality. The code and manual provide minimum requirements for reducing and controlling the discharge of contaminants by requiring all sites and activities to utilize source control Best Management Practices (BMPs) to control release of contaminants.

Chapter 13.26A also adopts the *Clark County Stormwater Manual* that provides BMPs for materials handling, landscape management, trash management, and building exterior maintenance.

Clark County Stormwater Manual

The *Clark County Stormwater Manual* contains technical guidance for meeting county stormwater code when developing, redeveloping, or constructing buildings on a site to fulfill minimum requirement 3, Source Control of Pollution. The manual also applies to existing land uses.

Inventory Potential Pollutant Generating Sites

Purpose

The Potential Pollutant Generating Site inventory helps target education and enforcement of source control requirements on commercial, industrial, and multifamily sites.

Responsibilities Matrix

Task	DES Source Control Specialist	GIS Analyst	CWD NPDES Mgr.
Create inventory of tax lots by type	Completed		
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted			

Inventory Maintenance

The Clean Water Division used the Clean Water Fee database to identify commercial, industrial, and multifamily sites in the county that have impervious surfaces.

The database is derived from the Clark County Assessor tax lot database and a GIS overlay of impervious surfaces. It includes parcel owner, site address, owner's mailing address, square footage of impervious surface, and the primary land use code. As inspections have progressed to include most permanent business sites, a separate, inspection-based site inventory is maintained in the *Tidemark* inspection and enforcement tracking database. The inventory is updated as new stormwater fee sites are added to the GIS and business changes are found during inspection work.

Outputs

- Inventory of business and multifamily sites

Source Control at Business and Multifamily Sites

Purpose

Clark County inspects all business sites and many multifamily sites for compliance with source control requirements to ensure pollutants are not discharged to the MS4 or groundwater via Class V stormwater infiltration wells.

Responsibilities Matrix

Task	DES CWD NPDES Manager	DES Source Control Specialist	DES Code Enforcement Officer	DES Environmental Education	DES Office Assistant
Site selection	A	P	O	O	O
Inspection / education	A	P	S	S	O
Follow-up for compliance	A	P	P	O	O
Referral	A	P	P	O	O
Record-keeping	A	P	P	O	P
	A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted				

Site Selection

Each year, all business sites within selected subwatersheds will be inspected. The selection of subwatersheds will be the least recently visited subwatershed.

Inspection and Education

Inspections are conducted by qualified county staff. Currently, Clean Water Division Source Control Specialists inspect sites.

At each business site, county staff will approach the owner, manager, or other employees to obtain access to the storm system on the site and to ask questions about source control practices, drainage plumbing, materials storage, and, if relevant, structural source control BMPs.

Staff will note inspection findings on the "Clark County Stormwater Business Site Visit Report" field form.

During the visit, county staff will provide education and technical assistance as judged necessary or beneficial. Education or assistance could include brochures, BMP handouts, general information on stormwater pollution topics, copies of the county's water quality ordinance, *Clark County Stormwater Manual*, or referrals to maintenance companies.

Follow-up Actions for Compliance

If a business is not in compliance, the source control specialist will work with the manager or owner to reach compliance. Follow-up actions may include phone calls, additional site visits, and letters. County staff may give additional technical assistance such as locating

engineering drawings, providing handouts from the *Clark County Stormwater Manual* or Ecology and recommending new source control BMPs.

The source control specialist will set deadlines as necessary for compliance actions (e.g. cleaning catch basins).

Follow-up actions will also be recorded on the "Clark County Stormwater Business Site Visit Report" field form, which is then entered into Tidemark

Referral

If necessary to gain compliance, the source control specialist will refer the case to another agency such as Clark County Public Health or the Clark Regional Wastewater District. The source control specialist will continue to follow the case to conclusion.

Further Enforcement Actions

Further enforcement will be provided by Clean Water Division Code Enforcement or by referral to Ecology in cases of continued inaction.

Record-keeping

Data from field forms for both inspection and follow-up will be entered into *Tidemark* as a CWD case type by an Environmental Services Clean Water Division office assistant.

Outputs

- Records of inspections and follow-up cases in *Tidemark*
- Report of numbers of inspections and referrals
- Case files

Water Quality Complaint Investigation

Purpose

Clark County investigates all legitimate complaints about water quality problems to reduce contamination of stormwater, surface water, and groundwater as well as to comply with its NPDES Permit.

Responsibilities Matrix

Task	DES CWD NPDES Mgr.	DES Source Control Specialist	DES Office Assistant	DES Natural Res. Spec.	CD Code Enf. Officer
Refer potential cases to CWD	O	I	O	O	P
Open case	A	P	O	O	O

Investigation	A	P	O	S	O
Education and compliance	A	P	O	O	O
Record-keeping	A	S	P	O	O
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted					

Open Case

Water quality complaints may arrive in a variety of ways, including the 24-hour water quality complaint line, referral from other agencies, referrals from Community Development Code Enforcement Officers, e-mail to the Clean Water Division general address, and phone calls to the Clean Water Division. Complaints may be made by the general public or agency staff.

Complaints will be referred or forwarded to the Environmental Services Clean Water Division source control specialist.

Investigation

The source control specialist will investigate every legitimate complaint beginning with a phone call and site visit.

For business sites, the specialist will fill out the "Clark County Stormwater Business Site Visit Report" field form and begin a case file.

For residential sites, the specialist will fill out the field form but generally will not begin a case file. In difficult or egregious cases, the specialist will begin a case file.

Education and Compliance

If a water quality or source control violation is found, the specialist will work with the property owner on compliance or refer the case to another agency, generally following the procedures for source control follow-up (above), and, if necessary, further enforcement actions.

Record-keeping

A Clean Water Division office assistant will enter data from the field forms into *Tidemark* as a CWD case type. The specialist will keep any case files.

Outputs

- Records of complaints, investigations and follow-up in *Tidemark*
- Case files

Source Control Success

In an ongoing effort to identify and reduce pollutants entering our storm water system, our Source Control Specialists took to the streets and commercial properties in the Salmon Creek watershed. With a requirement to visit 20% of our entire commercial properties inventory, over 400 businesses were visited and inspected in 2014. The approach to site visits kept inspections in a focused, geographical area an efficient method for revisits, for an ongoing presence, for documenting progress, and for an all-inclusive approach.

While each individual business and business practice is evaluated for pollution potential, common or universal best management practices are always addressed. One of those shared sources of potential pollution is the dumpster/compactor. During our site visits an estimated 200 commercial containers in service to these businesses were inspected for their ability to keep rain water out and polluted liquids in. 24 dumpsters or compactors were identified as inadequate and where promptly replaced or repaired in order to contain their pollutants at the source.

Training

Clean Water Division and Code Enforcement personnel have been performing source control inspections and enforcement since 2000. When applicable, new staff will be trained on enforcing the Water Quality Ordinance, including legal basis, BMPs,

inspection procedures, enforcement process, and record keeping. When changes to manuals or procedures are made, all appropriate staff will be trained.

TIMELINE

Ongoing

- ✔ Source control inspections and enforcement
- ✔ Staff training for source control
- ✔ Update inventory of pollution-generating sites
- ✔ Inspect sites, enforce and respond to complaints

2013-2015

- ✓ Update county municipal code per permit requirements
- ✓ Update county stormwater manual per permit requirements

2016-2018

- ❑ Continue ongoing programs

FOR MORE INFORMATION ON THE SOURCE CONTROL PROGRAM

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Illicit Connections and Illicit Discharges Detection and Elimination (IDDE)

Regulatory Requirements Summary

NPDES Permit S5.C.8 – Illicit Connections and Illicit Discharges Detection and Elimination

The NPDES Permit requires the county to have a program to detect, remove, and prevent illicit connections and illicit discharges, including spills, into the MS4. Illicit connections are man-made conveyances connected to the MS4 without a permit, such as sanitary sewers and floor drains that can carry materials other than stormwater. Illicit discharges are discharges to the MS4 not composed entirely of storm water, except where allowed by a state waste discharge permit.

The Permit designates timelines for beginning an investigation of a suspected illicit connection and for terminating a confirmed illicit connection.

Revised Code of Washington Chapter 90.48 – State Water Pollution Control Act

The State Water Pollution Control Act prohibits the discharge of contaminants to waters of the state.

County Policies, Rules and Regulations

Clark County Code Chapter 13.26A – Water Quality

Chapter 13.26A prohibits the discharge of contaminants into surface water, stormwater, or groundwater, and it defines contaminants and illicit connections. It gives inspection and enforcement authority to authorized representatives of the Environmental Services Director or other department heads specified in established procedures to enforce that chapter.

Clark County Code Chapter 13.10 – Use of Sewer

Chapter 13.10 requires the use of sewers to dispose of liquid wastes and water carrying waste materials.

Clark County NPDES Illicit Discharge Detection and Elimination Screening Quality Assurance Project Plan

The Project Plan addresses project design, schedule, methods of data collection and management, quality assurance and control requirements, data analysis, thresholds for further investigation, and reporting for the county's program to screen the MS4 for illicit connections.

Illicit Connection Screening

Purpose

Screening for evidence of illicit connections helps county staff identify outfalls or points in the MS4 that appear to convey something other than stormwater, as well as meeting Permit requirements for ongoing screening.

Responsibilities Matrix

Task	DES CWD Manager	DES CWD Permit Manager	DES Natural Resources Specialist
Basin selection	A	S	P
Outfall selection	A	I	P
Site visits / screening	A	I	P
Sampling / evaluation	A	I	P
Record-keeping	A	I	P
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted			

Ongoing Work

Clark County carried out an extensive screening program in 2006, 2007, 2008 and 2012, completing the 2013 NPDES Permit requirement to screen the conveyance systems in the high density area and at least one rural sub-basin began under the 2007 permit term.

Environmental Services Clean Water Division natural resources specialists (NRS) will continue effectiveness monitoring on illicit connections discovered during previous field screening operations (see Illicit Connection and Discharge Response and Removal on page 54). In addition, a NRS or the source control specialist will respond to any complaints and referrals.

Source control inspections are an important element of illicit discharge detection (see Source Control Program on page 44).

Basin Selection

In 2016, a Clean Water Division NRS will select urbanized subwatersheds for screening based on professional judgment and watershed management objectives. This area will include at least 12 percent of the urban stormwater conveyance systems.

Outfall Selection and Scheduling

A Clean Water Division NRS will use the county stormwater infrastructure inventory GIS database, *StormwaterClk*, to locate and map all outfalls within chosen basins. Staff will schedule site visits using this information.

Site Visits

During dry weather, a NRS will screen outfalls for indicators of illicit connections, such as flow or deposits.

Sampling and Evaluation

The NRS will take samples at flowing outfalls, send them for laboratory analysis, and then evaluate the results using defined protocols to determine if an investigation is warranted. In cases where an investigation is warranted, the discharge is called a suspected illicit discharge or connection.

Investigations and follow-ups are part of the Illicit Connections and Discharge Response program (below).

Record-keeping

The NRS will track all information regarding screening, illicit connection investigations and response to illicit discharges if applicable, in the IDDE screening database.

Reporting

Each year, the NRS will complete a report suitable for an auditor review describing the year's work from planning through removal of any discovered illicit connections or discharges, including those discovered by source control inspections. The report will be stored in the project folders by year.

Outputs

- Records in the IDDE screening database
- Annual written summary of screening activities, investigations and results
- Report of number of inspections and follow-ups
- Laboratory data and field measurements entered in the *Water Quality Database*

Illicit Connection and Discharge Response and Removal

Purpose

Clark County responds to all suspected illicit discharges and connections to the MS4 that it identifies through screening or other methods. Response is designed to eliminate the source of the discharge or the connection.

Responsibilities Matrix

Task	DES CWD NPDES Mgr.	DES Natural Resources Specialist	DES Source Control Specialist	Public Health	CRWWD	Ecology
Open case	A	I	P	O	O	O
Investigation	A	S	P	S	S	S
Follow-up / removal	A	I	P	S	S	S
Continued follow-up	A	S	P	S	S	S
Record-keeping	A	P	S	O	O	O
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted						

Suspected Illicit Connection and Discharge Response

The DES Clean Water Division and Public Works Operations Division will receive and respond to reports of suspected illicit connections; however, some illicit connections of on-site sewage treatment systems are discovered and terminated by Clark County Public Health. The process described here is that used by the Clean Water Division and Public Works.

Notify Ecology of Severe Threats

The county immediately will notify Ecology if an illicit discharge or connection poses a severe threat to human health or the environment.

Open Case

The process begins with notification about a suspected illicit discharge or connection through referral from illicit detection screening (above), discovery through source control inspections (above), or complaint.

The source control specialist will open a case file.

Investigation

Within 21 days, the Clean Water Division source control specialist and a NRS will attempt to trace a suspected illicit discharge or connection back to its source to identify the problem. If tracing back to the source is not possible, they may elect to follow other protocols established in the IDDE Project Plan.

The source control specialist will confirm the presence or absence of the suspected illicit discharge or connection based on the findings, and, when possible, will specify the source.

Follow-up and Removal

For confirmed illicit discharges or connections, the source control specialist will work with the property owner and, if necessary, other county departments or agencies to eliminate the illicit connection. If relevant, Clark Regional Wastewater District, Public Health, cities, or the Department of Ecology may be requested to assist in areas where they have responsibility.

Addressing illicit discharges will follow standard source control procedures for follow-up actions (e.g. personal contacts) and further enforcement by a Code Enforcement Officer, if necessary.

Removal of illicit connections will be completed within six months of confirmation of an illicit connection through field verification.

Continued Follow-up

Following the IDDE Project Plan, questionable outfalls require continued follow up, which may include effectiveness monitoring at sites where illicit connections or discharges were found, repeat screening where low levels of pollutants were found, or additional visits by the source control specialist to verify that actions leading to an illicit discharge are ended.

Record-keeping

The source control specialist will inform the NRS of the results of the follow-up actions involving illicit discharge or connection abatement. The NRS will enter information into the IDDE screening database.

If the case is a suspected illicit connection, the date it was first discovered or reported will be used to track the requirement to initiate an investigation with 21 days.

After the illicit connection is confirmed, the requirement to terminate the connection within six-months will apply. If the suspected connection was identified through field observation, source control inspection, or complaint, the discovery date is the date the observation or complaint was made. If the suspected connection was identified through laboratory analysis, the discovery date is the date of the official laboratory report. Discovery dates will be recorded and tracked in the IDDE screening database.

A record is kept for every illicit connection referred to Ecology as a severe threat to human health or the environment.

Outputs

- Removal of illicit connections and reduction of illicit discharges to the MS4
- Entries in the IDDE screening database
- Reporting to Ecology

Spill Response

Clark County responds to spills on surfaces, such as roadways, that discharge to the MS4, surface water, or ground water, and to improper dumping into the MS4.

