City of Port Angeles

2020 Annual Report

NPDES Phase II Municipal Stormwater Permit

Permit #: WAR045028
Permit Cycle: 2019-2024

Annual Report

Number	Permit Section	Question
1	S5.A	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.6. **Not Applicable**
2	S5.A	Attach updated annual Stormwater Management Program Plan (SWMP Plan). (S5.A.2) **SWMP Plan for 2021_Apps includ_2_03292021123236**
3	S5.A	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**
4a	S5.A.5.b	Attach a written description of internal coordination mechanisms. (S5.A.5.b). **Appendix A_Inter-dept. coordin_4a_03292021123324**
5	S5.C.1.	Have you convened an interdisciplinary team to inform and assist in the development, progress, and influence of the comprehensive stormwater planning program? (S.5.c.1). August 1, 2020 **Yes**

Number	Permit Section	Question
6	S5.C.1.b.i(a)	List the relevant land use planning efforts that have taken place in your jurisdiction (land use plans that are used to accommodate growth, stormwater management, or transportation). (S5.C.1.b.i(a) and (b) – Required by March 31, 2021 and January 1, 2023) **ACCOMMODATING GROWTH 1. In 2016, the City added a policy to their Comprehensive Plan to develop an annexation plan which allows the annexation of land characterized by urban development, which is consistent with the extension of services and the land development policies of the City's Comprehensive Plan and Capital Facilities Plan (Land Use Element, Goal A, Policy 3). 2. In alignment with the Comprehensive Plan, Growth Management Goal 2A, the City added a policy in 2018 to review and update the City's Buildable Lands inventory on a biannual basis, helping to inform land use decision-making (Comprehensive Plan, Chapter 11.3). 3. In alignment with The Comprehensive Plan, Growth Management Goal 2A, the City instituted an ongoing effort to acquire no-protest annexation agreements for all utility connections occurring in the Port Angeles Urban Growth Area (Comprehensive Plan, Chapter 11.3). 4. In alignment with The Comprehensive Plan, Land Use Element, Goal G, the City established a Harbor Study committee comprised of private and public stakeholders in harbor uses and activities to review and revise the Harbor Resource Management Plan. 5. In alignment with The Comprehensive Plan, Land Use Element, Goal G, the City updated its zoning code (Title 17) to establish opportunities for limited work/live environments consistent with industrial zoning. 6. In the Comprehensive Plan, the City added language in 2016 describing the creation of new zone designations in anticipation of future annexations, especially the City's eastern Urban Growth Area, including: a. The Commercial Regional Zone. The Commercial Regional Zone applies to areas along highway 101 where existing large commercial uses such as car dealerships and large volume stores currently exist, or where land is available for such uses (Land Use Element, Goal D) b. The Residential Single-Family Zone (RS-1). RS-1 restricts residential lots to a minimum of 11,000 square feet or larger for areas within existing City limits (Land Use Element, Goal C) c. The Industrial Marine Zone (IM). IM applies to shoreline areas focusing primarily on marine trades that may need the support of commercial uses to provide framework for mixed uses in a campus-like environment (Land Use Element, Goal G) STORMWATER MANAGEMENT 1. In 2016, the City revised its Comprehensive Plan to encourage Low Impact Development (LID) as follows: a. Added a new policy that establishes a preference for LID techniques and BMPs (Land Use Element, Goal A, Policy 4) b. Added a policy to utilize land donated for public use to provide common open space, public buildings, parks and recreational opportunities, while incorporating LID techniques and BMPs (Land Use Element, Goal J, Policy 5) c. Added a policy to emphasize the integration of LID BMPs, stormwater wetlands, and other stormwater features in major parks and open spaces (Utilities and Public Services Element, Goal C, Policies 2 and 3) d. Added new policy and objective regarding preference of LID techniques and BMPs for new development (Housing Element, Goal A, Policy 14 and Objective 2) TRANSPORTATION 1. In 2016, the City revised its Comprehensive Plan to encourage transportation-related LID as follows: a. Added language to include LID techniques and BMPs as public streetscape improvement (Transportation Element, Goal A, Objective 6) b. Added language to clarify permeable pavement preference for local access streets and alleys, where feasible (Transportation Element, Goal A, Objective 6) c. Added language regarding the City's preference for sidewalks to be constructed of permeable materials where feasible (Capital Facilities Element, Goal A, Policy 15) 2. In 2018, the City revised the Municipal Code with Ordinance No. 3615, which established a "Complete Streets" program, helping to identify travelways to accommodate all modes of transportation as appropriate for the needs and conditions of each neighborhood or district (Comprehensive Plan, Chapter 11.5)**
7	S5.C.1.b.i(a)	List of stormwater capital projects (currently in or slated for future design and construction) that resulted from this planning. (S5.C.1.b.i(a) and (b) – Required by March 31, 2021 and January 1, 2023) **Question 7 - List of Capital P_7_03292021124828**

Number	Permit Section	Question
8	S5.C.1.b.i(a)	Describe watershed protection measures associated with stormwater management and land use planning actions that resulted from this planning. (S5.C.1.b.i(a) and (b) – Required by March 31, 2021 and January 1, 2023) **1. In 2014, the City completed the Shoreline Master Program, which included development of a new Harbor Resource Management Plan, a Shoreline Inventory/Characterization/Analysis Document, a Cumulative Impacts Analysis, and a Shoreline Restoration Plan (Comprehensive Plan, Chapter 1.15) 2. In response to the Shoreline Master Program, a shoreline restoration effort was completed during the summer months of 2016 and resulted in a continuous restored shoreline on Ediz Hook from Harbor View Park on the east end of the Hook to Sail and Paddle Park on the west end of the Hook. 3. In 2019, the City developed an inventory of wetland delineations completed as part of land use permitting (Comprehensive Plan, Chapter 11.8)**
9	S5.C.1.b.i(a)	Were land acquisitions identified (or are planning ahead for) that are useful for stormwater facilities to accommodate growth or to better serve an existing developed area? (S5.C.1.b.i(a) and (b) – Required by March 31, 2021 and January 1, 2023) **No**
10	S5.C.1.b.i(a)	Identified corrective actions, in addition to the minimum requirements of the Municipal Stormwater Permits, to control or treat municipal stormwater discharges that pollute waters of the State (e.g. Limits to impervious cover added to any zoning districts, regional facility planning, minimization of vegetation loss, etc.)? (S5.C.1.b.i(a) and (b) – Required by March 31, 2021 and January 1, 2023) **Yes**
10a	S5.C.1.b.i(a)	If yes, briefly describe and list relevant plan or code sections, if applicable. **Port Angeles Comprehensive Plan (2019 Amendment) 1. Encourage residential development to preserve and capitalize on existing unique natural, historic, archaeological, and/or cultural features including promotion of native and drought tolerant vegetation and scenic views (Policy 3B.06) 2. Discourage intensive recreational uses and construction of impervious surfaces in sensitive open spaces (Policy 3J.03) 3. Protect water quality and prevent erosion through the retention of existing vegetation (Policy 7B.09) 4. Establish and implement an urban tree management program...to mitigate the negative effects of impervious surfaces and vehicular traffic such as...stormwater runoff (Policy 7B.16) 5. Maintain and restore riparian vegetation in shoreline areas and on tributary streams, which affect shoreline resources wherever possible (Policy 7D.02) 6. Revise existing urban development standards in low density residential areas to include low impact development standards (Policy 8D.01)**
11	S5.C.1.b.i(a)	Updates to goals and policies related to investment in stormwater management facilities/BMPs? (yes/no) (S5.C.1.b.i(a) and (b) – Required by March 31, 2021 and January 1, 2023) **Yes**
11a	S5.C.1.b.i(a)	If yes, briefly describe. **In 2016, the City made revisions to its Municipal Stormwater Utility and Regulations Code (Chapter 13.63) to invest in updates to its Stormwater Incentives program. The incentives program focuses on one-time rebate incentives for projects triggering Minimum Requirement (MR) #5: On-Site Stormwater Management. Additionally, a new Incentives program was created for retrofit projects and projects that install rain gardens but are less than the MR #5 threshold.**

Number	Permit Section	Question
12	S5.C.1.b.i(a)	Does the long-range plan identify the location and existing capacity of the stormwater facilities owned or operated by the permittee and show which of those stormwater facilities have unused capacity? (yes/no) (S5.C.1.b.i(a) and (b) – Required by March 31, 2021 and January 1, 2023) **Yes**
12a	S5.C.1.b.i(a)	Do these stormwater facility locations impact where housing, or other types of development, are projected to be located or influence the acquisition of land? (if yes, how?) **Yes. Larger development projects in regions with downstream stormwater conveyance capacity constraints are required to manage runoff from the developed site up to the 25 year storm or eliminate the downstream constraint - an added cost that could influence viability of a project.**
12b	S5.C.1.b.i(a)	Does the long-range plan identify a lack of facilities and the potential impacts of existing or new development to those areas and receiving waters? **No**
12c	S5.C.1.b.i(a)	Any new proposed locations and capacities of stormwater facilities needed for the timeframe of the plan? **Yes**
13	S5.C.1.b.i(a)	Based on the projected population densities and distribution of growth over the planning period, describe how stormwater runoff impacts are forecasted. Does stormwater management information (including water quality) direct where growth is directed? (S5.C.1.b.i(a) and (b) – Required by March 31, 2021 and January 1, 2023) **According to 2010 census data, the population of the City of Port Angeles was 19,038 in 2010, with a projected annual growth of 1.5%. In planning for this growth, the Port Angeles Urban Growth Areas were established to meet the area required to contain the projected 20-year population growth of the urban area plus those neighborhoods that were already urban in nature. The established Urban Growth Areas include the Eastern Urban Growth Area, located east of the City limits, and the Western Urban Growth Area, located west and south of the City limits. It is expected the City will annex all of the Urban Growth Areas in the next 20 years. The Urban Growth Areas are encouraged to develop land utilizing City development standards, which includes encouraging development to apply LID techniques and BMPs, where feasible (Clallam County Code, Chapter 31.04: Port Angeles Regional Plan).**
15	S5.C.1.c	Continue to design and implement local development-related codes, rules, standards, or other enforceable documents to minimize impervious surfaces, native vegetation loss, and stormwater runoff, where feasible? See S5.C.1.c.i. (Required annually) **Yes**
16	S5.C.1.c	From the assessment described in S5.C.1.c.i(a), did you identify any administrative or regulatory barriers to implementation of LID Principles or LID BMPs? (Required annually) **No**
20	S5.C.2	Did you choose to adopt one or more elements of a regional program? (S5.C.2) **Yes**

Number	Permit Section	Question
20a	S5.C.2	If yes, list the elements, and the regional program. **West Sound Stormwater Outreach Group (WSSOG) - Build general awareness, effect behavior change via: targeted stormwater awareness advertisement campaign, interactive games, educational materials, practical handouts, collaborative research to influence and improve our local programs, etc.**
21	S5.C.2	Attach a description of general awareness efforts conducted, including your target audiences and subject areas, per S5.C.2.a.i. **FINAL WSSOG Activities Report _21_03292021125757**
22	S5.C.2	Conducted an evaluation of the effectiveness of the ongoing behavior change program and documented recommendations as outlined in S.5.C.2.a.ii(b). (Required no later than July 1, 2020) **Not Applicable**
24	S5.C.2	Began implementing strategy outlined in S.5.C.2.a.ii(c) (S5.C.2.a.ii(d) – Required by April 1, 2021) **Yes**
26	S5.C.2	Promoted stewardship opportunities (or partnered with others) to encourage resident participation in activities such as those described in S5.C.2.a.iii. **Yes**
26a	S5.C.2	Attach a list of stewardship opportunities provided. **2017-2021 Streamkeepers Agreem_26a_03292021130001**
27	S5.C.3.	Describe in Comments field the opportunities created for the public, including overburdened communities, to participate in the decision-making processes involving the development, implementation, and updates of the Permittee's SWMP and the SMAP. (S5.C.3.a) **The stormwater informational webpage on the City's website contains a direct link to the updated SWMP Plan along with a link to a digital form where public input on the SWMP is encouraged. In addition, City staff are available to the public for direct communication regarding stormwater, as described in the SWMP Plan. The City is part of an ongoing regional effort to identify the local "overburdened community" and develop targeted ways to provide outreach and be inclusive on future efforts.**
28	S5.C.3.	Posted the updated SWMP Plan and latest annual report on your website no later than May 31. (S5.C.3.b) **Yes**
28a	S5.C.3.	List the website address in Comments field. **https://www.cityofpa.us/376/Stormwater-Management-Program**
29	S5.C.4.	Maintained a map of the MS4 including the requirements listed in S5.C.4.a.i-vii? **Yes**
30	S5.C.4.	Started mapping outfall size and material in accordance with S5.C.4.b.i? (Required no later than January 1, 2020) **Yes**

Number	Permit Section	Question
30a	S5.C.4.	Attach a spreadsheet that lists the known outfalls' size and material(s). **COPA Stormwater Outfalls_GIS 3_30a_03292021140829**
31	S5.C.4.	Completed mapping connections to private storm sewers in accordance with S5.C.4.b.ii? (Required no later than August 1, 2023) **Not Applicable**
32	S5.C.4.	Developed an electronic format for map, with fully described mapping standards in accordance with S5.C.4.c? (Required no later than August 1, 2021) **Yes**
33	S5.C.5	Informed public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste? (S5.C.5.b) **Yes**
33a	S5.C.5	Actions taken to inform public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste. **Provided staff training. Maintained IDDE page on website. Implemented the City's IDDE program. Continued the Pollution Prevention Assistance program with local businesses (formerly Local Source Control).**
34	S5.C.5	Implemented an ordinance or other regulatory mechanism to effectively prohibit non-stormwater, illicit discharges as described in S5.C.5.c. **Yes**
35	S5.C.5	Implemented procedures for conducting illicit discharge investigations in accordance with S5.C.5.d.i. **Yes**
35a	S5.C.5	Cite field screening methodology in Comments field. **The City's screening methodology consists of: business inspections, stream and creek walks, and stormwater infrastructure inspections. Results of the field inspections are used to select monitoring nodes. Primary indicator testing is performed at monitoring locations. If thresholds are exceeded, the area upstream from the monitoring site is flagged for further investigation. See the "2020 Screening Summary and Map Update.pdf" attachment for more details.**
36	S5.C.5	Percentage of MS4 coverage area screened in the reporting year per S5.C.5.d.i. (Required to screen 12% on average each year.) **13**
36a	S5.C.5	Cite field screening techniques used to determine percent of MS4 screened. **The City was divided up into eight (8) roughly equal screening basins by the number of catch basins within the right of way. Each year, one basin is selected and screened using the methodology described above. See the "2020 Screening Summary and Map Update.pdf" attachment for more details and a map of the screening basins.**
37	S5.C.5	Percentage of total MS4 screened from permit effective date through the end of the reporting year. (S5.C.5.d.i.) **25**

Number	Permit Section	Question
38	S5.C.5	Describe how you publicized a hotline telephone number for public reporting of spills and other illicit discharges in the Comments field. (S5.C.5.d.ii) **Posted on the City website (https://www.cityofpa.us/262/Reporting-Spills), advertised at public outreach events, and listed on handout materials.**
39	S5.C.5	Implemented an ongoing illicit discharge training program for all municipal field staff per S5.C.5.d.iii. **Yes**
40	S5.C.5	Implemented an ongoing program to characterize, trace, and eliminate illicit discharges into the MS4 per S5.C.5.e. **Yes**
41	S5.C.5	Municipal illicit discharge detection staff are trained to conduct illicit discharge detection and elimination activities as described in S5.C.5.f. **Yes**
42	S5.C.5	Attach a report with data describing the actions taken to characterize, trace, and eliminate each illicit discharge reported to, or investigated by, the Permittee as described in S5.C.5.g. The submittal must include all of the applicable information and must follow the instructions, timelines, and format described in Appendix 12. **2020 IDDE Tracking Spreadsheet_42_03292021141934**
43	S5.C.6.	Implemented an ordinance or other enforceable mechanism to effectively address runoff from new development, redevelopment, and construction sites per the requirements of S5.C.6.b.i-iii. **Yes**
44	S5.C.6.	Revised ordinance or other enforceable mechanism to effectively address runoff from new development, redevelopment, and construction sites per the requirements of S5.C.6.b.i-iii. (Required no later than June 30, 2022) **Not Applicable**
45	S5.C.6.	Number of adjustments granted to the minimum requirements in Appendix 1. (S5.C.6.b.i. and Section 5 of Appendix 1) **0**
46	S5.C.6.	Number of exceptions/variances granted to the minimum requirements in Appendix 1. (S5.C.6.b.i., and Section 6 of Appendix 1) **0**
47	S5.C.6.	Reviewed Stormwater Site Plans for all proposed development activities that meet the thresholds adopted pursuant to S5.C.6.b.i. (S5.C.6.c.i) **Yes**
47a	S5.C.6.	Number of site plans reviewed during the reporting period. **89**

Number	Permit Section	Question
48	S5.C.6.	Inspected, prior to clearing and construction, permitted development sites per S5.C.6.c.ii, 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? **Yes**
48a	S5.C.6.	If no, inspected, prior to clearing and construction, all construction sites meeting the minimum thresholds (S5.C.6.c.ii)?
49	S5.C.6.	Inspected permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls per S5.C.6.c.iii. **Yes**
49a	S5.C.6.	Number of construction sites inspected per S5.C.6.c.iii. **16**
49b	S5.C.6.	Inspected stormwater treatment and flow control BMPs/facilities and catch basins in new residential developments every 6 months per S5.C.6.c.iv? **Yes**
50	S5.C.6.	Inspected all permitted development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater facilities. (S5.C.6.c.v) **Yes**
51	S5.C.6.	Verified a maintenance plan is completed and responsibility for maintenance is assigned for projects prior to final approval and occupancy being granted. (S5.C.6.c.v) **Yes**
52	S5.C.6.	Number of enforcement actions taken during the reporting period (based on construction phase inspections at new development and redevelopment projects). (S5.C.6.c.ii-iv)(S5.C.7.c.viii) **3**
53	S5.C.6.	Achieved at least 80% of scheduled construction-related inspections. (S5.C.6.c.vi) **Yes**
54	S5.C.6.	Made Ecology’s Notice of Intent for Construction Activity and Notice of Intent for Industrial Activity available to representatives of proposed new development and redevelopment? (S5.C.6.d) **Yes**
55	S5.C.6.	All staff whose primary job duties are implementing the program to control stormwater runoff from new development, redevelopment, and construction sites including permitting, plan review, construction site inspections, and enforcement are trained to conduct these activities? (S5.C.6.e) **Yes**

Number	Permit Section	Question
56	S5.C.7.	Implemented maintenance standards that are as protective, or more protective, of facility function than those specified in the Stormwater Management Manual for Western Washington or a Phase I program approved by Ecology per S5.C.7.a.? **Yes**
57	S5.C.7.	Updated maintenance standards specified in Stormwater Management Manual for Western Washington per S5.C.7.a? (Required no later than June 30, 2022) **No**
58	S5.C.7.	Applied a maintenance standard for a facility or facilities which do not have maintenance standards specified in the Stormwater Management Manual for Western Washington? If so, note in the Comments field what kinds of facilities are covered by this alternative standard. (S5.C.7.a) **No**
59	S5.C.7.	Verified that maintenance was performed per the schedule in S5.C.7.a.ii when an inspection identified an exceedance of the maintenance standard. **Yes**
59a	S5.C.7.	Attach documentation of maintenance time frame exceedances that were beyond the Permittee's control. **Not Applicable**
60	S5.C.7.	Implemented an ordinance or other enforceable mechanisms to verify long-term operation and maintenance of stormwater treatment and flow control BMPs/facilities regulated by the permittee per (S5.C.7.b.i (a))? **Yes**
61	S5.C.7.	Annually inspected stormwater treatment and flow control BMPs/facilities regulated by the Permittee per S5.C.7.b.i(b) **Yes**
61a	S5.C.7.	If using reduced inspection frequency for the first time during this permit cycle, attach documentation per S5.C.7.b.i (b) **Not Applicable**
62	S5.C.7.	Achieved at least 80% of scheduled inspections to verify adequate long-term O&M. (S5.C.7.b.ii) **Yes**
63	S5.C.7.	Annually inspected all municipally owned or operated permanent stormwater treatment and flow control BMPs/facilities. (S5.C.7.c.i) **Yes**
63a	S5.C.7.	Number of known municipally owned or operated stormwater treatment and flow control BMPs/facilities. (S5.C.7.c.i) **193**

