

**City of Port Angeles**

# **2014 Annual Report**

**NPDES Phase II Stormwater**





# Water Quality Program

## Permit Submittal Electronic Certification

**Permittee:** PORT ANGELES CITY

**Permit Number:** WAR045028

**Site Address:** 321 E FIFTH ST  
Port Angeles, WA 98362

**Submittal Name:** MS4 Annual Report Phase II Western

**Version:** 1

**Due Date:** 3/31/2015

### Questionnaire

Number	Permit Section	Question	Answer
1	S5.A.2	Attach updated annual Stormwater Management Program Plan (SWMP Plan). (S5.A.2)	1 2015 COPA Stormwater Management Plan_1_03262015_1115.pdf
2	S9.D.5	Attach a copy of any annexations, incorporations or boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period per S9.D.5.	Not Applicable
3	S5.A.3	Implemented an ongoing program to gather, track, and maintain information per S5.A.3, including costs or estimated costs of implementing the SWMP.	Yes
4	S5.A.5.b	Coordinated among departments within the jurisdiction to eliminate barriers to permit compliance. (S5.A.5.b)	Yes
4b	S5.A.5.b	Attach a written description of internal coordination mechanisms. (Required to be submitted no later than March 31, 2015, S5.A.5.b)	PA NPDES Coordination Mechanis_4b_03302015083823.pdf
5	S5.C.1.a.i and ii	Attach description of public education and outreach efforts conducted per S5.C.1.a.i and ii.	5 Public Outreach Tracking 2014_5_03232015_1011.pdf
6	S5.C.1.b	Created stewardship opportunities (or partnered with others) to encourage resident participation in activities such as those described in S5.C.1.b.	Yes
7	S5.C.1.b	Used results of measuring the understanding and adoption of targeted behaviors among at least one audience in at least one subject area to direct education and outreach resources and evaluate changes in adoption of targeted behaviors. (Required no later than February 2, 2016, S5.C.1.b)	No
7b	S5.C.1.b	Attach description of how this requirement was met.	

8	S5.C.2.a	Describe the opportunities created for the public to participate in the decision making processes involving the development, implementation and updates of the Permittee's SWMP. (S5.C.2.a)	The SWMP and contact information are available to the public on the City's website. A link to a comment form is also available on SWMP page. Copies of the SWMP are available at the front counter of the City's Engineering Department, and provided at the annual Home Show. The City also holds workshops with stakeholder groups such as Streamkeepers, EcoNet, and North Peninsula Builders Association. This year a workgroup session was held with Streamkeepers to gather feedback on the SWMP.
9	S5.C.2.b	Posted the updated SWMP Plan and latest annual report on your website no later than May 31. (S5.C.2.b)	Yes
9b	S5.C.2.b	List the website address.	<a href="http://wa-portangeles.civicplus.com/376/Stormwater-Management-Program">http://wa-portangeles.civicplus.com/376/Stormwater-Management-Program</a>
10	S5.C.3.a.i - vi	Maintained a map of the MS4 including the requirements listed in S5.C.3.a.i-vi.	Yes
11	S5.C.3.b.v	Implemented a compliance strategy, including informal compliance actions as well as enforcement provisions of the regulatory mechanism described in S5.C.3.b. (S5.C.3.b.v)	Yes
12	S5.C.3.b.vi	Updated, if necessary, the regulatory mechanism to effectively prohibit illicit discharges into the MS4 per S5.C.3.b.vi. (Required no later than February 2, 2018)	Not Applicable
12b		Cite the Prohibited Discharges code reference	
13	S5.C.3.c.i	Implemented procedures for conducting illicit discharge investigations in accordance with S5.C.3.c.i.	Yes
13b	S5.C.3.c.i	Cite methodology	Illicit Discharge Detection and Elimination (IDDE) Response Policy, PW-0610
14	S5.C.3.c.i	Percentage of MS4 coverage area screened in reporting year per S5.C.3.c.i. (Required to screen 40% of MS4 no later than December 31, 2017 (except no later than June 30, 2018 for the City of Aberdeen) and 12% on average each year thereafter. (S5.C.3)	15
15	S5.C.3.c.ii	List the hotline telephone number for public reporting of spills and other illicit discharges. (S5.C.3.c.ii)	360-417-4745

15b	S5.C.3.c.ii	Number of hotline calls received.	4
16	S5.C.3.c.iii	Implemented an ongoing illicit discharge training program for all municipal field staff per S5.C.3.c.iii.	Yes
17	S5.C.3.c.iv	Informed public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste. (S5.C.3.c.iv)	Yes
17b	S5.C.3.c.iv	Describe the information sharing actions. (S5.C.3.c.iv)	The City trains its staff through IDDE Awareness Training, and businesses through personalized business inspections. A utility bill mailer was sent to all City residents which described what illicit discharges are and how to report them. A IDDE poster was also located in the entrance to City Hall.
18	S5.C.3.d	Implemented an ongoing program to characterize, trace, and eliminate illicit discharges into the MS4 per S5.C.3.d.	Yes
19	S5.C.3.d.iv	Number of illicit discharges, including illicit connections, eliminated during the reporting year. (S5.C.3.d.iv)	23
20	S5.C.3.d.iv	Attach a summary of actions taken to characterize, trace and eliminate each illicit discharge found by or reported to the permittee. For each illicit discharge, include a description of actions according to required timeline per S5.C.3.d.iv	20 IDDE Incident Tracking Report_20_03252015_0911.pdf
21	S5.C.3.e	Municipal illicit discharge detection staff are trained to conduct illicit discharge detection and elimination activities as described in S5.C.3.e.	Yes
22	S5.C.4.a	Implemented an ordinance or other enforceable mechanism to address runoff from new development, redevelopment and construction sites per the requirements of S5.C.4.a.	No
24	S5.C.4.a.i	Number of exceptions granted to the minimum requirements in Appendix 1. (S5.C.4.a.i., and Section 6 of Appendix 1)	0
25	S5.C.4.a.i	Number of variances granted to the minimum requirements in Appendix 1. (S5.C.4.a.i., and Section 6 of Appendix 1)	0
26	S5.C.4.b.i	Reviewed Stormwater Site Plans for all proposed development activities that meet the thresholds adopted pursuant to S5.C.4.a.i. (S5.C.4.b.i)	Yes
26b	S5.C.4.b.i	Number of site plans reviewed during the reporting period.	12

27	S5.C.4.b.ii	Inspected, prior to clearing and construction, permitted development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 Determining Construction Site Sediment Damage Potential, or alternatively, inspected all construction sites meeting the minimum thresholds adopted pursuant to S5.C.4.a.i. (S5.C.4.b.ii)	Yes
27b	S5.C.4.b.ii	Number of construction sites inspected per S5.C.4.b.ii.	7
28	S5.C.4.b.iii	Inspected permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. (S5.C.4.b.iii)	Yes
28b	S5.C.4.b.iii	Number of construction sites inspected per S5.C.4.b.iii.	10
29	S5.C.4.b.ii, iii and v	Number of enforcement actions taken during the reporting period (based on construction phase inspections at new development and redevelopment projects). (S5.C.4.b.ii, iii and v)	2
30	S5.C.4.b.iv	Inspected all permitted development sites that meet the thresholds in S5.C.4.a.i upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater facilities. (S5.C.4.b.iv)	Yes
31	S5.C.4.b.ii-iv	Achieved at least 80% of scheduled construction-related inspections. (S5.C.4.b.ii-iv)	Yes
32	S5.C.4.b.iv	Verified a maintenance plan is completed and responsibility for maintenance is assigned for projects. (S5.C.4.b.iv)	Yes
33	S5.C.4.c	Implemented provisions to verify adequate long-term operation and maintenance (O&M) of stormwater treatment and flow control BMPs/facilities that are permitted and constructed pursuant to S5.C.4. a and b. (S5.C.4.c)	Yes
35	S5.C.4.c.iii	Annually inspected stormwater treatment and flow control BMPs/facilities per S5.C.4.c.iii.	Yes
35b	S5.C.4.c.iii	If using reduced inspection frequency for the first time during this permit cycle, attach documentation per S5.C.4.c.iii	Not Applicable
36	S5.C.4.c.iv	Inspected new residential stormwater treatment and flow control BMPs/facilities and catch basins every 6 months per S5.C.4.c.iv to identify maintenance needs and enforce compliance with maintenance standards.	Yes
37	S5.C.4.c.v	Achieved at least 80% of scheduled inspections to verify adequate long-term O&M. (S5.C.4.c.v)	Yes
38	S4.C.4.c.vi	Verified that maintenance was performed per the schedule in S5.C.4.c.vi when an inspection identified an exceedance of the maintenance standard.	Yes
38b	S5.C.4.c.vi	Attach documentation of any maintenance delays. (S5.C.4.c.vi)	Not Applicable

39	S5.C.4.d	Provided copies of the Notice of Intent for Construction Activity and Notice of Intent for Industrial Activity to representatives of proposed new development and redevelopment. (S5.C.4.d)	Yes
40	S5.C.4.e	All staff responsible for 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. (S5.C.4.e)	Yes
42	S5.C.4.g	Participated and cooperated with the watershed-scale stormwater planning process led by a Phase I county. (S5.C.4.g)	Not Applicable
43	S5.C.5.a	Implemented maintenance standards as protective, or more protective, of facility function as those specified in Chapter 4 of Volume V of the 2005 Stormwater Management Manual for Western Washington.	Yes
44	S5.C.5.a	Applied a maintenance standard that is not specified in the Stormwater Management Manual for Western Washington.	No
44b	S5.C.5.a	Please note what kinds of facilities are covered by this alternative maintenance standard. (S5.C.5.a)	
45	S5.C.5.a.ii	Performed timely maintenance per S5.C.5.a.ii.	Yes
46	S5.C.5.b	Annually inspected all municipally owned or operated permanent stormwater treatment and flow control BMPs/facilities. (S5.C.5.b)	Yes
46b	S5.C.5.b	Number of known municipally owned or operated stormwater treatment and flow control BMPs/facilities. (S5.C.5.b)	24
46c	S5.C.5.b	Number of facilities inspected during the reporting period. (S5.C.5.b)	24
46d	S5.C.5.b	Number of facilities for which maintenance was performed during the reporting period. (S5.C.5.b)	9
47	S5.C.5.b	If using reduced inspection frequency for the first time during this permit cycle, attach documentation per S5.C.5.b.	Not Applicable
48	S5.C.5.c	Conducted spot checks and inspections (if necessary) of potentially damaged stormwater facilities after major storms as per S5.C.5.c.	Not Applicable
49	S5.C.5.d	Inspected all municipally owned or operated catch basins and inlets as per S5.C.5.d, or used an alternative approach. (Required once no later than August 1, 2017 and every two years thereafter, except once no later than June 30, 2018 and every two years thereafter for the City of Aberdeen)	Yes
49b	S5.C.5.d	Number of known catch basins.	2531
49c	S5.C.5.d	Number of catch basins inspected during the reporting period.	1605
49d	S5.C.5.d	Number of catch basins cleaned during the reporting period.	1605

50	S5.C.5.d.i-ii	Attach documentation of alternative catch basin cleaning approach, if used. (S5.C.5.d.i or ii)	Not Applicable
51	S5.C.5.f	Implemented practices, policies and procedures to reduce stormwater impacts associated with runoff from all lands owned or maintained by the Permittee, and road maintenance activities under the functional control of the Permittee. (S5.C.5.f)	Yes
52	S5.C.5.g	Implemented an ongoing training program for Permittee employees whose primary construction, operations or maintenance job functions may impact stormwater quality. (S5.C.5.g.)	Yes
53	S5.C.5.h	Implemented a Stormwater Pollution Prevention Plan for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the Permittee in areas subject to this Permit that are not required to have coverage under an NPDES permit that covers stormwater discharges associated with the activity. (S5.C.5.h)	Yes
54	S7.A	Complied with the Total Maximum Daily Load (TMDL)-specific requirements identified in Appendix 2. (S7.A)	Not Applicable
55	S7.A	For TMDLs listed in Appendix 2: Attach a summary of relevant SWMP and Appendix 2 activities to address the applicable TMDL parameter(s). (S7.A)	Not Applicable
56	S8.A	Attach a description of any stormwater monitoring or stormwater-related studies as described in S8.A.	Fecal_01-2014to12_2014_56_03302015080257.pdf
57	S8.B.1	Participated in cost-sharing for the regional stormwater monitoring program (RSMP) for status and trends monitoring. (S8.B.1)	Yes
58	S8.C.1	Participated in cost-sharing for the regional stormwater monitoring program (RSMP) for effectiveness studies. (S8.C.1) (Required to begin no later than August 15, 2014)	Yes
59	S8.D.1	Contributed to the RSMP for source identification and diagnostic monitoring information repository in accordance with S8.D.1. (Required to begin no later than August 15, 2014)	Yes
60	G3	Notified Ecology in accordance with G3 of any discharge into or from the Permittees MS4 which could constitute a threat to human health, welfare or the environment. (G3)	Yes
61	G3	Number of G3 notifications provided to Ecology.	13
62	G3.A	Took appropriate action to correct or minimize the threat to human health, welfare, and/or the environment per G3.A.	Yes
63	S4.F.1	Notified Ecology within 30 days of becoming aware that a discharge from the Permittee's MS4 caused or contributed to a known or likely violation of water quality standards in the receiving water. (S4.F.1)	Not Applicable

64	S4.F.3.a	If requested, submitted an Adaptive Management Response report in accordance with S4.F.3.a.	Not Applicable
65	S4.F.3.d	Attach a summary of the status of implementation of any actions taken pursuant to S4.F.3 and the status of any monitoring, assessment, or evaluation efforts conducted during the reporting period. (S4.F.3.d)	65 WQ Monitoring_65_03232015_1013.pdf
66	G20	Notified Ecology of the failure to comply with the permit terms and conditions within 30 days of becoming aware of the non-compliance. (G20)	Not Applicable
67	G20	Number of non-compliance notifications (G20) provided in reporting year.	0
67b	G20	List the permit conditions described in non-compliance notification(s).	Not Applicable

*I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

Craig

3/30/2015 1:58:42 PM

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

# Washington Department of Ecology Submission Cover Letter

**WQWebSubmittal - Submittal Submission Id: 1487314 - 3/30/2015  
1:58:43 PM**

**Report Received Dated:**

3/30/2015 1:58:44 PM

Company Name	Signer Name	System Name
City of Port Angeles	Craig	WQWebPortal

## Attachments:

Document Name of Description	Document File Name
	20 IDDE Incident Tracking Report_20_03252015_0911.
14 Field Screening Summary and Map	14 Screening Summary and Map
20 IDDE Database Report	20 IDDE Incident Tracking Report Export
Submitted Copy of Record for City of Port Angeles	Copy of Record CityofPortAngeles Monday March 30 2015
WAR045028_56_03302015080257	Fecal_01-2014to12_2014_56_03302015080257.pdf
Stewardship Opportunities	6 Stewardship Opportunities
WAR045028_4b_03302015083823	PA NPDES Coordination Mechanis_4b_03302015083823.p

## Attestation Agreed to at Signing:

I certify I personally signed and submitted to the Department of Ecology an Electronic Signature Agreement. I understand that use of my electronic signature account/password to submit this information is equal to my written signature. I have read and followed all the rules of use in my Electronic Signature Agreement. I believe no one but me has had access to my password and other account information.

I further certify: I had the opportunity to review the content or meaning of the submittal before signing it; and to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I intend to submit this information as part of the implementation, oversight, and enforcement of a federal environmental program. I am aware there are significant penalties for submitting false information, including possible fines and imprisonment.

**For Ecology Use Only ---  
Dev**



4/QwcvilXI34cnPXEu+oMAcmHi2hz3S2x2MnN78hVpoRg9WgxZIS8aHnXqx5VUxcjXlsmhSggzbrIDH+afD8/6fZ0MI9dJBw8zKoSQaTSGg=

## View Files Attached to Submission

	<b>DocDescr</b>	<b>DocName</b>	<b>DocExt</b>	<b>DocID</b>	<b>SubID</b>	<b>AppName</b>
<a href="#">View</a>		1 2015 COPA Stormwater Management Plan_1_03262015_	.pdf	344522	1487314	wqwebportal
<a href="#">View</a>	14 Field Screening Summary and Map	14 Screening Summary and Map	.pdf	344298	1487314	wqwebportal
<a href="#">View</a>	20 IDDE Database Report	20 IDDE Incident Tracking Report Export	.xlsx	344252	1487314	wqwebportal
<a href="#">View</a>		20 IDDE Incident Tracking Report_20_03252015_0911.	.pdf	344251	1487314	wqwebportal
<a href="#">View</a>		5 Public Outreach Tracking 2014_5_03232015_1011.pd	.pdf	343781	1487314	wqwebportal
<a href="#">View</a>	Stewardship Opportunities	6 Stewardship Opportunities	.pdf	343843	1487314	wqwebportal
<a href="#">View</a>		65 WQ Monitoring_65_03232015_1013.pdf	.pdf	343783	1487314	wqwebportal
<a href="#">View</a>	Submitted Copy of Record for City of Port Angeles	Copy of Record CityofPortAngeles Monday March 30 2015	.pdf	345116	1487314	wqwebportal
<a href="#">View</a>	Submitted Cover Letter for City of Port Angeles	Cover Letter CityofPortAngeles Monday March 30 2015	.pdf	345117	1487314	wqwebportal
<a href="#">View</a>	WAR045028_56_03302015080257	Fecal_01-2014to12_2014_56_03302015080257.pdf	.pdf	344910	1487314	wqwebportal
<a href="#">View</a>	WAR045028_4b_03302015083823	PA NPDES Coordination Mechanis_4b_03302015083823.p	.pdf	344918	1487314	wqwebportal

[Close](#)

[Ecology Home](#) | [WQWebPortal Home](#) | [WQWebSubmittal Home](#) | [Help](#) | [Release Notes](#) | [Contact Us](#)

Submittals (WQWebSubmittal) Version 1.2 | [Data Disclaimer](#) | [Privacy Policy](#)

Copyright © Washington State Department of Ecology 2013. All Rights Reserved.

**This is a copy of the City's stormwater management plan. It defines what the City plans to do to make stormwater cleaner.**

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

**Please let us know if you have any comments, ideas or concerns! You can return this directly to the City offices 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](mailto:stormwater@cityofpa.us)**

# **City of Port Angeles**

## **Stormwater Management Program**

Revised: March 25, 2015



As required by the  
Western Washington Phase II Municipal Stormwater Permit  
State of Washington – Department of Ecology  
Municipal Stormwater Permit Coverage Number: WAR04-5028

## Table of Contents

Background and Intent.....	4
1) Public Education and Outreach.....	5
a) Education and Outreach Program .....	5
i.) General public.....	5
ii.) General public, home-based and mobile businesses.....	6
iii.) Homeowners, landscapers, and property managers.....	7
iv.) Engineers, contractors, developers, review staff, and land use planners.....	7
b) Measurement of Understanding and Adoption Among Targeted Audiences.....	8
c) Public Education and Outreach Recordkeeping .....	8
2) Public Involvement and Participation.....	9
a) Public Involvement in SWMP .....	9
b) Availability of Information to the Public.....	9
3) Illicit Discharge Detection and Elimination .....	10
a) Municipal Storm Sewer System Map .....	10
ii) Connections to MS4.....	10
iii) Areas Not Discharging to Surface Waters .....	10
iv) Information Available to Ecology .....	10
v) Information Available to Secondary and Co-Permittees .....	11
b) Illicit Discharge Ordinance.....	11
c) Detection Program .....	11
i) Priority Areas.....	11
ii) Field Assessment .....	12
iii) Nature of Discharges.....	12
iv) Tracing Source(s) of Discharges.....	12
v) Removing Source(s) of Discharges .....	13
d) Public Information .....	13
i) Distribute Information to Target Audiences .....	13
ii) Hotline for Public Reporting of Discharges and Spills.....	13
e) Program Evaluation and Assessment.....	13
f) Illicit Discharge Training.....	13
i) Field Staff Training.....	14
ii) Ongoing Training Program.....	14
4) Controlling Runoff from New Development, Redevelopment, and Construction Sites.....	14
a) Runoff Ordinance.....	14
i) Minimum Requirements, Technical Thresholds, and Definitions .....	14
ii) Site Planning Process, and BMP Selection and Design.....	15
iii) Legal Authority to Inspect Private Facilities .....	15
iv) Provisions to Allow LID.....	15
v) Erosivity Waiver .....	15

b) Permitting Process .....	15
i) Review of Stormwater Site Plans .....	15
ii) Pre-Construction Inspection of Development Sites .....	15
iii) Inspection of Development Sites During Construction .....	16
iv) Post-Construction Inspection of Development Sites .....	16
v) Inspection Compliance.....	16
vi) Enforcement Strategy.....	16
vii) Erosivity Waiver .....	16
c) Operation and Maintenance of Post-Construction Stormwater Facilities.....	16
i) Operations and Maintenance Ordinance.....	16
ii) Maintenance Standards .....	16
iii) Annual Inspections.....	17
iv) Inspections During Construction .....	17
d) Recordkeeping .....	17
e) Notice of Intent Availability .....	17
f) Training.....	17
5) Pollution Prevention and Operation and Maintenance for Municipal Operations.....	17
a) Maintenance Standards .....	17
b) Annual Inspections.....	18
c) Spot Checks .....	18
d) Catch Basin Inspections.....	18
e) Inspection Program .....	18
f) Road Runoff Control and Maintenance .....	18
g) Public Land Runoff Control and Maintenance .....	19
h) Training Program.....	19
i) Stormwater Pollution Prevention Plans .....	19
j) Recordkeeping .....	21

## List of Tables

Table 1: Status of Stormwater Pollution Prevention Plans for City Facilities.....	20
Table 2: Existing Individual Stormwater and Stormwater-Related Permits.....	21

## Appendices

- Appendix A: Public Outreach Plan Activity Matrix
- Appendix B: Illicit Discharge Detection and Elimination (IDDE) Response Policy
- Appendix C: Inter-Departmental Coordinating Mechanisms

## 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 renewed on August 1, 2013. The Permit was issued by the State of Washington's Department of 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 authorizes the City to discharge from the municipal separate storm sewer system (MS4) to surface waters and ground waters of the state.

The City is developing this Stormwater Management Program (SWMP) to address the specific requirements of Special Condition S5 of the Permit: "Stormwater Management Program for Cities, Towns, and Counties." The SWMP is a set of planned actions and activities designed to reduce the discharge of pollutants to the maximum extent practicable and to protect water quality. The City has teamed with Kitsap County to enhance the Public Education and Outreach components of the SWMP. The Permit includes broad ranging requirements which are implemented by various Departments within the City, inter-departmental coordination mechanisms are detailed in Appendix C.

