

Thurston County

Stormwater Management Program Plan

December 2016

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1. INTRODUCTION

1.1 Overview

When precipitation from rain and snow flows over hard surfaces like roads, roofs, and parking lots, it can pick up oils, chemicals, debris, and other pollutants that end up washing into waterways. While this runoff may take a direct path to the waterway, in developed areas it commonly gets collected and conveyed through municipal storm sewer systems which directs the runoff into local waterbodies. Thurston County's *Stormwater Management Program Plan* (Stormwater Plan) describes the various activities, procedures, and practices the County uses to help reduce the adverse impacts from stormwater runoff from storm sewer systems owned or operated by the County. The annual revision of the Stormwater Plan reflects changes in regulations, advancements in stormwater management, and the evolution of the County's procedures and practices and fulfills a regulatory obligation under the County's municipal stormwater permit. The Stormwater Plan also serves as an informative guide to County staff responsible for carrying out these programs as well as a resource for the public to learn about the County's stormwater management efforts.

1.1.1 Regulatory Context

The U.S. Environmental Protection Agency (EPA) established stormwater regulations under the [Federal Clean Water Act](#) for the municipal stormwater permit program consisting of two phases. Phase I for medium and large municipalities and Phase II for smaller municipalities. Phase II of EPA's stormwater regulation, which applies to the County, went into effect in early 2003.

In Washington State, EPA delegates administration of municipal stormwater permits to the Department of Ecology (Ecology). In addition to applying federal stormwater regulations, Ecology-issued permits also apply regulations under the [State Water Pollution Control Act](#). The County's coverage under the [Western Washington Phase II Municipal Stormwater Permit](#) (Permit) began in January 2007. The reissued 2013-2018 Permit became effective on August 1, 2013. The Permit conditionally authorizes the discharge of stormwater to surface waters and to ground waters from county owned or operated separate storm sewer systems within the geographic scope of the Permit. Locally, the Permit generally applies to urbanized areas and urban growth areas associated with permitted cities (Olympia, Lacey, and Tumwater) under the jurisdictional control of the County.

The Permit requires the County to develop and implement a Stormwater Plan designed to reduce discharges of pollutants from municipal stormwater systems to protect water quality. The Permit requires the Stormwater Plan to include the following program components:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Controlling Runoff from New Development, Redevelopment, and Construction Sites

- Municipal Operations and Maintenance
- Planned actions to meet applicable Total Maximum Daily Load (TMDL) requirements
- Planned actions to meet the Permit’s monitoring requirements.

The Permit requires the Stormwater Plan be updated at least annually to inform the public of the planned program activities for the upcoming calendar year.

1.1.2 Area and Facilities Covered

Thurston County’s Permit covers unincorporated urbanized areas¹ and urban growth areas associated with permitted cities (i.e., the Cities of Lacey, Olympia, and Tumwater) falling under the jurisdictional control of the County. The geographic scope of the permit coverage evolves as the County’s jurisdictional control transfers due to annexations to permitted cities. [Appendix A](#) details the 2015 annexations and the County’s 2016 Permit boundary. The County also implements several of the programs described in the Stormwater Plan countywide.

1.2 Stormwater Management Program Plan Organization

[Section 1: Introduction](#) provides an introduction/overview of the County’s stormwater management program, the regulatory context of the program, the area and facilities affected, and permit history.

[Section 2: Stormwater Management Program Administration](#) describes the County’s stormwater-related internal and external coordination mechanisms, funding structure, asset management, capital improvement program, and the Stormwater Plan revision process.

[Section 3: Public Education and Outreach](#) describes the County’s programs designed to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts as well as encourage public participation in stewardship activities.

[Section 4: Public Involvement and Participation](#) describes the ongoing opportunities for public involvement and participation in developing, implementing, and revising the Stormwater Plan.

[Section 5: Illicit Discharge Detection and Elimination](#) describes the County’s ongoing program designed to prevent, detect, characterize, trace, and eliminate unauthorized connections and illicit discharges into its Municipal Separate Storm Sewer System (MS4).

[Section 6: Controlling Runoff from New Development, Redevelopment, and Construction Sites](#) describes the County’s program and enforcement mechanisms to reduce pollutants in stormwater runoff to its MS4 from new development, redevelopment, and construction activities.

[Section 7: Municipal Operations and Maintenance](#) describes the County’s operations and maintenance program to prevent or reduce pollutant runoff from its municipal operations.

¹ A federally-designated land area comprising one or more places and the adjacent densely settled surrounding area that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile. The U.S. Census Bureau designates *urbanized areas* based on the most recent decennial census.

[Section 8: Compliance with Total Maximum Daily Load Requirements](#) describes the County’s TMDL-related obligations for stormwater discharges from its MS4.

[Section 9: Monitoring and Assessment](#) describes the County’s participation in the Regional Stormwater Monitoring Program as well as any stormwater monitoring or stormwater-related studies conducted by the County.

2. STORMWATER MANAGEMENT PROGRAM ADMINISTRATION

2.1 Internal Coordination

The responsibility for the overall administration of the Stormwater Plan and compliance coordination for the Permit lies with the County’s Water Resource Division’s National Pollutant Discharge Elimination System (*NPDES*) *Compliance & Planning Coordinator* in consultation with the County’s *Stormwater Coordination Team (SCT)*. The County’s various departments, divisions, and programs distribute functional responsibilities associated with the County’s Stormwater Plan. These include:

- [Central Services](#) (Facility Services, Fleet Operations, and GeoData)
- [Public Health & Social Services](#) (Environmental Health)
- [Public Works](#) (Engineering Services, Development Review, Noxious Weeds, Parks, Roads, Safety & Operations, Solid Waste, and Utility Operations)
- [Resource Stewardship](#) (Permitting & Administrative Services, Fairgrounds, Long Range Planning, and the Stormwater Utility)

2.1.1 Stormwater Coordination Team (SCT)

The SCT assists in addressing stormwater management-related policy issues as well as providing a framework for communication, coordination, and cooperation in the development and implementation of the County’s stormwater management program. The SCT meets regularly and consists of representatives from County departments and programs required to commit or expend resources related to stormwater management. Meeting summaries, focusing on decisions and action items, are kept and distributed to SCT members. When appropriate, the SCT directs assignments to subcommittees.

Duties and responsibilities of the SCT include:

1. Making decisions and recommendations regarding stormwater management-related policies, programs, and planning.
2. Providing regular updates on program direction and evolving policy issues to the Storm and Surface Water Advisory Board (SSWAB), a citizen advisory committee to the Board of County Commissioners (BoCC).
3. Providing recommendations to the BoCC and/or management on preferred approaches to meet regulatory obligations.
4. Guiding development and deployment of the County’s Stormwater Plan by making recommendations regarding:

- Funding, staffing, and other resources necessary to support its development and implementation.
 - The roles and responsibilities of the County departments and programs that are essential for its successful implementation.
 - How best to carry out stormwater-related work or, if that is not possible, suggest priorities on what should be done so the risks and downsides are understood.
5. Ongoing evaluation of the Stormwater Plan's effectiveness.
 6. Improving communication among affected workgroups in County departments and programs.
 7. Assisting in the resolution of stormwater-related problems and conflicts.

2.1.2 Permit Implementation Tracking Tool

In late 2014, the County began developing a stormwater permit implementation tracking tool. The County uses the spreadsheet-based stormwater permit tracking tool to aid in:

- Communicating stormwater permit obligations among department, programs, and staff;
- Identifying resource and staffing needs;
- Assigning roles and responsibilities among departments and staff;
- Developing work programs and budgets;
- Tracking permit compliance; and
- Generating annual reporting assignments

2.2 Intergovernmental Coordination

The County coordinates with local, state, and federal governments, tribes, and various stakeholder groups. Improved intergovernmental coordination helps identify areas for stormwater retrofit, maintenance, illicit discharge detection and elimination, spill response, and education. As appropriate, the County works with these groups to help coordinate the implementation of our Stormwater Plan.

The County actively participates in numerous groups and committees to coordinate stormwater-related policies, programs, and projects. This helps leverage resources, maximize program effectiveness, and foster information sharing. These groups and committees, ranging from local to national involvement, include such areas as permit coordination, operation and maintenance, education and outreach, basin planning, salmon recovery, TMDLs, monitoring, floodplain management, and technical advisory functions.

2.3 Storm and Surface Water Utility Fees

Most property owners in unincorporated Thurston County pay storm and surface water utility fees. The rates vary depending on the property's use (e.g., residential, multi-family, commercial, industrial, agricultural, government, public and private roads, and vacant land), square feet of impervious surface, and whether the property lies within the regulatory boundaries of the Permit.

The storm and surface water utility rate has two components: a base rate and a capital rate. The rates appear as a single stormwater charge on annual property tax statements.

The County offers a rate fee credit program as a way for schools and non-residential properties to reduce their stormwater fees. The fee credit program is designed to recognize schools, commercial businesses and other non-residential property owners whose activities support the County's stormwater management goals by granting these parcel owners up to a 50 percent credit on their stormwater rates and charges. Non-residential properties include, but are not limited to, retail, wholesale, or services businesses; offices, public buildings, and places of worship.

More information on the County's storm and surface water utility fees and rate fee credit program can be found at: <http://www.co.thurston.wa.us/stormwater/utility/utility-rates.html>.

2.4 Stormwater Asset Management

The County has built a very detailed foundation of data used for daily operation and maintenance related to: illicit discharge detection and elimination (IDDE), stormwater facility asset management, utility locates, facility inspections, work order generation, service requests, and technical assistance. County asset management efforts focus on identifying structural defects as well as condition inspection tracking and reporting on the overall condition of its stormwater infrastructure assets.

The County uses VUEWorks asset and maintenance management software to maintain a map of its storm sewer system in a Geographic Information System (GIS) database. Staff collects data in the field and then edits the data to fit within the database's established data structure. Importing the data into VUEWorks results in a searchable database for everyday use in the field and office.

Staff continues to map new or newly discovered stormwater infrastructure throughout all of unincorporated Thurston County. Ultimately, the County aims to map the location of all public and private stormwater infrastructure in the unincorporated areas of the County. This is an ongoing challenge due to facility replacement, new development and redevelopment, and discovery of previously unknown systems.

2.5 Capital Improvement Program

The Stormwater Utility's [Capital Facilities Plan](#) (CFP) is prepared with six and 20 year planning horizons. CFP projects include those that require more than minor maintenance or repair and involve a substantial cost and/or engineering and permitting effort. Previously completed capital projects include culvert replacements to address road flooding, the construction of runoff treatment and infiltration facilities to replace failing drywells in older subdivisions, and implementation of other standalone runoff treatment and flow control facility retrofits, such as wetponds and detention ponds in older developments.

The CFP includes project descriptions, estimated construction dates, costs, and proposed methods of financing. The CFP is updated annually using a [priority rating form](#) to rank the

projects. The ranking system rates projects using approximately 60 different criteria. The criteria are scored from 0-5 and weighted by category. The categories include:

- Project location (i.e., whether the project falls inside or outside an urban growth area, the NPDES municipal stormwater permit boundary, or sensitive or priority watershed; project proximity to water bodies, wells, etc.);
- Project feasibility (i.e., ease of permitting, utility or site constraints, number of parcels and their ownership effected by the project, project impacts on adjacent activities, and ease of construction);
- Identified high priority projects (i.e., identified in TMDL water cleanup plans or basin plans, known public health and safety issues, priorities identified by outside agencies and tribes, and beneficial impacts to neighborhoods);
- Water quality and quantity conditions (i.e., amount of flow control and treatment the project provides, size of area treated, and pollutant removal effectiveness);
- Environment, habitat; and ecology (i.e., habitat enhancement, wetlands restoration, streambank protection, open space connectivity, and/or stream channel restoration); and
- Public stewardship (i.e., total project cost to the stormwater utility compared to total budget, cost per acre of treated impervious surface, public education and outreach potential, cost of maintenance and operations, and outside funding opportunity).

The County's Storm and Surface Water Advisory Board (SSWAB) vets and recommends the ranked list of projects for approval by the BoCC. Projects are scheduled for design and construction based on the project's approved ranking, the project cost, and the available funding for each year of the County's six-year [Consolidated Capital Facilities Plan](#). The 20-year plan includes projects that cannot be funded in the six-year plan.

2.6 Stormwater-Related Training Tracking

In 2016, the County developed a *Stormwater Training Plan* ([Appendix B](#)) in order to facilitate deployment of the training requirements set forth in the Permit. This pertains to the following program areas:

- Illicit discharge detection and elimination;
- Operation and maintenance; and
- Controlling runoff from new development, redevelopment, and construction sites.

For each of these program areas, the training plan describes the key training topics, the groups or positions that need the training, delivery of the training, and when and how often the training will occur. The County also began work on integrating the elements of the training plan into the County's electronic Learning Management System (LMS) that will aid in improving notification, tracking, and documentation of attendance for the trainings.

2.7 Stormwater Plan Revision Process

The County updates its Stormwater Plan annually for submittal with its annual municipal stormwater permit compliance report to Ecology. In addition to including planned activities in

the coming year, the County may identify trends, common problems, or solutions that spur the need to revise aspects of the Stormwater Plan as part of our ongoing evaluation and continuous improvement of program areas. The SCT identified chapter leads to coordinate the ongoing review of the Stormwater Plan's content. The Stormwater Plan revision process involves circulating the revised draft for internal staff review as well as review by the SSWAB.

