Stormwater Action Monitoring

2020 Update to the Illicit Connection and Illicit Discharge (IC-ID) Field Screening and Source Tracing Guidance Manual

Source Identification

Lead Entity

King County
Stormwater Services

Partners

Aspect Consulting, LLC

Herrera Environmental Consultants, Inc.

Collectively improving stormwater management

Stormwater Action Monitoring (SAM) is a collaborative, regional stormwater monitoring program that is funded by more than 90 Western Washington cities and counties, the ports of Seattle and Tacoma, and the Washington State Department of Transportation. SAM's goal is to improve stormwater management to reduce pollution, improve water quality, and reduce flooding. We do this by measuring stormwater impacts on the environment and evaluating the effectiveness of stormwater management actions.

Questions about SAM?
See ecology.wa.gov/SAM

Study goals

The project:

1. Updated the Illicit Connection and Illicit Discharge (IC-ID) Field Screening and Source Tracing Guidance Manual (IC-ID Manual), originally published in 2013, with new and improved information on field methodologies and indicators for screening, identifying, and tracing the sources of stormwater pollution.
2. Provided eight trainings on the updated 2020 IC-ID Manual for municipal stormwater staff throughout Washington.
3. Updated and enhanced the training resources to support the updated IC-ID Manual.

Stormwater management problem

Municipal stormwater staff invest a substantial amount of time investigating and addressing potential illicit discharges to the municipal separate storm sewer system (MS4) for permit compliance. They encounter many different types of pollution that require quick, accurate, and inexpensive approaches to identify and find the source. This is especially challenging for diffuse sources of pollution.

The first IC-ID Manual in 2013 provided municipal illicit discharge detection and elimination (IDDE) programs with a comprehensive and useful resource for investigating stormwater pollution. The updated IC-ID Manual provides municipal stormwater professionals across the region with widely used information in an accessible format for screening, identifying, and tracing the sources of stormwater pollution. Trainings on the updated IC-ID Manual provided a refresher for existing personnel, and new additional training resources will help to train future personnel.

Project findings

The updated IC-ID Manual was published in May 2020 and is available via the SAM Source Identification webpage and the Washington Stormwater Center's IC-ID webpage. Updates were informed by feedback from municipal staff in two workshops, a literature review on updated and new methodologies and indicators, and a review of data from IDDE programs. The updates include:

- New *Index* and revised *Flow Charts* to quickly determine appropriate methods and tests to use
- Updated *Screening* and *Source Tracing* descriptions
- More *Indicator* tests
- Expanded *Bacteria* section to include four bacterial types and easy culturing test instructions
- Updated *Equipment Costs* and *Field Sheet* templates
- Reorganized and streamlined information

Eight training sessions in 2020 drew more than 200 attendees, mostly municipal staff from Western Washington. While the trainings were originally planned to be in-person, the COVID-19 pandemic provided an opportunity to reformat and present the trainings on a virtual platform more easily accessible to professionals across the region. The trainings included a small group exercise to find the sources of pollution in a hypothetical scenario, along with live demonstrations and prerecorded videos of field equipment usage, indicator tests, and sampling techniques.

The original 2013 IC-ID Manual included 14 videos giving an overview of the manual and demonstrating specific indicator tests. The 2020 update created five short videos on indicator tests and a new, longer video presenting an overview of the updated IC-ID Manual, all posted on the Washington Stormwater Center's YouTube channel.

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Recommendations

A comprehensive and up-to-date guidance manual and training materials are essential resources for conducting IDDE investigations. This 2020 IC-ID Manual and training resources should be used by municipal stormwater staff to support training and implementation of their programs on MS4 screening, source identification, and control. These materials are available online at no cost, providing access to all stormwater professionals and others working on pollutant source identification and control.

As stormwater pollution regulations adaptively improve in Washington, the knowledge and data available to evaluate best practices also improve. Ecology and permittees will benefit from more up-to-date efforts with National Pollutant Discharge Elimination System (NPDES) permit implementation in this updated IC-ID Manual. This will improve consistency, accuracy, and efficiency in how stormwater pollution is screened, identified, traced, and reported.

The project trainings on the updated IC-ID Manual were described as a valuable resource for ongoing stormwater management, helping train and refresh over 200 municipal stormwater staff on IC-ID field methodologies and indicators. Stormwater managers are encouraged to use these materials to train staff every two to five years on the updated IC-ID Manual.

Ecology and permittees are encouraged to consider supporting a future update to the IC-ID Manual and trainings in five to ten years.

Why does this study matter?

Stormwater carries numerous potential sources of pollution. Proven, accurate, and efficient methods to screen, identify, and trace the sources (which are often intermittent) are essential tools of stormwater management. Keeping municipal staff up to date and trained on how to spot and respond to illicit discharges is an essential requirement of the Municipal Stormwater Permits and a critical component of a local government's stormwater management program.

This project expanded educational and training materials for identifying and tracing stormwater pollution, which will help stormwater managers ensure their staff are efficient and knowledgeable on implementation of IDDE, source control, and MS4 screening.

What will Ecology do with this information?

Recognizing the need for and benefit of coordinated IC-ID practices and training materials, Ecology will continue to support regional efforts to develop consistent methods for pollution screening, identification, and tracing.

Ecology will share the updated IC-ID Manual with the Pollution Prevention Assistance program (formerly the Local Source Control program) and update websites to reference the updated manual and training materials.

What should we do with this information?

Permittees and stormwater managers should use the 2020 IC-ID Manual for IDDE investigations and the training resources and videos for ongoing staff training needs.

The Washington Stormwater Center should continue to host the material in an easy-to-find location on its Municipal Resources webpage, which provides a central source of permit tools.

For more information

Visit the Washington Stormwater Center's IC-ID webpage https://www.wastormwatercenter.org/permit-assistance/municipal/permit-assistance-2/ic-id/

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