CLARK COUNTY

# 2020 Stormwater Management Plan

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## 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)

**Council –** Clark County Council

**CCPH –** Clark County Public Health

**CCPW –** Clark County Public Works

**CCSM –** Clark County Stormwater Manual 2015 (Errata November 2016)

**CCSWMP –** Clark County Stormwater Management Plan

**CIP –** Capital Improvement Program

**County Manager –** Executive officer for Clark County

**CWD –** the Clean Water Division of Clark County Public Works

**Ecology –** Washington **State Department of Ecology**

**EPA –** Environmental Protection Agency

**GIS –** geographic information services

**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
**MMS** – maintenance manual system (MainStar)

**MS4 –** municipal separate storm sewer system

**NOAA Fisheries** - National Oceanic and Atmospheric Administration, National Marine Fisheries Service

**NOI –** Notice of Intent

**NPDES –** National Pollutant Discharge Elimination Systems

**PPGS –** potential pollutant generating site

**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
CCPW = Clark County Public Works

| ABBREVIATION | FULL STAFF TITLE | JOB DESCRIPTION |
|---|---|---|
| **Applicant** | (as stated) | Customer who utilizes the municipal code and stormwater manual to guide development projects |
| **CCPW Answering Service** | (as stated) | Coordinates after business hours service calls |
| **CCPW Code Enforcement** | (as stated) | Coordinates citizen complaints and code compliance |
| **CCPW PIO** | Public Information Officer | Supports the development and delivery of public outreach and educational materials |
| **CCPW Construction Mgmt. Eng.** | Construction Management Engineer | Reviews PW construction projects for compliance with approved plans and applicable regulations |
| **CCPW Construction Mgmt. Inspectors** | Construction Management Inspectors | Conducts on-site construction inspections to ensure compliance with approved plans and applicable regulations |
| **CCPW Construction Mgmt. OA** | Construction Management Office Assistant | Coordinates document management associated with project approvals |
| **CCPW Construction Mgmt. Supervisor** | Construction Management Supervisor | Oversees the compliance with inspections of development construction |
| **CCPW Construction Supervisor** | Construction Management | Oversees the compliance of development construction with approved plans and code |
| **CCPW CWD Admin.** | Clean Water Division Administration | Supports document control and recordkeeping |
| **CCPW CWD Eng.** | Clean Water Division Engineer | Coordinates design and engineering of Clean Water projects |
| **CCPW CWD Infrastructure Mgr.** | Clean Water Division Infrastructure Manager | Oversees / manages stormwater capital planning , infrastructure mapping and monitoring activities, coordinates stormwater infrastructure inspection and maintenance |
| **CCPW CWD Mgr.** | Clean Water Division Manager | Oversees and manages the Clean Water Division |
| **CCPW CWD Natural Res. Specialist** | Clean Water Division Natural Resource Specialist | Performs monitoring and illicit discharge field work and analysis |
| **CCPW CWD NPDES Mgr.** | Clean Water Division National Pollution Discharge Elimination System Permit Manager | Oversees compliance with the county's Phase I Municipal Stormwater Permit |
| **CCPW CWD OA** | Clean Water Division Office Assistant | Coordinates document control and recordkeeping |
| **CCPW CWD Outreach Specialist** | (as stated) | Coordinates, implements and evaluates outreach programs for Clean Water |
| **CCPW CWD Professional Staff** | (as stated) | Supports various work projects and products |

| ABBREVIATION | FULL STAFF TITLE | JOB DESCRIPTION |
|---|---|---|
| **CCPW CWD Program Coordinator** | (as stated) | Coordinates specific project tasks and work products, including outreach / education |
| **CCPW CWD Source Control Specialist** | Clean Water Division Source Control Specialist | Technical assistance with citizens and businesses to comply with facility maintenance and source control regulations |
| **CCPW CWD Sr. Eng. Tech** | Clean Water Division Senior Engineering Technician | Inventory and maps the stormwater system |
| **CCPW CWD Sr. Operations Specialist** | Clean Water Division Senior Environmental Operations Specialist | Technical assistance with citizens and businesses to comply with private stormwater facility maintenance |
| **CCPW Dev. Inspectors** | Development Inspectors | Coordinates inspections and education |
| | | |
| **CCPW Director** | (as stated) | Designated director for permit compliance |
| **CCPW Eng. Program Mgr.** | Engineering Program Manager | Oversees PW engineer activities |
| **CCPW Eng. Program Staff** | Engineering Program Staff | Develops engineering related materials |
| **CCPW Eng. Project Mgr.** | Engineering Project Manager | Manages engineering related projects |
| **CCPW Enhance. & Permitting Mgr.** | Enhancement and Permitting Manager | Coordinates environmental permitting for the department |
| **CCPW Land and Vegetation Mgr.** | Land and Vegetation Manager | Oversees the operations and maintenance of the vegetation management program |
| **CCPW Ops Admin.** | Operations Administration | Provides support to various tasks, such as spill response and citizen complaints |
| **CCPW Ops Crew Chief** | Operations Crew Chief | Leads and coordinates road crew activities |
| **CCPW Ops Mgr.** | Operations Manager | Oversees all operation and maintenance responsibilities |
| **CCPW Ops Road Crews** | Operations Road Crews | Perform all necessary road maintenance and operations activities to meet applicable standards and regulations |
| **CCPW Ops Road Super** | Operations Road Superintendent | Oversees all elements associated road maintenance and operations |
| **CCPW Parks and Lands Mgr.** | Parks and Lands Manager | Oversees all of the administration, customer service, maintenance and operations of parks and other county land management |
| **CCPW Parks Super.** | Parks Superintendent | Oversees the maintenance and operations of the parks |
| **CCPW Real Property Services** | (as stated) | Coordinates property related information, such as titles, legal information, etc. |
| **CCPW Regulated Facility Lead** | (as stated) | Coordinates regulated facility inspection and technical assistance. |
| **CCPW Survey** | (as stated) | Coordinates all necessary survey data required for a project |
| **CCPW Vegetation Mgmt. Crew** | Vegetation Management Crew | Performs all tasks associated with operations of the program |

| ABBREVIATION | FULL STAFF TITLE | JOB DESCRIPTION |
|---|---|---|
| **CD Building Official** | (as stated) | Oversees customer application for development, all building permits and permit counter. |
| **CD Building Safety** | (as stated) | Enforces erosion control regulations and stormwater for residential building permits |
| **CD Dev. Eng. Mgr.** | Development Engineering Manager | Oversees the engineering review of development applications |
| **CD Dev. Eng. Planning Tech** | Development Engineering Planning Technician | Reviews development applications for compliance with county code and regulations. Coordinates bonds, compliance and final plat |
| **CD Dev. Eng. Review Eng.** | Development Engineering Review Engineer | Conducts the engineering development review and participates in application meetings |
| **CD Dev. Services Mgr.** | Development Services Manager | Coordinates a pre-application conference with potential applicants and provides planning approvals |
| **CD Permit Services** | (as stated) | Coordinates review of development applications |
| **CD Permit Tech** | Permit technician | Processes permit applications |
| **CD Planner** | (as stated) | Supports the pre-application process and land use approvals |
| **Contract Services** | Outside firm or agency contracted with Clark County | Hired to meet specific scope of work items per the appropriate fund and need |
| **Council** | Clark | County Council |
| **Legal authority for permit compliance** | | |
| **County Mgr.** | County Manager | Executive official for Clark County |
| **CRWWD** | Clark Regional Wastewater District | Supports the coordination of illicit discharge protection |
| **General Services Facilities Crews** | (as stated) | Performs all tasks associated with the operations of the program on county properties |
| **General Services Facilities Mgr.** | Facilities Manager | Oversees the facilities program for county properties |
| **GIS** | (as stated) | Supports the county's GIS system |
| **Public Health** | (as stated) | Coordinates illicit connection/discharge issues with CCPW staff |

Moultan Falls on the Lewis River

# CHAPTER 1
# Introduction and Background

# Clark County Stormwater Management Plan

*The Clark County Stormwater Management Plan (CCSWMP) describes the various ways the 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. and S5.A.*

## INTRODUCTION

As the county's unincorporated population continues to increase (over 222,000 in 2018 according to the Washington State Office of Financial Management), Clark County is committed to responsible stormwater management to keep our waterways healthy for people, fish and wildlife.

The Clark County Public Works department (CCPW) utilizes 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, stormwater management planning, water quality monitoring of stormwater and streams, public education and outreach, development and enforcement of water quality regulations, water quality compliance for businesses and private stormwater facility owners, coordination with other municipalities, and maintenance of the county's stormwater system.

## STORMWATER AND 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 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 Per6mit program. In Washington State, the EPA has delegated to the Washington Department of Ecology (Ecology) the authority to develop and administer the NPDES permitting program.

Ecology issued the most recent NPDES Phase I Municipal Stormwater Permit to Clark County and other larger western Washington jurisdictions in July 2019, with an effective date of August 1, 2019. This permit is for a five-year period expiring on July 31, 2024.

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, prescribes an eleven-component stormwater management program (SWMP).

The SWMP consists of actions meeting the eleven 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 annually to include 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 or Plan) encompasses efforts undertaken by Clark County, primarily in the Public Works and Community Development departments for the protection 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 Public Works department is responsible for a majority of the county's NPDES compliance actions and activities, coordination and reporting. The program coordinates and contracts with 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 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 and 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 $8 million annually from approximately 73,200 properties. 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 equivalent residential units (ERUs) of impervious surface measured on the parcel.

In July 2014, the Clark County Council 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.

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

Beginning in August 2017, the Clean Water Division implemented updated requirements for schools wishing to receive a Clean Water Fee reduction (CCC 13.30A.050 D). Schools meeting four criteria including stormwater BMP training for staff, passing stormwater facility inspections, implementing educational activities related to stormwater, and disseminating stormwater messages to the broader school community, will receive a Clean Water Fee reduction. If all criteria are met during the school year, the Clean Water Fee will be waived for the later calendar year of the school year (e.g., 2017-2018 school year will apply to the 2018 Clean Water Fee).

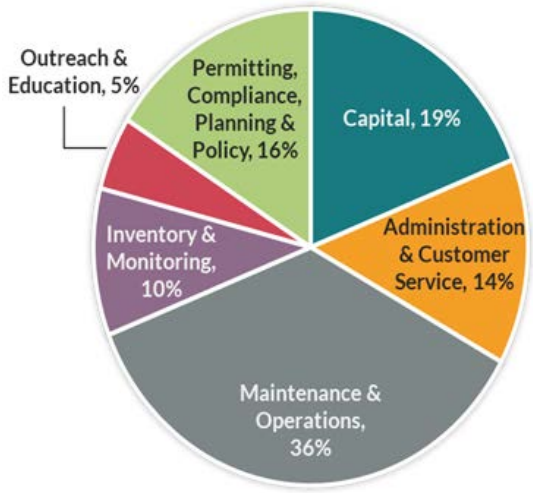
***Clean Water Fund***

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.

*The Road Fund provides support for stormwater management associated with county roadways.*

***Budget***

Clark County budgets on a one-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 year.