Number	Permit Section	Question
63b	S5.C.7.	Number of facilities inspected during the reporting period. **193**
63c	S5.C.7.	Number of facilities for which maintenance was performed during the reporting period. **110**
64	S5.C.7.	If using reduced inspection frequency for the first time during this permit cycle, attach documentation per S5.C.7.c.i. **Not Applicable**
65	S5.C.7.	Conducted spot checks and inspections (if necessary) of potentially damaged stormwater facilities after major storms as per S5.C.7.c.ii. **Not Applicable**
66	S5.C.7.	Inspected municipally owned or operated catch basins and inlets every two years or used an alternative approach? Cleaned as needed? (S.5.C.7.c.iii) **Yes**
66a	S5.C.7.	Number of known catch basins? **2681**
66b	S5.C.7.	Number of catch basins inspected during the reporting period? **1496**
66c	S5.C.7.	Number of catch basins cleaned during the reporting period? **1496**
67	S5.C.7.	Attach documentation of alternative catch basin cleaning approach, if used. (S5.C.7.c.iii.(a)-(c)) **Not Applicable**
68	S5.C.7.	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.7.d) **Yes**
69	S5.C.7.	Documented 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.7.d – Required by December 31, 2022) **No**
70	S5.C.7.	Implemented an ongoing training program for Permittee employees whose primary construction, operations or maintenance job functions may impact stormwater quality. (S5.C.7.e) **Yes**

Number	Permit Section	Question
71	S5.C.7.	Implemented a Stormwater Pollution Prevention Plan (SWPPP) 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.7.f) **Yes**
72	S5.C.7.	Updated, if needed, SWPPPs according to S5.C.7.f no later than December 31, 2022. **No**
73	S5.C.8	Adopted ordinance(s), or other enforceable documents, requiring the application of source control BMPs for pollutant generating sources associated with existing land uses and activities per S.5.C.8.b.i. (Required by August 1, 2022) **No**
74	S5.C.8	Established an inventory per S5.C.8.b.ii. (Required by August 1, 2022.) **No**
75	S5.C.8	Implemented an inspection program S5.C.8.b.iii (Required by January 1, 2023). **No**
76	S5.C.8	Implemented a progressive enforcement policy per S5.C.8.b.iv (Required by January 1, 2023). **No**
77	S5.C.8	Attach a summary of actions taken to implement the source control program per S5.C.8.b.iii and S5.C.8.b.iv. **Not Applicable**
78	S5.C.8	Attach a list of inspections, per S5.C.8.b.iii, organized by the business category, noting the amount of times each business was inspected, and if enforcement actions were taken. **Not Applicable**
79	S5.C.8	Implemented an ongoing source control training program per S5.C.8.b.v? **No**
80	S7	Complied with the Total Maximum Daily Load (TMDL)-specific requirements identified in Appendix 2. (S7.A) **Not Applicable**
81	S7	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**
82	S8	Submitted payment for cost-sharing for Stormwater Action Monitoring (SAM) status and trends monitoring no later than December 1, 2019 (S8.A.1); and no later than August 15 of each subsequent year? (S8.A.2.a.) **Yes**

Number	Permit Section	Question
84	S8	Submitted payment for cost-sharing for SAM effectiveness and source identification studies no later than December 1, 2019 (S8.B.1); and no later than August 15 of each subsequent year (S8.B.2.a or S8.B.2.c)? **Yes**
86	S8	If conducting stormwater discharge monitoring in accordance with S8.C.1, submitted a QAPP to Ecology no later than February 1, 2020? (S8.C.1.b and Appendix 9) **Not Applicable**
87	S8	If conducting stormwater discharge monitoring in accordance with S8.C.1, attach a data and analysis report per S8.C.1. and Appendix 9. (Due annually beginning March 31, 2021.) **Not Applicable**
88	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**
89	G3	Took appropriate action to correct or minimize the threat to human health, welfare, and/or the environment per G3.A. **Yes**
90	Compliance with standards	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**
91	Compliance with standards	If requested, submitted an Adaptive Management Response report in accordance with S4.F.3.a. **Not Applicable**
92	Compliance with standards	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) **S4F Status_ongoing efforts_Str_92_03292021143220**
93	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**
94	G20	Number of non-compliance notifications (G20) provided in reporting year. List permit conditions described in non-compliance notification(s) in Comments field. **Not Applicable**

Attachments:

View Files Attached to Submission

	DocDescr	DocName	DocExt	DocID	SubID	AppName
View	SW Outfall Map	11x17 Outfalls	.pdf	1083393	1765088	wqwebportal
View	WAR045028_26a_03292021130001	2017-2021 Streamkeepers Agreem_26a_03292021130001	.pdf	1083239	1765088	wqwebportal
View	IDDE Tracking Spreadsheet_pdf copy	2020 IDDE Tracking Spreadsheet	.pdf	1083397	1765088	wqwebportal
View	WAR045028_42_03292021141934	2020 IDDE Tracking Spreadsheet_42_03292021141934	.xlsx	1083296	1765088	wqwebportal
View	2020 Public Outreach Tracking	2020 Public Outreach Tracking	.pdf	1083379	1765088	wqwebportal
View	IDDE Screening Summary_2020	2020 Screening Summary and Map Update3	.pdf	1083396	1765088	wqwebportal
View	2020_SW Facilities OM Tracking	2020 Stormwater Facilities OM Spreadsheet (002)	.pdf	1083407	1765088	wqwebportal
View	2020_Development Review and Construction Inspection Tracking	2020_Inspection Documentation Tracking List	.pdf	1083406	1765088	wqwebportal
View	2020 Native Plantings and give-aways	2020_Native Plantings and Give-Aways	.pdf	1083380	1765088	wqwebportal
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Back

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

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

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

City of Port Angeles

Stormwater Management Program Plan

Revised: March 19, 2021

As required by the

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

Permit Number: WAR045028
Permit Cycle: 2019-2024

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BACKGROUND AND INTENT

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

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

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

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

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

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

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

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

Phone:	(360) 417-4830 (Stormwater Hotline) (360) 417-4745 (Illicit Discharge Hotline) *Report a Spill* (360) 417-4701 (City Stormwater Engineer)
Email:	illicitdischarge@cityofpa.us
Website:	http://www.cityofpa.us …. CLICK >> Business… Stormwater Management Program.
Digital Copy:	SELECT >> Stormwater Management Program planning document (PDF).
Web Form:	SELECT >> Stormwater Plan Survey

1) STORMWATER PLANNING

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

a) STORMWATER PLANNING TEAM

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

b) LONG-RANGE PLAN COORDINATION REPORT

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

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

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

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

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

c) LID Code-related Requirements

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

i) LID Barrier Assessment

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

d) Stormwater Management Action Planning (SMAP)

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

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

The resulting SMAP will strategically identify approaches to accommodate future growth and development while preventing water quality degradation and/or improving conditions in receiving waters harmed by past development.

i) Receiving Water Assessment

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

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

ii) Receiving Water Prioritization

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

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

This prioritized and ranked list of receiving waters will be documented no later than June 30, 2022, along with the process used to identify high priority receiving waters. Additionally, the ranking process will include the identification of high priority catchment area(s) for focus of the Stormwater Management Action Plan (SMAP).

iii) SMAP Development

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

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

As required by the Permit, this SMAP will be developed by March 31st, 2023 and will include the following:

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

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

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

2) PUBLIC EDUCATION AND OUTREACH

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

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

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

a) GENERAL AWARENESS

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

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

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

Subject areas:

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

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

Subject areas:

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

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

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

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

- **Media advertisements**: The City may periodically place stormwater-related information in the local newspaper (Peninsula Daily News), on paid cable and satellite, and at local movie theatres. This information will be designed to address the education goals listed above and will be timed to reflect the greater impact during the wet winter season. Electronic copies of media advertisements may be made available through the City's stormwater webpage.
- **Utility bill mailers**: One month of the year, typically October, educational mailers are sent out with the monthly utility bills, thereby reaching the City's utility customers. The mailers will be developed to create a progressive flow of general stormwater related information with practical tips for home and business owners to help improve water quality. Copies of mailers will also be made available on the City's stormwater website and as handouts. The 2021 utility bill mailer are likely to feature topics such as: LID code updates, stormwater programmatic changes, BMPs, dog waste, vehicle washing, and natural yard care.
- **Local event participation**: Educational materials (posters, brochures/handouts, maps, etc) are commonly distributed at existing local and regional events that attract members of the target audiences. At such events, City representatives are made available to answer questions and provide information. Typical events include: Clallam County Fair, Clallam County Home and Lifestyle Show, and others. Event-specific materials are developed and distributed as appropriate. Announcements of upcoming events and copies of materials used at events are typically available on the City's stormwater website. This normally effective method of outreach was essentially canceled in 2020 due to the global Covid-19 pandemic and is expected to be significantly restricted in 2021.

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

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

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

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

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

b) BEHAVIOR CHANGE

At a minimum, the City will annually select one target audience and one Best Management Practice (BMP) from the list below and implement an education and outreach program designed to effect behavior change to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts.

Target Audiences

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

Best Management Practices (BMPs):

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

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

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

c) STEWARDSHIP

Empowering and encouraging local citizens to take ownership in their community is known to have long-term positive impacts that can be felt for generations to come. The permit requires the City provide and advertise stewardship opportunities and/or partner with existing organizations (including nonpermittees) to encourage residents to participate in activities or events planned and organized within the community, such as: stream teams, storm drain marking, volunteer monitoring, riparian plantings, and education activities. To meet this permit

requirement, the City intends to continue its partnership with Streamkeepers of Clallam County; a citizen-based watershed monitoring program that provides volunteer opportunities and project assistance in the effort to protect and restore the local watersheds in Clallam County. However, new ideas for new partnerships and ways to support local stewardship opportunities are always welcome and can be submitted to the City's Stormwater Engineer.

d) RECORDKEEPING

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

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

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

3) PUBLIC INVOLVEMENT AND PARTICIPATION

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

a) PUBLIC INVOLVEMENT IN SWMP

The City seeks public involvement and participation in developing and managing stormwater within the community. The permit describes ongoing opportunities for participation may be provided through advisory councils, public hearings, watershed committees, developing rate-structures, or other similar activities. Ways to engage and include overburdened communities, as defined in the permit, will be considered when providing a means for involvement. Currently, common ways the public have opportunities for participation are:

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

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

b) Availability of Information to the Public

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

4) MS4 Mapping and Documentation

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

- 65 miles of stormwater conveyance
- 2,600 catch basins
- 170 outfalls
- 190 treatment and flow control facilities

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

a) Municipal Separate Storm Sewer System (MS4) Map

The City's stormwater system is mapped electronically in the City's Geographic Information System (GIS). The data contained in the map is updated and corrected continuously as information is gathered in the field or as new development occurs. Updates are made based on field sketches, design plans, as-built plans, aerial photography, and/or other sources of information that become available.

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

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

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

ii) New Connections to the MS4

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

iii) Areas Not Discharging to Surface Waters

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

b) Availability of Information

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

https://pawa.maps.arcgis.com/apps/webappviewer/index.html?id=e58c0d47915c44cf833174513da11086

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

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

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

5) Illicit Discharge Detection and Elimination (IDDE)

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

a) IDDE Policy and Procedures

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

b) IDDE Education

The City will primarily utilize its established Education and Outreach Program, as described in Section 2, to proactively disseminate information about illicit discharges,

associated hazards, and improper disposal of waste. Additional education opportunities are taken under the City's Source Control Program (Section 8) and, reactively, during IDDE investigations.

c) Illicit Discharge Ordinance

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

d) Illicit Discharge Detection

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

i) Field Screening and Potential Sources

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

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

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

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

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

- Ennis / White Creek system

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

- Peabody Creek
- Tumwater Creek
- Ennis / White Creek system

Starting in 2014, the City was broken up into 8 annual screening basins based on equal distribution of stormwater infrastructure. This enabled the City to begin

annually screening, on average, 12.5% of its MS4 system for illicit connections and discharges. When a basin contains or borders a creek, a field assessment of the creek from its outfall to the basin limit is performed as part of the screening program. Field assessments of the Peabody, Tumwater, Valley, Mill, Dry, White, and Ennis Creeks have been completed at least once within City limits. Field assessment activities include visual inspection during dry weather and field screening for illicit discharges in accordance with the City's "Illicit Discharge Detection and Elimination (IDDE) Response Policy". To date, 92% of the City's MS4 has been screened for illicit discharges and connections. Basin 6, comprised of areas surrounding I St., Lincoln Park, W. Highway 101, and the Eclipse Industrial Park, is scheduled for screening in 2021.

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.

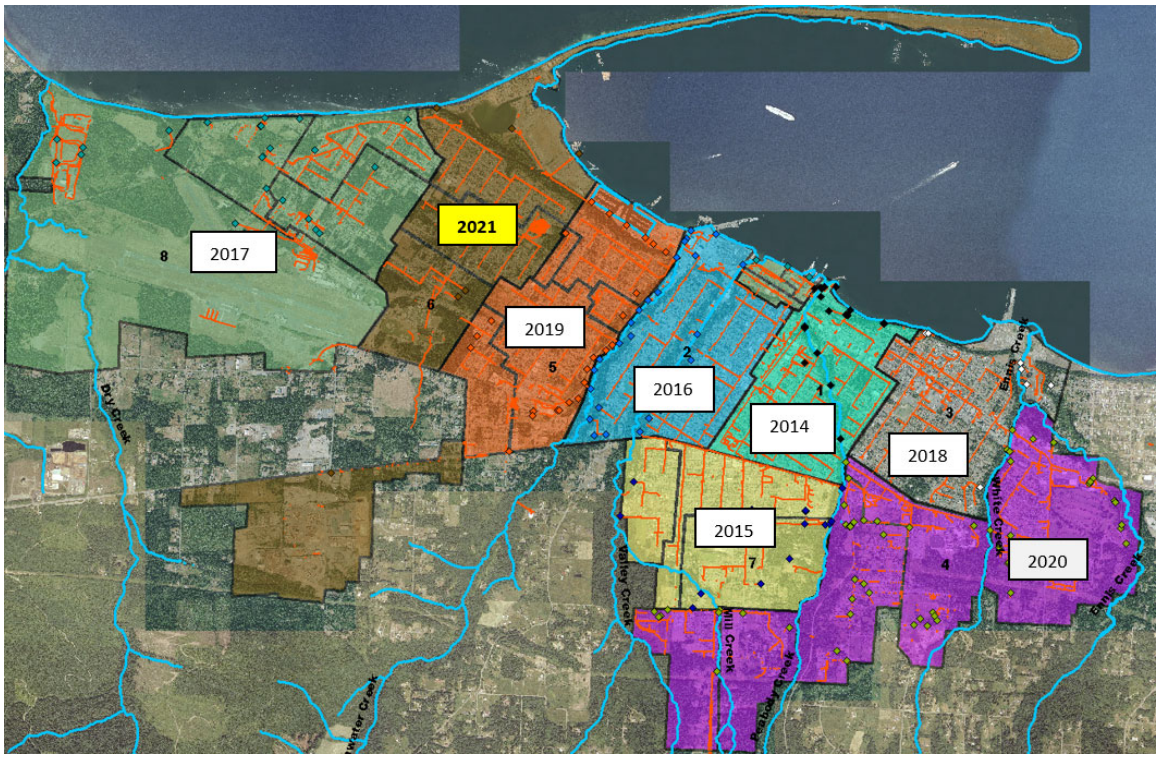


Figure 1. IDDE Screening Strategy: Screening basin boundary map and schedule.

ii) Hotline for Public Reporting of Discharges and Spills

The City's Illicit Discharge Hotline (360-417-4745) is available for public reporting of discharges and spills. Outside of traditional working hours, this number is forwarded to the Public Works On-Call number for after-hours response. The hotline number will be published with all stormwater information and is available on the City's stormwater website. The public will also be able to report discharges, spills, or other concerns via the City's storm water webpage,

utilizing an online form, where information on the spill and photos can be submitted. Direct reporting via email is also available: illicitdischarge@cityofpa.us. Both the hotline and email are forwarded directly to City staff to ensure a timely response.

iii) IDDE Staff Training

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

Municipal field staff, which, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system are provided on-going annual IDDE trainings. This training is intended to educate staff members in the basics of the City's policy, IDDE identification, and the proper procedures for reporting to response teams.

e) Illicit Discharge Response

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

i) Nature of Discharge

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

ii) Source Tracing

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

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

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

iii) Discharge Elimination

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

iv) Permit Compliance Timeframes

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

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

f) Recordkeeping

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

1. Jurisdiction name and permit number
2. Date incident discovered or reported to you
3. Date of beginning your response
4. Date of end of your response
5. How was the incident discovered or reported to you?
6. Discharge to MS4?
7. Incident Location
8. Pollutants Identified

9. Source or Cause
10. Source tracing approach(es) used
11. Correction/elimination methods used
12. Field notes, explanations, and/or other comments

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

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

6) Controlling Runoff from New Development, Redevelopment, and Construction Sites

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

a) Stormwater Ordinance Regulating Development

The City developed and adopted an ordinance that addresses runoff from new development, redevelopment, and construction site activities at sites 2,000 sq-ft and greater. The ordinance adopts most of the Department of Ecology's 2014 Stormwater Management Manual for Western Washington and the Low Impact Development Technical Guidance Manual. For more details, review Port Angeles Municipal Code, Section 13.63.

In conjunction with the Stormwater Ordinance, the City has developed and implemented a permitting program to reduce pollutants in stormwater runoff from new development, redevelopment, and construction site activities. The program is being applied to development or re-development projects with greater than or equal to 7,000 sq. feet of land disturbance or projects that install 2,000 sq. feet of new or replaced hard surface. The program applies to both private and public development, including transportation projects. The program is enforced through the City Ordinance described above as well as through the City's development standards (The City of Port Angeles Urban Services Standards and Guidelines, USSG).

i) Minimum Requirements, Technical Thresholds, and Definitions

The minimum requirements, technical thresholds, and definitions in Appendix 1 of the permit have been in-effect in Port Angeles since 2009. As required by the

previous Permit, the lowered stormwater management thresholds were adopted and enforced January 1st, 2017.

