This is a copy of the City's Stormwater Management Program (SWMP) Plan. It defines what the City plans to do to reduce adverse stormwater runoff impacts on downstream receiving waterbodies.

We would like your input on methods to improve the quality of our stormwater and the environment.

Please let us know if you have any comments, ideas, or concerns! You can provide feedback directly to City Hall at 321 East Fifth Street, attention Stormwater Engineer. You can also call the stormwater hotline at 360-417-4830, or send an email to stormwater@cityofpa.us.

City of Port Angeles

Stormwater Management Program Plan

Revised: March 22, 2023

As required by the

Western Washington Phase II Municipal Stormwater Permit
State of Washington – Department of Ecology

Permit Number: WAR045028
Permit Cycle: 2019-2024

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BACKGROUND AND INTENT

The City of Port Angeles (City) was issued a Western Washington Phase II Municipal Stormwater Permit (Permit) on January 17, 2007. The Permit was issued by the State of Washington's Department of Ecology (Ecology) in compliance with the State of Washington Water Pollution Control Law (Chapter 90.48 Revised Code of Washington) and the Federal Water Pollution Control Act (Title 33 United States Code, Section 1251 et seq). The Permit was renewed on August 1, 2013 for a five-year term (2013-2018), however, Ecology extended the permit an additional year into 2019. On August 1, 2019, Ecology updated and renewed the permit for another five-year term (2019-2024). The Permit authorizes the City to discharge from the municipal separate storm sewer system (MS4) to surface waters and ground waters of the state.

A Stormwater Management Program (SWMP) was developed by the City to meet the specific requirements of Special Condition S5 of the Permit: "Stormwater Management Program for Cities, Towns, and Counties." The SWMP Plan is a written set of planned actions and activities designed to reduce the discharge of pollutants to the maximum extent practicable and to protect water quality.

The organization of the City's SWMP reflects the eight core components required by Special Condition S5 under the active Permit; the corresponding permit sections are provided in parentheses:

1. Stormwater Planning (S5.C.1)
2. Public Education and Outreach (S5.C.2)
3. Public Involvement and Participation (S5.C.3)
4. MS4 Mapping and Documentation (S5.C.4)
5. Illicit Discharge Detection and Elimination (S5.C.5)
6. Controlling Runoff from New Development, Redevelopment, and Construction Sites (S5.C.6)
7. Operation and Maintenance (S5.C.7)
8. Source Control Program for Existing Development (S5.C.8)

The City's SWMP Plan is updated and submitted to the Department of Ecology annually, as required. A digital copy of the SWMP Plan is available on the City's stormwater web page. Updates to the Plan for each calendar year are posted by March 31st, as required by the Permit

Many of the activities described in the SWMP are planned activities, and their inclusion in this document does not guarantee that they will be implemented as described. An annual report of actual activities performed is submitted annually to Ecology.

The public is encouraged to participate in the ongoing development and improvement of the SWMP. To provide input, contact the Department of Public Works and Utilities with questions, comments, or suggestions at:

Address: 321 East Fifth St., Port Angeles, WA 98362

Phone:	(360) 417-4830 (Stormwater Hotline) (360) 417-4745 (Illicit Discharge Hotline) *Report a Spill* (360) 417-4701 (City Stormwater Engineer)
Email:	stormwater@cityofpa.us illicitdischarge@cityofpa.us *Report a Spill*
Website:	https://www.cityofpa.us/376/Stormwater-Management-Program

Digital Copy: SELECT >> Stormwater Management Program planning document (PDF).

Web Form: SELECT >> Stormwater Plan Survey

1) STORMWATER PLANNING

The City is in the process of implementing a Stormwater Planning Program designed to inform and assist in the development of policies and strategies as water quality management tools to protect receiving waters. During the current permit cycle, this program will be further developed and executed within the allowable timeframes to meet the requirements of the 2019-2024 Permit.

a) STORMWATER PLANNING TEAM

Within the City, inter-departmental communication and coordination regarding stormwater management (i.e. code changes, permit compliance, low-impact development standards, illicit discharges, pollution prevention, education and outreach, permitting, tracking, etc.) has been well-established, as documented by the City's Inter-Departmental Coordination Mechanism Policy. The City's Stormwater Permit Coordination Group (SWPCG) was expanded upon in 2020 to specifically include a "Planning" component that is dedicated to informing and assisting in the development, progress, and influence of the City's overall Stormwater Planning Program. The Group's written policy was updated in July 2020, included here-in in Appendix A, and was renamed the "Stormwater Permit Coordination and Planning Group" (SWPCPG). Semi-regular meetings are held to discuss ongoing and future stormwater management items across select departments and divisions within the City.

b) LONG-RANGE PLAN COORDINATION REPORT

During this permit Cycle, the City reviewed and evaluated how stormwater management needs and protection/improvement of receiving water health are (or are not) informing the planning update processes and influencing policies and implementation strategies.

This effort was manifested in two reports to Ecology describing how the water quality and watershed protection policies, strategies, codes, and other measures intended to protect and improve local receiving water health through planning, or taking into

account stormwater management needs or limitations; under the previous permit cycle and, again, under the current permit cycle.

Included in the City's 2020 annual report to Ecology (due on or before March 31, 2021), the City has responded to the series of Stormwater Planning Annual Report questions describing how anticipated stormwater impacts on water quality were addressed, if at all, during the 2013-2019 permit term in updates to the Comprehensive Plan (or equivalent) and in other locally initiated or state-mandated, long-range land use plans that are used to accommodate growth or transportation.

These same questions were applied to the current permit cycle and used to generate a Long-range Plan Coordination Report to Ecology, submitted January 1st, 2023.

c) LID Code-related Requirements

The City will continue to require Low-impact Development (LID) Principles and LID BMPs when updating, revising, and developing new local development-related codes, rules, standards, or other enforceable documents, as needed. The intent being to make LID the preferred and commonly-used approach to site development. The local development-related codes, rules, standards, or other enforceable documents will be designed to minimize impervious surfaces, native vegetation loss, and stormwater runoff in all types of development situations, where feasible.

i) LID Barrier Assessment

Annually, the City will assess and document any newly identified administrative or regulatory barriers to implementation of LID Principles or LID BMPs since local codes were updated in accordance with Ecology's 2013 Permit, and the measures developed to address the barriers. If applicable, the assessment will describe mechanisms adopted to encourage or require implementation of LID principles or LID BMPs.

d) Stormwater Management Action Planning (SMAP)

During this permit cycle, the City developed a comprehensive stormwater planning approach that is focused on addressing impacts from the cumulative development in a watershed rather than on single site or subdivision impact. The purpose of this effort to determine:

- How the City can most strategically address existing stormwater problems, and
- How the City can meet future population and density targets while also protecting and improving conditions in receiving water.

The resulting SMAP strategically identified approaches to accommodate future growth and development while preventing water quality degradation and/or improving conditions in receiving waters harmed by past development. Here is a link to the SMAP webpage for more information and to obtain copies of the progress reports: https://www.cityofpa.us/1140/Stormwater-Management-Action-Plan.

i) Phase I: Receiving Water Assessment

In order to develop and implement a strategic plan of action, the City first identified receiving waters that are most likely to receive a benefit. To achieve this, the City documented and assessed existing information related to our local receiving waters.

A tabulated watershed inventory that includes a brief description of the relative conditions of the receiving waters and the contributing areas has been consolidated, per permit requirements, and was be submitted to Ecology by March 31st, 2022. The submittal included a map of the delineated basins that references back to the watershed inventory table and identifies which receiving waters have a relatively low stormwater management influence and will not be included in the next step; prioritization.

ii) Phase II: Receiving Water Prioritization

Informed by the assessment of receiving water conditions, and other local and regional information, the City developed and implemented a prioritization method and process to determine which receiving waters will receive the most benefit from implementation of stormwater facility retrofits, tailored implementation of SWMP actions, and other land/development management actions. The retrofits and actions were designed to:

- Conserve, protect, or restore receiving waters through stormwater and land management strategies that act as water quality management tools,
- reduce pollutant loading, and
- address hydrologic impacts from existing development as well as planned for and expected future buildout conditions.

This prioritized and ranked list of receiving waters was documented in a report and submitted to Ecology prior to June 30, 2022, along with the process used to identify high priority receiving waters. Additionally, the ranking process included the identification of a high priority catchment area (the Valley Creek Basin) for focus of the Stormwater Management Action Plan (SMAP Phase III).

iii) Phase III: SMAP Development

In this step, the City developed an SMAP for at least one high-priority catchment area that:

- Identified specific stormwater management actions to protect water quality in the selected receiving water (Valley Creek Basin), and
- Determined an appropriate schedule and budget source(s) for implementing the activities and projects identified.

As required by the Permit, this SMAP was completed by March 31st, 2023 and will included the following:

1. A description of the stormwater facility retrofits needed for the area, including the BMP types and preferred locations.

2. Land management/development strategies and/or actions identified for water quality management.
3. Targeted, enhanced, or customized implementation of stormwater management actions related to permit sections within section S5 of the Permit, including:
    a. IDDE field screening,
    b. Prioritization of Source Control inspections,
    c. O&M inspections or enhanced maintenance, or
    d. Public Education and Outreach behavior change programs.

    Identified actions will support other specifically identified stormwater management strategies and actions for the basin overall, or for the catchment area in particular.
4. If applicable, identification of changes needed to local long-range plans, to address SMAP priorities.
5. A proposed implementation schedule and budget sources for:
    a. Short-term actions (accomplished within 6 years)
    b. Long-term actions (accomplished within 7-20 years)
6. A process and schedule to provide future assessment and feedback to improve the planning process and implementation of procedures or projects.

2) PUBLIC EDUCATION AND OUTREACH

The City's public education and outreach program has been developed consistent with the original Permit goal: "to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts." The program's foundational goals are to:

- build general awareness within the community about methods to address and reduce impacts from stormwater runoff,
- effect behavior change to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts,
- create stewardship opportunities that encourages community engagement in addressing the impacts from stormwater runoff.

The City is a member of the West Sound Stormwater Outreach Group (WSSOG); a regional group facilitated by Kitsap County that consolidates resources, knowledge, and experience in an effort to achieve a robust, engaging, and consistent education and outreach program. Regionally developed strategies and materials are tailored to meet the City's needs and implemented locally.

a) GENERAL AWARENESS

At a minimum, the City will annually select one target audience from the list below and implement an education and outreach program designed to provide

general awareness regarding stormwater issues and solutions. The content of the program will be relevant to the target audience selected and will be implemented on an ongoing or strategic schedule. The target audiences included in the permit and relevant subject areas to be covered are detailed below.

General Public or Businesses
Including overburdened communities, or school age children and including home-based or mobile businesses, respectively.

Subject areas:

- General impacts of stormwater on surface waters, including impacts from impervious surfaces.
- Low impact development (LID) principles and LID BMPs.

Land Development Professionals
Engineers, contractors, developers, or land use planners.

Subject areas:

- Technical standards for stormwater site and erosion control plans.
- LID principles and LID BMPs.
- Stormwater treatment and flow control BMPs/facilities

The following is a list of means and methods the City may employ in their annual targeted education and outreach program:

- **Stormwater website**: the City's stormwater website contains information on general stormwater impacts, impervious surfaces, and opportunities for the public to help improve stormwater quality within the watershed. The webpage may be found at https://www.cityofpa.us/255/Stormwater-Utility. The website will be updated as more information becomes available. Specific updates are planned to include a list of frequently asked questions, a list of upcoming stormwater-related events, additional links to other websites, and copies of educational materials developed under this program.
- **Presentations / Meetings**: Annually, the City may hold virtual and/or in-person public meetings to discuss the stormwater management program plan, stormwater management requirements, permitting, stormwater templates, ordinances, LID, etc. In these meetings we may discuss local water quality, the effects of impervious surfaces on stream health, and stormwater pollutants generated by home and automobile owners. Meetings may be held with local interest groups such as Streamkeepers, EcoNet, and the North Peninsula Builders Association.
- **Informational handouts:** Take-home fliers and brochures and may be made available to the public at facilities such as Port Angeles City Hall (customer service and billing desk, Public Works and Utilities reception area), Clallam County Courthouse, Port Angeles Public Library, City Pier (Arthur D. Feiro Marine Life Center), Peninsula College, and others. The informational brochures are designed to address the education goals listed above. As new

brochures and other informational materials are developed, electronic copies will be made available through the City's stormwater webpage.

- **Media advertisements**: The City may periodically place stormwater-related information in the local newspaper (Peninsula Daily News), on paid cable and satellite, locally targeted internet advertising platforms, and at local movie theatres. This information will be designed to address the education goals listed above and will be timed to reflect the greater impact during the wet winter season. Electronic copies of media advertisements may be made available through the City's stormwater webpage.
- **Utility bill mailers**: One month of the year, typically October, educational mailers are sent out with the monthly utility bills, thereby reaching the City's utility customers. The mailers will be developed to create a progressive flow of general stormwater related information with practical tips for home and business owners to help improve water quality. Copies of mailers may also be made available on the City's stormwater website and as handouts. The 2023 utility bill mailer are likely to feature topics such as: LID techniques, stormwater code updates, stormwater programmatic changes, BMPs, pet waste management, vehicle washing, natural yard care, and the new source control inspection program.
- **Local event participation**: Educational materials (posters, brochures/handouts, maps, etc) are commonly distributed at existing local and regional events that attract members of the target audiences. At such events, City representatives are made available to answer questions and provide information. Typical events include: Clallam County Fair, Clallam County Home and Lifestyle Show, Earth Day at the Pier, and others. Event-specific materials are developed and distributed as appropriate. Announcements of upcoming events and copies of materials used at events are typically available on the City's stormwater website. While restricted during the global Covid-19 pandemic, public outreach activities were mostly able to resume normally in 2022 and are expected to continue in 2023.

A matrix has been prepared to show planned activities for the current year and their relationship to the target audiences. This matrix is attached as Appendix B to this document. Updates of actual education and outreach activities performed will be provided with the Annual Report for the year.

In addition to the means and methods listed above (whose primary purpose is to provide stormwater education and meet permit requirements), throughout a typical year, the City also indirectly provides education outreach, such as:

- **Pollution prevention site visits**: The City receives grant funding through the State Department of Ecology to support a Pollution Prevention Specialist position. This person schedules site visit appointments at businesses within the City. The purpose will be to educate them about stormwater pollution and their connection to the local water ways, to educate them about the impacts of

illicit discharges and how to report them, to help them implement BMPs on use and storage of hazardous materials, to fill out the Department of Ecology's Source Control Checklist and to report that information to Ecology and the City. Under the current permit cycle, Source Control is now a permit condition and starting in Jan. 2023, this program will become an active component to the City's overall stormwater management program. See Section 8 for more details.