2020 Clean Water Adopted Budget

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

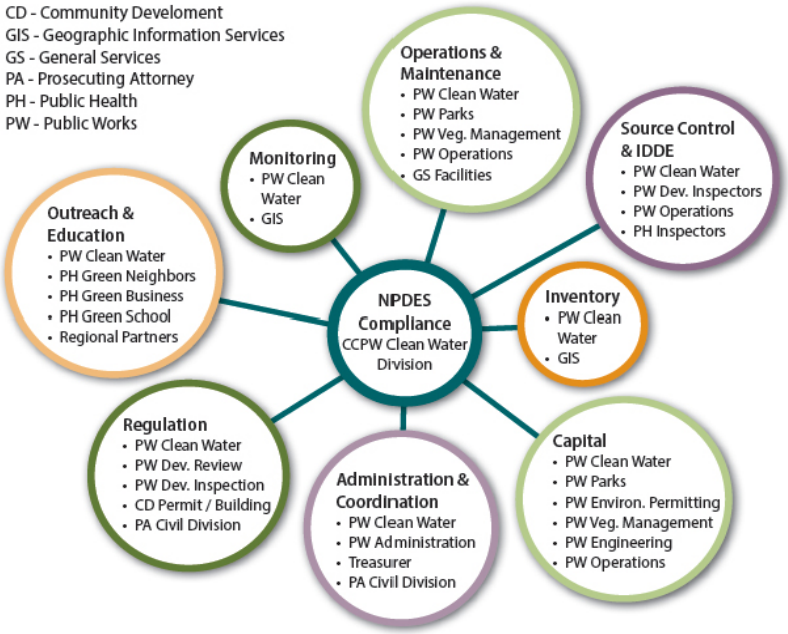
Areas of greatest expenditure include maintenance and operation of storm sewer infrastructure, stormwater capital construction, and assessment and monitoring of surface water and stormwater.

In recent years, a focus on building new stormwater facilities in underserved areas and on enhancing existing facilities has increased the overall budget and the proportion dedicated to capital construction. The total budget for 2020 is $8 million.

## 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 Public Works divisions and county departments for additional essential stormwater services that fit within those division's or 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 divisions or departments to complement a core staff of stormwater specialists.

The Clean Water Division is directly responsible for storm sewer system inventory; code and manual updates; watershed planning; source control inspections; illicit connection and discharge inspections; private stormwater facility inspections; stormwater facility maintenance compliance; stormwater capital planning; coordination with other jurisdictions and entities; and surface water and stormwater assessment and monitoring.



The program coordinates with other Public Works divisions and 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

## TASK CHECKLIST

| STATUS | TASK |
|---|---|
| Ongoing | The Clean Water Division administers the NPDES Municipal Phase 1 Stormwater Permit for Clark County |
| 2020 | Clark County will review the Clean Water Fee program to assess appropriate revenue levels |

**For more information on the county's Clean Water Division, contact:**
Greg Shafer, Interim Clean Water Division Manager
564.397.4064
greg.shafer@clark.wa.gov

Turbid urban runoff from Cougar Creek into Salmon Creek

# CHAPTER 2
# Stormwater Management Program

# Section 1 – Legal Authority

## REGULATORY REQUIREMENTS SUMMARY

| | |
|---|---|
| NPDES Permit S5.C.1<br>**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 Stormwater Manual 2015. 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 required under Chapter 40.386 |
| **Legislative Authority of the Clark County Council** | Through the legislative authority of the Clark County Council, 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. |

## TASK CHECKLIST:

| STATUS | TASK |
|---|---|
| Ongoing | Maintain legal authority to control discharges to and from the MS4 |

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

Greg Shafer, Interim Clean Water Division Manager
564.397.4064
greg.shafer@clark.wa.gov

# Section 2 – Taking Inventory and Mapping the Storm Water Infrastructure

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).

Stormwater Infrastructure Mapping

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 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 infrastructures 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 MS

## 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 1,600 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 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, 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 Public Works maintains a stormwater database called *StormwaterClk*. The database is administered by the GIS Department, while data is maintained and updated by the Clean Water Division. The GIS data can be accessed in Clark County MapsOnline in the utilities map site.

### Land Development Records

Clark County Community Development maintains the *Land Management System*, 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.

## ONGOING 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.

### 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 a limited number of stormwater facilities to retrofit developed areas that lack adequate flow control or treatment. (See County Capital Improvements below.)

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*.

## Responsibilities Matrix

| Task | CCCD CWD Mgr. | CCPW CWD Infra. Mgr. | CCPW CWD Sr. Eng. Tech | CCCD Dev. Engineering Planning Tech | CCCD Dev. Engineering Mgr. | CCPW Construction Mgmt. Engineer | CCPW Construction Mgmt. OA | CCPW Construction Manager | CCPW Engineering Program Manager | CCPW Survey | CCPW 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 | P | O | S | 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

## 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. The senior engineering technician will regularly query the Tidemark database or the LMS for new Development Inspection Numbers (DINs), which are created when engineering plans have been approved for construction.

The senior 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 CD Development Engineering planning technician will notify the CCPW CWD senior 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.

***County Projects Notification - Physical Completion***

The Public Works Engineering Program Construction Management section will notify the senior engineering technician that new public project is physically complete with a copy of the letter sent to the construction contractor.

***Notification of Existing Projects***

Infrequently, the senior engineering technician will discover engineering drawings or other evidence of an existing project that does not appear in the inventory. In those cases, the senior 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 senior engineering technician will research and assemble relevant documentation about the project from various sources, including Development Engineering and the Auditor.

To inventory and map the stormwater infrastructure, the senior 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 in electronic format. The senior 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 senior engineering technician.

***Determine Ownership and Maintenance Responsibility***

The senior 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 senior engineering technician will determine the current maintenance responsibility.

The senior engineering technician will evaluate information on legal documents such as the plat map, full plat recordings, covenants and recorded surveys. Ultimately, citing the owner of the land where a facility is located.

### Inventory and Map (Digitize)

The senior 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 senior 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*
- Asset data in MMS

## 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 under (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.

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

## Responsibilities Matrix

| Task | CCPW CWD Mgr. | CCPW CWD Infrastructure Mgr. | CCPW CWD Sr. Eng. Tech | GIS |
|---|---|---|---|---|
| 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 (CCPW CWD Sr. Eng. Tech) | | | |
| Map receiving waters | * Completed * | | | |
| Map areas not draining to outfalls | * Completed * | | | |
| Map outfall catchments | Completed – updated as needed (CCPW CWD Sr. Eng. Tech) | | | |
| Map tributary conveyances | Completed – updated as needed (CCPW CWD Sr. 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***

This effort primarily involves mapping private road ditch connections to public road ditches and now applies to areas outside the UGA where the public ditch leads to an outfall with nominal diameter of at least 24 inches. Most county roadside ditches have nominal diameters of 24 inches.

***Map Connections between BMPs and Tributary Conveyances***

Existing connections, including overflows 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 urban area outfalls. This includes nearly 500 outfalls, most of which are smaller than 24 inches of 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. 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 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 and conveyance systems 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 within the UGA. For outfalls outside the UGA, areas not mapped as an outfall catch fulfill this requirement.

## 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 | CCPW CWD Mgr. | CCPW CWD Infrastructure Mgr. | CCPW CWD Sr. Eng. Tech | GIS |
|---|---|---|---|---|
| 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 senior engineering technician will 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 Infrastructure manager will check *Annexation Tracker* to determine if stormwater infrastructure has been annexed to a city. The senior engineering technician will change facility ownership attributes and update county MS4 municipal connection points in *StormwaterClk* where infrastructure has been annexed.

***Ongoing Corrections***

As possible mistakes in inventory data or needed revisions are discovered, the senior engineering technician will keep a list of possible corrections, then periodically research and, if necessary, correct StormwaterClk. Possible sources of discovery include Public Works Operations and Maintenance personnel, annual stormwater facility inspectors and 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 senior engineering technician will review the archive of older paper plan sets to fill gaps in mapping and attributes of existing infrastructure.

### 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 | CCPW CWD Infrastructure Mgr. | CCPW CWD Sr. Eng. Tech | CCPW CWD Engineer | CCPW Project Mgr. | CCPW Const. Mgr. | Applicant | CD Dev Eng. Mgr. |
|---|---|---|---|---|---|---|---|
| Map new Class V injection wells | A | P | O | O | O | O | O |
| Locate unregistered Class V injection wells | A | P | I | O | O | O | O |
| 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 CCPW CWD senior 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, CD 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 CCPW CWD senior engineering technician will add new UICs to StormwaterClk upon project completion as part of ongoing inventory and mapping activities.

### Outputs

- Updates to *Stormwater Clk*
- UIC wells registered with Ecology

## TASK CHECKLIST

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

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

Jeff Schnabel, Clean Water Division Infrastructure Manager
564.397.4583
jeff.schnabel@clark.wa.gov

# Section 3 – Operating and Maintaining the Storm Sewer System, County Property and Roadways

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 (SMMWW)* or an approved manual. The Clark County Stormwater Manual, Book 4 contains a more extensive maintenance standard listing than the *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 2015, 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-Source Control* 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 *Clark County Stormwater 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

The 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.

For stormwater facilities and related infrastructure, the inventory in MMS is uploaded directly from *StormwaterClk* (see Inventorying and Mapping the Storm Sewer Infrastructure on page 21).

## 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 | CCPW CWD Mgr. | CCPW CWD Infrastructure Mgr. | CCPW CWD Inspectors | CCPW CWD Sr. Eng. Tech | CCPW Construction Mgmt . OA | CCPW Construction Mgmt. Supervisor | CCPW Construction Mgmt. Inspectors | CCPW Ops Road Crews | CCPW Ops Road Supervisor |
|---|---|---|---|---|---|---|---|---|---|
| Inspect Regulated Facilities | A | I | P | S | O | O | S | O | O |
| Inspect Facilities During Heaviest Home Construction | I | I | O | S | S | A | P | O | O |
| Inspect County-owned Facilities | I | I | O | S | S | A | P | O | O |
| Inspect Catch Basins | I | 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 plans to annually inspect 100 % of regulated facilities with a permit mandate to inspect at least 80% of regulated facilities connected to the MS4.

County responsibility for inspecting regulated facilities will begin at issuance of the completion of construction letter by CD Development Engineering or the occupancy permit for individual residence projects subject to maintenance requirements. (See Regulatory Program for Development, Redevelopment and Construction Projects on page 69)

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 Clean Water Division will use ESRI Collector and Survey 123 applications on iPad devices to schedule, log and track regulated facility inspections.

***Inspection***

Inspections will be completed by Public Works Clean Water Division operations specialists and natural resource specialists. Inspections may be combined with business source control inspections. The inspectors will compare facility condition with maintenance standards from the Clark County Stormwater Manual.

Facility inspection

***Contact Owners of Non-Compliant Facilities***

If an inspection shows that a facility is out of compliance, the Clean Water Division senior operations specialist will send a mailing to the owner(s) and/or responsible party. The mailing packet will include:

- 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 Clean Water for questions or problems.

Facility ownership or homeowner association leadership may change. In some cases, no viable homeowner association exists. The Clean Water Division senior operations specialist will research and follow up in these cases.

***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 Clean Water inspectors will assist owners who reply to the initial letter by giving advice on maintenance. 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.

***Further Enforcement***
If the owner or owners of a non-compliant facility are unresponsive, then the senior operations 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. This is a costly and time-consuming option, so it is generally avoided.

***Compliance Tracking***
Public Works Clean Water will update facility records with compliance information on a regular basis, including inspection results, contact information and other relevant facility information. A spreadsheet system tracks correspondence to regulated facility owners and assistance provided. Follow-up and enforcement actions will be tracked by the Clean Water Division senior operations specialist and tracked as case files.