Purpose

The purpose is to reduce and prevent contamination of surface water, ground water, and stormwater.

Responsibilities Matrix

Task	PW Operations Admin	PW Operations Crew Chief	PW Operations Road Crew	PW Operations OA
Open case	I	A	I	P
Spill response / clean-up	I	A	P	O
Notify Ecology	A	P	S	P
Record-keeping	A	P	C	S
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted				

Notification

Spill notification can arrive in a variety of ways, including detection by Public Works Operations and Maintenance roads crews or citizen complaint.

Clark County staff receiving notification of a spill will immediately notify Public Works Operations and Maintenance dispatch. For spills responded to by Public Works crews, the Crew Chief will call Ecology's spill response team in the Vancouver Field office if necessary.

The phone operator will also notify Ecology using the 24-hour spill reporting number. County personnel also will immediately refer significant spills to Department of Ecology.

Response

Spill reports received by Public Works generate a Maintenance Management System work order, the appropriate crew responds to work order and, if necessary, they call Ecology. For urgent complaints arriving after hours via telephone, the answering service will page the Public Works Operations and Maintenance on-call crew chief, who will determine the level of response following established Public Works guidelines.

Record-keeping

Records of spill incidents and responses will be kept in the Public Works customer service database. The Public Works phone operator enters the phoned-in spill report into the tracking system. The crew chief enters all follow-up information and closes out the work order.

Outputs

- Spill clean-up
- Records of incidents responses

Water Quality Problem Reporting

Purpose

Clark County advertises its 24-hour Public Works customer service line as a water quality complaint line. The line gives citizens an opportunity to report spills, dumping, and other water quality concerns at any time. The Ecology spill response number is also posted on the Clean Water Division web page. The Clark County web page how to list includes reporting a spill or environmental problem tab. That tab links to a form for non-emergency concerns and has phone numbers for emergencies and spill reporting.

Responsibilities Matrix

Task	PW Operations Admin	PW Operations OA	PW Answering Service	CD Code Enf	Public Health	CWD
Take calls during business hours	A	P	O	P	P	P
Take calls after hours	A	I	P	O	O	O
Receive web comment form via email	A	P	I	O	O	P
Referral	A	P	P	P	P	P
Log calls in database	A	P	O	P	O	P
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted						

Complaint and Referral

Complaints arriving on the Public Works 24-hour line are logged to the Public Works customer service database by Public Works office assistants. Incidents are generally routed to the Environmental Services Source Control Specialist or Department of Ecology, depending upon the nature of the incident.

Web form comments (*http://www.clark.wa.gov/environment/stormwater/report_online.html*) are sent via email to the Clean Water Division who directs the report to the appropriate response staff as per phone call protocols.

Water quality complaints are also received by other agencies or county departments including Ecology, Clark County Code Enforcement, and Clark County Public Health.

Response to complaints is described under Water Quality Complaint Investigation.

Outputs

- Report of number of calls and emails to the general customer service line
- Water quality complaint response report records

TIMELINE

Ongoing

- ✔ Continue implementing on-going program to prevent, identify and respond to illicit connections and illicit discharges
- ✔ Procedures for addressing pollutants entering the MS4 from interconnected MS4s
- ✔ Staff training
- ✔ Implement procedures to respond to spills
- ✔ Operate a water quality citizen complaint line
- ✔ Revise program to include new Ecology guidance

2016-2018

- ❑ Continue ongoing programs

FOR MORE INFORMATION ON THE COUNTY PROGRAM TO DETECT AND ELIMINATE ILLICIT CONNECTIONS AND DISCHARGES TO THE MS4

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Section 5
Expanding and Improving the Stormwater Management Infrastructure

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As county population and development pressure increase, the primary means of controlling runoff from areas of new growth and for fixing problems caused by uncontrolled runoff from existing developed areas is by expanding and improving the existing stormwater management infrastructure.

In Clark County, stormwater management infrastructure is expanded in two ways:

County Stormwater Capital Improvement Projects

The county has a program to plan and construct new stormwater infrastructure and improve existing infrastructure to better control and treat runoff from areas where existing development does not include adequate stormwater controls. This addresses the permit requirement to mitigate for stormwater impacts from existing development.

Regulation of Development, Redevelopment, and Construction Projects

Private entities and government agencies develop the land, and the county regulates the design and construction of stormwater controls on it, many of which eventually become part of the county's own stormwater infrastructure.

The process for each of these types of projects is described below.

Roadway flooding during winter storm, 2007

County Stormwater Capital Improvements

Past stormwater management and drainage practices and development regulations have proven inadequate to prevent impacts of runoff on surface water, and thousands of developed acres in Clark County contribute to problems in streams, lakes, and rivers. Accordingly, the county has a program to construct stormwater capital improvements primarily to control and treat stormwater from areas of existing development with inadequate stormwater controls. In addition, the county may take opportunities to expand the treatment and flow control capacity of existing facilities when making repairs. These activities all are part of the county's stormwater capital improvement program.

Regulatory Requirements Summary

NPDES Permit – S5.C.6. Structural Stormwater Controls

The NPDES Permit requires the county to implement a structural stormwater controls program to prevent or reduce impacts to waters of the state caused by discharges from the MS4. The program considers projects including new flow control facilities, new water quality treatment facilities, retrofits of existing facilities, property acquisition, and maintenance with capital construction costs >$25,000 to provide water quality or flow control benefits. Other means to reduce impacts are also considered, including riparian habitat acquisition, restoration of forest in upland areas and in riparian buffers, and floodplain reconnection projects. Small scale projects that are not planned in advance may also be included in meeting this requirement.

While the permit requires a structural stormwater control program, it does not prescribe a scope for it other than to note that the program will demonstrate it meets AKART and MEP standards.

The SWMP must include a list of planned individual projects updated in each annual report to the state.

The description of the structural stormwater control program in the SWMP must include the program's goals and the planning process, including budget and public involvement. Individual project descriptions must include estimated pollutant load reduction (if applicable), flow control benefits (if applicable), other expected environmental benefits, and plans for monitoring the facility. A table describing the 2013-2018 capital projects is attached as Appendix A. The 2012 to 2018 capital plan was included in the March 2015 annual report. It includes a detailed program description and can be found at:

https://www.clark.wa.gov/sites/all/files/environmental-services/Stormwater/Main%20documents/AppendixB-ClarkCountyStormwaterCapitalPlan2013-2018Final_reduced.pdf

Chapter 173-218 WAC – Underground Injection Control (UIC) Program

Pursuant to Chapter 90.48 RCW, the state's requirements for stormwater infiltration wells may result in capital improvements associated with county systems that are found to pose a threat to groundwater.

County Policies, Rules and Regulations

The Clean Water Division has the following policies for county stormwater capital improvements:

- Meet NPDES Permit requirements for the structural stormwater control program through stormwater capital planning and capital construction.

County goals for stormwater capital improvements include:

- Protect and enhance streams and wetlands in Clark County through planning and constructing modifications to the stormwater infrastructure.
- Minimize the degradation of receiving waters from impacts attributable to stormwater runoff in existing developed areas.
- Maximize public benefits of county-owned land by providing multiple uses, including recreation, and by leveraging funding from multiple sources.
- Provide stormwater facilities for future development and redevelopment.

Guiding Principles

In support of county policies and goals, the capital planning process strives to:

- Prioritize projects with the greatest potential to support multiple county programs and goals, including local and regional fish recovery, habitat enhancement, and water cleanup goals.
- Ensure a reliable scientific and engineering basis for projects.
- Establish that each project in the plan is needed, feasible, and cost-effective.
- Focus limited resources on the most pressing concerns and the most cost-beneficial solutions.
- Incorporate environmental benefits into needed infrastructure repair projects.

- Maintain a sufficient list of potential projects to enable replacement of any projects found to be infeasible, and to take advantage of funding opportunities.
- Utilize partnerships, where feasible, to meet multiple community goals.

As-Built Plan Preparation

Clark County Public Works follows a management practice for the production of record drawings at the final acceptance of a public capital project.

Stormwater Capital Planning

Purpose

Planning ensures that stormwater capital improvements meet the county's goals.

Capital planning is a process for identifying potential projects, deciding if they are feasible, selecting the best for further development, and tracking their progress from inception through construction. The stormwater capital program will list projects scheduled for implementation on a six-year horizon.

- The proposed projects are considered to comply with MEP and AKART requirements under Permit Condition S5.C.6.
- Projects reflect what Clark County is best able to implement within its available funding and demands for structural control projects.
- Projects address stormwater impacts not adequately controlled by other permit-required actions, chiefly those caused by uncontrolled or untreated runoff from existing development, and habitat degradation that has already occurred.

By complying with permit condition S5.C.6, together with all of the remaining other permit requirements, Clark County complies with MEP and AKART as set forth in the county's NPDES Municipal Stormwater Permit condition S4.E.

Individually, projects meet AKART by being designed following practices described in the *Stormwater Management Manual for Western Washington*.

Responsibilities Matrix

Task	DES CWD Infrastructure Manager	DES CWD Engineer	PW Eng. Program Manager	PW Eng. Project Manager	PW Eng. Program Staff	BOCC	DES Director
Accept referrals	A	P	O	O	O	O	O
ID potential projects	A	P	O	O	S	O	O
Database entry & updates	A	P	O	O	O	O	O
List of potential projects	A	P	I	I	C	O	O

Formulate selection criteria	A	P	I	O	S	C	C
Apply selection criteria	A	P	C	C	S	O	C
Scoping and Selection	A	P	O	O	S	O	I
Six-year capital plan	A	P	C	S	S	C	C
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted							

Referrals

Project ideas may be referred to the Clean Water Division from several sources, including field work completed by the Assessment and Monitoring Section, CWD engineer review of watershed plans and water quality reports, problems identified by Road Operations crews, and projects suggested by the public.

Referrals can arrive continuously throughout the year.

Project Tracking / Capital Planning Database

CWD engineers will enter potential capital projects selected for further consideration into the *Capital Planning Database* as they are evaluated.

The database tracks stormwater capital projects from inception to construction and close-out, or their status as shelved or dropped including the following attributes:

- Project category/type.
- Description and basis of the project and the problem being addressed.
- Estimated project benefits including flow control, pollutant load reduction, habitat enhancements, and other environmental benefits.
- Status of preliminary engineering and construction.
- Funding summary.
- Types of potential environmental impacts, including wetland, priority habitat, cultural resource, floodplain impacts, etc.

As projects advance and more information is developed, CWD engineers will update the database with new details on a regular basis.

Project Identification

The capital plan considers projects within the entire unincorporated urban area and rural Clark County, but focuses on urban and urbanizing areas where stormwater impacts are greatest.

Most projects considered for the current capital plan were identified through one of three mechanisms: the county's Stormwater Needs Assessment Program (SNAP), stormwater facility inspections, and assessment of drywell systems. Additionally,

property acquisitions were identified through the Legacy Lands program under the Conservation Areas Acquisition Plan.

The SNAP watershed assessment effort evaluated the stormwater and surface water systems, identifying problems and opportunities that could be addressed through capital projects. SNAP was conducted county-wide from 2006-2010.

Routine field inspections of stormwater infrastructure identify the majority of repair projects. In addition, stormwater engineers may identify project opportunities while conducting regular business such as responding to drainage complaints, evaluating problems identified by county road operations crews and looking into projects suggested by members of the public.

The county's Underground Injection Control Well Assessment (2013) identified wells potentially needing retrofits to eliminate threats to groundwater. Other focused efforts may include catch basin retrofits in highly urbanized drainages.

Screening

Project identification may generate a large number of candidate projects. Screening is the first step in determining which opportunities should be evaluated more extensively.

Initial screening eliminates clearly infeasible or unproductive stormwater capital projects early in the planning process by determining at a general level whether the project is both worthwhile and feasible. The first question is answered through an objective scoring of *resource-based* criteria for whether or not they are likely to produce a significant benefit to the environment. The second, feasibility question is answered through an objective scoring of *engineering* criteria.

Scoping

Project scoping is perhaps the most critical step in the planning process. Where initial screening takes a general approach, scoping begins to look quantitatively at feasibility and benefit as well as project costs. Scoping is where observed stormwater problems are linked to tangible solutions.

The goal of the scoping process is to ensure that projects have the best possible chance of successful implementation. While significant issues can still arise later in the design phase, scoping is expected to expose most barriers to project implementation and determine with good confidence that the project is both cost-effective and feasible.

Scoping includes the following elements:

- Feasibility and Cost Effectiveness Check (CWD engineering staff)
- Independent Review (PW engineering staff)
- Project justification and discussion (selected CWD/PW managers and staff

Prioritization

A robust capital planning program generates more scoped projects than can be implemented in a six-year plan. Prioritization is the process of determining which of the feasible projects of each type best meet program goals and provides the most cost-effective solutions. Within the constraints of regulatory requirements and available funding, the subsequent Programming step strives to implement higher-priority projects.

Each project type requires slightly different prioritization criteria; in all cases, criteria are intended to be simple yet meaningful. The Resource screen provides an initial prioritization step for all project types by forwarding only those projects that appear to provide significant natural resource benefits. Another key consideration goes beyond the parameters of stormwater management: in all cases, priority is given to projects that also meet other related county goals, such as leveraging Public Works road project wetland mitigations to include stormwater functions.

Programming Projects

Programming applies regulatory requirements and available funding to the list of scoped and prioritized projects to develop a six-year program matrix that can meet Permit requirements and program goals. Where specific projects have not yet been identified for implementation, placeholder values for projected spending are included in the matrix as ongoing programs.

Funding

The anticipated budget for the 2013-2018 plan is approximately $9 million. Completion of these projects is dependent on funding through the Clean Water Fee, General Fund, Road Fund, Conservation Futures fund and grants.

Outputs

- Database entries of potential projects and scoped projects, and detailed project attributes, for consideration in subsequent years
- Submittal of NPDES permit report Appendix 11
- Six-year capital plan with funding allocation

Construction of the Thomas Wetland East Stormwater Facility

Capital Project Construction Program

Purpose

The construction program is the engine for designing, permitting, and building stormwater capital projects. The Public Works Engineering Program leads the effort through established project management systems.