- **Illicit discharge information for the general public**: General information regarding illicit discharges to stormwater is provided to the public in an ongoing manner under the City's IDDE program. Information includes a description of illicit discharges, applicable laws, environmental effects, preventative measures, reporting measures, and links to other sources of information. A "Stormwater Pollution Hotline" is available for public reporting of illicit discharges (360-417-4745). See Section 5 for more details.
- **Direct mail:** Mailers designed to address specific stormwater education goals or stormwater ordinance updates may be sent directly to a specific target audience or City wide (i.e. car washes, golf courses, LID code changes, etc.). The audience will be selected based on classification in directories such as telephone books, web searches, or utility information.
- **BMP and LID incentives programs:** the City will continue to implement a stormwater rebate program that will offer financial incentives to small development projects who implement certain stormwater LID BMPs, on their properties. This program will be advertised on the City website and at local public events. The City has also implemented a rain garden rebate program for existing homes and businesses to further encourage LID. The rain garden rebate reimburses an approved applicant the cost of up to $1000 for the material required. Program details can be found on the City's Stormwater webpage: https://www.cityofpa.us/256/Rain-Gardens.
- **Stormwater Management Manual for Western Washington:** a copy of the most recent version of the Department of Ecology's manual is available at the City's Public Works and Utilities Department's Engineering Services Office so that designers can access the manual without purchasing or printing it. Staff are available by appointment to assist with the use of the manual.
- **Workshops or one-on-one meetings with developers:** The city stormwater engineer meets regularly with developers and engineers to help them interpret the City stormwater regulations, and to recommend low impact development techniques as generally lower cost stormwater solutions. New in 2021; via Microsoft Bookings and from the City's website, interested parties can now directly schedule a virtual meeting with Public Works Staff to discuss all aspects of development, including stormwater management or concerns.

b) BEHAVIOR CHANGE

At a minimum, the City will annually select one target audience and one Best Management Practice (BMP) from the list below and implement an education and

outreach program designed to effect behavior change to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts.

Target Audiences
Residents, landscapers, property managers/owners, developers, school age children, or businesses (including home-based or mobile businesses).

Best Management Practices (BMPs):

- Use and storage of: pesticides, fertilizers, and/or other household
- chemicals.
- Use and storage of: automotive chemicals, hazardous cleaning supplies, carwash soaps, and/or other hazardous materials.
- Prevention of illicit discharges.
- Yard care techniques protective of water quality.
- Carpet cleaning.
- Repair and maintenance BMPs for: vehicles, equipment, and/or home/buildings.
- Pet waste management and disposal.
- LID Principles and LID BMPs.
- Stormwater facility maintenance, including LID facilities.
- Dumpster and trash compactor maintenance.
- Litter and debris prevention.
- Sediment and erosion control.
- (Audience specific) Source control BMPs (refer to S5.C.8).
- (Audience specific) Locally-important, municipal stormwater-related subject area.

As required by the permit, behavior change effectiveness studies will be performed at the time intervals specified. The City anticipates continuing to meet behavior change and program evaluation requirements in collaboration with the regional West Sound Stormwater Outreach Group (WSSOG), facilitated by Kitsap County. The City's inter-local Agreement with Kitsap County was re-signed at the beginning of the year through Dec. 2022. The focus over the last few years has been Natural Yard Care (NYC) and will continue to be in 2023.

Tailoring of the program to meet the City's needs may be necessary to ensure the content is applicable to Port Angeles. Results from the effectiveness study will be used to optimize the strategy and schedule of our existing education and outreach program. Social marketing practices and methods will be incorporated, and a program evaluation plan will be developed and implemented to monitor ongoing performance. Progress reports regarding the program evaluation results and improvements will be submitted to Ecology at specified intervals.

c) STEWARDSHIP

Empowering and encouraging local citizens to take ownership in their community is known to have long-term positive impacts that can be felt for generations to come. The permit requires the City provide and advertise stewardship

opportunities and/or partner with existing organizations (including nonpermittees) to encourage residents to participate in activities or events planned and organized within the community, such as: stream teams, storm drain marking, volunteer monitoring, riparian plantings, and education activities. To meet this permit requirement, the City intends to continue its partnership with Streamkeepers of Clallam County; a citizen-based watershed monitoring program that provides volunteer opportunities and project assistance in the effort to protect and restore the local watersheds in Clallam County. However, new ideas for new partnerships and ways to support local stewardship opportunities are always welcome and can be submitted to the City's Stormwater Engineer.

d) RECORDKEEPING

The City will track and maintain records of all public education and outreach activities conducted. An electronic database of this information is maintained by the City's Public Works and Utilities Department. The database contains the following entries, where applicable:

- Name of outreach activity/distribution/event
- Date(s)
- Location(s)
- City personnel involved
- Target audience(s)
- Contact information for other group(s)
- Subject area(s)
- Attendance/distribution (actual or approximate)
- Educational materials used (flyers, handouts, slide shows, posters, etc)
- Notes/other

The public education and outreach database is available from the City upon request. An updated version will be included with each annual report. Copies of all material used during public education and outreach activities will be maintained, as well as photos, descriptions of feedback, lessons learned, and other information.

3) PUBLIC INVOLVEMENT AND PARTICIPATION

The SWMP will include opportunities for public involvement and participation to ensure that the program addresses the goals and expectations of the public as well as the requirements of the Permit. Public comments will be tracked and responded to as appropriate.

a) PUBLIC INVOLVEMENT IN SWMP

The City seeks public involvement and participation in developing and managing stormwater within the community. The permit describes ongoing opportunities for participation may be provided through advisory councils, public hearings, watershed committees, developing rate-structures, or other similar activities. Ways to engage

and include overburdened communities, as defined in the permit, will be considered when providing a means for involvement. Currently, common ways the public have opportunities for participation are:

- Direct contact with City staff: An email address, phone number, and mailing address will be provided on all City stormwater information distributed. The public will be encouraged to contact City staff at any time with questions or concerns.
- Web page: The City's stormwater web page, https://www.cityofpa.us/255/Stormwater-Utility, includes an updated copy of the SWMP Plan, encourages public involvement, elicits and facilitates feedback, and gives contact information.
- Public hearings: All City policy decisions will follow standard City procedure and will be brought before City Council through the public hearing process. This includes rate changes, new or revised ordinances, and other official policy decisions. The public are notified, as required, and will have a chance to comment during the hearings.
- Engineering counter handout: The SWMP Plan is available at City Hall in the Public Works and Utilities (PW&U) reception area.
- Stormwater workshops: The City stormwater engineer may hold public information sessions on the stormwater management program to local professionals, the public, and stakeholder groups such as Streamkeepers, EcoNet, and North Peninsula Builders Association.

All opportunities for public involvement and comments received will be tracked on a spreadsheet maintained by the Department of Public Works and Utilities. The City will consider comments as they are received and will follow up with the public as appropriate.

b) Availability of Information to the Public

The most recent annual report to Ecology, the SWMP Plan, and other submittals required by the Permit are made available to the public on the City's stormwater webpage. The documents are also be available to the public at the Department of Public Works and Utilities (321 East Fifth St, Port Angeles), upon request. Staff will be available by appointment to discuss the documents with any interested parties.

4) MS4 Mapping and Documentation

Accountability of a municipality's existing and developing stormwater network is necessary to build upon the past, maintain what's existing, and plan for the future. In the late 90's and early 2000's, the City began collecting field stormwater infrastructure data and recording it electronically using data management and spatial mapping software. Today, the City's inventoried and mapped stormwater system consists of approximately:

- 65 miles of stormwater conveyance

- 2,600 catch basins
- 170 outfalls
- 190 treatment and flow control facilities

Maintaining accountability and updating the mapping system is an ongoing collaborative effort that relies heavily on communication and established information processing pathways.

a) Municipal Separate Storm Sewer System (MS4) Map

The City's stormwater system is mapped electronically in the City's Geographic Information System (GIS). The data contained in the map is updated and corrected continuously as information is gathered in the field or as new development occurs. Updates are made based on field sketches, design plans, as-built plans, aerial photography, and/or other sources of information that become available. This information is available graphically to all interested parties via ArcGIS Online: https://pawa.maps.arcgis.com/home/index.html.

The stormwater GIS layers contain information on storm drain manholes, catch basins, outfalls, pipes, ditches, culverts, detention ponds, treatment facilities, and drainage basins. Other layers within the City's overall GIS dataset contain information relevant to stormwater as well, for example: land use, land cover, zoning, impervious surfaces, topography, natural hydrology, and combined sewers. Aerial photography is also available, with the most recent flyover being performed in 2019.

i) Location of Known Outfalls, Receiving Waters and Structural BMPs

The locations of all known outfalls, receiving waters, and structural BMPs owned, operated and/or maintained by the City have been mapped in the GIS. Additional information regarding tributary conveyances (pipes, ditches, etc), associated drainage areas, and land use will be developed as part of the program's ongoing refinement process. During the course of normal business, Stormwater Operations staff are in the process of collecting and recording more detailed information specifically regarding outfalls such as material type, diameter, condition, etc.

ii) New Connections to the MS4

The City continuously updates the stormwater GIS with all new connections or infrastructure permitted or otherwise authorized by the City. New connections are mapped from development plans, project plans, field reports, and/or other sources as appropriate.

iii) Areas Not Discharging to Surface Waters

Most of the areas served by the City-owned MS4 discharge into surface waters, however there are four west side retention basins which provide an unmeasured level of infiltration: Lincoln Park Pond, Big Boy Pond, M & 10th St. Wetland, and the 10th and N St. Quarry). All of these areas have overflow structures that allow stormwater to discharge to surface waters. Also, the City has some surface water

catch basins which drain to the City's wastewater plant. These basins have been mapped.

b) Availability of Information

The City's stormwater mapping with associated infrastructure information is available to anyone at anytime on the City's website or via the following web address:

https://pawa.maps.arcgis.com/apps/webappviewer/index.html?id=201b67adeee447f89d720a9fbb9569f9

Additionally, City staff are available by appointment to provide assistance with navigating the GIS mapping database and in providing more-detailed project specific information, if available.

Upon request, and to the extent appropriate, the City is able provide mapping information to federally recognized Indian Tribes, municipalities, and other Permittees, however, depending on the extent of the request, the City may recover reasonable costs associated with fulfilling these mapping information requests.

Upon request, the City can provide available stormwater maps to Ecology. The City can provide the required mapping information in electronic format that meets or exceeds Ecology's GIS mapping standards, with the exception of metadata, which the City does not have available in electronic format at this time.

5) Illicit Discharge Detection and Elimination (IDDE)

An illicit discharge is any direct or indirect discharge into the City's stormwater system that is not comprised entirely of stormwater, with some exceptions explicitly described in the Phase II permit and reiterated in municipal code. This section of the stormwater management program is designed to prevent, detect, characterize, trace, and eliminate illicit discharges to the City's municipal separate storm sewer system (MS4).

a) IDDE Policy and Procedures

In 2010, the City developed a written IDDE Response Policy and Procedure Manual for the Department of Public Works and Utilities. This manual details the City's standard operating procedures for reporting, responding, and correcting or removing illicit connections, spills, or other illicit discharges, whether suspected or confirmed. The most recent comprehensive update to the City's IDDE policy occurred in Dec. 2014, however, a re-evaluation and update is currently underway and is expected to be finalized within the year. The goal of the update is to ensure the City's policy is consistent with current techniques, methods, and standards and increase the document's overall usability. A copy of this policy is included as Appendix C to this document. In compliance with the Permit, implementation of this Policy will continue through the 2019-2024 permit cycle. Each element is discussed in the following sections.

b) IDDE EDUCATION

The City will primarily utilize its established Education and Outreach Program, as described in Section 2, to proactively disseminate information about illicit discharges, associated hazards, and improper disposal of waste. Additional education opportunities are taken under the City's Source Control Program (Section 8) and, reactively, during IDDE investigations.

c) ILLICIT DISCHARGE ORDINANCE

The City developed a comprehensive stormwater ordinance including an illicit discharge provision for the MS4 (PAMC 13.63). The ordinance was written to satisfy the criteria listed in the original Permit, including: illegal discharges, allowable discharges, categories of discharge identified as significant sources of pollution to waters of the State, escalating enforcement procedures, and enforcement strategies. The ordinance was passed by the City Council on June 16th, 2009. Additional permit driven updates to the stormwater code were enacted on December 20th, 2016 and July 5th, 2022.

d) ILLICIT DISCHARGE DETECTION

Within the City's IDDE program, mechanisms for the detection and identification of non-stormwater discharges and illicit connections have been established and are being implemented.

i) FIELD SCREENING AND POTENTIAL SOURCES

The City's established field screening methodology is described in full detail in the City's IDDE Response Policy, attached in Appendix C, and in the City's IDDE screening strategy that is updated annually and submitted to Ecology as part of the annual report.

Prioritization of receiving waterbodies was completed on February 12, 2010. Prioritization is based on the Department of Ecology's 303d list, as well as the significance of the waterbody for potential salmon recovery.

<u>303(d) listed waterbodies</u>

- Peabody Creek
- Tumwater Creek
- Port Angeles Harbor
- Dry Creek
- Valley Creek
- Ennis / White Creek

<u>Creeks with high salmon recovery potential</u>

- Ennis / White Creek system

<u>Proposed highest priority waterbodies for visual inspection:</u>

- Peabody Creek

- Tumwater Creek
- Ennis / White Creek system

Starting in 2014, the City was broken up into 8 annual screening basins based on equal distribution of stormwater infrastructure. This enabled the City to begin annually screening, on average, 12.5% of its MS4 system for illicit connections and discharges. When a basin contains or borders a creek, a field assessment of the creek from its outfall to the basin limit is performed as part of the screening program. Field assessments of the Peabody, Tumwater, Valley, Mill, Dry, White, and Ennis Creeks have been completed at least once within City limits. Field assessment activities include visual inspection during dry weather and field screening for illicit discharges in accordance with the City's "Illicit Discharge Detection and Elimination (IDDE) Response Policy". IDDE basin 6 was screened in 2021 achieving 100% of the City being screened since 2014. Basin 7, the Lauridsen Boulevard Basin, is scheduled for screening in 2023.

Screening of these basins is accomplished through the use of existing City inspection programs. Primary stormwater catch basins within the priority screening basin is visually inspected during its years screening. Existing programs and tasks are also leveraged to fulfill this requirement including Business Inspections, Manhole Inspections, Outfall Inspections, Stormwater BMP Inspections, and creek walks.