## 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.5.b.vi.d).

***Maintain Inspection List***
Construction Management runs a report from permit tracking software listing the number of lots in the subdivision and the number of lots having active building permits.

***Schedule Inspections***
The Public Works Construction Management lead inspector will consult the inspection list 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 inspection list.

***Inspection***
Public Works Construction Management inspectors will inspect project sites using standards from the *Clark County Stormwater Manual*

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

***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 issue 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 two years after issuance of the completion of construction letter to the developer. (See Regulatory Program for Development, Redevelopment and Construction Projects on page 69.)

***Inspection***
Public Works Construction Management will inspect facilities using standards from *the Clark County Stormwater Manual*. Crews will note compliance and defects using the same field applications used for regulated facilities.

***Spot Checks***
After significant storms, Public Works crews will inspect facilities that have known problems associated with heavy rainfall.

***Tracking***
Public Works Construction Management inspection results are entered into the MMS using the iPad-based field applications.

## 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.

Catch basins in parks and other county facilities will be inspected and cleaned as part of routine maintenance by Public Works.

## 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 69.)

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 | CCPW CWD Infrastructure Mgr. | CCPW CWD NPDES Mgr. | CCPW CWD Sr. Eng. Tech | CCPW Road Ops and Parks Supers | CCPW 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).

Stormwater facility maintenance

### *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 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., is also part of typical maintenance.

## Capital Construction Facility Maintenance

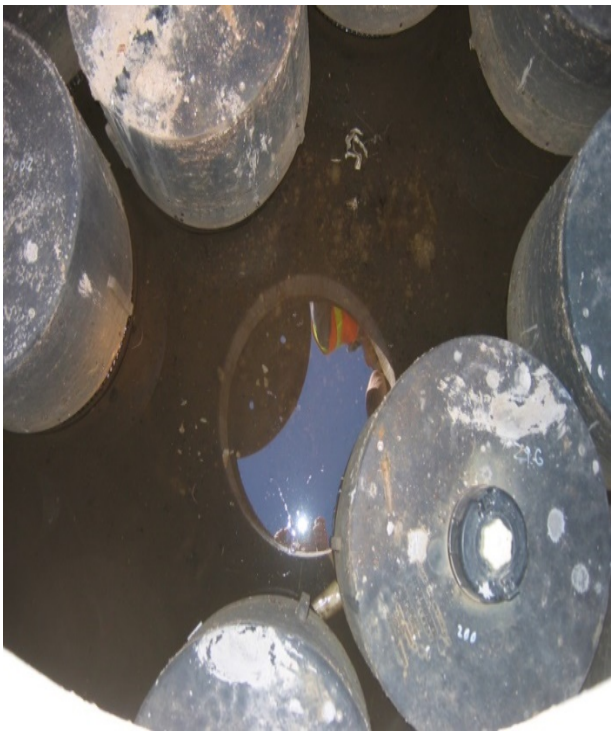
### *Prioritization and Budget*

The Clean Water Division and Operations and Maintenance 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 65).

### *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.



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***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.

Stormwater facility

## Responsibilities Matrix

| Task | CCPW CWD Infrastructure Mgr. | CCPW CWD Permit Mgr. | CCPW CWD Sr. Operations Specialist | CCPW Ops and Parks Mgrs | CCPW Road Ops Super | CCPW Ops Roads Crews | CCPW Parks Super | CCPW Parks Crews | CCPW Land and Vegetation Mgr. | CCPW 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 Road Maintenance and Operations Division.

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.

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


Street sweeper with clean water message

## 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 and Lands 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 Maintenance and 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 and Lands 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*. 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 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 Public Works Parks and Lands 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 and Public Works Parks and Lands 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.

In addition to task specific training, county personnel who as part of their field work may encounter a spill or non-stormwater discharge are trained on how to respond.

***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

## TASK CHECKLIST

| STATUS | TASK |
|---|---|
| ONGOING | Spot check facilities with known problems after significant storms |
| ONGOING | Annually inspect and clean, if needed, county-owned catch basins |
| ONGOING | Implement established practices to reduce stormwater impacts from property and landscape maintenance activities |
| December 31, 2022 | Document practices to reduce stormwater impacts from property and landscape maintenance activities for county property |
| ONGOING | Employee training |
| ONGOING | Update SWPPPs for county equipment yards |
| ONGOING | Adopt and implement maintenance standards equivalent to the SMMWW |
| ONGOING | Require maintenance of regulated facilities to the SMWW |
| ONGOING | Implement program to annually inspect all regulated facilities |
| ONGOING | Inspect all new facilities in new residential developments every 6 months during the period of heaviest construction |
| ONGOING | Inspect all county-owned facilities annually |

**For more information on county operation and maintenance of the MS4:**

Jeff Schnabel, Clean Water Division Infrastructure Manager,
564-397-4583
Jeff.Schnabel@clark.wa.gov

# Section 4 – Detecting and Reducing Pollutants and Contamination

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 illicit connections and discharges of contaminants is an important part of the county's Stormwater Management Program.

Improper non-stormwater 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.

Along with meeting 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.8 – 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* as the technical manual for meeting the Minimum Requirements of the Permit, including Minimum Requirement 3, Pollution Source Controls.

### 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 stormwater manual provide 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 requirements for meeting Minimum Requirement 3, Source Control of Pollution under county code Chapter 40.386 for development projects The manual also applies to existing land uses under Chapter 13.26A.

## 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. The site inventory also meets a requirement of the NPDES permit.

### Responsibilities Matrix

| Task | CCPW CWD Source Control Specialist | GIS | CCPW CWD NPDES Mgr. |
|---|---|---|---|
| Update inventory of sites | **S** | **P** | **A** |

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

### Inventory Maintenance

The Clean Water Division uses several sources to identify commercial, industrial and multifamily sites in the county that have impervious surfaces.

The database is derived from the Clark County Assessor personal property tax database and fire marshal inspection data. As inspections progress to include most permanent business sites, the site inventory is refined based on site-specific information. The inventory is also updated as new business sites are built or complaint-driven sites are added.

### Outputs

- Inventory of business and multifamily sites

## SOURCE CONTROL AT BUSINESS AND MULTIFAMILY SITES

### Purpose

Clark County inspects 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 | CCPW CWD NPDES Mgr. | CCPW CWD Source Control Specialist | CCPW Code Enforcement Officer | CCPW CWD Outreach / Education | CCPW CWD OA |
|---|---|---|---|---|---|
| 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 |
| Recordkeeping | A | P | P | O | P |
| **A** = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted | | | | | |

## Site Selection

Each year, a group of sites are selected for inspection based on land use risk and results from past inspections.

## 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 using the i-pad field form and enter results into the Local Source Control database in Secure Access Washington (SAW).

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 using the iPad field form, which is stored in a county database and entered into the Local Source Control database on SAW.

## CATCH BASIN CLEANING ASSISTANCE

In late 2018, a new program was implemented to provide catch basin cleaning services for a fixed rate of $45 per catch basin. Out of compliance businesses are referred to the county webpage where businesses can register for the service. The contractor then performs the catch basin cleaning, properly disposes of waste material and invoices the business and provides a manifest of proper waste disposal. Mailers were sent to all business sites draining to the county storm sewer system

### Referral

If necessary to gain compliance, the source control specialist will refer the case to another agency such as Clark County Public Health, Ecology 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.

### Recordkeeping

Information is stored in a database linked to the iPad Survey 123 and Collector applications. Non-stormwater discharges are logged in the county IDDE database and site visit information is logged in the state SAW database for Local Source Control contract compliance. .

### Training

All county employees who conduct field work need to be aware of spill response procedures and protocols. A training program is established using the county's Gensuite training tracker online program. Field personnel from multiple departments will be required to complete the training annually to ensure they are familiar with illicit discharge, illicit connections, use of spill kits, and what to look for in the field.

### Outputs

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

# WATER QUALITY COMPLAINT INVESTIGATIONS

## 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 | CCPW CWD NPDES Mgr. | CCPW CWD Source Control Specialist | CCPW CWD OA | CCPW CWD Natural Res. Specialist | CCPW Code Enforcement 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 |
| Recordkeeping | A | P | S | S | 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 Public Works 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 source control specialist will fill out the "Clark County Stormwater Business Site Visit Report" field form and begin a case file.

For residential sites, the source control 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 source control specialist will work with the property owner or property manager on compliance or refer the case to another agency. The source control specialist generally follows the procedures for source control

follow-up (above), and, if necessary, further enforcement actions.

### Recordkeeping

A Public Works Clean Water Division source control specialist will enter the data into the IDDE tracking database and maintain a case file.

### Outputs

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

### 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 recordkeeping. When changes to manuals or procedures are made, all appropriate staff will be trained.

## TASK CHECKLIST

| STATUS | TASK |
|---|---|
| ONGOING | Source control inspections and enforcement |
| ONGOING | Staff training for source control |
| ONGOING | Update inventory of pollution-generating sites |
| ONGOING | Inspect sites, enforce and respond to complaints |
| 2021 | Update county municipal code per permit requirements |
| 2021 | Update county stormwater manual per permit requirements |

### For more information on the Source Control program:

Rod Swanson, Clean Water Division NPDES Permit Manager,
564-397-4581
Rod.Swanson@clark.wa.gov

# *Illicit Connections And Illicit Discharges Detection And Elimination (IDDE)*

## REGULATORY REQUIREMENTS SUMMARY

### NPDES Permit S5.C.9 – Illicit Connections and Illicit Discharges Detection and Elimination (IDDE)

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 Public Works 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 DISCHARGE AND CONNECTION SCREENING

## Purpose

Screening for evidence of illicit discharges and 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 | CCPW CWD Mgr. | CCPW CWD NPDES Mgr. | CCPW CWD Natural Res. Specialist |
|---|---|---|---|
| Screening area selection | A | S | P |
| Outfall selection | A | I | P |
| Site visits / screening | A | I | P |
| Sampling / evaluation | A | I | P |
| Recordkeeping | 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 each year and has screened the entire urban area and several rural subwatersheds at least once.

Public Works Clean Water Division natural resource specialists will continue effectiveness monitoring on illicit connections discovered during previous field screening operations (see Illicit Connection and Discharge Response and Removal on page 53). In addition, a natural resource specialist or 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 43).

***Screening Site Selection***

In 2020, a Clean Water Division natural resource specialist will select urbanized subwatersheds for screening based on professional judgment and watershed management objectives. This area will include at least 12 percent of the MS4 urban stormwater conveyance systems.

***Outfall Selection and Scheduling***

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

***Site Visits***
During the summer season, a natural resource specialist will screen outfalls for indicators of illicit connections, such as flow or deposits.

***Sampling and Evaluation***
The natural resource specialist will take samples at flowing outfalls, use field tests and 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).

***Recordkeeping***
The natural resource specialist will track all information regarding screening, illicit connection investigations and response to illicit discharges if applicable, in the IDDE screening iPad application. Database fields based on those described in the 2019 permit.

***Reporting***
Each year, the natural resource specialist will complete a report 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.

***Awareness Training***
A new training program has been established using the county's Gensuite training tracker online program. Field personnel from multiple departments will be required to complete the training annually to ensure they are familiar with illicit discharge, illicit connections, use of spill kits, and what to look for in the field.

## 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 | CCPW CWD NPDES Mgr. | CCPW CWD Natural Res. Specialist | CCPW CWD 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 |
| Recordkeeping | 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 CCPW Clean Water Division and Public Works Operations Division will receive and respond to reports of suspected illicit discharges; however, some illicit connections or discharges due to 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*

The county immediately will notify Ecology if an illicit discharge or connection poses a 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 natural resource specialist 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 have ceased.