As part of this year's program review, the County participated in a peer-to-peer mock audit with Kitsap County to review our programs, policies, and procedures related to illicit discharge detection and elimination, operations and maintenance, and construction stormwater management oversight. The mock audit utilized the audit worksheets developed by the Department of Ecology.

3. EDUCATION AND OUTREACH

3.1 Overview

The County recognizes the essential role individuals and businesses can play in proactively preventing or reducing polluted stormwater runoff. Strategically deployed Education and Outreach (E&O) programs help citizens and businesses prevent pollution and help keep local waterways clean and healthy by adopting preferred Best Management Practices (BMPs). To this aim, County E&O programs incorporate citizen involvement, stewardship activities, social marketing, and community outreach.

3.2 E&O Local and Regional Partnerships

In order to leverage resources, reduce duplication of efforts, and provide consistent messaging, the County utilizes internal, local, and regional partnerships to reach a diverse array of target audiences.

On a local level, the County coordinates with the Cities of Lacey, Olympia, and Tumwater as part of a local regional educational partnership (PARTNERSHIP). The jurisdictions develop a regional work plan annually and meet monthly coordinate efforts to meet shared regulatory obligations and program priorities. This year, County and the Cities adopted an Interlocal Agreement (ILA) to formalize the PARTNERSHIP. This ILA provides a mechanism for the County and the Cities to voluntarily collaborate in the development, implementation, and funding of stormwater education and outreach messages, materials, activities, and program assessment tools.

Regional E&O priorities include: construction-related sediment and erosion control, Home Owner Association (HOA) storm system maintenance, restaurants and automotive-related businesses lawn care, and a [*Stream Team*](#)² program. In addition, the County coordinates stormwater E&O efforts on a larger regional scale through the Puget Sound-wide STORM (Stormwater Outreach for Regional Municipalities) work group and locally via the Thurston EcoNetwork (EcoNet), a network for Thurston County environmental educators.

County E&O staff in the Stormwater Utility, Environmental Health, and Public Works coordinate internally to: 1) help promote “good housekeeping” practices for the County’s operations, 2) to speak with one voice on messages related to stormwater and water resources, and 3) reduce duplication and improve program efficiencies. E&O County staff meet on a regular basis via the *Thurston County E&O Specialists* work group. Through these meetings staff identifies ways to increase coordination on Permit-related E&O activities.

² The *Stream Team* program seeks to protect and enhance the water resources and associated habitats and wildlife in Thurston County through citizen action and education.

3.3 E&O Program Design Process

The County designs its E&O programs to meet or exceed Permit requirements. Through strategic planning, assessment, and coordination the County seeks to focus its E&O programs on target audiences to elicit behaviors that will best protect water quality and associated habitat throughout the County. The County identifies priority target audiences and desired outcomes based on local and regional studies and surveys, illicit discharge reports, monitoring data, and through participation in local and regional processes.

Staff develops many of its E&O programs, based on social marketing principles, to identify:

- Target audiences
- Desired behaviors
- Barriers to change
- Motivators to realize change
- Evaluative measures

The County evaluates E&O efforts regularly to determine effectiveness and ensure they meet County priorities. Staff makes program adjustments based on these evaluations. This includes using participant and non-participant survey data to: assess which practices the participants adopted, identify barriers and motivators, and conduct cost-benefit analyses.

3.4 Target Audiences

Target audiences for E&O programs include:

- Residential property owners, managers, and renters
- Business and commercial owners/managers
- Rural resource landowners/managers
- Engineers, contractors, developers, landscape architects, and land use planners
- Youth
- Citizen volunteers
- The general public

3.4.1 Residential Property Owners, Managers, and Renters

The County uses the following programs to provide E&O for residential property owners, managers, and renters:

Workshops

The County has contracted with the Washington State University Extension (WSU Extension) to conduct workshops that help participants learn how to reduce runoff, reduce the use of pesticides and quick-release fertilizers, and replace lawn with native and/or water-wise plants to increase infiltration.

In addition, the County, in partnership with the cities of Lacey, Olympia, and Tumwater conduct HOA workshops to instruct them on the proper maintenance of residential stormwater facilities.

Stormwater Stewards

The County contracts with WSU Extension to implement residential site assessment program called [Stormwater Stewards](#). This program trains volunteers to conduct site assessments and generate reports to property owner with suggestions on various approaches they could implement to reduce stormwater runoff and pollution.

Yard Care

Thurston County, in partnership with the cities of Olympia and Tumwater, participated in the GROSS³ grant-funded *North and South Sound Natural Yard Care Education Pilot Program*. This pilot program, marketed as *Go GREEN Lawn Care* began in January 2014, targeted residential homeowners currently using “weed and feed” and/or quick-release fertilizers on their lawns. The contractor completed the program evaluation report in December 2015.

Based on suggestions from the evaluation report, the County piloted a [monthly electronic newsletter](#) called *Thurston Lawn & Garden: Seasonal Solutions For Lawn, Home & Garden*. The e-newsletter provided timely seasonal prompts for key lawn and yard care BMPs and related pollution prevention practices. Discussions are occurring with Thurston County Environmental Health to continue this e-publication with a healthy homes/healthy gardening focus as the publication’s host as the Stormwater Utility’s involvement will cease at the end of 2016 to allow us to better balance workload demands with the Stormwater Utility’s and our PARTNERSHIP’s E&O priorities.

The County’s *Residential Lawn Aeration Incentive Program* offers qualifying residents a rebate or free rental for aerating their lawns to improve infiltration in residential landscapes. This program was included in the *Go GREEN Lawn Care Pilot Program*.

The County’s Environmental Health Division has an ongoing [Integrated Pest Management \(IPM\)](#) education program to teach residents least-toxic methods for managing weed, pest, and disease problems. Residents can learn about IPM through the County’s [Common Sense Gardening Program](#), which includes brochures, fact sheets, and retail staff trainings at local lawn and garden stores (see Lawn Care Point of Purchase Program below). Residents can also learn about IPM methods from WSU Extension Service-trained Master Gardeners who conduct outreach at community events and public locations year-round throughout Thurston County.

Looking forward, the County plans on working with its regional partners to refine residential yard care outreach program efforts. The County is also evaluating the efficacy of utilizing *Master Gardener* volunteers to assist in disseminating yard care information and providing lawn care clinics.

³ Grants of Regional or Statewide Significance

The County's Noxious Weeds Control Program also helps residents to incorporate IPM methods through:

- Phone advice
- Site visits and weed identification
- IPM weed control recommendations
- Free noxious weed disposal
- Displays, speakers, and brochures
- Help with beneficial insects

Residents Adjacent to County Roadside Conveyance Ditches/Bioswales

During 2016, staff from multiple departments worked on developing procedure regarding maintaining vegetation in conveyance ditches and stormwater facilities. Upon completion of the procedures, staff will revise the current roadside ditches outreach brochure to reflect the County procedures and to inform residents of the critical role conveyance ditches and stormwater facilities play in managing stormwater runoff.

Septic System Maintenance

In recognition that improper maintenance and operation of septic systems can lead to polluted runoff and impaired water quality, Thurston County Environmental Health implements programs targeted to septic system maintenance and operations. Their education and outreach program relies on:

- Educational materials, videos, displays in public locations such as libraries and city halls, and general workshops on proper septic system operation and maintenance;
- A list of certified professionals to perform septic systems services; and
- Incentives and financial assistance.

The County posts this information on the program's website at:

<http://www.co.thurston.wa.us/health/ehoss/index.html>. In addition, the County promotes the septic program through various outreach efforts, such as the quarterly *Stream Team* newsletter and distributing educational materials at community events.

Household Hazardous Waste Storage and Disposal

The County E&O to residents regarding the proper storage and disposal of household hazardous wastes includes distributing information: on the County's Environmental Health Education and Outreach webpages, in publications and newsletters, through its [*Healthy Homes Program*](#), at retail stores through the point-of-purchase program, and conducting community and school presentations.

3.4.2 Business & Commercial Owners/Managers

Programs vary by target audience within the business and commercial sectors. The following provides business and commercial sectors for which the County has existing, or is currently developing, E&O programs:

- Restaurants

- Small Quantity Hazardous Waste Generators
- Automotive Parts and Repair Businesses
- Lawn Care Point of Purchase Education
- Mobile Businesses (e.g., painters, pressure washers, food vendors, landscapers, concrete truck operators, drywall installers/finishers, tile and granite cutters, and carpet cleaners)
- Landscapers

Restaurants

The County developed a *Restaurant Poster & Hood Sticker BMP* program, based on social marketing principles, in cooperation with the PARTNERSHIP. The BMPs in the program include: proper cleaning of restaurant hoods and mats, sweeping up around dumpsters, cleaning up spills, and proper storage of grease. The County has utilized staff from Public Health (PH) to help deliver BMP posters and hood stickers to restaurants during restaurant inspections. The County is exploring the option of contracting with the Environmental Coalition of South Seattle (ECOSS) to deliver this program in the future.

Small Quantity Hazardous Waste Generators

The County's Business Pollution Prevention Program provides *small quantity generators* (SQGs) with technical assistance. The program aims to educate businesses about hazardous material and waste regulations and to enforce the County's [Nonpoint Source Pollution Ordinance](#) (Article VI of the Sanitary Code). County specialists provide free on-site technical assistance and otherwise work with businesses to ensure proper storage, handling, and disposal of hazardous materials or waste while promoting hazardous waste reduction, reuse, and recycling. In the past the County has conducted technical assistance campaigns for automotive shops, commercial printers, dry cleaners, auto recyclers, and paint contractors.

Automotive Parts and Repair Businesses

In 2014, using focus groups, the PARTNERSHIP developed an automotive BMPs poster. The poster's BMPs include proper covering, cleaning, capturing, and containing of potential pollutants. The PARTNERSHIP intends to distribute the poster to automotive parts and repair businesses as part of a regional campaign focusing on vehicle-related businesses. This campaign will coordinate with staff from the County's Business Pollution Prevention Program to ensure consistent messaging, reduce duplication, and increase program efficiencies.

Lawn Care Point of Purchase Program

County Environmental Health staff carry out a Point of Purchase program at local businesses that sell lawn care products. The program encourages the purchase of lawn and garden care products that are safer for local waterways, people, and pets while helping to reduce sources of non-point pollution. Local businesses receive annual staff training on safer lawn and garden care products. During the peak lawn care season, *secret shoppers* help evaluate the staff training program. The program includes display racks at local garden centers and nurseries which contain informative brochures on lawn care and gardening practices, including the County's *Common Sense Gardening* guides series.

In addition, the PARTNERSHIP will consider outreach to retail buyers on a regional level to help ensure that lawn and garden products recommended for use through the *Go GREEN Lawn Care* program and the *Common Sense Gardening* guides are readily available for purchase in locations throughout Thurston County.

Mobile Businesses

The PARTNERSHIP will explore contracting with ECOSS for the distribution of spill kits and stormwater pollution prevention materials to food trucks and espresso carts.

Landscapers

Thurston County EH hosted an EcoPRO landscapers training with up to 25 local landscapers in March of 2016. EcoPRO is a Washington-based landscaping certification training that includes extensive stormwater education. The landscaping actions taught in the training include the BMPs recommended for use in the *Go GREEN Lawn Care* program. The PARTNERSHIP help promote the training and will consider promoting the list of certified landscape professionals in their regional yard care outreach efforts.

The PARTNERSHIP began offering workshops in 2016 to train landscapers in the proper maintenance of residential storm ponds and related stormwater facilities. Thurston County and the City of Tumwater piloted such a training in 2015.

3.4.3 Rural Resource Landowners/Managers

A significant portion of the County's population lives in rural areas outside the geographic scope of the County's Permit. While less dense in population compared to the urbanized portion of the County, rural land uses affect the health of the County's water resources.

Several waterbodies are impaired for pollutants associated with nonpoint source pollution, and Total Maximum Daily Loads (TMDLs) assign load allocations to nonpoint sources. In recognition of this, the County offers rural landowners limited assistance in replanting streamside habitat through volunteer habitat enhancement projects, implemented via *Stream Team* volunteers, students, or community youth groups that qualify for the County's *Works Involvement Now !* community service program. Staff from the Thurston Conservation District (CD) or WSU Extension develop planting plans used for these projects. (Refer to [Section 8.4](#) for more information on the County's implementation actions related to TMDLs.)

The County will continue holding regular meeting with local nonpoint partners, including the CD, WSU Extension, Natural Resource Conservation Service, and Ecology. These efforts aim to develop more coordinated and effective nonpoint pollution prevention strategies for agricultural operations. Examples include Pollution Identification and Correction (PIC) and the Voluntary Stewardship Program (VSP). Coordinated education and outreach will be integral to the success of these programs. The group also hopes to identify priority areas for to rural stewardship projects in coordination and partnership with willing landowners.

3.4.4 Engineers, Contractors, Developers, Landscape Architects, and Land Use Planners

With the impending changes to the County's *Drainage Design and Erosion Control Manual (DDECM)*, the County has identified engineers, contractors, developers, landscape architects, and land use planners as target audiences. The County has already begun outreach and education to staff in Land Use and Permitting who will be working directly with the public regarding implementing the updated DDECM and the new low impact development (LID) requirements contained within the manual.