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

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

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

ii) Legal Authority to Inspect Private Facilities

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

ii) LID Required

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

iii) Erosivity Waiver

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

b) Permitting

The City has developed a permitting process with plan review, inspection, and enforcement capability as described herein. The permitting process is applied to both private and public projects that consist of greater than or equal to 7,000 sq. feet of land disturbance or projects that install 2,000 sq. feet of new or replaced hard surface. Permitting is administered by qualified personnel.

i) Review of Stormwater Site Plans

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

developers to ensure that stormwater site plans meet the criteria established by both Ecology and the City.

ii) Erosivity Waiver

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

iii) Notice of Intent

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

c) Inspections

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

i) Pre-Construction Inspections

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

ii) During Construction Inspections

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

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

iii) Post-Construction Inspections

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

iv) Inspection Compliance

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

v) Enforcement Strategy

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

d) Staff Training

Staff whose primary job duties are implementing the program to control stormwater runoff from new development, redevelopment, and construction sites, including permitting, plan review, construction site inspections, and enforcement, are trained to conduct these activities. Follow-up training is provided as needed to address changes in procedures, techniques or staffing. The City documents and maintains records of the training provided and the staff trained.

e) Recordkeeping

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

7) Operations and Maintenance

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

a) Maintenance Standards

The City has adopted Ecology's Stormwater Management Manual for Western Washington (SWMMWW), including maintenance standards. The City uses Ecology's maintenance standards to determine if and when maintenance is required.

It is important to note that the maintenance standard is not a measure of the facility's required condition at all times between inspections and an exceedance of the maintenance standard between inspections and/or maintenance is not a permit violation

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

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

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

b) Permitted Stormwater Facilities

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

i) Operations and Maintenance Ordinance

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

ii) Maintenance Standards

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

iii) Annual Inspections

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

Reduction of the inspection frequency will be based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records, the City may substitute written statements to document a

specific less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with Permit requirements.

iv) Compliance & Recordkeeping

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

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

c) City Owned Stormwater Facilities

The City has developed and implemented a program to inspect and maintain all municipally owned and operated stormwater facilities to ensure functionality and prevent or reduce stormwater impacts.

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

i) Treatment and Flow Control Inspections

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

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

ii) Spot Checks

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

iii) Catch Basin Inspections

On a two-year interval, the City inspects all catch basins and inlets owned and/or operated by the City. Catch basins and inlets are cleaned based on inspection

results and in accordance with Ecology's SWMMWW maintenance standards. Decant water is disposed of in accordance with Appendix 6 of the Permit – *Street Waste Disposal*.

iv) Compliance

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

d) Stormwater Impact Reduction from Public Lands

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

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

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

The following activities have been addressed:

- Pipe cleaning
- Cleaning of culverts that convey stormwater in ditch systems
- Ditch maintenance
- Street cleaning
- Road repair and resurfacing, including pavement grinding
- Snow and ice control
- Utility installation
- Pavement striping maintenance
- Maintaining roadside areas, including vegetation management
- Dust control
- Application of fertilizers, pesticides, and herbicides according to the instructions for their use, including reducing nutrients and pesticides using alternatives that minimize environmental impacts
- Sediment and erosion control
- Landscape maintenance and vegetation disposal
- Trash and pet waste management
- Building exterior cleaning and maintenance

e) Training Program

The City has implemented an on-going operations and maintenance training program for employees whose construction, operations, or maintenance job functions may impact stormwater quality. The training addresses the importance of protecting water quality, the requirements of the permit, operation and maintenance standards, inspection procedures, selecting appropriate BMPs, ways to perform job activities to

prevent or minimize impacts to water quality, and procedures for reporting water quality concerns, including potential illicit discharges. Follow-up training will be provided as needed to address changes in procedures, techniques, or requirements. Training is documented and training records include dates, activities or course descriptions, and names and positions of staff in attendance.

f) STORMWATER POLLUTION PREVENTION PLANS

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

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

Facility Name	**Facility Use**	**Document**	**Status**
Sanitary and Storm Sewer Collection System	Collection of sanitary and combined sewerage	"Illicit Discharge Detection and Elimination (IDDE) Response Policy"	Most Recent Revision: December 2014
Corp Yard	Maintenance, equipment & materials storage for water, wastewater, & streets utilities	"City of Port Angeles Maintenance Facility Stormwater Pollution Prevention Plan"	Updated February 2016
Port Angeles Wastewater Treatment Plant	Wastewater treatment plant (secondary treatment)	"City of Port Angeles Wastewater Treatment Plant SWPPP"	December, 2001
Regional Transfer Station	Solid waste transfer station (previously a landfill)	"Port Angeles Transfer Station/ Landfill Stormwater Pollution Prevention Plan"	Updated July 2018
Electric Utility Handling & Warehouse Building	Electric transformer storage and handling	"Spill Prevention Control and Countermeasure Plan"	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 Table 2 below for a listing of individual stormwater or other related permits.

Table 2: Existing Individual Stormwater and Stormwater-Related Permits

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

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

g) RECORDKEEPING

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

8) SOURCE CONTROL PROGRAM FOR EXISTING DEVELOPMENT

The City is in the process of developing a Source Control Program that is designed to prevent and reduce pollutants in runoff from areas that discharge to the City's MS4, as required by the 2019-2024 Permit. While this is a new permit requirement, the City has had an established pollution prevention presence in the community that can be built upon.

Since 2012, the City of Port Angeles has been a member of the Pollution Prevention Assistance (PPA) Partnership, formerly called Local Source Control, which is a grant funded program designed to help small businesses reduce and manage potential wastes to protect water, soil, and air quality. Under Washington State's Hazardous Waste and

Toxics Reduction Program, Ecology is able to fund local jurisdictions on a biennium basis to provide free, one-on-one technical assistance to small businesses regarding waste management, pollution prevention, and stormwater-related issues.

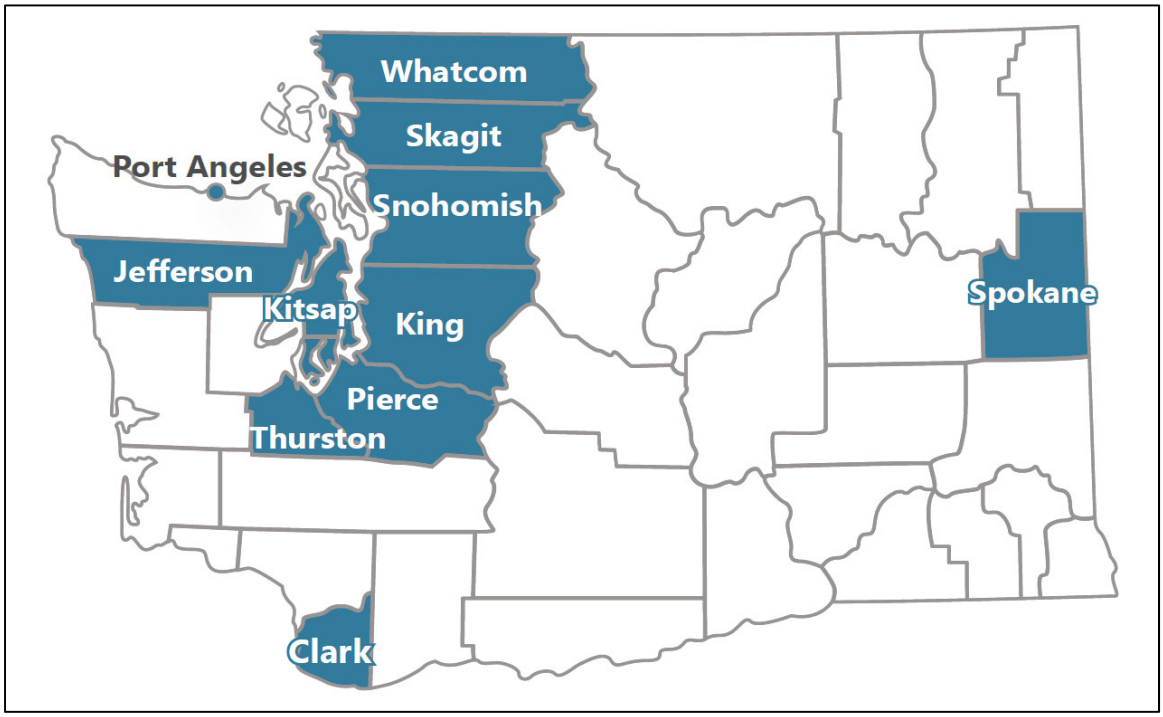


Figure 2. Pollution Prevention Assistance partners for 2017-2019 biennium.

a) Program Goals

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

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

b) Program Components and Milestones

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

i) Ordinance to Apply BMPs

The City will adopt and make effective an ordinance(s), or other enforceable documents, requiring the application of source control BMPs for pollutant generating sources associated with existing land uses and activities. These ordinances will be adopted no later than August 1, 2022,

The City will use the source control BMPs in the SWMMWW, or a Phase I Program approved by Ecology. In cases where the manual(s) lack guidance for a specific source of pollutants, the City will work with the owner/operator to implement or adapt BMPs based on the best professional judgement of the City.

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

ii) Inventory of Sites

The City will establish an inventory that identifies publicly and privately owned institutional, commercial, and industrial sites which have the potential to generate pollutants to the MS4. This inventory will be compiled by August 1, 2022 and will include:

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

iii) Inspection Program

The City will develop an inspection program for sites identified in the inventory. The inspection program will be implemented by January 1st, 2023, and will entail the following components:

1. All identified sites with a business address will be provided information about activities that may generate pollutants and the source control requirements applicable to those activities. This information will be provided by mail, telephone, electronic communications, or in person. This information may be provided all at one time or spread out over the permit term to allow for tailoring and distribution of the information during site inspections.

2. The City will annually complete the number of inspections equal to 20% of the businesses and/or sites listed in their source control inventory to assess BMP effectiveness and compliance with source control requirements. The City may count follow-up compliance inspections at the same site toward the 20% inspection rate. The Permittee may select which sites to inspect each year and is not required to inspect 100% of sites over a 5-year period. Sites may be prioritized for inspection based on their land use category, potential for pollution generation, proximity to receiving waters, or to address an identified pollution problem within a specific geographic area or sub-basin.
3. The City will inspect 100% of sites identified through credible complaints.
4. The City may count inspections conducted based on complaints, or when the property owner denies entry, to the 20% inspection rate.

iv) Progressive Enforcement Policy

By January 1st, 2023, the City will implement a progressive enforcement policy that requires sites to comply with stormwater requirements within a reasonable time period, as specified below:

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

c) Staff Training

The City will train staff who are responsible for implementing the source control program to conduct these activities. The ongoing training program will cover the legal authority for source control, source control BMPs and their proper application, inspection protocols, lessons learned, typical cases, and enforcement procedures. Follow-up training shall be provided as needed to address changes in procedures,

techniques, requirements, or staff. The City will document and maintain records of the training provided and the staff trained.

STORMWATER NPDES AND CAPITAL NEEDS ASSESSMENT

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

-Effective January 2020. $17.01 per month for each ERU

This revenue is not sufficient to implement all projects in the 6 year Capital Facilities Plan. The City plans to evaluate the Stormwater Utility revenues and obligations again in 2021 to seek public input.

DOCUMENTS REFERENCED

"City of Port Angeles Maintenance Facility SWPPP" City of Port Angeles, 2016

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

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

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

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

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

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

"City of Port Angeles Municipal Code Title 13.63, Stormwater Ordinance" last modified in December 2016

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

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

SWMP Appendix A : Inter-Departmental Coordination Mechanism Policy

SWMP APPENDIX B : PUBLIC OUTREACH PLAN ACTIVITY MATRIX

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

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

Background

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

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

Section 1. Name

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

Section 2. Purpose

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

Section 3. Mission

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

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

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

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

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

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

A. Coordination framework and expectations:

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

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

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

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

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

B. Non-compliance:

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

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

Section 6. Meetings

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

Section 7. Attendance Policy

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

Section 8. Departmental Responsibilities

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

A. Public Works

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

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

These responsibilities include, but are not limited to:

Engineering Division

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

system.

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

Operations Division

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

C. Community & Economic Development

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

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

C. Parks & Recreation

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

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

D. Police and Fire

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

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

Section 9. Permit Coordinator's Role

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

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

2021 Planned Activities / Events	Location(s)	City Personnel	Target Audience	Contact Information (other groups)	Subject Area(s)
SW Presentation and Virtual Tour	Zoom Presentation	Vince McIntyre	College Students - WWU, Huxley College of the Environment	vmcintyre@cityofpa.us	Stormwater Issues and local SW Treatment, detention, and LID facilities.
CESCL	Virtual/Live Presentation & Certification	Vince McIntyre	City Operations Staff, Local Developers, Local Contractors, & County PWKS	vmcintyre@cityofpa.us	Certified Erosion and Sediment Control Lead Cert. & Re-cert. Hosted by the City. Performed by CWT.
* Clallam County Fair (August)	Fairgrounds, Port Angeles	Vince McIntyre, Lucio Baack, Joey Bradley	General public	vmcintyre@cityofpa.us	Focusing on pet waste awareness, natural yardcare.
Utility Bill Mailer (October)	NA	Vince McIntyre	General Public	vmcintyre@cityofpa.us	LID, Pollution Prevention Hotline
Pollution Prevention Assistance Partnership (Ongoing)	Site visits within the City	Rachel Bowen	Local Businesses	rbowen@cityofpa.us	IDDE, Pollution Prevention, Source Control
Local Cinemas (May)	Deer Park Theatre, Port Angeles	Vince McIntyre	General public	vmcintyre@cityofpa.us	Pollution Prevention
Internet Adverts (May)	Port Angeles	Vince McIntyre	General Public	vmcintyre@cityofpa.us	Pollution Prevention: landscaping, automotive, pet waste
Natural Yard Care: Behavior Change Analysis via WSSOG (April)	Kitsap Co.	Vince McIntyre	Landscapers, Home Gardeners	vmcintyre@cityofpa.us	Natural Yard Care
Storm Drain Art Project (Summer)	Fracis St. Park	Vince McIntyre	General Public, Local artists	vmcintyre@cityofpa.us	Visual connection between stormwater inlets and the receiving waterbody.

* Subject to Covid-19 restrictions

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

1.0 PURPOSE:

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

2.0 ORGANIZATIONS and SPECIFIC POSITIONS AFFECTED:

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

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

3.0 POLICY:

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

4.0 SAFETY ASPECTS:

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

5.0 DEFINITIONS:

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

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

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

6.0 EQUIPMENT FOR RESPONSE PERSONNEL:

Required Equipment:

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

Other Equipment As Needed:

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

7.0 PROCEDURES:

7.1 Illicit Discharge Contact Methods

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

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

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

illicit-discharge@cityofpa.us

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

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

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

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

listed above.

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

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

7.2 Priority Area Identification and Reconnaissance

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

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

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

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

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

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

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

7.3 Illicit Discharge Response, Characterization, and Tracing

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(2) Consider storm drainage basin and land uses.

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

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

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

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

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

(8) Document investigation results for NPDES Permit compliance.

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

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

7.4 Regulatory Reporting Requirements

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

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

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

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

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

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

7.5 Field Screening

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

7.6 Public Education

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

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

7.7 IDDE Assessment

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

7.8 Training for City Staff

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

The Stormwater Engineer will be responsible for arranging for or conducting

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

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

8.0 APPENDIX:

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

APPENDIX 8.1

COMBINED CONTACT & POLLUTION INVESTIGATION CHECKLIST

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

SPILL INVESTIGATION

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

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

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

ERTS # _____

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

Initial Containment Measures _____

_____

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

_____

_____

Signature _____ Title _____

APPENDIX 8.2
PUBLIC WORKS & UTILITIES
EMERGENCY CALL LIST

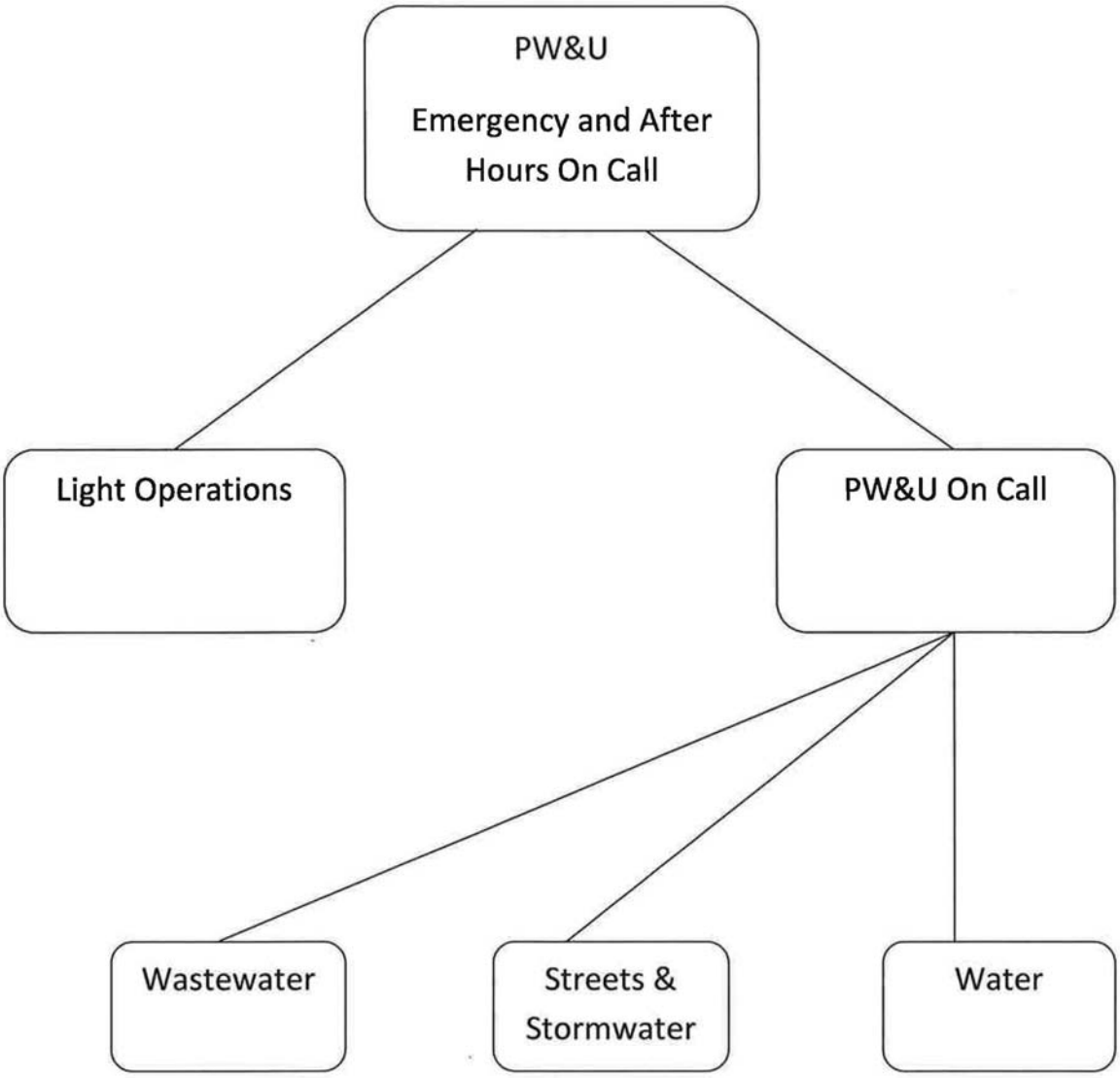
FOR POLLUTION INCIDENTS

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

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

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

APPENDIX 8.3


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

APPENDIX 8.4 - SPILL (ILLICIT DISCHARGE) CHARACTERIZATION FIELD SHEET

Section 1: Background Data

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

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

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

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

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

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

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

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

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

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

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

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

Section 6: Overall Spill or Illicit Discharge Characterization

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

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

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

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

Figure 8.4.1: Characterizing Submersion and Flow

Spill Characterization Field Sheet Section 2

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

Spill Characterization Field Sheet Section 3

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

Section 3: Quantitative Characterization

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

Figure 8.4.2: Section 3 of the ORI Field Sheet

Spill Characterization Field Sheet Section 4

Odor

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

Tip

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

Color

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

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

Turbidity

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

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

Color: Brown; Severity: 2
Turbidity Severity: 2

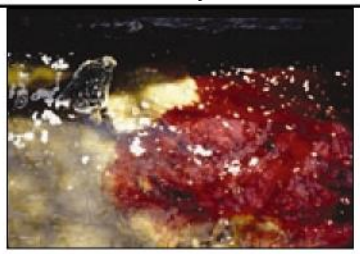
Color: Blue-green; Severity: 3
Turbidity Severity: 2