***Recordkeeping***
The source control specialist will inform the natural resource specialist of the results of the follow-up actions involving illicit discharge or connection abatement. The natural resource specialist 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

## SPILL RESPONSE

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

### Purpose

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

### Responsibilities Matrix

| Task | CCPW Ops Admin. | CCPW Ops Crew Chief | CCPW Ops Road Crews | CCPW Operations OA |
|---|---|---|---|---|
| Open case | I | A | I | P |
| Spill response / clean-up | I | A | P | O |
| Notify Ecology | A | P | S | P |
| Recordkeeping | 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. Public Works Operation and Maintenance staff will then notify the Clean Water Division senior operations specialist. 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 Clean Water Division senior operations specialist will also be responsible for ensuring spills are reported to Ecology's 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 or notify the Clean Water Division senior operations specialist who will report the spill to 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.

### Recordkeeping

Records of spill incidents and responses will be kept in the Public Works customer service database. If the Clean Water Division senior operations specialist responds, the spill will be recorded in the IDDE tracking 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 Ecology's spill response hotline 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 Clark County webpage also includes a web-form to report a spill or environmental problem in the home page "How do I" tab. The webpage includes contacts for non-emergency concerns and has phone numbers for emergencies and spill reporting at: www.clark.wa.gov/public-works/report-stormwater-erosion-or-drainage-concerns.

### Responsibilities Matrix

| Task | CCPW Ops Admin. | CCPW Ops OA | CCPW Answering Service | CWD Code Enforcement Officer | Public Health | CCPW CWD Source Control Specialist |
|---|---|---|---|---|---|---|
| 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 Public Works source control specialist or Department of Ecology, depending upon the nature of the incident.

Web form comments, at site noted above, 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

## TASK CHECKLIST

| STATUS | TASK |
|---|---|
| ONGOING | Continue implementing on-going program to prevent, identify and respond to illicit connections and illicit discharges |
| ONGOING | Screen an annual average of 12% of MS4 |
| ONGOING | Procedures for addressing pollutants entering MS4 from interconnected MS4s |
| ONGOING | Staff training |
| ONGOING | Implement procedures to respond to spills |
| ONGOING | Operate a water quality citizen complaint line |
| ONGOING | Revise program to include new Ecology guideance |

**For more information on the program to detect and eliminate illicit connections and discharges to the MS4:**

Rod Swanson, Clean Water Division NPDES Permit Manager, 564-397-4581
Rod.Swanson@clark.wa.gov

# Section 5 – Expanding and Improving the Stormwater Management Infrastructure

As county population and development 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***

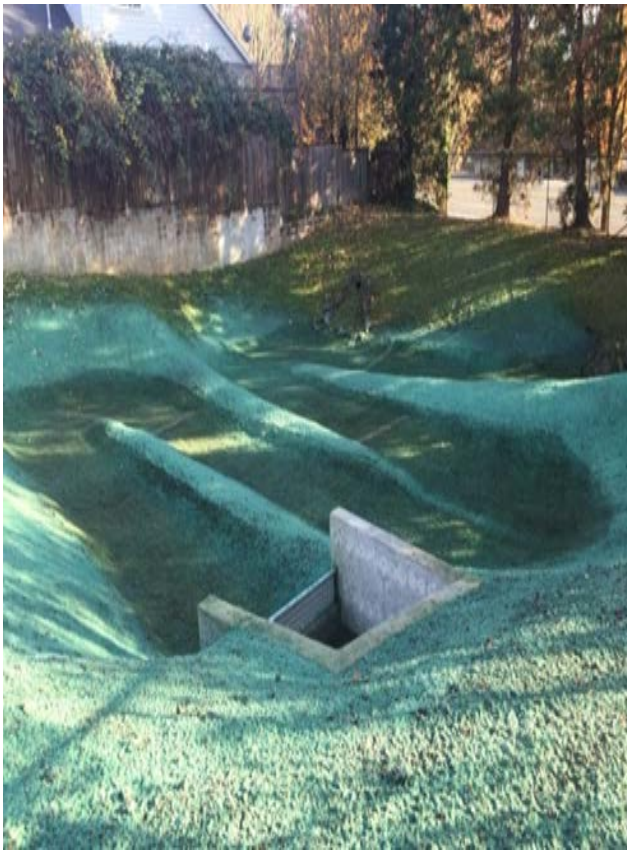
Private entities and government agencies develop the land, and the county regulates the design and construction of stormwater controls on it, many of which eventually become part of the county's own stormwater infrastructure.

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.7. 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 greater than $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.

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

In 2020, Public Works Clean Water Division will update its stormwater capital plan for the 2021 to 2026 period.

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. A table describing the 2020-2025 capital projects is included in the 2020-2025 Stormwater Capital Plan. The capital plan will be included in the March 2020 annual report.

It includes a detailed program description and can be found at: https://www.clark.wa.gov/sites/default/files/dept/files/public-works/Stormwater/Capital_Projects/Stormwater%20Capital%20Plan%202019-2024%20FINAL.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.

## 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 plan will

list projects scheduled for implementation on a six-year horizon.

- The proposed projects are considered to comply with requirements under Permit Condition S5.C.7.
- 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.7, 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.

Clark County applied lessons learned from its 2013 permit work on the Whipple Creek watershed-scale plan to its stormwater capital planning program. A key finding was that it is infeasible to restore forested stream hydrology in basins where LID is infeasible. This led to a subwatershed scale review of Vancouver UGA subwatershed to identify areas where detention retrofit projects should be avoided.

Clean Water plans to lead a process in 2020 to develop the next 6-year stormwater capital program covering 2021-2026.

## Responsibilities Matrix

| Task | CCPW CWD Infrastructure Mgr. | CCPW CWD Eng. | CCPW Eng. Program Mgr. | CCPW Eng. Program Staff | Council | CCPW Director |
|---|---|---|---|---|---|---|
| Accept referrals | A/P | P/S | O | O | O | O |
| ID potential projects | A/P | P/S | O | S | O | O |
| Database entry & updates | A/P | P/S | O | O | O | O |
| List of potential projects | A/P | P/S | I | C | O | O |
| Formulate selection criteria | A | P | I | S | C | C |
| Apply selection criteria | A | P | C | S | O | C |
| Scoping and Selection | A | P | O | S | O | I |
| Six-year capital plan | A | P | C | 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 infrastructure manager 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 infrastructure manager will update the database with new details on a regular basis.

## Project Identification

Stormwater capital projects typically originate from systematic capital planning efforts, routine stormwater facility inspections, observations by maintenance crews, or evaluation of underground injection control wells.

Clean Water completed significant county-wide project identification and screening efforts between 2006 and 2011 under the Stormwater Needs Assessment Program (SNAP). The program identified many potential project opportunities, which formed the basis for much of the stormwater capital plan through 2018. During that time, most priority opportunities identified through the SNAP have either been constructed or were found to be infeasible. The remaining potentially viable projects from the SNAP effort are being re-evaluated in light of updated priorities during sub-basin retrofit studies.

Sub-basin retrofit studies follow up on earlier stream assessments, refining county efforts to plan and build stormwater controls that meet permit requirements and reduce pollutant discharges to receiving waters. The process for sub-basin retrofit studies was developed in 2018 and first applied to Cougar and Suds Creeks in the Salmon Creek watershed. Additional high-priority drainages will be evaluated beginning in 2019.

Studies identify an array of projects that will improve stream conditions, applying consistent objectives and specific project types tailored to the goals for each sub-basin. The process incorporates information from multiple county capital efforts and is intended to promote collaboration between county programs.

The studies apply a series of tools to identify projects, including a series of project area maps depicting existing conditions and needs, long-plots of high traffic roadway corridors, stormwater outfall verification, review of underutilized and county lands, headwater wetland project assessment, right-of-way retrofitting assessment, and channel/floodplain restoration project assessment.

Results are managed in a series of project maps and spreadsheets, and highly-rated projects are promoted to the Capital Planning Database for possible inclusion in the 6-year Stormwater Capital Plan.

A Project Identification Worksheet is first compiled, identifying purpose and level of need (1-5) for each identified project and performing a preliminary high-level verification. The end result is a list of all identified projects shown in three categories: viable; needs more information, or; rejected.

## Project Verification

Viable projects from the identification spreadsheet are run through a more detailed verification process in a second spreadsheet called the Project Verification Worksheet.

The primary verification checks are based on detailed Technical Information Report maps automatically generated for each project. These maps inform project verification with current information and also identify whether additional field visits are necessary to perform verification. The end result is a list of projects shown in three categories: verified; additional field information needed, or; rejected.

Verified projects with a need level of 1, 2, or 3 are carried over into the database for consideration in the 6-year plan.

## Programming Projects

Programming applies regulatory requirements and available funding to the list of scoped projects to develop a six-year program matrix that can meet Permit requirements and program goals. Permit requirements for structural stormwater controls are  stated in the 2019 permit as a number of “retrofit incentive points”.,. 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 2020-2025 plan is approximately $13.8 million. Completion of these projects is dependent on funding through the Clean Water Fee, Road Fund, Conservation Futures Fund and grants.

## Outputs

- Database entries of potential and scoped projects and detailed project attributes for consideration in subsequent years
- Submittal of NPDES permit report Appendix 12
- 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 and Construction Division leads the effort through established project management systems.

The Public Works Engineering and Construction Division 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 Plan to construction. The responsibilities and procedures for this program are briefly reviewed below.

## Responsibilities Matrix

| Task | CCPW CWD Infrastructure Mgr. | CCPW CWD Eng. | CCPW Enhance. and Permitting Mgr. | CCPW Env. Permitting Mgr. | CCPW Eng. Program Mgr. | CCPW Eng. Project Mgmt. Mgr. | CCPW Eng. Project Mgr. | CCPW Eng. Program Engs | CCPW Eng. Construction Mgr. | CCPW Eng. Construction Mgmt. Staff | CCPW Comm. Specialist Sr. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Assign Project Team | I | I | S | S | A | P | S | S | S | S | O |
| Schedule and Budget | S | S | S | S | A | C | P | S | S | S | I |
| Preliminary Engineering | I | O | O | O | A | S | S | P | O | O | O |
| Permitting | I | O | A | P | I | O | I | C | C | O | O |
| Construction Management | I | I | I | C | I | S | S | C | A | P | O |
| Public Outreach | S | O | I | I | I | S | I | O | O | O | A/P |
| Project Close Out | I | S | I | C | A | I | P | C | C | C | I |
| Update Capital Planning Database | A/P | S | O | O | O | O | O | O | O | O | O |

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

## Team, Schedule and Budget

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 the life of each project.

## Preliminary Engineering and Environmental Permitting

Public Works engineers will create engineering plans, design specifications and cost estimates for each project in the plan. Public Works Permitting Coordinators will guide each project through local, state and federal permitting processes.

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

Encore Stormwater Facility Retrofit

## Bid

The project manager will coordinate with the Clean Water Division Infrastructure Manager 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 Clark County Council.
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. Receipt of the final acceptance letter by Operations will initiate maintenance and operations tasks.

## Public Outreach

The Public Works Public Information Officer will coordinate outreach about the project including news releases, information on the Public Works website and signage.

## Close Out

The project manager and construction manager will coordinate preparation of close out documents, including final expenditures.