In addition, sediment and erosion control from construction practices was identified as a high priority by the PARTNERSHIP. The PARTNERSHIP is working with staff from other appropriate programs to develop a community based social marketing program aimed at reducing sediment and erosion related to construction activities.

3.4.5 Youth

The County employs a variety of methods to engage and help youth develop a water resources stewardship ethic. The County contracts with three local programs that assist teachers in developing and implementing water quality education curriculum get their students out in the field for hands-on learning. The three programs (South Sound GREEN, Nisqually River Education Project, and the Chehalis Basin Education Consortium) aim to help students learn about the entire water cycle, including the adverse effects that stormwater runoff and pollution can have on water resources and aquatic communities.

County staff also provide stormwater-related classroom and field trip educational activities to thousands of local students. Topics covered include pet waste, non-point source pollution, salmon, watersheds, car washing, residential pollution prevention, and streamside habitat enhancement.

To support youth education programs, the County offers a stormwater fee rebate to accredited schools that keep their stormwater facilities in good operating condition and teach their students about specified water-related issues. To date, the Rochester School District, Meadows Elementary, and The Evergreen State College currently participate in this rebate program. E&O staff are working with Operations and Maintenance staff to help market and facilitate program registration to additional school districts in unincorporated Thurston County.

3.4.6 General Public

Newsletters

The County conducts community outreach to help raise awareness on a variety of topics related to preventing non-point source pollution and preventing and reporting illicit discharges through educational articles included in the *Splash* annual Stormwater Utility newsletter and the quarterly *Stream Team* newsletters.

Community Events

County also provides E&O on non-point source control at community events, such as pet waste outreach at the annual Nisqually Watershed Festival and Thurston County Fair.

In 2015, the Stormwater Utility and Environmental Health began a major review and overhaul of their web pages with the goal of making them more informative and user-friendly. Once completed, there will be an ongoing focus to keep the content on these pages current and user-friendly.

Clean Cars; Clean Streams

The PARTNERSHIP, promotes the *Clean Cars; Clean Streams* program to encourage residents to wash their cars at commercial car washes in lieu of washing them in their driveways. The program also encourages community groups to sell car wash tickets as a fund raiser in lieu of holding traditional “bucket and sponge” car wash fund raisers.

Don't Let Your Pooch Pollute

To encourage dog walkers to pick up their dogs' waste, the County offers free pet waste signs and bag dispensers to residential neighborhoods in unincorporated Thurston County. Qualifying applicants receive a free “Don't Let Your Pooch Pollute” metal sign(s), bag dispenser(s) and an initial set of 500 pet waste bags. The County surveys applicants within the first year to ensure the pet waste stations have been installed and to gather qualitative information.

3.5 Stewardship

The County offers multiple opportunities where citizens can actively engage in the stewardship of water resources and habitat. *Stream Team* offers a variety of opportunities for citizen monitoring and surveying; habitat restoration projects; learning about local plants, habitats and wildlife; and maintaining local environmental educational trails.

WIN!

To help engage youth groups in the protection of local water resources, the County offers a youth group stipend program called *WIN!* (Works Involvement Now!). Thurston County youth groups can earn a \$300 stipend by successfully completing a County-approved stewardship project that provides a minimum of 40 total hours of volunteer labor. Eligible projects must demonstrate a benefit to local water resources or associated habitat.

Native Plant Salvage Program

The County contracts with WSU Extension's Native Plant Salvage Program to conduct native plant salvage events at sites slated for development. Volunteers help to salvage native plants for later use in capital improvement, restoration, enhancement, and mitigation projects throughout the County.

For example, *Stream Team* along with WSU Extension Native Plant Salvage Program are “Adopt-A-Trail” partners for the State Department of Natural Resources' McLane Creek Nature Trail, a part of Capital Forest. This small reserve located in Thurston County provides a perfect

environmental learning environment. As such, the County, in partnership with WSU Extension, involves volunteers in maintaining the trail in a condition suitable for educational uses.

Salmon Stewards

The County hosts a *Salmon Stewards* program at the McLane Creek Nature Trail that provides trained volunteers to serve as docents during the late fall wild chum salmon run. The volunteer docents staff an observation platform and viewing bridge and answer questions from the public on the salmon spawning behaviors and make connections about their need for clean water free of polluted runoff. *Salmon Stewards* also assist with public school field trips visiting the site.

Citizen Macroinvertebrate Monitoring

As described in [Section 9.3.6](#), County E&O staff will resume macroinvertebrate monitoring with trained volunteers starting in the summer of 2017. All volunteer field work will be supervised by E&O staff to maintain quality assurance and quality control standards.

4. PUBLIC INVOLVEMENT and PARTICIPATION

4.1 Overview

Public involvement in the County's Stormwater Program directly links public agencies and elected officials to interested citizens. It greatly enhances the quality, efficacy, and effectiveness of County programs by gathering information from community members, creating a shared sense of responsibility, and leveraging local knowledge. In addition, the County sees public involvement as a means to inform and educate citizens, leading to support in the adoption of stormwater solutions with the aim of fostering innovation and more cost-effective solutions. Public participation can help inform and shape the ordinances enacted by the County's elected officials and administered by its departments. It also helps support and compliment the County's regulatory obligations such as implementing programs and actions to help achieve state water quality standards with the aim of making the County's waters more "drinkable, fishable and swimmable."

In order to meet its obligations under the Permit, as well as to maximize the benefits of public involvement, Thurston County has established the Storm and Surface Water Advisory Board (SSWAB) and conducts extensive public contact through the County's Education and Outreach Program ([see Section 3.0](#)). In addition, the County maintains a website for the "[Thurston County Storm and Surface Water Utility](#)." This site provides access to news and resources related to the County's stormwater program, such as the [Thurston County Stormwater Management Program Plan](#) (SWMPP) and [Annual Compliance Report](#).

4.2 Opportunities for Public Involvement

4.2.1 Storm and Surface Water Advisory Board

The [Storm and Surface Water Advisory Board](#) (SSWAB) was established in 1990 by [Thurston County Resolution No. 9514](#) in order to provide review and recommendations on issues affecting the County's Storm and Surface Water Utility. Members, appointed by County Commissioners, serve staggered three-year terms. An annual meeting schedule is developed in November for the following calendar year. Generally six meetings are held per year. Meetings are open to the public, and [meeting materials](#) are routinely provided to citizens, reporters, businesspeople, and others interested in tracking SSWAB activities. Specific duties of the SSWAB established by code include:

1. Providing public involvement and accountability within the rate boundary where the County collects fees and charges for the Storm and Surface Water Utility;
2. Providing recommendations to the BoCC regarding the Thurston County Stormwater Utility;
3. Specifically reviewing and providing recommendations to the BoCC on the annual work program, budget, rates, and policy proposals; and
4. Carrying on regular communications with other water quality concerned groups such as city water quality representatives, Groundwater Committee, Watershed Ranking Committee, Watershed Action Committee, Planning Commission, Agriculture

Committee, Conservation District, Drainage Districts, and Sewerage General Plan Task Force to bring a broad water quality perspective to the County's storm and surface water program.

Among other things, the SSWAB examines and provides input on utility rates, capital improvement projects, education and outreach efforts, staff work plans, and stormwater policies. Annually, the SSWAB provides input on activities such as updating the stormwater management program plan, and reviewing the ranking schema and prioritized lists in the County's *Capital Facilities Plan*.

In 2017, the SSWAB also anticipates reviewing and providing input on:

- Recruitment and appointment of additional SSWAB members;
- Recertification of the County's Community Rating System for flood insurance;
- Conservation Futures field trips and site rankings;
- Shoreline Master Program Plan;
- Voluntary Stewardship Program;
- Monitoring Program;
- Habitat Conservation Plan; and
- The County's stormwater asset management system.

4.2.2 Stormwater Education and Outreach Program

The County also encourages public involvement in the County's stormwater management program through the broad range of education and outreach programs sponsored by the County, such as the County's support to the regional [Stream Team](#) program. *Stream Team* engages the public by offering an open platform for members of the community to participate in stormwater management activities and learn about protecting water resources and improving habitat by planting riparian corridors with native trees, monitoring water quality in local streams, removing litter, and marking storm drains. [Section 3](#) (Education and Outreach) provides a detailed discussion of additional education and outreach programs and activities that provide opportunities for public involvement and encourage stewardship such as Work Involvement Now (WIN!), Stormwater Stewards, and Salmon Stewards Programs.

4.2.3 Special Projects

The Stormwater Utility also provides opportunities for public involvement and outreach as part of special projects including:

- Property owner and community meetings related to specific capital projects proposed for design or construction; and
- Outreach to stakeholders related to updates of stormwater-related ordinances and guidance, including public workshops for the 2016 low impact development (LID) code updates and revisions to the Thurston County [Drainage Design and Erosion Control Manual](#) (DDECM).

Planned public outreach efforts for 2017 include:

- Outreach associated with permitting and construction of capital projects; and
- Outreach and public involvement associated with future stormwater retrofit studies.

4.3 Website

As an obligation under its Permit, the County posts its current version of the [SWMPP](#) and most recent submittal of its [annual stormwater permit compliance report](#) online, no later than May 31st each year. Each annual compliance report submittal includes a copy of the current SWMPP as well as the complete annual reporting form along with required summaries, descriptions, and reports.

5. ILLICIT DISCHARGE DETECTION AND ELIMINATION

5.1 Core Program Functions

An *illicit discharge* (ID) means any direct or indirect non-stormwater discharge to a storm drainage facility except those specifically allowed in Thurston County Code Chapter 15.07.060. Examples of illicit discharges include: trash or debris, construction material, vehicle wash water, petroleum products, human and animal waste, irrigation runoff, chemical spills, and vehicle collision spills. An *illicit connection* (IC) refers to any man-made conveyance connected to the County's storm sewer system without a permit or other form of written approval by the Director of Thurston County Department of Resource Stewardship, excluding roof drains and other similar type connections. Examples of illicit connections include: sanitary sewer connections and floor drains connected directly to the municipal separate storm sewer system.

Thurston County designed its Illicit Discharge Detection and Elimination (IDDE) program to perform the following four core functions on an ongoing basis:

1. Identify potential illicit discharges or illicit connections to the County's storm sewer system (i.e., MS4);
2. Detect, record, and report the characteristics and scope of those discharges or connections;
3. Eliminate any illicit discharges or illicit connections; and
4. Utilize education and outreach programs to help prevent illicit discharges and illicit connections from occurring.

To meet its obligation under its municipal stormwater permit as well as successfully perform these core functions, the County has undertaken the task of mapping its storm sewer system, implementing an ordinance that prohibits illicit discharges and connections, conducting ongoing ID/IC detection staff trainings, and incorporating ID/IC detection into its stormwater facilities inspection program.

5.2 Municipal Storm Sewer System Mapping

As a component of Thurston County's IDDE and asset management program, the County maintains a map of its storm sewer system in a geographic information system (GIS). Staff can access this map through the County's VUEWorks asset management software program ([see Section 2.4](#)). Among other things, this mapping information enhances Thurston County's ability to map, track, and characterize illicit discharges and illegal connections. One of the initial steps in assessing illicit discharges and illicit connections involves utilizing mapping resources to identify contributing areas, possible pollutant entry points upstream, and aquatic resources downstream of the discharge.

5.3 IDDE Ordinance

On September 7, 2010, the BoCC adopted Ordinance 14404, which amended Chapter 15.05 of the Thurston County Code (TCC) and created Chapter 15.07 Illicit Discharge Detection and Elimination Ordinance. This ordinance prohibits the discharge of pollutants into storm drainage facilities within unincorporated Thurston County. The full text of Ordinance 14404 and TCC Chapter 15.07 can be found at: <http://www.co.thurston.wa.us/stormwater/dumping/Ordinance-14404-IDDE.pdf>.

5.4 IDDE Program

The County maintains publicly listed and publicized phone numbers that citizens, field personnel, and outside agencies can call to report a suspected illicit discharge, illicit connection, or an illegal dumping action. Incidents within the County limits may be reported to the Stormwater Utility Spill Reporting number (360-867-2099), the Hazardous Waste complaint number (360-867-2664), or through the online Illegal Discharges (Dumping) form (<http://www.co.thurston.wa.us/stormwater/dumping/dumping-online.html>). After hour emergencies or large-scale incidents should be reported through the Department of Ecology's Emergency Spill Hotline (360-407-6300) or by calling 911.

While Thurston County receives reports from a variety of sources, trained stormwater field staff are the primary identifiers of ID/IC. The County's ongoing IDDE program includes private, commercial, and public storm system inspections. Staff may discover an ID/IC while:

- Conducting video inspections for system condition assessments, general locating, or construction approval.
- Performing daily field work and routine inspections.
- Conducting dry weather outfall inspections.

Some, but not all, illicit discharges have fairly obvious and distinct colors, odors, or visual indicator. Other illicit discharges may not be as easy to detect using visual and olfactory senses. Thurston County staff uses the following indicators when performing field screenings:

- Visible signs of staining, residues, or oily substances in the water or detained within ditches, channels, catch basins, or surrounding pavement and soils.
- Pungent odors coming from the drainage system (e.g., discharge smells rancid or like sewage, sulfide, petroleum/gas, etc.).
- Abnormal water flow during the dry weather season.
- Excessive sediment deposits or turbid waters, particularly near active off-site construction sites.
- Floatables (e.g., discharge includes sewage, an oil sheen, suds, etc.)