The organization of the City's SWMP reflects the five core components required by Special Condition S5:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Controlling Runoff from New Development, Redevelopment, and Construction Sites
5. Pollution Prevention and Operation and Maintenance for Municipal Operations

The City's SWMP will be updated and submitted to the Department of Ecology annually as required. Electronic copies of updates will be available on the City's stormwater web page. Updates for each calendar year will be submitted by March 31 of the following year. 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.

The public is encouraged to participate in the development of the SWMP. Please contact the Department of Public Works and Utilities with questions, comments or suggestions.

Mail: 321 East Fifth St – P.O. Box 1150  
Port Angeles, WA 98362  
Phone: (360) 417-4745 (illicit discharge hotline)  
(360) 417-4811 (City stormwater engineer)  
Email: [illicit-discharge@cityofpa.us](mailto:illicit-discharge@cityofpa.us)  
Website: <http://www.cityofpa.us/Stormwater.htm>  
Web Form: Click [Stormwater Management Plan](#) on the Stormwater webpage

## 1) Public Education and Outreach

The City's public education and outreach program is being developed consistent with the Permit goal: "to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts."

### a) Education and Outreach Program

The Permit has established education and outreach goals for four categories based on target audiences and subject areas. The City's program is structured to match these four categories, listed as i-iv below.

A matrix has been prepared to show planned activities for the year, and their relationship to the required target audiences. This matrix is attached as Appendix A to this document. Updates of actual education and outreach activities will be provided with the Annual Report for the year. The following sections provide details on anticipated and ongoing public education and outreach program activities.

#### i.) General public

*Education and outreach goals:*

- *General impacts of stormwater flows into surface waters*
- *Impacts from impervious surfaces*
- *Source control BMPs and environmental stewardship actions and opportunities in the areas of pet waste, vehicle maintenance, landscaping, and buffers*

The program to meet these goals may include the following components:

- **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 <http://www.cityofpa.us/Stormwater.htm>. 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.
- **Localized groups:** Annually, the City holds a public meeting to discuss the stormwater management plan. In these meetings we discuss local water quality, the effects of impervious surfaces on stream health, and stormwater pollutants generated by home and automobile owners. Meetings will be held with groups such as Streamkeepers, EcoNet, and North Peninsula Builders Association.
- **Informational brochures:** will be made available 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 will be designed to address the education goals listed above. As brochures are developed, electronic copies will be made available through the City's stormwater webpage.

- **Newspaper advertisements:** the City plans to periodically place stormwater-related information in the local newspaper (Peninsula Daily News). 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 all newspaper advertisement will be made available through the City's stormwater webpage.
- **Utility bill mailers:** Annually, educational mailers will be sent out with the monthly utility bills, thereby reaching all of 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 will also be made available on the City's stormwater website and as handouts. The topic for the 2015 utility bill mailer and may feature topics such as: code update, BMPs, yard care, dog waste, car washing, and yard debris.
- **Participation in existing events:** educational materials (posters, brochures/handouts, maps, etc) will be distributed at existing local and regional events that attract members of the target audiences. City representatives will be present to answer questions. Events are anticipated to include: Clallam County Fair, Clallam County Home and Lifestyle Show, and others. Event-specific materials will be developed and distributed as appropriate. Announcements of upcoming events and copies of materials used at events will be available on the City's stormwater website.

## ii.) **General public, home-based and mobile businesses**

### *Education and outreach goals:*

- *BMPs for use and storage of automotive chemicals, hazardous cleaning and yard care products, carwash soaps, and other hazardous materials*
- *Impacts of illicit discharges and how to report them*

The program to meet these goals may include the following components:

- **Site visits to business owners by City Pollution Prevention Specialist:** The City received grant funding through the State Department of Ecology to support a new Pollution Prevention Specialist position. This person will schedule 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.
- **Illicit discharge information for the general public:** general illicit discharge information will be distributed to the general public. The information will take the form of one or more of the general public program components described in the previous section. Information will include 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).

### iii.) Homeowners, landscapers, and property managers

*Education and outreach goals:*

- *Yard care techniques protective of water quality*
- *BMPs for use and storage of pesticides and fertilizers*
- *BMPs for carpet cleaning and auto repair and maintenance*
- *Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees*
- *Stormwater pond maintenance*

The program to meet these goals may include the following components:

- **Informational mailers to target audience:** mailers designed to address the specific education goals will be sent to the target audience. The audience will be selected based on classification in directories such as telephone books and web searches.
- **Informational brochures at City Hall, at local public events and at target commercial establishments:** informational brochures/handouts will be designed to address the specific education goals. The brochures will be placed or displayed at City Hall, at local public events and at businesses within the target group or that cater to the target audience. Examples may include: lawn and garden stores, hardware stores, general stores, landscaping businesses, florists, real estate offices, property management offices, and others. Permission to place the brochures will be obtained from business owners prior to placement. Brochures will be replaced periodically.
- **BMP and LID incentives programs:** the City will continue a stormwater incentives program that will offer financial incentive to home and business owners who implement certain stormwater BMPs, including LID technology, on their properties. This program is advertised on the City website and at local public events. The City has also implemented a new rain garden rebate program to further encourage LID. The rain garden rebate reimburses an approved applicant the cost of up to \$750 for the material required. Program details can be found on the Stormwater webpage.

### iv.) Engineers, contractors, developers, review staff, and land use planners

*Education and outreach goals:*

- *Technical standards for flow control and pollution prevention*
- *Technical standards for stormwater site and erosion control plans*
- *Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees*

The program to meet these goals may include the following components:

- **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.
- **City staff will organize 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.
- **BMP and LID incentives programs:** see description in previous section
- **City staff training:** City engineering and review staff will attend training sessions as available to further knowledge of technical standards, LID techniques, regulatory requirements, and other stormwater-related topics.

***b) Measurement of Understanding and Adoption Among Targeted Audiences***

The City has entered into an interlocal agreement with Kitsap County for 2015. In conjunction with Kitsap County, the City will measure the understanding and adoption of a targeted behavior for at least one target audience in at least one subject area.

***c) Public Education and Outreach 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:

- 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.

## **2) 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 public will have the following opportunities for participation:

- 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 site (<http://www.cityofpa.us/Stormwater.htm>) includes the SWMP, encourages public involvement and participation in the development of the SWMP, 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 will be notified as required and will have a chance to comment during the hearings.
- Engineering counter handout: The SWMP is available in the Public Works and Utilities (PW&U) reception area.
- Stormwater workshops: The City stormwater engineer will hold public information sessions on the stormwater management program to stakeholder groups such as Streamkeepers, EcoNet, and North Peninsula Builders Association.

The current contact information for public involvement is:

Mail: P.O. Box 1150, Port Angeles, WA 98362  
Phone: (360) 417-4745 (illicit discharge hotline)  
(360) 417-4811 (City stormwater engineer's number)  
Email: [illicit-discharge@cityofpa.us](mailto:illicit-discharge@cityofpa.us)  
Website: <http://www.cityofpa.us/Stormwater.htm>  
Web Form: Click [Stormwater Management Plan](#) on the Stormwater webpage

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 Department of Ecology, the SWMP, and other submittals required by the Permit will be made available to the public on the City's

stormwater webpage. The documents will 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.

### **3) Illicit Discharge Detection and Elimination**

#### **a) *Municipal Storm Sewer System 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.

The stormwater GIS layers contain information on manholes, catchbasins, outfalls, pipes, ditches, culverts, detention ponds, 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 performed in 2012. This information is available to City employees at any time, and can be made available to the public or other organizations upon request.

#### **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 where required.

#### **ii) **Connections to MS4****

The City continuously updates the stormwater GIS with any new connections or infrastructure allowed or 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 three west side basins which generally infiltrate (Lincoln Park Pond, Big Boy Pond and 10<sup>th</sup> and N open space). All of these areas have overflow structures that allow the water to discharge to surface waters. Also the City has many surface water catch basins which drain to the City's wastewater plant. These basins have been mapped.

#### **iv) **Information Available to Ecology****

The City's stormwater GIS is available to Ecology upon request. The City can provide the required mapping information in electronic format and can meet the mapping

standards described on Ecology’s website, with the exception of metadata, which the City does not have available in electronic format at this time.

**v) Information Available to Secondary and Co-Permittees**

The City does not currently have any secondary or co-permittees.

**b) Illicit Discharge Ordinance**

The City developed a comprehensive stormwater ordinance including an illicit discharge provision for the separate stormwater system. The ordinance was written to satisfy the criteria listed in the Permit, including: discharge categories that are NOT prohibited (3.b.i), discharge categories that ARE prohibited (3.b.ii), categories of discharge identified as significant sources of pollution to waters of the State (3.b.iv), escalating enforcement procedures (3.b.v), and enforcement strategies (3.b.vi). The ordinance was passed by the City Council on June 16<sup>th</sup>, 2009. No changes are anticipated in 2015.

**c) Priority IDDE Screening Basins**

In order for the City to comply with its NPDES phase II permit, all permittees shall complete a field screening of at least 40% of the City MS4 system no later than December 31, 2017. The City of Port Angeles has elected to screen on average 12% of its MS4 system beginning in 2014. Each priority field screening basin contains approximately 12% of the cities stormwater catch basins; for a total of eight screening basins, each approximately 300 acres in size. Screening of these basins is accomplished through the use of existing City inspection programs. Every Stormwater catch basin 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, and Stormwater BMP Inspections.

**d) Detection Program**

The City has developed and implemented an “Illicit Discharge Detection and Elimination (IDDE) Response Policy”. This Policy is included as Appendix B to this document. This policy contains all of the elements required by the Permit. The implementation of this Policy will continue in 2015. Each element is discussed in the following sections.

**i) Priority Areas**

Prioritization was completed on February 12, 2010.

**Prioritization of Port Angeles Receiving Waterbodies**

Prioritization is based on the Department of Ecology’s 303d list, as well as the significance of the waterbody for potential salmon recovery.

**303d list of most impacted to least impacted waterbodies in the Port Angeles area**

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

**Creeks with high salmon recovery potential**

Ennis / White Creek system

**Proposed highest priority waterbodies for visual inspection:**

Peabody Creek  
Tumwater Creek  
Ennis / White Creek system

**ii) Field Assessment**

Field assessment has been completed on Peabody, Tumwater, Valley, Mills. Dry, White and the Ennis Creek systems. Inspections and re-inspections of priority water bodies will be made as part of the annual Field Screening of 12.5% of the City MS4. 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". This Policy is included as Appendix B to this document.

**iii) Nature of Discharges**

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.

Follow up training for maintenance staff in the use of the Policy for characterization will be conducted in 2015.

**iv) Tracing Source(s) of Discharges**

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. Sampling of priority areas identified in the contaminate survey continues. Sampling of priority areas identified in the contaminate survey continue.

**v) Removing Source(s) of Discharges**

Once identified, sources of illicit discharges will be removed, using the City’s enforcement authority as needed.

**e) Public Information**

The City will utilize its Public Education and Outreach Program, as described in Section 1, to disseminate information about illicit discharges.

**i) Distribute Information to Target Audiences**

See Section 1.A – Public Education and Outreach Program.

**ii) Hotline for Public Reporting of Discharges and Spills**

The City’s stormwater pollution hotline will be used for public reporting of discharges and spills. The hotline number will be published with all stormwater information and is available on the City’s stormwater website. The hotline number is (360) 417-4745. 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. An email address is also available: [illicit-discharge@cityofpa.us](mailto:illicit-discharge@cityofpa.us). Both the hotline and email are forwarded directly to City staff.

**f) Program Evaluation and Assessment**

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

- Number and type of spills or illicit discharges identified
- Inspections made
- Feedback received from public education efforts (see Section 1 – Public Education and Outreach)

Public reporting of illicit discharges will be tracked using the form developed by the Center for Watershed Protection and incorporated into the City’s IDDE Policy. 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.

**g) Illicit Discharge Training**

The City will provide appropriate training for municipal field staff as described below.

### **i) Field Staff Training**

The City will ensure that all municipal field staff who are responsible for identification, investigation, termination, cleanup, and reporting of illicit discharges, including spills, improper disposal, and illicit connections are trained to conduct these activities. Follow-up training will be provided as needed to address changes in procedures, techniques, or requirements. The City will document and maintain records of training provided and staff trained. Refresher training for City field staff was held in 2013 and 2014.

### **ii) Ongoing Training Program**

The City has developed and implemented an ongoing training program for all 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. Staff has been trained on the identification of an illicit discharge/connection and on the proper procedures for reporting and responding to the illicit discharge/connection. Follow-up training was provided in 2014 to address changes in procedures, techniques, or requirements. City staff will continue to attend select sessions held through the Statewide LID Training Program to assist staff in design, implementation, and maintenance of LID best management practices and facilities. The City will document and maintain records of future training provided and staff trained.

### ***h) Stormwater Ordinance***

The City developed and adopted an ordinance that addresses runoff from new development, redevelopment, and construction site activities at sites one acre and greater, and which retains all existing local policies and procedures for sites less than one acre. The ordinance adopts most of the Department of Ecology's 2005 Stormwater Management Manual for Western Washington and the Low Impact Development Technical Guidance Manual. Please see the Port Angeles Municipal Code, Section 13.63 for more detail.

In conjunction with the Stormwater Ordinance, the City has developed and implemented a program to reduce pollutants in stormwater runoff from new development, redevelopment, and construction site activities. The program is being applied to all sites one acre and greater, including projects less than one acre that are part of a larger common plan of development or sale. The program applies to both private and public development, including roads. 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).

### **i) Minimum Requirements, Technical Thresholds, and Definitions**

The minimum requirements, technical thresholds, and definitions in Appendix 1 of the permit have been effective for the City since 2009.

## **ii) Site Planning Process, and BMP Selection and Design**

The site planning processes and Best Management Practice (BMP) selection and design criteria contained in the Department of Ecology manual have been effective for the City since 2009.

## **iii) Legal Authority to Inspect Private Facilities**

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

## **iv) Provisions to Allow LID**

The City has an existing Planned Low Impact Development (PLID) overlay zone ordinance that allows developers to apply non-structural preventative actions and source reduction approaches. The City also works with developers on a case by case basis to apply select LID BMPs, such as pervious pavements, to new development. The new stormwater ordinance encourages LID and the City provides a stormwater fee credit for property owners willing to implement BMPs on their sites to infiltrate stormwater. In 2015 and 2016 the City will review codes and standards for barriers to LID and propose changes to encourage the use of LID.

## **v) 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.

## **i) Permitting Process**

The City has developed a permitting process with plan review, inspection, and enforcement capability as described below. The permitting process is applied to both private and public projects greater than one acre, and 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, 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 the Department of Ecology and the City.

### **ii) Pre-Construction Inspection of Development Sites**

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 will be inspected by qualified personnel prior to clearing and grading activities.

### **iii) Inspection of Development Sites During Construction**

Qualified City staff inspect all known permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. Enforcement is used as required.

### **iv) Post-Construction Inspection of Development Sites**

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 plan is completed and that responsibility for maintenance is clearly assigned. Enforcement is used as required.

### **v) Inspection Compliance**

The City maintains compliance with sections ii, iii, and iv above by the presence and records of an established inspection program designed to inspect all sites and achieving at least 80% of scheduled inspections.

### **vi) 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 13.62.

### **vii) 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.

### ***j) Operation and Maintenance of Post-Construction Stormwater Facilities***

The City has developed and implemented a program to verify adequate long-term operation and maintenance of post-construction stormwater facilities and BMPs that are permitted pursuant to the City's permit process.

#### **i) Operations and Maintenance Ordinance**

The City has developed a comprehensive stormwater ordinance which requires private developers to clearly identify the party responsible for maintenance, requires inspection of facilities in accordance with Chapter 4, Volume V of the Department of Ecology's Stormwater Management Manual for Western Washington, and establishes enforcement procedures.

#### **ii) Maintenance Standards**

The City has adopted the 2005 Department of Ecology's Stormwater Management Manual for Western Washington. The City is currently implementing the maintenance standards included in Chapter 4 of Volume V.

### **iii) Annual Inspections**

The City will continue to annually inspect all private stormwater treatment and flow control facilities (other than catch basins) permitted. This inspection schedule may be adjusted for a different frequency if maintenance records justify the change.

### **iv) Inspections During Construction**

The City will inspect all new flow control and water quality treatment facilities, including catch basins, for new residential developments that are a part of a larger common plan of development every six months during the period of heaviest house construction. The purpose of the inspections will be to identify maintenance needs and enforce compliance with maintenance standards as necessary.

### **k) Recordkeeping**

The City will keep and maintain records of inspections and enforcement actions by staff. This will include inspection reports, warning letters, notices of violations, and other enforcement actions. Records of maintenance inspections and maintenance activities will also be maintained.

### **l) Notice of Intent Availability**

Copies of the “Notice of Intent for Construction Activity” and the “Notice of Intent for Industrial Activity” are available to representatives of proposed new development and redevelopment. Paper copies can be found at City Hall at the front desk of the Engineering Department. 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.

### **m) Training**

The City staff responsible for implementing the program to control runoff from new development, redevelopment, and construction sites have been trained to conduct these activities. Follow-up training will be provided as required. The City will document and maintain records of training.

## **4) Pollution Prevention and Operation and Maintenance for Municipal Operations**

The City has developed and implemented an operations and maintenance program that includes a training component and has the goal of preventing or reducing pollutant runoff from municipal operations. The program elements are described below.

### **a) Maintenance Standards**

The City has adopted the 2005 Department of Ecology’s Stormwater Management Manual for Western Washington including the maintenance standards included in Chapter 4 of Volume V. The City is using the maintenance standards to determine if/when maintenance is required.

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

- Within 1 year for wet pool facilities and retention/detention ponds
- Within 6 months for typical maintenance
- Within 9 months for maintenance requiring re-vegetation
- 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 exceedence of the required timeframes, the City will document the extenuating circumstances.

### **b) Annual Inspections**

The City will perform annual inspections of all municipally owned or operated permanent stormwater treatment and flow control facilities, other than catch basins. The City will take appropriate maintenance actions in accordance with the maintenance standards in Chapter 4, Volume V of the Department of Ecology's Stormwater Management Manual for Western Washington (2005).

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

### **c) Spot Checks**

The City will perform "spot checks" of potentially damaged permanent treatment and flow control facilities (other than catch basins) after major storm events (greater than 24-hour 10-yr). 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.

### **d) Catch Basin Inspections**

The City has inspected of all catch basins and inlets owned and/or operated by the City as required before the end of the last Permit term (February 2012). Catch basins and inlets will continue to be cleaned based on inspection results and in accordance with the maintenance standards established in the 2005 *Stormwater Management Manual for Western Washington*. Decant water will be disposed of in accordance with Appendix 6 of the Permit – *Street Waste Disposal*.

The City continues to inspect the City's stormwater CBs every two years for maintenance requirements.

### **e) *Inspection Program***

The City's inspection program will be constructed to comply with the requirements in sections a, b, c, and d above. The inspection program will be designed to inspect all sites and to achieve inspection at 95% of sites. The program will include full documentation of activities using City Works, a data base program which overlays the City's existing GIS program.

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.

### **f) *Road Runoff Control and Maintenance***

The City has established and implemented practices to reduce stormwater impacts associated with runoff from streets, parking lots, roads or highways owned or maintained by the City, and road maintenance activities conducted by the City. The following activities have been addressed:

- Pipe cleaning
- Culvert cleaning
- 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

### **g) *Public Land Runoff Control and Maintenance***

The City has established and implemented policies and procedures to reduce pollutants in discharges from all lands owned or maintained by the City, including, but not limited to, parks, open space, road right-of-way, maintenance yards, and stormwater treatment and flow control facilities. The following policies and procedures have been adopted:

- Application of fertilizer, pesticides, and herbicides including the development of nutrient management and integrated pest management plans
- Sediment and erosion control
- Landscape maintenance and vegetation disposal
- Building exterior cleaning and maintenance

### **h) *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.

**i) 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 SWPPPs for all facilities that are required to have them.

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

<b>Facility Name</b>	<b>Facility Use</b>	<b>Document</b>	<b>Status</b>
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”	Most Recent Update: February 2013
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 November 2012
Electric Utility Handling & Warehouse Building	Electric transformer storage and handling	“Spill Prevention Control and Countermeasure Plan”	Completed November 2003
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 the table below for a listing of individual stormwater or other related permits.

**Table 2: Existing Individual Stormwater and Stormwater-Related Permits**

<b>Facility Name</b>	<b>Type of Permit</b>	<b>Permit Number</b>
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 do discharge into it.

***j) Recordkeeping***

The City will maintain records of inspections and maintenance or repair activities conducted.

***k) 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 and future (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 2013. \$9 per month for each ERU

-Effective January 2014. \$12 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 2015 to seek public input.

## **Documents Referenced**

“City of Port Angeles Maintenance Facility SWPPP” City of Port Angeles, 2013

“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, June 2010

“Spill Prevention Control and Countermeasure Plan” (Electric Utility) City of Port Angeles, November 2003

“Western Washington Phase II Municipal Stormwater Permit” State of Washington Department of Ecology, Issued August 1, 2013 and Modified on January 2015.

“Washington State Department of Ecology 2005 Stormwater Management Manual for Western Washington”

“City of Port Angeles Municipal Code Title 13.63, Stormwater Ordinance” last modified in August 2009

“City of Port Angeles Urban Service Standards and Guidelines” last modified in 2010

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

**SWMP Appendix A**  
**Public Outreach Plan Activity Matrix**

2015 Planned Activities / Events	Location(s)	City Personnel	Target Audience	Contact Information (other groups)	Subject Area(s)
Library "Science, Technology, Engineering & Math Career Day	Port Angeles Library	Jonathan Boehme	5th grade Port Angeles students	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	LID - Watersheds, Rain gardens, pervious pavement, pollution prevention
Clallam County Home and Lifestyle Show	Port Angeles High School Gymnasium	Jonathan Boehme, Helen Freilich, Bob Kajfasz	General public	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	IDDE Program, LID Rain Garden Rebate Program
Rain Garden Workshop	Port Angeles	Jonathan Boehme	Residents- Master Gardner Training	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	Rain Gardens
Utility Bill Mailer	Port Angeles	Jonathan Boehme	General Public	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	IDDE Hotline number
County Fair	Port Angeles	Jonathan Boehme, Helen Freilich, Bob Kajfasz	General public	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	IDDE Awareness and LID, focusing on the benefits of installing a rain garden.
Library Skill Share Fair	Port Angeles	Jonathan Boehme	General public	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	focusing on the benefits of installing a rain garden, City Rebate program.
Crab Festival	Port Angeles	Jonathan Boehme/ Lucio/ Helen	General Public	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	Focused on pet waste reduction, used pet waste game from Snohomish Co.
Business Stormwater Education	Site visits to businesses within the City	David Freed	Local businesses within the City	<a href="mailto:jhart@cityofpa.us">jhart@cityofpa.us</a>	IDDE, Pollution Prevention
B-Wet Grant support	Individual class rooms and Peabody Creek from NPS Visitor's Center to Creek outfall at the Harbor	Jonathan Boehme	4th and 5th grade students, teachers and parents in Port Angeles and Sequim School Districts	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	Water quality and negative effects on water quality and biota from pet waste, fertilizers and pest control products and car washing
Local Cinemas	Deer Park and Lincoln Cinemas	Jonathan Boehme	General public	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	Pollution Prevention

**SWMP Appendix B**  
**Illicit Discharge Detection and Elimination (IDDE)**  
**Response Policy**





# PUBLIC WORKS & UTILITIES DEPARTMENT POLICY AND PROCEDURES

---

## 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](mailto: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.

#### Small non-hazardous spills

- Use a rag, damp cloth, or absorbent materials for general cleanup of liquids
- Use brooms or 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

#### Large non-hazardous spills

- 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. For 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.

