

2024 Municipal Stormwater Permit Ad-Hoc Advisory Process

Illicit Discharge Detection and Elimination and Source Control Group

White Paper

February 2022

Authors

Bob Bernard, King County

Mark Joyner, City of Bellingham

David Kangiser, City of Tumwater

Rod Swanson, Clark County

Reviewed by

Bob Bernard, King County

Aaron Burkhart, City of Bellingham

Matthew Geiger, City of Mukilteo

Kristina Lowthian, City of Renton

Rod Swanson, Clark County

Ryeann-Marie Tuomisto, City of Kirkland

Kenneth Waldo, City of Redmond

Lisa Werre, City of Sammamish

Editor

Mark Joyner, City of Bellingham

Introduction

The Department of Ecology (Ecology) is the National Pollutant Discharge and Elimination System (NPDES) delegated authority in Washington State. The NPDES program was created under the Federal Water Pollution Control Act, better known as the Clean Water Act. Ecology is delegated by the Environmental Protection Agency to regulate additions of point-source pollutants, such as municipal stormwater and wastewater outfalls, into Waters of the United States. Ecology also enforces state water quality standards which protect a broader than federally required collection of surface water bodies known as Waters of the State. To meet its obligations under federal and state law, Ecology issues stormwater permits to municipal and county governments with urbanized watersheds, large construction sites, and individual industrial facilities.

In November of 2021, Ecology requested help from the Washington Stormwater Center with convening an “ad-hoc advisory process” to gather recommendations for Ecology’s re-issuance of the 2024 municipal stormwater permit. Permittees, non-governmental organizations, and other interested parties, volunteered to provide feedback to Ecology through the creation of a series of topic-driven white papers.

This ad-hoc advisory group was assigned to clarify the relationship between the 2019 municipal stormwater permit (Permit) required Illicit Discharge Detection Elimination (IDDE) and Source Control programs. In addition, this group elected to provide recommendations and feedback to Ecology pertaining to the IDDE and Source Control programs.

Overview of Illicit Discharge, Detection, and Elimination and Source Control

The Permit required Source Control Program and IDDE Program have commonalities in their goals but operate with unique approaches. Awareness of these similarities and differences can help permittees to implement their Stormwater Management Programs through leveraging existing resources and identifying gaps in services to achieve Permit compliance. The IDDE Program maintains procedures for identifying sources of pollution after they are observed in the stormwater collection system or in the receiving water. The Source Control Program maintains procedures for implementing best management practices (BMP) to prevent potential pollutants from contacting stormwater.

Similarities between the programs

The IDDE Program and Source Control Programs can work in tandem: Illicit discharges may be discovered during routine source control inspections and illicit discharge investigations can often identify source control BMPs which can be employed by property owners and business managers. Other environmental regulation violations, such as improper hazardous waste

storage and disposal and omitted industrial or construction stormwater general permit coverage, may also be discovered during the operation of the two programs.

Educational material generated from existing IDDE Program efforts partially align with messaging for Source Control Program goals and efforts. Messaging for the IDDE Program mainly focuses on a reactive approach of spill awareness, reporting, and clean up. The Source Control Program builds on this outreach with an added proactive approach of distributing materials which intend to aid in the prevention of pollutants from mixing with stormwater. Conducting outreach for both Programs requires good communication and interpersonal skills and requires materials to be translated into multiple languages. A regional approach to creating educational material would benefit many jurisdictions, particularly jurisdictions with limited staff. For example, a collection of jurisdictions in Southwest Washington created a partnership called Stormwater Partners to facilitate the sharing of educational materials.

Proficient understanding of municipal code, and the division of labor between departments, is required for representatives of both the IDDE and Source Control programs. Education and technical assistance are the preferred approaches for both programs, with enforcement actions as a last resort. When enforcement actions are required, typically both IDDE Program Code Enforcement and Source Control Program Code Enforcement normally follow the same return to compliance method.

Both Programs require knowledge of the jurisdiction's watersheds and municipal separate storm and sewer systems. The Programs also require knowledge of material and potential pollutant identification and how specific materials are transported through the built and natural environment.

Differences between the programs

Many differences between the IDDE and Source Control Programs may be attributed to the reactive and proactive nature of the programs, respectively. The IDDE Program detects and eliminates ongoing discharges and is reactive to reports of spills. The Source Control Program is proactive by preventing discharges to the storm sewer from occurring through the identification of pollution generating activities and the application of pollutant source controlling BMPs.

The public interactions vary between the two programs. The Source Control Program is designed to address pollution sources at existing development. Contacts are usually made with property owners and operators who may have a vested interest in the jurisdiction where their property is located. The Source Control Program benefits from building relationships with owners and operators and understanding motivations for requiring a business change their practices. IDDE response can involve anyone from the public, including residential and commercial property owners.