Responsibilities Matrix

Task	DES CWD Infrastruct-ure Manager	DES CWD Engineer	DES Enhance. & Permitting Mgr.	DES Env. Permitting Manager	PW Eng. Program Manager	PW Eng. Project Manage-ment Manager	PW Eng. Project Manager	PW Eng. Program Engineers	PW Eng. Construction Manager	PW Eng. Construction Mgmt. Staff
Assign Project Team	I	I	S	S	A	P	S	S	S	S
Schedule and Budget	S	S	S	S	A	C	P	S	S	S
Preliminary Engineering	I	O	O	O	A	S	S	P	O	O
Permitting	I	O	A	P	I	O	I	C	C	O
Construction Management	I	I	I	C	I	S	S	C	A	P
Project Close Out	I	S	I	C	A	I	P	C	C	C
Update Capital Planning Database	A	P	O	O	O	O	O	O	O	O

A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted

The Public Works Engineering Program designs and oversees construction of all types of capital improvement projects, including county stormwater projects. Their services include project management, survey, property acquisition, engineering, and construction management.

The program is responsible for the advancement of stormwater capital projects from the Stormwater Capital Program to construction. The responsibilities and procedures for this program are briefly reviewed below.

Team, Schedule, and Budget

From the Stormwater Capital Program, the manager of the Project Management section will assign a team of professionals, led by a project manager.

The project manager, with the help of the team, will develop a detailed scope, schedule and budget for his/her assigned projects. The project manager will monitor each item closely throughout each project's life.

Preliminary Engineering and Environmental Permitting

Public Works engineers will create engineering plans, design specifications, and cost estimates for each project in the plan. Department of Environmental Services permitting coordinators will shepherd each project through local, state, and federal permitting processes.

Encore Stormwater Facility Retrofit

As projects near completion of engineering design, the Engineering Program manager, in consultation with the Clean Water Division manager, will make the final decision to advance selected projects to construction.

Bid

The project manager will coordinate with the Clean Water Division and the team to prepare and execute a project bid schedule.

Construction Management

The Public Works Engineering Program Construction Management team will review bids and prepare an award recommendation for the Board of Clark County Councilors.

Once the contract is awarded, Construction Management will administer it and oversee construction.

As a project reaches completion, the construction manager will send a copy of the letter of physical completion to the Clean Water Division and Public Works Operations and Maintenance program. The Clean Water Division also will be copied on the letter of final acceptance.

Receipt of the physical completion and final acceptance letters by the Clean Water Division will initiate stormwater inventory tasks (see section 2 on page 12). Receipt of the final acceptance letter by Operations will initiate maintenance and operations tasks (see section 3 on page 26).

Close Out

The project manager and construction manager will coordinate preparation of close out documents, including final expenditures. The project manager will provide a final report and a CD of the electronic project files to the Clean Water Division Infrastructure Manager.

CWD engineers will update the *Capital Planning Database* with metrics from the final report.

Construction Management will oversee the production of record drawings, and Survey staff will notify the Clean Water Division of their location. The receipt of record drawings by Clean Water Division will initiate tasks to verify the stormwater infrastructure inventory.

Outputs

- Project plans, specifications, and estimates
- Completed stormwater capital projects
- As-built drawings (record drawings)
- Final expenditures and metrics for each project
- CD of electronic files to Clean Water Division
- Project final report

Timeline

Ongoing

- ✔ Implement structural stormwater controls program
- ✔ Stormwater capital planning
- ✔ Annual reporting on capital projects

2016-2018

- ❑ Continue structural stormwater controls program
- ❑ Continue capital planning
- ❑ Continue annual reporting on capital projects

For more information on planning and building county stormwater infrastructure

Jeff Schnabel, Clean Water Division Infrastructure Manager, (360) 397-6118, x4583
jeff.schnabel@clark.wa.gov

Regulatory Program for Development, Redevelopment, and Construction Projects

The county is the local land use regulator. As such, the NPDES Permit requires the county to regulate the discharge of runoff from new development, redevelopment, and construction activities in the county.

In 2013, the county began a project to update its regulations in response to the newly issued 2013-2018 NPDES Permit, submitting updated code and stormwater manual to Ecology in June 2014. During 2015, Clark County completed the equivalent code and manual adoption and implementation under the schedule prescribed by the Permit. The 2015 code and manual became effective January 8, 2016.

Regulatory Requirements Summary

NPDES Permit S5.C.5.a and b. – Controlling Runoff from New Development, Redevelopment and Construction Sites

The NPDES Permit requires the county to have a program to prevent and control the impacts of runoff from new development, redevelopment, and construction activities. The program must apply to all development activity, including private-sector development and county projects such as roads and parks. The program must enforce development regulations that provide protection equivalent to the minimum requirements, thresholds, and definitions in Appendix 1 of the NPDES Phase I stormwater permit and the design standards in the December 2014 version of the *Stormwater Management Manual for Western Washington*. The program must also revise code and manuals to make low impact development the standard approach for stormwater management.

NPDES Permit S5.C.5.c. – Completing a watershed-scale stormwater plan

Along with updates to code, the NPDES Permit requires the county complete a study of Whipple Creek watershed that will identify stormwater management strategies that would result in hydrologic and water quality conditions that fully support “existing uses” and “designated uses” as defined by state law under WAC 173-201A.

Clark County staff started work on the plan in summer 2014, including data collection (gages, macroinvertebrate collections, GIS database management, etc.) and project coordination. Work will continue in 2016 with analysis of data and formulation and modeling of strategy scenarios. The project anticipates completing a draft report in late 2016.

County Policies, Rules and Regulations

Clark County Code 40.386 – Stormwater and Erosion Control

Clark County regulates stormwater runoff and erosion control on development, redevelopment, and construction sites primarily in Chapter 40.386 Stormwater and Erosion Control. The purpose of the code is to safeguard public health, safety, and welfare by protecting the quality of surface and ground waters for drinking water supply, recreation, fishing and other beneficial uses through the application of best management practices (BMPs) for stormwater management and erosion control. It was adopted to minimize the degradation of receiving waters from impacts attributable to stormwater runoff, thereby not precluding the preservation of future restoration of beneficial uses.

The regulations generally apply to all development and construction projects, including county roads and parks that have complete development applications after January 7, 2016, whether or not they discharge to county storm sewers or to waters of the state. A notable exception is construction of buildings and impervious area for agricultural activity, which is only regulated under the stormwater and erosion control code if projects discharge directly or indirectly to the county storm sewer system.

Clark County Code 40.380 and 40.385– Stormwater and Erosion Control

For development, redevelopment, and construction sites that received final engineering approval prior to December 28, 2011 and a complete application before January 8, 2016, Clark County regulates stormwater runoff and erosion control under Chapter 40.380 Stormwater and Erosion Control (Clark County Code). Although this code has been superseded by Chapter 40.386 it remains in effect for the few projects that remain vested under it.

Clark County Code 13.26A – Water Quality

Clark County regulates the discharge of contaminants to surface water, stormwater, and groundwater to protect the county's surface and groundwater quality by providing minimum requirements for reducing and controlling the discharge of contaminants and stormwater flows. It requires certain sites and activities to utilize best management practices to control release of contaminants.

For purposes of regulating development activities, the Chapter applies to those limited projects that only trigger minimum requirement 3 of the *Clark County Stormwater Manual*. Source control requirements are in Book 3 of the *Clark County Stormwater*

Manual. Stormwater facility maintenance requirements for development and redevelopment projects are in Clark County Stormwater Manual Book 4.

Clark County Code 40.430 – Geologic Hazard Areas

Identifies sites where geologic concerns such as erosion and steep slopes are coincident in preparation of erosion control and stormwater site plans.

Clark County Stormwater Manual

The *Clark County Stormwater Manual* is the technical guide that project proponents follow to meet the minimum requirements of the 2013 Permit and meet county stormwater management requirements for development and construction projects in the county. The manual contains county requirements and procedures specific to Clark County and is equivalent to the 2014 *SMMWW*.

Clark County Code 40.450 and 40.440 – Wetlands and Habitat Protection

Chapters 40.450 *Wetland Protection* and 40.440 *Habitat Conservation* regulate some stormwater discharges and the placement of treatment and control facilities in habitat and wetland buffers.

Clark County Code 40.510

Applications for development, redevelopment, and construction require different levels of review depending on their impacts to the community, which are defined in Chapter 40.510. The levels of review are ministerial decisions (Type I), administrative decisions (Types II and II-A), and quasi-judicial decisions (Type III).

Stormwater Review and Enforcement of Development and Construction Applications

Purpose

Clark County has a system of ordinances, technical manuals, plan review, inspection and enforcement to apply the NPDES Permit minimum requirements to development, redevelopment, and construction projects.

For stormwater, the purpose of the review is to determine:

- Applicability of the stormwater and erosion control minimum requirements.
- Compliance with applicable minimum requirements.
- Compliance with other county-specific stormwater requirements listed in the Clark County Stormwater Manual.

Inspection and enforcement strives to ensure that construction sites correctly and consistently use erosion control BMPs to prevent sediment-laden runoff from leaving the sites, and that permanent stormwater BMPs for conveyance, LID, treatment, and flow control are properly installed, constructed, and transferred in good condition to the ultimate owners/operators with a maintenance manual for each facility.

Interdepartmental Responsibilities Summary

Responsibility for implementing the stormwater code is shared by several departments and is guided by interdepartmental MOUs. Environmental Services will update and maintain these agreements.

Community Development Department – Permit Services

Permit Services will accept development and construction applications and determine if applications include the required submittals. Permit Services staff review residential building permit applications accept and review stormwater site plans for stormwater compliance, and condition building permits for stormwater requirements.

Community Development Department – Building Safety

Building Safety will inspect building construction sites for compliance with erosion control, source control, preservation of natural drainage, and onsite stormwater management.

Public Works Department – Development Engineering

Development Engineering staff will provide engineering review of stormwater and erosion control plans on development sites, including residential and non-residential development sites. Development Engineering staff will oversee the issuance of the plat, the final engineering as-built documents (record drawings), and the maintenance warranty, if applicable.

Public Works Department – Construction Management

Construction Management staff will inspect development sites, including county projects, for compliance with stormwater engineering plans and erosion control plans.

Environmental Services Department – Clean Water Division

Clean Water Division staff will support decision-making regarding interpretation of the code and manuals, providing documentation of their findings.

Environmental Services Department – Code Enforcement

Code Enforcement will enforce erosion control violations on development and building construction sites as needed.

Responsibilities Matrices

The review and enforcement process varies depending on complexity and scope of the project. For stormwater review purposes, projects generally can be divided into residential development projects (subdivisions), non-residential development projects, residential construction projects (individual home construction), and Public Works projects.

The first matrix below describes responsibilities at the department and division level, and then four separate matrices describe responsibilities and accountability at the staff level for each type of review.

Overview of Regulatory Review and Enforcement Responsibilities

Task	CD Permit Services	CD Building Safety	CD Building Official	DES Code Enforce-ment	PW Development Engineering	PW Dev. Engineering Manager	PW Construction Management	PW Const. Manager	DES Clean Water Division
Plan Review - residential construction	P	S	A	O	O	O	O	O	S
Inspect building construction sites	I	P	A	O	O	O	O	O	I
Engineering review - development	S	O	O	O	P	A	C	O	I
Accept "non-manual" treatment BMPs	O	O	O	O	P	A	O	O	C
Inspect development sites	O	O	O	O	S	O	P	A	I
Inspect Public Works sites	O	O	O	O	S	O	P	A	I
Enforce erosion control	I	P	A	P	O	O	P	A	I
Maintenance warranty inspection	O	O	O	O	S	O	P	A	I
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted									

Residential Development (Subdivision, Short Plat)

Public Works Projects Is Table justification consistent with others?

Task	DES CWD Eng. Tech	PW Eng. Design Manager	PW Design Engineer	PW Construction Section Manager	PW Construction Engineer	PW Construction Inspector	PW Survey	PW Operations and Maintenance
Design	O	A	P	I	I	I	S	O
Final engineering review	O	I	C	I	O	O	O	O
Construction approval	O	O	O	A	P	S	O	O
Construction inspection	O	O	C	A	S	P	O	O
Final walk-through	O	O	S	A	S	P	O	S
Issue substantial completion	I	O	O	A	P	S	O	I
Issue physical completion	I	O	O	A	P	S	O	I
Issue final acceptance	I	O	O	A	P	S	O	I
Produce and distribute record drawings	I	O	S	A	P	S	S	I

A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted

Residential Development Project Review

Residential development projects are divisions of land to create individual lots and construction of infrastructure such as roads and storm sewer. Many aspects of residential development project review will not concern stormwater; only aspects concerning stormwater are covered in this plan.

Pre-Application Phase

Applicants typically submit initial information and may meet with a planner, engineer, and other pertinent staff in a Pre-application Conference (PAC) before an applicant submits a completed development application. The PAC will help determine options and likely requirements for stormwater control, among many other regulations and requirements.

Preliminary Land Division and Preliminary Engineering Review Phase

The applicant will submit an application for residential land division (subdivision or short plat) to the Permit Center along with a preliminary stormwater plan in accordance with section 1.8.1 of *Clark County Stormwater Manual Book 1*.

Development Engineering staff will review the preliminary stormwater plan to evaluate whether the proposal for stormwater controls is feasible given existing site conditions and constraints. The engineer's Findings and Conditions of Approval will appear in the Staff Report, which will be forwarded to the applicant.

Findings describe the engineer's determination of whether or not each aspect of the stormwater proposal meets county code. Conditions of Approval list the engineer's requirements for how to meet code, in cases where the proposal does not meet it, and they must be met in the final engineering plan.

Final Engineering Review Phase

The applicant will submit final plans for the residential development, including a final stormwater plan in accordance with section 1.8.2 of *Clark County Stormwater Manual Book 1*. The final stormwater plan will provide final engineering design (Technical Information Report) and construction drawings for the stormwater aspects of the proposed project and a construction Stormwater Pollution Prevention Plan (SWPPP).

Development Review engineers will:

- Ensure that the Conditions of Approval from the preliminary land division have been met.
- Verify that applicable county and NPDES permit requirements have been met.
- Review engineering calculations of stormwater flows, sizing of flow control facilities, and sizing of conveyances.

- Verify adequacy of erosion control BMPs.
- Perform any other engineering review required for stormwater.

Responsible officials from Public Works, Community Development, Environmental Services, and Public Health will sign the final plans. The Development Engineering manager will make the final approval. Then the planning technician will return the approved plans to the applicant.

The Development Engineering office assistant will open a development inspection case in *Tidemark* in preparation for the next phase of the process.

Development Inspection Phase

During development inspection, the applicant will construct the development's infrastructure, including grading, roads, and stormwater controls, according to the approved final plans. Public Works development inspectors will inspect the site for conformity with the plans.

The process begins when the applicant submits the final construction plan and application for development inspection.

The assigned development inspector will hold a Preconstruction Conference with the applicant. During the Preconstruction Conference, the inspector will review erosion control requirements, including requirements related to a high potential for sediment to be discharged from the site with the applicant and will receive the name of the Certified Erosion Control and Sediment Lead (CECSL) for the site. The inspector will reiterate storm system requirements and additional inspection-related policies for storm system installation. Department of Ecology state construction stormwater permit enforcement staff are also invited to each Preconstruction Conference. After the conference, the development inspector will give approval to begin constructing the project after completion of a preconstruction inspection to verify proper installation of erosion control BMPs.