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 Form 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. Within 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:

<b>TOPIC</b>	<b>TARGET AUDIENCE</b>
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
<b>(Petroleum or Hazardous Materials)</b>				
WS Emergency Management				
Division (24hrs)- <b>Immediate</b>	<u>1-800-258-5990</u>	_____		
National Response Center- <b>Immediate</b>	<u>1-800-424-8802</u>	_____		
Ecology Regional Office-SW- <b>24 Hrs</b>	<u>360-407-6300</u>	_____		
City of PA Stormwater Eng.- <b>24 Hrs</b>	<u>360-460-3456</u>	_____		

#### Bacterial-

#### WWTP or Collections System Failure

Ecology Regional Office-SW- <b>Immediate</b>	<u>360-407-6300</u>	_____		
WS DOH Shellfish Protection- <b>Immediate</b>	<u>360-236-3330</u>	_____		
(If no answer)	<u>360-786-4183</u>	_____		
Clallam County Enviro Health- <b>24 Hrs</b>	<u>360-417-2415</u>	_____		
City of PA Stormwater Eng.- <b>24 Hrs</b>	<u>360-460-3456</u>	_____		

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**

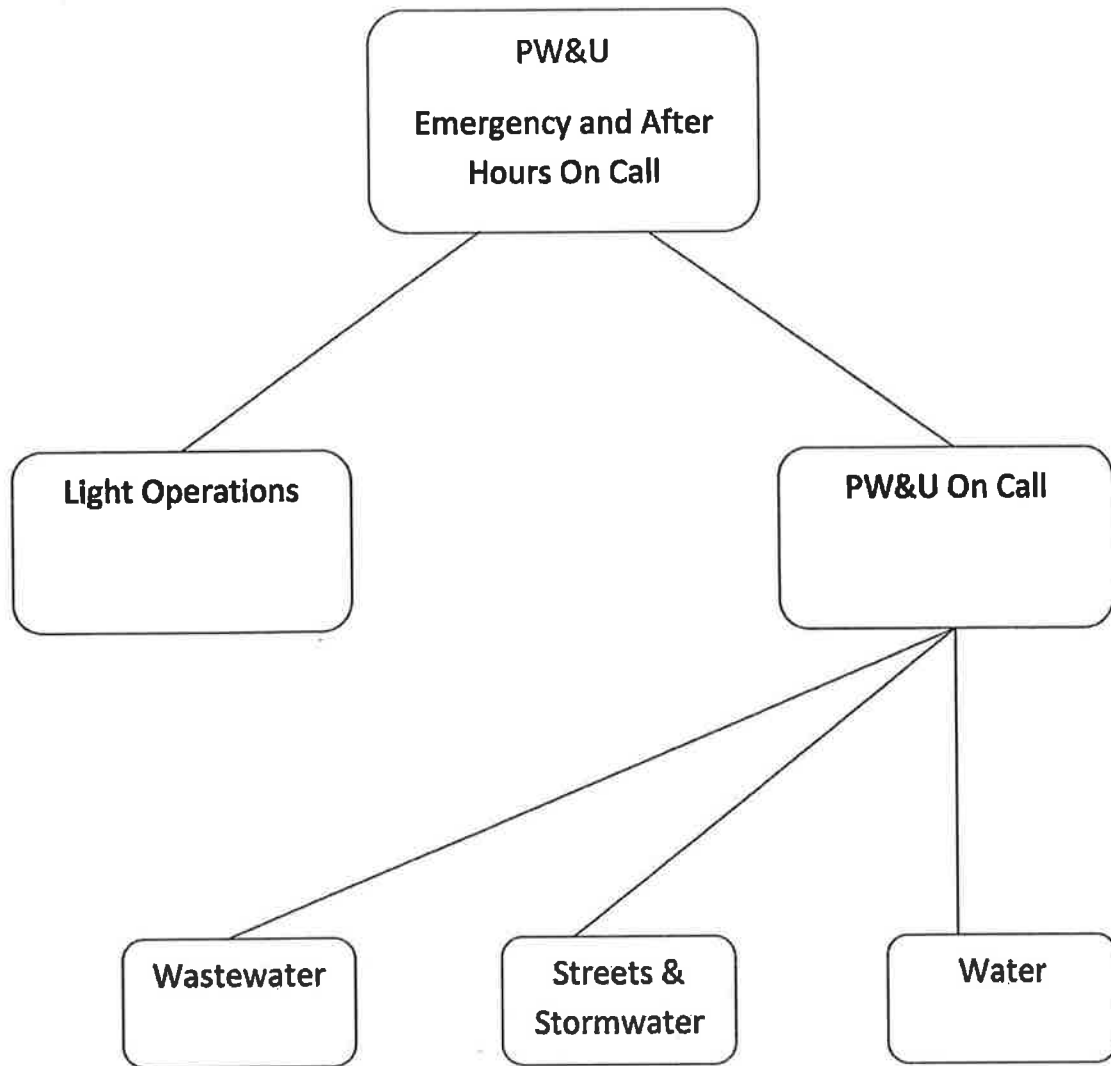
**FOR POLLUTION INCIDENTS**

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.

<b>City of Port Angeles</b>	<b>Contact Person</b>	<b>Phone Nos.</b>
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 Puntteney	Work: 360-417-4803 Cell: 360-808-3089
Fire Department	1) Coral Wheeler	Work: 360-417-4650 Dispatch: 360-417-4797

<b>Agency</b>	<b>Contact Person</b>	<b>Phone Nos.</b>
WS Department of Ecology Water Quality, SW Regional Office.  <i>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.</i>	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**



## 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):			
<input type="checkbox"/> Industrial	<input type="checkbox"/> Open Space		
<input type="checkbox"/> Ultra-Urban Residential	<input type="checkbox"/> Institutional		
<input type="checkbox"/> Suburban Residential	<input type="checkbox"/> Other: _____		
<input type="checkbox"/> Commercial	<input type="checkbox"/> 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	
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____  Depth: _____ Top Width: _____ Bottom Width: _____	<b>In Water:</b> <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully <b>With Sediment:</b> <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____			
<input type="checkbox"/> In-Stream	<b>(applicable when collecting samples)</b>				
Flow Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No		<i>If No, Skip to Section 5</i>		
Flow Description (If Present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> 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	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape Measure
	Flow width	____' ____"	Ft, In	Tape Measure
	Measured length	____' ____"	Ft, In	Tape Measure
	Time of travel		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	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/Sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See Severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables – Does Not Include Trash!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 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	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

**Section 6: Overall Spill or Illicit Discharge Characterization**

<input type="checkbox"/> Unlikely	<input type="checkbox"/> Potential (presence of two or more indicators)	<input type="checkbox"/> Suspect (one of more indicators with a severity of 3)	<input type="checkbox"/> 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?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Collected from:	<input type="checkbox"/> Flow <input type="checkbox"/> Pool
3. Intermittent flow trap set?	<input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> 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
<input type="checkbox"/> Flow #1	Volume		Liter
	Time to fill		Sec
<input type="checkbox"/> Flow #2	Flow depth		In
	Flow width	____' ____"	Ft, In
	Measured length	____' ____"	Ft, In
	Time of travel		S
Temperature			°F
pH			pH Units
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**













 <p>Color: Brown; Severity: 2 Turbidity Severity: 2</p>	 <p>Color: Blue-green; Severity: 3 Turbidity Severity: 2</p>	 <p>Highly Turbid Discharge Color: Brown; Severity: 3 Turbidity Severity: 3</p>
 <p>Sewage Discharge Color: 3 Turbidity: 3</p>	 <p>Paint Color: White; Severity: 3 Turbidity: 3</p>	 <p>Industrial Discharge Color: Green; Severity: 3 Turbidity Severity: 3</p>
 <p>Blood Color: Red; Severity: 3 Turbidity Severity: None</p>	 <p>Failing Septic System: Turbidity Severity: 3</p>	 <p>Turbidity in Downstream Plume Turbidity Severity: 2 (also confirm with sample bottle)</p>
 <p>High Turbidity in Pool Turbidity Severity: 2 (Confirm with sample bottle)</p>	 <p>Iron Floc Color: Reddish Orange; Severity: 3 (Often associated with a natural source)</p>	 <p>Slight Turbidity Turbidity: 1 (Difficult to interpret this observation; May be natural or an illicit discharge)</p>
<p>Construction Site Discharge Turbidity Severity: 3</p>		<p>Discharge of Rinse from Floor Sanding (Found during wet weather) Turbidity Severity: 3</p>

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.

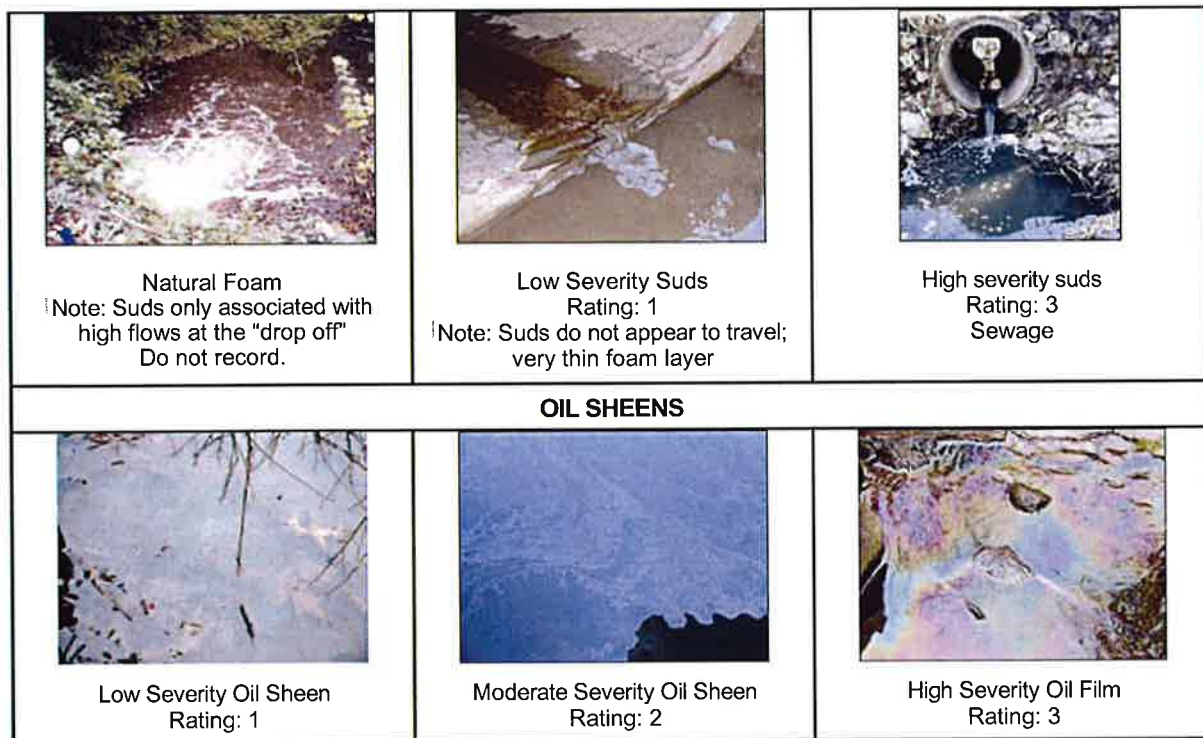


Figure 8.4.5: Determining the Severity of Floatables

SUDS



**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.

		
<p>Bacterial growth at this outfall indicates nutrient enrichment and a likely sewage source.</p>	<p>This bright red bacterial growth often indicates high manganese and iron concentrations. Surprisingly, it is not typically associated with illicit discharges.</p>	<p>Sporalitis filamentous bacteria, also known as “sewage fungus” can be used to track down sanitary sewer leaks.</p>
		
<p>Algal mats on lakes indicate eutrophication. Several sources can cause this problem. Investigate potential illicit sources.</p>	<p>Illicit discharges or excessive nutrient application can lead to extreme algal growth on stream beds.</p>	<p>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.</p>
		
<p>This brownish algae indicates an elevated nutrient level.</p>		

**Figure 8.4.7: Interpreting Benthic and Other Biotic Indicators**







 <p><b>Reddish staining on the rocks below this outfall indicate high iron concentrations.</b></p>	 <p><b>Toilet paper directly below the storm drain outlet.</b></p>	 <p><b>Watershed Protection??</b></p>
 <p><b>Trash is not an indicator of illicit discharges, but should be noted.</b></p>	 <p><b>Staining at the base of the outfall may indicate a persistent, intermittent discharge.</b></p>	 <p><b>Excessive vegetation may indicate enriched flows associated with sewage.</b></p>
 <p><b>Brownish stain of unclear origin. May be from degradation of the brick infrastructure.</b></p>	 <p><b>Cracked rock below the outfall may indicate an intermittent discharge.</b></p>	 <p><b>Poor pool quality. Consider sampling from the pool to determine origin.</b></p>

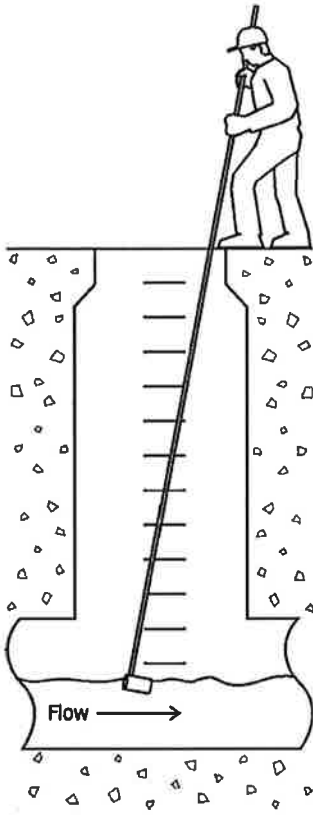
Figure 8.4.8

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

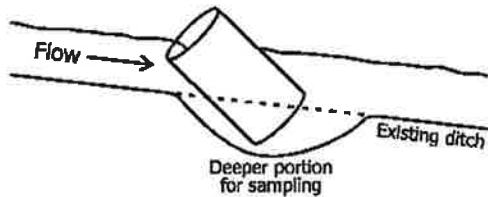
## Appendix 8.5 – Stormwater Sampling Checklist

### General Sampling Techniques

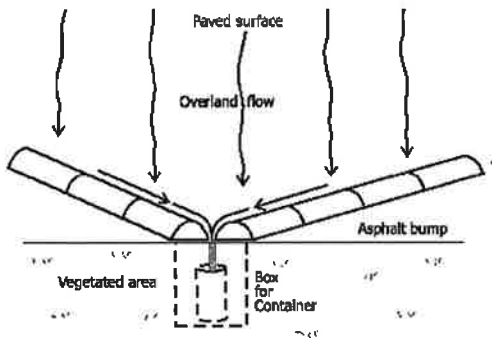
- If possible, notify the wastewater lab ahead of an illicit discharge investigation, a stream survey or a priority outfall survey so they will be aware that timely testing may be required.
- Collect two sample bottles for each sample site from the lab. Lab note: for fecal coliform samples: Bacteria 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.



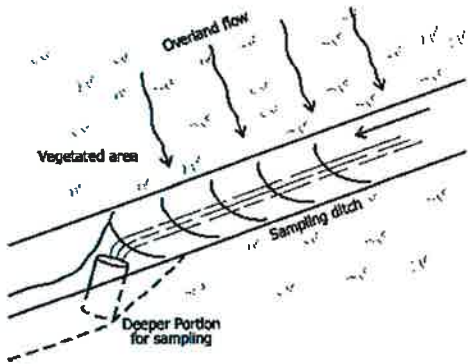
When sampling from a manhole, use a pole to safely sample from above ground. Avoid touching the sides of the manhole or pipes with the bottle to prevent contamination. Place the opening of the bottle upstream so that the flow enters the bottle directly.



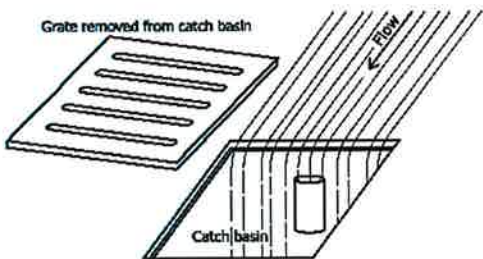
Deepening an existing ditch can allow samples to be collected directly into bottles in some cases. Be careful not to stir up solids from the sides or bottom of the ditch



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 not 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

 <b>IDDE INCIDENT CLOSURE FORM</b>		
Initial investigation date:	Title:	Investigators:
Cityworks WO#:		
<input type="checkbox"/> No investigation made:	Reason:	
<input type="checkbox"/> Referred to different department/agency:	Department/Agency:	
<input type="checkbox"/> Investigated: No action necessary		
<input type="checkbox"/> Investigated: Requires action	<input type="checkbox"/> Report to Ecology ERTS #	
<input type="checkbox"/> Enforcement Required?	<input type="checkbox"/> 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

**SWMP Appendix C**  
**NPDES Phase II Municipal Stormwater Permit**  
**Inter-Departmental Coordination Mechanisms**

**S5.C.3.c.i**

The City has developed the following Field Screening strategy to comply with the permit requirement for field screening for at least 40% of the MS4 system no later than December 31, 2017. The City of Port Angeles has elected to screen on average 12% of its MS4 system annually, beginning in 2014. Screening basins were divided up by number of catch basins within the right of way; the summation of catch basins in the first three screening areas resulted in 41.5% of the City's total catch basins, meeting the 40% minimum screening goal set for Phase II NPDES permittees. In order to use the City's resources as efficiently as possible, a mix of residential and commercial zoning in each year's screening area was preferred. This strategy takes advantage of an existing business inspection program. The City's Pollution Prevention Specialist inspects businesses within the screening basin boundary for potential illicit connections or discharges, and provides education to the business owners and staff on pollution prevention. Streams and creeks within the yearly screening area are inspected for the purpose of verifying outfall locations, identifying previously unknown outfalls, and detecting illicit discharges. All catch basins within the screening area are inspected for odor, color, and floatables that are indicative of illicit discharges. Results of the catch basin inspection and in-office basin investigation are used to select monitoring nodes, typically manholes. Primary indicator testing is performed at these manhole locations, and at the basin's primary outfalls. If primary indicator thresholds are exceeded, the area upstream from the monitoring site is flagged for further investigation; if no indicators are found then areas of the screening basin can quickly be eliminated from further screening. When a discharge has been detected and traced back to a specific branch of the MS4 network, methods such as dye testing, smoke testing, or video inspections will be employed to trace the discharge to its source.