The number of Source Control Inspections compared to IDDE responses differs greatly. Creating a streamlined process for data storage for tracking communications, responses, photos, follow up visits, ownership, and contact information is essential to an efficient Source Control Program. Creating notification templates or inspection report templates to use as communication tools is important. IDDE investigations are often case specific, and notifications and reports are usually customized to address the offender with discharge information and BMPs to correct or clean up the discharge.

Training of staff is an ongoing Permit requirement for both programs. IDDE response procedures are commonly known by members of several municipal departments; such as public works, fire, police, parks, and planning. As such, IDDE Program training program is often extensive and must occur in all involved departments. The Source Control Program is often housed within a single department such as public works. Training for Source Control focuses on inspection protocols and public interaction with a smaller group of inspectors or contractors.

Reporting requirements differ between the two programs. The IDDE Program reporting requirements are extensive and include ongoing ERTS notification, annual reporting, and the submission of data through the Ecology operated WQWebIDDE Portal. Source Control Program data is required to be reported within the annual report in a table that includes NAICS codes associated with the businesses.

Source Control inspections are conducted in all seasons but are often best administered during wet periods when observations can be made about pollutant run off. Many pollutant generating activities are not discovered until a Source Control inspector reviews business practices during a site visit. Storm sewer outfall screening activities, a requirement for the IDDE Program, are best investigated in the dry months when stormwater does not obscure possible illicit connections. Other IDDE efforts, such as the identification of the source of a pollutant, may be aided by an increase in rainfall and stormwater within the storm sewer system.

Skill sets differ for IDDE responders and Source Control inspectors. Both are trained in material identification, spill response techniques and safety precautions. However, Source Control Inspectors need additional skills to work with business owners and offer technical assistance to solve potential pollution problems or BMP deficiencies.

IDDE Program Recommendations and Feedback

The IDDE Performance Standard

The phase I and phase II permit both include the requirement to on average, screen 12 percent of the known MS4 each year. For permittees with large rural areas or large areas of suburban residential development, the 12 percent yearly average requirement is unduly burdensome and

not a productive use of staff time. In rural areas, where traffic often travels at highway speeds, screening ditches is hazardous. The Permit language should allow permittees to exclude areas that are known not to or likely to not include illicit discharges from the 12 percent average annual performance standard inventory.

IDDE in Urban Areas Served by Piped Conveyance Systems

The Permit should allow the permittee the use of source control visits as a primary means of conducting IDDE screening of conveyance systems.

The primary source of illicit discharges in urbanized areas is outdoor activities at businesses. Other sources such as improper sewage disposal by transient dwellings and failed septic systems are not the focus of an illicit discharge detection screening program but must be addressed by complaint response.

Outfall screening lacks effectiveness in suburban areas in Clark County, where the developed urban area had its outfalls screened several times over the last 20 years. Very few illicit connections or discharges were discovered during these previous screenings.

For municipalities that do not operate sanitary sewage utilities, the great majority of illicit discharges and connections are discovered during stormwater source control visits to businesses.

In residential areas, common illicit discharges include the improper disposal of sewage and refuse. These incidents are often reported to the Health Department or Code Enforcement by neighbors. Outfall screening is ineffective at detecting these discharges. Low density residential-area collection systems should not be required to be screened unless the collection system includes potentially pollutant generating sites.

Rural Areas that are Served by Ditch Conveyance Systems

The primary sources of illicit discharges to the MS4 in zoned rural or undeveloped areas zoned for urban land uses are businesses on rural lots. Failed septic systems are a likely source of bacteria in streams but rarely discharge to MS4 roadside ditches. Many of the non-stormwater discharges in the rural area do not enter the MS4, instead being discharged into the ground, a natural drainageway or ditch not connected to the MS4.

While runoff to the rural MS4 ditches does originate from developed sites, most of the runoff is from sheet flow from fields or woods, groundwater seeps and stormwater interflow.

Dry season roadside ditch and ditch outfall screening in rural areas is not an effective tool for identifying illicit discharges from homes and businesses for several reasons. Ditches generally have tall stands of grass that make the conveyance of illicit discharges and their detection nearly impossible. Grassy ditches absorb any moisture available during the dry summer months.

Performing screening on foot in rural areas is extremely hazardous due to high-speed traffic and a complete lack of shoulders. Ditches are generally very difficult to walk in due to

vegetation and the morphology of ditches. Rural roads in Western Washington are often on right-of-way established in the 1800s and early 1900s when most travel was on narrow earthen roads of the time. Consequently, the right-of-way is usually very narrow and lacking shoulders.

Recommendations from Clark County

1. Remove the outfall screening requirement for forested areas, rural ditches, and urban residential areas and develop a viable tool for illicit discharge screening in these areas.
2. Rely on complaints to identify sources from failing septic systems or transient sources such as trailers and motor homes.
3. Use a business source control approach as the primary tool in the rural area. The source control approach should use an office screening to identify potential sources such as home businesses parked heavy equipment, livestock areas, and plant nurseries. Use targeted inspections of these sites to ensure there are no illicit discharges to the MS4. A two-person crew could perform routine windshield surveys of rural county roads to screen for potential illicit discharges and perform source control inspections.