During construction of the development, the development inspector will inspect the site to ensure that erosion control measures are operational and effective. The inspector will work with the developer to achieve compliance, using correction notices and stop work orders if necessary. If there is evidence of continued neglect, the inspector will call a code enforcement officer to enforce erosion control measures through citations and penalties. Referral to Ecology for enforcement under the NPDES Construction General Permit is also an option.

The development inspector also will verify that stormwater facilities are constructed as designed.

At the end of construction, the applicant will submit record drawings and a maintenance bond, if applicable, for any public improvements. (Public improvements are roads and stormwater conveyance and facilities that will fall into public ownership upon acceptance of the development.) A Development Engineering engineer will approve the record drawing and then a Development Engineering planning technician will accept the maintenance bond, if applicable.

Development Engineering staff will provide an electronic record drawing file to Environmental Services, and then send the Mylar plan to the state archives.

After these steps are complete, the planning technician will issue a notice of completion of construction to the applicant and copy it to several departments, including the Clean Water Division and Public Works Maintenance and Operations. The notice signals the start of the stormwater facility maintenance warranty period, if applicable (see below).

The notice of completion of construction constitutes provisional county acceptance of the public infrastructure, including public stormwater facilities. In the case of private facilities, completion of construction is the end of county involvement in construction and the regulated facility operation and maintenance inspection process will begin.

Receipt of the notice of completion of construction will initiate some stormwater mapping tasks (see Mapping the Storm Sewer Infrastructure on page 12) and some maintenance inspection tasks (see Operating and Maintaining the Storm Sewer System, County Property and Roadways on page 26).

Final Land Division Phase

The final land division will begin after the development inspection phase begins but before it ends.

The applicant will submit the final land division application and the draft plat. The plat will contain required information describing facility ownership and maintenance responsibility, stormwater tracts, and drainage easements. The plat will be routed to several departments for review and approval.

After approval of the draft plat, the applicant will submit a Mylar version that will be signed by the Planning Director, the County Engineer, and the Board of Clark County Councilors. Development Engineering staff then will record the final plat with the Auditor and issue a plat notification to the developer, copied to several departments, including the Clean Water Division.

Receipt of the plat notification by Clean Water Division may initiate some stormwater mapping tasks, (see Mapping the Storm Sewer Infrastructure on page 12).

The final plat must be recorded before building permits for home construction will be issued for lots in the development (see Residential Construction Project Review on page 87).

Maintenance Warranty Period

Most, but not all, residential developments will have public improvements, including public stormwater infrastructure.

For residential developments with public improvements, a two-year maintenance warranty period will begin at completion of construction. During the maintenance warranty period, the developer will be responsible for continued maintenance of the stormwater facilities. During the 22nd month of the maintenance warranty, a development inspector will inspect the public stormwater facilities for compliance with maintenance standards.

If the stormwater facilities are found to be in good condition and properly maintained, the development inspector will recommend release of the maintenance bond. The Development Engineering planning technician will release the bond and notify the Clean Water Division and Public Works Maintenance and Operations.

If the facility has components that fail the maintenance inspection, the planning technician and development inspector will work with the developer to obtain needed repairs. If the developer fails to make repairs, the planning technician will demand the bond from the surety company.

After repairs are made, the Clean Water Division will initiate stormwater mapping tasks, if necessary, (see Mapping the Storm Sewer Infrastructure on page 12), and Public Works Maintenance and Operations will initiate maintenance and operations tasks (see Operating and Maintaining the Storm Sewer System, County Property and Roadways on page 26).

Under the 2015 Clark County Stormwater Manual, private stormwater facilities will be maintained by the applicant for two years.

Non-Residential Development Project Review

Non-residential developments include commercial and industrial projects as well as schools, churches, and other non-residential land uses. These projects construct infrastructure such as roads and stormwater along with the buildings. Multifamily housing projects also are reviewed using this process. Occasionally, commercial projects may also go through a land division. Many aspects of non-residential development project review will not concern stormwater and are not covered in this plan. Also, many projects do not trigger

stormwater requirements because they do not add or replace a sufficient amount of impervious surface; examples include cell tower placement, sign construction, and building façade replacement.

Pre-Application Phase

Applicants typically submit initial information and meet with a planner, engineer, and other pertinent staff in a Pre-application Conference (PAC) before submitting a completed development application. The PAC will help determine options and tentative requirements for stormwater control, among many other regulations and requirements.

Preliminary Site Plan and Preliminary Engineering Phase

To begin the process, the applicant submits an application for preliminary site review to the Permit Center along with a preliminary stormwater plan in accordance with section 1.81. of *Clark County Stormwater Manual Book 1*.

The assigned Development Engineering engineer will review the preliminary stormwater plan to evaluate whether the proposal for stormwater controls is feasible given the available information on existing site conditions and constraints. The engineer's Findings and Conditions of Approval will appear in the Staff Report and Decision (or Land Use Hearing Examiner Decision), which will be forwarded to the applicant.

Findings describe the engineer's determination of whether or not each aspect of the stormwater proposal meets county code. Conditions of Approval list the engineer's requirements for how to meet code, in cases where the proposal does not meet it, and they must be met in the final engineering plan.

Under state development project vesting rules, the applicant will have several years to begin the construction process, depending on circumstances.

Final Site Plan and Final Engineering Review Phase

The applicant will submit final plans for the development, including a final stormwater plan in accordance with section 1.8.2 of *Clark County Stormwater Manual Book 1*. The final stormwater plan will provide final engineering design and construction drawings for the stormwater aspects of the proposed project and a construction Stormwater Pollution Prevention Plan (SWPPP).

The assigned Development Review engineer will:

- Ensure that the Conditions of Approval from the Final Decision have been met.
- Verify that applicable NPDES permit and county code minimum requirements have been met.
- Review engineering calculations of stormwater flows, sizing of flow control facilities, and sizing of conveyances.

- Verify adequacy of erosion control BMPs.
- Perform any other engineering review required for stormwater.

Responsible officials from Public Works, Community Development, and Public Health will sign the final plans. The Development Engineering manager will make the final approval. The approved plans are returned to the applicant.

Development Engineering will open a development inspection case in *Tidemark* in preparation for the next phase of the process.

Building Permit Review

The applicant will submit building permit applications to Permit Services. Construction of structures will be concurrent with construction of the development; therefore, most stormwater review will have already occurred.

The building permit must be issued before construction of structures may begin.

Development Inspection Phase

During development inspection, the applicant will construct the development's infrastructure, including grading, roads, and stormwater controls. The project's buildings are also erected during this phase.

The process begins when the applicant submits the final construction plans and application for development inspection.

The assigned Public Works development inspector will hold a Preconstruction Conference with the applicant. The inspector will review erosion control requirements with the applicant, including requirements related to a high potential for sediment to be discharged from the site and will receive the name of the Certified Erosion Control and Sediment Lead worker (CECSL) for the site. Department of Ecology state construction stormwater permit enforcement staff are also invited to each Preconstruction Conference. The inspector will reiterate storm system requirements and additional inspection-related policies for storm system installation. After the conference, the development inspector will give

approval to begin constructing the project after completion of a preconstruction inspection to verify proper installation of erosion control BMPs.

During construction, the development inspector will inspect the site as needed to ensure that erosion control measures are operational and protective. If necessary, a code enforcement officer will be called to enforce erosion control measures. If the project has a state-issued NPDES construction permit, then violations may be referred to Ecology.

The inspector also will ensure that stormwater facilities are constructed as designed.

At the end of construction, the inspector will verify that the facility was built as shown on approved design plans. The applicant will submit record drawings and, if applicable, a maintenance bond for any public improvements in the right-of-way. A Public Works engineer will review the record drawings for accuracy before approving it. After approval of the completed facilities and record drawings, a Development Engineering planning technician will accept the maintenance bond.

When a record drawing is received, Development Engineering staff will give an electronic file to Environmental Services and send the Mylar plan to the state archives.

The planning technician will issue the notice of completion of construction to the applicant and copy it to several county agencies, including the Clean Water Division. The notice signals the start of the maintenance warranty period, if applicable.

Receipt of the completion of construction by the Clean Water Division will initiate some stormwater mapping tasks for projects with either public or private stormwater facilities (see Mapping the Storm Sewer Infrastructure on page 12).

Maintenance Warranty Period

The maintenance warranty period is relevant for those few non-residential developments that have public stormwater infrastructure in public right-of-way. However, with increasing use of LID BMPs such as bioretention facilities in county right-of-way, they will become more common.

A two-year maintenance warranty period will begin at completion of construction. During the period, the developer will be responsible for continued maintenance of the stormwater facilities.

During the 22nd month of the warranty, a development inspector will inspect the public stormwater facilities for compliance with maintenance standards.

If the stormwater facilities are found to be in good condition and properly maintained, the development inspector will authorize release of the maintenance bond and will notify the Clean Water Division and Public Works Maintenance and Operations that the bond has been released.

Receipt of the bond release notification will initiate maintenance and operations tasks, (see Operating and Maintaining the Storm Sewer System, County Property and Roadways on page 26).

If the facility has components that fail the maintenance inspection, the planning technician and development inspector will require the developer to obtain needed maintenance and repairs. If the developer fails to make repairs, the county will demand the bond from the surety company.

After repairs are made, the Clean Water Division will initiate stormwater mapping tasks, if necessary, (see Mapping the Storm Sewer Infrastructure on page 12), and Public Works Maintenance and Operations will initiate maintenance and operations tasks (see Operating and Maintaining the Storm Sewer System, County Property and Roadways on page 26).

Under the 2015 Clark County Stormwater Manual, private stormwater facilities will be maintained by the applicant for two years.

Single Lot Residential Construction Project Review

Single lot residential construction projects include construction or expansion of single-family and duplex homes and their appurtenances, such as decks, garages, and driveways, and outbuildings. Many aspects of residential construction project review will not concern stormwater and are not addressed here.

Building Permit Application Review – Stormwater

The applicant will submit a residential building permit application including a stormwater site plan showing proposed building footprint(s), erosion control measures, and on-site stormwater control BMPs to the Permit Center. Projects triggering Minimum Requirements 1-9 are referred to Development Engineering for review.

The permit technician will review the residential building permit application to verify applicability of the minimum requirements and selection and use of allowed stormwater BMPs and erosion control BMPs. They will also check for the mapped presence of steep slopes or geo-hazard areas. If they conflict with the proposed stormwater BMPs, the applicant will be required to consult a licensed geotechnical engineer to design stormwater controls.

If the residential construction site is within an existing subdivision with an approved stormwater plan that provides flow control and treatment, then the permit technician will recommend that the applicant consult the development project's engineering plans to determine stormwater requirements, such as roof drain infiltration and amended soils,

for the lot. In those cases, the permit technicians also will include requirements from the recorded plat and subdivision engineering drawings and attach them as conditions on the building permit. For projects approved under the 2015 *Clark County Stormwater Manual*, each lot should have an engineered stormwater site plan as part of the final engineering plans.

If the residential construction site is not part of an existing subdivision with an approved stormwater plan, then applicants will follow minimum requirements applicable to their projects. Generally, if minimum requirements 1- 5 apply, the applicant can complete the stormwater plan on his or her own. If minimum requirements 1-10 apply, the applicant will need to consult an engineer complete the stormwater plan that complies with county code and the NPDES permit requirements under an engineering review by Public Works Development Engineering.

The Permit Center will issue the building permit before construction may begin.

Construction Inspection

Before construction is allowed to begin on the site, a Building Safety Division inspector will inspect the site as part of a foundation inspection to also verify that the erosion control BMPs are properly installed and that any unusual site conditions that might lead to sediment transport off site.

All sites are required to maintain an erosion control log with an attached site plan and form that includes the required onsite stormwater management BMPs.

At the end of construction, an inspector will retrieve the erosion control log and stormwater plan to place in the project file.

Public Works Project Review

Projects built by the Public Works department, including roads, parks, and stormwater facilities will be reviewed by the Public Works Engineering and Design Group independently from the design team for compliance with county stormwater standards. Many Public Works projects will not require land use review, including roadways through existing right-of-way; therefore, the process will frequently begin at the final engineering review phase. Those that require land use review will begin at the preliminary site plan and preliminary engineering phase (above).

Additionally, the development inspection phase is replaced by a construction management phase. Public Works will use its own construction inspectors to oversee the construction of the project to ensure that it is built as designed and bid. Enforcement of erosion control and other measures is through contract management.

Before completion of a project, the construction engineer will invite stakeholders, including the Public Works Maintenance and Operations water quality crew chief, to a

walk-through of the new roadways and/or facilities. The construction manager also will copy the Clean Water Division and the Public Works Operations and Maintenance program on the letters of physical completion and final acceptance of the project.

At the final acceptance, Public Works will develop a record drawing according to its *As-Built Plan Preparation Policy*, dated May 7, 2009.

Outputs

General outputs:

- Stormwater site plans that meet county standards
- Construction site management that controls excessive runoff and sediment
- Completed projects include stormwater facilities meeting county standards
- Assigned ownership and maintenance responsibility for stormwater control facilities
- Record drawings are completed
- Completed project notifications to programs

Residential Development Project Review Outputs

- Final Decision denying, approving, or approving with conditions the proposed development project
- Technical Information Report
- Approved final construction plan
- SWPPP
- Record drawings
- Approved final plat
- Notice of completion of construction
- Maintenance bond release letter, if applicable

Non-Residential Development Project Review Outputs

- Final Decision denying, approving, or approving with conditions the proposed development project
- Technical Information Report
- Approved Final Site Plan
- Approved final construction plan
- SWPPP
- Record drawings
- Erosion control log
- Building plan
- Notice of completion of construction
- Maintenance bond release letter, if applicable

Residential Construction Project Review Outputs

- Building Permit including plot plan with stormwater requirements
- Erosion control plan
- Erosion control log
- Building Plans

Public Works Project Review Outputs

- Technical Information Report
- Approved final construction plan
- Record drawings
- Completion of Construction notice
- Physical Completion letter
- Final Acceptance letter

Code and Manual Revisions

Updates to Implement the 2012 SWMWW

The 2013-2018 NPDES permit requirement S5.C.5.a. required Clark County to update its development code and stormwater manuals to be equivalent to minimum requirements in Appendix 1 of the permit and the design standards of the *2012 Stormwater Management Manual for Western Washington*. Draft code and manuals were submitted to Ecology for review by July 1, 2014 and final adoption drafts were adopted by the Board of County Councilors on November 24, 2015. Following the Permit requirements, the code and manual updates became effective on January 8, 2016. The *Clark County Clark County Stormwater Manual* includes four books to address administration, design, source control and operation/maintenance.