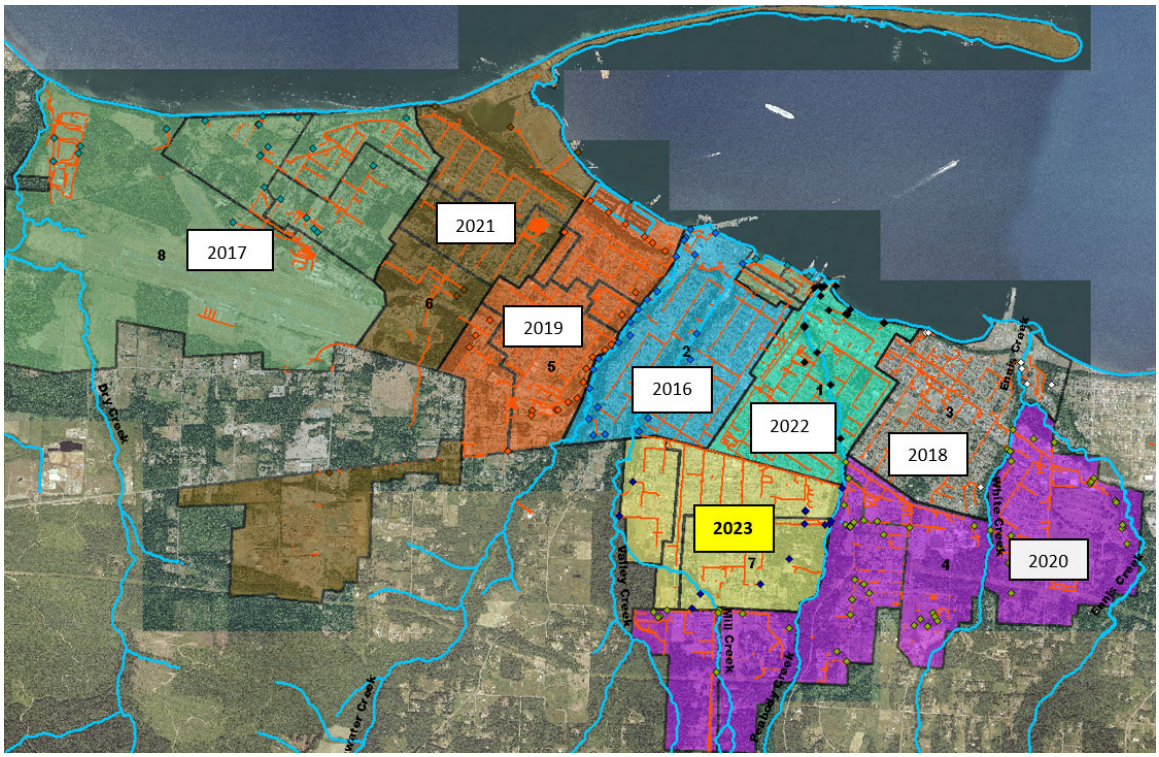


Figure 1. IDDE Screening Strategy: Screening basin boundary map and schedule.

ii) Hotline for Public Reporting of Discharges and Spills

The City's Illicit Discharge Hotline (360-417-4745) is available for public reporting of discharges and spills. Outside of traditional working hours, this number is forwarded to the Public Works On-Call number for after-hours response. The hotline number will be published with all stormwater information and is available on the City's stormwater website. The public will also be able to report discharges, spills, or other concerns via the City's storm water webpage, utilizing an online form, where information on the spill and photos can be submitted. Direct reporting via email is also available: illicitdischarge@cityofpa.us. Both the hotline and email are forwarded directly to City staff to ensure a timely response.

iii) IDDE Staff Training

Municipal staff who are responsible for identification, investigation, termination, cleanup, and reporting of illicit discharges, including spills, improper disposal, and illicit connections are specifically trained to conduct these activities. Follow-up training will be provided as needed to address changes in procedures, techniques, or requirements. The City documents and maintain records of training provided and staff trained.

Municipal field staff, which, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system are provided on-going annual or biennial IDDE trainings, depending on need and availability. This training is intended to educate staff members in the basics of the City's policy, IDDE identification, and the proper procedures for reporting to response teams. New employees receive this training during their probationary period to ensure all staff are trained to understand the basics and importance of IDDE notification and response.

e) Illicit Discharge Response

Following IDDE detection or notification, the City's response plan includes characterization, threat assessment, source tracing, discharge elimination or disconnection, spill clean-up, and reporting.

i) Nature of Discharge

Any illicit discharges discovered by or reported to the City will be characterized using the City's IDDE Response Policy in terms of potential public or environmental threat. The City will investigate any complaints, reports, or monitoring information that indicates a potential illicit discharge, spill, or illegal dumping within seven days. Problems and violations determined to be emergencies or otherwise judged to be urgent or severe will be investigated immediately.

ii) Source Tracing

The City will trace the source of illicit discharges using one or more of the following means and methods:

- Visual observation
- Tracing upstream from manhole to manhole
- Dye testing
- Sewer inspection camera
- Water sampling and analysis
- Site inspections of potential sources

Additional tracing methods will be employed as available and applicable. The results of the tracing investigation will be entered onto the appropriate data base and used for follow-up activities. A drainage contaminate survey was performed on Peabody Creek with a goal of detecting and eliminating illicit connections contributing to high levels of fecal coliform. An inter-local agreement with Streamkeepers of Clallam County facilitates ongoing sampling of priority areas identified in the contaminate survey alongside routine sampling of Peabody, Tumwater, and Valley Creeks.

iii) Discharge Elimination

Once identified, sources of illicit discharges and illicit connections will be eliminated using all allowable means made available by municipal code. If necessary, escalating enforcement and legal actions will be used if discharge elimination/disconnection cannot be achieved voluntarily and within allowable frames.

iv) Permit Compliance Timeframes

Regarding IDDE response, Permit compliance is achieved by meeting the following timelines:

- Immediately respond to all illicit discharges, including spills, which are determined to constitute a threat to human health, welfare, or the environment, consistent with General Condition G3.
- Investigate (or refer to the appropriate agency with the authority to act) within 7 days, on average, any complaints, reports, or monitoring information that indicates a potential illicit discharge.
- Initiate an investigation within 21 days of any report or discovery of a suspected illicit connection to determine the source of the connection, the nature and volume of discharge through the connection, and the party responsible for the connection.
- Upon confirmation of an illicit connection, use the compliance strategy in a documented effort to eliminate the illicit connection within 6 months. All known illicit connections to the MS4 shall be eliminated.

f) RECORDKEEPING

The City will track the following information, as required by the 2019-2024 Permit:

1. Jurisdiction name and permit number
2. Date incident discovered or reported to you
3. Date of beginning your response
4. Date of end of your response
5. How was the incident discovered or reported to you?
6. Discharge to MS4?
7. Incident Location
8. Pollutants Identified
9. Source or Cause
10. Source tracing approach(es) used
11. Correction/elimination methods used
12. Field notes, explanations, and/or other comments

More details regarding the information tracked is described in Appendix 12 of the Permit.

In years past, reporting of illicit discharges were tracked using the form developed by the Center for Watershed Protection and incorporated into the City's IDDE Policy. To include all the recently required information listed above, the existing form may need to be updated or the City may begin using Ecology's WQWebIDDE form. Electronic and paper copies of all records, including follow up reports and actions, will be maintained at the Public Works and Utilities office. A summary of this information will be included in the City's Annual Report to Ecology.

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

The City has developed and will continue to implement and enforce a program to reduce pollutants in stormwater runoff from new development and redevelopment construction projects, in accordance with Appendix 1 of the Permit. The program applies to both private and public development, including transportation projects.

a) STORMWATER ORDINANCE REGULATING DEVELOPMENT

The City developed and adopted an ordinance that addresses runoff from new development, redevelopment, and construction site activities at sites 2,000 sq-ft and greater. The ordinance adopts most of the Department of Ecology's most-recent Stormwater Management Manual for Western Washington and the Low Impact Development Technical Guidance Manual. For more details, review Port Angeles Municipal Code, Section 13.63.

In conjunction with the Stormwater Ordinance, the City has developed and implemented a permitting program to reduce pollutants in stormwater runoff from new development, redevelopment, and construction site activities. The program is being applied to development or re-development projects with greater than or equal to

7,000 sq. feet of land disturbance or projects that install 2,000 sq. feet of new or replaced hard surface. The program applies to both private and public development, including transportation projects. The program is enforced through the City Ordinance described above as well as through the City's development standards (The City of Port Angeles Urban Services Standards and Guidelines, USSG).

i) Minimum Requirements, Technical Thresholds, and Definitions

The minimum requirements, technical thresholds, and definitions in Appendix 1 of the permit have been in-effect in Port Angeles since 2009. As required by the previous Permit, the lowered stormwater management thresholds were adopted and enforced January 1st, 2017.

To ensure the City's program satisfies the State's requirements under Chapter 90.48 RCW regarding water quality protection and reducing discharge of pollutants, the City utilizes Ecology's Stormwater Management Manual for Western Washington (SWMMWW) for:

- Site planning requirements
- BMP selection criteria
- BMP design criteria
- BMP infeasibility criteria
- LID competing needs criteria
- BMP limitations

The City has utilized the SWMMWW since 2009 to meet these permit requirements.

ii) Legal Authority to Inspect Private Facilities

The City's stormwater ordinance includes provisions providing City inspectors legal authority to inspect private stormwater facilities that discharge into the City's MS4.

ii) LID Required

As of December 31, 2016 the City updated its development codes to require LID where feasible, as determined by the SWMMWW criteria.

iii) Erosivity Waiver

The City does not allow developers to apply the Erosivity Waiver in Appendix 1, Minimum Requirement #2 of the permit. Therefore, the City does not plan to include enforcement sanctions for construction sites that provide notice of intent to apply the waiver but do not meet the requirements.

b) Permitting

The City has developed a permitting process with plan review, inspection, and enforcement capability as described herein. The permitting process is applied to both private and public projects that consist of greater than or equal to 7,000 sq. feet of

land disturbance or projects that install 2,000 sq. feet of new or replaced hard surface. Permitting is administered by qualified personnel.

i) Review of Stormwater Site Plans

The City reviews stormwater site plans as part of the permitting process. Plans are reviewed for compliance with the stormwater ordinance (PAMC 13.63) and the City's Urban Services Standards and Guidelines (USSG), which implement the ordinance. The review includes the minimum requirements, technical thresholds, and definitions in Appendix 1 of the Permit. The City works with developers to ensure that stormwater site plans meet the criteria established by both Ecology and the City.

ii) Erosivity Waiver

At this time, the City does not allow developers to apply the Erosivity Waiver in Appendix 1, Minimum Requirement #2 of the Permit. Therefore, the City will perform review and inspection tasks for all construction sites as described above.

iii) Notice of Intent

When applicable and during permitting, the City directs applicants also triggering Ecology's Construction Stormwater General Permit (CSWGP) and Industrial Stormwater General Permit (ISWGP) thresholds to submit a Notice of Intent (NOI) with Ecology. The City's stormwater website also directs owners of construction sites and industrial facilities to the Ecology websites where they can find additional information and electronic copies of the notices of intent. In instances where a development project is covered by both local and State permits, the City continues to enforce local ordinances.

c) Inspections

Construction related inspections required by the City's Phase II Permit include pre-construction, during construction, and post construction site visits, where applicable. Follow-up inspections may be warranted if a project does not meet minimum standards or is in violation of their permit requirements. Additionally, the City may perform inspections of treatment or flow control facilities during installation and connection to the City's MS4.

i) Pre-Construction Inspections

During site plan review, City staff uses the definitions and requirements in Appendix 7 of the Permit (Identifying Construction Site Sediment Transport Potential) to determine which sites have a high potential for sediment transport. These high priority sites are inspected by qualified personnel prior to permitting and before commencement of land disturbing activities.

ii) During Construction Inspections

Qualified City staff inspect all permitted development sites during construction that exceed the land disturbance and hard surface thresholds described above to verify proper installation and maintenance of required erosion and sediment controls. Escalation of enforcement is described in Ordinance and is implemented when necessary.

Typically, the City inspects new residential developments at least once every six-months for maintenance needs and compliance with development standards, until 90% of the lots are constructed or when construction has stopped and the site is fully stabilized.

iii) Post-Construction Inspections

Qualified City staff inspect all permitted development sites upon completion of construction and prior to final approval or occupancy. The purpose of the inspection is to ensure proper installation of permanent stormwater controls such as stormwater facilities and structural BMPs. City staff also verifies that a maintenance agreement and plan is completed for all treatment and flow control facilities and that responsibility for maintenance is clearly assigned. Enforcement is used as necessary.

iv) Inspection Compliance

The City maintains permit compliance by the presence and records of an established inspection program designed to inspect all sites and achieving at least 80% of scheduled inspections.

v) Enforcement Strategy

The City has developed an enforcement strategy to respond to cases of non-compliance. This enforcement strategy is included in the City's Stormwater Ordinance PAMC 13.63.

d) Staff Training

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 is provided as needed to address changes in procedures, techniques or staffing. The City documents and maintains records of the training provided and the staff trained.

e) Recordkeeping

The City keeps and maintains permitting records as required by Ecology's permit and State laws. This includes inspection reports, warning letters, notices of violations, and other enforcement actions. Records of maintenance inspections and maintenance activities are also maintained.

7) Operations and Maintenance

The City has developed and implemented a program to regulate and conduct maintenance activities to prevent or reduce stormwater impacts. The program elements are described below.

a) Maintenance Standards

The City has adopted Ecology's Stormwater Management Manual for Western Washington (SWMMWW), including maintenance standards. The City uses Ecology's maintenance standards to determine if and when maintenance is required. It is important to note that the maintenance standard is not a measure of the facility's required condition at all times between inspections and an exceedance of the maintenance standard between inspections and/or maintenance is not a permit violation

When an inspection identifies an exceedance of a maintenance standard, maintenance shall be performed within the following timeframes:

- Within 1 year for typical maintenance facilities, except catch basins.
- Within 6 months for catch basins
- Within 2 years for maintenance that requires capital construction of less than $25,000.

These timeframes may be exceeded if there are circumstances that are beyond the City's control. Such circumstances may include, but not be limited to, denial or delay of access by property owners, denial or delay of necessary permit approvals, and unexpected reallocations of maintenance staff to perform emergency work. For each such exceedance of the required timeframes, the City will document the extenuating circumstances.

b) Permitted Stormwater Facilities

The City has developed and implemented a program to verify adequate long-term operation and maintenance of privately-owned stormwater facilities and BMPs that are regulated pursuant to the City's permitting process.

i) Operations and Maintenance Ordinance

The City developed and enacted a comprehensive stormwater ordinance which requires projects installing treatment or detention facilities to record an O&M agreement and manual that clearly identifies the party responsible for ongoing inspection and maintenance, details maintenance standards per Ecology's SWMMWW, and acknowledges the City's annual inspection requirements and enforcement procedures.

ii) Maintenance Standards

The City has adopted Ecology's Stormwater Management Manual for Western Washington (SWMMWW).

iii) Annual Inspections

The City performs annual inspections of all stormwater treatment and flow control BMPs/facilities that discharge to the MS4 and were permitted by the Permittee, including those permitted in accordance with requirements adopted pursuant to the 2007-2019 Ecology municipal stormwater permits, unless there are maintenance records to justify a different frequency.

Reduction of the inspection frequency will be based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records, the City may substitute written statements to document a specific less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with Permit requirements.

iv) Compliance & Recordkeeping

Permit compliance is determined by the presence and records of an established inspection program designed to inspect all facilities, and achieving at least 80% of required inspections.

The City maintains records of inspections and enforcement actions by staff, including inspection reports, warning letters, notices of violations, and other enforcement records. Records of maintenance inspections and maintenance activities are also maintained.

c) City Owned Stormwater Facilities

The City has developed and implemented a program to inspect and maintain all municipally owned and operated stormwater facilities to ensure functionality and prevent or reduce stormwater impacts. This program is implemented by the City's Public Works Operations Department.

In addition to Ecology's permit requirements, the City also has an existing large diameter culvert inspection program. The major culverts that conduct the City creeks under roads are visually inspected in the late summer every two to three years. Maintenance deficiencies are corrected before the wet winter season begins.

i) Treatment and Flow Control Inspections

The City performs annual inspections of all municipally owned or operated permanent stormwater treatment and flow control facilities. The City will take appropriate maintenance actions in accordance with Ecology's maintenance standards described in the SWMMWW.

