



ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

*City of Sedro-Woolley
Public Works Department
325 Metcalf Street
Sedro-Woolley, WA 98284*

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Illicit Discharge Detection and Elimination Program

Section I: Introduction

The purpose of the Illicit Discharge Detection and Elimination (IDDE) Program is to detect and eliminate sources of pollution to the municipal separate storm sewer system (MS4) as required by the Western Washington Phase II Municipal Stormwater Permit (S5.3).

The goal of this plan is to identify and then eliminate illicit discharges. Examples of illicit discharges include:

- Direct or indirect sanitary wastewater discharges that connect to the storm sewer or watercourse, such as a shop floor drain connected to a storm drain, a crossconnection between the municipal sewer and storm sewer systems, a damaged sanitary sewer line that is leaking sewage into a cracked storm sewer line, or a failing septic system that is leaking into a water course.
- Materials (e.g., used motor oil) that have been dumped illegally into a storm drain catch basin or other stormwater facility.
- Improper home or business owner activities such as washing paint brushes into a catch basin, washing new textured concrete driveways into a storm drain, draining swimming pools to the storm system (swimming pools have high pH and chlorine), excess use of fertilizers, or washing cars with chemicals that enter the storm drain system.

Additional goals of the IDDE program include:

- Improve water-quality in local waterways by reducing incidences of pollution to MS4s
- Increase awareness among municipal employees, businesses, and the general public of the direct connection between the MS4 and local waterways
- Educate municipal employees, businesses, and the general public of the hazards associated with illicit discharges and the best management practices (BMPs) available
- Facilitate consistency in response to incidences of discharges of pollutants to City's stormwater system through a coordinated system of procedures and training of municipal employees,
- And foster citywide coordination in protecting Sedro-Woolley's watersheds from pollutants related to illicit discharges.

The NPDES Permit sets forth the minimum elements of the plan which are listed below. These minimum elements are described throughout the remainder of this document.

- Municipal Storm Sewer System Mapping (S5.C.3a)
- Ordinances (that effectively prohibit illicit discharges) (S5. C.3b)
- Detection and Elimination Program (S5.C.3c)
- Public Education (S5.C.3d)
- Program Evaluation and Staff Training (S5.C.3e & f)

Section II: Municipal Storm System Mapping

The NPDES Phase II Permit outlines minimum information that should be included in the City's municipal storm sewer system map:

- Location of all known municipal storm sewer outfalls, receiving waters, and structural BMPs owned, operated, or maintained by the City, tributary conveyances (type, material, size) leading to outfalls that are 24-inches or larger (or have an equivalent cross-sectional area), drainage areas and land use for the drainage basins contributing to outfalls that are 24-inches or larger (or have an equivalent cross-sectional area),
- Locations of new connections to the City's stormwater drainage system,
- Drainage areas within the City that do not discharge to surface water (aka closed depressions). All city areas ultimately drain to surface waters.

The City has completed GIS mapping of the city's stormwater system, including all basins, pipes, ditches and stormwater facilities, including outfall identification. Updating and maintenance is ongoing. This map will be used to schedule and track maintenance activities and plan for capital improvement projects.

The GIS map information is currently not available on-line. A wall map showing the mapped system to date is available at Public Works.

All City owned stormwater facilities have been identified, and an Operation and Maintenance Plan for each is being prepared. Outfalls have been mapped. Stormwater BMP's are in the process of being mapped (on-going process).

Receiving waters have been prioritized and identified on the GIS Stormwater Map.

Section III: City Ordinance

In 2009, the City of Sedro-Woolley adopted the Illicit Discharge Detection and Elimination Ordinance 1648-09. The adoption of Ordinance 1648-09 to the Sedro-Woolley Municipal Code included revisions to Chapter 13.36, Stormwater Management,

to include required IDDE elements and the creation of Chapter 13.40, Stormwater Maintenance, to address stormwater management and IDDE requirements associated with management.

Section IV: Illicit Discharge Detection and Elimination

A. Detection

Certain areas within the City are more likely to be sources of illicit discharges, connections and pollution. These areas include:

- Locations where there have been repeated problems in the past. This could include areas with water quality data (i.e. Brickyard Creek) or where repeated complaints have been filed.
- Older areas of a community typically have a higher percentage of illegal connections. Also, deteriorating sewer pipes can allow wastewater to exfiltrate out of the sanitary lines and into the surrounding environment.
- Commercial and industrial areas (i.e. Skagit Industrial Park) tend to have a higher percentage of illicit discharges.
- Residential areas where pesticides and fertilizers may be used, washing vehicles, and leakage from parked vehicles. These areas also have the potential for direct dumping of pollutants (i.e. engine fluids) into the stormwater system.