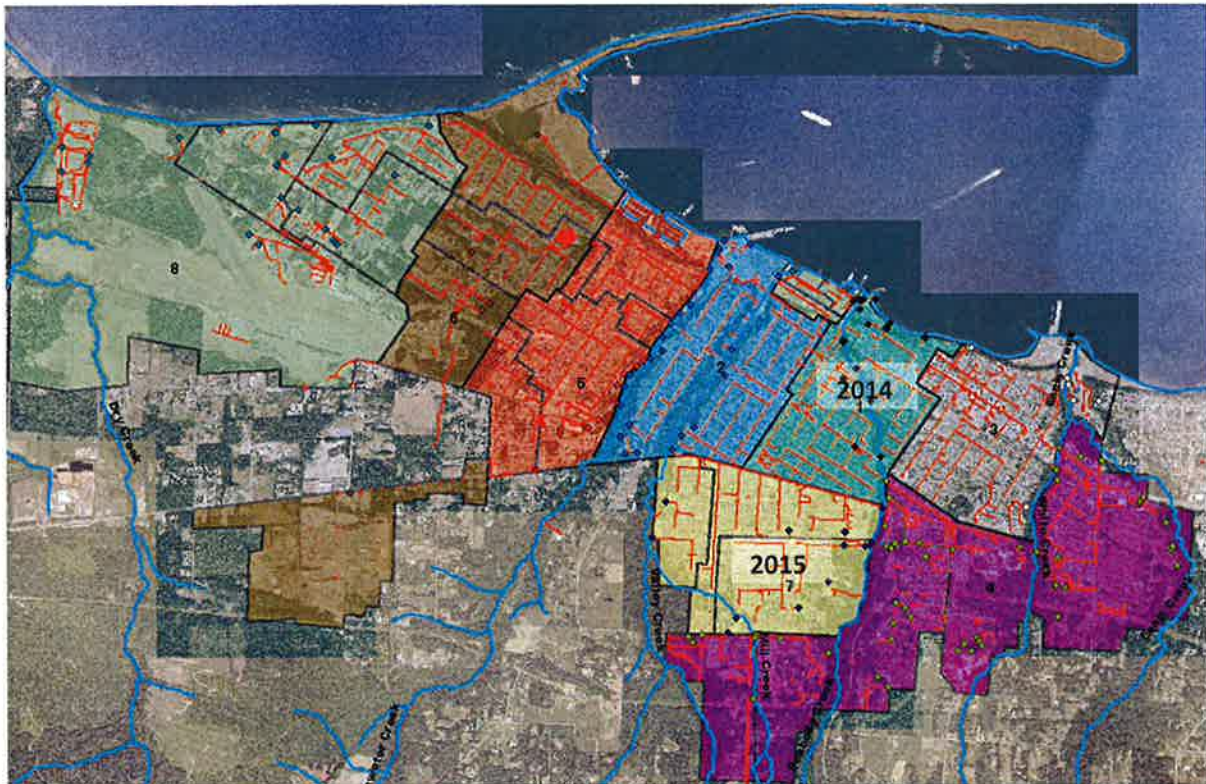


Figure 1 -- Basin Boundaries

### IDDE Event Inspection Listing

Unique Identifier:	Actual Start:	Actual Finish:	Threat Determination	G3:	Investigated within 7 days	Pollutant(s) Identified:	Correction/Elimination Method:	Location:	Street Address:	Comments:
1811	17-Apr-13	30-Sep-14	Yes	Yes	Yes	Fecal Coliform	Enforcement	Peabody 0.2a Outfall/ County Court House	127 S. Lincoln St.	Initial tracing in 2013 performed under the assumption that fecal source was avian, source of fecal not found. 5/8/2014 Testing performed to determine species of fecal coliform, test indicated significant levels of human fecal biomarker. Exhaustive tracing for cross connections was performed through the first half of 2014, dye testing performed on courthouse toilets, dye observed in Peabody Creek. 5/21/2014 suspected restroom closed. 9/3/2014 County hired plumber to remove illicit connection and redirected line to sanitary sewer.
2095	2-Jan-14	6-Jan-14	No	N/A	Yes	Vehicle Fluids	Education/Technical Assistance	Residential Street	2427 Samara Dr.	Cleanup completed 1-6-14
2117	28-Jan-14	29-Jan-14	Yes	Yes	Yes	Vehicle Fluids	N/A	Residential Street	110 Liberty St.	Source not found, cleanup completed 1-29-2014
2140	11-Feb-14	12-Feb-14	No	N/A	N/A	Paint	N/A	City Hall Parking Lot	321 E. 5th St.	Accidental paint spill, was cleaned up before entering MS4
2154	4-Mar-14	5-Mar-14	Yes	Yes	Yes	Dry wall mud washout	Education/Technical Assistance	Residential Street	1628 W 8th St.	Small quantity, < 1 gallon observed in CB, CB was cleaned.
2167	26-Mar-14	In Process	Yes	Yes	Yes	Soap/Detergents	Education/Technical Assistance	Clallam County Road Maintenance Facility, Washdown pad	1033 W. Lauridsen Blvd.	Washpad outlet to MS4 was plugged 3/26/2014, discharge eliminated, County Designing permanent solution to connect to City sewer.
2172	16-Mar-14	30-Apr-14	Yes	Yes	Yes	Other, Sulfur-based soil acidifier	Other	Lincoln Park, Duck and Fishing Pond	1600 Lauridsen Blvd.	Material likely a sulfur-based soil acidifier, source is unknown, cleanup completed 4/30/2014
2182	8-Apr-14	18-Dec-14	Yes	Yes	Yes	Soap/Detergents	Enforcement	Sunrise Carwash	1333 E. 1st St.	Automatic Carwash partially connected to MS4. Connection was plugged on 4-14-2014, eliminating discharge to MS4. Final fix connection to sewer completed 12-18-2014. Additional time was required for design and construction of connection.
2198	14-May-14	15-May-14	No	N/A	Yes	Food Waste/Oil, Soap/Detergents	Education/Technical Assistance	Bar N9ne	229 W. 1st St.	
2199	9-May-14	9-May-14	No	N/A	Yes	Vehicle Fluids	Education/Technical Assistance	Frank's Auto Repair & Parts	1416 E. Front St.	Immediate response and cleanup limited discharge to CB of < 4 oz of moter oil. Cleanup completed 5-9-14
2254	10-Jul-14	21-Aug-14	Yes	Yes	Yes	Food Waste/Oil	Enforcement	Albertsons	114 E. Lauridsen Blvd.	Trash compactor leaking into MS4, compactor repaired and storm system cleaned.
2260	15-Jul-14	15-Jul-14	No	N/A	N/A	Paint	N/A	200' south of intersection on Lauridsen Blvd and HWY 117		Paint spill, was cleaned up before entering MS4. Source unknown.
2272	24-Jul-14	28-Jul-14	No	N/A	Yes	Food Waste/Oil, Soap/Detergents	Education/Technical Assistance	Le Belle Creperie	222 N. Lincoln St.	
2292	13-Aug-14	13-Aug-14	Yes	Yes	Yes	Vehicle Fluids	Other	The Spa Shop	230 E. 1st St.	Referred to ECY underground tank department
2552	24-Oct-14	In Process	Yes	Yes	Yes	Food Waste/Oil	Enforcement	Safeway (Lincoln St.)	110 E 3rd St	Safeway Trash compactor leaking into private stormwater system draining to MS4, clean up performed by 11/4/14. Additional leaking discovered 12/8/14. Meet with Manager on 1/13/15, verbal warning to perform cleanup and fix compactor. Enforcement letter send 2/23/2015. Cleanup performed 3/12-3/13/15, temporary measures in place to prevent future discharge, new trash compactor scheduled for delivery April 2015.
2723	25-Sep-14	In Process	Yes	Yes	Yes	Fecal Coliform	Other	South side of Lauridsen Blvd bridge.	Peabody 1.2 Outfall	Further tracing continues, sampling, visual recon, to determine source of high fecal counts at outfall at Peabody Creek outfall. Video inspection scheduled for 2015. As of 3/25/2015 source unknown.
2724	23-Dec-14	30-Dec-14	No	N/A	Yes	Sediment/Soil	Education/Technical Assistance	Residential Street	112 W. 5th St.	
2725	20-Oct-14	12-Jan-15	No	N/A	Yes	Sediment/Soil	Enforcement	Airport Log Yard	1339 Airport Rd.	Investigated 10/20/2014, enforcement email 10/22/2014, as of 12/7/14 BMPs had been improved, sweeper running. Second enforcement email sent 12/29/2014 after additional track out, cleanup and additional BMPs completed by 1/12/2015
2760	9-Jan-14	1-May-14	No	N/A	Yes	Negative	No Action Needed	Cottage Apt.	1203 E. 1st St.	Disharge determined to be allowable ground and rainwater from sump pump in basement.
2798	13-Aug-14	29-Aug-14	Yes	Yes	Yes	Sediment/Soil	Behavior/Operations Modification	4th St. Stormwater Project	4th St. Alley	527 NTU Reading
2819	14-Apr-14	15-Oct-14	Yes	Yes	Yes	N/A	Enforcement	Olympic Park Maintenance Yard	600 Park Ave.	Catch Basin determined to connect to Sanitary, therefore this was not an illicit dishcharge, referred to sanitary sewer department
2820	8-Apr-14	30-Apr-14	Yes	Yes	Yes	Vehicle Fluids	Education/Technical Assistance	"Wash N Go" car wash	105 N. Liberty St.	
N/A	25-Sep-14	30-Sep-14	No	N/A	Yes	Sediment/Soil	Education/Technical Assistance	Swains	602 E. 1st St.	Concrete Cutting spoils washed down the alley, education provided and cleanup completed.

Total # of Events: 23

Total # of G3:

13

2014 Activities / Events	Date(s)	Location(s)	City Personnel	Target Audience	Contact Information (other groups)	Subject Area(s)	Attendance/Distribution	Educational Materials Used
Library "Science, Technology, Engineering & Math Career Day	23-Jan-14	Port Angeles Library	Jonathan Boehme	5th grade Port Angeles students	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	LID - Rain gardens, pollution prevention	300	Rain garden model, soil infiltration samples, pervious pavement sample, IDDE pollution prevention banner
Bio Clean BMP Technical Seminar	23-Jan-14	Port Angeles City Hall	Kathryn Neal	Engineers	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	Stormwater BMPs	10	PowerPoint Presentation developed by Bio Clean
Rain Garden Workshop	12-Feb-14	Port Townsend	Jonathan Boehme	Landscapers	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	Rain Garden Rebate Program	30	PowerPoint describing the City of Port Angeles Rain Garden and LID incentivizes and the value of LID.
KONP Home Show	February 22nd and 23rd, 2013	Port Angeles High School Gymnasium	Jonathan Boehme, Helen Freilich, Bob Kajfasz	General public	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	IDDE Program, LID Rain Garden Rebate Program	7,000, Directly spoke to over 100 specifically about stormwater.	Promoted the pollution prevention hotline, and rain garden rebate program. Handed out yard sticks with information on how to apply for City rain garden rebates. Focus on the water quality benefits of a rain garden using a rain garden model with circulating water. Made fliers available at front counter of Engineering Dept. at City Hall
Rain Garden Workshop	Mar-14	Port Angeles	Jonathan Boehme	Residents- Master Gardener Training	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	Rain Gardens	23	Powerpoint focusing on the 4th Street Rain Garden project and keys to building rain gardens, benefits of rain gardens, pollution reporting hotline.
County Fair	August 14 - 17 2012	Port Angeles	Jonathan Boehme, Helen Freilich, Bob Kajfasz	General public	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	IDDE Awareness and LID, focusing on the benefits of installing a rain garden.	Uncertain - 10,000	Handed out 193 Pudget Sound Starts Hear Pet waste dispensers and discussed the importance of picking up after our pets with each person. Also provided information on how to apply for City rain garden rebates. Focus on the water quality benefits of a rain garden using a rain garden model with circulating water.
Library Skill Share Fair	20-Sep-14	Port Angeles	Jonathan Boehme	General public	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	focusing on the benefits of installing a rain garden, City Rebate program.	50	Focus on the water quality benefits of a rain garden using a rain garden model with circulating water.
Utility Bill Mailer	1-Apr-14	Port Angeles	Jonathan Boehme	General Public	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	Low Impact Development, Pollution Prevention Hotline	7,000-10,000	Flier focused on rain gardens and the pollution reporting hotline.
Crab Festival	October 10 to 12	Port Angeles	Jonathan Boehme/ Lucio/ Helen	General Public	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	Focused on pet waste reduction, used pet waste game from Snohomish Co.	Directly spoke about pet waste pollution reduction and played game with over 200 people.	Focus on the water quality benefits of a rain garden with video highlighting stormwater impact on the Sound. Pollution Prevention Magnets
Business Stormwater Education	January through December 2014	Site visits to businesses within the City	Jason Hart	Local businesses within the City	<a href="mailto:jhart@cityofpa.us">jhart@cityofpa.us</a>	IDDE, Pollution Prevention	Over 100 Businesses	Pollution Prevention and reporting information
B-Wet Grant support	March through December 2014	Individual class rooms and Peabody Creek from NPS Visitor's Center to Creek outfall at the Harbor	Jonathan Boehme	4th and 5th grade students, teachers and parents in Port Angeles and Sequim School Districts	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	Water quality and negative effects on water quality and biota from pet waste, fertilizers and pest control products and car washing	Over 600 students	Water quality tests for temperature, pH, surfactants turbidity, watershed notebooks
Local Cinemas	Months of June, July, and August	Deer Park and Lincoln Cinemas	Jonathan Boehme	General public	<a href="mailto:jboehme@cityofpa.us">jboehme@cityofpa.us</a>	Pollution Prevention	NA	30 second Pollution Prevention Ad on Vehicle Leaks shown before feature films

# Stormwater Rains

## STORMWATER REBATES

### *Rain Garden and Residential Downspout Disconnection Rebates*

Spring has arrived, which for many people, signals a time to get outside after a long winter and work in the garden. The City of Port Angeles is excited to provide rebates of up to \$750 to residents and businesses building rain gardens at their home or place of business.

Rain gardens reduce the amount of stormwater and pollutants coming off your property and entering the environment.

The City is also providing an incentive to disconnect from the City Combined Sewer System or Separate Stormwater System.

For more information visit: [www.cityofpa.us/stormwater.htm](http://www.cityofpa.us/stormwater.htm)

## WHAT IS "STORMWATER" AND WHY IS IT IMPORTANT?

Stormwater is water from rain and snow that runs over the ground surface into drainage inlets, pipes and ditches. As stormwater runs along surfaces such as lawns, roads and rooftops, it can become polluted by litter, oil, fertilizers, and pesticides. Much of the stormwater in Port Angeles flows through a separate stormwater system with 65 miles of stormlines that discharge into local creeks and the Harbor.

When polluted stormwater reaches a water body it can have a harmful impact on the environment. Protecting our water resources starts with each person, home, building, and work-site. The City's separate stormlines do not provide water quality treatment, they simply convey water.

However, a primary goal of the Stormwater Utility is to improve water quality. The most effective and economical way to improve water quality is through source control, modifying our daily behaviors to be more environmentally friendly and prevent pollution in the first place. See "How You Can Help?" (right)

Report any spills or other harmful activities to the city water pollution hotline at 360-417-4745.

The City is also working on capital stormwater projects to improve water quality from streets:

## HOW YOU CAN HELP?

Each one of us can make a difference by:

- Avoiding fertilizers or chemicals on your lawn
- Check your car for leaks that may be running onto pavement
- Don't litter or dump trash illegally
- Educate yourself, your family, and your neighbors to be good stewards of the unique environment of Port Angeles and surrounding areas
- Never dump oils or chemicals into catch basins or the street
- Pick up all pet waste, even in your backyard
- Plant bare and graded areas to reduce erosion
- Wash cars and boats on lawn areas, where the water percolates in, or at a local car wash
- Build a rain garden to help clean stormwater before it leaves your property

## 4th Street Stormwater Improvement Project



Retrofitting an existing neighborhood with rain gardens. To improve water quality and increase pipe conveyance size to reduce localized flooding.

Scheduled for construction Summer of 2014.  
Funded in part through a \$1 Million Ecology Grant

## Peabody Water Quality Retrofit Project



Install water treatment Filterra devices to reduce fecal coliform bacteria discharging into Peabody Creek.

Projected construction Spring of 2015.  
Funded in part through a \$150,000 Ecology Grant



### Contact Information

Website:  
[cityofpa.us/stormwater.htm](http://cityofpa.us/stormwater.htm)  
Stormwater Hotline:  
**417-4830**  
Email:  
[Stormwater@cityofpa.us](mailto:Stormwater@cityofpa.us)

# HOW IS STORMWATER REGULATED IN WASHINGTON?



In 1987, Congress changed the Clean Water Act to include stormwater discharges in the National Pollutant Discharge Elimination System (NPDES) permit program.

The Environmental Protection Agency (EPA) developed rules to apply the new stormwater requirements in two phases.

The Washington Department of Ecology implements the stormwater rules through stormwater permits. The City of Port Angeles was issued a Western Washington Phase II Municipal Stormwater Permit on January 17, 2007 and it was renewed on August 1, 2013.

## STORMWATER MANAGEMENT PLAN

The Stormwater Management Plan (SWMP) is a comprehensive plan designed to reduce the discharge of pollutants from the City of Port Angeles separate stormwater system in order to protect local waters.

The plan addresses six minimum control measures, as identified by EPA:

1. **Public Education and Outreach**  
Provide informative information to the general public, environmental groups and non profits
2. **Public Participation/Involvement**  
Try our new online survey (right)
3. **Illicit (illegal) Discharge Detection and Elimination**  
Identify and reduce spills to protect the environment
4. **Construction Site Runoff Control**
5. **Post-Construction Runoff Control**  
Maintain/ clean new stormwater controls
6. **Pollution Prevention/Good Housekeeping**  
The City cleans over 1500 catch basins, and sweeps over 10,000 miles of streets each year

This plan is available for review at City Hall or on the City stormwater webpage, [www.cityofpa.us/Stormwater.htm](http://www.cityofpa.us/Stormwater.htm)

The City also implements projects and performs maintenance designed to reduce flooding and improve stormwater collection within the City.

### LEARN MORE:

To learn more about the Stormwater Management Plan visit: [www.cityofpa.us/stormwater.htm](http://www.cityofpa.us/stormwater.htm)  
Copies are also available at City Hall.

### ONLINE SURVEY:

An online survey is available at [www.cityofpa.us/stormwater.htm](http://www.cityofpa.us/stormwater.htm) to provide input on the plan. Topics include:

What stormwater pollution topics would you like to see discussed in future newsletters or presentations?

Do you have cost effective ideas that can improve the quality of stormwater?

What would you like to see incorporated into the plan?

**Spills happen. Help us find them.**

**CALL or CLICK if you see oil, paint, suds, or sewage in ditches, drains or waterways.**

Call the **Port Angeles Water Pollution Hotline** at **(360) 417-4745**  
Click [www.cityofpa.us/stormwater.htm](http://www.cityofpa.us/stormwater.htm)  
If it looks hazardous call 911

# 2014 Stormwater Outreach Booths



KONP Home Show - February 22, 23. Directly spoke to over 100 people on stormwater subjects ranging from the IDDE program, the City Rain Garden Rebate Program and the benefits of Low Impact Development.



Clallam County Fair - August 14 - 17. Directly spoke to over 200 people on stormwater subjects ranging from the IDDE program, including picking up after pet using give-away pet waste dispensers, the City Rain Garden Rebate Program and the benefits of Low Impact Development.



**Mailing Address:** PO Box 625  
Port Angeles, WA  
98362

**Street Address:** 315 North Lincoln St.  
Port Angeles, WA

**Main Contact:** *Melissa Williams, Executive Director, Feiro Marine Life Center*

**Telephone:** (360) 417-6254

**Agreement:** COPA 2014 Public Education and Outreach Services by Feiro Marine Life Center

## 2014 Report

### **TASK 1:**

**Name of Project:** *North Olympic Watershed Science- Elementary*

### **Summary of Project:**

#### 5<sup>th</sup> Grade

Students in the fifth grade at area schools visited the Feiro Marine Life Center, on the Port Angeles City Pier, and NOAA's Olympic Coast National Marine Sanctuary to participate in *North Olympic Watershed Science*. This program provides a hands-on opportunity for students to learn about their local watershed and develop a better understanding of the relationship between ecological conditions and human land use. The program focuses on ecosystems and the process of science as inquiry, understanding local watershed and drainage patterns, and watershed connections from mountains to ocean.

478 fifth grade students, and 60 parent chaperones and teachers accompanying the students, participated in "We All Live in a Watershed" and worked with staff naturalists in this hands-on opportunity to assess the health of Peabody Creek as it enters and flows through the city of Port Angeles. During the classroom visit watershed and stormwater concepts were introduced to the students. The students investigated forms of watershed and stormwater pollution through the use of EnviroScape Models. Every 5<sup>th</sup> grade class in Port Angeles, Sequim, and Crescent school district, 19 classes in total, plus an additional private school, Five Acres, enrolled in the program and participated in

a follow-up lesson of sharing what they learned by creating posters to display at both Feiro Marine Life Center and NOAA’s Olympic Coast Discovery Center.

**Student Pre- and Post-test Survey 5<sup>th</sup> Grade**

**Student Evaluation:** Feiro posed a number of pre-visit questions to evaluate student knowledge. Post evaluation was completed by questions during the field investigation and posters done at the completion of the entire program. During pre-classroom visits students were assessed on the following:

<b>Question</b>	<i>Percentage of students able to answer correctly</i>
What is a watershed?*	15%
What can be done to help keep stormwater clean?***	>80%
Is Peabody watershed a healthy watershed?	NA

\* Questions were posed during pre-classroom visit, and numbers were estimated by number of students willing to attempt to answer.

\*\*\*Many students were able to respond with the answer such as picking up trash and recycling. There was also anecdotal evidence to suggest that many students have taken part in education on ‘fish friendly car washes’ by the City of Port Angeles. However, very few students had answers connecting other sources of pollutions, such as pets, erosion, streets, or fertilizers.

<b>Post Evaluation Of Poster or Question</b>	<i>Results</i>
Understanding of watershed	90%
Clear communication of ways to promote behavior changes in issues related to watershed health & keeping storm water clean	86% clearly communicated activities or desires for healthy watersheds and keeping storm water clean
Is Peabody watershed a healthy watershed?	>90% able to answer with data collected

**Teacher Evaluation:** Teachers were asked to complete a program evaluation and 85% of the teachers, representing all three school districts, completed the evaluation. Following are the evaluation results:

Rating Key: 1- Unsatisfactory

2- Acceptable, average

3- Good, above average, effective

4- Excellent, outstanding, very effective

**Registration Process:** There were a number of questions in this area from ease of scheduling to knowing what students needed in preparation for the field investigation. The average response was a 3.8.

*Student Impact Questions:*

<b>Specific Impact on Students</b>	<i>Rate the specific impact you think the program had on your students</i>
Ability to ask and investigate questions and experience science as an inquiry-based process	3.8
Understanding of human connections to the environment	3.8
Appreciation for marine environment	3.9
Knowledge of specific behaviors that promote stewardship (care)of the environment	3.8
Awareness of their role/responsibility in protecting the environment	3.8
<b>Overall Impact on Student Learning</b>	3.8

**Teacher Comments:**

Sandi Biasell – This trip fills a need that is not addressed in our science kits. It is also directly related to our community which makes it relevant for our students

Claire Rausch – I have participated in this program for several years. It is a wonderful support of our classroom science learning goals

Theresa Schmid – The vocabulary, pre-study, and field experience is right on with the Washington State guidelines. This is a huge support keep offering this program!

Eric Danielson - We began a plastics recycling program at school several years ago based on the information from this field trip experience.

The program has been a mainstay of the Port Angeles School District for the past six years and for the Sequim School District for three. "...Without the partnership and the collaborative efforts of our teachers with these field science professionals, our students would not have been able to have this robust science experience," Superintendent Jane Pryne explains. "The opportunities are essential for students. The hands-on experience has a tremendous impact on student achievement. For one day the students have the opportunity to relate classroom studies to a real world experience."

The program supports, and is aligned with, individual classroom units, it supports the school districts' goals to look to community partners to enhance the education of students, and the program supports a number of State Science Learning Requirements (Performance Expectations). Additionally, the program

supports the goals of Ocean Literacy and those of the Puget Sound Partnership to increase ocean stewardship.

#### 4<sup>th</sup> Grade

Students in the fourth grade at area schools visited the Feiro Marine Life Center, on the Port Angeles City Pier, and NOAA’s Olympic Coast National Marine Sanctuary to participate in North Olympic Watershed (NOW) Science. This program provides a hands-on opportunity for students to learn about the ocean food chain –from plankton to whales - and the feeding mechanisms of the plants and animals in that food chain. Students study the origins and effects of marine debris and what happens when marine debris interferes with these ocean inhabitants.

Every 4th grade class in Port Angeles, Sequim, and Crescent school district, 21 classes in total, were invited to participate in this program. This fall 10\* fourth grade classes, 207 fourth grade students, and 38 parent chaperones and teachers accompanying the students, participated in “Systems for Survival: The Impacts of Marine Debris” and worked with staff naturalist to answer questions like: Where is that marine debris coming from and what can we do to prevent it from getting into the ocean? What is micro-debris and how is it especially harmful to the ocean living creatures? During the classroom visit marine debris and feeding behavior concepts were introduced to the students.

\*An additional 3 classes plan on participating in the 4<sup>th</sup> grade program this winter (January) and another 4 classes have scheduled dates in late April as to better align this field experience with their science kits.

#### **Student Pre- and Post-test Survey 4<sup>th</sup> Grade**

**Student Evaluation:** Feiro used a pre and post visit questionnaire to evaluate the effectiveness of the program. The students were given the pre-test during the classroom visit prior to the start of the presentation. At the end of the last station the students were given the same questionnaire to fill out.

Survey Questions	Percent of Students Answering Question Correctly	
	Pre-test	Post-test
How many oceans are there?	7	97
Draw a marine food chain	32	85
Did the food chain include plankton?	9	80
What is on action you can take to help reduce the impact of marine debris?	20	93

**Teacher Evaluation** Teachers were asked to complete a program evaluation and 90% of the teachers, representing all three school districts, completed the evaluation. Following are the evaluation results:

Rating Key: 1- Unsatisfactory

2- Acceptable, average

3- Good, above average, effective

4- Excellent, outstanding, very effective

**Registration Process:** There were a number of questions in this area from ease of scheduling to knowing what students needed in preparation for the field investigation. The average response was a 3.4.