Outputs

- Stormwater and Erosion Control Chapter 40.386
- Updates to Chapter 13.26A Water Quality
- *Clark County Stormwater Manual2015* to meet all relevant NPDES permit code and manual requirements

Watershed-Scale Stormwater Planning

Adopt LID Standards and Associated Code Changes

The 2013-2018 NPDES permit requirement S5.C.5.c. requires Clark County to select a basin and complete a watershed-scale stormwater plan following permit prescribed steps. The final report must be submitted to Ecology by September 6, 2017 following an approved by Ecology in September 2014.

During 2016, Clark County will continue work to implement the approved scope of work and schedule including:

- Collecting stream flow data
- Collecting rainfall data
- Evaluating existing watershed conditions
- Water quality model calibration
- Completing baseline model scenarios
- Developing and modeling strategies aimed at protecting and restoring designated uses
- Completing other specific elements of the Ecology-approved scope of work

Outputs

- Scope and schedule submittal to Ecology (completed June 2014)
- Stream gauges construction and operation (installed fall 2014)
- Hydrology and water Workspace and existing data report
- Delineation of areas of special interest for hydrologic and water quality impacts
- Calibrated hydrologic and water quality models
- Base case model scenario output
- Stormwater management strategies for evaluation
- Modeling and proposal of strategies with funding mechanisms and implementation schedule
- Draft and final project reports

TIMELINE

Ongoing

- ✔ Legal authority to require maintenance of facilities
- ✔ NOI forms available
- ✔ Legal authority to require maintenance of facilities
- ✔ Procedures to implement the *SMMWW*
- ✔ NOI forms available
- ✔ Staff training on *SMMWW*

2016-2018

- ❑ Tailor Minimum Requirements to local circumstances through basin planning
- ❑ Continue to enforce stormwater regulations
- ❑ Continue staff education
- ✓ Revise stormwater regulations for equivalence to Appendix 1
- ✓ Revise code to promote LID
- ❑ Complete watershed-scale stormwater plan

FOR MORE INFORMATION ON HOW DEVELOPMENT, REDEVELOPMENT, AND CONSTRUCTION SITES ARE REGULATED FOR STORMWATER AND EROSION CONTROL

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Section 6
Public Involvement, Education and Outreach about Stormwater and the Stormwater Management Program

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Clark County provides ongoing opportunities for the public to review and comment on the stormwater management program through various mechanisms. Public input is one way to tailor policy within the guidelines of the NPDES Permit. The county also offers numerous stormwater education opportunities for the public. The education program is aimed at various audiences and is designed to help raise awareness to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts.

Public Information, Involvement and Participation

Regulatory Requirements Summary

NPDES Permit S5.C.4 - Public Involvement and Participation

The NPDES Permit requires the county to provide ongoing opportunities for public involvement in the stormwater management program development and implementation. The public must have opportunities to participate in the development, implementation and update of the SWMP and the county must consider public comments on it. The Stormwater Management Program Plan, annual report and other submittals required by the permit must be posted on the Web.

County Policies, Rules and Regulations

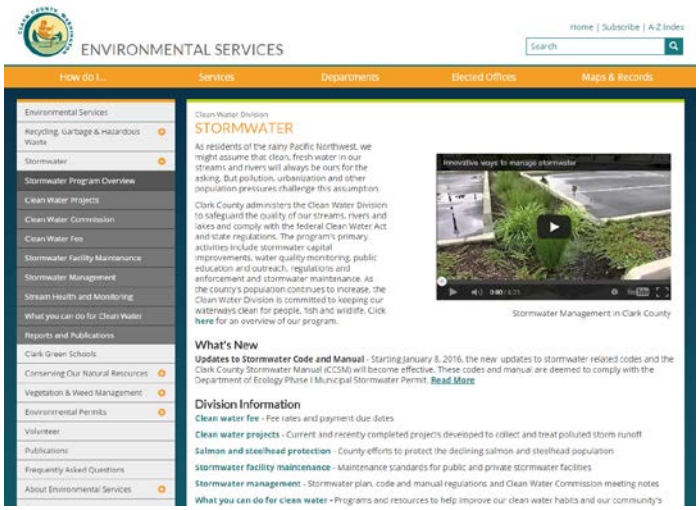
Clark County Code Chapter 13.30A

County Code Chapter 13.30A.040 defines the role of the Clark County Clean Water Commission (CWC), a citizen commission formed to advise the Board of Clark County Councilors (BOCC). The CWC will advise the BOCC on the focus of the SWMP, the effectiveness of the SWMP, program service levels, financing, and policies on surface and stormwater issues, as well as citizen outreach

Public Information

Purpose

The Clean Water Division provides information to the public about the stormwater management program to publicize the program's services to rate payers and keep the community abreast of current stormwater management issues. www.clark.wa.gov/stormwater



Responsibilities Matrix

Task	DES CWD Manager	DES Communications Coordinator	DES Outreach Project Coordinator	PW Public Information Officer	DES CWD Professional Staff
Provide content	A	I	I	S	P
Write / design eNewsletter	A	C	P	S	S
Manage CWD mailing list	O	C	P	O	O
Web updates	I	C	P	O	S
Write media releases	S	A	P	S	S
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted					

e-Newsletter

Clark County Environmental Services Clean Water Division publishes an e-Newsletter to distribute information about current NPDES stormwater code and manual updates and on an as needed basis. The current distribution is about 300 email addresses, including local businesses, school districts, non-profit organizations and individual citizens. During the stormwater manual update process, the e-Newsletter was distributed quarterly and posted on the stormwater web page.

Clean Water Division Web Site

The Clean Water Division Web site offers an opportunity for the public to review many program activities, services and documents, as well as receive educational messages about stormwater. The website address is: www.clark.wa.gov/stormwater. Older technological reports and information that used to be on the web are available to citizens upon request.

Media Releases

The Clean Water Division releases information on various topics to the media to publicize noteworthy events. The Environmental Services director or Clean Water Division manager will call for a media release. The program coordinator will write the release with the support of the Public Works Department public information officer and the Clark County Public Information Office. Releases will be reviewed, edited and distributed to the media by the DES Communications Coordinator.

Outputs

- E-Newsletter
- Content on CWD Web site
- Media releases

Public Involvement and Participation

Purpose

The purpose of involving the public in the SWMP is to make an effort to tailor the program, while considering the prescriptive nature of the permit, to the local community's priorities. Public feedback about program effectiveness and the public's needs also helps the Board of Clark County Councilors set policies for stormwater management.

Responsibilities Matrix

Task	BOCC	DES CWD Manager	DES CWD Program Coord.	DES CWD NPDES Permit Manager	DES CWD Office Assistant	DES CWD Staff	DES Enhanc. & Permitting Manager	DES Enviro. Permitting Coord.
Appoint Clean Water Commission	A / P	I	I	I	I	I	O	O
CWC liaison	C	A	P	S	S	S	O	O
CWC secretary	O	A	S	O	P	O	O	O
Respond to SWMP public comments	I	A	S	P	I	I	O	O
Respond to SEPA comments for stormwater capital projects	I	I	O	O	O	S	A	P
Community presentations	I	A	P	S	S	S	O	O
Other code update coordination	I	A	responsibilities assigned as needed				O	O
Customer service adaptive management	I	A	any CWD staff may be primary in his/her area				O	O
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted								

Clean Water Commission

The Clean Water Commission (CWC) is a nine-member advisory panel appointed by the Board of Clark County Councilors. It provides a forum for public participation in the stormwater management program and also informs the BOCC about stormwater topics and policy recommendations.

Staff Support

Clean Water Division staff support the CWC in a variety of ways. A program coordinator is the primary staff liaison to the CWC. The liaison will attend most meetings and provide minimal facilitation when required and respond to requests for information from CWC members.

The Clean Water Division office assistant will attend each meeting to take notes and distribute meeting materials. The Clean Water Commission Web pages will be updated

with current commission member information and terms, agendas, meeting summary notes and meeting audio files, as well as any handouts.

Other staff members may attend meetings, as required, to present updates on program activities or documents.

Member Appointments

Openings on the CWC will be listed in local newspapers by the BOCC. Interested applicants, including incumbents seeking another term, must submit a letter of interest and a resume to the BOCC, which will conduct interviews and select a candidate to fill the position.

Public Meetings

The Clean Water Commission will hold a minimum of six public meetings each year, every other month starting in January. Meetings are held on the first Wednesday of the month at 6:30 p.m. usually in the Public Service Center (1300 Franklin St.) in downtown Vancouver, Washington.

Discussion topics will include program updates from staff on the stormwater management program and updates from staff on other Clean Water Division functions, such as surface water / stormwater monitoring, capital project planning, and regulatory changes.

At meetings, the CWC will review and discuss major stormwater policy recommendations. All meetings will be documented with a meeting summary (.pdf file) and an audio recording (MP3). The meeting documentation will be available on the Clean Water Commission web page.

The Commission will hear public comment both prior to and following the discussion.

Communications with the Board of Clark County Councilors

Annual Meeting

Annually, the Clean Water Commission will request a meeting with the Board of County Councilors (BOCC) in a public meeting to present a review of the effectiveness of the Clean Water Division and to discuss other stormwater topics or concerns. The CWC will present an annual report at this meeting.

Other Communications

The Clean Water Commission may elect to communicate with the BOCC at any time via letter, memorandum, or during scheduled public comment periods at BOCC Work Sessions and Hearings.

Stormwater Management Plan Review and Input

Clark County will offer its *Stormwater Management Plan* each year on the Clean Water Division Web site for review and comment by the public at https://www.clark.wa.gov/environmental-services/clark-county-stormwater-management-plan.

The Clean Water Division manager or a designee will respond to comments.

Stormwater Capital Projects SEPA

As the Clean Water Division builds stormwater capital projects (see County Stormwater Capital Projects on page 62), each project will be subject to public review and comment under the Washington State Environmental Policy Act (SEPA).

The DES Environmental Permitting coordinator assigned to the project will write and distribute to stakeholders a Determination of Significance or a Determination of Non-Significance. The required public comment period will be held. The coordinator will respond to any comments received, and, if warranted, require changes to the project's design.

Each capital project may also include a package of outreach materials to inform potentially impact citizens and stakeholders of the project. Typical products include a "Head's Up" notice to citizens in the immediate project area, a detailed project letter to adjacent property owners (describing project timeline and potential impacts), a project sign at the construction site, and informational fliers. Materials may also be posted on the CWD stormwater capital project web page.

Community Presentations

As requested, Clean Water Division staff will provide information on the program's activities to community and civic groups, at times in concert with the Clean Water Commission, to distribute information about the stormwater management program and get feedback on community priorities.

Code Updates

Code revisions for water quality, stormwater and erosion control, and the Clean Water Fee regulations require extensive public outreach, review and comment, which will be coordinated by the Clean Water Division. The code update process will include significant public involvement to consult and inform the community and stakeholders.

Per the 2013-2018 NPDES Municipal Stormwater Permit, a public outreach plan was developed to inform the public about stormwater code and manual updates. The plan describes outreach efforts via several venues, including: a Technical Advisory Committee (meets every 6 weeks); a Stakeholder Advisory Committee (meets every

two months); monthly e-newsletters; web page updates and special media releases for special communications.

Customer Service / Adaptive Management

The Clean Water Division and its designees maintain regular contact with the public through daily programmatic activities such as customer service for the Clean Water Fee, source control inspections (section 4), inspections of regulated stormwater control facilities at businesses and subdivisions (section 3), response to information requests, and complaint response. Staff receives feedback during these contacts and frequently incorporates suggestions into their daily procedures and processes.

For example, as a result of public feedback, the Clean Water Division initiated a program to educate residential subdivision Homeowners' Associations about proper maintenance of their stormwater facilities http://www.stormwaterpartners.com/maintenance/index.html.

Outputs

- Clean Water Commission notes including public comments
- Clean Water Commission Annual Report to the Board of Clark County Councilors
- Log of public comments on the Stormwater Management Program
- Log of public comments from community presentations
- SEPA file for each stormwater capital project
- Public testimony transcripts from code update Hearings
- Record of public input for code updates
- Media releases
- E-Newsletters
- Web content

TIMELINE

Ongoing

- ✔ Develop and implement a process to involve the public in the SWMP
- ✔ Display SWMP and other NPDES submittals on Web site

2016-2018

- ✓ Complete the fueling station survey and implement changes to outreach
- ❑ Continue ongoing outreach programs
- ❑ Develop additional materials to meet permit requirements for awareness and affect behavior of the various audiences

FOR MORE INFORMATION ON THE COUNTY'S EFFORTS TO INFORM AND INVOLVE THE PUBLIC IN THE STORMWATER MANAGEMENT PROGRAM

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Education and Outreach Program

Regulatory Requirements Summary

NPDES Permit S5.C.10 - Education and Outreach Program

The NPDES Permit requires the county to have an educational program aimed at various audiences to raise general awareness and effect behavior change to help reduce or eliminate pollution in runoff. The Clean Water Division will provide stewardship opportunities to encourage residents to participate in stormwater related activities.

County Policies, Rules and Regulations

Clark County Code Chapter 13.26A

County Code Section 13.26A.005 describes the use of education and technical assistance to business owners and the general public as a primary means of implementing a successful pollution source control and prevention program.

Clark County Code Chapter 13.30A

Section 13.30A.050(D) states that "many of the difficulties in managing of surface and stormwater problems result in part from the general lack of public knowledge about the relationship between human actions and surface and stormwater management. In order to achieve a comprehensive approach to surface and stormwater management, the county should provide general information to the public about land use and human activities that affect surface and stormwater management."

Education for the General Public

Purpose

The goal of the stormwater education and outreach program is to build general awareness and effect behaviors changes that adversely impact stormwater runoff. The support and awareness of the general public is crucial to achieving this goal. Education for the general public will focus on the following topics:

- Importance of clean water.
- General impacts of stormwater flows into surface waters, including watershed management.
- Impacts from impervious surfaces.
- Contributions we each make to the problem.

- Each person's ability to help protect and improve the quality of Clark County's water resources through source control BMPs and environmental stewardship.
- Low impact development principles and practices

Responsibilities Matrix

Task	DES CWD Manager	DES Communications Manager	DES Outreach Project Coordinator	Partner Agencies / Contractors
Coordinate education programs	A	C	P	C
Track and measure deliverables	A	C	P	S
Create messages, programs and collateral	A	C	P	P
Distribute messages and collateral	A	C	P	P
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed,				

Regional Advertising Campaign

The Regional Coalition for Clean Rivers and Streams is a group of Portland/Vancouver metropolitan-area cities, counties, and stormwater utilities. The focus of the group is to coordinate, develop and implement a regional public awareness media campaign promoting nonpoint stormwater pollution prevention.