5.5 Notification Procedures

Upon identifying an illicit discharge or illicit connection, staff implements procedures to eliminate the illicit discharge or illegal connection. For illicit discharges, this also involves characterizing the discharge, tracing its source, and taking appropriate actions to keep the discharge from spreading or causing harm.

In the event of a spill, staff shall follow the steps outlined in [Figure 1](#) on the following page.

When Thurston County becomes aware of an illicit discharge, including spills, into our storm sewer system which constitute a threat to human health, welfare, or the environment, staff shall take appropriate action to correct or minimize the threat and initiate the appropriate notification as follows:

- Notify Ecology's southwest regional office (360-407-6300) and other appropriate spill response authorities immediately, but in no case later than with 24 hours of obtaining knowledge of the illicit discharge or spill.
- Immediately report spills or other discharges which might cause bacterial contamination of marine waters, such as discharges resulting from broken sewer lines and failing onsite septic systems, to:
 - Ecology's southwest regional office (360-407-6300); and
 - The Department of Health Shellfish Program (360-236-3330 during business hours; 360-789-8962 outside of business hours).
- Immediately report spills or discharge of oils or hazardous substance to:
 - Ecology's southwest regional office (360-407-6300); and
 - The Washington Emergency Management Division (1-800-258-5990).

5.6 Response and Remediation

The County responds to identified illicit discharges, illicit connections, or illegal dumping activities using escalating enforcement actions. The first step and preferred approach to address these problems involves pursuing voluntary compliance through private property owner or responsible party education. Often, business operators and property owners are not aware of the existence of illicit connections or activities on their properties that may constitute an illegal discharge. In these cases, providing the responsible party with information about the connection or operation, the environmental consequences, and suggestions on how to remedy the problem may be enough to secure voluntary compliance. Education begins during the site investigation upon confirmation of the illicit discharge or connection.

When voluntary compliance through education does not produce the desired results, the County will pursue enforcement action. Before initiating enforcement, staff are advised to adhere to the authorities and obligations detailed in Chapter 15.07.100 TCC, consult with the Stormwater Utility Manager, and inform other County departments, including the Prosecuting Attorney's Office, as necessary.

Safety First! When in doubt call 911

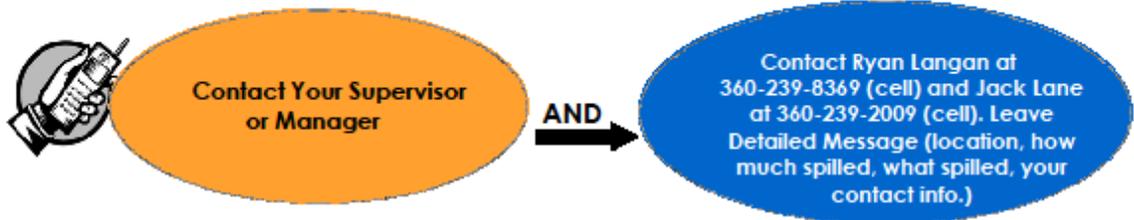
By law, the County must track and report spills

Step 1: Is the Spill Reportable

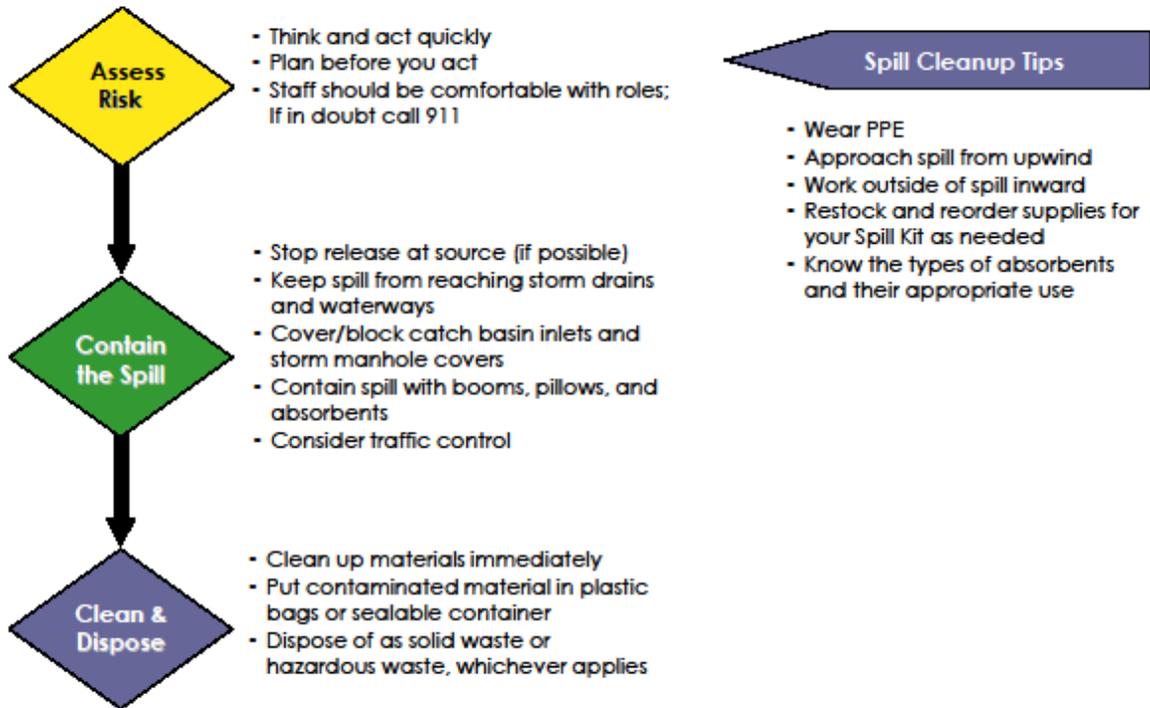
1. Is the spill within a non-paved area? (i.e., gravel, dirt, grass)?
2. Did the spill enter a stormwater facility (i.e., catchbasin, ditch, pond) or surface waters?
3. If the spill is contained to a paved surface -
 - Is the spill's surface area equal to or greater than 3 feet in size?
 - Does the spill have the potential to travel (i.e., downslope / mobilized by rain)?

If you answered YES to any of the above it is reportable

Step 2: Make Calls



Step 3: Get Personal Protection Equipment (PPE) and Spill Response



10/17/2014

Figure 1: Spill Reporting and Response Matrix

Thurston County's Public Health and Social Services (PHSS) Department, may also use [Article 6 of the Sanitary Code](#) to enforce compliance with IDDE through their Environmental Health Division. PHSS tracks and documents investigations and enforcement actions using the software program Amanda.

5.7 Prevention

As part of its ongoing education and outreach program ([see Section 3](#)), the County employs multiple strategies to inform the local community of the importance that preventing illicit discharges plays in protecting water resources and the aquatic environment. Some of these strategies include communications made through social media, the County's website, newsletters, and brochures as well as during public events, school presentations, and public workshops.

5.8 Training

Field staff and staff responsible for the identification, termination, clean-up, and reporting of illicit discharges (including spills and illicit connections) receive training to conduct these activities as described in the County's *Stormwater Training Plan* ([Appendix B](#)). Employees requiring training include: 1) all field staff, 2) staff responsible for assessing outfalls, and 3) staff responsible for response, tracing, clean-up, and enforcement.

6. CONTROLLING RUNOFF FROM NEW DEVELOPMENT, REDEVELOPMENT, AND CONSTRUCTION SITES

6.1 Overview

This Section describes the current and planned compliance activities associated with Section S5.C.4 of the Permit related to Controlling Runoff from New Development, Redevelopment, and Construction Sites.

6.2 Technical Guidance and Standards

The [*2016 Drainage Design and Erosion Control Manual \(DDECM\)*](#) *Drainage Design and Erosion Control Manual (DDECM)* establishes requirements and provides guidance for managing the quantity and quality of stormwater runoff generated from development and redevelopment in unincorporated Thurston County. This manual represents an update to the 2009 Thurston County DDECM and is written to comply with the Permit and be equivalent to the Ecology 2014 *Stormwater Management Manual for Western Washington* (SMMWW). The 2016 manual was adopted by the County under Thurston County Code 15.05 on October 18, 2016 and becomes effective December 31, 2016. The principal change in the new manual involves incorporating the guidelines for Low Impact Development.

With additional technical complexities introduced into the 2016 DDECM revision, County staff has begun reviewing its staffing levels and procedures involved in administering the manual's guidelines.

6.3 Permitting and Site Plan Review for New Development and Redevelopment

The County requires all applicants to submit *Drainage and Erosion Control Plans and Reports* meeting the requirements of the DDECM. County staff reviews these documents prior to development permit issuance.

As required by the Permit, the County provides copies of the Notice of Intent (NOI) for construction or industrial activities to representatives of the proposed new development and redevelopment project as part of our review process.

6.4 Stormwater Controls During Construction

[*DDECM Volume II*](#) describes construction stormwater pollution prevention requirements and key consideration and mechanics for construction stormwater BMPs including:

- Elements to consider when preparing a stormwater pollution prevention plan (SWPPP)
- Requirements for construction erosion control, including seasonal limitation
- BMPs for construction stormwater control and site management as well as design and facility sizing information

6.5 Site Inspections

Pre-construction

County staff conducts a preconstruction erosion and sediment control inspection of all projects that will have soil disturbing activities prior to development permit issuance.

During Construction

During construction projects, County staff inspects to verify proper installation, maintenance, and functioning of erosion and sediment controls.

Prior to Final Approval/Occupancy

All projects receive a final inspection to verify that the site is stabilized to prevent erosion and permanent stormwater controls are properly installed and functioning prior to final approval/occupancy. Development Review staff conducts these inspections for smaller projects, such as single family homes. Inspections for larger projects that will require annual reporting on maintenance of stormwater facilities are performed jointly with the Development Review and Stormwater Utility staff responsible for performing the required ongoing post-construction inspections.

For all private projects that connect to the County maintained road system and/or MS4, Development Review staff meets with Stormwater Utility and Maintenance Operations staff in the field to ensure work is complete, and County staff receives the necessary information to ensure proper ongoing maintenance.

For private facilities (i.e., single family residence, residential subdivision, or commercial/industrial project), the party (or parties) responsible for maintenance of stormwater facilities and BMPs must execute a project-specific agreement to maintain stormwater facilities and implement a pollution source control plan consistent with the provisions in the DDECM. The responsible party must sign and record the agreement with the Thurston County Auditor's Office prior to final project acceptance by Thurston County.

For all county projects, Public Works Construction staff and Maintenance Operations staff meet to ensure staff receives the necessary information to ensure proper ongoing maintenance.

Thurston County uses an escalating enforcement policy to enforce erosion and sediment control compliance, which range from verbal correction notices to stop work orders depending on the nature of the non-compliance issue. For further information on this please see Public Works Policy 820 in [Appendix C](#).

Ongoing Operation and Maintenance Verification

Upon the construction's completion, Stormwater Utility staff perform inspections to verify the proper operation and maintenance of post-construction stormwater facilities. As required by the DDECM, the developer, per agreement, provide for ongoing maintenance of the facilities. County staff conduct ongoing inspections to ensure proper function of these facilities.

6.6 Enforcement Mechanisms

If sediment and erosion control BMPs are not adequately installed and maintained during construction, County staff will attain compliance utilizing steps laid out in the escalating enforcement policy per *Public Works Policy Pol-820* ([Appendix C](#)). If noncompliance leads to a Stop Work Order being placed on the property, Thurston County Code contains provisions for enforcement in Title 26.

6.7 Information Management

Private project inspection tracking

County Permit Center staff utilize the Amanda software to record and maintain inspections and enforcement of private projects.

County project inspection tracking

The County uses Ecology's inspection report forms to track inspections of County construction projects. For projects that require coverage under Ecology-issued construction permits, the County enters discharge monitoring report (DMR) information into Ecology's electronic WQWebDMR system. The County retains hardcopies of the inspection forms for projects that do not require an Ecology permit.

6.8 Training

New Development and Redevelopment Stormwater Controls Training

Staff responsible for reviewing development and redevelopment submittals attend training, both general and specific, pertaining to Thurston County's drainage standards. Most training occurs via outside sources such as those sponsored by Ecology, Washington State University extension, Center for Watershed Protection, and the Washington Stormwater Center. Supplemental Thurston County-specific training occurs on the job. Additional information and updates regarding practices and procedures is shared during weekly staff meetings or during one to one discussions. For additional information on related training, please see the *Stormwater Training Plan* in [Appendix B](#).

Construction Stormwater Pollution Prevention Training

All County staff responsible for performing erosion inspections must obtain Certified Erosion and Sediment Control Lead (CESCL) certification. While this certification training currently occurs through outside sources, efforts are underway to develop an Ecology-approved program which would enable the County to provide this training internally. For additional information on related training, please see the *Stormwater Training Plan* in [Appendix B](#).

7. MUNICIPAL OPERATIONS AND MAINTENANCE

7.1 Overview

Thurston County developed its Municipal Stormwater Operations and Maintenance Program (O&M Program) to comply with the Permit to prevent or reduce pollutant runoff from municipal operations. The County reviews the O&M Program annually and updates it as necessary. County staff performs the inspections and maintenance procedures.