Detection of non-stormwater discharges, spills and illicit connections is provided by a variety of methods. These include reports from various City Department staff during routine maintenance and repairs, and reports from citizens.

The Development Services staff inspect the stormwater system of new construction to ensure that no cross-connections or illegal connections are installed during construction prior to issuing occupancy certificates.

The City's Public Works Operations Department staff maintains and repairs the stormwater system as needed. By making timely repairs to the existing stormwater system, the likelihood of contaminants entering the stormwater system from the surrounding ground or nearby sanitary sewer pipes is greatly reduced.

The Development Services inspectors, Public Works Operations Department and Public Works staff are available to respond to complaints. Response procedures are indicated in Appendix D.

Reports of illicit discharges by citizens to the City of Sedro-Woolley can be made to the City directly, or through a 911 call to the Sedro-Woolley fire department. During business hours, hotline calls to the 360-855-0771 number are routed to Public Works

personnel. The hotline is published on the City website and in literature being distributed under the SCD Interlocal.

Reports received over the hotline will be entered into the reporting system by the person receiving the call. If the report falls within city limits it is the City's responsibility to investigate the illicit discharge; however the City should contact DOE at (425)649-7000 to coordinate investigation efforts. If it is determined that the City is not equipped to conduct the investigation DOE will conduct the investigation on their behalf.

For illicit discharges that could constitute a threat to human health, welfare, or the environment City staff will notify the Department of Ecology Regional office and other appropriate spill response authorities immediately but in no case later than within 24 hours of obtaining that knowledge. Spills which might cause bacterial contamination of shellfish, such as might result from broken sewer lines, shall be reported immediately to the Department of Ecology and to the Department of Health, Shellfish Program.

Investigations of complaints, reports or monitoring information indicating a potential illicit discharge, including spills shall be initiated within 7-days.

Investigating reports of discovered or potential illicit connections shall be initiated within 21-days of the report. The investigation should determine the source of the connection, the nature and volume of discharge through the connection, and the party responsible for the connection. Enforcement action to eliminate the illicit connection shall be taken within 6-months.

Illicit discharge investigations will begin with a visual inspection of the spill. Observations such as the color, odor, and volume of the spill will be recorded and documented on a field sheet (see Appendix A). Following the investigation a written report of the findings will be completed (example report included in Appendix C). Digital photos of the discharge will be taken to be logged with the written report and, if needed, as evidence should code enforcement be required.

Investigators will determine if water quality samples should be collected to identify the contaminants and ultimately source of the illicit discharge. The City of Sedro-Woolley will coordinate sample collection and analysis of water quality samples. Sampling results will be compared with reference discharge chemical fingerprints compiled by DOE.

If the source of the illicit discharge is not readily apparent, determination of the source may require the use of video equipment (if available), dye or smoke testing, or caulk dams. The source of the illicit discharge can be traced up-stream through the storm sewer by systemically working from the outfall to the next "up-stream" storm sewer manhole until the illicit discharge is not detected. Facility inspections may be required once the area of the illicit discharge is determined. If an inspection of a facility is

required, the facility owner will be notified and a scheduled inspection will be required. Police support may be required if violators are uncooperative.

In addition to the illicit discharge reports and investigations, all storm sewer outfalls in the City of Sedro-Woolley will be inspected annually during dry weather for evidence of illicit discharges.

Dry weather inspections will be performed by City of Sedro-Woolley employees. Dry weather inspectors will inspect storm sewer outfalls after a minimum period of 48 hours of no precipitation. Information collected during these inspections includes evidence of staining, odors, dry weather flows, unusual plant growth and other indicators of illicit discharges. The condition of the storm sewer also will be noted. Field sheets used in dry weather inspections are included in Appendix B.

If an illicit discharge is discovered during dry weather investigations, the inspector will contact the appropriate City contact to begin the illicit discharge investigation. Employees responsible for routine storm sewer maintenance should also be trained to identify illicit discharges in the field.