*Student Impact Questions:*

<b>Specific Impact on Students</b>	<i>Rate the specific impact you think the program had on your students</i>
Knowledge of structures and adaptations for feeding behaviors	3.6
Basic understanding of marine food web interactions	3.9
Appreciation for the marine environment	3.9
Knowledge of specific behaviors that promote stewardship of the environment	3.9
Understanding of human connections to the environment	3.9
<b>Overall impact on Student Learning</b>	<b>3.8</b>

**Teacher Comments:**

Sue Neese (Crescent Elementary) – We plan to do clean-up events to prevent litter from getting into the streams.

Sharle Osborne (Helen Haller Elementary) – I have participated in this program a number of times, and the plankton and microscopes and touch tanks are great because I cannot replicate this at school.

Terri Longin (Roosevelt Elementary) – There was great scientific vocabulary, awareness of local animals, and ways kids can make a difference.

Jaysa Hill (Helen Haller Elementary) – I really appreciated the [marine debris] activities incorporated into the lessons this year! It allowed the students to move and do hands-on learning.

Joe Kemmer (Dry Creek Elementary) - The pre-trip visit allowed me to know what particular subjects to incorporate in our learning – selecting [marine debris and sea star wasting] articles for reading.

### TASK 3: Low Impact Development Education Models

Feiro has designed and built a model to demonstrate the effectiveness of a permeable pavement as compared to traditional pavement. Feiro also updated and repaired the current rain garden model. Both models were completed in time to be displayed at the Clallam County Fair.



CSO and Stormwater were discussed during the 5<sup>th</sup> grade programs and the models were made available for students to see.

A link to the City's CSO and Stormwater work is provided on Feiro's website.

The models were available for local service organizations and used at the Clallam County Fair.

CSO and stormwater issues and the models were used extensively during Feiro's volunteer training so staff and volunteers are prepared to talk about these issues to visitors.



### Photo Gallery

5<sup>th</sup> grade



Students taking water quality samples at Peabody Creek



Students recording observations at Peabody Creek



Student dissection an albatross bolus



Searching for animals from the beach seine at Hollywood Beach

**Example of Posters**

Did you hear only dump Clear!



# Help our Water Stay

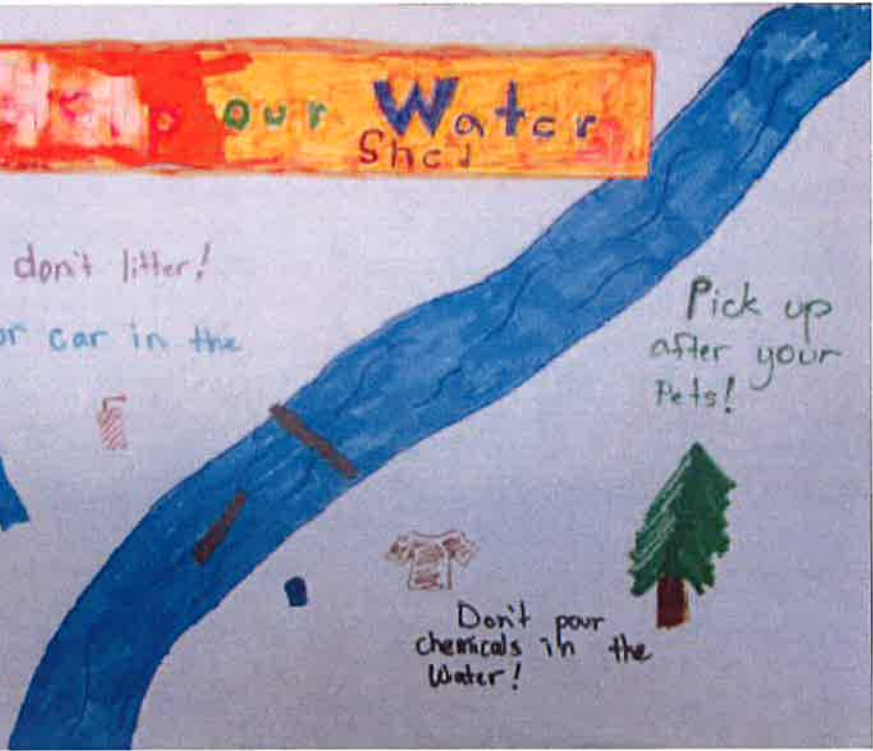
Please don't litter!

Wash your car in the grass!

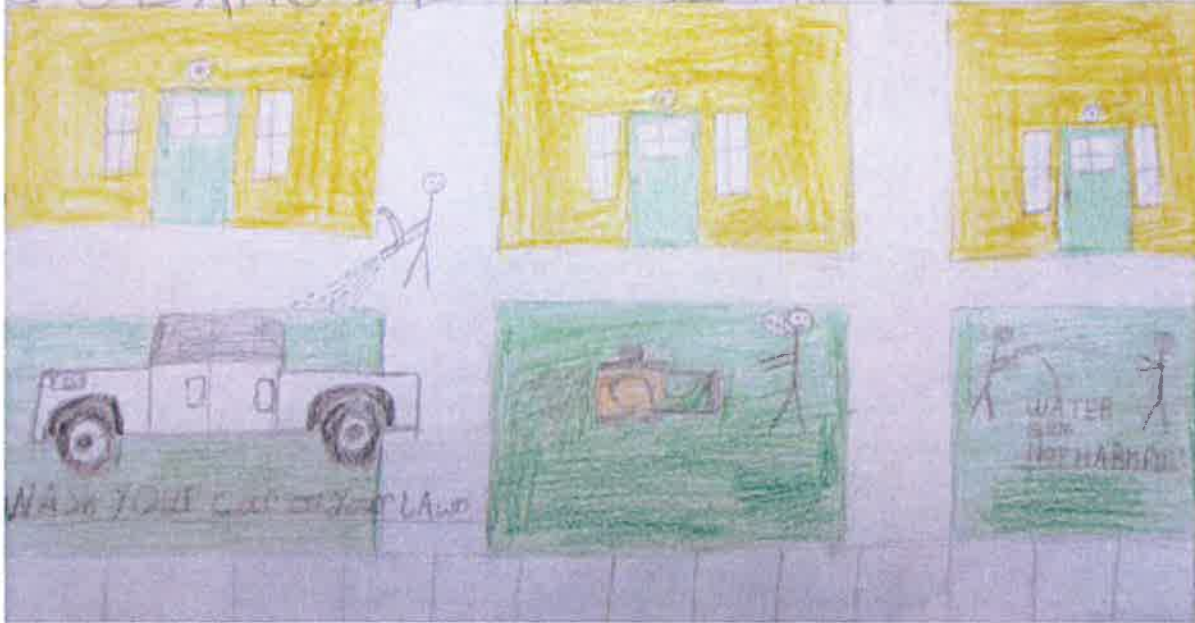
Use compost or use fertilizers sparingly!

Pick up after your Pets!

Don't pour chemicals in the Water!



# HELP OUR WATERSHEDS AND OCEANS BE HEALTHY!



## WASH • IT • RIGHT!

Mr. T. When do you wash your car? Do it before the rain starts. Do it after.

**DON'T DO**

Wash your car in the driveway, lawn, or yard. Instead, go to the car wash or use a hose. If you do, use a bucket and sponge and control your water to reduce runoff and erosion.

**DO**

4<sup>th</sup> Grade



Students sorting out marine debris from their sample beaches



Students looking for animals in a scavenger hunt

## Public Education and Outreach Agreement

The City of Port Angeles has partnered with Kitsap County to work cooperatively to help meet the requirements of S5.C.1 to implement an education and outreach program to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts and encourage the public to participate in stewardship activities. The following pages include the group outreach report, and well as the inter-local agreement.

# West Sound Stormwater Outreach Group

## 2014 Summary of Activities

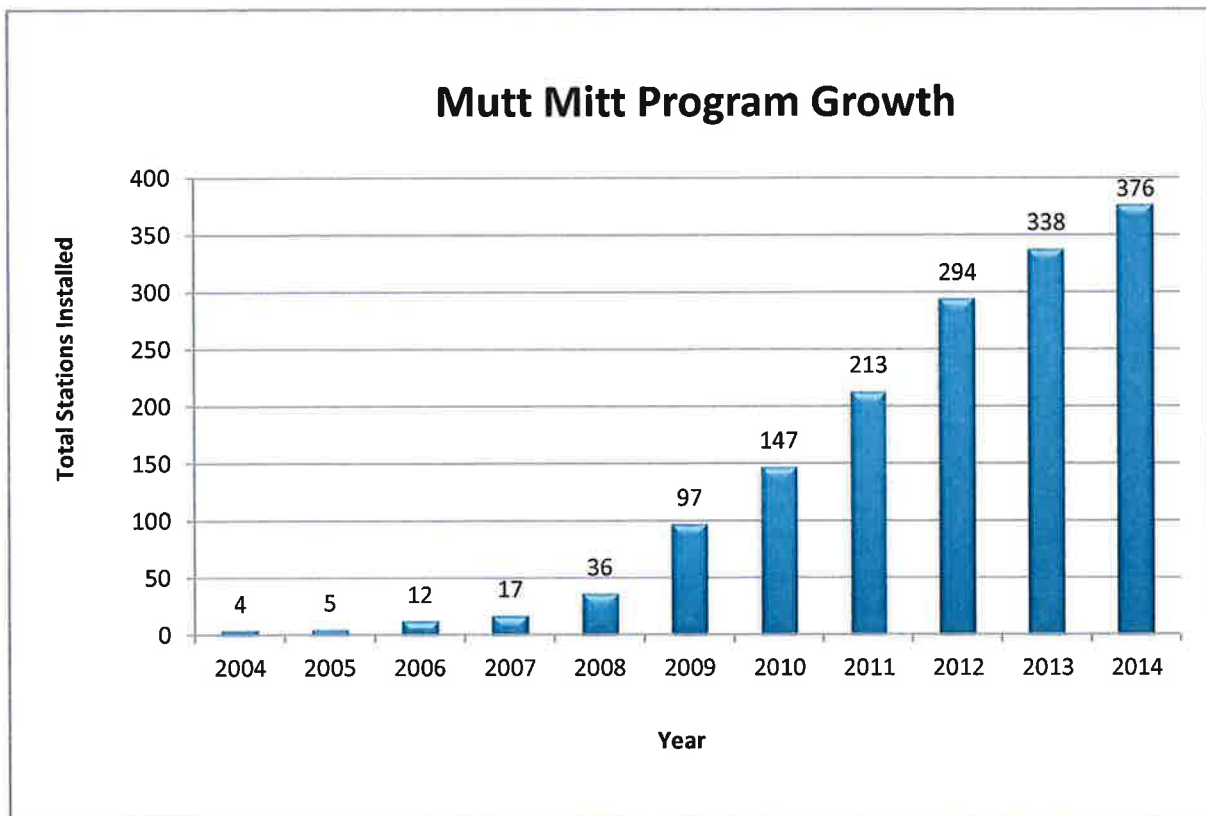
Members: Andrea Archer-Parsons, City of Port Orchard ■ Jonathan Boehme, City of Port Angeles ■ Teresa Sjostrom, City of Bremerton ■ Michelle Perdue, Kitsap County ■ Cammy Mills, Kitsap County ■ Anja Hart, City of Poulsbo ■ Melva Hill, City of Bainbridge Island ■ Wayne Matthews, City of Gig Harbor

### HIGHLIGHTS

2014 was a year of transition, with Jayna Ericson leaving Kitsap County and the position of coordinator for the group. Jayna was replaced by Michelle Perdue of Kitsap County, and Cammy Mills of Kitsap County. The group chose to maintain and enhance existing programs, such as the Mutt Mitt and Spills Hotline, and prioritize and select an additional new behavior for campaign development.

Participation in Puget Sound Starts Here (PSSH) efforts continued, with distribution of coasters and coffee sleeves for the month of May, as well as theater ads in selected jurisdictions. We continued to participate in STORM, and participated in the regional Don't Drip and Drive vehicle leaks campaign.

**Pet Waste in Public Areas (Mutt Mitt) Program** – Despite 2014 being a year of maintenance for the Mutt Mitt program with no active promotion of the program, we still saw significant growth. Thirty-eight new Mutt Mitt stations were installed throughout the county. Sponsors are responsible for much of the Mutt Mitt program's success. This year, station sponsors reported using 107,645 bags purchased with their own funding. It is noteworthy that of the 95 active Mutt Mitt sponsors, only 38% responded to the request to report bag use, and therefore, actual bag use is likely much higher. In addition, Kitsap County Parks distributed 201,680 Mutt Mitt bags in 2014. These numbers do not include bags purchased by the Cities. (Bremerton – 80,000; Gig Harbor – 73,600; Poulsbo – 64,000; Port Angeles - 48,000)



One of the highlights for the Mutt Mitt program this year was the completion of surveys of both station users and sponsors. These surveys yielded important information which will help the program continue to grow. Survey results will inform an updated outreach plan for the Mutt Mitt program. Recommendations will include exploring ways to ease the cost of sponsorship, finding ways to make proper disposal of pet waste more convenient, and more promotion of the program and its successes. A summary of the survey is attached.

"We have all been impressed at how well the station was received and how much good it has done with regards to pet waste."  
 – Mutt Mitt Sponsor

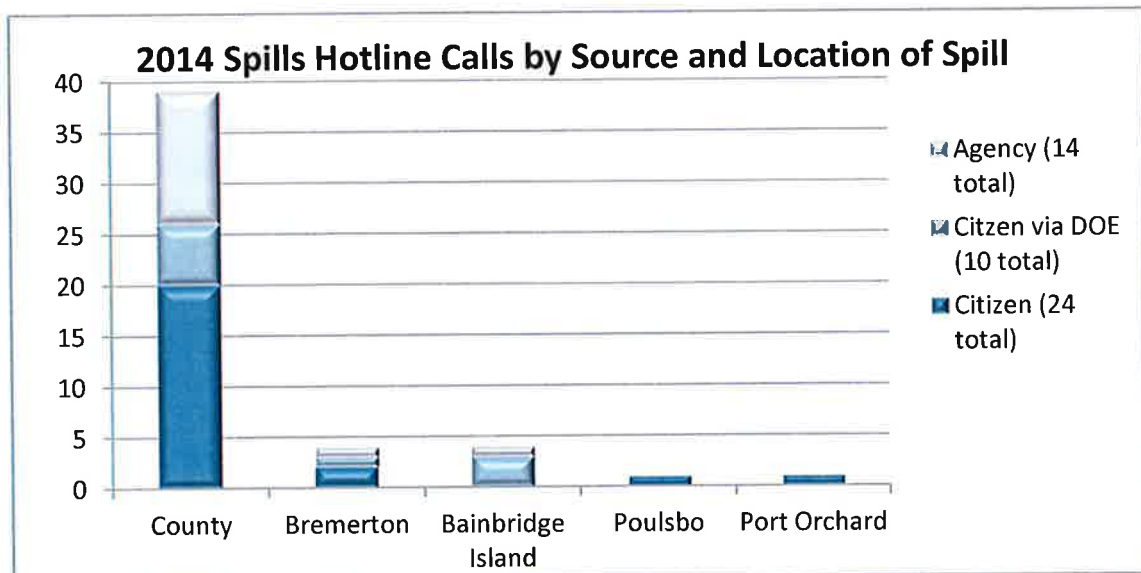


Generally both users and sponsors were quite pleased with the program, though users consistently asked for more places to dispose of waste. Said one user, "Trash cans near the Mutt Mitt stations might be helpful to encourage people to actually use the Mitts and then not throw them in the nearby bushes."

One fun piece of this year's program was the introduction of the Poop Toss game, borrowed from Snohomish County for several events, including Petswalk in Poulsbo and Crab Fest in Port Angeles. This tool proved to be a very successful draw, greatly increasing booth traffic and public engagement. The Port Angeles event played the game with over 200 people, providing an opportunity to highlight proper pet waste handling and distribute pet waste dispensers filled with bags. Due to the successful testing of the borrowed unit, the group decided to build our own in 2015 to be shared amongst the jurisdictions for use.



**Illicit Discharge Detection and Elimination Program** – The Spills Happen effort, meant to encourage people to report spills, continued in 2014. Several jurisdictions are currently posting the hotline on their websites, and other outreach methods included distribution of paint sticks featuring the hotline number; display of the "Spills Happen" banner at events, in billing offices and public spaces; and an ad in the Spring 2014 WasteWise Living newsletter, a publication that is direct mailed to all Kitsap County residents including those that reside in the cities. (Gig Harbor and Port Angeles are outside of the hotline area.)



A total of 48 calls were received in 2014 by Kitsap1 to the hotline number. In addition, cities also received several reports directly to their jurisdictions. (Poulsbo – 8, Bremerton – 4, Bainbridge Island – 54, Port Orchard – 12) Port Angeles has its own hotline number – 360.417.4745 - and web reporting form, and reported 5 hotline calls in 2014.

Kitsap County began planning for internal staff training in IDDE in 2014, to be implemented in 2015. Based on interest from WSSOG members, the County’s planning was done with the idea that elements of this training could be shared with WSSOG members to conduct their own training in 2015. Shareable items could include training videos, activities and post-training quiz and evaluation.

**Puget Sound Starts Here, on the Peninsula** – In May we once again celebrated “Puget Sound Starts Here Month”, a regional effort to raise awareness about the harm to Puget Sound from polluted stormwater runoff and simple actions residents can take to reduce their impact. Local implementation of PSSH month included a variety of outreach approaches.

Two cities purchased on-screen cinema ads for the months of May and June, featuring the PSSH PSA on car leaks and yard care. These ads showed on 10 screens in Gig Harbor at the Uptown Galaxy Theater (car leaks) and on 8 screens in Port Angeles at Deer Park Cinemas (yard care), at least two times prior to each feature film on every screen throughout the month, with between 2800 and 6000 impressions each month depending on how many ads were in the cycle. Theatergoers could expect to see the ad within six minutes or less before the start of each movie, and if they were there earlier, could view those ads every six minutes in rotation. These professionally produced 30-second PSAs were produced by the City of Seattle for PSSH, and featured the municipality’s logo (either Gig Harbor or Port Angeles) at the close.

Additionally, outreach included the popular distribution of beverage coasters and coffee sleeves to local restaurants and coffee shops. Collectively, these efforts placed over 30,500 “Puget Sound Starts Here”-branded items in the hands of countless Peninsula residents and visitors (Table 2). Two members of our group that had not previously participated also completed distribution of these materials, which brought us to 100% group participation in this campaign in 2014. This total more than doubled the distribution from the previous year, and started a conversation about how to expand the campaign by more strategically placing this messaging into the hands of residents.

**Table 2. Coasters and coffee sleeves delivered at local businesses.**

Coasters		Coffee Sleeves	
<b>BAINBRIDGE ISLAND</b>			
Isla Bonita	100	Pegasus	75
Doc's Marina and Grill	100	T&C Market	100
Casa Rojas	100	Bainbridge Bakers	100
Public House	100	Blackbird Bakery	100
Island Grill	100	New Rose Café	75
Bainbridge Island Brewers	200	Roosters	75
City Hall - Engineering Counter	100	Walt's Market	50
		Treehouse	75
		Boat House Café (new lynwood café)	75
		Jake's Pickup (Arco station)	75
		Rolling Bay Café	75
		Bainbridge Crepes	75
<b>POULSBO</b>			

Valholl Brewing Co	250	Chocmo	150
Sheila's Port Side Pub	250	Caffe Cocina	150
The Loft Restaurant	500	Cups Espresso	150
Sogno Di Vino	250	Hot Shots Java	150
One Ten Lounge	250	Liberty Bay Books	150
Tizley's Euro Pub	250	Sugar & Spice Tea Co.	150
Hare & Hounds	250	Poulsbohemian	150
		Jak's Café	150
		Poulsbo Perk	150
		Latte On Your Way	150
<b>BREMERTON</b>			
Bremerton Bar and Grill	375	Manette Coffee Company	100
Toro Lounge	375	Christale's Java Hut & Juanito's	100
McClouds	375	Espresso Lane	100
Fritz Fry House	125	Cowgirl Coffee	100
Manette	375	The Coffee Spigot	100
Arena	375	Simply Sublime	100
		Cornerstone	200
		Coffee Oasis on Burwell	100
		Coffee Oasis Drive-Thru	200
		Red Apple Espresso	100
		Hi Lo's	100
		2 Blocks Up Café	200
		Coffee Oasis in Govn Center	100
		Fraiche Cup	200
		Harbor Market	100
		Caffe Perfetto	100
<b>PORT ORCHARD</b>			
Moon Dogs II	500	Chug-A-Tug	250
Wiskey Gulch	250	Bay Buoy Espresso	150
Amy's on the Bay	625	Jump Start Java	150
Hi-Tide Tavern	250	Stormy Espresso	242
Slaughter Co. Brewery	875	Grinderfest	150
Red Dog Saloon	250	Second Wind Coffee	150
McCormick Woods	250	The Frothie Bean	150
Swim Deck	340	Coffee Oasis	150
Hi-Joy Bowling Alley	375	Crème Café	150
Family Pancake House	375	Brewed Awakening	150
<b>KITSAP COUNTY</b>			
Round Table Pizza	250	The Global Bean	100
Los Corales	250	Drifters	100
Grub Hut	250	Java Joint	200
Bella Luna Pizzeria	250	Brewberry Hill	200
Our Place Pub	375	Brownsville Junction Java	200
Whiskey Creek Steakhouse	375	Café Noir	200
Drifters	375	Simply Sublime (Silverdale)	200
Chips Bar/Grill	375	Simply Sublime (Chico)	200

Clover Leaf	375	Keyport Mercantile	200
AC Sports Bar	375	J'aime les crepes	200
S. Pacific Sports Bar (W Brem)	375	Coyote Coffee	200
The Drift Inn	375	DRINKWORx Coffee Co.	200
Manchester Pub	375	East Side Java	200
Hale's Ales	500	Cutter's Point Coffee	200
Hop Jacks	500	Supreme Bean	200
Puerto Vallarta	500	Light House Espresso	200
Sully's	500	Café Soleil	200
Manchester Grill	750	Gamble Bay Coffee	200
Main Street Ale House	1125	Express Espresso	300
		Mystic Mountain	300
		All Star Espresso	400
		The Cup & Muffin	600
		Jumpin' Java	1300
<b>PORT ANGELES</b>			<b>500</b>
		Blackbird Coffeehouse	100
		Bella Rosa Coffee House	100
		A Cup Above	100
		Easy Street Coffee House	100
		Oven Spoonfull	100
<b>GIG HARBOR</b>	<b>300</b>		<b>200</b>
The Tides Tavern	100	The Tides Tavern	15
Spiro's Pizza and Pasta	100	Gourmet Burgers	85
The Green Onion	100	Suzanne's	100
<b>TOTAL</b>	<b>17440</b>		<b>13142</b>

**STORM Continues Coordinating Regional Outreach** – Kitsap staff continues to represent the County and cities within STORM. In 2014 the group reevaluated our participation in STORM. Although we chose not to be part of the Core Team at this time, Kitsap staff provided input on STORM's BMP prioritization process, STORM Work Plan, and participated on the 2014 Symposium Planning committee. Significant accomplishments are summarized in the annual STORM report (included as Appendix A). Among the highlights of the year were:

- STORM held another round of the Don't Drip and Drive Campaign, a behavior change program to encourage vehicle owners to inspect their vehicles for leaks, as well as to provide incentives for fixing leaks. This campaign included participation by 80+ ASA member repair shops, some of which are in Kitsap County.
- The annual STORM Symposium in November, where Kitsap County presented at three sessions – LID Outreach, Outreach Materials and Ownership, and Shoestring Audience Research.
- In collaboration with the Puget Sound Partnership, STORM has continued to shape the PSSH campaign and has advocated for BMPs to remain a visible and accessible part of the campaign.