7.2 Technical Guidance and Maintenance Standards

The *2016 Drainage Design and Erosion Control Manual (DDECM)* [Volume IV](#) provides guidance on how to prepare and implement a source control plan to prevent stormwater pollution. DDECM [Volume V](#) provides the maintenance standards for permanent stormwater management facilities. The [Regional Road Maintenance Endangered Species Act Guidelines \(RRMG\)](#) requires the use of a field guide which, among other things, includes stormwater source control BMPs for routine maintenance activities.

The County performs maintenance promptly as necessary to remain compliant with standards. Unless circumstances exist beyond the County's control, when an inspection identifies an exceedance of the maintenance standard, maintenance within the Permit area occurs as follows:

- Within one year for typical maintenance of facilities, except catch basins.
- Within six months for catch basins.
- Within two years for maintenance that requires capital construction of less than \$25,000.

Circumstances beyond the County's control include:

- Denial or delay of access by property owners,
- Denial or delay or necessary permit approvals, and
- Unexpected reallocations of maintenance staff to perform emergency work.

7.3 Inspections and Record Keeping

The various responsible departments maintain records of training, inspection, and maintenance (or repair) activities as required for annual permit compliance reporting.

As described in [Section 5.2](#), the County inventories and maintains a map of its MS4 in a GIS database accessible through the County's asset management software (i.e., VUEWorks). The Stormwater Utility inspects permanent stormwater facilities that the County owns or operates. Records of all inspections get documented in VUEWorks.

7.4 Maintenance Practices

The following subsections describe procedures relevant to stormwater maintenance practices as they relate to the County's various facilities. Thurston County Public Works has been a member of the Regional Road Maintenance ESA Program (RRMP) since 2001. The RRMP assisted the County in developing a regional road maintenance program designed to meet the requirements of the Endangered Species Act (ESA). This program helps contribute to the conservation of ESA-listed species by relying on the use of pre-approved BMPs for routine maintenance activities and adaptive management improvements.

7.4.1 Stormwater Treatment and Flow Control Facilities

Public Works Operations performs cleaning of County stormwater treatment and flow control facilities and follows the [RRMG Part 1- Maintenance Category #2](#) and SWPPP requirements. In addition, Thurston County will continue developing O&M plans for its treatment and flow control facilities. The County tracks inspection, work orders, and maintenance of stormwater facilities in VUEWorks. The County performs spot checks of its permanent stormwater treatment and flow control BMPs/facilities after major storm events (24-hour storm event with a 10-year or greater recurrence interval). If spot checks indicate widespread damage/maintenance needs, all affected stormwater treatment and flow control BMPs/facilities are inspected. Repairs or appropriate maintenance action occurs in accordance with maintenance standards established above in [Section 7.1](#).

7.4.2 Catch Basins and Inlets

The County inspects the catch basins and inlets it owns or operates within the geographic scope of the Permit every two years. When a catch basin inspection identifies an exceedance of a maintenance standard, the necessary maintenance occurs within the Permit's six-month time-line.

7.4.3 Vegetation Management

The County's [Integrated Pest and Vegetation Management Policy](#) provides guidelines for County staff involved with operations and provides advice related to pest and vegetation management. The County uses the [Integrated Pest Management Program](#) to minimize pollutant discharge from landscaped areas on County property. The County uses [RRMG – Part 1 Maintenance Category #15](#) for activities involving repairing, replacing, installing, removing, and/or maintaining vegetation within the right of way, stormwater infrastructure, easements, and mitigation sites.

7.4.4 Snow and Ice Control

Public Works Operations follows the [RRMG Part 1- Maintenance Category 10 when](#) deicing County streets and facilities. For sidewalks, the County uses an amount of deicing product required for pedestrian safety. In parking lots, the County applies liquid anti-icing chemical and sand in the event of severe snow conditions. The County employs BMPs as part of maintaining storage of snow and ice control products such as salt, liquid deicers, and sand. These BMP practices include the proper containment, handling, and cleanup related to using and storing these materials.

7.4.5 Dust Control

The County's unpaved roads get re-graded and re-rocked periodically to control erosion and potholing. While uncommon, if dust emissions become significant, the County will consider dust control practices such as re-rocking with a cleaner grade of rock as outlined in the RRMG or those listed in [Ecology Publication #96-433 \(revised March 2003\) Techniques for Dust Prevention and Suppression](#).

7.4.6 Enclosed Drainage Systems

For enclosed drainage systems within the Permit boundary, the County uses guidelines in [RRMG Part 1 Maintenance Category #2](#). Areas outside of the Permit boundary are cleaned as resources made available.

7.4.7 Exterior Building Maintenance

Exterior Painting

Thurston County's buildings and exterior facilities consist of mostly stone, brick, and metal which do not require painting. When facilities require painting, it takes place during dry weather. All materials used during painting are removed from the area to an approved site for cleaning and crews protect storm drain inlets within 25 feet of work site.

Exterior Washing

Wash water containing oils, soaps, or detergents are collected and conveyed to appropriate treatment such as a sanitary sewer system. Wash water not containing oils, soaps, or detergents are allowed to drain to soils that have sufficient natural attenuation capacity for dust and sediment. [BMPs for Washing and Steam Cleaning Vehicles/Equipment/Building Structures](#) contains further guidance for exterior washing.

Roof Drains

[BMPs for Roof/Building Drains at Manufacturing and Commercial Buildings](#) contains the guidance that the County uses for roof drain maintenance.

7.4.8 Roads

The County implements the following practices, policies, and procedures to reduce stormwater impacts associated with runoff from land owned or maintained by County road maintenance activities.

Street Sweeping

Road Operations sweeps curbed streets in Thurston County using regenerative air street sweepers. The sweepers have vacuum and sweeping capabilities for efficient removal of sediment, debris, and other pollutants. The Public Works Department coordinates sweeping within the Permit boundary using route priority map books generated by the Stormwater Utility. Outside of Permit area staff follows the [RRMG – Part 2 section 2.150](#).

Road Repair and Resurfacing

The County performs regular municipal street repair and maintenance activities following the [RRMG Part 1 Maintenance Category #1](#).

Pavement Striping Maintenance

The County only uses Department of Transportation-approved paint applied to meet Washington State Department of Transportation standards.

Roadside Ditches

The County maintains its roadside ditches as needed and to maintain the capacity for which they were originally constructed as well as to minimize bare or thinly vegetated surfaces. Maintenance practices include erosion and sediment control as needed. [RRMG Part 1, Maintenance Category #4](#) and/or the DDECM's BMPs for *Maintenance of Roadside Ditches* ([Volume 4](#), Section A7.13) contain further guidance used by the County.

7.4.9 Waste Handling and Disposal

The following addresses the generally applicable stormwater runoff pollution prevention BMPs associated with waste handling and disposal:

BMPs for Storage of Liquid or Dangerous Waste

- Clean-up leaks and spills.
- Store containers in impervious containment under a roof.
- Liquids – Use tight fitting lids or bungs; use of drip pans; inspect containers for damage and leaks.
- Solids – Elevate or otherwise protect from stormwater.
- If generating “dangerous waste” or identifying hot loads follow Ecology’s [Shop Guide for Dangerous Waste Management](#). In addition, staff will follow all developed SWPPP’s for County facilities and *WARC Decant Operation Plan*.
- Comply with *Uniform Fire Code* if waste is flammable, reactive, or explosive.
- Cover trash cans and dumpsters.

BMPs for Storage or Transfer (outside) of Solid Raw Materials, By-products, or Finished Products

- Provide (impervious where necessary) containment with berms, dikes, etc. and/or cover to prevent run-on and discharge of leachate pollutants and total settleable solids.
- Do not hose down materials/product to the stormwater system.
- Protect catch basins or other entry points nearest to the pile.
- Sweep regularly.
- Treat runoff where it has a pathway to the storm sewer or surface waters.

Dangerous or Special Wastes

These waste materials typically contain hazardous substances, oils, or exhibit hazardous characteristics such as corrosiveness, ignitability, reactivity, toxicity, or environment persistence. State regulations ([WAC 173-303-330](#)) require training for anyone handling and managing these wastes (including, but not limited to waste designation, packaging, labeling, preparing shipping documents, and transporting). Appropriate County staff receive training in the handling and managing of dangerous or special waste, such as hazardous waste operations and emergency response (HAZWOPER) training. Spills that include dangerous waste materials trigger a 911 response.

Street Wastes

Thurston County complies with the Western Washington Phase II Permit, [Appendix 6 – Street Waste Disposal](#). Street waste generated by street sweeping or cleaning of catch basins by a vacator (vacuum) truck are taken to the decant facility located at the County’s Waste and Recovery Center. The waste is processed in accordance with the Decant Facility Operations Plan. Prior to removal from the facility, the solids material get tested to ensure contaminant levels fall within permitted limits. Tested solids suitable for reuse are used on pit reclamation projects. Liquids, including precipitation falling on the site, flow through a treatment train that allows suspended solids to settle out in the facility’s settling bays, drain through two sedimentation structures, and then flow into the permitted pre-treatment aeration pond prior to discharge into the City of Lacey sanitary sewer under Wastewater Discharge Permit No. LA-004 for final treatment at the LOTT Wastewater Treatment Plant. Discharge from the Vacator Waste Decant Facility shall not cause an exceedance of Permit No. LA-004. Solids testing occurs in accordance with the *Solid Waste Permit*, WAC 173-350, *Water Quality Standards for Ground Water of the State of Washington*, and as approved by Thurston County Environmental Health.

7.5 Operations Facilities

7.5.1 Operations Division

Public Works, Fleet Services, and Emergency Operations provide services from a facility located at 9605 Tilley Road S., Olympia. The facility follows its own Stormwater Pollution Prevention Plan (SWPPP) as it includes heavy equipment and a storage yard. To ensure Permit compliance and improve usability, the SWPPP is being reviewed and updated in 2016 with finalization planned for early 2017. Copies of the SWPPP are found in Public Works Buildings A, B, and C.

7.5.2 Solid Waste

The Waste and Recovery Center (WARC) receives all refuse material collected throughout the County. The WARC is located at 2420 Hogum Bay Rd NE, Lacey. In addition to falling under the Permit's coverage, the WARC operates under its own Wastewater Discharge Permit for its discharges to sanitary sewer. To ensure permit compliance and improve usability, the SWPPP is being reviewed and updated in 2016 with finalization planned for early 2017. A hard copy of the SWPPP is located in the main office of the WARC.

7.5.3 Fairgrounds

The Thurston County Fairgrounds, located at 3054 Carpenter Road, Lacey, hosts the annual county fair. The facilities are also available to rent for functions and vehicle storage. The site's stormwater infrastructure falls under the Underground Injection Control Program regulatory scheme (i.e., not the County's Phase II municipal stormwater permit).

7.5.4 Central Services

Central Services, through the Facilities Department (Facilities), has maintenance responsibilities for a number of facilities located in various parts of the County (See [Appendix D](#)).

Facilities makes all known, available, and reasonable efforts to reduce stormwater impacts associated with runoff from buildings, sidewalks, parking lots, and driveways owned by Thurston County and maintained by the Department. Facilities use applicable stormwater BMPs in conducting maintenance tasks.

7.5.5 Parks Division

The Parks Division (Parks) manages 2,645 acres of parkland, trails, historic sites, preserves, and undeveloped land. It conducts operations out of the facility located at 9605 Tilley Road S., Olympia. Developed County parks include:

- Kenneydell – 6745 Fairview Road SW
- Burfoot – 6927 Boston Harbor Road NE
- Frye Cove – 4000 NW 61st Avenue NW
- Griffin Athletic Fields 6924 41st Ave NW
- Deschutes Falls Park 25005 Bald Hill Rd. SE (currently under development for opening in Spring 2017)

7.6 Training

Thurston County implements an ongoing training program for employees whose primary responsibilities involve operations or maintenance job functions that may adversely impact stormwater quality. Operation and maintenance staff receive training on the importance of protecting water quality during maintenance operations. Additional training courses for maintenance personnel may apply base on individual job duties. Follow-up training occurs as needed to address changes in procedures, techniques, requirements, or staffing. For additional information on related training, please see the *Stormwater Training Plan* in [Appendix B](#).

8. COMPLIANCE WITH TOTAL MAXIMUM DAILY LOAD REQUIREMENTS

8.1 Background

Section 303(d) of the Clean Water Act (CWA) requires states, territories, and authorized tribes to develop lists of impaired waters (i.e., waters too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes). The law requires that these jurisdictions establish priority rankings for these listed waters and develop corresponding Total Maximum Daily Loads (TMDLs). A TMDL represents the numerical value of the highest amount of pollutant a surface water body can receive and still meet water quality standards. Any amount of pollution exceeding the TMDL level needs to be reduced or eliminated. Pollution sources fall into two categories. The first is *nonpoint source pollution*, where the source runs directly off the land into the water. *Load allocation* refers to the allowable discharge from all the nonpoint sources. The second category, *point source pollution*, refers to sources which typically flows out of a pipe, ditch, or other discrete source, and regulated under an NPDES permit. The allowable discharge from a permitted point source is called a *wasteload allocation*. The TMDL Water Quality Improvement Report and Implementation Plan (WQIR/IP) sets out the actions required for nonpoint and point sources in the TMDL area to ensure TMDL allocations are met, ultimately leading to compliance with water quality standards.