Clark County will continue to participate in the coalition's regional awareness campaign through the remainder of the permit term, including the new River Starts Here campaign in 2015. It is anticipated that once the contract term expires in 2016, Clark County will discontinue this service.

Educational information is on the Web at www.theriverstartshere.org.

Canines for Clean Water

The Canines for Clean Water program provides information to dog owners about proper management and disposal of pet waste. The program's web page provides educational information, directions for properly managing and disposing of pet waste, and a pledge for dog owners to pick up after their dogs. In 2015, more than 75 pet owners participated in pledging.

An outreach specialist will oversee the program and complete the majority of the tasks including receiving pledges, mailing materials, and keeping program materials up to date.

The program web page also provides information for community members to work in their neighborhood to support pet waste pick-up. Signs are available to place in yards and common pet walking areas.

Green Neighbors Program

Clark County launched the Green Neighbors program in 2012. The program, which promotes sustainable practices (including stormwater runoff and pollution prevention) to homeowners is web-based (www.clarkgreenneighbors.org), however, will host workshops and other educational events, including information on what homeowners can do to protect minimize polluted stormwater runoff.

Natural Yard Care Technical Assistance

Managed by the Green Neighbors staff, Clark County provides technical assistance for natural yard care. The technical assistance consists of a 4-class series on natural gardening and will cover a variety of topics to help property owners develop landscapes that conserve water, reduce maintenance and the need for chemicals.

The program served 75 property owners in 2015 and will serve another 75 in 2016. There is a waiting list of over 125 property owners (without additional advertising).

Web Site

The Clean Water Division operates a web site at www.clark.wa.gov/stormwater , as well as specific program sites, that showcase information about stormwater pollution and prevention techniques aimed at all audiences. The site also contains information on endangered species at www.clark.wa.gov/environmental-services/endangered-species-act, with multiple links to additional resources on endangered species.

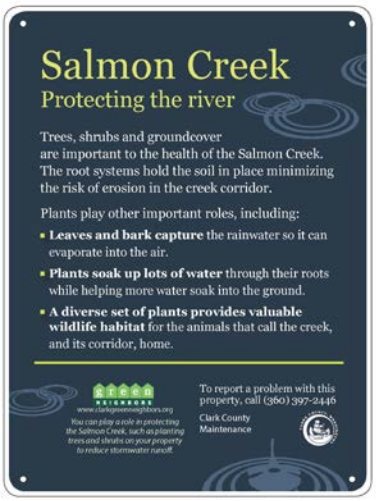
The web site also contains a web page dedicated to "What you can do for clean water." The page includes educational information and stewardship opportunities for home projects, community projects, schools, businesses and property managers.

The Web site is updated on a monthly basis or as needed primarily by the DES Clean Water Division staff.

Publications and Displays

Environmental Services staff will produce displays and publications generally as a part of specific program areas, such as pet waste management, natural gardening to prevent toxic runoff, pollution prevention techniques, and others.

Many displays and publications are in stock and ready for distribution. Staff will continue to display and distribute them at community events, targeted environmental events, Clean Water Division presentations, and Clean Water Commission meetings.



An additional tool has been developed to include interpretive signs on county capital projects. Interpretive / educational messages are tailored to each site. Typical messaging includes information on watersheds, value of the stormwater project, value of protecting water quality, and contact information for the Green Neighbors program.

Outreach Events

Environmental Services outreach specialists staff informational booths at a variety of community events. Outreach includes information about water quality, the effects of stormwater pollution and pollution prevention along with other environmental messages about recycling, solid waste, toxics control, etc.

Environmental Services partners with Clark County Community Development to use the "Planet Clark" trailer containing environmental displays, including a stormwater display, for educational outreach. The trailer is set up at numerous community events each year.

Outputs

- Web pages, www.cleanriversandstreams.org, and www.cleanwaterdogs.com
- Public contacts at events
- Natural Yard Care workshops
- Fact sheets / brochures / Informational signage
- Pledges to pick up pet waste
- Collateral materials such as stickers, magnets, etc.

Education for Businesses

Purpose

Education for businesses helps meet county goals for assisting commercial, industrial, and governmental enterprises in preventing contribution of pollutants to stormwater runoff or to receiving waters. Outreach and assistance will focus on:

- General stormwater issues
- Information about illicit discharges

- Preventing and controlling the discharge of contaminants through proper use of Best Management Practices
- Equipment maintenance.

Responsibilities

Most activities for this requirement are conducted concurrently or in association with procedures described elsewhere in the SWMP to complete source control inspections. Responsibilities are described in their respective sections.

Clark County Green Business Program

Clark County's Green Business Program (www.clarkgreenbiz.com) recognizes and promotes local businesses that document "green" practices, including stormwater BMPs. The program currently supports over 50 local businesses that have completed sustainability assessments and have met the requirements to be a local Green Business.

Technical assistance visits and education to promote proper handling and disposal of toxic and hazardous materials and stormwater BMPs is an integral part of the program.

Targeted Messaging

The Clean Water Division has identified a number of businesses that would benefit from targeted messaging towards how their business can modify everyday practices to minimize pollution to stormwater. One specific messaging brochure was created providing information on proper dumpster management and maintenance.

Specific business types were also identified for mobile businesses that may have a large impact on surface water quality. Messaging in the brochure provides reminders of good business practices and certain activities to avoid (such as dumping any materials down storm drains like rinse water). Businesses include:

- Landscapers
- Mobile carpet cleaners
- Mobile surface cleaners (e.g. power washing, window washing, etc.)

Staff also created English and Spanish language mop bucket management posters for businesses. Staff have identified instances of local businesses (i.e. restaurants) that dump their wash buckets into the MS4.

Fueling Station Spill Management – outreach assessment

Specific messaging was developed in 2015 for fueling station owners and operators to address spill response and management. To meet permit requirement S5.C.5.10.c, staff created a coordinated outreach program to identify current spill response protocols (via survey), develop outreach materials (brochure, spill plan, and poster) as well as a final report of the effort.

Staff conducted on-site technical visits to all 54 businesses for pre- and post-education visits. The visits identified key targets for outreach to businesses to affect behavior that will protect the MS4. Targets include on-site visits, communication with staff and owner, inspect stormwater features on site and determine risk to MS4. Review spill management tools, use and reporting is key to successfully minimizing impacts to the MS4.

Outputs

- www.clarkgreenbiz.com
- Other outputs listed in relevant sections
- Targeted business materials, spill response, etc.

Education for Homeowners, Landscapers and Property Managers

Purpose

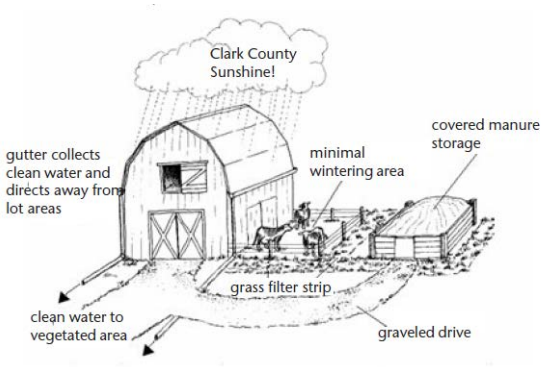
Homeowners, landscapers and property managers are caretakers for a large percentage of the county's impervious surfaces, such as roofs and driveways, as well as lawn and landscaped areas that may contribute pollutants to runoff. Education messages will focus on the following topics:

- Impacts of stormwater on surface waters.
- Rural property management techniques.
- Yard care techniques.
- Proper storage and use of pesticides, fertilizers, and other chemicals.
- Proper maintenance of stormwater treatment and flow control facilities.
- Low Impact Development principles and practices.
- Proper maintenance of vehicles, equipment and home/buildings.
- Proper techniques for carpet cleaning and auto repair.

Responsibilities Matrix

Task	DES CWD Manager	DES Communications Coordinator	DES Outreach Project Coordinator	Agencies Providing Services
Coordinate education programs	A	C	P	C
Track and measure deliverables	A	C	P	S
Create messages, programs and collateral	A	C	P	P
Distribute messages and collateral	A	C	P	P
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted				

Small Acreage Education Program



The Small Acreage program, funded by the Clean Water Division in partnership with WSU Clark County Extension, provides educational workshops and other outreach to residents on water quality topics unique to rural properties.

The goal of the Small Acreage (SA) program is to reduce pollution entering storm and surface water coming from residential and agricultural properties by giving residents the knowledge and skills necessary to manage their land and animals.

WSU Clark County Extension will provide one full-time program coordinator and oversight by the Extension director. The coordinator will facilitate workshops, training sessions, and follow-up activities. The coordinator also will attend community events to recruit new trainees.

The DES education and outreach program coordinator will track deliverables of the program and negotiate the annual scope of work with the Extension director. Extension will submit quarterly and annual reports detailing deliverables.

Workshops

The Small Acreage program offers workshops throughout the year on issues of interest to rural landowners. Topics include mud and manure management, pasture management, wells and septic maintenance, and fencing for livestock.

The SA program coordinator will coordinate and give most presentations.

Living on the Land: Stewardship for Small Acreages

For those landowners who seek more in-depth information, the program offers a 12-week training series twice a year. During training, each participant creates a workable plan for his or her property using knowledge gained in class.

The SA program coordinator will coordinate each training and follow-up activities.

The SA program coordinator will offer "Model Farm" recognition signage to graduates who implement a plan to protect water quality on their properties.

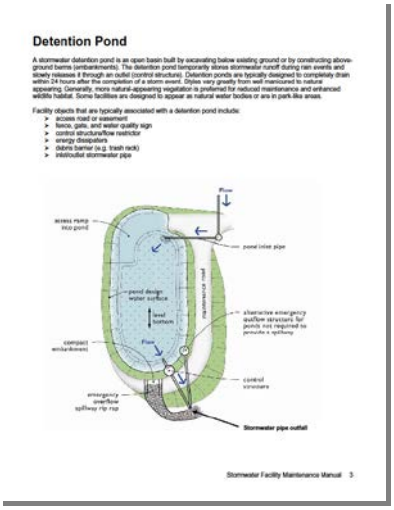
The *Living on the Land: Stewardship for Small Acreages* class series graduated 30 people in 2015. The program attracted 62 participants to BMP workshops on rainwater harvesting, pasture establishment and renovation, and weed management. Three well and septic inspection certification and maintenance workshops garnered 143 participants, while 31 people attended two small acreage property tours. The small acreage Expo brought in 97 people, while 1,038 people toured farms at the Harvest Celebration.

Targeted Outreach for Workshops and Presentations

Clark County participates in the Local Interagency Networking Cooperative (LINC), an education and outreach partnership between Clark County departments of Environmental Services and Public Health, City of Vancouver Department of Public Works, Clark Regional Wastewater District and the Washington States departments of Agriculture and Labor & Industries.

Regulated Facility Maintenance Inspections

Clark County combines site visits for regulated stormwater facility maintenance inspection with delivery of technical assistance materials such as relevant pages from the *Stormwater Facility Maintenance Manual*. Refer to the "Operating and Maintaining the Storm Sewer System, County Property, and Roadways" section on page 26 for a complete description of the process.


Detention Pond

A stormwater detention pond is an open basin built by excavating below existing ground or by constructing above-ground berms (embankments). The detention pond temporarily stores stormwater runoff during rain events and slowly releases it through an outlet (control structure). Detention ponds are typically designed to completely drain within 24 hours after the completion of a storm event. Styles vary greatly from well manicured to natural appearing. Generally, more natural-appearing vegetation is preferred for reduced maintenance and enhanced wildlife habitat. Some facilities are designed to appear as natural water bodies or are in park-like areas.

Facility objects that are typically associated with a detention pond include:

- access road or easement
- fence, gate, and water quality sign
- control structure/flow restrictor
- energy dissipaters
- debris barrier (e.g. trash rack)
- inlet/outlet stormwater pipe

Stormwater Facility Maintenance Manual 3

Stormwater Facility Assistance & Stormwater Partners

Clark County continues to partner with municipalities within the county in the Stormwater Partners of SW Washington, a program to provide common stormwater messages and education and guidance to the public on how to properly maintain privately-owned stormwater treatment and flow control facilities.

The Stormwater Partners Web site (www.stormwaterpartners.com) contains how-to videos and a user-friendly guidebook, as well as traditional outreach materials, such as brochures, door hangers, and newsletters.

The Clean Water Division education and outreach coordinator will continue to work with the Stormwater Partners to develop and implement additional activities.

Low Impact Development Training (LID)

Clark County staff has several tools for educating the public on LID, including a tour book of LID sites in Clark County. The book is in hard copy as well as a Google map on the Stormwater Partners web page.

Clark County has developed a series of outreach tools to help residents modify their homes and yards to minimize pollution to stormwater runoff.

Homeowner Targeted Messaging

- Grasscycling – Natural yard care to maintain healthy lawns without chemicals
- Demonstration site information – A demonstration home garden site has been established at a local park (Pacific Community Park) to educate on home to manage diverse home landscapes while conversing and protecting water. More information is on the project web page.
- Technical Assistance for Natural Gardening – this program offers technical assistance to homeowners to improve yards to minimize water use, runoff, and the use of native plants and creation of wildlife habitat.

Related Activities

Other Environmental Services programs distribute information about water quality, the effects of stormwater pollution, and pollution prevention techniques as integral parts of their program outreach and education messages to the general public.

- Naturally Beautiful Backyards curriculum delivered through a contract with WSU Clark County Extension's Master Gardeners program - less toxic gardening and yard care
- Master Composter Recyclers - less toxic gardening and yard care
- Hazardous Waste Reduction - proper disposal of household and business hazardous wastes
- Recycling A-Z Web site at www.recyclinga-z.com – proper disposal of tires, electronics and household hazardous waste

Outputs

- Fact sheets
- Workshops
- Videos
- Landowner trainings
- Staff LID training
- LID site tour guidebook
- Collateral materials

Education for Development and Construction Community and County Planners and Reviewers

Purpose

The individuals, businesses and agencies involved in development project planning and construction (both regulated communities and the regulators) have great influence on the impacts of stormwater from new development and redevelopment. Education to these communities will focus on the following topics:

- Technical standards for stormwater site and erosion control plans.
- Low impact development techniques.
- Stormwater treatment and flow control BMPs and facilities.