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

Sewage Discharge
Color: 3
Turbidity: 3

Paint
Color: White; Severity: 3
Turbidity: 3

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



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

Failing Septic System:
Turbidity Severity: 3

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

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

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

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

Construction Site Discharge
Turbidity Severity: 3

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

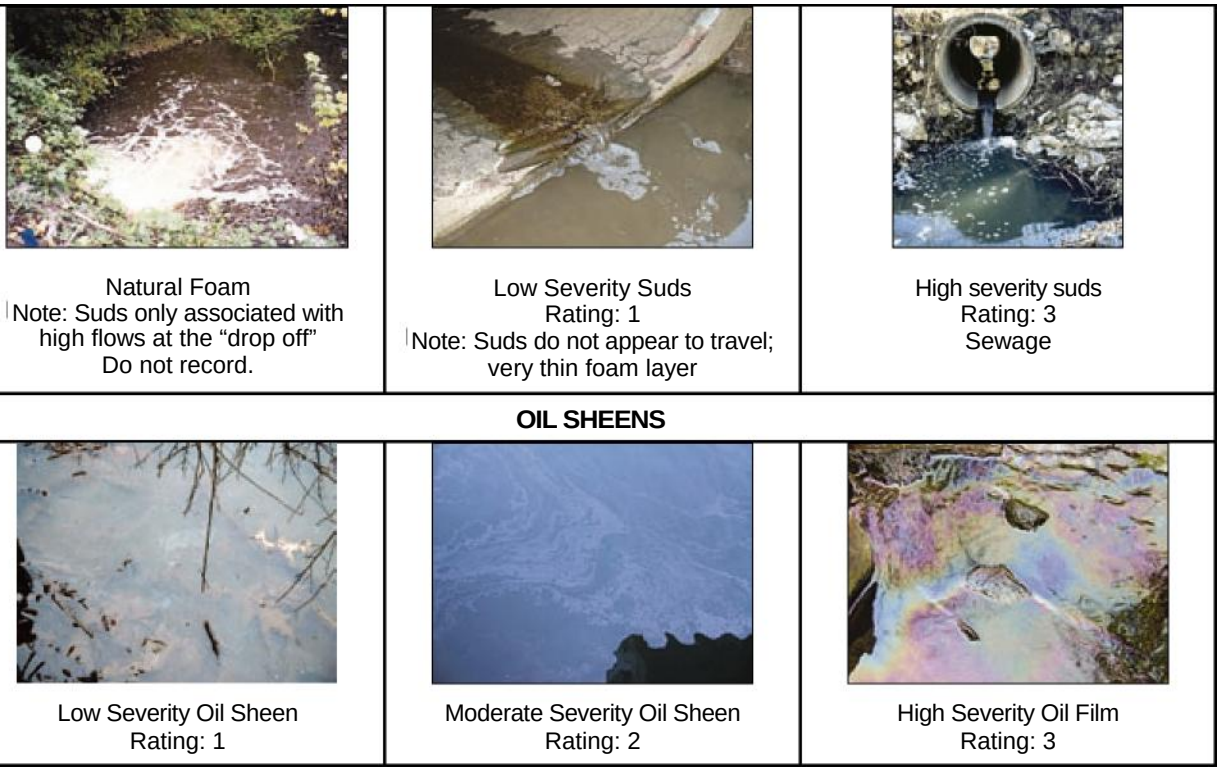
Figure 8.4.4: Interpreting Color and Turbidity

Floatables

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

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

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



SUDS

Figure 8.4.5: Determining the Severity of Floatables

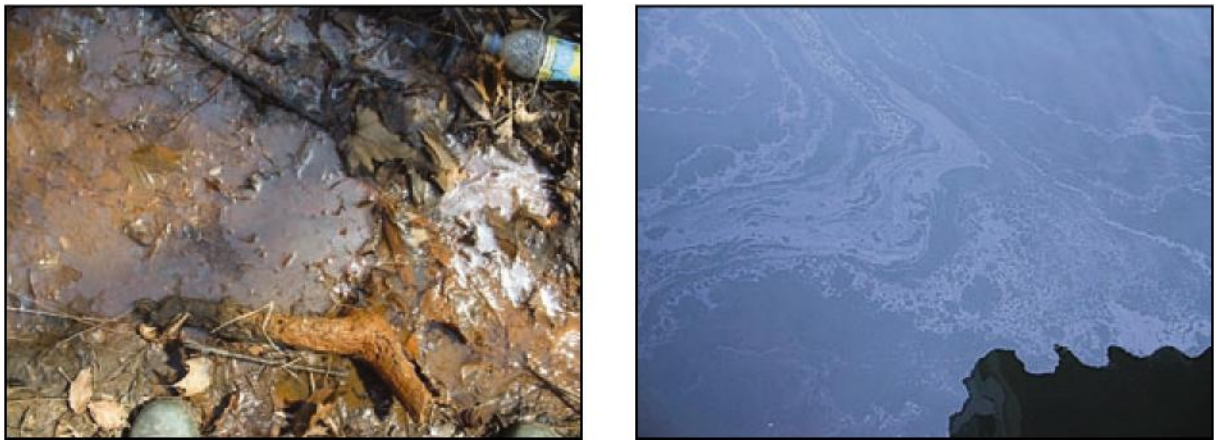


Figure 8.4.6: Synthetic versus Natural Sheen (a) Sheen from bacteria such as iron floc forms a sheet-like film that cracks if disturbed (b) Synthetic oil forms a swirling pattern

Sample Collection Field Sheet Section 5

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

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

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

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

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

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

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

This brownish algae indicates an elevated nutrient level.

Figure 8.4.7: Interpreting Benthic and Other Biotic Indicators

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

Toilet paper directly below the storm drain outlet.

Watershed Protection??

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

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

Excessive vegetation may indicate enriched flows associated with sewage.

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

Cracked rock below the outfall may indicate an intermittent discharge.

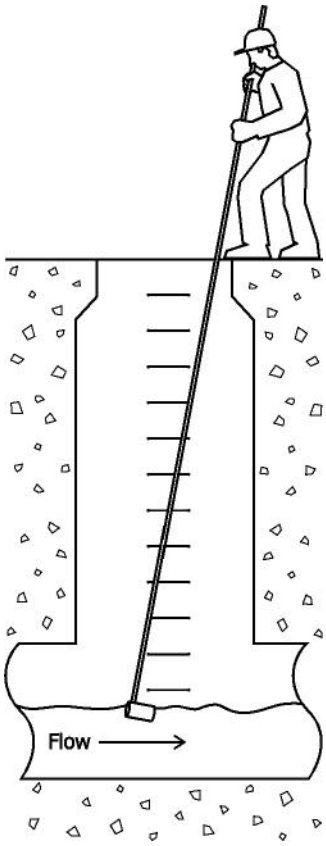
Poor pool quality. Consider sampling from the pool to determine origin.

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

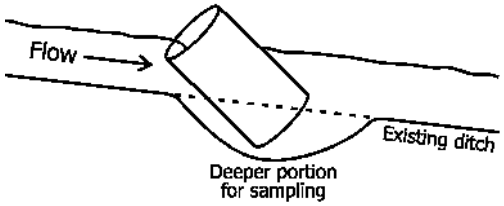
Appendix 8.5 – Stormwater Sampling Checklist

General Sampling Techniques

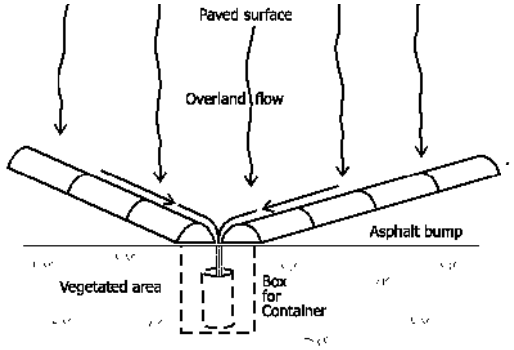
- If possible, notify the wastewater lab ahead of an illicit discharge investigation, a stream survey or a priority outfall survey so they will be aware that timely testing may be required.
- Collect two sample bottles for each sample site from the lab. Lab note: for fecal coliform samples: Bacteria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



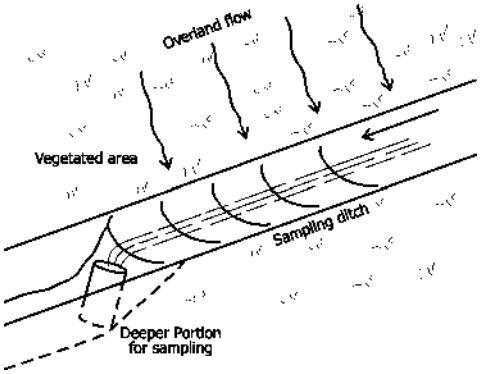
When sampling from a manhole, use a pole to safely sample from above ground. Avoid touching the sides of the manhole or pipes with the bottle to prevent contamination. Place the opening of the bottle upstream so that the flow enters the bottle directly.



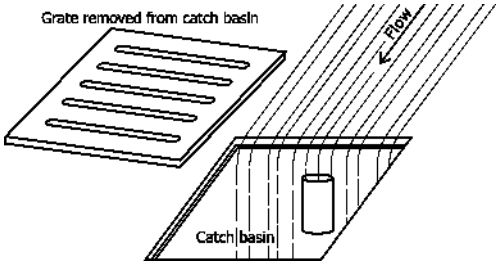
Deepening an existing ditch can allow samples to be collected directly into bottles in some cases. Be careful not to stir up solids from the sides or bottom of the ditch



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



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



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

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

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

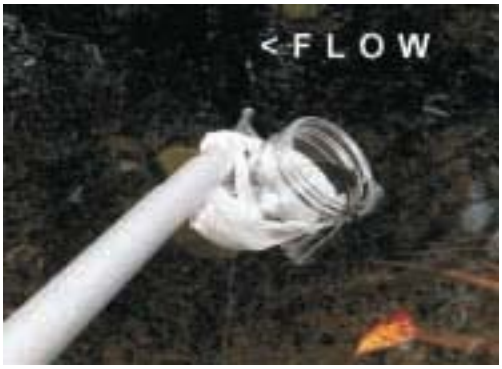
Do attach a bottle to a pole for sampling in manholes or when a hand sample would be in stagnant water. A boathook is used in this example and the bottle is attached to it with filament strapping tape.

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

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

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

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



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

Do collect samples without overfilling the bottle.

Appendix 8.6 – IDDE Incident Closure Form

IDDE INCIDENT CLOSURE FORM

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

X_____
Deputy Director of Public Works & Utilities

3.29.2021

Annual Stormwater Report to Ecology

Question 7 [S5.C.1.b.i(a)]**:** List of stormwater capital projects (currently in or slated for future design and construction) that resulted from this planning. (S5.C.1.b.i(a) and (b) – Required by March 31, 2021 and January 1, 2023)

COMPLETED PROJECTS

1. Peabody Creek Water Quality Treatment Project: Constructed in 2015, the goal of the Peabody Creek Water Quality Project was to retrofit green infrastructure to an existing neighborhood in a way that improves water quality discharged into Peabody Creek, a 303(d) listed water body for fecal coliform bacteria. The project involved installing a total of eight (8) Filterra Bioretention Modules at six (6) intersections on Albert and Francis Streets. In April 2014, City Council authorized acceptance of a grant from the Washington State Department of Ecology (DOE) that pays up to 75% of the cost of construction, including City staff time. The estimated total grant reimbursement from DOE for this project is $155,000.

2. Green LID Alley Project: Completed in 2015, this project installed permeable pavement in two alleys in the Peabody and Francis Street basins that drain to the Combined Sewer System.

3. H Street Stormwater Outfall Improvements: In 2015, the City removed and replaced 1,200 lineal feet of undersized failing storm pipe between Marine Drive and the Harbor to reduce flooding in the Crown Park neighborhood.

4. 18th Street Reconstruction: Completed in 2015, this project reconstructed approximately 10,800 lineal feet of roadway and added drainage, sidewalks, and bike lanes along 18th Street.

5. 10th Street Reconstruction: Completed in 2019, this project reconstructed approximately 1,200 lineal feet of curb, gutter, sidewalk, bike lanes, drainage, and new asphalt along 10th Street.

6. GreenLink Port Angeles, Phase I: Completed in 2020, Phase I of GreenLink Port Angeles developed a list of implementable green infrastructure projects and/or policies that will improve Port Angeles water quality, habitat, and community assets within the Port Angeles watershed.

FUTURE DESIGN AND CONSTRUCTION

1. GreenLink Port Angeles, Phase II: Planned for design completion in 2021, Phase II of GreenLink Port Angeles will advance and expand the project and/or policy list generated in Phase I (completed in 2020).

2. 16th Street LID (C to L Streets): Planned for design completion in 2021, this project will use LID techniques to manage stormwater and restore street surfacing between C and L streets. Construction funding and schedule TBD.

3. 1st/2nd/Valley/Oak Green Alley: Planned for design completion in 2021, this project involves repairing pavement and stormwater connections. Pavement has failed in the alley and inadequate stormwater connections contribute to wet weather combined sewer overflow events. Construction funding and schedule TBD.

4. City Hall East Parking Lot LID: Planned for design completion in 2021, this project will use LID techniques to manage stormwater runoff and restore the parking surface, which will help reduce pollutant loading to Peabody Creek. Construction funding and schedule TBD.

ROBIN KIRSCHBAUM, INC.

water { planning engineering

NPDES PHASE II MUNICIPAL STORMWATER PERMIT SUPPORT: STORMWATER PLANNING

COORDINATION WITH LONG-RANGE PLAN UPDATES

2013 – 2019 PERMIT PERIOD

MARCH 2021

CITY OF PORT ANGELES

CITY OF PORT ANGELES

NPDES PHASE II MUNICIPAL STORMWATER PERMIT SUPPORT: STORMWATER PLANNING

Date:	March 8, 2021
To:	Aimee S. Navickis-Brasch / Osborn Consulting, Inc.
	Vince McIntyre / City of Port Angeles
From:	Steven Demmer / Robin Kirschbaum, Inc.
Subject:	Task 2.22: Coordination with Long-Range Plan Updates (2013 – 2019 Permit Period)

Cover photos downloaded from the City of Port Angeles' website on February 8, 2021.

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1 INTRODUCTION

1.1 Project Description

The Washington State Department of Ecology (Ecology) reissued the Western Washington Phase II Municipal Stormwater Permit (Permit) on July 1, 2019, with an effective date August 1, 2019 and expiration date July 31, 2024. Special Condition (S) 5.C.1.b.i of the Permit requires the City of Port Angeles (City) to respond to a series of Stormwater Planning Annual Report questions to describe how anticipated stormwater impacts on water quality were addressed, if at all, during the previous 2013 to 2019 Permit term in updates to the City's long-term plans. The list of questions are provided in Appendix 3 of the Permit.

Responses to the questions for the previous 2013 to 2019 Permit term are due to Ecology by March 31, 2021. Section S5.C.1.b.i of the Permit also requires the City to address the same Stormwater Planning Annual Report questions relating to the current 2019 to 2024 Permit term, due to Ecology on or before January 1, 2023.

The City retained a Consulting team of Osborn Consulting, Inc. and Robin Kirschbaum, Inc. (RKI) to review the City's Comprehensive Plan, Capital Facilities Plan, Transportation Improvement Plan, and other long-term planning documents and assist with responses to the Stormwater Planning Annual Report questions.

1.2 Purpose of this Memorandum

Pursuant to S5.C.1.b.i (a) of the Permit, the purpose of this memorandum is to assist the City with responses to the Stormwater Planning Annual Report questions describing how anticipated stormwater impacts on water quality were addressed, if at all, during the 2013 – 2019 Permit term. Specifically, this memorandum provides responses to Questions #6 through #13, found in Appendix 3 of the Permit under the section titled "Coordination with Long-Range Plan Updates".

1.3 Organization of this Memorandum

The remainder of this memorandum is organized as follows:

- **Section 2:** Documents Reviewed
- **Section 3:** Stormwater Planning Annual Report Questions
- **Section 4:** References
- **Appendix A:** Responses to Stormwater Planning Annual Report Questions

The responses provided in Appendix A are intended to be ready for the City's use in submitting responses to Ecology per the requirements of S5.C.1.b.i (a) of the Permit.

2 DOCUMENTS REVIEWED

The documents reviewed for this task are summarized in Table 1.

Table 1. Documents Reviewed for Response to Annual Report Questions

Document Name	Year Last Updated
City of Port Angeles Capital Facilities Plan (2015 – 2020) and Transportation Improvement Plan (2015 – 2020)	2014
City of Port Angeles 2017 - 2022 Capital Facilities Plan and Transportation Improvement Plan	2016
City of Port Angeles 2018 - 2023 Capital Facilities Plan and Transportation Improvement Plan	2017
City of Port Angeles Urban Services Standards and Guidelines	2017
City of Port Angeles 2020 - 2025 Capital Facilities Plan and Transportation Improvement Plan	2019
The Comprehensive Plan for the City of Port Angeles	2016
City of Port Angeles Comprehensive Plan 2019 Amendment	2019
City of Port Angeles 2021 – 2026 Capital Facilities Plan and Transportation Improvement Plan	2020
City of Port Angeles Stormwater Management Program Plan	2020
Port Angeles Municipal Code	2020
Clallam County Code Title 31.04: Port Angeles Regional Plan	2021

3 STORMWATER PLANNING ANNUAL REPORT QUESTIONS

This section presents Stormwater Planning Annual Report Questions #6 through #13 as provided in Appendix 3 of the Permit. See Appendix A of this memorandum for responses for the City's use in responding to the questions as required by the Permit.

Question 6

List the relevant land use planning efforts that have taken place in your jurisdiction (land use plans that are used to accommodate growth, stormwater management, or transportation).

Question 7

List of stormwater capital projects (currently in or slated for future design and construction) that resulted from this planning.

Question 8

Describe of [sic] watershed protection measures associated with stormwater management and land use planning actions that resulted from this planning.

Question 9

Were land acquisitions identified (or are planning ahead for) that are useful for stormwater facilities to: accommodate growth or to better serve an existing developed area? If yes, for what purpose?

Question 10

Identified corrective actions, in addition to the minimum requirements of the Municipal Stormwater Permits to control or treat municipal stormwater discharges that pollute waters of the State (e.g. Limits to impervious cover added to any zoning districts, regional facility planning, minimization of vegetation loss, etc.)? If yes, briefly describe and list relevant plan or code sections, if applicable.

Question 11

Updates to goals and policies related to investment in stormwater management facilities/BMPs? (yes/no) If yes, briefly describe.

Question 12

Does the long-range plan identify the location and existing capacity of the stormwater facilities owned or operated by the Permittee and show which of those stormwater facilities have unused capacity?

12a. Do these stormwater facility locations impact where housing, or other types of development, are projected to be located or influence the acquisition of land? (If yes, how?)

12b. Does the long-range plan identify a lack of facilities and the potential impacts of existing or new development to those areas and receiving waters?

12c. Any new proposed locations and capacities of stormwater facilities needed for the timeframe of the plan?

Question 13

Based on the projected population densities and distribution of growth over the planning period, describe how stormwater runoff impacts are forecasted. Does stormwater management information (including water quality) direct where growth is directed?

4 REFERENCES

Clallam County, 2021. “Clallam County Code Title 31.04: Port Angeles Regional Plan.” Passed January 19, 2021.