**LOOKING AHEAD at 2015** – Working within the scope of the interlocal agreements implemented in 2014, WSSOG members evaluated the Work Plan to guide 2015's activities. (Attached as Appendix B) In summary, 2015 will be about *maintaining, improving, and building*. The focus for the year will be to review and revise existing programs and to establish a new campaign based on the behavior chosen in 2014.

The first half of the year will be spent examining efficient and effective ways to continue the Pet Waste and IDDE programs. The Mutt Mitt Program will be continued with the addition of 40 more Mutt Mitt stations throughout the County and Cities, and the Backyard Pet Waste plan will be developed. A Poop Toss game will be constructed for members to utilize at events. Additionally, an Education & Outreach Plan for Hotline Promotion will be developed to determine how ongoing promotion of the hotline should occur. Where feasible, this plan will be incorporated into an overall IDDE Outreach Plan, which could include some type of shared staff training or mutually sharable materials.

In the second half of the year, we will develop a campaign for the chosen new behavior based on the research completed in the first portion of 2015. This campaign is slated for implementation in 2016.

On a regional scale, the WSSOG will take advantage of the work underway by the STORM Vehicle Leaks Committee to see what opportunities arise to encourage our residents to find and fix leaks. This will primarily entail recruiting local automotive shops to participate in offering discounts and other incentives as part of the Don't Drip and Drive campaign during the summer months. In May, we will also participate in Puget Sound Starts Here month through outreach to local restaurants and coffee shops. The WSSOG will also monitor STORM's evolution of the Puget Sound Starts Here campaign, and based on the outcome of their decisions may also consider a small independent pilot project to extend the distribution of materials to other times of the year.

Finally, members will continue to monitor and provide input on the regional BMP prioritization process, and use the outcomes of this process in WSSOG efforts as applicable.

APPENDIX A  
STORM ANNUAL REPORT



2014 STORM  
Symposium Attendees

## About STORM

STORM is the acronym for Stormwater Outreach for Regional Municipalities. We are a coalition of city and county governments working together to improve water quality in our lakes, rivers, streams, and Puget Sound by meeting outreach requirements from the federal Clean Water Act.

**STORM's Vision:** People living and working in our communities take actions that protect water quality within the Puget Sound Basin.

**STORM's Mission:** Work together with regional partners to address polluted runoff by advancing broad-scale behavior change.

If your municipality would like to join STORM, or receive our updates, send your request to Tiffany O'Dell, Pierce County, at [todell@co.pierce.wa.us](mailto:todell@co.pierce.wa.us)

## STORM Symposium is the Biggest Yet

The fourth annual STORM Symposium was another great success. Over 80 people from regional jurisdictions, non-profits, business, and state organizations attended. For the first time in 2014, attendees from across the state were invited to attend the Symposium. STORM worked closely with the Washington Stormwater Center to coordinate the symposium with the Municipal Stormwater Conference, so people could attend both.

The 2014 Symposium moved to the Brightwater Education Center. The symposium included a keynote presentation by Tracy Collier about chemical contaminants and their effects on salmon and other biota in Puget Sound and nine breakout sessions on the following topics:

- Using Perceptions of Risk to Prompt Behavior Change
- Brightwater Wastewater Treatment Plant tour
- Mobile Business Outreach discussion
- Successful Programs - Examples of What Works
- Communication Strategies - Tips and Tricks for Successful Outreach
- Low Impact Development - Outreach Strategies and Lessons Learned
- Outreach Materials and Ownership - Obtaining Rights and Borrowing
- BMP Prioritization Process - Process and Findings
- Audience Research on a Shoestring Budget

A big thank you to the symposium planning committee and all the presenters and attendees!

If you are interested in joining the 2015 symposium planning committee, contact Janet Geer, City of Bothell, at [janet.geer@ci.bothell.wa.us](mailto:janet.geer@ci.bothell.wa.us)



## Best Management Practice Prioritization Process

In 2013 and 2014, STORM created a prioritized list of stormwater outreach best management practices (BMPs). The process involved STORM members and their colleagues who respond to spills and illicit discharges or have expertise in water quality monitoring or modeling. This process will help ensure that the issues we choose to address are relevant, strategic and fundable.

This process is running parallel to a process with regional salmon conservation outreach efforts to ensure that our results are aligned as much as possible. The resulting BMP lists may create opportunities to strengthen STORM's partnership with salmon recovery efforts.

To learn more or get involved, contact Peter Holte, City of Redmond, [pholte@redmond.gov](mailto:pholte@redmond.gov)



## Natural Yard Care GROSS Grant & Evaluation

In 2014, Snohomish County received a grant from Ecology to measure the understanding and adoption of natural yard care behaviors using multiple approaches. Seventeen phase one and two jurisdictions\* are working together to implement the grant. Two distinctively different natural yard care program delivery strategies are being implemented and evaluated to reveal which program elements yield the best rate of new behavior adoption and largest return on investment and satisfaction.

In Snohomish County, 14 jurisdictions hosted three-part evening lectures in seven locations (three communities in Spring and four in Fall 2014). Invitees have single family homes on lots smaller than one acre. Those who attended all three sessions learned about six topics featured in the "Natural Lawn & Garden" publications: Natural Lawn Care, Building Healthy Soil, Sustainable Landscape Design, Right Plant/Right Place, Smart Watering, and Natural Pest, Weed & Disease Control.

In Thurston County, residents who fertilize their lawns with quick release fertilizer, including weed and feed products, were recruited to participate. Those admitted into the "Go Green" program were provided with a free soil analysis, spring and fall lawn assessments with a lawn care professional, lime, phosphorous-free 70% slow release nitrogen fertilizer, lawn aeration incentives and "how-to" demonstrations.

To measure BMP adoption, non-participant pre-program data was gathered in fall 2014. In June 2015, non-participants will be re-sampled. Participants completed pre-program and immediate post-program surveys, and in June 2015 will be queried about their actual actions. We have also gathered input from speakers, lawn coaches, and staff. In June 2015, personal interviews with some participants will be completed.

\*Participating Jurisdictions: Arlington, Bothell, Brier, Edmonds, Everett, Granite Falls, Lynnwood, Marysville, Mill Creek, Mountlake Terrace, Monroe, Mukilteo, Olympia, Snohomish, Tumwater, Thurston County, and Snohomish County.

To learn more, contact Suzi Wong Swint, Snohomish County, [swswint@snoco.org](mailto:swswint@snoco.org)



## Don't Drip and Drive Phase Two

In late 2013, Pierce County received a \$300,000 grant from Ecology on behalf of STORM to implement the second phase of Don't Drip and Drive. The Don't Drip and Drive steering committee and advisory committee worked hard in early 2014 to plan the campaign, which included some new and expanded elements:

- Small grants to six jurisdictions and non-profit organizations to plan and implement vehicle leak testing events in Whatcom, Snohomish, King, Pierce and Thurston counties.
- More than 100 participating auto repair shops, including ASA, AAA and Envirostars members.
- A new, interactive website featuring a searchable mechanic map and information about testing for leaks and finding the right mechanic.
- Online ad campaign featuring five unique ads

The campaign's largest goal in 2014 was to collect data about the different approaches the campaign used. This allows us to determine the most successful approaches and expand them in the future. Behavior change surveys are still being fielded. A presentation including final behavior change results will be given at the February or May STORM quarterly meeting.

The following were accomplished in 2014:

- Participating repair shops tested 4,479 vehicles for leaks and reported a 29% leak rate
- Non-profit organizations and jurisdictions conducted 34 vehicle leak testing events, tested 3,795 vehicles and reported an 8% leak rate
- Online ads received more than 12 million impressions and 42,701 clicks, a 0.35% click-through rate, which is very high.
- The website had 20,017 unique visitors, and most sessions lasted 3-10 minutes.

In late 2014, King County submitted a Centennial grant application on behalf of STORM for a third phase of the campaign. Results of that request are not yet available. The request included two years of advertising, workshops and events with additional pilot efforts, including:

- Partnering with a quick lube service station to test for leaks and refer customers with leaks to the campaign
- Spanish language outreach
- Creating third party mechanic inspection stations in public places
- Installing leak prevention devices on vehicles, and
- Conducting additional research on our target audience and establishing a leak repair rebate program.

Thank you to all of you who participated in the campaign, either by getting the word out to your constituents, recruiting repair shop, hosting a leak testing event or participating in the steering committee or advisory committee. Your involvement in the program over the past two years has grown Don't Drip and Drive into a successful and groundbreaking campaign with great potential for influencing widespread behavior change.

To learn more or get involved, contact Tiffany O'Dell, Pierce County, [todell@co.pierce.wa.us](mailto:todell@co.pierce.wa.us)



## Puget Sound Starts Here Night at the Mariners

STORM and King County ECO Net organized the third annual Puget Sound Starts Here Night at the Mariners in May. The game featured a Puget Sound Starts Here (PSSH) educational booth and activity, mascot friends of PSSH, Bert the Salmon and Scoopy Doo, and PSSH fan cards creating a school of fish in the 100 level. Fans who purchased tickets through the PSSH promotion received an exclusive PSSH and Mariners t-shirt. This fun partnership is made possible by the Seattle Mariners and STORM partners who help organize and promote the game.

For more information and to get involved in 2015, contact Bill Malatinsky, City of Seattle, [bill.malatinsky@seattle.gov](mailto:bill.malatinsky@seattle.gov)



## STORM Coordinator Funding Request

The STORM Core Team has been working with WA Dept. of Ecology staff to identify a funding strategy to support a STORM coordinator position. This position would help coordinate STORM activities including meetings and the STORM Symposium, provide strategic and fundraising support, and develop and maintain an online resource repository for jurisdictions to share successful education and outreach materials. The Core Team hopes to obtain funding and hire the position in 2015.

For more information, contact Stef Frenzl, Snohomish County, [stephan.frenzl@co.snohomish.wa.us](mailto:stephan.frenzl@co.snohomish.wa.us)

## Municipal Stormwater Conference Coordination

STORM partnered with the Washington Stormwater Center to provide two presentations to stormwater professionals from Eastern and Western Washington at the 2014 Stormwater Conference in Puyallup. Dave Ward, Puget Sound Partnership, and Tiffany O'Dell, Pierce County, presented a half-day workshop, Successful Source Control through Behavior Change. Stef Frenzl, Snohomish County, presented on Collective Impact for Stormwater Education, Outreach and Beyond.

## Bothell Creates Car Wash Impact Calculator

In an effort to identify the scale of home car wash water entering streams, the City of Bothell developed a Car Wash Runoff Model. Using existing models, with adjustments for local conditions, a working model was established which can provide baseline volumes that any jurisdiction can use by simply plugging in their population size and making any adjustments for local conditions. To review the model, research, and findings, visit: [tinyurl.com/kr23kp5](http://tinyurl.com/kr23kp5)

To learn more, contact Janet Geer, City of Bothell, [jgeer@ci.bothell.wa.us](mailto:jgeer@ci.bothell.wa.us)

Thank you to all the jurisdictions and Washington state agencies who help make STORM successful by giving input, promoting Puget Sound Starts Here, collaborating and working throughout the Puget Sound region to prevent water pollution.

# APPENDIX B

## SOG 2015 WORK PLAN

### Sustain successful efforts (Objective 2, Task 2.2)

- Continue Pet Waste Outreach
  - Update Backyard Pet Waste E&O Plan (2<sup>nd</sup> Quarter)
  - Updated Mutt Mitt E&O Plan (1<sup>st</sup> Quarter)
  - Sustain Mutt Mitt Program through the addition of 40 more stations (year round)
- Plan for sustained Hotline Outreach
  - Update IDDE Education & Outreach Plan or create Hotline E&O Plan (1<sup>st</sup> and 2nd Quarter)
  - Consider:
    - Paint Sticks
    - Municipal staff training, or shared training components

### BMP Prioritization (Objective 3, Tasks 3.1, 3.2)

- Continue to monitor STORM's BMP prioritization process
- Use outcomes of STORM process as applicable in SOG work (year round)

### New behavior campaign development (Objective 3 & 4)

- New campaign research (1<sup>st</sup> and 2<sup>nd</sup> Quarter)
- New campaign development (3<sup>rd</sup> and 4<sup>th</sup> Quarter)

### Other opportunities (Objective 7)

- PSSH Month (May)
- Don't Drip and Drive campaign (summer)
- Cinema ads (summer – Port Angeles & Gig Harbor)
- School lessons (year round – Poulsbo & Port Orchard)

### Strengthen coalition and represent WSSOG on regional efforts (Objective 8)

- Capacity building/training (year round)
- STORM & PSSH support (year round)

**INTERLOCAL AGREEMENT  
BETWEEN KITSAP COUNTY AND  
THE CITY OF PORT ANGELES  
FOR THE WEST SOUND STORMWATER OUTREACH GROUP**

**I. PREAMBLE**

This Interlocal Agreement (hereafter "AGREEMENT") is by and between Kitsap County (hereafter "COUNTY") whose principal offices are located at 614 Division Street, Port Orchard, WA, 98366 and the City of Port Angeles (hereafter "CITY") whose principal offices are located at 321 East 5<sup>th</sup> Street, Port Angeles, WA 98362.

**II. RECITALS**

*Whereas*, the Washington State Department of Ecology requires owners or operators of a municipal separate storm sewer system to obtain coverage under a Western Washington NPDES Phase II Municipal Stormwater Permit; and

*Whereas*, mutual benefits will accrue to the parties hereto and the people which each serves in the cooperative implementation of the West Sound Stormwater Outreach Group. The Interlocal Cooperation Act, chapter 39.34 RCW, further authorizes the parties hereto to enter into this AGREEMENT; and

*Whereas*, Permittees are required by Permit Section S5.C.1 to provide stormwater education and outreach programs designed to achieve measurable reductions in behaviors that cause or contribute to adverse stormwater impacts; and

*Whereas*, coordination among Permittees with adjoining or shared geographic areas is encouraged by Washington State Department of Ecology and enhances access to federal, state, and other financial and technical support; and

*Whereas*, West Sound residents share media sources and would benefit from consistent messaging across city and county boundaries; and

*Whereas*, municipal resource efficiency is increased and cost savings are realized through sharing expertise, expenses, and staff time to gain economies of scale and avoid duplication; and

*Whereas*, Kitsap County, United States Naval bases therein, and the cities of Poulsbo, Bremerton, Port Orchard, Gig Harbor, Bainbridge Island and Port Angeles desire to continue working together as the West Sound Stormwater Outreach Group to coordinate joint development and implementation of stormwater education and outreach programs.

NOW THEREFORE, the parties mutually agree as follows:

**III. AGREEMENT**

A. The Recitals set forth above are expressly incorporated into the Agreement by this reference.

B. This AGREEMENT consists of the following documents:

1. Interlocal Agreement
2. Exhibit A: West Sound Stormwater Outreach Group Scope of Work and Budget

C. **Purpose:** The purpose of the AGREEMENT is to provide a mechanism through which COUNTY and CITY voluntarily collaborate in the development, implementation, and funding of stormwater education and outreach messages, materials, activities, and program assessment tools for the general public, businesses, and other target audiences as required by the NPDES Phase II Permit.

D. **Payment and Funding:** CITY will provide COUNTY funds in an amount not to exceed a total of **\$8,290 per year, \$24,870 total** for the years 2014 to 2016 inclusive. In accordance with Section I below, COUNTY agrees to send invoices to CITY representative for reimbursement of allowable expenses incurred as defined in Exhibit A.

E. **Scope of Work:** COUNTY and CITY shall perform duties and services as are listed in Exhibit A, attached hereto and incorporated herein by this reference. Said services shall be performed in accordance with the approved Scope of Work and budget specified in Exhibit A, and as provided for in Section I of this AGREEMENT.

**F. COUNTY and CITY Administrators:**

The "West Sound Stormwater Outreach Group" is a collective of local jurisdictions and is not a separate legal entity. Accordingly, Jayna Ericson, SSWM Outreach and Education Coordinator, 614 Division Street MS 26-A, Port Orchard WA 98366 shall represent COUNTY in all matters pertaining to the services rendered under this AGREEMENT. All requirements of the CITY pertaining to the services and materials to be rendered under this AGREEMENT shall be coordinated through the COUNTY representative.

Jonathan Boehme, Port Angeles' Stormwater Engineer, 321 East 5<sup>th</sup> Street, Port Angeles, WA 98362 shall represent the CITY in all matters pertaining to the services and materials to be rendered under this AGREEMENT. All requirements of the COUNTY pertaining to the services or materials to be rendered under this AGREEMENT shall be coordinated through the CITY representative.

Following a change of representative, COUNTY and CITY will inform the other party in writing within ten (10) working days.

**G. Reporting:** By January 31<sup>st</sup> of each year this AGREEMENT is in effect, COUNTY and CITY will jointly report the results of work conducted under this AGREEMENT in a manner that is mutually useful in the fulfillment of NPDES Permit reporting requirements for public education activities, as specified in Permit Section S9.E.2.c.

**H. Responsibilities of the Parties:** It is mutually understood that CITY will provide COUNTY with the following:

Up to \$24,870 over the duration of this AGREEMENT for development of educational materials, professional service fees, partial reimbursement of COUNTY administrative costs, and other expenses related to tasks as described in Exhibit A. CITY will also contribute staff time to attend meetings, provide input, conduct pertinent research, and participate in program development.

It is mutually understood that COUNTY will provide CITY with the following:

COUNTY will provide administrative services and act as financial manager for this AGREEMENT and associated professional service contracts. COUNTY will also contribute staff time to facilitate meetings, provide input, conduct pertinent research, and participate in program development.

**I. Reimbursement:** CITY shall reimburse COUNTY for actual incurred costs upon presentation of a properly executed invoice. Costs shall be charged and funding reimbursed based upon appropriate program elements as defined in Exhibit A. COUNTY may exceed line item amounts within individual program element budgets, but shall not exceed the total budget for each individual program element without written approval of CITY. Reimbursement requests shall not be made to CITY more frequently than once a month. CITY shall reimburse COUNTY within thirty (30) days of receipt of a properly executed COUNTY invoice.

**J. Property:** Title to property purchased by COUNTY, the cost of which COUNTY has been reimbursed as a direct item of cost under this AGREEMENT, shall pass to and vest to COUNTY. Property purchased with funds delivered pursuant to this AGREEMENT may be used only for the performance of this AGREEMENT and shall be purchased in accordance with applicable state law and COUNTY purchasing policies.

**K. Assignment:** COUNTY may assign or subcontract any portion of the services provided within the terms of this AGREEMENT. All terms and conditions of the AGREEMENT shall apply to any approved subcontract or assignment related to this AGREEMENT.

**L. Indemnity:** Both COUNTY and CITY shall accept responsibility for any and all liability arising from acts of its own officers, employees, agents and contractors to the extent provided by law. Additionally, each party agrees to indemnify, defend, and hold

harmless the other party, and its officers, agents, and employees for all claims (including demands, suits, penalties, losses, damages or costs of any kind whatsoever) including costs, expenses and reasonable attorney's fees, to the extent such a claim arises or is caused by the indemnifying party's own negligence or that of its officers, agents, or employees in performance of this Agreement.

Nothing contained in this section of this Agreement shall be construed to create a liability or a right of indemnification in any third party.

This section shall survive the expiration of this Agreement.

**M. Amendments:** The parties hereby further agree that this AGREEMENT cannot be amended or modified without the written concurrence of both parties.

**N. Termination:** Either party to this AGREEMENT may elect to terminate this AGREEMENT for any reason by delivering a sixty (60) day written notice of intent to terminate to the other party. In the event of such termination, COUNTY shall be compensated for the actual costs incurred prior to the time of written notification of contract termination.

**O. Duration:** This AGREEMENT shall commence on the date of execution, and shall remain in effect through December 31, 2016.

**P. RECORDING.** Pursuant to RCW 39.34.040, this Agreement shall be filed with the Kitsap County Auditor.

**Q. WAIVER.** A failure by either party to exercise its rights under this agreement shall not preclude that party from subsequent exercise of such rights and shall not constitute a waiver of any other rights under this Agreement unless stated to be such in a writing signed by an authorized representative of the party and attached to the original Agreement.

**R. GOVERNING LAW.** This Agreement shall be governed by and construed in accordance with the laws of the State of Washington.

**S. VENUE.** The venue for any action to enforce or interpret this Agreement shall lie in the Superior Court of Washington for Kitsap County, Washington.

**T. MULTIPLE ORIGINALS.** This Agreement may be executed in multiple copies, each of which shall be deemed an original.

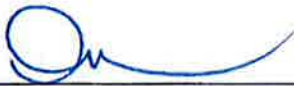
**U. SEVERABILITY.** If any provision of this Agreement or any provision of any document incorporated by reference shall be held invalid, such invalidity shall not affect the other provisions of this Agreement which can be given effect without the invalid provision, if such remainder conforms to the requirements of applicable law and the

fundamental purpose of this agreement, and to this end the provisions of this Agreement are declared to be severable.

IN WITNESS WHEREOF, this Agreement was executed by the parties on the dates hereinafter indicated.

DATED this 17<sup>th</sup> day of December, 2013.

**CITY OF PORT ANGELES**



Dan McKeen, City Manager

ATTEST



Janessa Hurd, City Clerk

Approved as to Form:



William E. Bloor, City Attorney

DATED this 27<sup>th</sup> day of January, 2014.

**KITSAP COUNTY  
BOARD OF COMMISSIONERS**



Charlotte Garrido, Chair



Robert Gelder, Commissioner



Linda Streissguth, Commissioner

ATTEST



Dana Daniels, Clerk of the Board



**EXHIBIT A:**

**WEST SOUND STORMWATER OUTREACH GROUP  
Scope of Work & Budget for 2014–2016**

Kitsap County and the Cities of Poulsbo, Bremerton, Port Orchard, and Gig Harbor have been working to jointly develop, implement, and fund NPDES Municipal Stormwater Permit-required outreach via interlocal agreements since 2008. With the additions of Bainbridge Island and Port Angeles in 2012, the group assumed the name of West Sound Stormwater Outreach Group (WSSOG), to represent the regional scope and to align with other similar groups across Puget Sound under the Stormwater Outreach for Regional Municipalities (STORM) umbrella.