Responsibilities Matrix

Task	DES CWD Manager	DES Outreach Project Coordinator	DES CWD Permit Manager	DES CWD NRS	Comm. Dev.	PW Dev. Eng.
Code update outreach	A	P	P	O	I	S
Construction Management training	A	O	P	O	O	O
Facility inspection training	A	O	S	P	O	O
WWHM training	A	O	S	O	I	I
CD web site	O	O	O	O	A / P	C
Pre-application conference	O	O	O	O	A / P	P
Small Projects BMP handout	A	S	S	O	P	O
DEAB	I	O	O	O	I	P

A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted

Workshops and Presentations

Stormwater Facility Inspection Training

Public Works Construction Management has an ongoing stormwater facility inspection program. Training will be provided to new inspectors or when there is a change in procedures or manual requirements. Staff are also trained to be certified erosion and sedimentation control leads.

Training on Demand

Clean Water Division staff will provide training, code interpretation, BMP manual interpretation and informational materials to technical, professional and field workers as requested.

Education Delivered Through Development Review

Many active development community stakeholders receive educational and outreach messages about stormwater and erosion control and water quality topics as an integral aspect of the regulatory development review process, including individual residential building permits.

For detailed information on the development review process, see Regulatory Program for Development, Redevelopment, and Construction Projects on page 73.

Community Development Web Site

The Clark County department of Community Development hosts a Web site devoted to compliance with erosion control measures at http://www.clark.wa.gov/development/building/erosion.html

Pre-Application Conference

All Type II and Type III development applications require the applicant to attend a pre-application conference with county planners and engineers where, among other topics, stormwater and erosion control requirements and submittal requirements are reviewed.

Clark County Stormwater Manual

The *Clark County Stormwater Manual*, which guides applicants for development and new development through stormwater requirements and submittal requirements, contains educational messages about the importance of stormwater management. Training is provided on the 2015 Clark County Stormwater Manual for engineering professionals and project reviewers. Training materials are posted on the county webpage. Training will be performed for builders and contractors.

Small Project BMP Handouts for Permit Center

Clark County provides BMP packet handouts for small projects that are required to have stormwater site plans, erosion controls and on-site stormwater management BMPs

but don't require an engineered design. The target audience is mainly applicants for single family residential building permits and other small building projects.

Development Engineering Advisory Board

The Development Engineering Advisory Board (DEAB) is a technical and policy review body reporting to the Board of Clark County Councilors. The DEAB also serves as a mechanism for coordinating with the development community and consulting engineers to distribute information and organize training.

Outputs

- Presentations
- Employee training
- Development community training
- Small Project BMP Handout
- Sustainable and affordable development reports
- Educational messages in *Clark County Stormwater Manual 2015*

Education for Students

Purpose

Students are the next generation to own property, own or manage businesses, or simply live, work, and recreate in Clark County. Education for students will focus on the following topics:

- Raising awareness of the importance of clean water.
- Introducing the idea of pollutants entering water through stormwater.

Responsibilities Matrix

Task	DES Clean Water Manager	DES Outreach Project Coordinator	Agencies Providing Services
Coordinate education programs	A	P	C
Track and measure deliverables	A	P	S
Create messages, programs and collateral	A	P	P
Distribute messages and collateral	A	P	P

A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted

Student Water Quality Monitoring Program

In partnership with City of Vancouver, Clark County involves K – 12 grade students in water quality monitoring of sites near their schools. Teachers and students receive mentoring in water quality and macroinvertebrate monitoring, and conduct stream studies. Students share their findings with peers and the community at an annual Student Watershed Congress.

Program activities and outreach will be conducted primarily by City of Vancouver staff. Clark County staff will negotiate the annual scope of work and track deliverables.

County staff may participate in the Student Watershed Congress as facilitators or judges during student presentations.

Student Outreach Program

In 2014, Clark County partnered with the City of Vancouver to receive a GROSS grant that would expand student monitoring and educational outreach, "Connecting Schools and Families to Healthy Stormwater Actions." The grant provided the following additional activities for students in the Clark County school districts. All materials are available to teachers and students on the City's web page: www.cityofvancouver.us/publicworks/page/watershed-monitoring-network-investigations-and-resources.

- Land-based stormwater impact monitoring investigations (tied to Washington K-12 Learning Standards). The field investigations cover several key topics, such as soils, plants and water quality
    - Temperature, pH and Dissolved Oxygen
    - Nitrate and Phosphate
    - Turbidity and Stream Measurements
- Hands-on toolkits to build stormwater projects on or near school sites (i.e. rain gardens, etc.)
- Host "Watershed Family Science Festivals" throughout the school year (up to three activities were conducted)

Washington Green Schools

Environmental Services helped launch the statewide Washington Green Schools program. A non-profit organization now runs the program full time, with financial support from Clark County and other entities. http://www.wagreenschools.org/

Schools complete assessments in five environmental categories, including water. More than 65 schools in Clark County currently participate in the program. A sustainability specialist serves as a resource for local participating Green Schools.

The School Grounds Assessment covers stormwater management and use on school grounds, as well as natural landscaping techniques to reduce chemical use on schoolgrounds. Outreach staff have created activity sheets related to stormwater to assist schools with completing the forms. Activity sheets are available on the "What You Can Do for Clean Water" web page.

Outputs

- Student Watershed Monitoring Network and Watershed Congress
- Washington Green Schools (school grounds and water activity sheets)
- Connecting Schools and Families to Healthy Stormwater Actions outreach to students

Stewardship Opportunities

Purpose

Per the NPDES Permit S5.C.10.b, the county shall create stewardship opportunities and/or partner with existing organizations to encourage residents to participate in educational activities. The county has restructured hands-on activities to include the following:

- Storm drain marking – kits are available to citizens, businesses, and community groups to mark drains on private property or local roads less than 25 mph.
- River-friendly car wash kit – This kit is available to businesses that host community charity car washes for local community groups.
- Build bat boxes at stormwater facilities – A great project for neighborhoods or scouts, the county is encouraging the location of bat boxes in the urban to promote habitat. Educational signage is then included at the site.
- Other individual site projects – Other projects are available based on the site, such as informational kiosk construction. Community projects build the kiosk and the county provides signage / poster / educational materials to post that tell about the site, the watershed and key messages.
- Planting projects are available to citizens through local organizations such as the Vancouver Watershed Alliance, Clark PUD Stream Team and the Lower Columbia Estuary Partnership along riparian areas and critical habitat zones.

TIMELINE

Ongoing

- ✔ Educate the general public
- ✔ Educate businesses
- ✔ Educate homeowners, landscapers, and property managers
- ✔ Educate the development and land use planning community

2016-2018

- ❑ Continue to increase awareness and education for homeowners, landscapers and property managers
- ❑ Continue to affect behavior through hands on activities, workshops, trainings and stewardship.
  - ✓ Measure the understanding and adoption of target behaviors for a target audience (fueling stations)

FOR MORE INFORMATION ON PROGRAMS TO PROVIDE EDUCATION AND OUTREACH ABOUT STORMWATER AND THE SWMP

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Section 7
Coordination

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County Policies, Rules and Regulations 116
Intra-governmental Coordination 117
Intergovernmental Coordination 120

Clark County coordinates internally and with other local governments and agencies on a variety of environmental and planning topics.

Regulatory Requirements Summary

NPDES Permit S5.C.3 – Coordination

The NPDES Permit requires the county to coordinate among its own departments and with neighboring jurisdictions to eliminate barriers to permit compliance and to encourage coordinated stormwater policies, programs and projects within a watershed.

County Policies, Rules and Regulations

The following policies and regulations promote permit implementation by county departments.

Clark County Code Chapter 13.26A – Water Quality

Chapter 13.26A requires inspection and maintenance of all public and private stormwater facilities and stormwater disposal wells in accordance with the *Clark County Stormwater Manual* that provides source control BMPs for materials handling, landscape management, trash management and building exterior maintenance. This manual is equivalent to maintenance standards in Volume V and source control standards in Volume IV of the *SMMWW*.

Environmentally Responsible Purchasing Policy

Clark County adopted its Environmentally Responsible Purchasing Policy in 2004. One element addresses purchase of landscaping and

vegetation maintenance products, including pesticides. The policy establishes 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. The policy promotes a coordinated approach to the pesticide and fertilizer use reduction.

Regional Road Maintenance Program

Clark County has been a member of the ESA Regional Road Maintenance Forum since 2003. The group assisted the county in developing a Regional Road Maintenance Program that is designed to meet the requirements of the Endangered Species Act (ESA). In 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. The program promotes systematic adherence to pollution control standards for road operations.

Intra-governmental Coordination

Purpose

Intra-governmental coordination helps ensure cooperation of all Clark County departments in meeting the terms of the NPDES Municipal Stormwater Permit and in protecting local water resources.

Responsibilities

Responsibility for negotiating interdepartmental and programmatic agreements lies with the Clean Water Division manager or a designee and with managers of coordinating programs and departments.

Responsibilities for implementing the agreed-upon activities are shown in detail in responsibility matrices and program descriptions in the appropriate sections.

Agreements

The Clean Water Division coordinates the county's NPDES Permit compliance efforts. Although the program coordinates with other departments, it is not responsible for all compliance actions. The Clean Water Division maintains memoranda of understanding or other agreement mechanisms with several county departments to support compliance. Agreements include services provided for payment by the CWD and description of permit requirements that must be met by departments.

Public Works Road and Parks Maintenance Divisions

Public Works completed an intra-departmental agreement between the Clean Water Division and the Road and Parks Maintenance Division to implement requirements under permit requirements 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 (SWPPs) for heavy equipment yards.
- Record keeping.
- Reporting requirements for the NPDES Permit annual report.

Public Works Development Engineering Division

Public Works provides development review services for enforcing Clark County Code Chapter 40.386 Stormwater and Erosion Control and its predecessor, Chapter 40.385.

Public Works provides the following services:

- Review and approval of development project applications.
- Administration of development project record keeping.
- Training for staff whose primary job duties include permitting and plan review.

Public Works Engineering and Construction Division

Public Works provides services to implement permit requirements under S5.C.5, S5.C.6 and S5.C.7.

Public Works provides the following services:

- Project management for stormwater capital improvements.
- Design and construction management for stormwater capital improvements.
- Capital planning assistance.
- Development site inspection.
- Program to inspect stormwater facilities during maintenance warranty.
- Enforce stormwater, erosion control, and water quality codes.
- Inspection program record keeping.
- Regulated stormwater facility inspection and follow-up.
- Training for staff whose primary job duties include design, construction site inspection, and enforcement.

Community Development

Department of Environmental Services maintains an interdepartmental agreement with Community Development to implement requirements under permit requirement S5.C.5, including:

- Accept development applications.
- Review site plans for residential building projects that do not require engineered designs.
- Review and inspect erosion controls, on-site stormwater controls at residential building sites, primarily single-family residential construction sites.
- Enforce stormwater, erosion control, and water quality codes.
- Maintain records of applications, reviews, inspections and enforcement actions.
- Training for staff whose primary job duties include permitting and plan review.

General Services

The Clean Water Division established an interdepartmental agreement with General Services that includes operation and maintenance of stormwater facilities, use of source control BMPs, and technical assistance and training from Environmental Services.

GIS Department and Application Services

Department of Environmental Services maintains an agreement with the GIS Department for various services that support SWMP implementation, including administration of the county's storm sewer infrastructure asset database, *StormwaterClk*, the stormwater asset Maintenance Management System, stormwater fee database administration, software support, GIS data used for capital planning and monitoring studies, developing Web applications and internet access to program information, and database development.

Other Intra-governmental Coordination

The Clean Water Division also coordinates informally with other county programs and departments on various stormwater-related and environmental efforts.

Public Health

The Clean Water Division coordinates with Clark County Public Health on spill responses, illicit discharge investigations, and other environmental complaints.

Outputs

- Interdepartmental memoranda of understanding for services and permit requirements performed

Intergovernmental Coordination

Purpose

Clark County informally coordinates with Phase II permittees and other local organizations to control pollutants between physically interconnected storm sewer systems, to attempt to provide consistent stormwater management for shared water bodies and to collaborate on permit implementation tools and TMDL implementation.

Responsibilities Matrix

Task	DES Director	DES CWD Manager	DES NPDES Permit Manager	DES Infrastructure Manager	DES Legacy Lands Manager	DES Project Coordinator
VLWP Steering Committee rep.	A	P	O	S	O	P
VLWP TAC representative	A	S	O	P	O	O
Provide input to TMDL DIPs	O	A	S	P	O	O
TMDL advisory committees rep.	O	A	S	P	O	O
WRIA Planning coordination	A	S	S	S	P	O
A = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted						

Coordination to Clarify Roles and Responsibilities for Interconnected Systems

The Clean Water Division has identified approximately 500 connection points between the county MS4 and other municipal entities such as cities and WSDOT right of way. Within the urban area, the Clean Water Division assesses the potential for intersystem pollutant discharges using IDDE procedures.

Clark County has informal discussions with NPDES Phase II permittees regarding mapping and illicit discharge screening programs. Clark County will develop a more formal agreement during the permit term.

General Intergovernmental Coordination

Clark County participates with other local governments and agencies on several joint efforts, including:

- Shared education and outreach programs with the city of Vancouver
- A regional education program covering facility maintenance to stormwater facility owners within Vancouver, Battle Ground, Camas, Washougal, Ridgefield, and La Center
- Operation of the regional street waste decant facility with WSDOT, Vancouver, Battle Ground, Camas, and Washougal

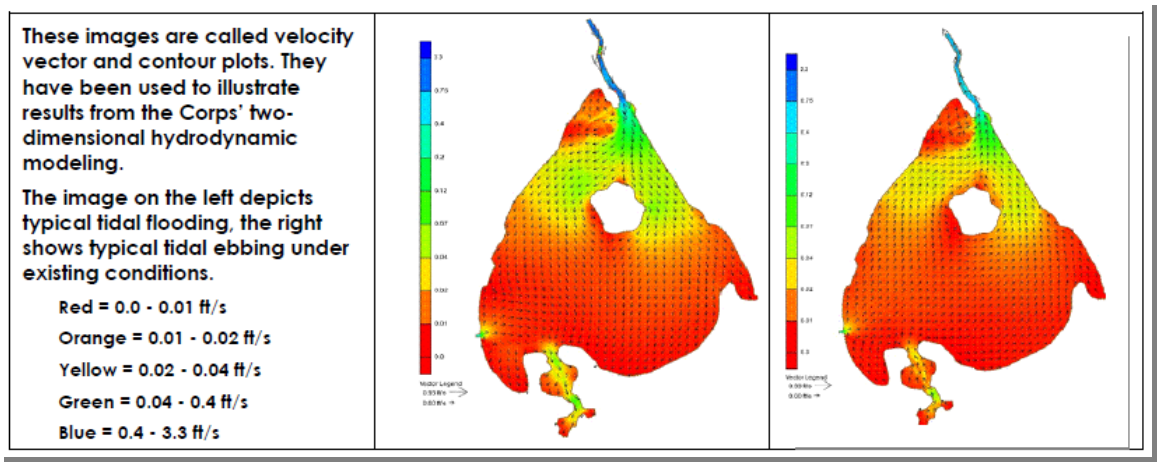
Coordination for Shared Water Bodies: Vancouver Lake Watershed Partnership

The Vancouver Lake Watershed Partnership (VLWP) was established through an intergovernmental agreement between the Port of Vancouver, the city of Vancouver, Clark County, and Vancouver-Clark Parks and Recreation. Other participants include the Fruit Valley Neighborhood Association, the Port of Ridgefield, Clark Public Utilities, Washington Department of Fish and Wildlife, Washington Department of Natural Resources, Washington Department of Ecology, the U.S. Army Corps of Engineers, the Lower Columbia River Estuary Partnership, and nine citizen members.