The City may reduce the inspection frequency based on inspection records of double the length of time of the proposed inspection frequency, or upon written and certified statements based on actual inspection and maintenance experience.

ii) Spot Checks

The City performs "spot checks" of potentially damaged permanent treatment and flow control facilities (other than catch basins) after major storm events (greater than 24-hour storm event with a 10-year or greater recurrence interval). If the spot checks indicated widespread damage and/or maintenance needs, the City will inspect all stormwater treatment and flow control facilities that may be affected. Repairs and other maintenance actions will be taken based on inspection results and in accordance with the City's maintenance standards.

iii) Catch Basin Inspections

On a two-year interval, the City inspects all catch basins and inlets owned and/or operated by the City. Catch basins and inlets are cleaned based on inspection results and in accordance with Ecology's SWMMWW maintenance standards. Decant water is disposed of in accordance with Appendix 6 of the Permit – *Street Waste Disposal*.

iv) Compliance

Compliance is determined by the presence of an established inspection program achieving at least 95% of permit required inspections.

d) Stormwater Impact Reduction from Public Lands

The City has implemented practices, policies, and procedures to reduce stormwater impacts associated with runoff from all lands owned or maintained by the City, and road maintenance activities under the City's functional control.

The City is in the process of updating the practices, policies, and procedures documentation to align with Ecology's 2019 SWMMWW guidelines.

Lands owned or maintained by a municipality typically include, but are not limited to: streets, parking lots, roads, highways, buildings, parks, open space, road rights-of-way, maintenance yards, and stormwater treatment and flow control BMPs/facilities.

The following activities have been addressed:

- Pipe cleaning
- Cleaning of culverts that convey stormwater in ditch systems
- Ditch maintenance
- Street cleaning
- Road repair and resurfacing, including pavement grinding
- Snow and ice control
- Utility installation
- Pavement striping maintenance
- Maintaining roadside areas, including vegetation management

- Dust control
- Application of fertilizers, pesticides, and herbicides according to the instructions for their use, including reducing nutrients and pesticides using alternatives that minimize environmental impacts
- Sediment and erosion control
- Landscape maintenance and vegetation disposal
- Trash and pet waste management
- Building exterior cleaning and maintenance

e) TRAINING PROGRAM

The City has implemented an on-going operations and maintenance training program for employees whose construction, operations, or maintenance job functions may impact stormwater quality. The training addresses the importance of protecting water quality, the requirements of the permit, operation and maintenance standards, inspection procedures, selecting appropriate BMPs, ways to perform job activities to prevent or minimize impacts to water quality, and procedures for reporting water quality concerns, including potential illicit discharges. Follow-up training will be provided as needed to address changes in procedures, techniques, or requirements. Training is documented and training records include dates, activities or course descriptions, and names and positions of staff in attendance.

f) STORMWATER POLLUTION PREVENTION PLANS

The City has developed and implemented a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance or storage yards and material storage facilities that it owns and/or operates. The City's applicable facilities and current status of SWPPPs or similar documents for each are summarized in the following table. While not all of the documents listed are specifically SWPPPs, they all have relevance to the prevention, containment, and handling of substances that could result in the pollution of municipal stormwater. The City has SWPPPs for all facilities required.

Table 1: Status of Stormwater Pollution Prevention Plans for City Facilities

Facility Name	**Facility Use**	**Document**	**Status**
Sanitary and Storm Sewer Collection System	Collection of sanitary and combined sewerage	"Illicit Discharge Detection and Elimination (IDDE) Response Policy"	Most Recent Revision: December 2014
Corp Yard	Maintenance, equipment & materials storage for water, wastewater, & streets utilities	"City of Port Angeles Maintenance Facility Stormwater Pollution Prevention Plan"	Updated December 2022

Port Angeles Wastewater Treatment Plant	Wastewater treatment plant (secondary treatment)	"City of Port Angeles Wastewater Treatment Plant SWPPP"	December, 2001
Regional Transfer Station	Solid waste transfer station (previously a landfill)	"Port Angeles Transfer Station/ Landfill Stormwater Pollution Prevention Plan"	Updated July 2018
Electric Utility Handling & Warehouse Building	Electric transformer storage and handling	"Spill Prevention Control and Countermeasure Plan"	Updated November 2022
CSO Facilities	Combined sewer collection, storage, and conveyance, and discharge	"Amendment to the 2006 CSO Facilities Reduction Plan"	Updated August 2012

Several of these facilities are regulated by their own environmental permits. See Table 2 below for a listing of individual stormwater or other related permits.

Table 2: Existing Individual Stormwater and Stormwater-Related Permits

Facility Name	**Type of Permit**	**Permit Number**
Regional Transfer Station	NPDES General Permit for Stormwater Discharges Associated with Industrial Activities	WAR005613
City of Port Angeles Municipal Solid Waste Facility	Solid Waste Handling Facility Permit	SLW98-0001
Port Angeles Wastewater Treatment Plant/CSO Facilities	NPDES Waste Discharge Permit	WA0023973

In addition, there are approximately twenty non-City-owned facilities in Port Angeles that are regulated by NPDES General Industrial Stormwater Discharge Permits. Because these facilities are regulated directly by the Department of Ecology, their individual stormwater collection infrastructure is not considered part of the municipal stormwater system, although in some cases they discharge into the MS4.

g) RECORDKEEPING

The City maintains records of inspections, maintenance, and repair activities performed in accordance with this section of the SWMP.

8) SOURCE CONTROL PROGRAM FOR EXISTING DEVELOPMENT

The City has developed a Source Control (SC) Program that is designed to prevent and reduce pollutants in runoff from businesses that discharge to the City's MS4, as required by the 2019-2024 Permit. While this is a new permit requirement, the City has had an established pollution prevention presence in the community that was able to be built upon.

Since 2012, the City of Port Angeles has been a member of the Pollution Prevention Assistance (PPA) Partnership, formerly called Local Source Control, which is a grant funded program designed to help small businesses reduce and manage potential wastes to protect water, soil, and air quality. Under Washington State's Hazardous Waste and Toxics Reduction Program, Ecology is able to fund local jurisdictions on a biennium basis to provide free, one-on-one technical assistance to small businesses regarding waste management, pollution prevention, and stormwater-related issues.

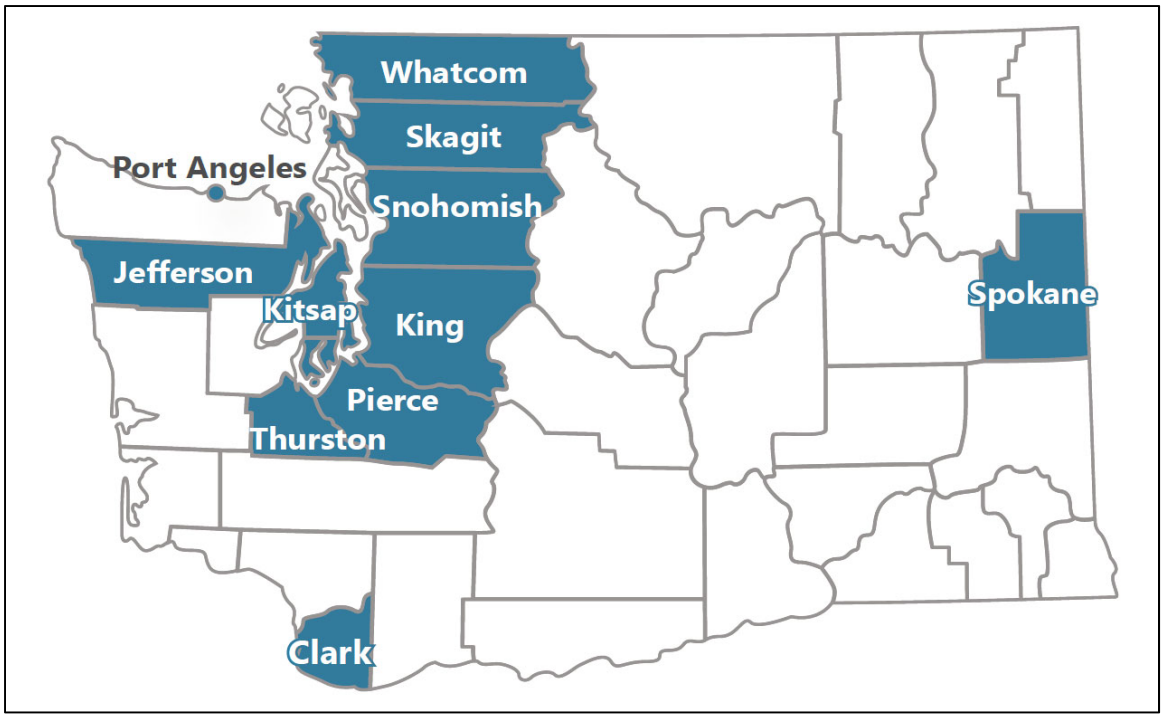


Figure 2. Pollution Prevention Assistance partners for 2017-2019 biennium.

The City intends to continue its partnership with Ecology's PPA program as a means to supplement the City's Source Control Program with valuable knowledge, expertise, and funding. Local businesses that qualify and participate in the PPA program that are also subject to Source Control inspections are able to have their SC inspection fees reimbursed by PPA through the City's grant agreement.

a) Program Goals

With the intent to prevent and reduce pollutants in runoff from areas that discharge into the City's MS4, the Source Control Program includes:

1. Application of operational source control BMPs, and if necessary, structural source control BMPs or treatment BMPs/facilities, or both, to pollution generating sources associated with existing land uses and activities.
2. Inspections of pollutant generating sources at publicly and privately owned institutional, commercial, and industrial sites to enforce implementation of required BMPs to control pollution discharging into the MS4.
3. Application and enforcement of local ordinances at sites, identified pursuant to the Permit, including sites with discharges authorized by a separate NPDES permit.
4. Practices to reduce polluted runoff from the application of pesticides, herbicides, and fertilizers from the sites identified in the inventory.

b) Program Components and Milestones

The program's minimum performance measures, as defined by the Permit, are:

i) Ordinance to Apply Best Management Practices (BMPs)

The City adopted ordinances requiring the application of source control BMPs for pollutant generating sources associated with existing land uses and activities. These ordinances were adopted July 5th, 2022.

The City applies the BMP standards described in the SWMMWW. In cases where the manual(s) lack guidance for a specific source of pollutants, the City will work with the owner/operator to implement or adapt BMPs based on the best professional judgement of the City.

Applicable operational source control BMPs are required for all pollutant generating sources. Structural source control BMPs, or treatment BMPs/facilities, or both, will be required for pollutant generating sources if operational source control BMPs do not prevent illicit discharges or violations of surface water, groundwater, or sediment management standards because of inadequate stormwater controls. Implementation of source control requirements may be done through education and technical assistance programs, provided that formal enforcement authority is available to the City and is used as determined necessary by the City, in accordance the Permit.

ii) Inventory of Sites

The City has established an inventory that identifies publicly and privately owned institutional, commercial, and industrial sites which have the potential to generate

pollutants to the MS4. This inventory was compiled by August 1, 2022 and includes:

1. Businesses and/or sites identified based on the presence of activities that are pollutant generating.
2. Other pollutant generating sources, based on complaint response, such as: home-based businesses and multi-family sites.

iii) Inspection Program

The City has developed an inspection program for sites identified in the inventory. The inspection program was initiated January 1st, 2023, and entails the following components:

1. All identified sites with a business address were provided information about activities that may generate pollutants and the source control requirements applicable to those activities. This information was provided to all sites on the business list by direct mail with posted links back to the program's webpage and to a webform to collect information about the business.
2. The City will annually complete the number of inspections equal to 20% of the businesses and/or sites listed in their source control inventory to assess BMP effectiveness and compliance with source control requirements. The City may count follow-up compliance inspections at the same site toward the 20% inspection rate. The Permittee may select which sites to inspect each year and is not required to inspect 100% of sites over a 5-year period. Sites may be prioritized for inspection based on their land use category, potential for pollution generation, proximity to receiving waters, or to address an identified pollution problem within a specific geographic area or sub-basin.
3. The City will inspect 100% of sites identified through credible complaints.
4. The City may count inspections conducted based on complaints, or when the property owner denies entry, to the 20% inspection rate.

iv) Progressive Enforcement Policy

Ordiance supporting the SC program and defining the program's progressive enforcement policy was codified on July 5th, 2022. Implementation of this policy coincided with the initiation of inspections on January 1st, 2023. This policy requires sites to comply with stormwater requirements within a reasonable time period, as specified below:

1. If the City determines, through inspections or otherwise, that a site has failed to adequately implement required BMPs, the City will take appropriate follow-up action(s), which may include phone calls, reminder letters, emails, or follow-up inspections.

2. When the City determines that a site has failed to adequately implement BMPs after a follow-up inspection(s), the City will take enforcement action as established through authority in its municipal codes or ordinances, or through the judicial system.
3. The City will maintain records, including documentation of each site visit, inspection reports, warning letters, notices of violations, and other enforcement records, demonstrating an effort to bring sites into compliance. The City will also maintain records of sites that are not inspected because the property owner denies entry.
4. The City may refer non-emergency violations of local ordinances to Ecology, provided, the City also makes a documented effort of progressive enforcement. At a minimum, the City's enforcement effort will include documentation of inspections and warning letters or notices of violation.

c) Staff Training

The City provides training to staff who are responsible for implementing the source control program to conduct these activities. The ongoing training program covers the legal authority for source control, source control BMPs and their proper application, inspection protocols, lessons learned, typical cases, and enforcement procedures. Follow-up training shall be provided as needed to address changes in procedures, techniques, requirements, or staff. The City documents and maintains records of the training provided and the staff trained.

Stormwater NPDES and Capital Needs Assessment

The City retained Herrera Environmental Consultants to complete a comprehensive study of the Stormwater Utility. This project utilized Ecology grant funding to develop a functional resourcing and financial analysis of the staffing, equipment and funding mechanisms necessary to meet the requirements outlined in the NPDES Phase II Municipal Stormwater Permit. Additionally, the analysis included a capital facilities program (CFP) component defining a range of funding support options for CFP projects. The analysis assessed the gap between current resources and the resources necessary to meet operating costs and capital costs under the current (2013-2018) Phase II Permit regulatory requirements. In 2012, the City's stormwater rate was $6 per month for each equivalent residential unit (ERU). This analysis showed a funding gap and resulted in sequential stormwater rate increases to cover necessary expenses:

-Effective January 2022. $17.01 per month for each ERU

This revenue is not sufficient to implement all projects in the 6 year Capital Facilities Plan. The City plans to evaluate the Stormwater Utility revenues and obligations again in 2023 and to seek public input.

DOCUMENTS REFERENCED

"City of Port Angeles Maintenance Facility SWPPP" City of Port Angeles, 2022

"Amendment to the 2006 CSO facilities Reduction Plan" City of Port Angeles, June 2007

"Illicit Discharge Detection and Elimination – A Guidance Manual for Program Development and Technical Assessments" Center for Watershed Protection, October 2004

"Port Angeles Transfer Station/ Landfill Stormwater Pollution Prevention Plan" City of Port Angeles, July 2018

"Spill Prevention Control and Countermeasure Plan" (Electric Utility) City of Port Angeles, November 2003, Updated November 2022.

"Western Washington Phase II Municipal Stormwater Permit" State of Washington Department of Ecology, Effective August 1, 2019.