**A. GOALS, OBJECTIVES, AND TASKS**

*Goals:*

1. Work cooperatively to help meet the requirements for compliance with NPDES Phase II Municipal Stormwater Permit Section S5.C.1, Public Education and Outreach, through the implementation of "education and outreach program[s] designed to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts and encourage the public to participate in stewardship activities."<sup>1</sup>
2. Realize cost savings and increase municipal resource efficiency by sharing expertise, expenses, and staff time to gain economies of scale and avoid duplication.
3. Jointly work to help fulfill education and outreach requirements of local Total Maximum Daily Loads (TMDLs), also known as Water Pollution Cleanup Plans.
4. Benefit citizens of the West Sound region by providing consistent outreach and messaging.
5. Gain enhanced access to federal, state, and other financial and technical support through coordination among Permittees with adjoining or shared geographic areas.

*Objectives & Tasks:*

**Objective 1** Develop and adhere to an annual work plan for each year of this interlocal agreement.

**Task 1.1** Jointly develop a work plan for each year by January 31 of 2014, 2015, and 2016.

**Objective 2** Build on existing successful efforts by maintaining elevated awareness levels and environmentally positive behavior trends for one audience and behavior selected during the previous Permit term.

**Task 2.1** Review available survey results to determine impact of existing outreach efforts.

---

<sup>1</sup> Washington State Department of Ecology, *Western Washington Phase II Municipal Stormwater Permit* (2013) p.16.

- Task 2.2 Continue to achieve sustained awareness and practice of proper pet waste management.
- Update the Education & Outreach Plan for Pet Waste in Backyards, including a strategy for sustained awareness for the current Permit term.
  - Update the Education & Outreach Plan for Pet Waste in Public Places, including a strategy for continued awareness and behavior adoption for the current Permit term, leading to sustainable growth and maintenance of the Mutt Mitt Program.

Objective 3 Select one new behavior and target audience. Review and prioritize the list of NPDES Permit audiences and practices to be addressed by a behavior change campaign. Revise as necessary based on emerging issues, opportunities, and evaluation results.

Task 3.1 Assess practices that are most likely contributing to adverse stormwater impacts based on regional reports, studies, and knowledge of local pollution problems. Consider the scope of the problems as identified by reports, water quality data, and inspection/investigation results.

Task 3.2 Evaluate behaviors targeted for social marketing campaigns using factors such as:

- Attitude and behavior survey data, such as the Puget Sound Partnership's General Opinion Survey and Sound Behavior Index results;
- Applicability of the issue across the West Sound region;
- Availability of existing, effective programs that can be modeled;
- Opportunities to collaborate with others involved in stormwater outreach programs;
- Degree to which behaviors are single, simple, doable, and measurable; and
- Findings from Task 3.1.

Objective 4 Design or adopt a social marketing campaign with built-in evaluation protocols for the highest priority behavior from Objective 3.

Task 4.1 Conduct formative research, which may include:

- Reviewing other program designs, management approaches, and evaluation strategies;
- Adopting a campaign approach that has been thoroughly evaluated and proven successful in a similar community; and/or
- Utilize focus groups or other survey tools to garner in-depth information on attitudes and practices relative to the behavior, and identify barriers and benefits of the target audience adopting the behavior.

Task 4.2 Develop a campaign strategy based on research from Task 4.1 that includes an evaluation plan with specific, measurable, and achievable outcomes.

- Objective 5** Implement a social marketing campaign for the highest priority behavior.
- Task 5.1 Test the campaign strategy on a small segment of the population, using focus groups and/or pilot studies to refine and reevaluate the strategy.
  - Task 5.2 Implement the campaign across the community, assessing effectiveness at proper intervals, documenting progress, and changing the campaign strategy as necessary to achieve defined outcomes.
  - Task 5.3 Continue the program at an appropriate level once measurements indicate increased adoption of the behavior in the target audience.

**Objective 6** As resources and consensus of the group are available, implement additional campaigns using a phased approach for each prioritized behavior and associated target audience.

- Task 6.1 Pursue grants and other funding opportunities as available and appropriate.

**Objective 7** Use adaptive management to refine programs and direct education and outreach resources most effectively.

- Task 7.1 Take advantage of mutually beneficial outreach opportunities that fall within the NPDES Permit-required scope of audiences and behaviors, regardless of prioritization ranking.
- Task 7.2 Seek opportunities to share among member jurisdictions the existing outreach efforts to audiences not prioritized within the WSSOG activities, such that these efforts are beneficial to all members.

**Objective 8** Represent the WSSOG on larger regional stormwater outreach efforts through participation as a Core member of STORM and the Puget Sound Starts Here (PSSH) campaign development team.

- Task 8.1 Help implement the STORM Strategic Plan and annual Work Plan to achieve results of use and benefit to the WSSOG.
- Task 8.2 Promote capacity building among STORM and WSSOG members to raise the caliber of collective outreach in the region.
- Task 8.3 Support development and implementation of the PSSH awareness campaign in conjunction with on the ground local behavior change programs.

**Objective 9** Track and maintain records of education and outreach activities. Publish an annual summary of activities that is suitable for use in NPDES reporting.

## **B. BUDGET**

Table 1 shows the annual budget for years 2014 through 2016. The annual Staff Time budget of \$43,720 is for 0.5 FTE of a Kitsap County Education & Outreach Coordinator's time to administer the Interlocal Agreement and manage outreach programs identified in the annual work plan on behalf of the WSSOG. This funding also includes coordination with STORM, the Puget Sound Starts Here campaign development team, ECO Nets, and all associated travel expenses; as well as administrative duties such as financial tracking and management. The annual staff time budget will be shared by all WSSOG jurisdictions in proportion to their relative population size, as shown in Table 1.

The annual Outreach Base Programs budget of \$65,020 will be used to implement joint programs prioritized by the group and agreed upon for inclusion in the WSSOG annual work plan. This may include activities such as the Mutt Mitt Program, backyard pet waste outreach, reporting hotline promotion, advertising, business outreach, local implementation of the Puget Sound Starts Here campaign, newsletters and literature development, priority behavior change programs, member capacity building, and evaluation/surveys. The WSSOG will make every effort to minimize actual costs by selecting competitive bids for professional services, and by pursuing grants and other funding sources as available and appropriate.

The annual Supplemental Programs Budget was added to accommodate several jurisdictions that expressed a desire for additional outreach support. This allows flexibility for jurisdictions to customize a suite of outreach options to meet the needs of their communities. Rates for elementary classroom lessons were based on County staff time for lesson preparation, teaching time, and travel. Cinema ad rates were based on real charges incurred for similar advertising in 2012.

**Table 1. Annual budget for all program elements.**

Jurisdiction	Population (2013)	Relative Population	Staff Time	Base Programs Budget	Supplemental Programs Budget	Annual Cost per Jurisdiction
Unincorporated KC	170,505	60.7%	\$26,540	\$39,460	N/A	\$66,000
Bremerton	37,850	13.5%	\$5,900	\$8,780	\$0	\$14,680
Bainbridge Island	23,190	8.3%	\$3,630	\$5,400	\$0	\$9,030
Port Angeles	19,120	6.8%	\$2,970	\$4,420	\$900 <sup>2</sup>	\$8,290
Port Orchard	12,870	4.6%	\$2,010	\$2,990	\$860 <sup>3</sup>	\$5,860
Poulsbo	9,585	3.4%	\$1,490	\$2,210	\$1,650 <sup>4</sup>	\$5,350
Gig Harbor	7,670	2.7%	\$1,180	\$1,760	\$2,700 <sup>5</sup>	\$5,640
TOTAL	280,790	100.0%	\$43,720	\$65,020	\$4,660	\$114,850

<sup>2</sup> Includes funding for 2 months of cinema ads in Port Angeles.

<sup>3</sup> Includes 4 elementary school classroom lessons at \$215 each.

<sup>4</sup> Includes 6 elementary school classroom lessons at \$275 each.

<sup>5</sup> Includes funding for 2 months of cinema ads at the Galaxy Uptown Theatre in Gig Harbor.

## Stewardship Opportunities

The City has implemented a grant program to encourage resident participation in activities such as learning about and building rain gardens, creek restoration, habitat enhancement, and storm drain marking. The City partners with WSU Extension, Master Gardeners of Clallam County to provide site assessments and education for property owners interested in rain gardens. In 2014 two rain garden grants were awarded, and installed by home owners.



Residential rain garden rebate awarded for materials to build the above rain garden in the Summer of 2014.



# Stormwater Green Infrastructure Rebate Program 2014

## Rain Garden and Residential Downspout Disconnection Rebate Application

Name: \_\_\_\_\_

When it rains, runoff flows from our roofs, yards and driveways, carrying oil, fertilizers, pesticides, and other pollutants into our environment. The City of Port Angeles wants to assure that does not happen. The Stormwater Green Infrastructure Rebate Program's aim is to reduce the amount of pollutants that enter the environment.

### Rain Gardens

The City of Port Angeles is providing financial assistance to residents and businesses building rain gardens at their home or place of business. Approved applicants may receive a rebate of up to \$750 for the purchase of materials, such as plants, compost, sand, mulch and rock.

### Residential Downspout Disconnections

The City of Port Angeles is providing financial assistance to residents disconnecting downspouts from the Combined Sewer or Stormwater System. Approved applicants may receive a rebate of \$25 per downspout draining to the Combined Sewer, \$150 maximum, or \$12.50 per downspout draining to the Stormwater System, \$75 maximum.

The stormwater from disconnected downspouts must be directed to onsite controls such as a drywell, rain garden, rain barrels, dispersion, or other approved method.

### Program Guidelines:

- Rain gardens and downspout disconnections must be located inside City limits.
- **Applicants must be approved prior to commencement of construction.**
- Rain Garden Rebate and Residential Downspout Disconnection Rebates may be combined, but limit one rebate of each type per household or business.
- A minimum of 400 square feet of impervious surface area, such as roofs, driveways, or patios must drain to proposed rain garden to be eligible.

Applications will be accepted from **January 1, 2014**, through **November 30, 2014**, or until available funding is depleted, whichever comes sooner. All work must be completed and Rebate Form submitted by December 10, 2014. Applicants will be notified regarding the status of approval or denial of their applications within three weeks of their application submittal. Applicants denied rebates may revise and resubmit their applications for reconsideration if they adequately address all prior comments. Suggested rain garden design details may be found on the City website: <http://www.cityofpa.us/Stormwater.htm>

For more information contact the City of Port Angeles at 360-417-4830  
Or to schedule a free site assessment contact Master Gardeners at 360-565-2679

# Stormwater Green Infrastructure Rebate Applicant Information

(required information)

Name: \_\_\_\_\_

Site Location Address: \_\_\_\_\_

Contact (Please check the best method to contact you)

- Mailing Address: \_\_\_\_\_
- Phone Number and best time to call: \_\_\_\_\_
- Email: \_\_\_\_\_

Applying for:

- Rain Garden Rebate
- Downspout Disconnection Rebate

Project Details:

What are your project goals? \_\_\_\_\_

Please attach the following items to your application for **Rain Garden Rebate**:

- Photos of the area BEFORE installation
- Green Rebate Worksheet (for free site assessment contact: Master Gardeners at 360-565-2679)
- Infiltration Test Checklist
- Sketch of the design and planting layout

Please attach the following items to your application for **Downspout Disconnection Rebate**:

- Photos of the area BEFORE installation
- Green Rebate Worksheet
- Sketch of where the downspouts currently drain
- Sketch of the design for onsite stormwater controls
- Number of downspouts to disconnect: \_\_\_\_\_

- **Following construction, submit rebate form with original receipts no later than December 10, 2014 in order for the rebate to be processed.**
- **Call (360) 417-4830 to schedule a FINAL inspection. Rebates will not be disbursed without a final inspection.**

**Certification**

By submitting this application I certify that I am the legal property owner as shown in the deed or I have obtained permission from the property owner to change the landscaping. I agree to perform routine maintenance on the rain garden or other stormwater controls, and keep the installed system in good working order for a minimum of two years. I grant the City permission to conduct site inspections of my stormwater system at times that are mutually acceptable to me and the City.

I acknowledge that the City of Port Angeles provides examples of rain gardens and stormwater control designs. I understand that the City did not design, install, or oversee the installation or design of my rain garden or stormwater control installed on my property. I am solely responsible for the design, installation, and functioning of the rain garden or stormwater control installed on my property. The City is not responsible for any loss, injury, flooding, or other damage that may occur or result from the rain garden or storm water control installed on my property or the downspout(s) disconnected on my property. By accepting the rebate, I hereby waive and release the City from any claim, cause of action, or liability from any loss, injury, flooding, or other damage whatsoever arising or resulting from the design, installation, and function of the rain garden or stormwater control installed on my property.

As a condition of this application and receiving City funds, I give the City permission to release the location of my rain garden, and I agree that my rain garden may be photographed by the City for documentation and promotion purposes.

X \_\_\_\_\_

Signature

Date

**Send complete applications by one of the following methods:**

Mail to: City of Port Angeles  
c/o Stormwater Rebate Program  
321 E Fifth Street – P.O. Box 1150  
Port Angeles, WA 98362

Email: [stormwater@cityofpa.us](mailto:stormwater@cityofpa.us)

For City Use: Date Received: \_\_\_\_\_ Approval: \_\_\_\_\_

## Green Rebate Worksheet - Feasibility

Date \_\_\_\_\_

Referred by \_\_\_\_\_

Property Owner: \_\_\_\_\_

Address: \_\_\_\_\_

Public Sewer: \_\_\_\_\_ Private drainfield: \_\_\_\_\_ Type of onsite sewage system: \_\_\_\_\_

Tax Parcel Number \_\_\_\_\_ Watershed (if known) \_\_\_\_\_

---

### DESIGN CONSIDERATIONS - LOCATION

*Ideal rain garden or infiltration sites are fairly flat, downhill from runoff source, and well drained. See pages 6-7 of the Rain Garden Handbook.*

- Green infrastructure site > 10 ft downslope or > 50 ft upslope of drainfield \_\_\_\_\_
- Check for buried utilities at site (call 811 to have utilities located) \_\_\_\_\_
- Slope <15 % (rise of slope / length of slope) \_\_\_\_\_
- Site >10 ft from buildings \_\_\_\_\_
- Site downhill of runoff source \_\_\_\_\_
- Groundwater > 1ft below bottom of green infrastructure \_\_\_\_\_
- Soil drainage >0.25 in/hr (see Infiltration Test Checklist) \_\_\_\_\_  
Percolation Tests:           Hole One       Trial 1 \_\_\_\_\_ Trial 2 \_\_\_\_\_ Trial 3 \_\_\_\_\_  
  Hole Two       Trial 1 \_\_\_\_\_ Trial 2 \_\_\_\_\_ Trial 3 \_\_\_\_\_
- Safe overflow path (where will water drain to if it overflows rain garden?) \_\_\_\_\_

### DESIGN CONSIDERATIONS – DRAINAGE, SIZE AND OUTFLOW

- Measure how much area is draining to the Rain Garden or other stormwater control (pg 10 of the Handbook) \_\_\_\_\_ square feet of roof area and \_\_\_\_\_ square feet of yard or driveway will drain to the rain garden for a total are of \_\_\_\_\_ square feet
- Measure how much area is available for the rain garden (pg 11 of the Handbook): \_\_\_\_\_ square feet
- Options for inflow to garden (e.g. buried pipe, swale, overland flow) \_\_\_\_\_
- Options for outflow from garden (e.g. storm drain, disperse to open landscape) \_\_\_\_\_

**CONCLUSION – Is site suitable for green stormwater infrastructure?** \_\_\_\_\_

---

## Green Rebate Worksheet – Design

### Budget

Design Costs: Who will design the rain garden?  Self  Consultant \$ \_\_\_\_\_

Labor Costs: Who will install the rain garden?  Self  Contractor \$ \_\_\_\_\_

Material Costs:

Materials (Plants, soil)	Quantity	Source (ie Nursery)	Area Required (sq-ft)	Cost

**Total Estimated Green Infrastructure Cost:** \$ \_\_\_\_\_

### Number of disconnected downspouts:

Disconnected from Sanitary Sewer at \$25 each Number : \_\_\_\_\_ \$ \_\_\_\_\_

Disconnected from Stormwater System at \$12.50 each Number : \_\_\_\_\_ \$ \_\_\_\_\_

**What is the estimated rebate amount requested?** \$ \_\_\_\_\_

(Maximum rain garden materials rebate is \$750.)

(Maximum disconnection rebate is \$150.)

## Perform an Infiltration Test Checklist

As part of your *Green Rebate Worksheet – Feasibility*

How water flows through soil plays a significant role in how large to build a rain garden. A glacial till or clay subsoil can act as a seal underneath the topsoil. If there is enough rain, the topsoil will become saturated and there will be no place for the water to go regardless of the characteristics of the topsoil.

To properly size your rain garden or other stormwater control, perform the following infiltration test:

### Test:

1) Dig a hole 24 inches deep and at least 10 inches across. Add a stake with a ruler attached to it.

2) Fill with a hose to a depth of **12 inches**, and let drain completely.

3) Repeat fill to 12-inch depth and drain a second time. This may take overnight.



- 4) On the third fill to 12-inch depth:
- Measure the water height every hour. *Note your results in the table included in this form.*
  - Continue until the rate of fall stabilizes. (Same amount of fall for 2-3 hours)
  - Use that as the infiltration rate. (inches/hour)

***If you find any of the following conditions during your test***

- ***You hit hard pan***
- ***Your test hole does not drain at least .25” per hour; OR***
- ***Your test hole fills with water***

***Do not attempt to install a rain garden or other infiltration system!***

**Results Table (Fill this out during your third fill)**

Percolation Test Hole # (Multiple test holes are recommended)	Elapsed Time (hours)	Water depth measurement (in inches)	Infiltration Rate (depth of fall in inches /time in hours)	Notes/Comments
1	Zero	12 inches		Initial fill

**You must sign the statement below and return this document with your application.**

I certify that I have followed the procedures outlined in this document to determine my rain garden or stormwater control sizing. I have chosen to size my rain garden or stormwater control in accordance with these results. I understand that rain gardens are sized for moderate rain events and that regardless of infiltration ability of my soil that my rain garden must have a clear and safe overflow.

Test performed by:

· Homeowner      Print Name \_\_\_\_\_  
 Signature \_\_\_\_\_ Date \_\_\_\_\_

· Contractor      Print Name \_\_\_\_\_  
 Signature \_\_\_\_\_ Date \_\_\_\_\_



# Stormwater Green Infrastructure Rebate Program 2014

## Creek Enhancement

### Grant Application

Project Name: \_\_\_\_\_

Five urban creeks are located in Port Angeles that carry water from the foothills of the Olympics to the Strait of Juan de Fuca. The City of Port Angeles wants to promote community awareness, and protect and enhance these natural amenities.

#### Creek Enhancement

The City of Port Angeles is providing financial assistance of between \$100 and \$1,000 to environmental organizations for stewardship opportunities. Eligible projects include:

- Creek restoration
- Riparian native vegetation and habitat enhancement
- Storm drain marking
- Other creek enhancement projects

#### Program Guidelines:

- Creek Enhancement Projects must be located inside City limits.
- Applicants must submit a project description not to exceed one page.
- Applications must be approved prior to commencement of project.
- Applicant is responsible for obtaining all required permits, such as property rights, Hydraulic Project Approval (HPA) permit, ect.

Applications will be accepted from **January 1, 2014**, through **November 30, 2014**, or until available funding is depleted, whichever comes sooner. Payments will be made on a cost-reimbursable basis. All work must be completed and Payment Request submitted by **December 10, 2014**. Applicants will be notified regarding the status of approval or denial of applications within three weeks of the application.

## Stormwater Creek Enhancement Application (required information)

Name: \_\_\_\_\_

Site Location / Address: \_\_\_\_\_

Contact (Please check the best method to contact you)

- Mailing Address: \_\_\_\_\_
- Phone Number and best time to call: \_\_\_\_\_
- Email: \_\_\_\_\_

What are your project goals? \_\_\_\_\_

Please attach the following items to your application:

- Brief project description, including any necessary environment / engineering permits
- Budget worksheet
- **Following project completion, submit payment request with itemized expenses no later than December 10, 2014 in order for the rebate to be processed.**

### Certification

I understand that the City did not design, install, or oversee the creek enhancement work. I am solely responsible for obtaining required permits to perform this work. The City is not responsible for any loss, injury, flooding, or other damage that may occur or result of this project. By accepting the grant, I hereby waive and release the City from any claim, cause of action, or liability from any loss, injury, property damage, or other damage whatsoever arising or resulting from the creek enhancement project. I understand that this application does not grant me any license to enter any property and that I am responsible for obtaining permission for the work from any property owners, including the City. In performing the work I understand I must follow all applicable laws.

X \_\_\_\_\_

Signature

Date

Send complete applications by one of the following methods:

Mail to: City of Port Angeles  
c/o Stormwater Rebate Program  
321 E Fifth Street – P.O. Box 1150  
Port Angeles, WA 98362

Email: [stormwater@cityofpa.us](mailto:stormwater@cityofpa.us)

For City Use: Date Received: \_\_\_\_\_ Approval: \_\_\_\_\_

An S4F1 notification was made to Department of Ecology on January 4, 2011. Sampling activities for bacteria continue through an Inter Local Agreement with Streamkeepers of Clallam County. Sampling for fecal coliform is conducted monthly in Peabody and Tumwater Creeks. A larger sampling of sites in Port Angeles is conducted quarterly for both dry and wet weather conditions. Sample results are analysed monthly and compared against the City IDDE Response Policy. This work has resulted in the identification (2013) and disconnection (2014) of the men's bathroom from a stormline discharging into Peabody Creek. Attached is the 2014 sampling plan.