B. Elimination

After the source of the illicit discharge is determined, the City of Sedro-Woolley will work with the violator to stop the discharge and begin remediation if necessary. If an illicit direct connection to the storm sewer system is discovered, the violator will be required to have a licensed contractor re-route the pipe to the appropriate discharge point and repair any damaged storm sewer pipes. Violators responsible for illicit dumping will be ordered to cease dumping activities and remediate any impacted storm sewer infrastructure and receiving water way.

The City will prepare a letter to be sent to the property owner/violator for any illicit discharge or illegal connection. Depending on the circumstances the letter will describe the findings of the investigation, the required remedy, the required deadline for compliance, technical resources, and the enforcement actions, fines, and legal actions that could ensue for non-compliance. The letter should also describe the relevant codes and laws. The letter should specify who the property owner should contact for additional information and to notify the City when the required remedy has been completed. The City will conduct a follow-up inspection following notification that the required remedy has been completed.

Should the owner/violator not remedy the discharge, the City may proceed to abate the violation as a public nuisance in accordance with 13.36.110 or 13.40.130 as well as to seek equitable payment to make this remedy.

Section III: Education and Outreach

One of the most important aspects of the IDDE Program is conducting targeted education and outreach efforts focused on increasing public awareness of best management practices (BMPs) that reduce or eliminate discharges of pollutants to MS4s and to enlist the public's help in identifying and reporting illicit discharges and connections.

Sedro-Woolley's efforts are supplemented by efforts of the Skagit County Local Source Control Program. The Local Source Control Program is being conducted throughout the Puget Sound region to help businesses understand how to prevent hazardous chemicals and contaminated water from reaching Puget Sound.

The City, in coordination with other agencies and organizations devoted to raising the awareness of the public to the impacts illicit discharges have on local water ways and subsequently the Puget Sound, will develop public education material to disseminate through a variety of outlets to inform and educate residents and businesses about the effects and dangers of illicit discharges to the MS4.

Businesses dealing with pools and pool maintenance, automotive repair and washing, mobile power washers, commercial carpet cleaners, and lawn chemical companies will be targeted for receiving educational materials initially. When possible, the City will provide educational materials, resources and links on the City's Stormwater webpage.

The City will maintain the illicit discharge hotline for residents and businesses to report incidences of pollution (or situations that could potentially result in pollution) to the MS4. All print publications will include the "Stormwater Hotline" phone number (360-855-0771).

Section IV. Training of municipal staff on implementation of the IDDE program

Generalized training for city employees who work in various field positions (Public Works Operations crews, inspectors, solid waste drivers, maintenance crews, etc.) on identifying and reporting illicit discharges will be conducted on a regular basis. Training will include the use of available prepared IDDE related materials available through the Ecology website as well as those materials developed by the City.

More specialized training will be required for city employees responding to reports of incidences of pollution to the MS4 or conducting pollution investigations. Some incidences will be resolved relatively easily, while others will require more "detective" work. Training could include: a) field investigation procedures, b) sampling protocol, c) documenting investigations (with digital photographs, etc.), and d) writing investigation reports. The local fire department will be utilized to coordinate field training exercises.

Section VIII: Record Keeping, Reporting and Program Evaluation

A. Record Keeping and Reporting

The City of Sedro-Woolley will maintain a database of illicit discharges and investigation reports especially if they are the lead investigators for the illicit discharges.

A report of illicit discharge investigations within city limits will be included in the annual report as required by the NPDES MS4 permit.

B. Program Evaluation

The illicit discharge detection and elimination program will be evaluated at least annually, and more frequently during the first year of implementation.

The evaluation process will review the program compliance with the requirements of the MS4 NPDES. The City will share resources with other agencies and ideas for improvement of the IDDE program in order to maintain consistency and coordination throughout Skagit County. The program will also be revised or have elements added based on lessons learned in the field.