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

## TASK CHECKLIST

| STATUS | TASK |
|---|---|
| ONGOING | Implement structural stormwater controls program |
| ONGOING | Stormwater capital planning |
| ONGOING | Annual reporting on capital projects |
| ONGOING | Update structural stormwater controls projects |
| ONGOING | Update Stormwater Capital Plan |
| ONGOING | Annual reporting on capital projects |

**For more information on planning and building county stormwater infrastructure:**

Jeff Schnabel, Clean Water Division Infrastructure Manager,
564-397-4583
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. During 2015, Clark County completed the equivalent code and manual adoption and implementation under the schedule prescribed by the Permit.

### REGULATORY REQUIREMENTS SUMMARY

**NPDES Permit S5.C.5.a & 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 applies to all development activity, including private-sector development and county projects such as roads and parks. The program enforces development regulations that provide protection equivalent to the minimum requirements, thresholds and definitions in Appendix 1 of the NPDES Phase I stormwater permit and design standards equivalent to the December 2014 version of the *Stormwater Management Manual for Western Washington.* The program also revised code and manuals to make low impact development the standard approach for stormwater management. .

### 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 water and groundwater 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 40.385 40 – Stormwater and Erosion Control

For development, redevelopment and construction sites with a complete application before January 8, 2016, Clark County regulates stormwater runoff and erosion control under Chapter 40.385 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 2015*. Source control requirements are *in Book 3 of the Clark County Stormwater Manual 2015*. Stormwater facility maintenance requirements for development and redevelopment projects are in *Clark County Stormwater Manual 2015 Book 4*.

### Clark County Code 40.430 – Geologic Hazard Areas

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

### Clark County Stormwater Manual

The *2015 Clark County Stormwater Manual* is the technical standards 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 and is referenced in Permit Appendix 10.

### 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. Public Works 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 and 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.

***Community Development 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.

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

***Public Works Department – Code Enforcement***
Code Enforcement will enforce erosion control violations on development and building construction sites as needed.

## Responsibilities Matrix

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 matrix on next page describes responsibilities at the department and division level.

## Overview of Regulatory Review and Enforcement Responsibilities

| Task | CD Permit Services | CD Building Safety | CD Building Official | CCPW Code Enforcement Officer | CD Dev. Eng. | CD Dev. Eng. Mgr. | CCPW Construction Mgmt. | CCPW Construction Mgr. | CCPW CWD |
|---|---|---|---|---|---|---|---|---|---|
| Plan Review - residential construction | P/A | I | O | 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 |
| 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 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 stormwater 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. 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 Public Works, 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 21) and some maintenance inspection tasks (see Operating and Maintaining the Storm Sewer System, County Property and Roadways on page 33).

***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. If there are private stormwater facilities, an HOA will be formed.

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 Clark County Council. 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 21).

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 93).

***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 update stormwater mapping tasks, if necessary (see Mapping the Storm Sewer Infrastructure on page 10), 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 33).

Under the 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 the *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.

### *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 stormwater 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 Public Works 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 21).

***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 33).

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 update stormwater mapping tasks, if necessary (see Mapping the Storm Sewer Infrastructure on page 21), 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 33).

Under the *Clark County Stormwater Manual 2015*, all 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 Clark County Stormwater Manual 2015, each lot will 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. If minimum requirements 1- 5 apply, the applicant can complete the stormwater plan or hire a contractor. If minimum requirements 1-9 apply, the applicant must use an engineer to complete a stormwater plan that complies with county code under an engineering review by 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 are addressed.
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.

## 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
- 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 site 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

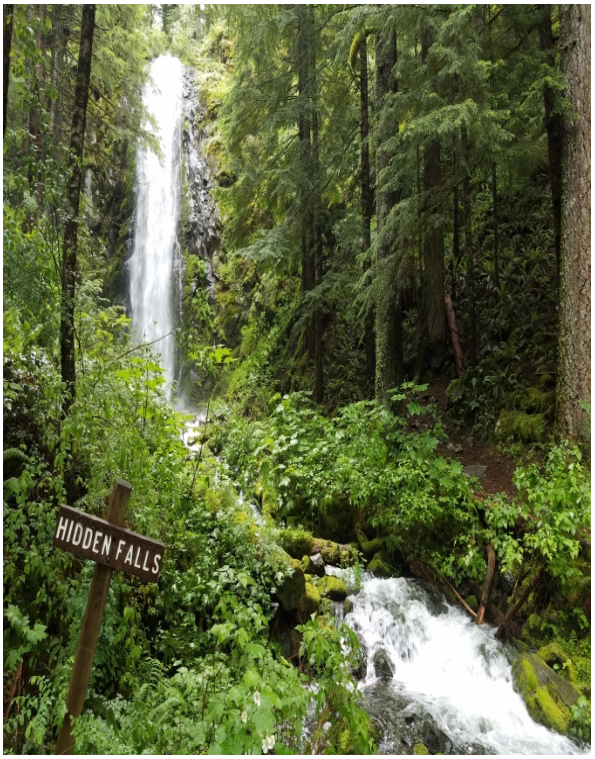
## CODE AND MANUAL REVISIONS

**Updates to Implement Permit Requirement S5.C.5.b and Clark County Updates** The 2019 NPDES permit requires Clark County to update its development code and stormwater manual to include changes listed in permit Appendix 10, Part 2. Clark County also has a list of proposed changes to the manual and code that were developed as the manual was implemented.
Clark County Clean Water will submit the draft manual and code for Ecology review by July 1, 2020.

The adoption and implementation date is July 1, 2021.

### Outputs

- Draft updates Stormwater and Erosion Control Chapter 40.386.
- Draft updates to Chapter 13.26A Water Quality.
- Draft updates to the *2015 Clark County Stormwater Manual.*
- Adopted stormwater and Erosion Control Chapter 40.386.
- Adopted Chapter 13.26A Water Quality.
- Adopted updates to the *2015 Clark County Stormwater Manual.*



## TASK CHECKLIST

| STATUS | TASK |
|---|---|
| ONGOING | Legal authority to require maintenance of facilities |
| ONGOING | NOI forms available |
| ONGOING | Legal authority to require maintenance of facilities |
| ONGOING | Procedures to implement the SMMWW |
| ONGOING | Staff training on SMMWW |
| ONGOING | Enforce stormwater regulations |
| 2022 | Complete catchment-scale stormwater plan |
| 2021 | Revise stormwater regulations for equivalent of Appendix 10 |

**For more information on how development, redevelopment and construction sites are regulated for stormwater and erosion control**:
Rod Swanson, Clean Water Division Permit Manager,
564-397-4581
Rod.Swanson@clark.wa.gov

## *Stormwater Planning*

The 2019 added a new component for stormwater planning. The stormwater planning component has three elements:

- Establish an interdisciplinary team
- Coordination of stormwater activities with other long-range planning
- LID code review
- Stormwater Management Action Planning (SMAP)

Each element is described separately in the following pages.

### Regulatory Requirement

NPDES phase I permit requirement S5.C.6. a-d.
Establish an interdisciplinary team
Clark County Clean Water will establish a team consisting of staff from:

- Public Works Engineering and Construction Division
- Public Works Clean Water Division
- Community Planning
- Community Development

### Schedule

This task will take place during 2020 and be completed by July 31, 2020.

### Outputs

- Meeting records
- List of team members

### Long-Range Planning Coordination

**Purpose**

The long-range planning coordination is intended to create a report describing how stormwater management needs and receiving water health are informing comprehensive land use planning under GMA and any other county long-range land use planning efforts. Other efforts include Regional Transportation Council planning, Clark County transportation planning, Clark County Parks planning and Legacy Lands planning. Stormwater planning efforts include the Whipple Creek study and Stormwater Structural Controls planning under the permit.

### Planning Document Review

The NPDES permit manager and Clean Water infrastructure manager will meet with to discuss how their plans consider stormwater. The planning mandates and goals will be listed and their relationship to stormwater management and receiving water protection will be documented.

The required report should address all of the questions in Appendix 3 regarding planning coordination.

### Schedule

The planning coordination report can be completed and submitted any time up to the March 31, 2022 annual report submittal for calendar year 2021.

Outputs

- Long-range planning coordination report

## Annual LID Barrier Assessment

### Purpose

The permit goal is to make LID the preferred approach to site development. This task will annually document any newly discovered barriers to LID development.

### LID Barrier Review

The NPDES permit manager in collaboration with staff from CD Development Engineering, CD Building Safety, and Permit Center, and PW

Construction Management will review current status of LID implementation and identify any current barriers. The LID barrier review from the 2013 permit will be reviewed to assess if there are remaining barriers from that code review.

The review should produce a document suitable to address the questions in Appendix 3 with each reporting year after 2019.

### Schedule

This effort will be completed each year starting in 2020.

### Outputs

- Meeting notes or other documentation from staff review
- Short report to support annual report question response

## Stormwater Management Action Planning (SMAP)

The SMAP is a detailed plan considering all options for managing land use and stormwater with a to meet specific objectives for receiving water health. The permit references the August 1, 2019 SMAP guidance document as containing the required SMAP content.

### Purpose

The SMAP requirement is intended to be an extension of the stormwater planning required by the 2013 permit. This includes describing the describing how the Whipple Creek plan informs stormwater structural control project selection and a sub-basin catchment for completing the SMAP. At this writing, Clark County is planning to select a catchment in a sub-basin other than Whipple Creek based on the results of that study.

### Sub-basin Prioritization and Selection

Clark County is fairly certain that it will select a catchment outside of Whipple Creek for the SMAP. The Whipple Creek study found that the level of existing rural and urban development, coupled with basin geology making LID BMPs largely infeasible suggested the management goal of restoring forested hydrology was unattainable. Also, there is very little salmon habitat or use in Whipple Creek due to poor water quality conditions, lack of gravel channel beds and significant migration barriers in the main stem and tributaries.

### Lessons from the Whipple Creek Study

Clark County found that areas where LID was infeasible are impossible to use flow control BMPs to restore healthy, or forested stream flows. Instead the study suggested the much cheaper option of projects to add channel complexity and reconnect flood plains to manage higher storm flows. This led Clean Water to evaluate streams in the urban area for flow control retrofit suitability. The evaluation found that almost none of the Vancouver UGA streams are suitable for flow control retrofits using detention ponds. This led to a focus on water quality retrofits for high traffic areas and promotion of infiltration retrofits where condition permit.

### Catchment Selection/Sub-basin Prioritization

If Clean Water selects a Whipple Creek catchment for SMAP work, it will likely be one of a few on the fringes of the Vancouver UGA. The tributary with headwaters in the Clark County Fairgrounds area might be a likely option due to the relatively low traffic and the large amount of county land and effective impervious area on that land.

If Clark County opts to select a sub-basin other than Whipple Creek for the SMAP catchment, the permit referenced SMAP guidance will be used to plan and complete the prioritization steps. Clean Water will mainly use existing data and reports as the principle tools to complete the analysis. Examples include steam health data, the detention facility retrofit suitability report, ESA priorities, inventoried fish use, RTC traffic model vehicle trip density, percent urban and rural area, presence of state highways, and basin hydrogeologic setting. Clean Water will consult with WDFW and the LCFRB.

### SMAP

Clean Water will use the SMAP guidance as a tool to create the permit-required report. A project plan is not yet completed.