# City of Port Angeles project: Streamkeepers Grab-Sample Plan f

<b>Quarterly Samples - Aim for 1 dry weather and 1 wet weather sample in each quarterly window (preferably on consecutive days), for a total of 8 samples at each location</b>	Samples per event	Lab cost per event	Lab cost per year
Tumwater 0.0			
Tumwater 0.0 rep			
Tumwater 0.1			
Tumwater 0.1b (storm pipe)			
Tumwater 0.1a (u/s of storm pipe)			
Tumwater 0.8			
Tumwater 0.8D			
Tumwater 0.8E			
Tumwater 1.5			
Tumwater 4.4			
Valley 0.0 (when possible)			
Valley 0.4			
Valley 0.4 rep			
Valley 1.4			
Peabody 0.0 (when possible)			
Peabody 0.2			
Peabody 0.2 rep			
Peabody 0.2A			
Peabody 0.2B			
Peabody 0.4b (u/s of trailers)			
Peabody 0.4			
Peabody 0.4A			
Peabody 0.9			
Peabody 1.2			
Peabody 1.2A			
Peabody 1.4			
Peabody 2.9			
	27	702	
<b>Semi- Annual Marine Samples - same as above, fecal + entero</b>			
PA Harbor @Hollywood west			
PA Harbor @Hollywood central			
PA Harbor @Hollywood east			
PA Harbor @Peabody mouth			
PA Harbor @Peabody mouth rep			
	5	305	
<b>SUBTOTAL:</b>		1007	6836

**Non-Quarterly Samples - Aim for 4 dry weather and 4 wet weather samples in non-quarterly months, for a total of 8 samples at each location**

Peabody 0.0 (when possible)			
Peabody 0.2			
Peabody 0.2 rep			
Peabody 0.2A			
Peabody 0.2B			
Peabody 0.4b (u/s of trailers)			
Peabody 0.4			
Peabody 0.4A			
Peabody 0.9			
Peabody 1.2			
Peabody 1.2A			
Peabody 1.4			
Tumwater 0.0			
Tumwater 0.0 rep			
Tumwater 0.8			
Tumwater 0.8D			
Tumwater 0.8E			
Tumwater 1.5			
<b>SUBTOTAL:</b>	18	468	3744
<b>TOTAL:</b>			<b>10580</b>

**Selected Water-Quality Parameters From: 1/1/14 To: 12/31/14**

**Project: City of Port Angeles**

**Watershed: All**

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
PA Harbor @ Marine Life Center														
23591	8/19/2014			15							833 G	164		
PA Harbor @ Peabody														
22978	1/6/2014			6							8	10 U		
22949	1/7/2014			7							84 J	22 J		
23397	4/8/2014			8							4 EST			
23786	11/18/2014			7 EST			20.8				16			
PA Harbor @Hollywood 2014 Depression 1														
23571	7/24/2014			13							83	137		
PA Harbor @Hollywood central														
22907	1/6/2014			6							104	20		
22947	1/7/2014			8							4 J	30 J		
23774	7/24/2014			12							18	52		
PA Harbor @Hollywood east														
22908	1/6/2014			6							8	20		
22948	1/7/2014			8							8 J	10 J		
PA Harbor @Hollywood west														
22977	1/6/2014			6							10	10		
22946	1/7/2014			8							34 J	30 J		

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Peabody 0.0														
				Peabody @ mouth										
22991	1/6/2014			4							12			
23016	1/6/2014			4							16			
22945	1/7/2014			4							268	J		
23389	2/26/2014			5							80	EST		
23165	3/18/2014			7							66			
23415	4/8/2014			8							8			
23187	5/20/2014			14							162			
23464	6/19/2014			14							96			
23531	7/17/2014			15							91			
23589	8/19/2014			14							201			
23628	9/16/2014			12							52			
23705	10/9/2014			12							32			
23685	10/14/2014													
23834	12/2/2014			5							18			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Page 2 of 20

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Peabody 0.2														
				Peabody @ 2nd St, above final culvert										
22990	1/6/2014			4							14			0.67
22923	1/7/2014			5							354 J			0.78
22966	1/7/2014													0.84
22967	1/7/2014													0.76
23384	2/26/2014			5							37			0.95
23166	3/18/2014			7							167			0.84
23390	4/8/2014			9							45			0.68
23391	4/8/2014													0.68
23188	5/20/2014													
23465	6/19/2014			13							111			0.52
23539	7/17/2014			14							83			0.5
23592	8/19/2014			15							242			0.42
23629	9/16/2014			16							21			0.4
23709	10/9/2014			12							33			0.4
23675	10/13/2014													0.4
23679	10/14/2014			12							242			0.47
23787	11/18/2014			4							84			0.48
23835	12/2/2014			3							13			0.66

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance. 12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci (Colonies/100ml)	Flow (cfs)	Stage
Peabody 0.2a	Peabody input - storm pipe d/s of RV park office													
22988	1/6/2014			12							476			
22924	1/7/2014			10							1820	JG		
23383	2/26/2014			10							130			
23167	3/18/2014			12							3104	G		
23393	4/8/2014			13							182			
23189	5/20/2014													
23466	6/19/2014			14							2	U		
23541	7/17/2014			14							2	U		
23593	8/19/2014			14							370			
23630	9/16/2014			14							2	U		
23710	10/9/2014			14							2	U		
23680	10/14/2014			14							82			
23788	11/18/2014			13							2	U		
23836	12/2/2014			12							2			
Peabody 0.2a04	Courthouse rear lot catch basin, E. inflow													
23477	6/19/2014			18							2	U		
23552	7/17/2014			20							2	U		
Peabody 0.2a07	Courthouse rear lot catch basin, S. inflow													
23476	6/19/2014													
Peabody 0.2a08	Upslope catch basin @Peabody RV Park, W. inflow													
23478	6/19/2014			14							2	U		
23554	7/17/2014			13							2	U		
Peabody 0.2a09	Upslope catch basin @Peabody RV Park, S. inflow													
23479	6/19/2014			13							26			
23553	7/17/2014			14							2	U		

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance. 12/29/2014  
Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).  
DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:  
\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.  
\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.  
QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.  
G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.  
U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here. Page 4 of 20

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Peabody 0.2b				Peabody u/s of drain pipe @ RV Park office										
22989	1/6/2014			3							820			
22925	1/7/2014			4							292	JG		
23382	2/26/2014			5							48			
23168	3/18/2014			7							184			
23392	4/8/2014			9							18			
23190	5/20/2014			18							82			
23467	6/19/2014			13							102			
23542	7/17/2014			14							296			
23594	8/19/2014			15							206			
23631	9/16/2014			17							10			
23711	10/9/2014			13							48			
23681	10/14/2014			11							238			
23789	11/18/2014			4							50			
23837	12/2/2014			3							4			
Peabody 0.3				Peabody d/s of trailer park laundry										
23191	5/20/2014			12							94			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Page 5 of 20

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Peabody 0.4														
														Peabody @u/s end of Peabody St culvert
22985	1/6/2014			3							16			
22926	1/7/2014			5							342	JG		
23379	2/26/2014			5							52			
23170	3/18/2014			7							10			
23395	4/8/2014			9							18			
23192	5/20/2014			12							116			
23469	6/19/2014			13							156			
23545	7/17/2014			14							316			
23597	8/19/2014			14							268			
23633	9/16/2014			14							10			
23713	10/9/2014			12							122			
23682	10/14/2014			11							202			
23791	11/18/2014			5							2			
23839	12/2/2014			3							4			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Page 6 of 20

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Peabody 0.4a	Peabody input - storm pipe inside culvert @ Peabody St.													
22986	1/6/2014			8							6			
22922	1/7/2014			6							468	JG		
23380	2/26/2014			7							40			
23171	3/18/2014			10							4692	G		
23396	4/8/2014			10							8			
23193	5/20/2014			13							2			
23470	6/19/2014			14							2			
23547	7/17/2014			14							34			
23596	8/19/2014			15							14			
23634	9/16/2014			15							4			
23714	10/9/2014			14							18			
23683	10/14/2014			15							1754	G		
23792	11/18/2014			10							256			
23840	12/2/2014			10							6			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Peabody 0.4b				Peabody ~80' d/s of Peabody St. culvert										
22987	1/6/2014			3							12			
22921	1/7/2014			4							504	JG		
23381	2/26/2014			5							44			
23169	3/18/2014			7							120			
23394	4/8/2014			9							52			
23468	6/19/2014			13							154			
23544	7/17/2014			13							282			
23595	8/19/2014			14							310			
23632	9/16/2014			14							30			
23712	10/9/2014			12							104			
23684	10/14/2014			12							176			
23790	11/18/2014			5							6			
23838	12/2/2014			3							2			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance. 12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here. Page 8 of 20

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Peabody 0.9				Peabody u/s of 8 St.										
22984	1/6/2014			3							20			
22930	1/7/2014			4							274 J			
23378	2/26/2014			5							70			
23172	3/18/2014			7							24			
23414	4/8/2014			8							14			
23194	5/20/2014			12							8			
23471	6/19/2014			13							52			
23548	7/17/2014			14							106			
23607	8/19/2014			15							210			
23635	9/16/2014			14							16			
23715	10/9/2014			12							756 G			
23700	10/14/2014			11							160			
23793	11/18/2014			4							6			
23841	12/2/2014			3							6			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific Conductivity (25°C) (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Peabody 1.2	Peabody u/s of storm pipe outfall @ Lauridsen Blvd													
22981	1/6/2014			4							4			
22928	1/7/2014			4							68	J		
23377	2/26/2014			5							32			
23173	3/18/2014			6							8			
23195	5/20/2014			11							2			
23472	6/19/2014			12							30			
23549	7/17/2014			13							68			
23608	8/19/2014			14							266			
23636	9/16/2014			13							8			
23724	10/9/2014			12							36			
23701	10/14/2014			11							18			
23794	11/18/2014			3							2	U		
23842	12/2/2014			3							2			
Peabody 1.2a	Peabody input - Storm pipe u/s of Lauridsen Blvd - closed a/o Feb 2014													
22982	1/6/2014			8							4			
22929	1/7/2014			6							448	JG		

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Peabody 1.2c														
				Peabody storm input d/s of Lauridsen Blvd										
23376	2/26/2014			7							366			
23174	3/18/2014			9							36			
23196	5/20/2014			12							44			
23473	6/19/2014			14							388	G		
23550	7/17/2014			16							24			
23609	8/19/2014			15							3288	G		
23637	9/16/2014			15							7680	J		
23716	10/9/2014			16							114			
23702	10/14/2014			16							4320	G		
23795	11/18/2014			8							3602	G		
23843	12/2/2014			10							128			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Visit_ID														
Peabody 1.4														
Peabody @ ONP Visitor Ctr														
22983	1/6/2014			3							2	U		
22927	1/7/2014			3							8	J		
23076	2/26/2014			4							28			
23175	3/18/2014			6							2	U		
23412	4/8/2014			7							12			
23197	5/20/2014			11							2	U		
23475	6/19/2014			12							10			
23551	7/17/2014			13							18			
23610	8/19/2014			14							24			
23638	9/16/2014			12							6			
23717	10/9/2014			12							2	U		
23703	10/14/2014			11							6			
23796	11/18/2014			3							2	U		
23844	12/2/2014			3							4			
Peabody 2.9														
Peabody 10' u/s of Coyote Run Ln														
22931	1/7/2014			4							12	J		
23413	4/8/2014			7							2	U		
23611	8/19/2014			14							18			
23718	10/9/2014			12							2			
23704	10/14/2014			10							8			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Page 12 of 20

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Tumwater 0.0				Tumwater d/s of Marine Dr										
23015	1/6/2014			9	EST						12			
22942	1/7/2014			5							102	J		
23388	2/26/2014			6							85			
23157	3/18/2014			7							21			
23400	4/8/2014			8							6			
23181	5/20/2014			12							35			
23456	6/19/2014			13							92			
23530	7/17/2014			15							122			
23612	8/19/2014			14							49			
23623	9/16/2014			12							23			
23707	10/9/2014			12							6			
23688	10/14/2014			11							120			
23780	11/18/2014			7							4			
23828	12/2/2014			3							5			
Tumwater 0.1				Tumwater u/s of Marine Dr, d/s of LB stormwater drain input										
23012	1/6/2014			3							10			
22939	1/7/2014			4							152	J		
23401	4/8/2014			8							8			
23614	8/19/2014			14							36			
23730	10/9/2014			12							10			
23689	10/14/2014			11							146			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance. 12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here. Page 13 of 20

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Tumwater 0.1a			Tumwater @ 3rd St. u/s of LB storm drain input											
23013	1/6/2014			4							8			
22941	1/7/2014			4							134	J		
23402	4/8/2014			8							12			
23613	8/19/2014			15							8			
23728	10/9/2014			12							16			
23690	10/14/2014			11							310			
23781	11/18/2014			3							2	U		
Tumwater 0.1b			Tumwater LB storm drain input @ 3rd St.											
23014	1/6/2014			9							14			
22940	1/7/2014			7							372	JG		
23403	4/8/2014			9							712	G		
23615	8/19/2014			13							8			
23729	10/9/2014			13							10			
23691	10/14/2014			14							66			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Page 14 of 20

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Visit_ID														
Tumwater nr. 11 St., d/s of storm outflow channel														
Tumwater 0.8														
23011	1/6/2014			3							22			
22936	1/7/2014			4							128 J			
23385	2/26/2014			5							68			
23158	3/18/2014			7							14			
23404	4/8/2014			8							4			
23183	5/20/2014			10							6			
23458	6/19/2014			12							70			
23533	7/17/2014			14							30			
23616	8/19/2014			15							12			
23624	9/16/2014			11							10			
23725	10/9/2014			12							18			
23692	10/14/2014			11							258			
23782	11/18/2014			2							2			
23829	12/2/2014			3							16			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance. 12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here. Page 15 of 20

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Tumwater 0.8d														
Tumwater input - storm outfall pipe into Tumwater @ 11 St.														
23009	1/6/2014			8							58			
22937	1/7/2014			6							834	JG		
23386	2/26/2014			5							86			
23161	3/18/2014			9							22			
23406	4/8/2014			9							2	U		
23184	5/20/2014			12							2			
23461	6/19/2014			12							2	U		
23534	7/17/2014			12							2	U		
23618	8/19/2014			13							8			
23625	9/16/2014			12							2			
23726	10/9/2014			12							2			
23693	10/14/2014			14							836	G		
23783	11/18/2014			9							2	U		
23830	12/2/2014			10							158			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Tumwater 0.8e			Tumwater u/s of 11 St. storm outfall											
23010	1/6/2014			3							20			
22938	1/7/2014			4							96	J		
23387	2/26/2014			5							100			
23160	3/18/2014			7							10			
23405	4/8/2014			8							6			
23185	5/20/2014			10							20			
23462	6/19/2014			12							90			
23536	7/17/2014			14							26			
23617	8/19/2014			15							10			
23626	9/16/2014			11							14			
23727	10/9/2014			12							2			
23694	10/14/2014			10							38			
23784	11/18/2014			2							8			
23831	12/2/2014			3							16			
Tumwater 1.5			Tumwater d/s of runoff ditch from SW side of Hwy 101											
23008	1/6/2014			3							8			
22934	1/7/2014			4							40	J		
23162	3/18/2014			7							8			
23407	4/8/2014			8							52			
23621	8/19/2014			15							4			
23639	9/16/2014			12							8			
23723	10/9/2014			12							20			
23695	10/14/2014			10							76			
23833	12/2/2014			4							16			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Page 17 of 20

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Tumwater 1.5a Tumwater u/s of runoff ditch from SW side of Hwy 101														
22935	1/7/2014			4							37	J		
23077	2/26/2014			5							40			
23163	3/18/2014			6							8			
23408	4/8/2014			8							40			
23186	5/20/2014			10							30			
23463	6/19/2014			12							48			
23537	7/17/2014			13							16			
23619	8/19/2014			14							4			
23627	9/16/2014			12							6			
23721	10/9/2014			12							10			
23696	10/14/2014			10							60			
23785	11/18/2014			2							8			
23832	12/2/2014			4							20			
Tumwater 1.5b Runoff ditch to Tumwater Cr. from SW side of Hwy 101														
23164	3/18/2014			7							30			
23409	4/8/2014			9							14			
23622	8/19/2014			16							16			
23640	9/16/2014			12							50	EST		
23722	10/9/2014			13							38			
23697	10/14/2014			11							162			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

Page 18 of 20

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific (25°C) Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Tumwater 4.4														
Tumwater u/s of 3142 Black Diamond Rd														
23006	1/6/2014			4							2	U		
22932	1/7/2014			4							2	J		
23411	4/8/2014			7							2	U		
23620	8/19/2014			12							2			
23720	10/9/2014			10							8			
23699	10/14/2014			10							12			
Valley 0.0														
Valley @ estuary pedestrian bridge														
22979	1/6/2014			2							38			
22944	1/7/2014			4							74	J		
23398	4/8/2014			8							8			
23587	8/19/2014			15							44			
23706	10/9/2014			12							74			
23686	10/14/2014			12							106			
Valley 0.4														
Valley @ 6th St, u/s of final culvert 220ft														
22980	1/6/2014			2							30			
22943	1/7/2014			4							12	J		
23399	4/8/2014			7							9			
23588	8/19/2014			15							57			
23708	10/9/2014			12							15			
23687	10/14/2014			10							54			

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance. 12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here. Page 19 of 20

Site	Date	Arr. Time	Air Temp (°C)	Water Temp (°C)	pH	DO Concentration (mg/L)	Specific Conductivity (uS)	Salinity (pss)	Turbidity (NTU)	Suspended Sediment (mg/L)	Fecal Coliform (Colonies/100ml)	Enterococci	Flow (cfs)	Stage
Valley 1.4														
Valley ~600' u/s of Hwy 101 where trail nears stream														
23007	1/6/2014			3							2	U		
22933	1/7/2014			4							40	J		
23410	4/8/2014			7							4			
23598	8/19/2014			15							22			
23719	10/9/2014			12							14			
23698	10/14/2014			11							36			
WS-KWAPORTA22														
Weather Station - PA - Lincoln HS														
22950	1/2/2014	10:31	through	1/2/2014	21:02									
22964	1/2/2014	21:03	through	1/7/2014	3:57									
22965	1/7/2014	3:58	through	1/7/2014	11:43									
23372	3/15/2014	15:46	through	3/16/2014	19:47									
23373	3/16/2014	19:48	through	3/18/2014	0:00									
23374	3/18/2014	0:00	through	3/18/2014	12:06									
23731	10/3/2014	15:00	through	10/9/2014	15:00									
23676	10/11/2014	9:33	through	10/11/2014	20:49									
23677	10/13/2014	16:54	through	10/13/2014	23:59									
23678	10/14/2014	0:00	through	10/14/2014	15:20									

Multiple readings for a given Visit are averaged; if multiple methods were used, results are reported only for the most reliable method & QA compliance.

12/29/2014

Values are rounded to the number of decimals deemed appropriate for the method and reported as recorded, even if below listed reporting or detection limits (available on request).

DO Conc & Sat Correction: After 8/1/2008, Streamkeepers' YSI-85 protocol corrects DO Sat for on-site barometric pressure and DO Conc for pressure, water temp, and salinity:

\* in "DO Saturation crctd?" column means that DO Sat has been corrected for pressure. If there is no \* and the date is >8/1/08, the DO Sat has not been corrected.

\*\* in DO Concentration column means that corrected data cannot be reported because water temperature > 30C, salinity > 1.0, or either of these values or pressure is missing.

QUALIFIERS: EST or J-variants = Field or Lab QA procedures not completely followed and/or documented, but program managers believe the data to be reasonably representative.

G = Actual value likely greater than reported value, due to number too numerous to count by lab, or confluent, overlapping colonies; L = Actual value likely lower than reported.

U = Value is below the reporting limit; FD = stream was dry; FS = water present in stream but stagnant. Unacceptable date (REJ) are not reported here.

# **City of Port Angeles**

## **NPDES Phase II Municipal Stormwater Permit**

### **Inter-Departmental Coordination Mechanisms**

#### **Background**

The Western Washington Phase II Municipal Stormwater Permit (NPDES permit or “Permit”) is a federal permit issued to municipalities which allows municipal stormwater systems to discharge to waters of the state. The NPDES (National Pollutant Discharge Elimination System) Permit includes broad ranging requirements which are implemented by various departments within the City, including Public Works, Parks & Recreation, Community & Economic Development (CED), Fire and Police.

Furthermore, it is a condition of the 2013 – 2018 NPDES permit (Section S5.A.5.b) that each jurisdiction develops a coordination mechanism to identify departmental responsibilities to eliminate barriers to compliance with the terms of the permit. These operating guidelines have been created to provide clarification of departmental roles and responsibilities for the purposes of complying with the NPDES permit.

#### **Section 1. Purpose**

The effective management of stormwater has an important role to play in reversing the ongoing degradation of wetlands, streams, harbors, and Strait of Juan de Fuca. The purpose of these coordination mechanisms are 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 and coordinate with the City’s Stormwater Management Program.

#### **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. 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. Lead Department**

The Public Works Department is the lead department responsible for coordinating compliance with the NPDES permit. All other departments responsible for complying with any portion of the NPDES permit work cooperatively with the lead agency, responding and providing accurate tracking and reporting information in a timely manner.

#### **Section 5. NPDES Permit Coordinator**

The Stormwater Engineer position has been designated the NPDES Permit Coordinator for the City. The NPDES Permit Coordinator duties include:

1. Coordinate NPDES Permit compliance efforts for the City, including collecting tracking and reporting data from the different departments, as well as preparing annual reports and updates to the Stormwater Management Program Plan for 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 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.

Any Permit Coordinator responsibilities listed above 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 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.

#### **Section 6. Coordination between Departments**

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 Permit compliance.

The Permit Coordinator shall assess Permit requirements and verify City compliance. When changes in procedures between Departments are required to fulfill Permit requirements the NPDES Permit Coordinator shall report to the City Engineer who reports to the Public Works Director. The Public Works Director will coordinate with the necessary Directors of other departments to clarify or revise procedures for Permit compliance. The City Manager has the final determination for any discrepancy in procedures between departments. Respective directors are responsible for implementing required Permit procedures among their departments.

#### **Section 7. Departmental Responsibilities**

It is the responsibility of each department head to assign the duties and responsibilities to the pertinent members of their staff, as well as ensure they are being implemented correctly.

## **A. Public Works**

The Public Works Department is responsible for the majority of the NPDES compliance efforts including Sections: S5.C.1 Public Education and Outreach, S5.C.2 Public Involvement, S5.C.3 Illicit Discharge Detection and Elimination, Section S5.C.4. Controlling Runoff from New Development, Redevelopment, and Construction Sites (for both public and private projects), and S5.C.5 Municipal Operations and Maintenance. 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 Plan.
5. Serving as point of contact for the Department of Ecology regarding issues of the Permit.
6. Submitting 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. Maintaining and updating stormwater system maps for both public and private facilities.
15. Collection and processing of maintenance covenants and operations and maintenance manuals for stormwater systems in 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.

**B. Community & Economic Development**

CED is responsible for implementation of and compliance with portions of Section S5.C4 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 stormwater plans and erosion and sediment controls plans
3. Inspection of private building sites for erosion and sediment controls per the Department of Ecology Stormwater Management Manual for Western Washington
4. Report observations of illicit discharges to the Permit Coordinator or other designee

**C. Parks & Recreation**

The Parks & Recreation Department is responsible for implementation of and compliance with portions of S5.C.3 Illicit Discharge Detection and Elimination and S5.C.5 Municipal 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. Ensuring operations and maintenance procedures are in place and followed in accordance with the Ecology Stormwater Management Manual for Western Washington to reduce stormwater impacts to all lands maintained by the Parks & Recreation Department.
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.3 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. They may also be called upon to assist in enforcement activities or during an illicit discharge event.