City of Port Angeles (Port Angeles), 2014. “The City of Port Angeles, Washington: 2015 - 2020 Capital Facilities Plan and Transportation Improvement Plan.”

City of Port Angeles (Port Angeles), 2016. “The City of Port Angeles, Washington: 2017 - 2022 Capital Facilities Plan and Transportation Improvement Plan.” May 9, 2016.

City of Port Angeles (Port Angeles), 2016. “The Comprehensive Plan for the City of Port Angeles.”, Approved June 21, 2016.

City of Port Angeles (Port Angeles), 2017. “City of Port Angeles, Department of Public Works and Utilities: Urban Services Standards and Guidelines.” January 2017.

City of Port Angeles (Port Angeles), 2017. “The City of Port Angeles, Washington: 2018 - 2023 Capital Facilities Plan and Transportation Improvement Plan.” March 30, 2017.

City of Port Angeles (Port Angeles), 2019. “The City of Port Angeles, Washington: 2020 - 2025 Capital Facilities Plan and Transportation Improvement Plan.” July 18, 2019.

City of Port Angeles (Port Angeles), 2019. “The Comprehensive Plan for the City of Port Angeles.” Approved June 21, 2016. Amended 2019.

City of Port Angeles (Port Angeles), 2020. “The City of Port Angeles Code of Ordinances: Supplement 27.” Enacted February 4, 2020. Updated May 8, 2020.

City of Port Angeles (Port Angeles), 2020. “The City of Port Angeles, Washington: 2021 – 2026 Capital Facilities Plan and Transportation Improvement Plan.” July 7, 2020.

State of Washington Department of Ecology (Ecology), 2019. “Western Washington Phase II Municipal Stormwater Permit.” Issued July 1, 2019.

Wierzbicki, Christopher, 2019. “Memorandum: GreenLink Port Angeles.” Developed by futurewise for Port Angeles City Council. May 21, 2019.

APPENDIX A

Responses to Stormwater Planning Annual Report Questions

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The below text provides responses to the Stormwater Planning Annual Report Questions #6 through #13 (see Section 3 of the main body of the memorandum) for the City's use in responding to Ecology as required by the Permit.

Question 6

Response

In 2018, the City initiated GreenLink Port Angeles, which is a two-phase, watershed-scale green infrastructure and land use planning effort. Phase I of the project occurred during the 2013 – 2019 Permit term and involved planning efforts to develop a list of implementable green infrastructure projects and/or policies to promote Port Angeles water quality, habitat, and community assets.

Additional land use planning efforts are described both in the City's Comprehensive Plan (last updated in 2016 and amended in 2017 and 2019) and in the City's Capital Facilities Plan and Transportation Improvement Plan (updated an on annual basis). The Capital Facilities Plan includes a schedule for preparation and adoption of all City service and facilities plans, coordinated with the Comprehensive Plan.

The following provides a summary of land use planning efforts used to accommodate growth, stormwater management, and transportation, as described in the updates to the Comprehensive Plan, the Capital Facilities Plan and Transportation Improvement Plan within the previous 2013 – 2019 Permit period.

ACCOMMODATING GROWTH

1. In 2016, the City added a policy to their Comprehensive Plan to develop an annexation plan which allows the annexation of land characterized by urban development, which is consistent with the extension of services and the land development policies of the City's Comprehensive Plan and Capital Facilities Plan (Land Use Element, Goal A, Policy 3).
2. In alignment with the Comprehensive Plan, Growth Management Goal 2A, the City added a policy in 2018 to review and update the City's Buildable Lands inventory on a biannual basis, helping to inform land use decision-making (Comprehensive Plan, Chapter 11.3).
3. In alignment with The Comprehensive Plan, Growth Management Goal 2A, the City instituted an on-going effort to acquire no-protest annexation agreements for all utility connections occurring in the Port Angeles Urban Growth Area (Comprehensive Plan, Chapter 11.3).
4. In alignment with The Comprehensive Plan, Land Use Element, Goal G, the City established a Harbor Study committee comprised of private and public stakeholders in harbor uses and activities to review and revise the Harbor Resource Management Plan.
5. In alignment with The Comprehensive Plan, Land Use Element, Goal G, the City updated its zoning code (Title 17) to establish opportunities for limited work/live environments consistent with industrial zoning.
6. In the Comprehensive Plan, the City added language in 2016 describing the creation of new zone designations in anticipation of future annexations, especially the City's eastern Urban Growth Area, including:

a. **The Commercial Regional Zone.** The Commercial Regional Zone applies to areas along highway 101 where existing large commercial uses such as car dealerships and large volume stores currently exist, or where land is available for such uses (Land Use Element, Goal D)

b. **The Residential Single-Family Zone (RS-1).** RS-1 restricts residential lots to a minimum of 11,000 square feet or larger for areas within existing City limits (Land Use Element, Goal C)

c. **The Industrial Marine Zone (IM).** IM applies to shoreline areas focusing primarily on marine trades that may need the support of commercial uses to provide framework for mixed uses in a campus-like environment (Land Use Element, Goal G)

STORMWATER MANAGEMENT

1. In 2016, the City revised its Comprehensive Plan to encourage Low Impact Development (LID) as follows:

    a. Added a new policy that establishes a preference for LID techniques and BMPs (Land Use Element, Goal A, Policy 4)

    b. Added a policy to utilize land donated for public use to provide common open space, public buildings, parks and recreational opportunities, while incorporating LID techniques and BMPs (Land Use Element, Goal J, Policy 5)

    c. Added a policy to emphasize the integration of LID BMPs, stormwater wetlands, and other stormwater features in major parks and open spaces (Utilities and Public Services Element, Goal C, Policies 2 and 3)

    d. Added new policy and objective regarding preference of LID techniques and BMPs for new development (Housing Element, Goal A, Policy 14 and Objective 2)

TRANSPORTATION

1. In 2016, the City revised its Comprehensive Plan to encourage transportation-related LID as follows:

    a. Added language to include LID techniques and BMPs as public streetscape improvement (Transportation Element, Goal A, Objective 6)

    b. Added language to clarify permeable pavement preference for local access streets and alleys, where feasible (Transportation Element, Goal A, Objective 6)

    c. Added language regarding the City's preference for sidewalks to be constructed of permeable materials where feasible (Capital Facilities Element, Goal A, Policy 15)

2. In 2018, the City revised the Municipal Code with Ordinance No. 3615, which established a "Complete Streets" program, helping to identify travelways to accommodate all modes of transportation as appropriate for the needs and conditions of each neighborhood or district (Comprehensive Plan, Chapter 11.5)

Question 7

Response

The following list summarizes stormwater capital projects that resulted from planning as described in Question 6, as well as projects that are slated for future design and construction.

COMPLETED PROJECTS

1. **Peabody Creek Water Quality Treatment Project:** Constructed in 2015, the goal of the Peabody Creek Water Quality Project was to retrofit green infrastructure to an existing neighborhood in a way that improves water quality discharged into Peabody Creek, a 303(d) listed water body for fecal coliform bacteria. The project involved installing a total of eight (8) Filterra Bioretention Modules at six (6) intersections on Albert and Francis Streets. In April 2014, City Council authorized acceptance of a grant from the Washington State Department of Ecology (DOE) that pays up to 75% of the cost of construction, including City staff time. The estimated total grant reimbursement from DOE for this project is $155,000.
2. **Green LID Alley Project:** Completed in 2015, this project installed permeable pavement in two alleys in the Peabody and Francis Street basins that drain to the Combined Sewer System.
3. **H Street Stormwater Outfall Improvements:** In 2015, the City removed and replaced 1,200 lineal feet of undersized failing storm pipe between Marine Drive and the Harbor to reduce flooding in the Crown Park neighborhood.
4. **18th Street Reconstruction:** Completed in 2015, this project reconstructed approximately 10,800 lineal feet of roadway and added drainage, sidewalks, and bike lanes along 18th Street.
5. **10th Street Reconstruction:** Completed in 2019, this project reconstructed approximately 1,200 lineal feet of curb, gutter, sidewalk, bike lanes, drainage, and new asphalt along 10th Street.
6. **GreenLink Port Angeles, Phase I:** Completed in 2020, Phase I of GreenLink Port Angeles developed a list of implementable green infrastructure projects and/or policies that will improve Port Angeles water quality, habitat, and community assets within the Port Angeles watershed.

FUTURE DESIGN AND CONSTRUCTION

1. **GreenLink Port Angeles, Phase II:** Planned for completion in 2021, Phase II of GreenLink Port Angeles will advance and expand the project and/or policy list generated in Phase I (completed in 2020).
2. **16th Street LID (C to L Streets):** Planned for completion in 2021, this project will use LID techniques to manage stormwater and restore street surfacing between C and L streets.
3. **1st/2nd/Valley/Oak Green Alley:** Planned for completion in 2021, this project involves repairing pavement and stormwater connections. Pavement has failed in the alley and inadequate stormwater connections contribute to wet weather combined sewer overflow events.
4. **City Hall East Parking Lot LID:** Planned for construction in 2022, this project will use LID techniques to manage stormwater runoff and restore the parking surface, which will help reduce pollutant loading to Peabody Creek.

5. **Peabody Creek Fecal Reduction:** Planned for construction in 2023, the City will install Filterra units in residential neighborhoods to reduce fecal coliform loading to Peabody Creek. This project is dependent on Ecology grant funding and will move forward as planned if grant funding is awarded. As of March 2021, the grant application for this project has not yet been written.

Question 8

Response

Watershed protection measures associated with stormwater management and land use planning actions that resulted from planning as described in Question 6 are as follows:

1. In 2014, the City completed the Shoreline Master Program, which included development of a new Harbor Resource Management Plan, a Shoreline Inventory/Characterization/Analysis Document, a Cumulative Impacts Analysis, and a Shoreline Restoration Plan (Comprehensive Plan, Chapter 1.15)
2. In response to the Shoreline Master Program, a shoreline restoration effort was completed during the summer months of 2016 and resulted in a continuous restored shoreline on Ediz Hook from Harbor View Park on the east end of the Hook to Sail and Paddle Park on the west end of the Hook.
3. In 2018, the City developed an archaeological database allowing for review and monitoring of ground-disturbing activities (Comprehensive Plan, Chapter 11.8). The database includes:
    a. Known archaeological and historic sites;
    b. Predictive model prescribing areas of high, medium and low archaeological site potential; and
    c. A waterfront archaeological overlay.
4. In 2019, the City developed an inventory of wetland delineations completed as part of land use permitting (Comprehensive Plan, Chapter 11.8)

Question 9

Response

No land acquisitions were identified in the City's long-range planning efforts that are useful for stormwater facilities.

Question 10

Response

The following policies are identified in the Port Angeles Comprehensive Plan (2019 Amendment) to control or treat municipal stormwater discharges that pollute waters of the State:

1. Encourage residential development to preserve and capitalize on existing unique natural, historic, archaeological, and/or cultural features including promotion of native and drought tolerant vegetation and scenic views (Policy 3B.06)
2. Discourage intensive recreational uses and construction of impervious surfaces in sensitive open spaces (Policy 3J.03)
3. Protect water quality and prevent erosion through the retention of existing vegetation (Policy 7B.09)

4. Establish and implement an urban tree management program…to mitigate the negative effects of impervious surfaces and vehicular traffic such as…stormwater runoff (Policy 7B.16)
5. Maintain and restore riparian vegetation in shoreline areas and on tributary streams, which affect shoreline resources wherever possible (Policy 7D.02)
6. Revise existing urban development standards in low density residential areas to include low impact development standards (Policy 8D.01)

Question 11

Response

In 2016, the City made revisions to its Municipal Stormwater Utility and Regulations Code (Chapter 13.63) to invest in updates to its Stormwater Incentives program. The incentives program focuses on one-time rebate incentives for projects triggering Minimum Requirement (MR) #5: On-Site Stormwater Management. Additionally, a new Incentives program was created for retrofit projects and projects that install rain gardens but are less than the MR #5 threshold.

Question 12

Response

12:

The City's Comprehensive Plan describes the City's stormwater conveyance facilities. The Comprehensive Plan describes that the downtown portion of the City has combined sewers and the rest of the City has varying degrees of partially separated sewers. The existing separated storm sewers are generally 6- and 8-inch-diameter pipes running primarily in the north/south "short block" orientation. These storm sewer pipes collect stormwater from catch basins that are at the east/west "long block" intersections. The Comprehensive Plan describes its complete sewer system as 119 miles of sanitary and combined sewer pipe ranging from 4 to 36 inches in diameter with two marine outfalls.

In 2014, the City modified its wastewater treatment plant, which provides combined sewer treatment, with a 4.9 million-gallon storage tank for temporary storage of peak flows of combined sewage during rain events. The wastewater treatment plant is rated at 10.6 million gallons per day (MGD) maximum monthly design flow and can handle peak combined sewer flows of up to 20 MGD.

12a:

Stormwater facility locations do not typically impact where housing or other types of development are projected to be located or where land is to be acquired.

12b:

The Comprehensive Plan and other long-range plans do not explicitly identify a lack of facilities and the associated potential impact to existing or new development. Typically, development in the City is not based on where existing stormwater facilities are located. However, if development is proposed in an area with no stormwater facilities, where applicable a stormwater facility expansion will be proposed to serve the proposed developed area.

12c:

The City's 2021 – 2026 Capital Facilities Plan identifies several prioritized locations in the City that are planned to undergo conversion from a combined sewer system to a separate sewer system (i.e., separating stormwater from wastewater). The conversion will provide for the City's goal to reduce combined sewer overflows to one event per outfall location per year. These areas include:

- Oak Street at Front Street
- Laurel Street and First Street
- 1st and 2nd Street Alley
- Shane Park

The Capital Facilities Plan also identifies Lincoln Park and Big Boy Pond at Steven's Middle School, located in the Lincoln Park neighborhood of the City, as an integral stormwater detention and flow control facility, which experiences necessary seasonal flooding to prevent residential flooding around Big Boy Pond. However, current conditions allow for flooding on the site's fairground areas and areas west of the school. Current planning efforts are underway to evaluate conveyance capacity and upgrades to the site to reduce flooding in these surrounding areas.

Question 13

Response

According to 2010 census data, the population of the City of Port Angeles was 19,038 in 2010, with a projected annual growth of 1.5%. In planning for this growth, the Port Angeles Urban Growth Areas were established to meet the area required to contain the projected 20-year population growth of the urban area plus those neighborhoods that were already urban in nature. The established Urban Growth Areas include the Eastern Urban Growth Area, located east of the City limits, and the Western Urban Growth Area, located west and south of the City limits. It is expected the City will annex all of the Urban Growth Areas in the next 20 years.

The Urban Growth Areas are encouraged to develop land utilizing City development standards, which includes encouraging development to apply LID techniques and BMPs, where feasible (Clallam County Code, Chapter 31.04: Port Angeles Regional Plan).

2020 Activities / Events	Date(s)	Location(s)	City Personnel	Target Audience	Contact Information (other groups)	Subject Area(s)	Attendance/Distribution	Educational Materials Used	Notes/Other
SW Presentation and Field Trip	January 25th, 2020	Peninsula College	Vince McIntyre	College Students	Vmcintyr@cityofpa.us	Urban stormwater problems and local stormwater management techniques and facilities	21 Students & 2 Faculty - Western Washington University, Huxley College on the Peninsula - ESCI 361 Fran Solomon, Ph.D & Cathy Reidy Lierman, Ph.D	Part I - 45 min. classroom presentation discussing stomrwater issues and functional solutions found in Port Angeles. Part II - Field trip to 5 local sites exemplifying LID, Treatment, and Flow Control. J. Waknitz from the Port of PA joined the tour and presented on their new Biofiltration facility.	
KONP Home Show	March 14th & 15th	Port Angeles High School Gymnasium	Lucio Baack, Vince McIntyre, Joey Bradley, Diana Bagwell	General Public, Developers, Landscapers, & Home Owners	Vmcintyr@cityofpa.us	IDDE Program, LID Rebate Program, Rain Gardens, Natural Yard Care	--- Canceled Due to Covid-19 Pandemic ---	Native Plantings originally purchased for handouts were donated to the Clallam Conservation District and planted at the Little River Restoration Site and along Ennis Creek by local volunteers.	
Local Cinemas	May through June	Deer Park and Lincoln Cinemas	Jonathan Boehme	General Public	Vmcintyr@cityofpa.us	Pollution Prevention	--- Canceled Due to Covid-19 Pandemic ---	Re-directed into online social media campaign - see below.	
Clallam County Fair	August 20th - 23rd	Clallam County Fairgrounds	Diana Bagewell, Lucio Baack, Vince McIntyre, Joey Bradley, Rachel Bowen	General Public	Vmcintyr@cityofpa.us	Focusing on pet waste awareness & natural yard care.	--- Canceled Due to Covid-19 Pandemic ---	Distributed pet waste bag that are normally handed out at the Fair through local pet-related businesses - see below.	
PSSH Month - handouts to community	August 28th, 2020	Local coffee shops and pet-related businesses	Vince McIntyre	General Public	Vmcintyr@cityofpa.us	Stormwater Imapcts from: Pet Waste, Landscaping Runoff, & Car Washing	5,200 coffee sleeves w/ stormwater awareness information were distributed from 10 different coffee shops throughout the community. 1,300 Pet Waste Bad Dispensers were distributed from 10 local Pet Shops, Pet Salons, and Veternenary Clinics to pet owners.	Coffee sleeves and pet waste bag dispensers. Materials included PSSH Campaign information directing to their website for more information.	Follow-up with business owners in October - Very Positive
Stormwater Awareness Ad. Campaign - online	September 1st - 30th	Virtual: YouTube, Facebook, & Basis DSP	Vince McIntyre	General Public	Vmcintyr@cityofpa.us	Stormwater Imapcts from: Pet Waste, Landscaping Runoff, Vehicle Fluids	Large regional social media campaign facilitated by Puget Sound Starts Here (PSSH) and in partnership with the City. Stats specific to Port Angeles: 40,183 Impressions, 3,030 Initiations, 2,068 Completions, & 39 Clicks.	PSSH Stormwater Awareness online videos and paid advertisements	
Stormwater Rains Newsletter - Vol. 7	October	Mail	Diana Bagwell, Vince McIntyre	General Public	Vmcintyr@cityofpa.us	General Info: What is SW, Prepare for Wet Season, Reporting Spills, Permitting, SW Projects, Reduce Pollution, Upcoming events	Physical distribution to City Residents via Utility Bill approx. 7,500-10,500	2-page flier - utility bill insert	
Business Stormwater Education	All-year	Site visits to businesses within the City	Rachel Bowen	Local Businesses	rbowen@cityofpa.us	IDDE, Pollution Prevention, Source Control	49 Local Businesses The pandemic experienced globaly in 2020 restricted in-person contact, however, the office remained fully staffed and communicated remotely with local businesses. In-person site visits were able to resume in late July within safety parameters.	Targeted Pollution Prevention and reporting information for local businesses to prevent adverse downstream stormwater impacts.	Mostly positive responses

3.19.2021

Note to File.

Due to the global Covid-19 Pandemic, the Clallam County Home Show was canceled. Native plantings the City had purchased and intended to give-away at the City's annual booth, were donated to the Clallam Conservation District and planted at the Little River Restoration Site and along the Ennis Creek by local volunteers and restoration technicians from the Lower Elwha Klallam Tribe.

It is unlikely that the Home Show will resume in 2021, however, we are hopeful for a return in 2022.