Wasteload allocations established for discharges from municipal separate municipal storm sewer systems are implemented via the NPDES municipal stormwater permit program. As a result, the County must demonstrate compliance with specific requirements identified in the TMDL water quality cleanup plan and listed in [Appendix 2](#) of the Permit.

8.2 Engaging in TMDL Development

The County tracks and participates in the development of TMDLs for waterbodies in Thurston County. During the public comment period for the proposed Water Quality Assessment, the County reviews each proposed water quality impairment listing to determine if any inaccuracies or incomplete information exists, and/or if supporting data suggests a waterbody has been improperly categorized. The County then submits its comments to Ecology for their consideration.

Once the water quality assessment concludes that a TMDL must be established in order to address water quality impairments, Ecology solicits participation in an advisory group to help guide the development of the associated Water Quality Improvement Plan. As a participant in an advisory group, the County helps steer the development of the plan by:

- Committing to participate in the multi-year process;
- Cooperatively working with Ecology and other stakeholders to use the best available science and share local knowledge about implementation challenges and opportunities;
- Sharing applicable water quality data, where available;
- Advising and suggesting ideas on effective strategies and implementation actions to improve water quality; and
- Reviewing, editing, and providing comments on draft documents.

Properly structured TMDLs ensure that County actions included in any TMDL water quality improvement plan are relevant, cost-efficient, feasible, and effective in achieving the ultimate goal of restoring water quality in impaired waters.

TMDL water quality cleanup plans inform the County's efforts to prioritize and direct resources to the most meaningful projects and programs by identifying critical watershed areas and activities that could help address water quality impairments. The County takes a proactive approach to prevent and address known impairments and is currently building partnerships both within and outside the County in order to leverage existing resources and local knowledge to develop more informed and meaningful implementation strategies. More information on the County's stormwater efforts, including many of the programs and resources identified here, are available on the County's [website](#).

8.2.1 Interagency Team

While the County works hard to contribute meaningfully to the development of TMDLs, there has been much discussion over the last decade about the efficacy of the TMDL program in successfully addressing water quality impairments. In order to assist in the effort to improve our state's approach to assessing and cleaning up impaired water bodies, the County has been participating in an [Interagency Team](#) (Team). The Team consists of staff from the surface water departments of Clark, King, Kitsap, Pierce, Snohomish, and Thurston Counties, as well as staff from the Washington State Department of Transportation and the City of Bellevue. Key areas of interest include identifying:

- Criteria for determining which waters are added and removed from the state's list of polluted waters. This includes methods for ensuring the list reflects the waterbody's actual and current conditions.
- Criteria and methods for prioritizing impaired waters for TMDL development.
- Methods for determining the level of effort and rigor necessary for TMDL studies ranging from complex multi-year sampling and analysis efforts to the "straight to implementation" approach.
- Criteria for selecting TMDL implementation actions based on the pollutant(s) of concern in municipal stormwater runoff.
- Approaches successfully used in other states.

To date, the Team has developed the following nine key recommendations:

1. Establish a multi-stakeholder standing committee to improve coordination and engagement with the regulated community;
2. Implement existing regulatory authority related to unpermitted and nonpoint sources;
3. Refine water quality standards and water quality assessment methodologies;
4. Improve and employ consistent processes for collecting, assessing, and utilizing credible data in Water Quality Assessment and TMDL development;
5. Refine water quality assessment categories to improve clarity and aid in defining priority water bodies;
6. Update the current biological assessment and listing methodology;
7. Define TMDL prioritization methodology, timelines, and process for public involvement;

8. Define TMDL development methodology; and
9. Develop consistent TMDL implementation expectations.

The Team, working with Ecology and EPA, has begun developing strategies and working agendas in an effort to initiate implementation of the above listed recommendations. This includes working closely with Ecology on the 2017 update of Water Quality Program Policy 1-11 [Assessment of Water Quality for the Clean Water Act Sections 303\(d\) and 305\(b\) Integrated Report](#). The ultimate goal of the effort aims to increase the efficacy of TMDL programs in the State in order to restore water quality thereby removing impaired waterbodies from the 303(d) list.

8.3 Thurston County TMDL Compliance Requirements

Thurston County implements assigned TMDL actions specified in [Appendix 2](#) of the Permit. Applicable areas in Thurston County include the Nisqually River Basin Reach (WRIA 11) and Henderson Inlet Watershed (WRIA 13). In addition, a TMDL for the freshwater portions of the Deschutes River Basin has been submitted to EPA for approval, with permit obligations likely to be incorporated into the reissued 2018 Permit.

[Tables 8.3a](#) and [8.3b](#) provide greater detail on the County’s permit-related obligations associated with each of the two existing TMDLs. The content was excerpted and adapted from [Appendix 2](#) of the Permit. In addition to performing these specific actions, the Permit requires the County to keep records associated with these TMDL-related actions and report annually on the status of TMDL implementation as part of its annual permit report submittal to Ecology.

Table 8.3a: Nisqually River Basin TMDL Requirements

Document(s) for TMDL	Nisqually Watershed Bacteria and Dissolved Oxygen Total Maximum Daily Load (Water Cleanup Plan): Submittal Report Nisqually River Basin Fecal Coliform Bacteria and Dissolved Oxygen Total Maximum Daily Load: Water Quality Implementation Plan (WOIP)
Areas Where TMDL Requirements Apply	Requirements apply in all areas regulated under the Permittee’s municipal stormwater permit and discharging to water bodies listed within the specific requirement in this TMDL section.
Parameter	Fecal Coliform, Dissolved Oxygen
Task Description	
Annually implement the following best management practices for reducing fecal coliform bacteria in areas discharging to the Nisqually Reach via the MS4 in accordance with the Permit:	
<ol style="list-style-type: none"> a. Reach households in targeted watershed through mailings, door hangers, etc. to increase awareness of the sources of bacteria pollution. b. Adequately maintain vegetation around stormwater facilities, ditches, and ponds. 	

Table 8.3b: Henderson Inlet Watershed TMDL Requirements

Document(s) for TMDL	<u>Henderson Inlet Watershed Fecal Coliform Bacteria, Dissolved Oxygen, pH, and Temperature Total Maximum Daily Load Study</u> <u>Henderson Inlet Watershed Fecal Coliform Bacteria, Dissolved Oxygen, and pH Total Maximum Daily Load: Water Quality Improvement Report Implementation Strategy</u> <u>Henderson Inlet Watershed Fecal Coliform Bacteria Total Maximum Daily Load: Water Quality Implementation Plan</u>
Area Where TMDL Requirements Apply	Requirements apply in all areas regulated under the Permittee’s municipal stormwater permit and discharging to water bodies listed within the specific requirement in this TMDL section.
Parameter	Fecal Coliform, Dissolved Oxygen, pH, Temperature
Task Description	
<ol style="list-style-type: none"> 1. Annually implement the following best management practices in areas discharging to the Henderson Inlet via the MS4 in accordance with the Permit: <ol style="list-style-type: none"> a. Require phosphorus control for new and redevelopment projects that discharge via the MS4 to Woodard Creek and meet the project thresholds in <i>Appendix 1</i>, Minimum Requirement #6: Runoff Treatment of the Permit. 	
<ol style="list-style-type: none"> 2. Annually implement the following best management practices for reducing fecal coliform in areas discharging to the Henderson Inlet via the MS4 in accordance with the Permit: <ol style="list-style-type: none"> a. Designate areas discharging via the MS4 to Woodland Creek from river mile 1.6 to 0.2 and Jorgenson Creek upstream of Pleasant Glade Road as high priority areas for illicit discharge detection and elimination field screening. Implement the schedules and activities identified in S5.C.3 of the Permit. Investigation shall include stormwater ponds and on-site septic systems as potential fecal coliform sources, and sampling of wet-weather discharges (November-April).⁴ 	
<ol style="list-style-type: none"> 3. Annually implement the following best management practices for reducing fecal coliform in areas discharging to the Henderson Inlet via the MS4 in accordance with the Permit: <ol style="list-style-type: none"> a. Continue supporting the Watershed Septic System Operations and Maintenance Program through a targeted educational plan delivering: <ol style="list-style-type: none"> i. Technical assistance to landowners through at least one presentation or workshop annually. ii. Technical assistance to landowners through one publication or targeted letter annually. iii. A resource webpage on the County’s website. b. Continue offering public education and outreach efforts for fecal coliform reduction such as brochures, signage, and pet waste stations to homeowner associations. 	

⁴The County has requested removal of this requirement since it does not own or operate any stormwater conveyances or structures discharging to these reaches. The County expects Ecology to address this in the reissued 2018 Permit.

8.4 Thurston County Programs and Activities that Address TMDL Requirements

Many Thurston County departments and divisions are engaged in implementing the TMDL requirements including Resource Stewardship, Environmental Health, and Public Works. This requires ongoing coordination and also provides a platform for peer-sharing and education on compliance activities as they relate to implementation. This inter-county partnership allows the County to constantly improve its implementation of TMDL-related activities and places it in a position to make more insightful and relevant contributions during TMDL development. Details regarding Thurston County programs and activities that address TMDL requirements are provided in greater detail in other sections of this document.

In addition, the County actively evaluates additional programs and partnership opportunities that may help address TMDL-related water quality impairments including:

- Meeting regularly with the Department of Ecology, Thurston Conservation District (CD), WSU Extension, and stakeholders to explore opportunities for improved coordination in areas of nonpoint pollution prevention and resource stewardship;
- Thurston County and other resource stewardship organizations are evaluating the potential to creating a position to serve as a permitting liaison between the County and landowners who are willing and/or interested in doing stewardship activities on their property that would help address downstream water quality impairments;
- Evaluating the potential to develop a comprehensive “Riparian Restoration Program” that would address water quality impairments for the County in partnership with local land trusts, tribal nations, the CD, and lead entities, and habitat work groups, among other potential partners;
- Working with the Cities of Lacey, Olympia, and Tumwater to identify additional opportunities for education and outreach activities that may help address water quality impairments identified in our TMDLs; and
- Working proactively with Ecology and the Team (see [Section 8.2.1](#)) to develop a comprehensive approach to managing sources of nonpoint pollution.

9. MONITORING

9.1 Overview

Monitoring of streams, lakes, groundwater and weather has been ongoing in Thurston County for over 20 years. The information obtained from the monitoring programs helps inform land use studies, regulations, and provides information used in efforts to improve water quality and protect people and property. For example, the County uses this data to develop and calibrate hydrologic models and identify problem areas requiring further assessment and remediation.

This section describes how Thurston County meets the Permit requirements related to water quality monitoring and assessment. This section also describes the programs and activities that occur outside of the Permit's regulatory framework as well as future planned activities.

9.2 Regional Stormwater Monitoring Program

Ecology established the Regional Stormwater Work Group (RSWG) to develop a Regional Stormwater Monitoring Program (RSMP) for Puget Sound that was integrated into the 2013 reissuance of the Western Washington Municipal Stormwater Phase I and II permits. Thurston County originally participated in the RSWG and will continue to participate to evaluate the results of the program and assist in the development of status and trends, source identification, and BMP effectiveness monitoring for inclusion in the next iteration of the stormwater permit.

In December of 2013, Thurston County notified Ecology that it chose the Permit option that allows paying into the collective fund to implement the RSMP in lieu of conducting independent monitoring studies. Our contribution to the three monitoring elements of the Permit began on August 15, 2014 and includes the following annual payments:

- *Status and Trends Monitoring* - \$12,841 to help implement the RSMP for Small streams and marine near shore status and trends monitoring in Puget Sound (i.e., Status and Trends Monitoring Option #1.)
- *Effectiveness Studies* - \$21,395 to help implement the RSMP effectiveness studies (i.e., Effectiveness Studies Option #1.)
- *Source Identification and Diagnostic Monitoring* - \$1,984 to help implement the RSMP Source Identification Information Repository (SIDIR.)

9.3 Thurston County Environmental Monitoring Program

Thurston County's Environmental Monitoring Program (TCEMP) includes ambient water quality, biological, and physical monitoring elements. The ambient water quality monitoring samples lakes and streams throughout the county for multiple parameters including pH, dissolved oxygen, suspended sediments, nitrogen, phosphorous, fecal coliform, and other chemicals of concern. The biological monitoring includes annual sampling for Benthic Index of Biotic Integrity (B-IBI) at five to seven streams. The physical monitoring element includes weather monitoring (precipitation, temperature, evaporation, and wind speed/direction), stream flow, lake level, and groundwater level monitoring. For more information on these programs

visit: <http://www.co.thurston.wa.us/health/ehswat/swater.html> and <http://www.co.thurston.wa.us/monitoring/>.

In 2016, the County evaluated the physical environmental monitoring program and recommended changes to the macroinvertebrate, groundwater, stream flow, and weather monitoring locations. Further evaluation of the program will occur in 2017. This program evaluation supports the emergent needs of the County for landslide analysis, groundwater protection, and Low Impact Development implementation.

9.3.1 Stream Flow Monitoring

Stream flow monitoring includes 13 streams evaluated for flow and temperature. The program monitors stream stage continuously using data loggers, and each month completes a stream cross section and flow calculation. Stage-discharge curves are developed from this data at regular intervals to provide flow history for each stream. Ten additional streams were evaluated for potential flow monitoring in the future and three were selected as additions to the program (Beaver Creek, Spurgeon Creek, and Chambers Ditch).