The partnership was formed to consider the community vision and strategies to manage Vancouver Lake.

Clark County will continue to act as the financial manager for the partnership.

The Clean Water Division will continue to provide a representative to the Steering Committee and a representative to attend general Partnership meetings in support of ongoing work. The Clean Water Division manager and a Program Coordinator with public outreach expertise will share these responsibilities. Efforts in 2016 will focus primarily on public engagement and outreach activities.



Images from the Vancouver Lake Watershed Partnership 2008 Annual Report

TMDL Coordination

Clark County coordinates with other local entities on TMDL implementation. Upon request, the NPDES Permit Manager will provide input to Ecology in development and update of Detailed Implementation Plans. The Stormwater Infrastructure Manager will continue to participate on the local advisory committees for the following existing or emerging TMDL water bodies:

- Burnt Bridge Creek Watershed

- East Fork Lewis River
- Gibbons Creek
- Salmon Creek
- Lacamas Creek

Clark County complies with TMDL requirements by implementing its Stormwater Management Program.

Water Resources Inventory Area (WRIA) Planning

The Legacy Lands Manager will coordinate with Ecology, the Lower Columbia Fish Recovery Board and local partners for WRIA plan development and implementation for WRIA 27 and WRIA 28. Goals of the WRIA plan include improving stream habitat and low flows, which are compatible with stormwater program objectives and actions.

Outputs

- Various outputs from education and outreach programs (see section 6)
- Vancouver Lake Watershed Partnership reports and publications
- Notes and summaries from each TMDL's Advisory Committee meetings
- WRIA Plan implementation input from Clark County

FOR MORE INFORMATION ON WAYS THE COUNTY COORDINATES WITH OTHER JURISDICTIONS AND PERMITTEES

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Chapter 3
Assessment and Monitoring

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County staff monitoring water quality at the Jones Creek stream gauge

Assessment and Monitoring

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BMP Effectiveness Monitoring 128
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Monitoring Resource Center 130

Clark County is a regional leader in natural resource monitoring and assessment. The Assessment and Monitoring section implements a variety of projects to collect scientific data about stormwater, surface waters, stream corridor condition, and habitat to support and implement NPDES permit requirements.

The core goal is to provide information leading to successful on-the-ground actions that improve natural resources in Clark County. The program utilizes sound science and data collection practices to inform the county's policy and program management decisions, and provide information vital to the success of Clark County programs.

Regulatory Requirements Summary

NPDES Permit – S8 Monitoring

The NPDES Permit requires the county to develop and implement a monitoring program with two components: 1) characterize status and trends in stormwater runoff quantity and quality, and 2) evaluate the effectiveness stormwater management BMPs.

NPDES Permit – S5.C.5 Controlling Runoff from New Development, Redevelopment and Construction Sites

The NPDES Permit allows flow control regulations for controlling runoff on development sites to be tailored to local circumstances through the use of basin plans. The alternate requirements must provide equal or similar protection of receiving waters and equal or similar levels of pollutant control as compared to Appendix 1 of the permit.

The permit also allows alternative flow control or treatment requirements to be tailored on a local basis through the adoption of basin plans.

Clark County Code Chapter 40.386 – Stormwater and Erosion Control

Clark County regulates stormwater runoff and erosion control on development, redevelopment, and construction sites in Chapter 40.386 Stormwater and Erosion Control. The purpose of the code is to safeguard public health, safety, and welfare by protecting the quality of surface and ground waters for drinking water supply, recreation, fishing and other beneficial uses through the application of BMPs for stormwater management and erosion control. It was adopted to minimize the degradation of receiving waters from impacts attributable to stormwater runoff, thereby not precluding the preservation of future restoration of beneficial uses.

At present, the code applies flow control regulations equally across all subwatersheds in the county with one exception. Most recently, the 2015 Clark County Stormwater Manual adopts an alternative standard for Mill Creek. The Mill Creek standard allows projects draining to Mill Creek below Dollars Corner to use pasture for predevelopment land cover for areas not forested in 2002 aerial photographs. This alternative recognizes watershed hydrology and stream hydraulics formed by over a century of agricultural land uses.

Tools that Support Permit Compliance

The Assessment and Monitoring section provides the tools and staffing to support completion of permit-required Watershed-Scale Stormwater Planning technical analysis and the permit's S8 stormwater monitoring requirements. These are standard procedures for collecting environmental data, database systems for storing data, quality assurance and quality control procedures, and methods to analyze and present data results.

Standard Procedures for Monitoring Activities

The Clean Water Division maintains the *Standard Procedures for Monitoring Activities* for use in guiding field and laboratory work. It details the protocols and means used to generate data.

Water Quality Database

The *Water Quality Database* (WQDB) is a centralized repository for the Clean Water Division's water quality and benthic macroinvertebrate data. The WQDB is a SQL 2000® database with Access® interfaces for data entry and retrieval. A batch uploading tool enables rapid entry of large datasets.

Capital Planning Database

The *Capital Planning Database* is an integrated data management system for tracking information about stream problems and project opportunities from discovery through implementation. The tool is a SQL 2000® geodatabase with two interfaces: 1) an Access® interface for tracking data relating to stormwater capital projects and 2) an ArcMap® interface for photos and data relating to stream problems and project opportunities.

Hydrology Databases

Data from the county's hydrologic and stormwater monitoring sites (storm flow, stream flow and rainfall gages) is stored in an Aquarius® database.

Monitoring

Stormwater Characterization Monitoring

Purpose

Stormwater monitoring includes projects that address an ongoing need for information about the quality of stormwater stemming from different land uses, the effectiveness of specific stormwater facilities in controlling flow and pollutants, and the ability of management activities to improve stormwater quality.

Stormwater Characterization is a multi-year project evaluating stormwater quality from one commercial and one high-density suburban residential area under Permit requirement S8.B. The project focuses on characterizing runoff from typical land uses and describing long-term changes in pollutant loading and stormwater quality as the stormwater management program is implemented.

Methodology

Stormwater characterization monitoring utilizes sophisticated automatic sampling equipment and technology to collect data and samples from targeted locations. The county has made a significant investment in the installation of stormwater monitoring stations, including data recorders, sensors, telemetry equipment, and water/sediment samplers that are programmed to operate during targeted storm and runoff events.

Multiple samples are collected for individual storms to create a composite of each storm that represents the average chemical composition of the entire storm. The samples are sent to an analytical lab to be tested for scores of pollutants. Continuous flow data is collected to calculate pollutant loads. Additional water and sediment samples are collected for characterization and toxicity testing during first-flush storm events.

Outputs

- Annual stormwater data reports and pollutant loads for two sites
- Enter stormwater data into the Ecology EIM database

Crews install a weir at a treatment wetland BMP monitoring site

BMP Effectiveness Monitoring

Best Management Practice Effectiveness Monitoring is a project proposal under requirement S8.C. to continue a permeable paver installation monitored under the 2007 permit. As required by the permit, Clark County submitted a project proposal to Ecology in February 2014. The proposal was approved by Ecology in September 2014, with a detailed draft monitoring plan submitted for Ecology approval in January 2015. The project began implementation in late 2015 and will be completely underway in 2016.

The county is also required to pay into a collective fund managed by Ecology for effectiveness studies. By electing to perform two effectiveness studies on its own the

county's annual payments to Ecology will be $43,308 and will begin in 2014 through the permit term.

Illicit Discharge Monitoring

This activity is described in detail in Illicit Connections and Illicit Discharges Detection and Elimination (IDDE) on page 51.

Other Functions

Stream bed stability testing in the Mill Creek subwatershed, 2009

Monitoring Resource Center

Purpose

The Volunteer Monitoring Resource Center lends monitoring equipment to volunteers who wish to monitor water bodies in Clark County. The program loans sampling equipment and professional-grade field meters. Staff scientists provide limited overview of how to use the equipment for their project.

Method

Staff assemble, calibrate, and track equipment on loan to qualified borrowers. Citizens can visit the volunteer website for equipment checklists and resource information to support a successful project. The web page is: https://www.clark.wa.gov/environmental-services/volunteer-monitoring-resources

Many of the users for this service are related to school research or neighborhood information.

Outputs during Permit Term

- Log of Monitoring Resource Center borrowers
- Log of data requests

Outcomes during Permit Term

- Equipment checkouts to individuals, agencies and groups

For more information on services provided by the Assessment and Monitoring section

Rod Swanson, Clean Water Division NPDES Permit Manager, 397-2121, x4581
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Appendix A. Stormwater Management Plan 2016 -- Capital Projects List

Project Name	Type[1]	Start Year	Status[2]	End Year	Cost Estimate	Funding (%)			WQ Benefit	Hydro Benefit	Hydro Benefit #	Retrofit Incentive	Other Benefit	Monitoring Planned	Lat	Long	Receiving Water Body	Comments
						Local	State	Federal										
Parkside Manor SWF Retrofit	3	2009	4	2013	$950K	25%	75%	0%	809.0	43%	1	12.000	None	No	45.727247	-122.674051	Whipple Creek	Retrofit to combine and improve three undersized facilities; partially funded by Ecology grant G1200577
Stones Throw SWF Repair	5	2011	4	2013	$170K	100%	0%	0%	NA	NA		0.500	None	No	45.663706	-122.604186	Burnt Bridge Creek	Facility repair >25K
Thomas Wetland East SWF	2	2009	4	2014	$2.2M	55%	45%	0%	2,686.0	26%	1	91.500	improve wetland habitat and recreation	No	45.661303	-122.618772	Burnt Bridge Creek	Construction of new stormwater wetland; partially funded by Ecology grant G1200576
Drywell Retrofits	3	2011	3	2015	$723K	47%	53%	0%	868.0	NA		18.300	None	No	45.679741	-122.516272	Groundwater	Installation of treatment BMPs upstream of drywells; partially funded by Ecology grant G1200566
Harding Farms SWF Retrofit	3	2009	2	2016	$1.2M	17%	83%	0%	952.0	11%	1	50.750	improve wetland habitat	No	45.712419	-122.630671	Salmon Creek	Retrofit to provide stormwater treatment and wetland enhancement; partially funded by 2013 Legislative Proviso
Flume Creek Riparian Acquisition	6	2012	1	2015	$2.2M	41%	59%	0%	NA	NA		82.500	None	No	45.792906	-122.736473	Flume Creek	Purchase of priority riparian habitat; partially funded by Grant #12-1504 through the Salmon Recovery Funding Board administered by the state Recreation and Conservation Office.
Schmid Riparian Acquisition	6	2012	1	2015	$500K	100%	0%	0%	NA	NA		10.325	None	No	45.585013	-122.339341	Washougal River	Purchase of priority riparian habitat
Poch Riparian Acquisition	6	2012	5	-	$130K	100%	0%	0%	NA	NA		2.680	None	No	45.737449	-122.559108	Salmon Creek	Purchase of priority riparian habitat (2014 project abandoned per Board of Clark County Commissioners)
Catch Basin Treatment Retrofits	3	2014	2	2018	$320K	100%	0%	0%	NA	NA		NA	None	No	tbd	tbd	tbd	Install water quality treatment retrofits for catch basins in priority areas with no existing stormwater treatment
UIC Water Quality Retrofits	11	2015	1	2018	$250K	100%	0%	0%	NA	NA		NA	None	No	tbd	tbd	tbd	Decommission existing UIC wells identified as high threat to groundwater
Trillium Park Subdivision SWF Repair	5	2015	2	2016	$85K	100%	0%	0%	NA	NA		2.375	None	No	45.670968	-122.654877	Burnt Bridge Creek	Facility repair >25K
Cold Creek Court SWF Repair	5	2015	5		$140K	100%	0%	0%	NA	NA		0.575	None	No	45.671597	-122.620217	Cold Creek	Facility repair >25K. Project shelved 2016 due to utility conflicts and design constraints.
Whipple Creek Place SWF Repair	5	2016	1	2017	$150K	100%	0%	0%	NA	NA		11.500	None	No	45.731412	-122.677782	Whipple Creek	Facility repair >25K
Pleasant Valley Park 'B' SWF Repair/ Retrofit	5	2016	1	2017	$170K	100%	0%	0%	NA	NA		15.875	None	No	45.724768	-122.626537	Salmon Creek	Facility repair >25K
Andy's Acres (A) SWF Repair	5	2016	1	2017	$55K	100%	0%	0%	NA	NA		0.725	None	No	45.690239	-122.694724	Lakeshore	Facility repair >25K
40 et 8 Chateau SWF Repair/Retrofit	5	2017	1	2018	$300K	100%	0%	0%	NA	NA		6.075	None	No	45.678349	-122.643588	Salmon Creek	Facility repair >25K
Huyette Riparian Acquisition	6	2015	6	2015	$30K	100%	0%	0%	NA	NA		3.010	None	No	45.713031	-122.642938	Salmon Creek	Purchase of riparian habitat. Land value $90K; $60K gifted to county, $30K purchased
Whipple Creek II SWF Repair	5	2013	4	2015	$30K	100%	0%	0%	NA	NA		13.750	None	No	45.741523	-122.644710	Whipple Creek	Facility repair >25K

[1]Type	Description
1	New flow control facility, including Low Impact Development (LID) Best Management Practices (BMPs)
2	New treatment facility (or treatment and flow control facility), including LID BMPs
3	Retrofit of existing treatment and/or flow control facility
4	Property acquisition for water quality and/or flow control benefits (not associated with future facility)
5	Maintenance with capital construction costs ≥ $25,000
6	Property acquisition for riparian habitat
7	Restoration of forest cover
8	Restoration of riparian buffer
9	Floodplain reconnection projects on water bodies that are not flow control exempt per Appendix 1
10	Capital projects related to the MS4 which implement an Ecology approved basin or watershed plan
11	Other actions to address stormwater runoff into or from the MS4 not otherwise required in S5.C

[2]Status (as of December 31st of the reporting year)	Description
1	Planning
2	Design and permitting
3	Construction
4	Complete/Maintenance
5	Project cancelled
6	Property acquisition