"Stormwater Management Manual for Western Washington" Washington State Department of Ecology 2019

"City of Port Angeles Municipal Code Title 13.63, Stormwater Ordinance" last modified in July 2022

"City of Port Angeles Urban Service Standards and Guidelines" last modified in 2017

"Stormwater NPDES and Capital Needs Assessment" Prepared for City of Port Angeles December 2012

SWMP Appendix A : Inter-Departmental Coordination Mechanism Policy

City of Port Angeles
NPDES Phase II Municipal Stormwater Permit
Inter-Departmental Coordination Mechanisms and Stormwater Planning Team

Background

The Western Washington Phase II Municipal Stormwater Permit (NPDES permit or "Permit") is a federal permit, facilitated by the Washington State Department of Ecology (Ecology or ECY), issued to municipalities which allows municipal separate storm sewer systems (MS4) to discharge to waters of the state. The City of Port Angeles initially received coverage by the Permit in 2007. The NPDES (National Pollutant Discharge Elimination System) Permit includes broad ranging requirements which require collaboration and implementation by various departments within the City, including Public Works, Parks & Recreation, Community & Economic Development (CED), Fire, and Police.

It was a condition of the 2013 – 2018 NPDES permit (Section S5.A.5.b) and a condition of the 2019 – 2024 Permit (Section S5.A.b) that each jurisdiction develop a coordination mechanism to identify departmental responsibilities to eliminate barriers to compliance with the terms of the permit. Furthermore, it is a condition of the 2019-2024 Permit (Section S5.C.1.a) that the City develop a Stormwater Planning Program and convene an inter-disciplinary team to inform and assist in the development, progress, and influence of this program. These operating guidelines have been created to provide clarification of departmental roles and responsibilities for the purposes of complying with the Permit requirements and intent.

Section 1. Name

The name of this group shall be known as the "Stormwater Permit Coordination and Planning Group (SWPCPG)".

Section 2. Purpose

The effective management of existing stormwater infrastructure and strategic stormwater planning has an important role to play in reversing the ongoing degradation of local wetlands, streams, harbor, and Strait of Juan de Fuca. The purpose of this group is to ensure the fulfillment of the conditions of the City's NPDES Permit by removing internal barriers to permit implementation and by requiring and empowering City departments to cooperate, coordinate, and plan in accordance with the City's Stormwater Management Program (SWMP). The SWPCPG serves as the coordinating body.

Section 3. Mission

The NPDES permit is a broad ranging federal stormwater permit which requires citywide compliance, and as such, shall be viewed as a citywide permit. The mission of the SWPCPG is to provide a coordinated, efficient and effective response to all Permit conditions. Each city

department is subject to implementing compliance activities when applicable to that department. Each department has an important contribution to make in improving the quantity or quality of stormwater discharged under the Permit.

Section 4. Duration
The SWPCPG shall continue indefinitely in order to preserve momentum and effectively manage the work required for Permit compliance.

Section 5. Membership
Management and implementation of the stormwater Permit is the responsibility of the jurisdiction as a whole, however, the core membership of the SWPCPG consists of representatives from the following departments: Public Works Operations and Engineering, Community and Economic Development, Parks & Recreation, Fire, and Police. The City's Stormwater Engineer is the City's Permit Coordinator and therefore has been designated coordinator of the SWPCPG. Representatives from other departments may be requested to attend meeting and provide input on occasion. Additionally, representatives from private consulting firm(s) retained by the City for Permit implementation support or long-term planning support may be invited to attend or facilitate coordination of the SWPCPG meetings.

On behalf of the Public Works Department, the Permit Coordinator shall lead the group, in coordinating compliance with the NPDES permit. All departments responsible for complying with any portion of the NPDES permit shall work cooperatively with the lead department, responding and providing information in a timely manner, including accurate tracking and reporting data.

Each department, division, section, or workgroup engaging in any activities or programs that the Permit Coordinator determines may be subject to or could support compliance with the municipal permit is expected to comply with municipal permit requirements. Other City workgroups or departments may be added to the core group should current needs or future requirements call for expanded responsibility.

A. Coordination framework and expectations:

1. The Permit Coordinator shall be responsible for coordinating the City's municipal permit compliance activities.
2. Each departmental representative shall be familiar with all municipal permit requirements, particularly those applicable to their department or workgroup.
3. Each departmental representative may propose options for funding and staffing to meet municipal permit requirements.
4. Each departmental representative shall communicate regularly with department management on the status of applicable compliance activities.
5. The Permit Coordinator, in collaboration with departmental representatives, shall prepare and provide submittals to Ecology to comply with municipal permit requirements. Submittals include, but are not limited to, annual reports,

stormwater management program (SWMP) plans, compliance reports and other submittals as required by Ecology.

6. Upon request from the Permit Coordinator, departmental representatives or other staff shall provide information regarding department-specific compliance activities in a timely manner. The Permit Coordinator shall indicate the timeline for any request and may extend the timeline at the request of the department representative if there is flexibility to do so.
7. The Permit Coordinator shall communicate as necessary with departmental representatives and other management about municipal permit requirements, the SWMP, and the status of the City's compliance.

Any Permit Coordinator responsibilities listed herein may be delegated to appropriate staff, but the Permit Coordinator shall retain accountability to the City Engineer.

Signature authority for all documents related to the municipal permit that require an official signature shall reside with the Public Works Director, as delegated in a letter from the City Manager to Ecology on September 10, 2013.

B. Non-compliance:

All city departments are responsible for working with the NPDES Permit Coordinator to resolve instances of permit noncompliance, including:

1. Notifying the NPDES Permit Coordinator as soon as they become aware of any instance of non-compliance; and
2. Identifying steps and a timeline for resolving issues of non-compliance that will be identified in, S4.F, G3, or G20 notifications to Ecology.

Section 6. Meetings

Meetings shall be facilitated by the City Engineer or the Permit Coordinator. Meetings shall be open to any/all staff that need permit information or to share challenges to permit implementation. Meeting frequency, time, and location shall be set by the City Engineer or Permit Coordinator based on the need to meet in order to respond to policy, procedures or barriers to implementation.

Section 7. Attendance Policy

Attendance at the meetings is important to continue being an informed SWPCPG member and to provide useful input into the process. Meeting attendance is expected of SWPCPG members or a designee. If unable to attend a meeting, it is the member's responsibility to inform themselves on issues discussed in those meetings. All meetings will be advertised to core group members, however, depending on content, some meetings may be geared towards a particular department with other departments being listed as "optional" on the meeting invite.

Section 8. Departmental Responsibilities

It is the responsibility of each department head to assign duties and responsibilities to the pertinent members of their staff, as well as ensure they are being implemented correctly. In the event of personnel changes, it is each department head's responsibility to ensure SWPCPG membership, information, and responsibilities are passed on to the designated replacement.

A. Public Works

The Public Works Department is responsible for the majority of the Permit compliance efforts including Sections:

S5.C.1 Stormwater Planning
S5.C.2 Public Education and Outreach
S5.C.3 Public Involvement and Participation
S5.C.4 MS4 Mapping and Documentation
S5.C.5 Illicit Discharge Detection and Elimination
S5.C.6 Controlling Runoff from New Development, Redevelopment, and Construction Sites (for both public and private projects)
S5.C.7 Operations and Maintenance, and
S5.C.8 Source Control Program for Existing Development.

These responsibilities include, but are not limited to:

Engineering Division

1. NPDES Permit coordination.
2. Program development appropriate/applicable to the department.
3. Annual reporting.
4. Development and submittal of the Stormwater Management Program (SWMP) Plan.
5. Serving as point of contact for the Department of Ecology regarding issues of the Permit.
6. Submitting S4.F, G3, and G20 noncompliance notifications.
7. Updating codes, policies, plans and standards applicable to the Public Works Department for permit compliance.
8. Private stormwater facility maintenance verification.
9. Enforcement of maintenance or water quality violations.
10. Conducting, tracking, and reporting development review in compliance with adopted standards and policies.
11. Tracking, reporting and justifying any deviations (e.g. variances, exceptions etc.) from adopted stormwater development review standards.
12. Inspection of development sites.
13. Collection of final stormwater system record drawings for new development/ redevelopment and distribution of them to designated GIS and Public Works staff.
14. Updating stormwater system maps for both public and private facilities. Forwarding updates to GIS for incorporation and maintenance of the mapping

system.

15. Collection and processing of maintenance covenants and operations and maintenance manuals for new development/redevelopment.

Operations Division

16. Inspection and maintenance of municipal stormwater components and facilities.
17. Illicit discharge/illicit connection detection and elimination.
18. Operations and maintenance procedures are in place and followed to reduce stormwater impacts to all lands owned and maintained by the City in accordance with the Ecology Stormwater Management Manual for Western Washington.

C. Community & Economic Development

CED is responsible for implementation of and compliance with portions of Section S5.C.1 Stormwater Planning and Section S5.C.6 of the NPDES Permit entitled "Controlling Runoff from New Development, Redevelopment and Construction Sites". These responsibilities include, but are not limited to:

1. Updating codes, policies, plans, programs, procedures, and standards appropriate/applicable to CED for permit compliance.
2. Processing permit applications and collecting required documents for all building permits, including required stormwater reports and plans.
3. Inspection of building sites for erosion and sediment controls as required by Ecology Stormwater Management Manual for Western Washington

C. Parks & Recreation

Parks is responsible for implementation of and compliance with portions of S5.C.5 Illicit Discharge Detection and Elimination and S5.C.7 Operations and Maintenance. These responsibilities include, but are not limited to:

1. Updating codes, policies, plans, programs, procedures, and standards appropriate/applicable to Parks for permit compliance.
2. Operations and maintenance procedures are in place and followed to reduce stormwater impacts to all lands owned and maintained by the City in accordance with the Ecology Stormwater Management Manual for Western Washington.
3. Report observations of illicit discharges to the Permit Coordinator or other designee.

D. Police and Fire

The Police and Fire Departments have permit responsibilities under S5.C.5 Illicit Discharge Detection and Elimination. As field personnel, it is their responsibility to report observations of illicit discharges to the Permit Coordinator or other designee. Such events include but are not limited to discharge of water or foam to the MS4 during a firefighting event or report of vehicle fluid spill and clean-up operations during

response to a vehicular accident within City limits. They may also be called upon to assist in enforcement activities during an illicit discharge event.

Section 9. Permit Coordinator's Role

The Permit Coordinator's role is to assure the integrity and fulfillment of the Permit. The Coordinator's role includes, but is not limited to:

1. Coordinate NPDES Permit compliance efforts for the City, including collecting tracking and reporting data from the different departments, as well as preparing and submitting annual reports and updates to the Stormwater Management Program Plan to the Department of Ecology.
2. Assist the different City departments in identifying and understanding their individual responsibilities for complying with the pertinent sections of the Permit.
3. Provide permit compliance guidance to individual departments who are developing or updating their departmental programs or procedures which are necessary to comply with Permit requirements.
4. Develop and implement programs and activities associated with the Public Works Department.
5. Work with individual departments to assist in resolving issues of non-compliance, as well as drafting and submitting S4.F, G3, or G20 Non-Compliance Notification letters to Ecology.
6. Coordinate required illicit discharge detection and reporting training for all municipal field staff. Assist in other training activities where applicable.
7. Ensure policies are followed.
8. Manage communication and information exchange among the SWPCPG. Determine meeting topics and agendas. Facilitate the meetings or arrange for an alternate to facilitate meetings. If necessary and appropriate, provide meeting materials to SWPCPG in advance and arrange for meeting notes to be taken.
9. Update this document, as needed.

SWMP APPENDIX B : PUBLIC OUTREACH PLAN ACTIVITY MATRIX

2023 Planned Activities / Events	Location(s)	City Personnel	Target Audience	Contact Information (other groups)	Subject Area(s)
Clallam County Home & Lifestyle Show (March)	Port Angeles High School	Vince McIntyre	Developers, contractors, home owners, landscapers, general public	vmcintyre@cityofpa.us	Pollution Prevention: landscaping, automotive care, pet waste, Natural Yard Care
Earth Day (April)	City Pier, Port Angeles	Matthew Moore, Vince McIntyre, TBD	General public	vmcintyre@cityofpa.us	Focusing on updates to the SWMP, the SMAP, and other programatic updates.
Clallam County Fair (August)	Fairgrounds, Port Angeles	Matthew Moore, Vince McIntyre, TBD	General public	vmcintyre@cityofpa.us	Focusing on pet waste awareness, natural yardcare, & programatic updates.
Utility Bill Mailer (October)	NA	Matthew Moore, Vince McIntyre	General Public	vmcintyre@cityofpa.us	LID, Pollution Prevention Hotline, programatic updates.
Pollution Prevention Assistance Partnership (Ongoing)	Site visits within the City	Howard Carlseen, Vince McIntyre	Local Businesses	vmcintyre@cityofpa.us	IDDE, Pollution Prevention, Source Control
Local Cinemas (Sept.)	Deer Park Theatre, Port Angeles	Vince McIntyre	General public	vmcintyre@cityofpa.us	Pollution Prevention
Internet Adverts (Sept.)	Port Angeles	Vince McIntyre	General Public	vmcintyre@cityofpa.us	Pollution Prevention: landscaping, automotive care, pet waste, Natural Yard Care
Natural Yard Care: Behavior Change Analysis via WSSOG (April)	Kitsap Co., Port Angeles	Vince McIntyre	Landscapers, Home Gardeners	vmcintyre@cityofpa.us	Natural Yard Care - free webinars taught by WSU Master Gardeners w/ local coupons at Airport Garden Center
Storm Drain Art Project (On hold - Need Staff)	Francis St. Park	Vince McIntyre	General Public, Local artists	vmcintyre@cityofpa.us	Visual connection between stormwater inlets and the receiving waterbody.

SWMP APPENDIX C : ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) RESPONSE POLICY

ILLICIT DISCHARGE DETECTION and ELIMINATION (IDDE) RESPONSE
PW- 0610

1.0 PURPOSE:

1.1 To establish a uniform procedure for IDDE response within the City of Port Angeles.

2.0 ORGANIZATIONS and SPECIFIC POSITIONS AFFECTED:

2.1 Public Works & Utilities Department staff
2.2 Key response personnel in order of response to pollution report:

1.	Stormwater Lead Worker		Cell: 461-5174
2.	Streets Superintendent	Office: 417-4825	Cell: 912-0260
3.	Assistant Stormwater Engineer	Office: 417-4720	
4.	Stormwater Engineer	Office: 417-4811	Cell: 460-3456
5.	Source Control Coordinator	Office: 417-4693	Cell: 808-6930
6.	Deputy Director of Public Works	Office 417-4803	Cell: 808-3089

3.0 POLICY:

3.1 This policy will implement an ongoing program to detect and address non-stormwater discharges, including spills, and illicit connections into the City's municipal separate storm sewer system. It shall be followed throughout the Public Works and Utilities organization. The Stormwater Engineer is the authorized department representative for the implementation of this program and the maintenance of this policy.

4.0 SAFETY ASPECTS:

4.1 Follow all safety measures as promulgated in the Public Works and Utilities Department Accident Prevention Plan.
4.2 Do not enter private property without permission (If the property owner is unwilling to allow access, and access is necessary for the investigation, contact the legal department or stormwater engineer for assistance).