## TASK CHECKLIST

| STATUS | TASK |
|---|---|
| Completed | Describe how Whipple Creek planning is used for SSC planning) |
| 2020 | Sub-basin prioritization and catchment selection |
| 2022 | Complete SMAP report |

**For more information on how development, redevelopment and construction sites are regulated for stormwater and erosion control**:
Rod Swanson, Clean Water Division Permit Manager, 564-397-4581
Rod.Swanson@clark.wa.gov

# Section 6 – Public Involvement, Education and Outreach

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 (S5.C.4)*

### 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 *Stormwater Management Plan* and the county must consider public comments on it. The SWMP, annual report and other submittals required by the permit must be posted on the Clean Water Division's website.

### COUNTY POLICIES, RULES AND REGULATIONS

**Clark County Code Chapter 13.30A.040 Clean Water Commission**

County Code Chapter 13.30A.040 defines the role of the Clark County Clean Water Commission (CWC), a citizen commission formed to advise the Clark County Council. The CWC will advise the Council on the focus of the SWMP, the effectiveness of the SWMP, program service levels, financing, policies on surface and stormwater issues, and 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 at: www.clark.wa.gov/stormwater.

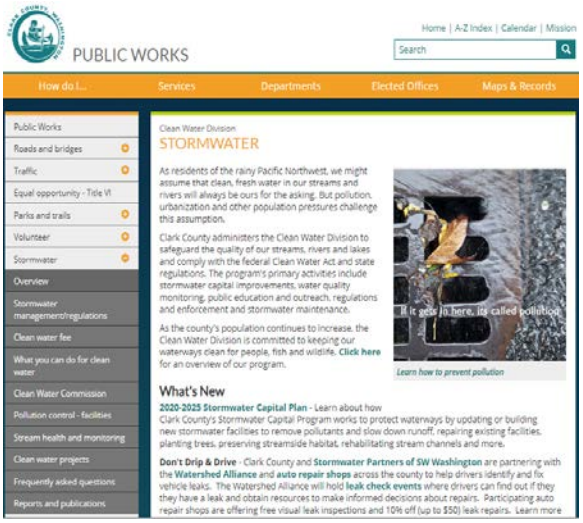
## Responsibilities Matrix

| Task | CCPW CWD Mgr. | CCPW PIO | CCPW CWD Program Coordinator | CCPW CWD Outreach Specialist | CCPW CWD Professional Staff |
|---|---|---|---|---|---|
| Provide content | A | I | I | P | P |
| Web updates | I | C | S | P | S |
| Write media releases | S | A | S | P | S |

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

## Clean Water Division Website

Clark County Public Works Clean Water Division's website offers an opportunity for the public to review program activities, services and documents, as well as receive educational messages about stormwater. The website address is: www.clark.wa.gov/stormwater. Older technical reports and information formerly on the web are available to the public upon request.




## Media Releases

The Clean Water Division releases information on various topics to the media to publicize noteworthy events. The Clean Water Division manager will call for a media release on timely matters. The Outreach Specialist will write the release with the support of the Public Works Public Information Officer. Releases will be reviewed, edited and distributed to the media by the Communications Office.

## Outputs

- Content on CWD website
- 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 Clark County Council set policies for stormwater management.

### Responsibilities Matrix

| Task | Council | CCPW CWD Mgr. | CCPW CWD Outreach Specialist | CCPW CWD NPDES Permit Mgr. | CCPW CWD OA | CCPW CWD Program Asst. | CCPW Enhance. and Permitting Mgr. | CCPW Enviro. Permitting Coordinator |
|---|---|---|---|---|---|---|---|---|
| Appoint Clean Water Commission | A / P | I | I | I | I | S | O | O |
| CWC liaison | C | A | S | S | S | P | O | O |
| CWC secretary | O | A | S | O | S | P | 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 County Manager and confirmed by the Clark County Council. It provides a forum for public participation in the stormwater management program and also informs the Council about stormwater topics and policy recommendations.

***Staff Support***

Clean Water Division staff support the CWC in a variety of ways. A program assistant is the primary staff liaison to the CWC. The liaison will attend each meeting to take notes, distribute meeting materials, provide minimal facilitation when required, and respond to requests for information from CWC members. The CWC webpages will be updated with current commission member information and

terms, agendas, meeting summary notes and audio files, as well as any handouts.
Other Clean Water Division staff members may attend meetings, as required, to present updates on program activities or documents.

***Member Appointments***
Public notice of openings on the CWC will be listed in a news release issued by the Communications Office. Interested applicants, including incumbents seeking another term, must submit a letter of interest and a resume to the Clean Water Division manager. Clean Water Division staff and Clean Water Commissioners will conduct interviews and select candidates to fill vacant positions. Selected candidates are recommended to the County Manager for approval and submitted to the Clark County Council for confirmation.

***Public Meetings***
The CWC 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 pm in the Public Service Center, 1300 Franklin St., Vancouver, Washington. Public notice of meetings are issued in the county paper of record (The Columbian) the Sunday prior to the meeting date, as well in The Camas-Washougal Post-Record (east county) and The Reflector (north county).

Discussion topics will include updates from staff on the stormwater management program, education and outreach activities, 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 file). The meeting documentation will be available on the CWC webpage.

The CWC will hear public comment at the meeting.

***Communications with Clark County Council***
Each year, the CWC will provide an annual report to the County Manager and Clark County Council in a public meeting during the first quarter of the year. The annual report should summarize CWC discussions, actions and recommendations from the previous year, as well as include a work plan for the upcoming year.

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

## Stormwater Management Plan Review and Input

Clark County places its *Stormwater Management Plan ea*ch year on the Clean Water Division website for review and comment by the public at: www.clark.wa.gov/public-works/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 54), each project will be subject to public review and comment under the Washington State Environmental Policy Act (SEPA).

The CCPW Public Works 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 impacted citizens and stakeholders of the project. Typical products include a "Heads-upp" 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 webpage.

## Community Presentations

As requested, Clean Water Division staff will provide information on the program's activities to community, neighborhood 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. A program power point is available for presentations.

## Code Updates

Code revisions for water quality, stormwater and erosion control and Clean Water Fee regulations require extensive public outreach, review and comment, which will be coordinated by the Clean Water Division.

Per the 2013-2019 NPDES Municipal Stormwater Permit, a public outreach plan was developed to inform the public about stormwater code and manual updates. Any code updates utilize a variety of outreach strategies including emails to internal and external stakeholders, as well as website updates.

## 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), information requests, social media 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 provides a program to educate residential subdivision homeowners associations about proper maintenance of their stormwater facilities at: www.stormwaterpartners.com/facilities.

## Outputs

- Clean Water Commission notes including public comments
- Clean Water Commission Annual Report to the County Manager and Clark County Council
- Log of public comments on the Stormwater Management Program
- Log of public comments from community presentations
- SEPA file for each stormwater capital project
- Media releases
- Email updates
- Web content

## TASK CHECKLIST

| STATUS | TASK |
|---|---|
| ONGOING | Create opportunities to the public, including overburdened communities, to participate in the decision-making process involving the development, implementation and update of the SWMP |
| ONGOING | Implement processes to involve public in the SWMP |
| ONGOING | Display SWMP and other NPDES submittals on the website |
| ONGOING | Continue ongoing outreach programs |
| 2020 | Conduct an evaluation of the effectiveness of ongoing behavior change program |
| 2021 | Develop behavior change campaign and program evaluation plan |
| 2024 | Evaluate and report on behavior change campaign |

**For more information on efforts to inform and involve the public in the stormwater management program:**

Greg Shafer, Interim Clean Water Division Manager
564.397.4064
greg.shafer@clark.wa.gov

## *Education and Outreach Program (S5.C.10)*

### REGULATORY REQUIREMENTS SUMMARY

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

The NPDES permit requires the county to have an educational program to raise general awareness and effect behavior change to reduce or eliminate stormwater pollution. The Clean Water Division also provides stewardship opportunities to encourage residents to participate in stormwater related activities.

### COUNTY POLICIES, RULES AND REGULATIONS

**Clark County Code Chapter 13.26A.005 Education and Technical Assistance**

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.050(D) Clean Water Fee Reduction Program for Schools**

Section 13.30A.050(D) describes the Clean Water Fee program including the need and uses for the fee. It 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."

The code identifies schools as playing an important role for achieving this goal, and allows a program for schools to reduce their Clean Water Fees for providing activities that further this effort. Schools meeting four tasks including stormwater BMP training for staff, passing stormwater facility inspections, implementing educational activities related to stormwater, and disseminating stormwater messages to the broader school community, will receive a reduction in their Clean Water Fees.

## EDUCATION FOR THE GENERAL PUBLIC

### Purpose

The goal of the stormwater education and outreach program is to build general awareness and influence behavior changes that adversely impact stormwater. 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 for local waterways.
- General impacts of stormwater flows into surface waters, including watershed management.
- Impacts from impervious surfaces.
- How people contribute to the problem through daily activities.
- 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.
- General information about water quality and stream health.

### Responsibilities Matrix

| Task | CCPW CWD Mgr. | CCPW PIO | CCPW CWD Program coordinator | CCPW CWD Outreach Specialist | Partner Agencies / Contractors |
|---|---|---|---|---|---|
| Coordinate education programs | A | C | P | P | C |
| Track and measure deliverables | A | C | P | P | S |
| Create messages, programs and collateral | A | C | P | P | P |
| Distribute messages and collateral | A | C | P | P | P |
| **A** = Accountable, **P** = Primary (doer), **S** = Supports, **C** = Consulted, **I** = Informed, **O** = Omitted | | | | | |

### 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 webpage provides educational information, directions for properly managing and disposing of pet waste, and a pledge for dog owners to pick up after their dogs.

An outreach specialist will oversee the program and complete the majority of the tasks including receiving pledges, mailing materials, keeping program materials up to date, having a table at events, and coordinating with local partners to share the message.


The program webpage 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.

Public Works also partners with Community Development to educate the public on the need to pick up pet waste (stormwater protection and solid waste management issues) through the promotion of the Pet Waste Scoop code. Informational fliers are sent out in every pet license update notification.

## Green Neighbors Program

Clark County launched the Green Neighbors program in 2012. Promoting sustainable practices (including stormwater pollution prevention) to homeowners via their webpage www.clarkgreenneighbors.org, the program also hosts workshops and other educational events. The program is administered within the Public Health Department, in partnership with Public Works, to provide timely messaging of upcoming events and activities, including a community event calendar.

## Website

The Clean Water Division maintains a website at www.clark.wa.gov/stormwater, as well as specific program webpages, that showcases information about stormwater pollution and prevention techniques aimed at all audiences. The site contains information on endangered species at www.clark.wa.gov/public-works/endangered-species-act , with multiple links to additional resources on endangered species.

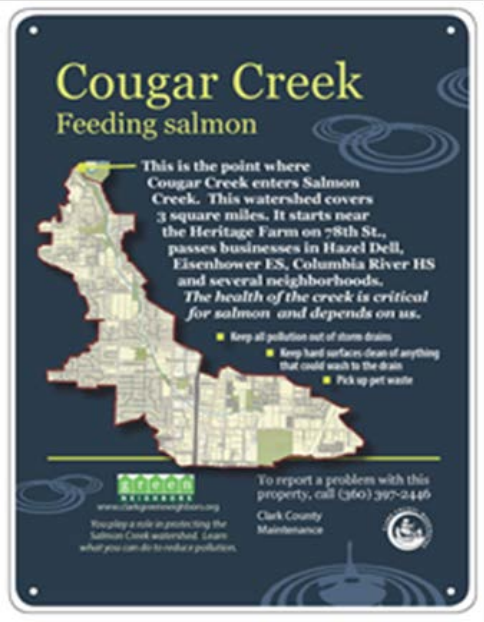
A webpage dedicated to "What you can do for clean water" includes educational information and stewardship opportunities for home projects, community projects, schools, businesses and property managers.