Additionally, and for the same reason, the 2020 Clallam County Fair was canceled. Normally, this large public gathering is an excellent opportunity to talk with the local community about stormwater management. The City normally hosts and staffs a booth all four days of the event. Our famous "poop toss" game never ceases to thrill and joyfully disgust as we explain the benefits of picking up after our pets when living in an urban environment. Instead, Puget Sound Starts Here pet waste bags were delivered to local pet shops, pet parlors, and veterinary clinics to be handed out to their customers, in consideration of the ongoing pandemic. As vaccines are being administered, we are hopeful that the Fair may be back in 2021.

Vince McIntyre, P.E.
Public Works

Clallam Conservation District

228 W First Street
Suite H
Port Angeles, WA 98362

PS order#	391
INVOICE #	2020-PS391
1/27/2020	

BILL TO

City of Port Angeles
Engineering Dept.
321 E. 5th St.
Port Angeles, WA 98362

Please mark your calendar
2020 Plant Pick-Up Date/Time:
February 29, 2020 9:30 AM - 12:00 PM

Plant Pick-Up Location:
Lazy J Tree Farm
225 Gehrke Rd.
Port Angeles, WA 98362

DESCRIPTION	QUANTITY	PRICE	TOTAL PRICE
Indian Plum, Bundle of 10	5	14.75	73.75T
Red Flowering Currant, Bundle of 10	3	14.74	44.22T
Rocky Mountain Maple, Bundle of 10	8	14.75	118.00T
Serviceberry, Bundle of 10	3	14.74	44.22T
Western Hemlock, Bundle of 10	2.5	9.216	23.04T
Western Red Cedar, Bundle of 10	2.5	9.216	23.04T
Clallam County Sales tax		8.50%	27.73

Total	$354.00
Payments/Credits	$0.00
Balance Due	$354.00

BUDGET CODE 406-7412-538.44-10
DEPT/DIV APPROVAL: V. Mc
DATE 1/28/2020

City of Port Angeles 2020 Home Show

	Saturday, March 14	Sunday, March 15
9:30am - 12:00pm	1 Diana Bagwell 2 Michelle Hale 3	1 Joey Currie 11 a.m. 2 Diana Bagwell 3 Michelle Hale
12:00pm - 2:00pm	1 Gregg King 2 Luccio Baack 3	1 Joey Currie 2 Vince McIntyre 3
2:00pm - 4:00pm	1 Gregg King 2 Luccio Baack 3	1 Joey Currie 2 Vince McIntyre 3
	1 2 3	1 2 3

FINAL SCHEDULE.

Vince McIntyre

From: Meghan Adamire <meghan.adamire@clallamcd.org>
Sent: Tuesday, October 13, 2020 11:06 AM
To: Vince McIntyre
Cc: Lucio Baack; Kim Williams
Subject: Re: FW: Home Show Plants

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Vince,

I just wanted to let you know that we were able to find restoration sites for all the Home Show plants. The 190 shrubs and deciduous trees will be planted at a Little River restoration site this Thursday, October 15, and the 50 conifers will be planted on Ennis Creek on October 29. Conservation District volunteers will be planting these sites alongside restoration technicians from the Lower Elwha Klallam Tribe, led by Kim Williams.

We are so excited for this great partnership to put these plants to work. Thank you and the City for the donation of them. Please let me know if you need any additional details.

Thank you,
Meghan

Meghan Adamire
Conservation Planner
Clallam Conservation District
228 W First St., Suite H
Port Angeles, WA 98362
Phone: (360) 775-3747 ext. 1

On Tue, Oct 6, 2020 at 3:36 PM Vince McIntyre <Vmcintyr@cityofpa.us> wrote:

> Hi Meghan,
>
> The City does not have a meaningful use for the Home Show plants at this time and we would be happy to donate them to a worthy cause.
>
> If you have multiple events planned and if possible, please utilize plants in the City or within the City's watershed or creek drainage basins. If not – no big deal. Let me know where they are used, if you could, for tracking purposes. Additionally, if you have a need for support for a project within the City or within the City's watershed, we may be a resource for you – just let me know.
>
> Take care,
>
> Vince McIntyre

Distribution of Pet Waste Bags - PSSH Month (Sept. 2020)

Drop Off Date = 8/28/2020

Education and Outreach to the Port Angeles Community

Starting amount = 1300 Bag Disp. # of Participants = 10

Business	Address	Phone	Email	Contact Person	Request Pet Waste Bags?	Notes	Amount
Patricia's Pet Shop	501 S Lincoln St, Port Angeles, WA 98362	(360) 457-6919			Manager to call back		130
Kit N Kapoodle	221 S Peabody St # C, Port Angeles, WA 983	(360) 457-5244		Alisha - owner	Y	Afternoon	130
Angeles Clinic for Animals	160 S Del Guzzi Dr, Port Angeles, WA 98362	(360) 452-7686		Hannah	Y		130
Little Mt Grooming	512 E 1st St, Port Angeles, WA 98362	(360) 452-3313			left a message		130
Grime To Shine Grooming	1605 E Front St A, Port Angeles, WA 98362	(360) 565-5010			left a message		130
Olympic Veterinary Clinic	1331 E Front St, Port Angeles, WA 98362	(360) 452-8978			Manager to call back		130
Port Angeles Veterinary Clinic	829 E 1st St, Port Angeles, WA 98362	(360) 452-5541			Y	Friday - 2:30-3	130
Best Friends Pet Care Center	1004 W 16th St, Port Angeles, WA 98363	(360) 452-7387			Y	before 1	130
Petazzled Pet Salon	402 E 8th St suite b, Port Angeles, WA 98362	(360) 406-1518		Shanna	Y	Friday -noon	130
Bergen's Dog Grooming Salon	511 S. Lincoln St., Port Angeles, WA	(360) 457-4838			Y	Friday -noon	130

Puget Sound Starts Here.org

We're proud to support the mission of Puget Sound Starts Here by offering this selection of promotional products. The items have been selected to help promote education and awareness to reduce human impact on local waterways.

PSSH PET WASTE BAG DISPENSER

The refillable 600D nylon construction features a compartment with 20 biodegradable disposable bags. The pet bag dispenser attaches to any back-pack, belt loop or leash with a swivel plastic clip. Choose from 8 stock colors: black, blue, green, lt. blue, orange, pink, violet, red. Mix up to 4 assorted colors available at no additional charge (with 200 plus orders).

ITEM: PSSH-WD

Includes 1-color, 1-location imprint, set-up. Shipping additional.

Quantity	Unit Price	Quantity	Unit Price
100 - 199	$ 3.25	200 - 399	$ 3.00
400 - 799	$ 2.75	800 - 999	$ 2.60
1000 - 2499	$ 2.50	2500 plus	$ 2.40

100 quantity min. order.

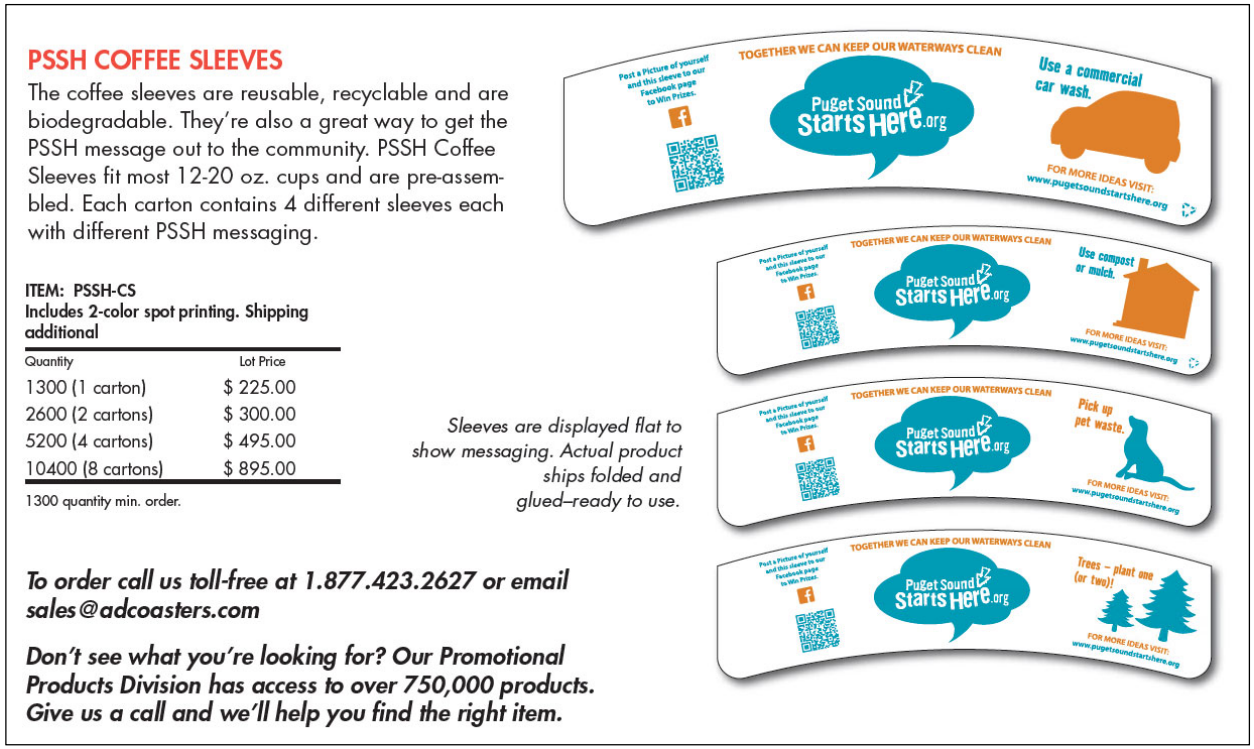
Distribution of Coffee Sleeves - PSSH Month (Sept. 2020)

Education and Outreach to the Port Angeles Community

Starting amount: 4 cartons = 5200 Sleeves # of Participants = 10

Business	Address	Phone	Email	Contact Person	Request Sleeves?	Drop off Date	Amount
Daily Grind	1919 E 1st St, Port Angeles, WA 98362	1-360-452-1744			call back	8/28/2020	520
Fogtown Coffee Bar	1105 E Front St B, Port Angeles, WA 98362	1-360-504-3509			call back	8/28/2020	520
Just Rewards Espresso	1001 E 1st St, Port Angeles, WA 98362	1-360-457-3441		*same owner as Higher Grounds	Y - do Higher Grounds First	8/28/2020	520
The Blackbird Coffeehouse	336 E 8th St, Port Angeles, WA 98362	1-360-452-3999		Tricia Fontana	Y	8/28/2020	520
Bella Rosa Coffee House	403 S Lincoln St, Port Angeles, WA 98362	1-360-417-5402		...Joe's Wife	Y	8/28/2020	520
Lincoln Street Coffee Pot	902A S Lincoln St, Port Angeles, WA 98362	1-360-457-5665			call back	8/28/2020	520
BADA NW	118 W 1st St, Port Angeles, WA 98362	1-360-797-1658			Mailbox full	8/28/2020	520
Easy Street Coffee and Tea House	128 W 1st St, Port Angeles, WA 98362	1-360-775-5041			Y	8/28/2020	520
Higher Grounds	802 S C St, Port Angeles, WA 98363	1-360-452-7825			Y	8/28/2020	520
The Coffee Cottage	1921 US-101, Port Angeles, WA 98363				Maybe	8/28/2020	520
Good To Go Natural Grocery	1105 S Eunice St, Port Angeles, WA 98362	13604571857	goodtogogrocery@gmail.com	Liz Seifert	email, call - no response	-	-

*List generated using Google Maps, search keyword "Coffee Shop". Some discretion was used to add known businesses and exclude businesses that were known to not be a coffee shop.



JANUARY 2021

WEST SOUND STORMWATER OUTREACH GROUP

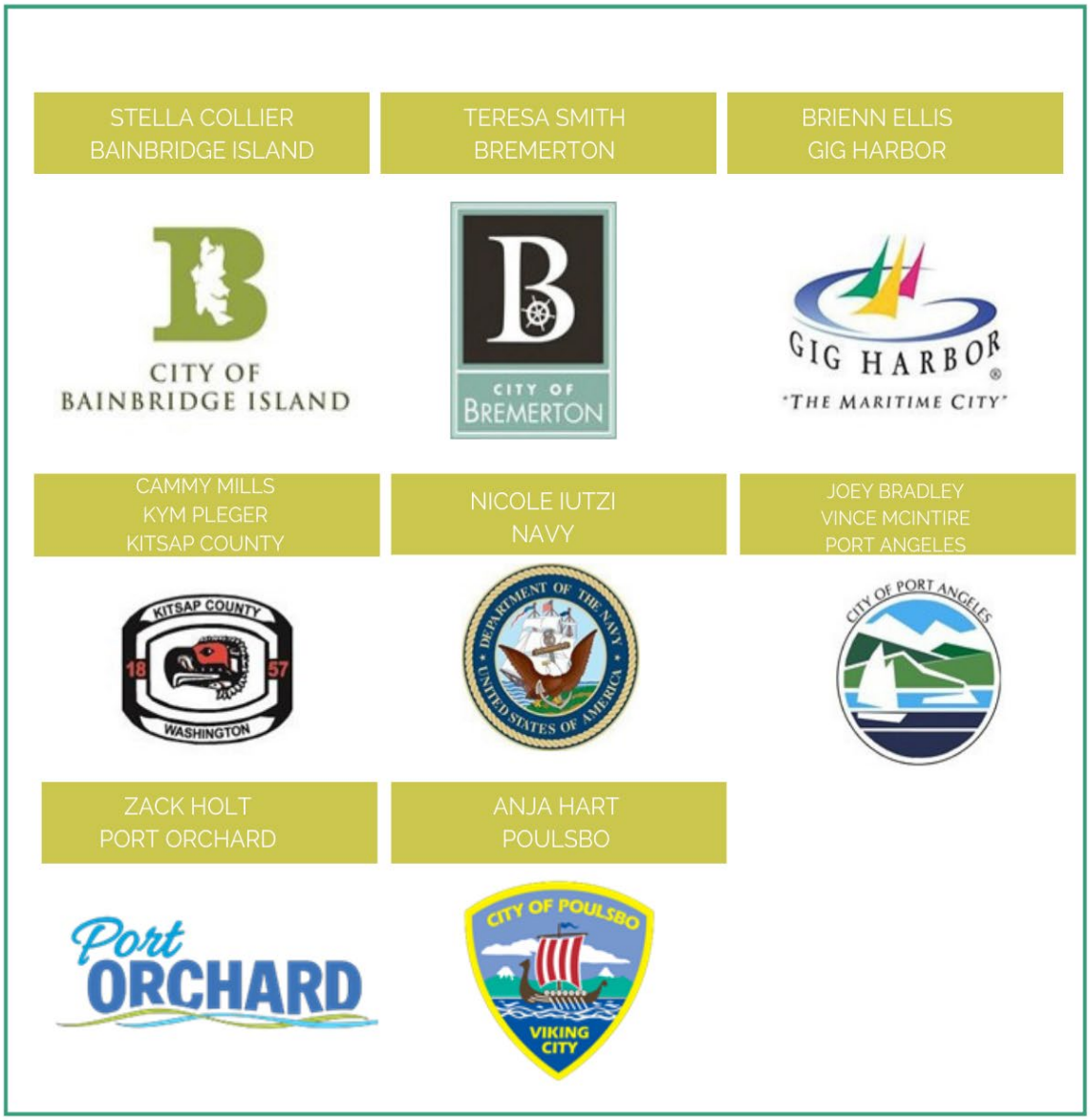
2020 SUMMARY OF ACTIVITIES

Table of Contents

Who We Are

Overview

The West Sound Stormwater Outreach Group (WSSOG) is a group of jurisdictions working together to improve water quality, meet key requirements of the NPDES Phase II Municipal Stormwater Permit (herein referred to as permit), and serve the collective needs of our jurisdictions in promoting good stewardship and preservation of our local waterways.



2020 Highlights

A Year of Adaptation

In 2020, WSSOG began implementing a pilot campaign designed to meet permit requirements S5.C.2.a.ii(c) a year ahead of schedule. The permit states that, by February 1, 2021, permittees must develop a community-based social marketing campaign. WSSOG began working with C+C consultants in 2018 to identify a new audience and a new BMP behavior change campaign to meet the permit requirements specified in S5.C.2.ii(c)3. Based upon our team's research, WSSOG chose to focus this new campaign on natural yard care, specifically helping people switch from synthetically created fertilizers to organic, natural lawn fertilizers. There are several implementation deadlines as part of the permit. WSSOG has met all of the permit deadlines, often well in advance, and will continue to meet these deadlines in 2021.

In addition to launching the pilot project, the group focused on maintaining and improving existing programs and monitoring regional efforts for future collaborative opportunities.

One month before the natural yard care campaign events were scheduled to begin, a year ahead of the permit deadline, Washington was facing the consequences of a fast-spreading global pandemic (COVID-19). The campaign was postponed as the state shut down all non-essential activities.

Rather than cease all activities, WSSOG used the time to conduct additional market research for the pilot project. These results shaped the future planning for 2021. The group also participated in Puget Sound Starts Here Month and spent the last half of the year identifying new strategies to meet a global shift in outreach.

> PERMITTEE MAY CHOOSE TO MEET THESE REQUIREMENTS INDIVIDUALLY OR AS A MEMBER OF A REGIONAL GROUP. REGIONAL COLLABORATION…INCLUDES PERMITTEES DEVELOPING A CONSISTENT MESSAGE, DETERMINING THE BEST METHODS FOR COMMUNICATING THE MESSAGE…AND CREATING STRATEGIES TO EFFECT BEHAVIOR CHANGE. IF A PERMITTEE CHOOSES TO ADOPT…A REGIONAL PROGRAM, THE PERMITTEE SHOULD PARTICIPATE IN THE REGIONAL GROUP AND SHALL IMPLEMENT THE ADOPTED ELEMENT(S) OF THE REGIONAL PROGRAM IN THE LOCAL JURISDICTION.
>
> NPDES MUNICIPAL STORMWATER PERMIT – S5.C.2

Pet Waste: Changing Behaviors

Pet Waste in Public Areas

The Mutt Mitt Program

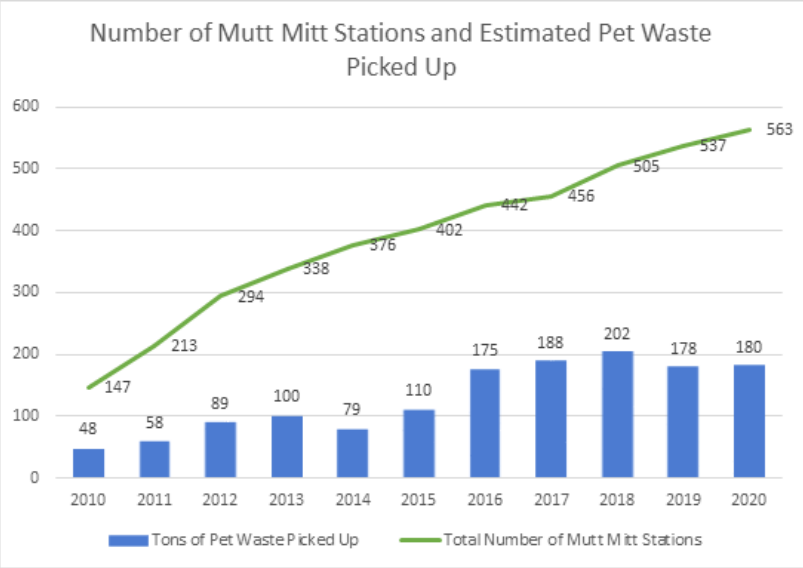
Members of the WSSOG continue to meet the requirements of S5.C.2.a.ii through the highly successful Mutt Mitt program including evaluation of the program by the July 1, 2020 permit deadline. This program focuses on installing and maintaining pet waste bag stations to encourage and facilitate dog walkers to pick up after the pets when they are in public places such as parks, apartment complexes, or neighborhoods.