5.0 DEFINITIONS:

5.1 Illicit discharge: any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.
5.2 Small non-hazardous spills: Under 5 gallons of oil based products, paints or automotive fluids.
5.3 Large non-hazardous spills: Over 5 gallons of oil based products, paints or automotive fluids.
5.4 Hazardous or very large spills: Spills over 20 gallons of any chemical, flammable, or unknown substance. * Gasoline is very flammable. Treat a gasoline spill of over five gallons as a hazardous spill.

5.5 A discharge which could constitute a threat to human health, welfare, or the environment: Large non-hazardous spills, hazardous or very large spills, or discharges exceeding thresholds in Section 7.3(3),

5.5 Dangerous system: A flooded stream system or a flooded large diameter culvert or manhole.

6.0 EQUIPMENT FOR RESPONSE PERSONNEL:

Required Equipment:

- Appropriate PPE (e.g., nitrile gloves, glasses, reflective vests, etc.)
- This SOP
- Hand Sanitizer

Other Equipment As Needed:

- System map
- Spill trailer or spill kit
- Sterile sample bottles

7.0 PROCEDURES:

7.1 Illicit Discharge Contact Methods

a. The official number for the public or City staff to report suspected illicit discharges is:

Public Works Emergency and Afterhours Phone Number	360-417-4745

b. Illicit discharges can also be reported by email using the following address:

illicit-discharge@cityofpa.us

c. Discharge reporting numbers and email addresses shall be posted on the City website.

d. During normal working hours, the PWU clerical staff will receive calls and emails. For each call or email a CityWorks Service Request will be created and populated and forwarded to the key response personnel. . PWU clerical staff will be responsible for maintaining the official record of all such contacts. The report of an illicit discharge will also be directly made to one of the following staff personnel in the order listed:

- Stormwater Leadworker
- Streets Superintendent
- Deputy Director of Operations
- Stormwater Engineer
- Source Control Coordinator

In addition, email reports shall be automatically distributed to all of the personnel

listed above.

e. After normal working hours, the PWU on-call staff member will be responsible for handling the call, filling out the Illicit Discharge Contact Form (Appendix 8.1), doing the initial visual inspection of the incident, making initial containment if appropriate, and notifying management and requesting additional support when necessary. All recorded information shall be forwarded to the personnel listed in paragraph (d) no later than 08:00 A.M. the following workday.

f. Illicit discharges or spills observed by City field personnel during the course of work should be immediately reported to their direct supervisor. In addition, City field personnel shall report the incident using one of the methods listed above to ensure that the key stormwater personnel are notified.

7.2 Priority Area Identification and Reconnaissance

a. The Stormwater Engineer, shall be responsible for conducting a process for locating priority areas likely to have illicit discharges and/ or source control violations. This shall include at a minimum evaluating land uses and associated business/industrial activities present; areas where complaints have been registered in the past; and areas with storage of large quantities of materials that could result in spills.

b. The lead organization for illicit discharge identification and field reconnaissance response shall be Operations Division, with the primary role for managing it being the Streets Section Superintendent. The Engineering Division shall provide technical support where appropriate. The responsibilities include:

(1) At a minimum, visually inspect all priority outfalls in the yearly Field Screening basin during dry weather conditions. Priority outfalls will be as designated by the Stormwater Engineer after consultation with the Streets Division Superintendent. Annually inspect and document the condition, sediment loading, blockages, and any other abnormal conditions for all priority culverts/outfalls.

(2) In addition, during dry weather, conduct stream reconnaissance for the purposes of verifying outfall locations, identifying previously unknown outfalls, and detecting illicit discharges. Stream reconnaissance will be conducted on one of the City's six stream systems or shoreline annually within the Port Angeles City limits.

(3) Flows suspected of containing illicit discharges due to the presence of odors, colors or sheens shall be tested. Testing will be done either in the field by trained personnel or by the COPA WW Lab. Test parameters include but are not limited to ammonia, surfactants, flouride, fecal coliform, pH, , turbidity, and temperature, . Testing will be performed by the lab within four hours of sample delivery, or by 10:00 am the next day, if the sample is delivered to the lab after 2:00 pm on any business day or on a weekend. Screening for illicit connections shall be conducted using: Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, October 2004.

(4) The results of the inspections and testing shall be documented and maintained on the Spill (Illicit Discharge Characterization) Field Sheet in Appendix 8.5 and input into the City's maintenance tracking software and GIS system to allow tracking of outfall locations, inspection dates, chemical tests conducted, and follow-up procedures implemented to correct any detected illicit discharge. The physical condition of the outfall shall also be noted during the inspections. Illicit discharge data will be used in the preparation of the annual report for the permit.

c. Results from the program shall be compiled and analyzed by the Stormwater Engineer, who may request additional requirements be done to achieve the overall objectives of this element.

7.3 Illicit Discharge Response, Characterization, and Tracing

a. The lead organization for illicit discharge response shall be Operations Division, with the primary role for managing being the Streets Division Superintendent. The Engineering Division shall provide technical support where appropriate.

b. If the material is unknown, chemical or hazardous in nature contact the fire department.

c. Containment. The qualified onsite responding personnel shall immediately assess a spill and determine if it is containable, recoverable, or neither. Attempt to contain and recover the material to the maximum extent practical using the procedure below, if feasible, safe to do so and the appropriate equipment is available. Block the nearby storm drains, so that the area impacted is minimized. If the appropriate equipment is not available, the material is unknown, chemical, or hazardous, wait for properly trained personnel to contain the materials.

<u>Small non-hazardous spills</u>

- Use a rag, damp cloth, or absorbent materials for general cleanup of liquids
- Use brooms of shovels for the general cleanup of dry materials
- If water is used, it must be collected and properly disposed of. The wash water cannot be allowed to enter the storm drain
- Dispose of any waste materials properly
- Clean or properly dispose of any equipment used to clean the spill

<u>Large non-hazardous spills</u>

- Use absorbent materials for general clean up of liquids
- Use brooms, shovels or street sweepers for the general cleanup of dry materials
- If water is used, it must be collected and properly disposed of. The wash water cannot be allowed to enter the storm drain
- Clean or dispose of any equipment used to clean up the spill properly

d. F<u>or hazardous or very large spills, chemical spills, or spills of unknown materials immediately contact the Fire Department, followed by the Streets Division Superintendent or Deputy Director of Operations.</u>

e. Illicit discharges indicated by the presence of odors, colors or sheens shall be tested. Testing will be done either in the field by trained personnel or by the COPA WW Lab.. Test parameters include but are not limited to ammonia, surfactants, flouride, fecal coliform, pH, turbidity, and temperature. Screening for illicit connections shall be conducted consistent with the Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, October 2004. The following additional guidance pertains:

(1) The spill or illicit discharge will be characterized by the key response personnel, by the stormwater field crew or by on call staff if the discharge occurs after hours. The discharge will be characterized using Appendix 8.4 (Spill Characterization Field Sheet), visual observation and field testing as an unlikely, potential, suspect or obvious discharge. Characterization (or referral to the appropriate agency) shall occur within 7 days of any complaints, reports or monitoring information that indicates a potential illicit discharge, or shall occur immediately on the next business day for discharges deemed to be emergencies, urgent or severe.

(2) Take a sample of the material in a sterile collection bottle and take the sample to the COPA WW lab for analysis.

(3) The sample results should be compared to the following thresholds to determine if further IDDE investigation is necessary:

Indicator	Threshold	Comments
pH	<5 or > 10	Good indicator for industrial discharge
Ammonia	>5 mg/L	Good indicator of sanitary sewage, main ingredient in fertilizers
Detergents/ Surfactants	>1 mg/L	Excellent indicator of wash water
Fecal Coliform	>2000 CFU/100mL (Dry Weather) or >5000 CFU/100mL (Wet Weather)	Human sources include failing septics, wastewater leaks or cross-connections. Animal sources include pets, livestock, and wildlife.

f. Verifying and tracing the discharge shall be considered the initiation of the investigation and shall be performed within 21 days of a discharge characterization, unless tracing requires entry into a dangerous system, as defined in 5.5. If a dangerous system exists, verifying and tracing shall be performed when low flow conditions in the stormwater or stream system resume. The Stormwater Engineer shall determine when a dangerous system exists and shall document the delay and set the date to resume the investigation. In all cases, initial investigation shall be performed within 9 months of the discharge characterization. If the tracing

confirms an illicit connection, the connection shall be removed using the City's enforcement authority within 6 months.

Procedures for tracing the source of an illicit discharge include visual inspections, and when necessary, opening manholes, using mobile cameras, collecting and analyzing water samples, and/or other detailed inspection procedures. The equipment and methods described in "Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments", Chapter 13 shall be used to trace the spill or illicit discharge to its source. The following additional guidance pertains:

(1) Review information collected when illicit discharge was initially identified (Spill Characterization Field Sheet).

(2) Consider storm drainage basin and land uses.

(3) Revisit outfall to verify reported discharge is still present.

(4) Contact COPA lab for determination of probable source.

(5) Survey the general area / surrounding properties to identify potential sources of the illicit discharge.

(6) Investigate illicit discharges using visual inspections of upstream points.

(7) Utilize M&O resources and equipment as required (traffic control, video truck, additional staff).

(8) Document investigation results for NPDES Permit compliance.

(9) If source cannot be found, add the location to a future inspection program.

g. Results shall be documented and reported to the Deputy Director of Operations and the Stormwater Engineer.
h. The Stormwater Engineer shall be responsible for administering the City's response to violations and ensuring consistency with City ordinances. All violation letters to property owners will be signed by the City Engineer level or higher. Technical assistance for eliminating the discharge; follow-up inspections; and escalating enforcement and legal actions if the discharge is not eliminated will be coordinated by the Stormwater Engineer.
i. The IDDE Incident Closure From will be completed by the personnel responsible for investigating the specific IDDE. This form is to be reviewed by the Stormwater Engineer. When the form is completed by operations personnel it shall be signed by the Deputy Director of Operations unless a violation letter has been issued, whereby the City Engineer shall sign. When the form is completed by engineering personnel it shall be signed by the City Engineer.

7.4 Regulatory Reporting Requirements

a. With in 24 hours all spills/ discharges which could constitute a threat to human health, welfare, or the environment shall be reported to Ecology regional office (Appendix 8.1).

b. Immediately report spills or discharges which might cause bacterial contamination of marine waters such as discharges resulting from broken sewer line to Ecology regional office, and Department of Health, Shellfish Program. (Appendix 8.1).

c.. Immediately report discharges of any size oil or other hazardous substance to Ecology and Washington Emergency Management Division (Appendix 8.1).

d. Reportable spills/illicit discharges shall be reported to the appropriate regulatory agencies by the following personnel in the order listed:

- Stormwater Leadworker
- Streets Superintendent
- Deputy Director of Operations
- Stormwater Engineer
- Source Control Coordinator

Reporting requirements are detailed in Appendix 8.1. If none of the personnel listed above can be reached, contact your supervisor for guidance. The Pollution Investigation Checklist shall be followed and returned to the Stormwater Engineer no later than 08:00 A.M. the following workday. If there is any doubt as to whether a spill is reportable, contact the appropriate regulatory agency for clarification.

7.5 Field Screening

Each year field screening will be performed on average of 12% of the MS4. Percent of MS4 will be measured based on the combination of the number of catch basins and geographic area within City limits. Detection, response and elimination methods will be used as outlined in this policy.

7.6 Public Education

The Stormwater Engineer shall conduct a program to inform City employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste. Acceptable methods to accomplish this provision include direct training, contract training, brochures, internet, mailers, etc.

The Source Control Coordinator will conduct site visits to target businesses to educate them on the proper requirements for stormwater discharges.

7.7 IDDE Assessment

The Stormwater Engineer shall be responsible for program evaluation and assessment, including tracking the number and type of illicit discharges, including spills identified; inspections made; and any feedback received from public education efforts. A summary of this information shall be included in the City's annual report.

7.8 Training for City Staff

The Streets Division Superintendent will be responsible for arranging for or conducting training requirements for the Streets and Stormwater workforce as well as on-call personnel.

The Stormwater Engineer will be responsible for arranging for or conducting

training for the Engineering Division staff and clerical staff for requirements needed to implement the policy contained herein. The following topics will be covered where appropriate:

TOPIC	TARGET AUDIENCE
Proper chain of contact for initial spill reporting	Clerical staff / on-call staff
Properly filling out the Spill Characterization Field Sheet and Pollution Investigation Checklist.	Field crews / on-call staff
Spill containment and response	Field crews / on-call staff
Simulated spill drill response, containment, and cleanup.	Stormwater Engineer, field crews, on-call staff, clerical staff
IDDE Characterization and Tracing	Stormwater Engineer, Streets Superintendent, Stormwater Leadworker, Deputy Director of Operations, Field Staff, On Call Staff
Requirements in this SOP	Stormwater Engineer, Streets Division, on-call staff, Clerical Staff

8.0 APPENDIX:

8.1 Combined Contact & Pollution Investigation Checklist
8.2 Public Works & Utilities Emergency Call List for Spill/ Pollution Incidents
8.3 Spill Response (Discharge Type) Chart
8.4 Spill Characterization Field Sheet and Identification Figures
8.5 Stormwater Sampling Checklist 8.6 IDDE Incident Closure Form

APPENDIX 8.1

COMBINED CONTACT & POLLUTION INVESTIGATION CHECKLIST

This checklist is to be used as an aid in preparing your report and included with the report when forwarded to the Public Works and Utilities Department.

SPILL INVESTIGATION

1. Date and time notification received or spill discovered _____
2. Name of City employee that discovered/reported the spill _____
3. If spill reported by public, name of staff reported to: _____
   By: _____
   (Reporting Citizen's Name) (Address) (Phone #)
4. Call to Key Response Personnel received by _____
   (This is the key response person who will report to the incident)
5. Notification of Authorities: (See PW 0808_04 Emergency Call List)
   Required when a discharge or spill could constitute a threat to human health, welfare, or the environment.