The website is updated on a monthly basis or as needed by the Public Works Clean Water Division staff.

## Publications and Displays

Clean Water Division staff produce displays and publications generally as part of specific program areas, such as pet waste management, natural gardening to prevent toxic runoff, pollution prevention techniques, watershed education and others.

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




Other displays include interpretive signs on county capital projects and park trails. Interpretive / educational messages are tailored to each site. Typical messaging includes information on watersheds, the value of the stormwater project, the value of protecting water quality, and contact information for the Green Neighbors program.

Clean Water Division staff also refer citizens to the 2010 Stream Health report for information about their local watersheds, especially teachers and neighborhoods.

## Outreach Events

Public Works Clean Water Division sponsor and staff informational booths at a variety of community events, such as the Earth Day Fest, Klineline Kids Fishing Derby, and Columbia River Watershed Festival. Outreach includes information about water quality, the effects of stormwater pollution, pollution prevention and other targeted environmental protection messages.

## Social Media

Public Works utilizes several forms of social media to increase outreach messaging effectiveness including:

- Facebook –Various divisions post messaging including the Clean Water Division at www.facebook.com/Clark-County-WA-Public-Works-1286536668033187/ and by the end of 2019 had 1,710 followers.
- Twitter – The Twitter feed is at www.twitter.com/ClarkCoWa_PW, and as of the end of 2019 has 2,199followers.
- Instagram – Various divisions use the Public Work Instagram account, @clarkcowa_pw, including the Clean Water Division and by the end of 2019 had 1,049 followers.
- Nextdoor.com – The Clean Water Division posts on the Clark County Communications agency account, which had more than 100,000 followers at the end of 2019.

## Stormwater Partners of SW Washington

Public Works Clean Water Division is promoting and staffing the Stormwater Partners of SW Washington to include local jurisdictions and other local / regional agencies and organizations which provide stormwater education and outreach. The county coordinates and facilitates quarterly meetings focused on maximizing education and outreach effectiveness through the sharing of resources, collaboration on projects, and the development of consistent messaging.

An updated Stormwater Partners website (www.stormwaterpartners.com) includes resources from previous collaborations on stormwater facility maintenance and LID, in addition to pollution prevention resources pertinent to audiences including businesses, residents, schools and developers.

The partnership collectively applies for grants to fund activities and pools resources where applicable.

## Regional Clean Water Campaign

The Clean Rivers Coalition is a group of Oregon and Southwest Washington cities, counties, stormwater utilities and nonprofit organizations committed to water quality and protection. An identified need is development of a strategy connecting regional messaging to local programs to increase the effectiveness of behavior change messages. The Clean Water Division is collaborating with Clean Rivers Coalition partners and KPTV Fox 12 on a regional public awareness media campaign promoting nonpoint stormwater pollution prevention.

## Outputs

- Clean Water Division webpages www.clark.wa.gov/stormwater and www.cleanwaterdogs.com
- Public contacts at events
- Fact sheets / brochures / informational signage
- Pledges to pick up pet waste
- Promotional materials such as water bottles, pens, etc.
- Social media outreach
- Stormwater Partners of SW Washington
- Regional clean water campaign

# EDUCATION AND TECHNICAL ASSISTANCE 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 (BMPs)
- 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 and follow-up technical assistance. 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 78 local businesses that have completed sustainability assessments and have met the requirements to be a local Green Business. This program is now managed through Clark County Public Health. An integral part of the program is the technical assistance visits and education to promote proper handling and disposal of toxic and hazardous materials and stormwater BMPs.

## Targeted Messaging

The Clean Water Division has identified a number of businesses that would benefit from messaging targeted to how their business can modify everyday practices to minimize pollution to stormwater. A series of brochures developed in 2017 are used to educate businesses and assist in finding solutions to their pollution prevention strategy. The brochures include messaging in Spanish and Russian.


Targeted business practices inserts include:

- Dumpster/Compactor management
- Spill kit use
- Landscaping
- Surface cleaning

Staff created English and Spanish language mop bucket management posters for businesses that routinely mop floors, such as restaurants. In the 2015 fuel station assessment program, messaging tools specific to fueling stations were developed.

## Local Source Control Pollution Prevention

The Clean Water Division, through a Department of Ecology Pollution Prevention grant, provides targeted outreach to businesses to address pollution source control. There are several aspects to the project, including technical assistance visits, messaging and materials. Available materials include 5-gallon emergency spill kits and drum lid covers, as part of the "Keep a lid on it" program.

In 2020, Clean Water Division staff will develop for business and property managers an oil/water separator user's guide covering function, inspection and maintenance.

## Catch Basin Cleanout Program

The Clean Water Division will continue the Catch Basin Cleanout Program aimed at increasing routine maintenance of privately owned catch basins. The program partners with a vendor to provide catch basin cleaning for an agreed upon price of $45 per catch basin. The vendor then performs the catch basin cleaning, properly disposes of waste material, invoices the business, and provides a manifest of proper waste disposal.
Clean Water Division staff created a webpage where owners of private catch basins sign up to have catch basins cleaned for the fixed rate (www.clark.wa.gov/catchbasincleanout). Out of compliance businesses are referred to the county.

In 2018, Clean Water Division staff mailed postcards to nearly 500 high priority businesses with stormwater facilities and catch basins draining to the county storm sewer system that need maintenance. The cards promoted the program and reminded businesses that they can save money and prevent pollution by performing regular maintenance.


The next mailing is planned for the 2020 NPDES permit term.

## Outputs

- www.clarkgreenbiz.com
- Other outputs listed in relevant sections
- Targeted business materials, spill response, etc.
- Pollution Prevention Assistance brochures
- Pollution Prevention Assistance oil/water separator user's guide
- Catch Basin Cleanout Program www.clark.wa.gov/catchbasincleanout

## 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.

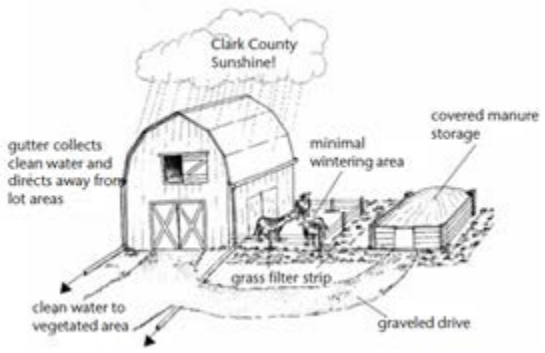
### Responsibilities Matrix

| Task | CCPW CWD Mgr. | CCPW PIO | CCPW CWD Project Coordinator | CCPW CWD Outreach Specialist | Agencies Providing Services |
|---|---|---|---|---|---|
| Coordinate education programs | A | C | P | P | C |
| Track and measure deliverables | A | C | P | P | S |
| Create messages, programs and collateral | A | C | P | P | P |
| Distribute messages and collateral | A | C | P | 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. Topics include mud and manure management, pasture management, wells and septic maintenance, and fencing for livestock.



The goal of the Small Acreage 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.

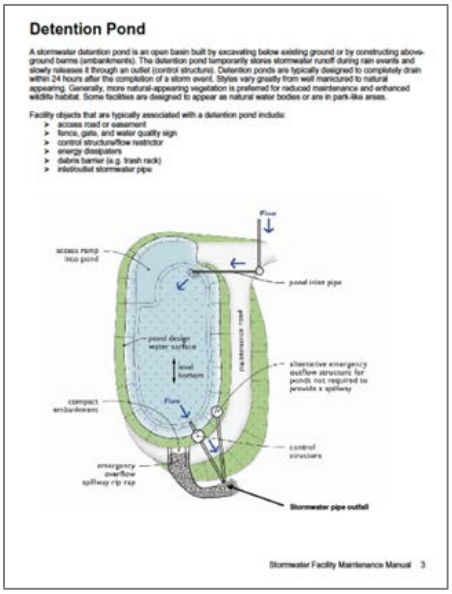
Clark County Public Works staff track deliverables of the program and negotiate the annual scope of work with the Extension director. WSU Clark County Extension submits quarterly and annual reports detailing deliverables.

## Targeted Outreach for Agency Partners

Clark County participates in the Local Interagency Networking Cooperative (LINC), an education and outreach partnership between Clark County departments of Public Works and Public Health, City of Vancouver Department of Public Works, Clark Regional Wastewater District, Southwest Washington Clean Air Agency, and the Washington State Departments of Agriculture, Ecology and Labor & Industries.

## Regulated Facility Maintenance Inspections

Clark County combines site visits for regulated stormwater facility maintenance inspections with delivery of technical assistance materials such as relevant pages from the Stormwater Facility Maintenance Manual. Refer to the section Operating and Maintaining the Storm Sewer System, County Property, and Roadways on page 21 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 dissipators
- 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 and regional partners within the county through Stormwater Partners of SW Washington, a program to provide common stormwater messages, education and guidance to the public on how to properly maintain privately owned stormwater treatment and flow control facilities.

The Stormwater Partners website (www.stormwaterpartners.com) contains how-to videos and user-friendly outreach materials.

The Clean Water Division outreach specialist will continue to work with the Stormwater Partners to develop this program. Quarterly meetings will be ongoing and include partners who have a role in educating the public about stormwater.

### Low Impact Development (LID) Training

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 webpage.

The Clean Water Division with Stormwater Partners plans to review and update outreach materials related to LID education. The program will create stormwater feature-specific information to share with various audiences including realtors, landscape professionals, contractors, single family residential homeowners and property managers. Some of the materials may be presented in workshops and trainings, including in collaboration with partners such as Community Development.

### Homeowner Targeted Messaging

- Grasscycling – Natural yard care to maintain healthy lawns without chemicals.
- Natural Garden Demonstration Site – A demonstration home garden site has been established at a local park (Pacific Community Park) to show how to manage diverse home landscapes while conserving and protecting water. More information is on the project webpage at: clarkgreenneighbors.org.
- Technical Assistance for Natural Gardening – The Naturally Beautiful Backyard program offers technical assistance through a web-based platform to homeowners to improve yards and minimize water use, pesticides and runoff. It also aims to encourage the use of native plants and creation of wildlife habitat.
- Backyard Habitat Certification Program – Provides technical assistance, incentives, resources, and recognition to owners of private property sized up to one acre focusing on habitat enhancements in five key areas including pesticide reduction and stormwater management.

### Related Messaging

Other Clean Water Division efforts 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. Many of these messages are with partner agencies, such as Public Health.

- 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 website at www.recyclinga-z.com – proper disposal of tires, electronics and household hazardous waste
- Clark County Community Development - Building Safety – information for homeowners on erosion and stormwater requirements
- Other local grant programs provide additional messaging about stormwater management and pollution prevention.

### Outputs

- Fact sheets
- Workshops
- Videos
- Landowner trainings
- Staff LID training
- LID educational materials
- Homeowner targeted materials
- Collateral materials

## EDUCATION FOR DEVELOPMENT AND CONSTRUCTION COMMUNITY, 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 | CCPW CWD Mgr. | CCPW CWD Program Coordinator | CCPW CWD Permit Mgr. | CCPW CWD Natural Res. Specialist | CD Dev. Services Mgr. | CCPW 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 website | 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 |

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## 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 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. Clark County departments with employees who work with the development community are trained by CWD staff on topics such as understanding "Pollution by Design" conflicts in development designs (i.e., dumpsters that include covers and separate drain systems).