Adoption of the target behavior is measured in part through growth of the program. In 2020, 26 new Mutt Mitt stations were installed through the Mutt Mitt program. As of the end of 2020, there are a total of 563 pet waste stations distributed throughout Kitsap County, Gig Harbor and Port Angeles. This means that dog walkers throughout the region see similar desirable behavior messaging for adoption as the norm. It is noteworthy that some communities have adopted the behavior, without the support of the Mutt Mitt program, by purchasing their own pet waste stations and bags. This may be an indicator of a growing social norm related to scooping.

When asked to report their total 2020 bag usage, 35% of private station sponsors responded, reporting a total of 228,886 bags, which are purchased with their own funding. Actual bag use is likely higher since the majority of sponsors did not report bag usage. NPDES municipal permittee sponsored stations distributed a total of 862,800 bags. Therefore, the total number of bags distributed was 1,091,686, the equivalent of 180 tons of dog poop picked up.

Jurisdiction	Number of Bags
Bainbridge Island	7,100
Bremerton	174,000
Gig Harbor	4,000
Port Angeles	160,000
Port Orchard	44,000
Poulsbo	54,000
Kitsap County	419,700
Private Mutt Mitt Sponsors	228,886
Total	**1,091,686**

Dog walkers depend upon stations that are reliably stocked with bags to help them adopt this behavior. It is essential that Mutt Mitt branded stations are continuously stocked and in good working order. Kitsap County typically conducts inspections of all Mutt Mitt stations located within Bainbridge Island, Bremerton, Port Orchard and Poulsbo on an annual basis and all other stations located within the County on a biannual basis. The County was not able to hire summer help in 2020 due to COVID-19, so a reduced number of inspections were completed by one staff member. A total of 227 inspections were completed in 2020 and73% of all Mutt Mitt stations passed their inspection, meaning that they were stocked with bags.



Pet Waste at Home

In 2018, the WSSOG piloted an effort to encourage people to pick up their dog's waste at home. This effort promoted the use of a sticker placed on outdoor garbage cans at home to help set a social norm for scooping. The pilot effort used a postcard to promote the use of the sticker and importance of home scooping.

Following the pilot, the group evaluated the campaign and ultimately decided not to move forward with this target audience and BMP. One of the primary lessons we learned was that some residents misinterpreted the stickers as an "invitation" to toss their pet waste bags in trash can at the curb with a sticker. Also, there were some issues with stickers staying on the surface of some trash cans. The group continued distributing the remaining stickers at the front counter of some jurisdictions' offices before offices were closed to the public. Over 90 stickers were distributed in 2020.

Figure 1: Front of pet waste sticker

Figure 2: Back of pet waste sticker

Illicit Discharge Detection and Elimination Outreach

Regional Spills Hotline Outreach

Preventing small spills from becoming big problems

The group continued to promote the *Spills Happen* campaign, meant to encourage people to report spills. Jurisdictions are currently posting their hotline on their websites as well as utilizing it on print materials.

WSSOG also utilized other outreach methods, including:

- Display of the upright *Spills Happen* banners at events, in billing offices and public spaces.
- Display of BMP-based banners with the *Spills Happen* branding at strategic locations.
- Bremerton promoted the hotline number on utility bill messages mailed to residents. They also featured the *Spills Happen* branding on their sweeper trucks.
- Poulsbo promoted spills outreach in their community e-newsletter in August and September.
- Kitsap County installed the *Spills Happen* graphics on two new spills trailers.
- Port Orchard handed out educational flyers to interested parties, advertised the *Spills Happen* campaign on their website and posted banners within City Hall.
- Port Angeles promoted their spills hotline on pens.

Hotline Calls

A total of 69 spill reports were called into Kitsap1 and 6 reports were entered into the SeeClickFix app in 2020. In addition, some cities also received several reports directly to their jurisdictions. (Bainbridge Island – 7, Bremerton – 17, Gig Harbor – 25, Poulsbo – 1, Port Orchard – 2,) (S5.C.3.d.ii).

Trainings

Jurisdictions provided trainings to their field staff on how to recognize, respond to and report spills (S5.C.5.d.iii).

- Bainbridge Island – 1 follow up training for response staff, with Q&A held over the phone during COVID-19
- Gig Harbor – staff training provided via a short PowerPoint presentation and discussion
- Port Orchard – 1 annual staff training for 12 people

Natural Yard Care Campaign

New Behavior Changes

Due to the anticipated impact of COVID-19, WSSOG's natural yard care pilot campaign was postponed until the 2021 ahead of the permit deadline. The remainder of 2020's budget was used to conduct market research on the priority audience during July 2020. The purpose of the research was to refine the tactics of the pilot project.

C+C, the communications consultant assisting WSSOG, recruited respondents to participate in a paid research study. This qualitative research was designed to learn more about what information would be compelling to encourage event attendance as well as to gauge interest in virtual Master Gardener events.

The research unveiled that Kitsap residents are interested and receptive to online Master Gardener events. The research also confirmed that cost of organic products continues to be a barrier. Lastly, our target audience is concerned about the safety of chemicals on their kids and pets. This confirmation will help us refine our outreach efforts in 2021.

Given the high interest in online events, as well as the uncertainty of whether in-person events will be permissible, WSSOG worked with C+C to modify the 2021 project scope of work to shift to online webinars. Elements that were determined in previous years, such as a product discount and outreach tactics will remain largely the same.

Puget Sound Starts Here

Brand Outreach

Puget Sound Starts Here (PSSH) is a regional effort to raise awareness about the harm to Puget Sound from polluted stormwater runoff as well as simple actions residents can take to reduce their impact. (S5.C.2.a.i). Local implementation of PSSH included a variety of outreach approaches, including the promotion of Puget Sound Starts Here Month historically held in May. PSSH Month was moved to September due to COVID-19.

Distribution of branded items was halted due to COVID-19. The primary item distributed by several jurisdictions, including Kitsap County, Port Angeles, Port Orchard and Poulsbo were pet waste bag dispensers. Kitsap County was able to provide these pet waste bag dispensers to the Humane Society.

Puget Sound Starts Here Month Goes Virtual

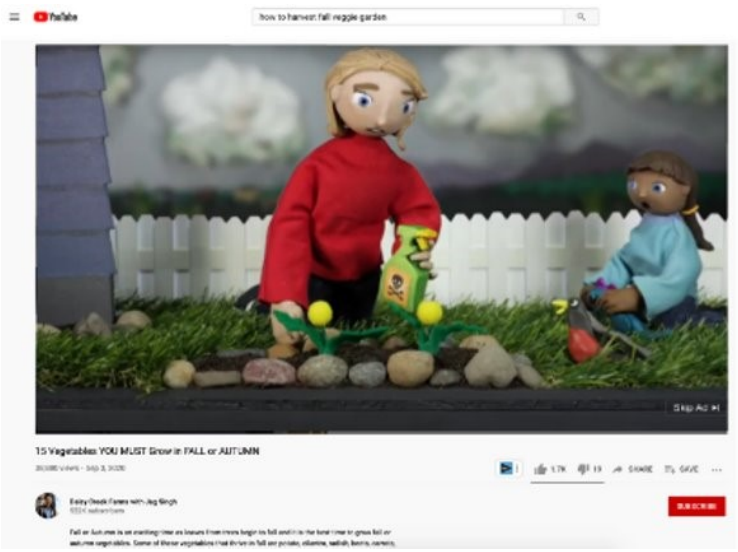
Due to prolonged closures caused by COVID-19, jurisdictions were not able to continue their practice of running on-screen cinema ads featuring PSAs about stormwater best management practices. Therefore, most jurisdictions redirected some funding towards the Puget Sound Starts Here month digital campaign.

The digital campaign with the primary goal of building awareness was coordinated by the regional group known as Stormwater Outreach for Regional Municipalities (STORM) this campaign had a primary goal of building awareness. This was measured by several key performance indicators: total media impressions (the number of times an ad was viewed), video completions and increasing website traffic to the Puget Sound Starts Here website.

The campaign's primary audience targets were adults 18-64 in the Puget Sound region. Up to 50% of the campaign budget was used to target low-income populations. The ads were run in English, Spanish, Korean and Vietnamese.

Secondary target audiences were people who speak limited English, no high school diploma, people of color, people living at or below the poverty level.

The one-month campaign resulted in an impressive 11.473 million impressions across the digital ad platforms, Facebook and YouTube. A total of 14,839 clicks were generated on the ads. Lastly, the ads generated 10,700 new users to the pugetsoundstartshere.org

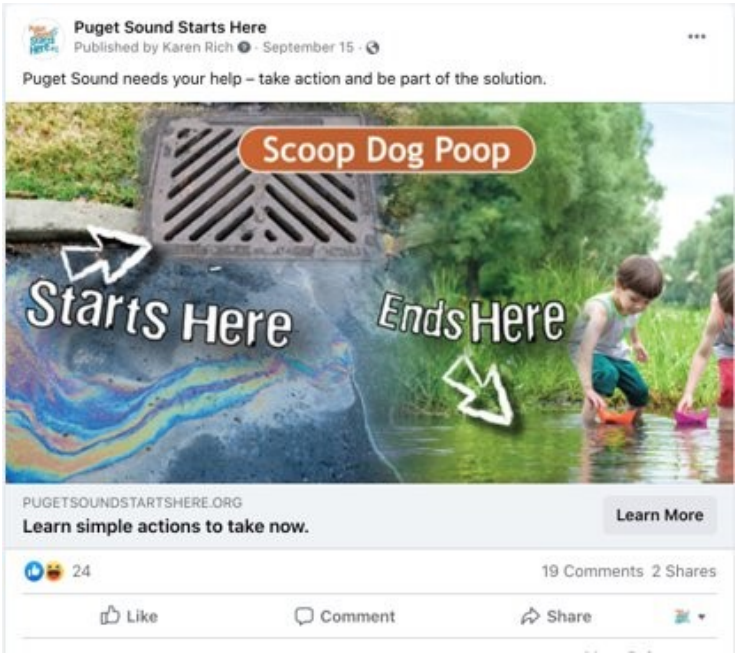


The table here shows the total number of impressions generated within the WSSOG boundaries.

Puget Sound Starts Here Digital Campaign Metrics

Jurisdiction	Impressions
Bainbridge Island	47,817
Bremerton	88,350
Gig Harbor	91,727
Kitsap County	41,110
Port Angeles	40,183
Port Orchard	54,848
Poulsbo	43,816
TOTAL IMPRESSIONS	**407,851**

Source: Rich Marketing



Public Participation

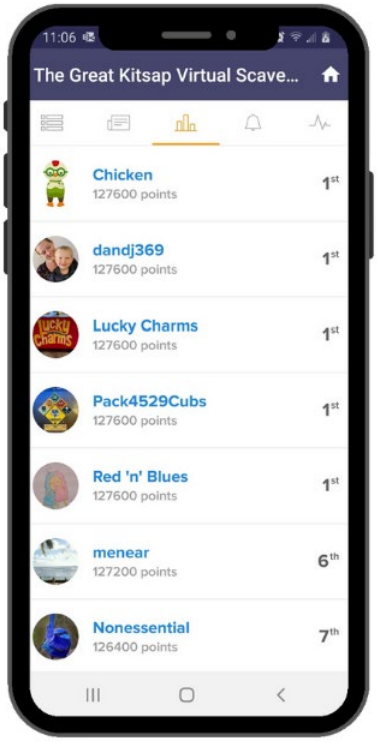
Getting People Involved

Creative Ways to Engage the Public

Jurisdictions found creative ways to maximize partnership opportunities and engage with the public while promoting existing campaigns or programs.

- Bainbridge Island installed pond signs at public facilities as well as had discussions with property owners about the signs.
- Bainbridge Island installed two bioretention signs on Winslow Way, the downtown business corridor frequented by residents and visitors.
- Bainbridge Island promoted and attended the WSU Rain Garden Mentors' Training presentation in February at Kitsap Regional Library.
- Bainbridge Island staff attended the online Bainbridge Island Watershed Council meetings.
- Bainbridge Island promoted Puget Sound Starts Here month in four City Manager Newsletters distributed every Friday in September.

- Bremerton participated in the rain garden program with Kitsap Conservation District.
- Gig Harbor created a stormwater story map: Gig Harbor Stormwater Story Map: https://gigharbor.maps.arcgis.com/apps/Cascade/index.html?appid=aeb8e880c74948609a25630d036600d6



- Gig Harbor initiated a new stormwater newsletter called *The Runoff*. *The Runoff* is distributed in utility bills, email and on the website. https://www.cityofgigharbor.net/DocumentCenter/View/2871/The-RunOff---Fall-2020
- Gig Harbor partnered with the Tacoma-Pierce County Health Department to host three natural yard care webinars which were attended by 210 people.
- Kitsap County partnered with the solid waste division to create and run The Great Kitsap Virtual Scavenger Hunt, through the GooseChase app. 356 players on 234 teams completed educational and fun missions. A total of 13,312 mission entries were completed.
- Kitsap County installed storm drain art in the community of Manchester. Kitsap residents were invited to submit their vote for their favorite design and the top three designs were painted by the artists and Kitsap County staff in August. This was the second year of the art project.

- Poulsbo hosted numerous on-going stewardship events at its two water-adjacent parks. Special events for Orca Recovery Day and Arbor Day were held in partnership with volunteers from Western Washington University, Olympic College, and Puget Sound Energy. Over 450 hours were volunteered by 200+ community members.
- Port Orchard residents, partnering with Kitsap County, hosted a clean-up of the Blackjack Creek valley within City Limits, removing more than one ton of trash and debris from the valley.

Maximizing Our Reach

Regional Partnerships for a Comprehensive Approach

Kitsap staff continues to represent the County and WSSOG cities as partners in the larger regional efforts of STORM. In 2020, Kitsap staff provided input at STORM's quarterly meetings, within the NPDES workgroup, and at the 2020 STORM Symposium. Significant accomplishments of the STORM group are summarized in their annual report (included as Appendix A).

Work Groups

Kitsap staff participated with several small workgroups under STORM's umbrella in 2020 on issues of regional significance, including the Business Inspection Group (BIG), the Dumpster Summit and the PSSH Committee. Kitsap took the lead on developing the RFP that was used by STORM to hire a consultant to implement the digital campaign.

STORM Steering Committee

Kitsap County continues to represent the County and the WSSOG partnership as a working member of the STORM steering committee. This committee meets twice a month on tasks that guide the regional STORM group. Notable projects by the committee in 2020 included developing governance strategies to guide STORM's future work, researching options for long-term funding for STORM, planning and facilitating virtual Quarterlies and the annual Symposium, coordinating seven free or subsidized trainings, and coordinating the regional Puget Sound Starts Here digital advertising campaign.

Looking Ahead to 2021

Overview - Shifting and Flexibility

Working within the scope of the group's interlocal agreements, WSSOG members evaluated the Work Plan to guide 2021's activities (attached as Appendix B). The primary focus for the upcoming year will be to continue our work with C+C on piloting and implementing a social marketing campaign to address the new Natural Lawn Care behavior. Due to the ongoing concerns with COVID-19, partnering with the Master Gardeners to conduct online webinars will be critical to the success of the program. Additional tasks will include maintaining the existing Mutt Mitt, *Spills Happen* and PSSH programs. Lastly, the group will evaluate the research and report being prepared by a consultant on Overburdened Communities to help inform and explore possible outreach strategies that could be collectively implemented (S5.C2.a.i.a & S5.C3.a)

Pet Waste and Spills – Sustain Successful Efforts

The group will examine efficient and effective ways to continue the Mutt Mitt Program and *Spills Happen* program. We will continue to promote the Spills Hotline through various outreach channels.

Launching a New Behavior Change Campaign

Building on the successful work between the group and their consultant C+C in 2018-19 to select a new behavior and priority audience, 2021 will herald the implementation of a complete social marketing plan. Tasks will include the launch of a pilot campaign, and the development of an evaluation plan. These tasks represent the final phase of a four-phase project to choose, build, and launch a social marketing campaign to address nutrients in stormwater runoff. This project will continue into 2022, where the pilot will be evaluated and next steps for the campaign will be determined.

PSSH, STORM and Beyond

On a regional scale, the WSSOG will monitor STORM's efforts to select and implement a new regional behavior change program. The WSSOG will also monitor existing workgroup efforts.

The WSSOG will also monitor STORM's evolution of the Puget Sound Starts Here campaign and will continue to promote local awareness. The group will participate in Puget Sound Starts Here Month through distribution of branded materials to local businesses. With an increased focus on virtual outreach, the group will continue to participate in regional digital advertising campaigns. The group will also evaluate the continued use of branded outreach materials based on supply of items and the ability to distribute items during the pandemic.

Kitsap County will continue to represent the WSSOG group as a STORM Steering Committee and PSSH Committee member. We will continue to participate in relevant workgroups and apply insights, approaches and materials gained from these workgroups as appropriate.

Appendix A: STORM ANNUAL REPORT

STORM

STORMWATER OUTREACH FOR REGIONAL MUNICIPALITIES

2020 ANNUAL REPORT

About STORM

STORM is 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 Micah Bonkowski, STORM Coordinator, ***Micah.Bonkowski@seattle.gov***

Check out the STORM Resource Reservoir at ***pugetsoundstormgroup.org***.

STORMers,

2020 has definitely been one for the books! Although this year was full of unprecedented challenges, it was a real pleasure to witness you all adapt and adjust to the ever-changing circumstances. It is easy to think of things that did not go as planned this year. We missed concerts, volunteer events were canceled, our spare rooms/living rooms/kitchens became our offices, trips were refunded, parents became teachers, our skin cracked from constant washing, the list goes on. Reflecting on this year, it can be quite easy to think of things to complain about. At the same time however, we have realized how many things we have to be grateful for and the STORM group is definitely one of them.

The STORM network is still strong. We have leaned on each other throughout this year and have come together in a new virtual world. New work groups have been formed and continue to meet. We have kindly reminded one another that "you're muted". We have gotten to know each other's pets and frequently had meetings interrupted by the eruption of barking as an Amazon package is delivered. We have come to know each other in a different way than would have been possible before all of this. There are still many uncertainties that lie ahead but one certain thing is that this wonderful group of stormwater professionals will continue to push forward making positive changes for our environment and our communities. The STORM Steering Committee would like to thank each and every one of you for your perseverance during this last year. We look forward to the year to come with you all and cannot wait to see what this brilliant group comes up with next.

Upwards and onwards folks!
- The STORM Steering Committee

Laurie Devereaux, Bellevue
Betsy Adams, Kirkland
Mary Rabourn, King County
Kym Pleger, Kitsap County
Cameron Coronado, Lynnwood
Susan McCleary, Olympia
Katherine Straus, Seattle

New Faces on the STORM Steering Committee!

Kym Pleger

Kym is an education and outreach coordinator for Kitsap County's Stormwater Division, where she is responsible for leading the division's communications and marketing. She coordinates the West Sound Stormwater Outreach Group (WSSOG) and is developing a natural yard care social marketing campaign.

Kym has over 20 years of experience in communications, marketing and fundraising for various governmental and nonprofit organizations. She also has a certificate in project management. Kym enjoys kayaking, CrossFit, gardening and chasing after her three dogs.

Laurie Devereaux

Laurie Devereaux has over 21 years of experience in education and outreach for utilities including the last 18 years as the Bellevue Stream Team Program Administrator. Laurie is a founding member of STORM. Although she has worked on countless work groups, this is her first time joining the Steering Committee! Laurie graduated from Western Washington University with a BS in Environmental Education and Interpretation. Her favorite place in the Salish Sea Watershed is Boundary Bay where she enjoys sunset paddling and campfires with her family.