Suggested permit language is in italics below:

[S5.C.9.c.i. Procedures for conducting investigations of the Permittees MS4, including field screening and methods for identifying potential sources. These procedures may also include source control inspections.]

The Permittee shall implement a field screening methodology appropriate to the characteristics of the MS4 and water quality concerns. Screening for illicit connections may be conducted using the *Illicit Connection and Illicit Discharge Field Screening and Source Tracing Guidance Manual* (Herrera Environmental Consultants, Inc., May 2013.); or another method of comparable or improved effectiveness. The Permittee shall document the field screening methodology in the Annual Report.]

Permittees are not required to screen conveyance systems where land use is zoned residential, rural or forest or is predominately residential. These conveyance systems may be removed from the total screening inventory for the purpose calculating the annual percentage screened.

Permittees may use the source control program as the primary method to screen conveyance systems if appropriate for local conditions.

IDDE Feedback from Ad-Hoc Group Meeting and White Paper Review

On November 4, 2021, a virtual meeting of Phase I and Phase II Western Washington permittees was convened to discuss the Source Control and IDDE program requirements for the 2024 NPDES Municipal Stormwater Permits.

Feedback and recommendations made during the November 4th meeting and the review of this white paper are listed below:

1. Discharges of stagnant and contaminated building fire sprinkler system during maintenance are not clearly addressed in the permit. These discharges are known to contain rust and corrosion inhibitors, oxidized metals, low dissolved oxygen, and cutting oils. Some builders have been observed routing flushing lines for these sprinkler systems directly into parking lot storm sewer drains. In highly developed areas of a storm sewer, sprinkler water may significantly impact water quality. *This comment was made by two permittees.*
2. Discharges of saltwater swimming pools are not addressed in the permit. *This comment was made by one permittee.*
3. Clear requirements for the regulation and prevention of pressure wash water. The current language is too broad and leaves much to interpretation by municipalities. This also places burdens on contractors who attempt to comply when operating different municipalities. *This comment was made by two permittees.*
4. Ecology should provide a clear explanation of how the required reporting data will be utilized and only request data from municipalities that will benefit the reduction of pollutant generating sources. *This comment was made by one permittee.*
5. Ecology should make reporting requirements streamlined and simplified to aid in the export of data from various software systems utilized by permittees. *This comment was made by one permittee.*

Source Control Program Recommendations and Feedback

Recommendations from King County

Annual report question number 47 for Phase I permittees and number 78 for Phase II permittees ask the permit holder to “Attach a list of inspections, per S5.C.8.b.iii, organized by business category, noting the number of times each business was inspected and if enforcement actions were taken.” The following are several recommendations pertaining to question numbers 47 and 78:

1. When reporting the business category, it would be beneficial to report the data using a designated naming convention (i.e., SIC or NAICs code) to compare and summarize data region-wide.
2. Note whether the business/site was referred to the Department of Ecology for assistance. This reporting measure may help identify business sectors that are commonly problematic and/or need additional assistance/outreach materials.

Source Control Feedback from Ad-Hoc Group Meeting and White Paper Review

On November 4, 2021, a virtual meeting of Phase I and Phase II Western Washington permittees was convened to discuss the Source Control and IDDE program requirements for the 2024 NPDES Municipal Stormwater Permits.

Feedback and recommendations made during the November 4th meeting and the review of this white paper are listed below:

1. XML formatting of data is not desirable from an IT perspective. *This comment was made by one permittee.*
2. Phase II municipalities may not have the financial resources to meet permit requirements for the Source Control program. Inventories can be very large in jurisdictions with a high business density. *This comment was made by one permittee.*
3. Source control work is very cost effective. Preventative measures are more cost-effective versus needing to treat contaminated water or trace pollutants through a system. *This comment was made by one permittee.*
4. Outreach materials should not need to be sent to every potential pollution generator once per permit term. It has not been found to be effective due to the need to constantly update business contact information. Outreach materials should be sent to verified pollutant generators. *This comment was made by one permittee.*
5. Assistance from Ecology to municipalities in creating easy to understand sector specific BMP guidance would help regulated entities comply with requirements rather than referring them to the Stormwater Manual for Western Washington. *The comment was made by two permittees.*
6. The permit identifies publicly and privately owned institutional, commercial, and industrial sites for inspection. The permit also identifies other pollutant generating sources, based on complaint response, such as home-based businesses and multi-family sites. Ecology should clarify if municipalities are required to inspect home-based businesses and multi-family sites that are identified as pollutant generating, but not the subject of any complaints. *This comment was made by one permittee.*