## Education Delivered Through Development Review

Many active development community stakeholders receive educational and outreach messages about water quality, stormwater and erosion control 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 77.

***Community Development Website***

The Clark County department of Community Development hosts a website devoted to compliance with erosion control measures at: www.clark.wa.gov/community-development/erosion-control.

***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, erosion control and submittal requirements are reviewed.

***Clark County Stormwater Manual***

The Clark County Stormwater Manual 2015, which guides applicants for development and new development through stormwater and submittal requirements, contains educational messages about the importance of stormwater management. Training materials are posted on the county stormwater manual webpage at: www.clark.wa.gov/public-works/stormwater-code-and-manual.

***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 Clark County Council. 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 | CCPW CWD Mgr. | CCPW CWD Program Coordinator | CCPW CWD Outreach Specialist | Agencies Providing Services |
|---|---|---|---|---|
| Coordinate education programs | A | P | P | C |
| Track and measure deliverables | A | P | P | S |
| Create messages, programs and collateral | A | P | P | P |
| Distribute messages and collateral | A | P | P | P |

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

### Student Watershed Monitoring Network Program

In partnership with the City of Vancouver, Clark County involves students grade K-12 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. About 3,500 students participate each year.

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 an Ecology Grant of Regional or Statewide Significance to 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 webpage: 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.
- Hands-on toolkits to build stormwater projects on or near school sites (i.e., rain gardens, etc.).

## Washington Green Schools

Clark County Public Health continues to manage the local Washington Green Schools program. A Seattle non-profit organization runs the program full-time, with financial support from Clark County and other entities. The web address is www.wagreenschools.org.

Schools complete assessments in six environmental categories, including water and school grounds. More than 65 schools in Clark County currently participate in the program. An outreach specialist serves as a resource for local participating Green Schools.

The School Grounds Assessment covers stormwater management and use, as well as natural landscaping techniques to reduce chemical use, on school grounds. The Water Assessment covers watershed identification, path of stormwater from the school campus, LID or stormwater facilities, and possible sources of pollution. Outreach staff has 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" webpage. Clean Water Division staff also participate in the annual teacher trainings and student summits to offer advice on their assessments and "make a lasting change" projects.

## Experience Vancouver Lake

Clark County partners with the Port of Vancouver and the City of Vancouver to fund the Experience Vancouver Lake project that provides a variety of outreach activities. The student program provides in-classroom lessons about watersheds, invasive plant species, water quality and human-environment connections. The students then participate in a 4-hour field trip to Vancouver Lake for nature hikes, water quality monitoring, stewardship projects and educational messaging about the lake. Community events target residents and their families to visit the lake. Six on-water community paddles will be offered, with a focus on providing opportunities for overburdened community members to get on the lake with no paddling skills required. Past events have included community forums, EcoBlitz (mini BioBlitz) and stewardship opportunities (trash pick-up, invasive species removal, etc.).

## Watershed Storytelling

In an effort to support schools that want to provide watershed, stream and water quality educational sessions to large groups, the Clean Water Division has contracted with regional storytelling expert Will Hornyak. He will be available to large school groups, school assemblies and student focused events, such as the annual Columbia River Watershed Festival. He was awarded the Brimstone Grant by the National Storytelling Network for his watershed education assembly "Living Streams: Stories for Healthy Watersheds," which has been performed for over 60,000 students throughout the Northwest. This program will continue in 2020. A new contract will be negotiated to support at least 10 schools with watershed stories.

## Enviroscape

The Clean Water Division has an Enviroscape watershed model available for schools to use for watershed and stream health studies. Utilized by both elementary and middle schools, the model includes a variety of

"pollutant" types such as soaps, dirt, oils and pet waste.

### Outputs

- Student Watershed Monitoring Network and Watershed Congress
- Washington Green Schools (school grounds and water activity sheets)
- Experience Vancouver Lake student and community outreach activities
- Watershed Storytelling school assemblies
- Enviroscape models for classroom use

## STEWARDSHIP OPPORTUNITIES

### PURPOSE

Clark County creates stewardship opportunities and/or partners with existing organizations to encourage residents to participate in educational activities. The county offers hands-on activities including the following:

- Storm drain marking – kits are available to citizens, businesses, scouts and community groups to mark drains on private property or local roads with speed limits less than 25 miles per hour (both metal medallions and paint stencil kits). In 2019, seven volunteer groups engaged more than 66 volunteers to mark over 489 drains in high priority neighborhoods.
- River-friendly car wash kit – This kit is available to businesses that host 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 area to promote habitat. Educational signage is then installed at the site.
- Other individual site projects – Other projects are available based on the site, such as informational kiosk construction. Community-led projects build the kiosk and the county provides signage / poster / educational materials about the site, the watershed and key messages.
- Informational sign installations – Scouts are great partners to install watershed specific messaging signs.
- Planting projects are available to citizens through local organizations such as the Watershed Alliance of Southwest Washington, Clark Public Utilities StreamTeam and the Lower Columbia Estuary Partnership along riparian areas and critical habitat zones.
- Clark County Parks - beach clean ups and invasive plant removal events are offered in many county parks.

### Other Community Partner Stormwater Outreach

There are numerous agencies and nonprofits that provide stormwater education throughout Clark County, including in the jurisdictional area of Clark County. Many of these programs offer education messaging, raising awareness and stewardship opportunities. Clark County does not partner on funding, but these programs continue to increase awareness of stormwater related issues in our community. Some of the programs anticipated to continue in 2020 include:

- Clark Conservation District – Best Management Practices program (providing technical assistance for agricultural properties to manage pollution sources).
- Clark Conservation District – Watershed Stewards learn about watershed topics and return service hours in the community.
- Clark Public Utilities – StreamTeam (tree plantings, invasive species removal, education/outreach, events).
- Columbia Springs Environmental Education Center – hosts various outreach events and programs including Salmon in the Classroom (raise and release baby salmon) and community events focused on river health.
- Lower Columbia Estuary Partnership – provides restoration projects, outreach and education, including big canoe tours and working with students in classroom education.
- City of Vancouver Water Resources Education Center – hosts a number of programs to schools and the community about water, water quality, fish and other environmental messages.

## TASK CHECKLIST

| STATUS | TASK |
|---|---|
| ONGOING | Educate the general public |
| ONGOING | Educate businesses |
| ONGOING | Educate residents, landscapers and property managers |
| ONGOING | Educate the development and land use planning community |
| ONGOING | Provide and advertise stewardship opportunities |
| ONGOING | Increase awareness and education of homeowners, landscapers and property managers |
| ONGOING | Affect behavior through hands on activities, workshops, trainings and stewardship |
| 2020 | Evaluation the effectiveness of ongoing program |
| 2021 | Apply social marketing practices and methods |
| 2024 | Report on changes in adoption of targeted behaviors and changes to make it more effective |

**For more information on programs providing education and outreach about stormwater and the SWMP**:
Greg Shafer, Interim Clean Water Division Manager
564.397.4064
greg.shafer@clark.wa.gov

# Section 7 – Coordination

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 Divisions 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.
- Recordkeeping.
- Reporting requirements for the NPDES permit annual report.

#### *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 recordkeeping.
- County facility annual maintenance inspection.
- Training for staff whose primary job duties include design, construction site inspection and enforcement.

#### *Community Development*

Department of Public Works 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.
- Referring water quality complaints to the Clean Water Division.

***Community Development***

Community Development provides development review services for enforcing Clark County Code Chapter 40.386 Stormwater and Erosion Control and its predecessor, Chapter 40.385.
Community Development provides the following services:

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

***Internal Services Facilities***

The Clean Water Division has 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 Public Works. In early 2019, the General Services Department was dissolved and the department's facilities management functions were moved into a new facilities division of the newly-formed Internal Services Department. Public Works will update the agreement to reflect the new department structure, while retaining the same performance requirements.

***Public Health***

The Clean Water Division coordinates with Clark County Public Health on spill responses, illicit discharge investigations and other environmental complaints.
Public Health's agreement includes referring illicit discharges to Clean Water Division when discovered during routine work such as restaurant inspections, swimming pool inspections and other field activities that may discover illicit discharges. Field staff are trained to report spills and refer sites having illicit discharges to the Clean Water Division. Public Health is also responsible for addressing illicit discharges caused by on-site sewage disposal facilities.

***GIS Department and Application Services***

Department of Public Works 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 and projects such as development code and comprehensive plan updates .

### 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 | CCPW Director | CCPW CWD Mgr. | CCPW CWD NPDES Permit Mgr. | CCPW CWD Infrastructure Mgr. | CCPW CWD Program Coordinator |
|---|---|---|---|---|---|
| Vancouver Lake Partnership | I | A | O | S | P |
| Provide input to TMDL DIPs | O | A | S | P | O |
| TMDL advisory committees rep. | O | A | S | P | O |
| Local permittee coordination | A | I | P | I | O |

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### 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.

### 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.
- Hosting quarterly Southwest Washington permittee meetings to coordinate activities including roles and responsibilities for our interconnected systems.

### Coordination for Shared Water Bodies: Vancouver Lake Watershed Partnership

The Vancouver Lake Watershed Partnership (VLWP) is no longer meeting. However, the original funding partners (Clark County, City of Vancouver and Port of Vancouver) continue to provide financial support for community outreach, education and volunteer activities focused on Vancouver Lake under a contract with the Lower Columbia Estuary Partnership (LCEP). The Clean Water Division program coordinator administers the contract with LCEP, and the Clean Water Division manager serves as representative to coordinate with the other funding partners.

### 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

In 2020, the focus will be on a partnership developing a cleanup plan for bacteria in the East Fork Lewis River in collaboration with Ecology and local stakeholders. Other work includes working with stakeholders to develop a plan in response to the East Fork Lewis River temperature TMDL and continued work at bacteria source identification in 303(d)-listed Whipple Creek watershed.

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

### Outputs

- Various outputs from education and outreach programs (see section 6)
- Notes and summaries from each TMDL's Advisory Committee meetings

**For more information on ways the county coordinates with other jurisdictions and permittees**:
Greg Shafer, Interim Clean Water Division Manager
564.397.4064
greg.shafer@clark.wa.gov

County staff monitoring water quality at the Jones Creek stream gauge

# CHAPTER 3

# Assessment and Monitoring

# Assessment and Monitoring

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 no longer requires the county to develop and implement a monitoring program.

In 2020, Clean Water will complete the final report and data submittal to Ecology.

## 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.

Stream bed stability testing in the Mill Creek sub-watershed, 2009

### 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.

### Quality Assurance Project Plans

Each monitoring project follows a Quality Assurance Project Plan or QAPP to ensure that data are of adequate quality to meet project objectives. Each QAPP follows guidelines published by Ecology.

### 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.

### Outputs

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

## BMP EFFECTIVENESS MONITORING

Clark County is not conducting Best Management Practice Effectiveness Monitoring as a permit requirement. The project 2013 permit effectiveness project began implementation in late 2015 and was completed under the 2013 permit in 2018.

Crews install weir at a treatment wetland BMP monitoring site

## ILLICIT DISCHARGE MONITORING

This activity is described in detail in Illicit Connections and Illicit Discharges Detection and Elimination (IDDE) on page 56.

## 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 webpage is: www.clark.wa.gov/environmental-services/volunteer-monitoring-resources.

### Outputs during Permit Term

- Log of Monitoring Resource Center borrowers
- Log of data requests
- Equipment checkouts to individuals, agencies and groups

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