Figure 2: Stream flow monitoring

Through a cooperative agreement with the United States Geologic Service (USGS), we also fund stream flow monitoring of the Skookumchuck and Deschutes Rivers.

9.3.2 Weather Monitoring

Thurston County monitors 13 weather stations located throughout the County. Three of the stations (Littlerock, Tilley Road, and Thurston County Courthouse Building 4) provide real-time reporting. All weather stations record temperature and precipitation. Others also track relative humidity, barometric pressure, and wind direction. The County completed evaluating all weather stations and will add two additional weather stations to provide uniform coverage of the County while avoiding significant overlap. Factors considered in this evaluation include the length of time the station has been in service and countywide rainfall patterns.

Thurston County also provides funding through a cooperative agreement with the USGS to provide weather monitoring at the Skookumchuck River near Bucoda and at Bloody Run near the Skookumchuck Reservoir.

A National Oceanic and Atmospheric Agency (NOAA) weather station at the Olympia Airport also collects weather data which is an important part of the County's monitoring program.



Figure 3: Precipitation station

9.3.3 Groundwater Monitoring

Groundwater level monitoring occurs at over 40 wells throughout the County. Many of these wells are located in the Salmon Creek Basin, an area that has a history of high groundwater flooding. Well loggers installed in most wells provide a continuous record of groundwater level. A few wells are only monitored monthly for groundwater level. Data download occurs monthly.

The County completed the first phase of an evaluation of the groundwater monitoring network in 2016 and as a result will be adding eight new monitoring wells in the Scatter Creek aquifer in 2016. The program evaluation's second phase will occur in 2017 to assess whether dropping some monitoring sites and adding other monitoring wells will provide a more uniform depiction of groundwater levels in the County. Basins under consideration for additional groundwater monitoring include the Lake St. Clair, Chambers Creek, Deschutes River, and Scatter Creek Basins because these basins are known to have high groundwater tables and/or impacts to groundwater quality from land uses.



Figure 4: Groundwater monitoring equipment

9.3.4 Lake Water Level

Lake level monitoring currently only includes three lakes: Long Lake, Lake St. Clair, and Black Lake. Additional lakes are being considered for level monitoring and automated real-time monitoring is being considered for Lake St. Clair and Black Lake to reduce program costs and enhance our ability to identify emerging problem conditions.

9.3.5 Ambient Water Quality Monitoring

Thurston County Environmental Health Division of the Public Health and Social Services Department conducts ambient water quality monitoring on the County's numerous lakes, streams, and rivers. Stream water quality monitoring, conducted monthly, includes parameters such as pH, temperature, conductivity, dissolved oxygen, total phosphorous, nitrate+nitrite nitrogen, turbidity, and fecal coliform. The program currently monitors 26 groundwater wells in the Scatter Creek aquifer, eight lakes, 33 streams or rivers, and one stormwater outfall.

9.3.6 Macroinvertebrate

Thurston County will continue to monitor selected streams for macroinvertebrates (B-IBI). Historically the County has collected B-IBI data at 20 to 25 sites. Going forward, the program will sample five to seven streams per year using staff-supervised *Stream Team* volunteers. For those sites targeted for continuing monitoring having more than ten years of data, the monitoring frequency will be reduced to once every two to three years.

9.3.7 Tanglewilde Area Stormwater Effectiveness Monitoring

The Tanglewilde area, near the City of Lacey in the vicinity of Martin Way and Carpenter Road, is the only stormwater location in Thurston County currently monitored for physical parameters and ambient water quality. Monitoring includes flow at the outfall from the stormwater system to Woodland Creek as well as at one upstream location. Water quality monitoring occurs at the outfall to Woodland Creek and measures the same parameters as described above for stream flow with the addition of ammonia.

Monitoring of this outfall will continue through at least water year 2017 to evaluate the effectiveness of stormwater improvements constructed upstream which include new infiltration galleries and drywell rehabilitation.

9.3.8 Interlocal Monitoring Agreement

Since the 1980s, Thurston County, in cooperation with the Cities of Lacey, Olympia, and Tumwater under an Interlocal Monitoring Agreement (ILMA), has pooled funding of ambient water quality, stream flow, and weather monitoring locations within the north county area.

Since its inception, the ILMA has been updated and renewed approximately every three to five years. The previous ILMA covered the period of 2012-2014 but was significantly modified in 2013 as a cost reduction strategy for the participating cities who had to channel funding to comply with the 2013-2018 Permit's regional monitoring program obligations.

A new ILMA was executed between Thurston County and the Cities that covers the period of 2015 to 2018. The 2015 ILMA's duration corresponds to the approximate five-year Permit reissuance cycle. This approach allows the participants in the ILMA to evaluate future regional monitoring and Permit costs against their available budget to fund ILMA monitoring.

9.4 Reporting

In accordance with the Permit, Thurston County's annual report submittal includes a description of stormwater-related monitoring or studies conducted by the County (or on behalf of the County) during the reporting period.

The County prepares ambient water quality monitoring and physical monitoring reports typically on an annual or bi-annual basis to summarize the results. The County will prepare a monitoring program report by April 30, 2017 which will include ambient and physical monitoring program results for the previous two years. The following monitoring data reports get posted to the County's website:

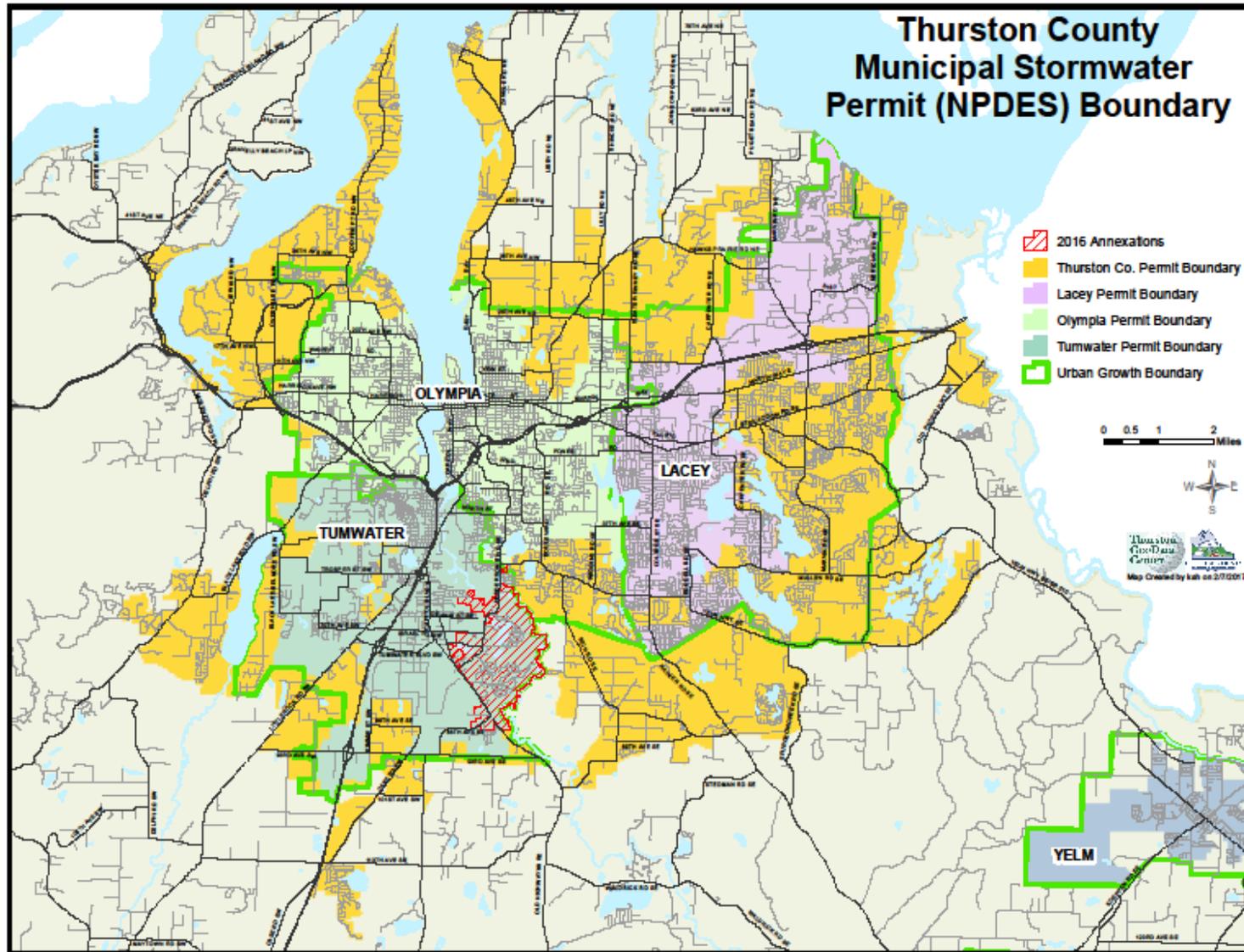
- [Ambient water quality monitoring data](#)
- [Physical monitoring data](#)

9.5 Planned Activities

Going forward, Thurston County's monitoring program will continue to collect, analyze, and disseminate data on ambient water quality, stream flow, groundwater, and rainfall to inform stormwater system management, design, and retrofits. The County intends to:

- Continue funding the RSMP as required by the Permit.
- Continue to participate in the RSWG's Local Caucus sub-committee.
- Continue to implement program changes identified in the 2016 Phase 1 monitoring program evaluation.
- Complete a Phase 2 monitoring program evaluation in 2017 and implement program changes in 2017 and 2018.
- Continue the County's ambient, groundwater, stream flow, and weather monitoring program, as modified, through 2017.
- Implement a new monitoring program database in cooperation with King County's environmental monitoring program which will allow the County to better manage, analyze, and present monitoring program data.
- Continue the Tanglewilde outfall flow and water quality monitoring through water year 2017.
- Continue to participate with the Cities of Olympia, Lacey, and Tumwater monitoring work group via the ILMA.

Appendix A



THURSTON COUNTY STORMWATER TRAINING PLAN

July 2016

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Introduction

Thurston County prepared this *Stormwater Training Plan* in order to facilitate deployment of the training requirements set forth in the [Western Washington Phase II Municipal Stormwater Permit](#) (Permit) and summarized in the County's Stormwater Management Program Plan (SWMPP). [Appendix 1](#) contains the specific permit conditions that require training for County staff who have a direct or indirect job duties that fall into the following stormwater program areas:

1. [Illicit Discharge Detection and Elimination \(IDDE\), and Spills](#);
2. [Operations and Maintenance \(O&M\)](#); and
3. [New Development, Redevelopment and Construction Stormwater](#).

For each stormwater program area, the plan describes the key training topics/objectives, the groups or positions that need the training, delivery of the training, and when and how often the training will occur.

1. IDDE/Spills Program Area

Staff in several County departments and divisions have key roles and responsibilities in the IDDE/Spills program area. This ranges from the initial detection and reporting of a spill, illicit discharge, and/or illicit connection to the follow-up response and resolution of the issue. For this reason, training for the IDDE/Spills program area is tailored toward three audiences:

- All field staff,
- Any staff responsible for assessing outfalls, and
- Staff responsible for response, tracing, cleanup, and enforcement.

Refresher training occurs as needed to address changes in procedures, techniques, requirements, or staffing. The IDDE/Spills training fulfills Permit Special Conditions [S5.C.3.c.iii](#) and S5.C.3.e.

1.1 All Field Staff

Field staff, as part of their normal job responsibilities, might come into contact with or otherwise observe a spill, illicit discharge, and/or illicit connection to the municipal separate stormwater sewer system (MS4) receive training on:

- The identification of a spill, illicit discharge, and/or illicit connection; and
- Reporting a spill, illicit discharge, or illicit connection through the Spill Reporting Matrix ([SWMPP Figure 1](#)).

1.2 Staff Responsible for Assessing Outfalls

All staff responsible for assessing outfalls receive additional training on how to map, trace, and characterize illicit discharges and/or connections. This training includes the use of the [VUEWorks](#) asset management software program to identify the areas contributing to the illicit discharge/connection, possible pollutant entry points upstream, and aquatic resources downstream of the discharge.

1.3 Staff Responsible for Response, Tracing, Clean-up, and Enforcement

All staff who are responsible for identification, investigation, termination, cleanup, and reporting of illicit discharges (including spills and illicit connections) receive additional training to conduct these activities.

Table 1. Summary of Training for the IDDE/Spills Program Area

Attendees	Training Topics	Description	Training Delivery	Training Frequency
All field staff	IDDE – general program overview	Training explains IDDE, including information on how to identify and report suspected spills or illicit discharges	DVD, PowerPoint, webcast, consultant delivered training, and informational brochures	<ul style="list-style-type: none"> ➤ Within six months of hire ➤ Refresher every two years
Any staff responsible for assessing outfalls	IDDE – Stormwater field staff	Training for staff responsible for field assessment of outfalls	Consultant training, webcasts, on the job training	<ul style="list-style-type: none"> ➤ Within six months of hire ➤ Refresher every two years
Staff responsible for response, source tracing, cleanup, and enforcement	IDDE – cleanup, source tracing, termination, enforcement	Training for staff responsible for response, cleanup, and enforcement	Consultant training, HAZWOPER 40hour, webcasts, on the job training	<ul style="list-style-type: none"> ➤ Within six months ➤ Annual refresher

2. Operations and Maintenance (O&M)

Staff in various County departments are responsible for operations and maintenance (O&M) of their facilities. Facilities include not only buildings, but structures and features within County right-of-ways. O&M of these facilities covers a wide range of activities. It is the responsibility of the staff performing these activities to prevent or minimize impacts to water quality by using operational and structural best management practices (BMPs). O&M staff training is tailored toward two audiences:

- O&M field staff, and
- Staff responsible for County facilities.