Oil Spill	Phone No.	Name	Date	Time
(Petroleum or Hazardous Materials)				
WS Emergency Management Division (24hrs)-**Immediate**	1-800-258-5990	_____		
National Response Center-**Immediate**	1-800-424-8802	_____		
Ecology Regional Office-SW-**24 Hrs**	360-407-6300	_____		
City of PA Stormwater Eng.-**24 Hrs**	360-460-3456	_____		

Bacterial-				
WWTP or Collections System Failure				
Ecology Regional Office-SW-**Immediate**	360-407-6300	_____		
WS DOH Shelfish Protection-**Immediate**	360-236-3330	_____		
(If no answer)	360-786-4183	_____		
Clallam County Enviro Health-**24 Hrs**	360-417-2415	_____		
City of PA Stormwater Eng.-**24 Hrs**	360-460-3456	_____		

ERTS # _____

6. Spill/ Discharge Scene:
   a) Location/Address_____
   b) Time of arrival _____
7. Type and Amount of pollutant and discharge _____
8. In the judgment of the qualified onsite personnel, is the spill Containable? Recoverable? Or Neither? (Circle)

Initial Containment Measures _____

_____

9. Ultimate discharge:
   a) Date/Time discharge terminated_____
   b) Date/Time cleanup commenced _____
   c) Final Cleanup measures _____
   d) Date/Time cleanup completed _____
10. Additional remarks (as necessary) _____

_____

_____

Signature _____ Title _____

APPENDIX 8.2
PUBLIC WORKS & UTILITIES
EMERGENCY CALL LIST

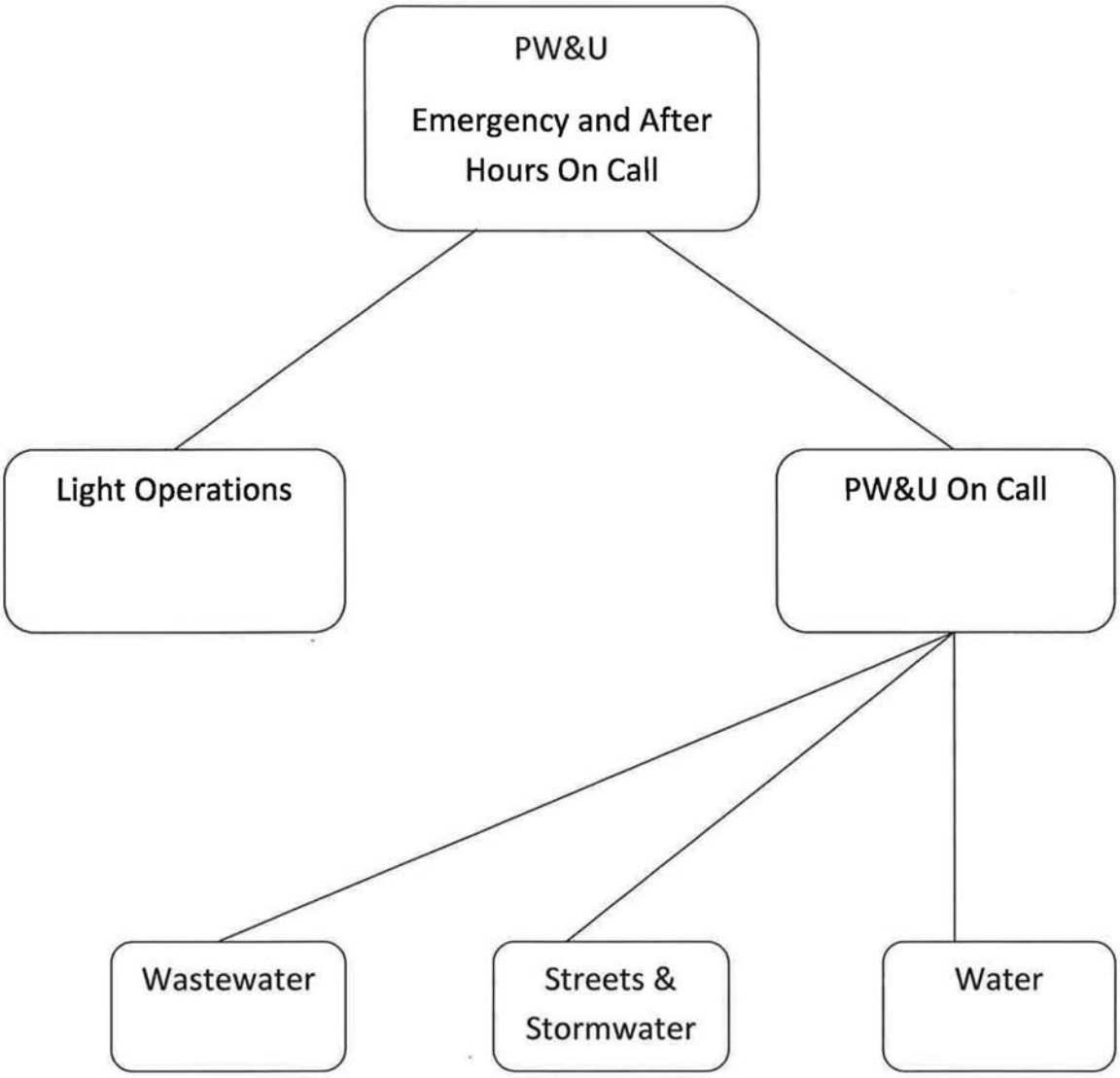
FOR POLLUTION INCIDENTS

The following phone/checklist is for the investigation and notification of the proper agencies of a pollution incident. By providing the applicable information, an accurate, orderly investigation and record will be assured. This checklist is to be used as an aid in preparing a final report and shall be included with the report when forwarded to the Public Works & Utilities Director.

City of Port Angeles	Contact Person	Phone Nos.
Street/Stormwater Division	1) Eric Wheatley	Work: 360-417-4825 Cell: 360- 912-0260
	2) Mike Brockopp	Work: 360-565-3854 Cell: 360-461-5174
	3) Guy Wehr	Work: 360-417-4827 Cell: 360-460-9676
	4) Street/Stormwater On-Call	Cell: 360-477-1260
Stormwater Engineer	Jonathan Boehme	Work: 417-4811 Cell: 460-3456
Wastewater Collection	1) Jeff D. Young	Work: 360-417-4845 Cell: 360-461-1044
	2) Jay Divelbiss	Work: 360-417-4845 Cell: 360-460-3976
Wastewater Treatment Plant	1) Jeff D. Young	Work: 360-417-4845 Cell: 360-461-1044
	2) Gary Richmond	Work: 360-417-4845 Cell: 360-808-4757
	3) WWTP on-call	Cell: 360461-0111
Deputy Director of Operations	Mike Puntenney	Work: 360-417-4803 Cell: 360-808-3089
Fire Department	1) Coral Wheeler	Work: 360-417-4650 Dispatch: 360-417-4797

Agency	Contact Person	Phone Nos.
WS Department of Ecology Water Quality, SW Regional Office. *Notification shall be provided not later than 24 hours from the time the Permittee becomes aware of the circumstances. If this information is provided orally, a written submission covering these points shall be provided within five (5) days of the time the Permittee becomes aware of the circumstances, unless the Department waives or extends this requirement on a case-by-case basis.*	24 Hour Spill Reporting	360-407-6300
WS Department of Health Shellfish/Marine Division	Dept. of Health Shellfish Program – Appropriate Person: Mark Toy	360-236-3306 Page: 360-786-4183 (After hours only)
Clallam County Department of Health	Andy Brastad	360-417-2415 Fax: 417-2313
Feiro Marine Lab (Water intake at mouth of Peabody Creek)		360-417-6254
Lower Elwha Klallam Tribe	Matt Beirne	360-457-4012 ext 12
Port of Port Angeles	Randy Brackett 24 Hours	360-417-3446 360-457-1909

APPENDIX 8.3


PW&U
Emergency and After Hours On Call
Light Operations
PW&U On Call
Wastewater
Streets & Stormwater
Water

APPENDIX 8.4 - SPILL (ILLICIT DISCHARGE) CHARACTERIZATION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID:	
Incident Date / Today's Date:		Time (Military):	
Investigators:		Form Completed by:	
Temperature (°F):	Rainfall (in.): Last 24 hours: Last 48 hours:		
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	

Land Use in Drainage Area (Check all that apply):

- ☐ Industrial
- ☐ Ultra-Urban Residential
- ☐ Suburban Residential
- ☐ Commercial
- ☐ Open Space
- ☐ Institutional
- ☐ Other:_____
- ☐ Known Industries: _____

Notes (e.g., origin of outfall, suspected violator information, if known):

Section 2: Outfall Description – Skip this section if spill occurs in the public right of way or on private property

LOCATION	MATERIAL	SHAPE		DIMENSION (IN.)	SUBMERGED
☐ **Closed Pipe**	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☐ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☐ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter/Dimensions: _____	**In Water:** ☐ No ☐ Partially ☐ Fully **With Sediment:** ☐ No ☐ Partially ☐ Fully
☐ **Open drainage**	☐ Concrete ☐ Earthen ☐ Rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ Other: _____		Depth: _____ Top Width: _____ Bottom Width: _____	
☐ **In-Stream**	**(applicable when collecting samples)**				
Flow Present?	☐ Yes ☐ No	***If No, Skip to Section 5***			
Flow Description (If Present)	☐ Trickle ☐ Moderate ☐ Substantial				

Section 3: Quantitative Characterization - Skip this section if spill occurs in the public right of way or on private property

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		**RESULT**	**UNIT**	**EQUIPMENT**
☐ Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐ Flow #2	Flow depth		In	Tape Measure
	Flow width	_____' _____"	Ft, In	Tape Measure
	Measured length	_____' _____"	Ft, In	Tape Measure
	Time of travel		S	Stop Watch
Temperature – field measure			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			Mg/L	Test strip – or lab

Section 4: Physical Indicators for Flowing Spills or Illicit Discharges Only
Are physical indicators present in the flow? ☐ Yes ☐ No (*If No, Skip to Section 5*)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/Sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 – Faint	☐ 2 – Easily detected	☐ 3 – Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 – Faint colors in sample bottle	☐ 2 – Clearly visible in sample bottle	☐ 3 – Clearly visible in outfall flow
Turbidity	☐	See Severity	☐ 1 – Slight cloudiness	☐ 2 - Cloudy	☐ 3 - Opaque
Floatables – Does Not Include Trash!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 – Few/slight; origin not obvious	☐ 2 – Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Spills or Illicit Discharges
Are physical indicators that are not related to flow present? ☐ Yes ☐ No (*If No, Skip to Section 6*)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Spill or Illicit Discharge Characterization

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

Section 7: Data Collection –Two samples must be taken for lab analysis. Test parameters are in 7.2 b 3 and 7.3 e

1. Sample for the lab?	☐ Yes	☐ No		
2. Collected from:	☐ Flow	☐ Pool		
3. Intermittent flow trap set?	☐ Yes	☐ No	If Yes, type: ☐ OBM	☐ Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

Figure 8.4.1: Characterizing Submersion and Flow

Spill Characterization Field Sheet Section 2

If discharge is discovered in a pipe or open drainage ditch, fill in this section using Figure 8.4.1 above to determine the level of flow and submergence. If the discharge is discovered on the pavement or in a curb and gutter, skip to the bottom of Section 2 and determine if flow is present or not.

Spill Characterization Field Sheet Section 3

Use this section if the discharge is coming from a pipe or ditch. If you have the Horiba water quality meter, test for temperature and pH and record the results. Ammonia is one of the parameters that will be tested by the City lab.

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		**RESULT**	**UNIT**	**EQUIPMENT**
☐Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
☐Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature			°F	Thermometer
pH			pH Units	Test strip/Probe
Ammonia			mg/L	Test strip

Figure 8.4.2: Section 3 of the ORI Field Sheet

Spill Characterization Field Sheet Section 4

Odor

Section 4 asks for a description of any odors that emanate from the outfall and an associated severity score. Since noses have different sensitivities, the entire field crew should reach consensus about whether an odor is present and how severe it is. A severity score of one means that the odor is faint or the crew cannot agree on its presence or origin. A score of two indicates a moderate odor within the pipe. A score of three is assigned if the odor is so strong that the crew smells it a considerable distance away from the outfall.

Tip

Make sure the origin of the odor is the outfall. Sometimes shrubs, trash or carrion, or even the spray paint used to mark the outfall can confuse the noses of field crews.

Color

The color of the discharge, which can be clear, slightly tinted, or intense is recorded next. Color can be quantitatively analyzed in the lab, but the spill characterization field sheet only asks for a visual assessment of the discharge color and its intensity. The best way to measure color is to collect the discharge in a clear sample bottle and hold it up to the light (Figure 8.4.3).

Field crews should also look for downstream plumes of color that appear to be associated with the outfall. Figure 8.4.4 illustrates the spectrum of colors that may be encountered during a spill investigation, and offers insight on how to rank the relative intensity or strength of discharge color. Color often helps identify industrial discharges.

Turbidity

The spill characterization field sheet asks for a visual estimate of the turbidity of the discharge, which is a measure of the cloudiness of the water. Like color, turbidity is best observed in a clear sample bottle, and can be quantitatively measured using field probes. Crews should also look for turbidity in the plunge pool below the outfall, and note any downstream turbidity plumes that appear to be related to the outfall. Field crews can sometimes confuse turbidity with color, which are related but are not the same. Remember, turbidity is a measure of how easily light can penetrate through the sample bottle, whereas color is defined by the tint or intensity of the color observed. Figure 8.4.4 provides some examples of how to distinguish turbidity from color, and how to rank its relative severity. Also, under high intensity or long duration rainfall, Port Angeles streams will be turbid from natural processes upstream. If turbid water is encountered in the stream, investigate waters upstream to determine the source.

Figure 8.4.3: Using a sample bottle to estimate color and turbidity

Color: Brown; Severity: 2
Turbidity Severity: 2

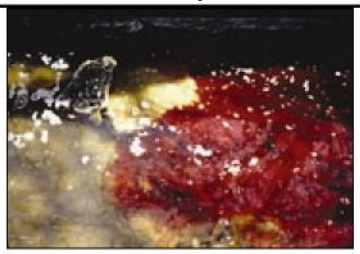
Color: Blue-green; Severity: 3
Turbidity Severity: 2

Highly Turbid Discharge
Color: Brown; Severity: 3
Turbidity Severity: 3

Sewage Discharge
Color: 3
Turbidity: 3

Paint
Color: White; Severity: 3
Turbidity: 3

Industrial Discharge
Color: Green; Severity: 3
Turbidity Severity: 3



Blood
Color: Red; Severity: 3
Turbidity Severity: None

Failing Septic System:
Turbidity Severity: 3

Turbidity in Downstream Plume
Turbidity Severity: 2
(also confirm with sample bottle)

High Turbidity in Pool
Turbidity Severity: 2
(Confirm with sample bottle)

Iron Floc
Color: Reddish Orange; Severity: 3
(Often associated with a natural source)

Slight Turbidity
Turbidity: 1
(Difficult to interpret this observation; May be natural or an illicit discharge)

Construction Site Discharge
Turbidity Severity: 3

Discharge of Rinse from Floor Sanding
(Found during wet weather)
Turbidity Severity: 3

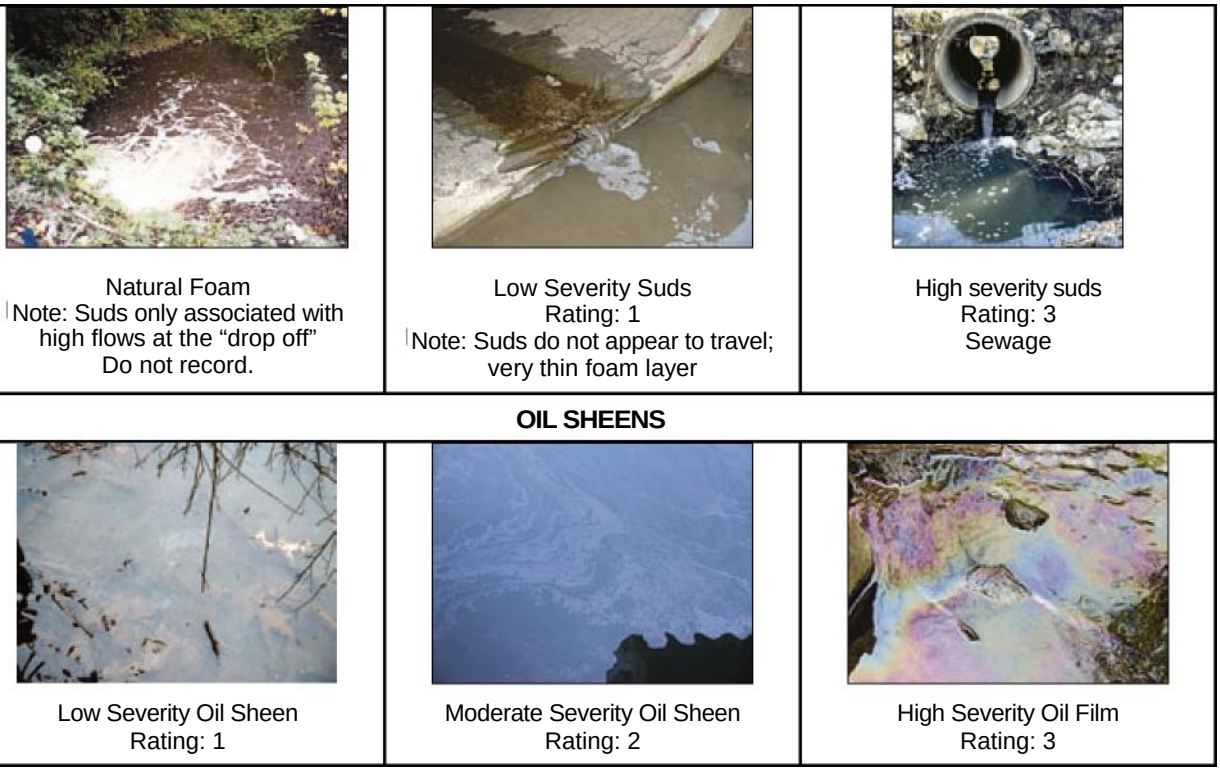
Figure 8.4.4: Interpreting Color and Turbidity

Floatables

The last sensory indicator is the presence of any floatable materials in the discharge or the plunge pool below. Sewage, oil sheen, and suds are all examples of floatable indicators; trash and debris are generally not in the context of the Outfall Reconnaissance Inventory (ORI). The presence of floatable materials is determined visually, and some guidelines for ranking their severity are provided in Figure 8.4.5, and described below.