Section IX: Important Contact Information

Stormwater Hotline: 360-855-0771

Ecology Northwest Regional Office: 1-425-649-7000

Regional Ecology Permit Specialist:

Christina Maginnis, 1-360-715-5212

City of Sedro-Woolley Stormwater Management Program Staff:

David Lee, P.E., Asst. City Engineer 360-855-0771

Appendix A: Illicit Discharge Incident Report



Illicit Discharge Incident Report

Event Reporting Person:

Name: _____ Title: _____

Address: _____

Telephone: _____ Fax: _____ E-mail: _____

Company Information:

Name: _____

Address: _____

Telephone: _____ Fax: _____

Company Contact Information:

Name: _____ Title: _____

Address: _____

Telephone: _____ Fax: _____ E-mail: _____

Discharge/Spill Information:

Material Discharged/Spilled: _____

Address of Discharge/Spill: _____

Location of Discharge/Spill: _____

Volume of Discharge/Spill: _____

Date of Event: _____ Time: _____ Duration: _____

Chemical Name: _____ CAS No.: _____

Note - Attach Material Safety Data Sheet(s)

Description of Discharge/Spill Incident:

Initial Response Action Taken:

Areas Affected: *(check all that apply)*

Soil Groundwater Storm Drain Off-Site Air
Wells Surface Water Sanitary Sewer Other: _____

Extent of Impact:

Reporting:

Agency	Telephone Number	Date Reported	Time Reported	Contact Name
EPA National (NRC)	800-424-8802			
ECY NW Region	425-649-7000			
City PW Dept	360-855-0771			
City Street Dept.	360-856-0151			
Wastewater Treatment Plant	360-856-1100			
Fire Department	911			
Police	911			
Other				
EPA Case Number:				
City Case Number:				

Instructions from Regulatory Agencies:

Health and Injury:

Follow-up Actions:

Summarize Actions Taken to Prevent a Reoccurrence:

Note: Submit completed report within five (5) days of the occurrence of the discharge/spill event.
Attach additional sheets if needed.

Mail/Deliver Report To: Director, Public Works
City of Sedro-Woolley
325 Metcalf Street

Sedro-Woolley, WA 98284

Appendix B: Dry Weather Investigation Field Sheet

DRY WEATHER OUTFALL INVENTORY/SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID:	
Date:		Time (Military):	
Investigators:		Form completed by:	
Air Temperature (°F):		Rainfall (in):	Last 24 hrs: Last 48 hrs:
Latitude:	Longitude:	GPS Unit:	
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g. origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Single <input type="checkbox"/> Elliptical <input type="checkbox"/> Double <input type="checkbox"/> Box <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: _____	Diameter/ Dimensions: _____	In Water: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> In-Stream				
Flow Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, Skip to Section 5</i>			
Flow Description	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	Bottle and Stop Watch
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width		Ft, In	Tape measure
	Measured length		Ft, In	Tape measure
	Time of travel		Sec	Stop Watch
Temperature		°C	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test Strip	

Section 4: Physical Indicators for Flowing Outfalls

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR (Check box if present)	DESCRIPTION (Circle)	RELATIVE SEVERITY INDEX (1-3) (Circle)		
		1-Faint	2- Easily Detected	3- Notice-able from a distance
Odor <input type="checkbox"/>	Sewage Rancid/sour Other: Sulfide Petroleum/gas _____			
Color <input type="checkbox"/>	Describe color: _____	1-Faint color in sample bottle	2- Clearly visible in sample bottle	3- Clearly visible in outfall flow
Turbidity <input type="checkbox"/>	See Severity	1-Slight Cloudiness	2-Cloudy	3-Opaque
Floatables (not including trash) <input type="checkbox"/>	Sewage (toilet paper , etc.) Suds Petroleum (oil sheen) Other	1-Slight Cloudiness	2-Cloudy	3-Opaque

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are Physical Indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR (Check box if present)	DESCRIPTION (Circle)	COMMENTS
Outfall Damage <input type="checkbox"/>	Spalling, Cracking or Chipping Peeling Paint Corrosion	
Deposits / Stains <input type="checkbox"/>	Oily Flow Line Paint Other	
Abnormal Vegetation <input type="checkbox"/>	Excessive Inhibited	
Poor pool quality <input type="checkbox"/>	Odors Colors Floatables Oil Sheen Suds Excessive Algae Other	
Pipe benthic growth <input type="checkbox"/>	Brown Orange Green Other	

Section 6: Illicit Discharge Characterization (Circle)

Unlikely	Potential (presence of two or more indicators)
Suspect (one or more indicators with a severity of 3)	Obvious