Refresher training occurs as needed to address changes in procedures, techniques, requirements, or staffing. The training fulfills Permit Special Conditions [S5.C.5](#) and [S5.C.5.g](#)

2.1 O&M Field Staff

O&M field staff working in their normal job duties at transitory project locations or responding to emergency situations receive training on:

- Stormwater facility-specific O&M standards per Thurston County’s *Drainage Design and Erosion Control Manual* ([DDECM](#));
- Selection and installation of appropriate structural best management practices (BMPs);
- General knowledge of good housekeeping and operational BMPs; and
- General knowledge of specific facility Stormwater Pollution Prevention Plans (SWPPPs).

2.2 Staff Responsible For County Facility Maintenance

Staff whose primary responsibility or main duty station is a County facility (e.g., Tilley and WARC) receive training on:

- Stormwater facility-specific O&M standards per Thurston County’s [DDECM](#);
- Selection and installation of appropriate structural BMPs;
- In-depth review and implementation of County facility SWPPPs; and
- Implementation of good housekeeping and other operational BMPs.

Table 2. Summary of Training for the Operations and Maintenance Program Area

Attendees	Training Topic	Description	Training Delivery	Training Frequency
O&M field staff	O&M Standards BMPs: structural and operational BMPs including good housekeeping SWPPPs	O&M Standards per DDECM BMP selection, installation and maintenance per DDECM General overview of facility SWPPPs	PowerPoint, webcast, consultant training, in house training, and Regional Road Maintenance	<ul style="list-style-type: none"> ➢ Within six months of hire ➢ Annual refresher
Staff responsible for facility maintenance	O&M Standards BMPs: structural and operational BMPs including good housekeeping SWPPPs	O&M Standards per DDECM or SWPPP BMP selection, installation and maintenance per DDECM or SWPPP In-depth review of facility SWPPPs	PowerPoint, webcast, consultant training, in house training, and Regional Road Maintenance	<ul style="list-style-type: none"> ➢ Within six months of hire ➢ Annual refresher

3. New Development/Redevelopment/Construction Stormwater

Staff responsible for implementing the County's program to control stormwater runoff from new development, redevelopment, and construction sites receive training tailored to staff teams responsible for:

- Permitting;
- Plan review;
- Construction site inspections; and
- Enforcement

Refresher training occurs as needed to address changes in procedures, techniques, requirements, or staffing. Staff training for controlling stormwater runoff from new development, redevelopment, and construction stormwater fulfills Permit Special Condition [S5.C.4.e](#).

3.1 Permitting

Staff responsible for reviewing permit applications at intake for stormwater compliance receive training to conduct these activities. Training includes permit thresholds, erosion control, and drainage. On the job training is augmented with outside training workshops, including [Certified Erosion and Sediment Control Lead \(CESCL\)](#) training.

3.2 Plan Review

Permit counter staff reviewing plans receive training to conduct these activities. Training includes site plan and report review, CESCL certification, and BMP selection/design for water quality and flow control. Supplemental on the job training addresses policies and procedures. Additional outside training may occur.

3.3 Construction Site Inspections

Construction inspectors receive training on erosion and sediment control, pollution prevention, and drainage. All inspectors maintain CESCL certification and receive ongoing on the job training.

3.4 Enforcement

County code enforcement staff who enforce stormwater requirements receive training, including CESCL certification, and ongoing on the job training on County enforcement policies and procedures.

Table 3. Summary of Training for New Development/Redevelopment/Construction Stormwater

Attendees	Training Topics	Description	Training Delivery	Training Frequency
Staff reviewing permit applications for stormwater compliance	Permitting of new development/redevelopment, and construction.	Training on permit thresholds, erosion and sediment control, and LID; relevant policies, procedures, and requirements.	<ul style="list-style-type: none"> ➤ CESCL ➤ Outside training, as available ➤ On the job training 	<ul style="list-style-type: none"> ➤ Obtain CESCL certification within six months of hire; recertify every three years ➤ Weekly at staff meetings
Counter staff reviewing plans	Review of site plans for new development/redevelopment and construction activity. Apply and interpret County Drainage Design and Erosion Control Manual .	Training for plan and report review; BMP siting, selection and design; LID principles and codes.	<ul style="list-style-type: none"> ➤ CESCL ➤ Outside training, as available ➤ County-specific on the job training 	<ul style="list-style-type: none"> ➤ Obtain CESCL certification within six months of hire; recertify every three years ➤ Weekly at staff meetings
Construction site inspectors	Inspections to assess compliance with construction stormwater pollution prevention plan (SWPPP) requirements and drainage codes.	Training for erosion and sediment control BMPs, SWPPPs, and applicable drainage codes.	<ul style="list-style-type: none"> ➤ CESCL ➤ On the job training 	<ul style="list-style-type: none"> ➤ Obtain CESCL certification within six months of hire; recertify every three years ➤ Weekly at staff meetings
Code enforcement staff	Enforcement of BMP, SWPPP and drainage requirements; other applicable health/environmental codes	Training for erosion and sediment control BMPs, SWPPPs, and applicable drainage codes. County code enforcement policies and procedures.	<ul style="list-style-type: none"> ➤ CESCL ➤ On the job training 	<ul style="list-style-type: none"> ➤ Obtain CESCL certification within six months of hire; recertify every three years

Tracking and Recordkeeping

In 2016, the County began using the electronic Learning Management System (LMS) to track and maintain stormwater training records. Applicable training requirements for each program area will be assigned to specific staff, enabling notification, tracking, and documentation of attendance. Managers can generate reports from LMS to assess adherence with the training plan.

Appendix 1 - Phase II Municipal Stormwater Permit Conditions Related to Training

This training plan is based on the following excerpts from the [2013 Western Washington Phase II Municipal Stormwater General Permit](#):

S5.C.3.c.iii

An ongoing training program for all municipal field staff, who, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge and/or illicit connection to the MS4, on the identification of an illicit discharge and/or connection, and on the proper procedures for reporting and responding to the illicit discharge and/or connection. Follow-up training shall be provided as needed to address changes in procedures, techniques, requirements, or staffing. Permittees shall document and maintain records of the trainings provided and the staff trained.

S5.C.3.e

Permittees shall train staff who are responsible for identification, investigation, termination, cleanup, and reporting of illicit discharges, including spills, and illicit connections, to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques, requirements or staffing. Permittees shall document and maintain records of the training provided and the staff trained.

S5.C.4.e

Each Permittee shall ensure that all staff whose primary job duties are implementing the program to control stormwater runoff from new development, redevelopment, and construction sites, including permitting, plan review, construction site inspections, and enforcement, are trained to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques or staffing. Permittees shall document and maintain records of the training provided and the staff trained.

S5.C.5

Each Permittee shall implement an operations and maintenance (O&M) program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.

S5.C.5.g

Implement an ongoing training program for employees of the Permittee whose primary construction, operations or maintenance job functions may impact stormwater quality. The training program shall address the importance of protecting water quality, operation and maintenance standards, inspection procedures, selecting appropriate BMPs, ways to perform their job activities to prevent or minimize impacts to water quality, and procedures for reporting water quality concerns. Follow-up training shall be provided as needed to address changes in procedures, techniques, requirements, or staffing. Permittees shall document and maintain records of training provided and the staff trained.

Appendix C

Appendix C

Effective Date: 10-30-13	Page 1 of 2
Revised Date:	
PUBLIC WORKS POLICY	
Supersedes: New	Approved by 
See Also:	Director

POL-820: Escalating Enforcement Policy for Erosion and Sediment Control Compliance

This policy establishes a formal procedure to be followed when enforcement action is necessary on construction sites that do not comply with the erosion and sediment control Best Management Practices (BMP) installation and maintenance procedures contained in the Drainage Design and Erosion Control Manual (DDECM) adopted by reference under Title 15 Public Work of the Thurston County Code (TCC).

Once site conditions have been verified by the County Engineer or his/her authorized representative, and if the site is determined to be in a state of non-compliance, the following enforcement actions will be pursued.

1. Correction Notice

A correction notice may be used for minor issues. These may include lack of installation and maintenance of appropriate erosion and sediment control BMPs or failure to address minor deficiencies in existing BMPs, (Such as adding more straw mulch, repairing silt fence, recovering stockpiles, etc). Correction notices may be verbal or written. Verbal correction notices will be documented within the permitting software (currently 'Amanda') under the project or via a letter sent to the responsible party. The time period for implementing corrections required by the correction notice will be provided with the notice. A reasonable effort to obtain a voluntary correction should be pursued.

The County may bypass enforcement action step #1 and advance immediately to enforcement action step #2 based on the severity of the impact, a discharge to the County's MS4, threat to human health, welfare and/or the environment and/or past compliance issues with the responsible party.

2. Stop Work Order

If voluntary correction by the responsible party cannot be reached within the timelines set in the 'Correction Notice' described above, a formal violation will be assessed against the responsible party and a physical stop work order will be posted onsite. The violation will then be forwarded onto the Compliance Section for official processing.

Appendix D

Thurston County Central Services Properties		
Property	Address	City
Thurston County Courthouse Bldg. #1	2000 Lakeridge Dr. SW	Olympia
Thurston County Courthouse Bldg. #2	2000 Lakeridge Dr. SW	Olympia
Thurston County Courthouse Bldg. #3	2000 Lakeridge Dr. SW	Olympia
Thurston County Courthouse Bldg. #4	929 Lakeridge Dr. SW	Olympia
Thurston County Courthouse Bldg. #5	2400 Evergreen Park Dr. SW	Olympia
Thurston County Jail - Annex	2000 Lakeridge Dr. SW	Olympia
Thurston County 3400 Bldg.	3400 Mottman Rd. SW	Tumwater
Thurston County Emergency Services	2703 Pacific Ave. SE	Olympia
Thurston County Health	412 Lilly Rd.	Olympia
McLane Bldg. and Annex	2033 Harrison Ave. NW	Olympia
Evaluation and Treatment facility	3436 Mary Elder Rd. NE	Olympia
Tilley Shop A	9605 Tilley Rd. SW	Olympia
Tilley Shop B	9605 Tilley Rd. SW	Olympia
Tilley Bldg. C	9605 Tilley Rd. SW	Olympia
Tilley Bldg. D	9605 Tilley Rd. SW	Olympia
Tilley Bldg. E	9521 Tilley Rd. SW	Olympia
Thurston County Family Justice Center	2801 32nd Ave.	Tumwater
Thurston County Coroners Bldg.	2925 37th Ave. SW	Tumwater
Accountability and Restitution Facility	3491 Ferguson St. SW	Tumwater
Ferguson Bldg.	3285 Ferguson St. SW	Tumwater
ARC Work Release Bldg.	3013 Ferguson S.t SW	Tumwater
G Parking Lot	2000 Lakeridge Dr. SW	Olympia
J Parking Lot	910 24 th Way SW	Olympia
Waste and Recovery Center	2414 Hogum Bay Rd. NE	Lacey

Glossary

BMP	Best Management Practice
BoCC	Thurston County Board of County Commissioners
B-IBI	Benthic Index of Biotic Integrity
CD	Conservation District
CESCL	Certified Erosion and Sediment Control Lead
CFP	Capital Facilities Plan
CWA	Clean Water Act
DDECM	Drainage Design and Erosion Control Manual
DMR	Discharge Monitoring Report
E&O	Education and Outreach
ECOLOGY	Washington State Department of Ecology
ECOSS	Environmental Coalition of South Seattle
EPA	U.S. Environmental Protection Agency
GIS	Geographic Information System
GROSS	Grants of Regional or Statewide Significance
HAZWOPER	Hazardous Waste Operations and Emergency Response
HOA	Homeowner Association
IC	Illicit Connection
ID	Illicit Discharge
IDDE	Illicit Discharge Detection and Elimination
ILMA	Interlocal Monitoring Agreement
LID	Low Impact Development
MS4	Municipal Separate Storm Sewer System
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
PARTNERSHIP	Regional Educational Partnership composed of Thurston County and the Cities of Lacey, Olympia, and Tumwater.
PERMIT	Western WA Phase II Municipal Stormwater Permit
PH	Public Health
PHSS	Public Health and Social Services
PIC	Pollution Identification and Correction
RRMG	Regional Road Maintenance Endangered Species Act Guidelines
RRMP	Regional Road Maintenance Endangered Species Act Program
RSMP	Regional Stormwater Monitoring Program
RSWG	Regional Stormwater Work Group
SCT	Stormwater Coordination Team
SMMWW	Stormwater Management Manual for Western Washington

SQGs	Small Quantity Generators
SSWAB	Storm and Surface Water Advisory Board
SWMPP	Stormwater Management Program Plan
SWPPP	Stormwater Pollution Prevention Plan
TCEMP	Thurston County's Environmental Monitoring Program
TEAM	Interagency Team
TMDL	Total Maximum Daily Load
USGS	United States Geological Survey
VSP	Voluntary Stewardship Program
WARC	Waste and Recovery Center
WSU	Washington State University Extension