If you think the floatable is sewage, you should automatically assign it a severity score of three since no other source looks quite like it. Surface oil sheens are ranked based on their thickness and coverage. In some cases, surface sheens may not be related to oil discharges, but instead are created by in-stream processes, such as shown in Figure 8.4.6. A thick or swirling sheen associated with a petroleum-like odor may be diagnostic of an oil discharge.

Suds are rated based on their foaminess and staying power. A severity score of three is designated for thick foam that travels many feet before breaking up. Suds that break up quickly may simply reflect water turbulence, and do not necessarily have an illicit origin. Indeed, some streams have naturally occurring foams due to the decay of organic matter. On the other hand, suds that are accompanied by a strong organic or sewage-like odor may indicate a sanitary sewer leak or connection. If the suds have a fragrant odor, they may indicate a sanitary sewer leak or connection. If the suds have a fragrant odor, they may indicate the presence of laundry water or similar wash waters.



SUDS

Figure 8.4.5: Determining the Severity of Floatables

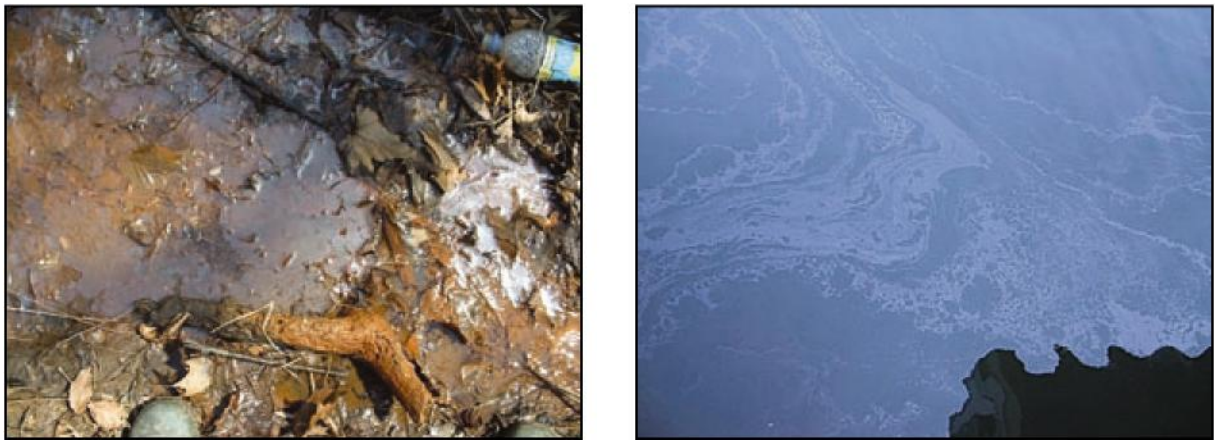


Figure 8.4.6: Synthetic versus Natural Sheen (a) Sheen from bacteria such as iron floc forms a sheet-like film that cracks if disturbed (b) Synthetic oil forms a swirling pattern

Sample Collection Field Sheet Section 5

Section 5 of the ORI field sheet examines physical indicators found at both flowing and non-flowing outfalls that can reveal the impact of past discharges. Physical indicators include outfall damage, outfall deposits or stains, abnormal vegetation growth, poor pool quality and benthic growth on pipe surfaces. Common examples of physical indicators are shown in Figures 8.4.7 and 8.4.8. Many of these physical conditions can indicate that an intermittent or transitory discharge has occurred in the past, even if the pipe is not currently flowing. Physical indicators are not ranked according to their severity, because they are often subtle, difficult to interpret and could be caused by other sources. Still physical indicators can provide strong clues about the discharge history of a storm water outfall, particularly if other discharge indicators accompany them.

Bacterial growth at this outfall indicates nutrient enrichment and a likely sewage source.

This bright red bacterial growth often indicates high manganese and iron concentrations. Surprisingly, it is not typically associated with illicit discharges.

Sporalitis filamentous bacteria, also known as “sewage fungus” can be used to track down sanitary sewer leaks.

Algal mats on lakes indicate eutrophication. Several sources can cause this problem. Investigate potential illicit sources.

Illicit discharges or excessive nutrient application can lead to extreme algal growth on stream beds.

The drainage to this outfall most likely has a high nutrient concentration. The cause may be an illicit discharge, but may be excessive use of lawn chemicals.

This brownish algae indicates an elevated nutrient level.

Figure 8.4.7: Interpreting Benthic and Other Biotic Indicators

Reddish staining on the rocks below this outfall indicate high iron concentrations.

Toilet paper directly below the storm drain outlet.

Watershed Protection??

Trash is not an indicator of illicit discharges, but should be noted.

Staining at the base of the outfall may indicate a persistent, intermittent discharge.

Excessive vegetation may indicate enriched flows associated with sewage.

Brownish stain of unclear origin. May be from degradation of the brick infrastructure.

Cracked rock below the outfall may indicate an intermittent discharge.

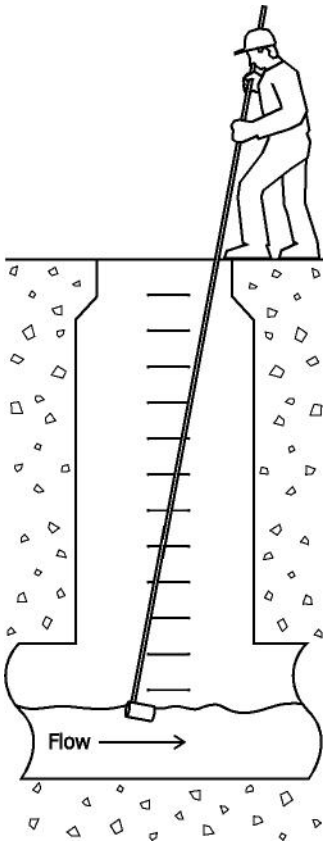
Poor pool quality. Consider sampling from the pool to determine origin.

Figure 8.4.8 **Typical Findings at Both Flowing and Non-Flowing Outfalls**

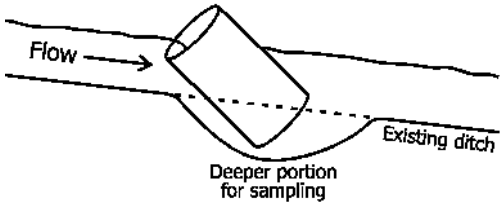
Appendix 8.5 – Stormwater Sampling Checklist

General Sampling Techniques

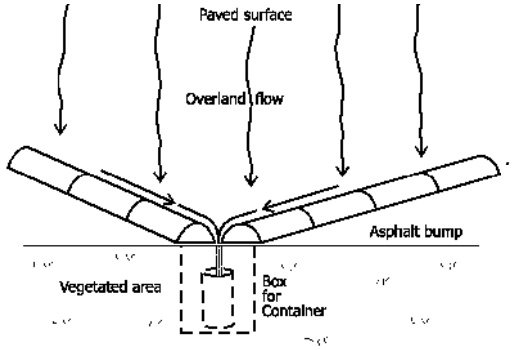
- If possible, notify the wastewater lab ahead of an illicit discharge investigation, a stream survey or a priority outfall survey so they will be aware that timely testing may be required.
- Collect two sample bottles for each sample site from the lab. Lab note: for fecal coliform samples: Bacteria sample containers should be 250-mL or 500mL pre-autoclaved (sterilized) polypropylene bottles with aluminum foil wrapped caps used to preserve sterility near the bottle opening. No preservative should be added. However, if sampling near a major road or highway, EDTA should be added to neutralize the high metals
- Prepare and carry a small sample cooler with ice.
- When collecting the sample:
    - Safety is most important. If a trip hazard is present or if there is deep, or swift water, samples should be taken with a partner. Do not enter any manhole or long culvert, unless you have been trained to enter confined spaces.
    - Wear disposable powder free gloves.
    - The sample should be collected by hand (grab sample) or with sample bottle attached to an extension pole. Samples cannot be pumped or transferred from container to container (dipper).
    - Care should be used at all times to avoid contamination of the inside of the sample bottle cap. (Do not touch the inside of the bottle cap with your hands, or place the open side on the ground.)
    - Do not rinse the bottle.
    - Do not disturb sediment from the stream bed, pipe or manhole. If the flow is too shallow to take a sample without sediment, the flow can be dammed to create a deep spot, or the ditch can be deepened with a shovel to create a small sampling pocket. See examples below.
    - Always collect samples from the active part of the stream or pipe flow.
    - Face the opening of the bottle upstream (or into the tidal flow in marine water).
    - Plunge the sample bottle to mid flow depth and sweep up.
    - Leave ½ inch headspace in the bottle for mixing.
    - As soon as the sample is collected, cap the bottle and label it.
    - Immediately store in a cooler with ice.
    - Deliver to the lab within 6 hours.



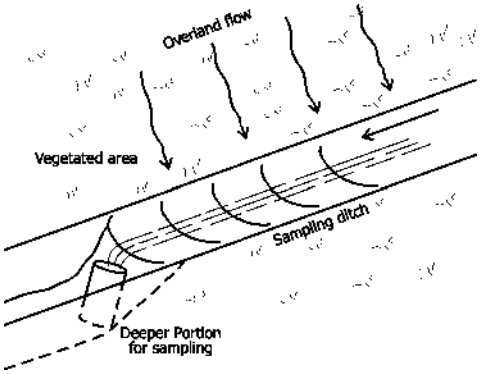
When sampling from a manhole, use a pole to safely sample from above ground. Avoid touching the sides of the manhole or pipes with the bottle to prevent contamination. Place the opening of the bottle upstream so that the flow enters the bottle directly.



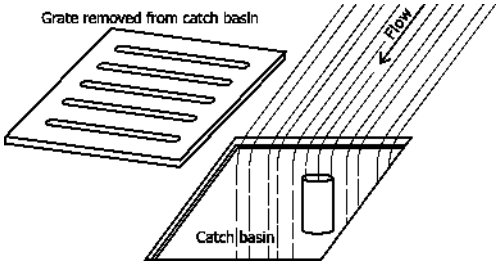
Deepening an existing ditch can allow samples to be collected directly into bottles in some cases. Be careful not to stir up solids from the sides or bottom of the ditch



Overland flow on paved areas can be sampled by constructing asphalt or concrete bumps to collect and concentrate the flow. A box positioned below ground surface in the paved area or the edge of an unpaved area can provide a place to collect samples directly into bottles.



Overland flow from vegetated areas can be sampled by constructing a shallow ditch to intercept the runoff and a deepened area to place bottles to catch the runoff.



Runoff entering a catch basin can sometimes be collected directly into bottles by removing the grate and allowing the runoff to fall into the bottles.

Do not touch openings of bottles. Keep bottles clean to prevent contamination.

Do not allow bottle lids to touch ground. Keep lids clean to prevent contamination.

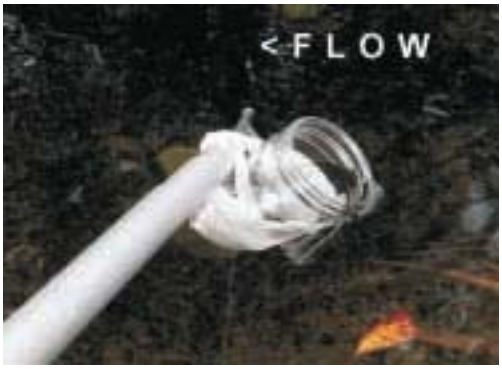
Do attach a bottle to a pole for sampling in manholes or when a hand sample would be in stagnant water. A boathook is used in this example and the bottle is attached to it with filament strapping tape.

Do not sample in stagnant areas with little flow. Do not stir up bottom sediments or allow foreign materials to enter the sample bottle. (Do be careful to grab a clean sample in cases where stormwater runoff is shallow.) If the runoff is so shallow that it is not possible to sample without the sample being contaminated in the process, then find an alternative way to sample.

If the water is too shallow to sample with the bottle upright on the pole, try taping it on sideways, but tilted up slightly.

Do not sample with the bottle opening facing downstream, when using a pole or when sampling by hand. Water flowing past your container, pole, or hand and into the container can be contaminated by such contact.

Do not allow water to overfill the bottle, particularly not for sample bottles with preservative. Oil and grease samples should be collected from water falling into the bottle when possible, or otherwise in a single swoop.



Do sample with the opening of the bottle facing upstream, into the flow so the water will enter directly into the bottle. This is true when sampling either by hand or with a pole. Do sample water that is rapidly flowing rather than stagnant.

Do collect samples without overfilling the bottle.

Appendix 8.6 – IDDE Incident Closure Form

IDDE INCIDENT CLOSURE FORM

Initial investigation date: **Cityworks WO#:**	**Title:**	**Investigators:**
☐ **No investigation made:**	**Reason:**	
☐ **Referred to different department/agency:**	**Department/Agency:**	
☐ **Investigated: No action necessary**		
☐ **Investigated: Requires action**	☐ **Report to Ecology** **ERTS #**	
☐ **Enforcement Required?**	☐ **Referred to Stormwater Engineering for Enforcement**	
Description of Event:		
Description or Actions Taken:		
Conclusion/Findings:		
Date of Case Closed:		

X_____
Deputy Director of Public Works & Utilities