Appendix C: Example Investigative Report

SEDRO-WOOLLEY PUBLIC WORKS DEPARTMENT

IDDE INVESTIGATION REPORT

Complaint Category: Water Pollution
Date: 2/15/06
Complainant Name: John Doe
Company Name: Ajax
Address: 12 West North Street

IDDE #: 3-06
Map Grid #: 33
Call Taken By: R. Harmon
Phone: 360-555-1212

NATURE OF COMPLAINT

Incident Address: 13 East West Street
Responsible Party: Unknown
Company Name:
Address:

City: Sedro-Woolley
Phone:

2/15/06, 12:40 pm Joe Jones telephoned the City hotline to report green discoloration in a storm drainage creek near 13 East West Street. According to Mr. Jones, the creek was bright green which resembled antifreeze.

INVESTIGATION FINDINGS/ACTION TAKEN

2/15/06, 1:30 pm Upon arriving at the creek site, the green discoloration was confirmed. The coloring agent appeared to be completely water soluble. No odor or sheen was noted and the water was not slick to the touch. No impact to aquatic life was noted. A large quantity of discolored water was present; extending over an area of approximately 3' x 1' x 50'. Storm inlets were checked but no evidence of spillage or improper disposal was observed.

The City was contacted and informed about the event. Elmer Fudd, Bugs Bunny, and Daffy Duck, from the city of Sedro-Woolley, arrived to assist in the investigation. Additional storm drains were checked and several companies were interviewed. The source of the discharge was not located. Subsequent analysis with a black light revealed that a sample of the green creek water would fluoresce. Analysis of diluted antifreeze with the same light did not fluoresce. No dye testing was reported to be in progress by Sedro-Woolley Public Works, or wastewater department. The source of discoloration was presumed to be an indicator dye. Sedro-Woolley public works personnel pumped the discolored creek water to the sanitary sewerage system.

2/23/06, 1:45 pm

Sedro-Woolley public work crews forwarded a report that the creek was green once again. The color and characteristics of the discoloration were the same as the February 15th event. However, the coloration was less intense. Storm inlets were once again checked for clues; none were found. Additional interviews were conducted. Ferndale lab personnel analyzed the water for common fertilizers and pesticides. None were detected. Sedro-Woolley personnel then pumped the discolored water into the sanitary sewerage system. Dye was again presumed to be the causal agent.

No further events occurred. File closure is recommended.

Follow-up: () Yes (X) No

Investigation by: Roger Harmon
Date: 2/23/06

Appendix D: Response Procedures

Immediate Response Procedures

The field crew should be prepared to take immediate action in the event of encountering one of the following situations:

- Individuals actively in the process of introducing possible illegal substances or materials to the storm drain system
- Very strong chemical odor emanating from storm drain system
- Presence of fumes or smoke emanating from storm drain system
- Visible significant stream of a controlled chemical or petroleum product flowing in storm system or downstream waters
- Large chemical plume in stream or river downstream of a City outfall
- Any condition that poses or could pose an immediate threat to property, human health or safety, or aquatic life.

The crew should take the following steps if one of the above situations is encountered:

- Ensure crew safety and the public by instructing people to stay clear of the area.
- Call 911 to report active illegal dumping or potential fire or significant chemical incident.
- Call the City's hotline at 360-855-0771 to report a possible illegal discharge.
- The following offices must all be called if an unauthorized discharge of oil or hazardous material such as a spill has occurred:
 - a. The National Response Center at 1-800-424-8802;
 - b. Washington Emergency Management Division at 1-800-OILS-911; and
 - c. Washington State Department of Ecology—Northwest Office at 1-425-649-7000.
- If a spill is encountered the following information should be recorded if possible:
 - a. Where is the spill?
 - b. What spilled?
 - c. How much spilled?
 - d. How concentrated is the spilled material?
 - e. Who spilled the material?
 - f. Is anyone cleaning up the spill?
 - g. Are there resource damages (e.g. dead fish or oiled birds)?
 - h. Who is reporting the spill?
 - i. Your contact information?
- If possible isolate or contain visible chemical pollution in the effected waterbody with any materials that are accessible. For small discharges

earth dams, absorbent pads, and containers may be useful to contain part of the illicit discharge.

- Take detailed notes and photos/video for subsequent investigation by City or other agencies.

At a minimum, follow-up work includes contacting the Washington State Department of Ecology—Northwest Office (see phone number above) to determine if any additional reporting or investigative actions are necessary.