Susan McCleary

Susan is a Senior Program Specialist for the City of Olympia where she develops and implements business and residential stormwater outreach programs. She co-coordinates Thurston County's Stream Team/SOG Regional Environmental Education Partnership. Susan co-founded and co-facilitates the Business Inspection Group (BIG). She is a LEAN green belt and Master Gardener with experience and training in social marketing and sustainability.

Growing up, Susan spent her summers playing on the beaches of Colvos Passage. She loves hanging out with family, gardening, hiking and biking.

New STORM Coordinator - Micah Bonkowski

Micah is a 5th generation Northwesterner with a deep love of the natural world.

Micah graduated from Seattle University with a BA in Ecological Studies. He has 21 years of experience in local government across many areas of sustainability and conservation, from habitat restoration to solid waste contract management, with the uniting thread being a strong commitment to community engagement and education.

He currently resides in Bothell with his family, which includes 3 crazy cats and 3 backyard chickens. When Micah isn't enjoying time outdoors, he is baking and obsessing over good coffee.

Micah can be reached at ***Micah.Bonkowski@seattle.gov***.

Puget Sound Starts Here Month Goes Digital

STORM celebrates Puget Sound Starts Here Month in May as a way to connect, inform and empower people to use simple actions to protect our waterways and the animals that live here. Due to COVID-19, the celebration was postponed to September.

Rich Marketing was recruited to run a digital campaign to build awareness. This goal was measured by several key performance indicators: total media impressions (the number of times an ad was viewed), video completions and website traffic to the Puget Sound Starts Here website.

The campaign targeted adults, aged 18 to 64, in the Puget Sound region. The campaign also aimed to reach people with no high school diploma; who speak limited English; people of color; or living at or below the poverty level. The ads were run in English, Spanish, Korean and Vietnamese.

The one-month campaign resulted in an impressive 11,473 million impressions across the digital ad platform, Facebook and YouTube. 14,839 clicks were generated on the ads. Lastly, the ads generated 10,700 new users to ***pugetsoundstartshere.org***.

STORM Members Talk Trash for Water Quality

Thirty staff from 25 jurisdictions convened for the Dumpster Summit in fall 2020 to create a regional social marketing campaign aimed at reducing stormwater pollution from dumpster areas. The Summit was a collaborative workshop held on Zoom for 4 half-days. Guided by our local social marketing expert, Nancy Lee, participants worked on teams to create 4 social marketing plans to close open dumpster lids and fix leaky dumpsters. In addition to working together for over 400 cumulative hours during the Dumpster Summit, partners collectively reported over 250 hours of additional time spent outside of the Summit working with their teams, planning, and collecting audience research.

Moving forward, the social marketing plan to target the commercial audience to close the lids on their dumpsters was chosen to be the focus of a shared regional campaign. The planning team is currently working with a consultant to create a toolkit of resources. Thirty-five jurisdictions are currently planning to implement this program as their NPDES Social Marketing Campaign. Funding has been offered from at least 20 jurisdictions. This effort is an amazing example of what STORM members can achieve when we collaborate and demonstrates the value of participating in regional projects.

For more information, contact Laurie Devereaux at ***ldevereaux@bellevuewa.gov***.

2020 STORM Symposium

Like most things in 2020, the STORM symposium looked a little different this year. Instead of meeting in person for an all-day event, we split it up into a 2-day virtual Zoom event. Although we couldn't all be in the same room together we were able to come together to learn, share ideas, and inspire one another. The virtual meeting space did seem to increase attendance as we had 80-90 colleagues on the call both days.

The STORM network continues its commitment to advancing equity for all. To that end, we welcomed the wonderful Dr. Anu Taranath who led us in a workshop on best practices for impactful multicultural outreach. We had heard updates from STORM's work groups including the Dumpster Outreach Group, the BMP Work Group, and the Green Stormwater Infrastructure Group. STORMers discussed outreach successes and lessons learned during the COVID-19 pandemic. Rich Marketing shared the results of the Puget Sound Starts Here digital ad campaign. We also had informative presentations on different tools available to us including mapping opportunity areas and evaluating water quality benefits.

2020 Trainings and Professional Development

It may have been impossible to meet in person for most of 2020, but that didn't stop STORM from offering a record-breaking number of free and highly subsidized trainings. This year's trainings focused on social marketing, equity and communication skills. Thank you to all of our presenters and to King County for their continued financial support!

- *15 Strategies for Keeping Your Audience Awake, Alert, and Interactive* with Cathy Angell
- *Stakeholder Engagement* with Sarah Brace, VEDA Environmental
- *How to Explain Science, Share Data and Build Trust: Presentation Skills for Scientists and Public Officials* with Cathy Angell
- A Series of 3 *Equity in Practice Trainings* with Dr. Anu Taranath
- *Harm, Health, Heart and Hope: A Community Gathering* with Dr. Anu Taranath
- *Tangled: Why Your Hair Matters to Society* with Dr. Anu Taranath
- *Social Marketing: Behavior Change for Social Good* with Nancy Lee

National Estuary Program (NEP) Grants Supporting STORM

The Washington State Department of Ecology receives NEP federal funding to implement the Action Agenda for Puget Sound. Based on the strength of its network and performance, STORM has received two NEP grants totaling $522,000 that support regional outreach and social marketing.

The first grant, *Strengthening STORM for Improved Local Capacity to Manage Stormwater Programs*, was for $300,000. Tasks under this grant include: support for the STORM Coordinator, the review of Best Management Practices, the 2020 Puget Sound Starts Here digital campaign, formalization of STORM governance, and long-term funding recommendations. Look for future presentations on that work.

The *Puget Sound Starts Here - A Regional Awareness and Behavior Change Campaign* grant of $222,000 will use the findings from the Best Management Practices review to create a refreshed Puget Sound Starts Here 2021 campaign. A goal of that project will be regional stormwater pollution awareness, including within overburdened audiences. A request for proposals for that project will be out soon, and a call for project partners.

For details, contact grant manager, Mary Rabourn at ***Mary.Rabourn@kingcounty.gov***.

Appendix B: WSSOG 2021 Work Plan

WSSOG 2021 WORK PLAN

Objectives from Exhibit "A" -
West Sound Stormwater Outreach Group Scope of Work & Budget for 2020-2022

Sustain successful efforts (Objective 2, Task 2.2)

- Continue Pet Waste outreach
    - Continue distribution of Backyard Pet Waste stickers
    - Brainstorm outreach strategies to vets on Backyard Pet Waste
    - Continue to implement Mutt Mitt E&O plan
    - Sustain Mutt Mitt program
    - Participate in the regional STORM Pet Waste workgroup as appropriate
    - Explore creation of a virtual Poop Toss game
- Continue to implement spills hotline outreach opportunities, including but not limited to:
    - Distribution of paint sticks, when feasible
    - Promotion of the See Click Fix application in social media, print or digital

New behavior campaign development (Objective 3, 4 and 5)

- Continue Natural Yard Care campaign development
    - Participate with consultant in the implementation of a pilot campaign to address the selected target behavior and audience. Pilot to include 2-3 virtual webinar events in partnership with the WSU Master Gardeners in spring 2021; including outreach, staffing, and a product discount (coupon)
    - Coordinate efforts with WSU Master Gardeners on webinar topics, and dates
    - Coordinate follow up phone call outreach to be done by Master Gardeners including logistics, talking points, etc.
    - Participate with consultant to draft an evaluation plan with specific, measurable and achievable outcomes
    - Participate with consultant on reporting out on pilot campaign as appropriate
- Monitor the progress of other jurisdictions' behavior change campaigns and adapt elements as appropriate

Other opportunities (Objective 6) – including optional activities with participation varying by jurisdiction

- Continue to participate in *Puget Sound Starts Here* outreach
    - Promote PSSH Month
    - Distribute PSSH-branded merchandise, including but not limited to coasters and pet waste bag holders, when feasible
    - Participate in STORM-sponsored regional ad buys and/or place local ads
- Review results of the Overburdened Communities report and explore possible strategies that could be collectively implemented
- Provide lessons for school aged children
- Advertise via a variety of channels as appropriate: digital, print or other media
- Pilot field monitoring programs with high school and elementary students if in-person schooling resume
- Consider partnerships on stewardship opportunities as appropriate

Strengthen coalition and represent WSSOG on regional efforts (Objective 6 and 7)

- Participate on the STORM Steering Committee and PSSH committee
- Participate in STORM's regional workgroups as appropriate
- Provide STORM and PSSH support and attend Quarterly meetings
- Promote capacity building as needed
- Provide annual summary of activities and report out on programs as appropriate

Appendix C: WSSOG Market Research Report

C+C | ALL ABOUT THE GOOD

WSSOG Market Research Report
August 2020

Conducted by C+C, Market Intelligence Department

BACKGROUND:

Due to the anticipated impact of COVID-19, WSSOG's natural yard care pilot campaign has been postponed until the spring of 2021. The remainder of 2020's budget cycle was used to conduct market research on the priority audience during July 2020. This report summarizes research results that will be used to inform the execution of the 2021 pilot's tactics.

RESEARCH OBJECTIVE:

Gather information that will help to refine the tactics within the natural yard care pilot campaign.

TARGET AUDIENCE:

Kitsap residents who:

- Have children and/or pets
- Do their own lawncare using chemical fertilizer
- Are open to trying natural lawn care products

RECRUITMENT APPROACH:

We recruited respondents by placing two Facebook ads letting Kitsap residents know we are seeking people who do their own yard care to participate in a paid research study. Residents who were interested clicked on a link that took them to a short survey to ensure they fit our target audience profile. If they did, they received information about how to participate.

METHODOLOGY:

C+C conducted online qualitative research using the Revelation™ platform with 13 people – or the equivalent of two focus groups. Respondents spent about 1 hour over a 2-day period participating in the research and were compensated $80 each for their opinions.

RESEARCH SCOPE:

The research was designed to provide information about the tactics in five ways:

1. Provide directional information regarding which Facebook ad strategy is more likely to cause chemical yard product users to try an organic fertilizer
2. Provide information that will make the planned Master Gardener Events more likely to interest the target audience
3. Determine which potential headlines for the planned emailed newsletters are most likely to grab the attention of the target audience

4. Determine level of interest in attending "virtual" Master Gardener events (especially during the time that social distancing prevents in-person events)
5. Understand pros and cons of having Master Gardener Events held at nurseries or big box stores, like Home Depot

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KEY INSIGHTS & IMPLICATIONS:

I. **Key Insight:** Target Audience has a large variance in sophistication. There were clearly some respondents who knew more than others about the benefits of organic products, and about lawn care in general. This same group of people were more inclined to want to see the event happen at the nursery versus a big box store. This group of respondents might be the "early adopter" segment of the target.

Implications*:* WSSOG may want to take into account the differences within their target audience when planning the campaign.

II. **Key Insight:** Although cost is a significant barrier to purchase, the way a campaign expresses price reduction has potential to deter people from purchasing organic products. Discounts and coupons were perceived by some respondents as methods for getting rid of inventory that was either old or ineffective. This is especially true when they did not recognize the brand name associated with the discount or coupon. Even the Master Gardener topic that covered saving money raised suspicions that the ultimate goal of the event was to sell sub-standard product.

Implications: The following tactics could be considered: a) Provide coupons and/or special discounts at events once Master Gardeners have introduced customers to the topic; b) When advertising events specifically, focus on education rather than coupons

III. **Key Insight:** Keep focusing on kid / pet health and safety as a motivator. The majority of respondents are not at the state to connect their lawncare practices to the health of the Puget Sound. However, a number of respondents are already concerned about the negative health implication of chemicals on their kids and pets.

Implications: No change to the creative elements of the campaign. Planned campaign creative included on next page.

IV. **Key Insight:** Providing the target audience with relevant, credible and convenient education opportunities is a powerful strategy to reach the target audience. Master Gardeners are a respected and credible source of information. It will be important to identify educational topics that are specific enough for people to know whether or not the topic is relevant, but general enough to have broad appeal. Additionally, we learned that the target audience is interested in getting information that helps them solve specific problems.

Implications: Consider working with Master Gardeners to develop and test a variety of educational topics related to natural yard care. Consider topics that help people troubleshoot specific yard care problems. Alternatively, develop a list of topics based on this research and test interest with the target audience.

V. **Key Insight:** The target audience is very receptive to online Master Gardener events because they are more convenient. Although a few respondents complained of "Zoom fatigue," most respondents were excited about the idea of having lawncare education online, provided by Master Gardeners. The biggest driver was the convenience vs. having to go to a retail store, and the ability to engage at times that are convenient for their schedules.

Implications: There is a strong opportunity to reach this audience through online events featuring Master Gardeners. In addition, this presents an opportunity to continue to do some research regarding topics of interest and how to best leverage discounts/coupons on organic products.

RESULTS BY RESEARCH OBJECTIVE:

I. ***Facebook Ad Strategy***

a. The Facebook ad that highlighted Master Gardener informational events was preferred over the Facebook ad that provided a coupon. The drivers were:

i. Respondents are eager to interact with Master Gardeners, and believe they would learn useful information from them. Credibility is very high.

ii. Those who said they would attend a Master Gardener event were motivated by the educational aspect. This also made some respondents believe that the ad wasn't just an advertising gimmick.

iii. They liked the idea of a coupon at the Master Gardener event, but that was not a significant driver for attendance.

iv. Respondents would be more likely to click either ad if it was posted by a friend or trusted source.

v. Although some people loved the idea of coupons, many felt that coupons or discounted products, especially without a familiar brand name, signal lower quality products and/or products that have been sitting around and need to be sold.

vi. The ads with coupons also didn't promote a specific product, so respondents didn't feel confident that the coupon would be worthwhile.

vii. Additionally, when respondents found that they had to fill out a form to get a coupon mailed to them, they thought it wasn't worth the effort. Others were concerned that it would just get their name on a mailing list.

II. ***Master Gardener Event Descriptions***

a. Master Gardener events are a strong campaign idea, and the topic that drove the most interest was "Master Gardeners will be at your local nursery offering free expert advice on understanding how best to use natural products to make your lawn healthy."

i. The topic has the right level of specificity. When a topic is too specific, it appeals to fewer people (i.e., "Improving your yard's soil health"). When it's too broad, people can't tell if it will be worth their time (i.e., "Best practices for natural yard care").

ii. Topics that focused on saving money (i.e., "Healthier yard while saving money over time with natural yard care") were the least interesting because they "sound like a scam" or they appear to be "part of a paid advertisement."

III. ***Email Newsletter Headlines***

a. The potential email newsletter headline that drove the most interest among the audience was "Growing a healthier lawn for your kids and pets."

i. Respondents are aware that chemicals are bad for children and pets, but have barriers around perceived performance, pricing accessibility and ease of use of organic products.

ii. Based on published articles they searched for or found useful in the past, topics that address specific problem areas in a lawn may also drive interest among the target audience.

IV. ***Virtual Events***
   a. There was very high interest in attending "virtual" Master Gardener events during COVID-19 restrictions, and beyond.
      i. Although a few respondents did mention "Zoom fatigue," most respondents liked this idea because of the convenience: don't have to leave home, don't need a sitter, and no time wasted traveling to the event.
      ii. Respondents also expressed an interest in making sure an online event would provide opportunity for Q&A.
      iii. The format that most people preferred for an online event was via a Webinar. Town hall and round table formats were thought to be too unstructured to be of interest.
      iv. One suggestion was a YouTube series that could be watched on-demand, where questions could be asked in the comment section so a Master Gardener could respond.

V. ***Event Venue Location***
   a. Respondents had mixed opinions regarding the ideal venue for in-person Master Gardener events.
      i. The advantages to a big box store, like Home Depot, is that other shopping could get done at the same time. Some mentioned that they could usually find a reason to go to Home Depot, so it wouldn't have to be a special trip.
      ii. The respondents who prefer a nursery as the venue believe that the people who work at a nursery are more knowledgeable / credible, and want to support local businesses.

DETAILED FINDINGS:

I. ***Lawn Care Routines:***
   a. Lawn care routines are considered to be difficult and exhausting work, generally consist of:
      i. Daily watering
      ii. Mowing, once or twice a week
      iii. Pulling weeds, as needed
      iv. Applying weed and feed / fertilizer once or twice a year, perhaps more in the summer months
      v. Some respondents mentioned edging and aeration

II. ***Product Purchase Influences:***
   a. The most commonly mentioned purchase drivers for fertilizer and weed and feed, in order of importance, were:

i. Ease of application and use
   - ◊ *"[It's easier to apply so] there is less back strain."*

ii. Efficacy / appearance of lawn
   - ◊ *"We did not want our new house lawn looking like our old house…which was full of moss and weeds."*
   - ◊ *"A nice lawn makes the house look better."*

iii. Availability and name recognition
   - ◊ *"We use Scott's because it's a reliable brand."*

iv. Family
   - ◊ *"My biggest influence is my family. My dad has always kept a very nice lawn. I would like to follow suit."*

b. Some respondents did mention the environmental impact of products, but this was not enough to dissuade them from using chemical products.
   - ◊ *"We have 3 kids and a bulldog, so I try to be minimalist with the chemicals. But they are necessary here in the PNW"*
   - ◊ *"I don't particularly like the use of chemical products in our yard because of the abundant wildlife we have and because we live in close proximity to a creek, and I don't want our dogs romping around in chemicals."*

III. ***Pros and Cons of Chemical and Organic Products***

	PROS	CONS
CHEMICAL PRODUCTS	○ Inexpensive ○ Works fast and more efficiently ○ Lasts longer ○ Makes the lawn appear healthier ○ Reliable/trustworthy brands ○ Easy to use	○ Not environmentally friendly ○ Harmful to kids and pets ○ Doesn't fortify the soil
ORGANIC PRODUCTS	○ Environmentally friendly ○ Healthy to use around kids and pets ○ Improves and therefore long-term health of lawn	○ Doesn't last as long ○ Expensive ○ Hard to find in stores ○ Needs to be applied more often ○ Results take longer

a. Chemical Products:
   - ◊ *"[With chemical products] you have almost instant gratification."*
   - ◊ *"Standardized labeling that is recognizable and easy to understand."*

b. Organic Products:

- ◊ *"Cost seems to be the biggest issue even after I've explained that using organic products can save us $$ in the long run because it literally addresses the root issues – pun intended!"*

IV. ***Newsletter Headlines:***

a. *Growing a healthier lawn for your kids & pets*

i. This was the headline that made most respondents interested in reading the article. Most respondents were already concerned about the impact of chemical products on their children and/or pets, so they wanted to learn more.

- ◊ *"This is one of the main reasons I'm hesitant to use any chemicals on our lawn"*
- ◊ *"I would definitely read since I have a dog and my kids are on the lawn all the time…I'd expect to find natural products to replace chemicals"*

ii. However, some expressed concern that this would be trying to push a specific product.

- ◊ *"I would assume it would provide an alternative [to chemical products]…I would like a healthy lawn for my family however a lot of the time articles cherry pick data to steer you towards certain products they're promoting."*

b. *Grow a healthy lawn through natural yard care*

i. This was a fairly popular headline. The idea of having a "healthy lawn" was interesting. However, respondents don't really understand what a healthy lawn is.

- ◊ *"I would expect to find ways to have a weed free, green lawn. Ways to reduce the amount of watering. Ways to reduce weeding time in flower [beds] and ways to promote healthy grass and plants through soil amendment, etc."*

c. *Using natural yard care products to protect the Puget Sound*

i. This was not a top choice of articles to read. Respondents aren't as concerned about the Puget Sound as much as they are concerned with family and/or pets. Additionally, a few respondents don't think it's a problem.

- ◊ *"I would expect it to tell me about the pollutant generating runoff that comes from the chemical fertilizer and then tell me what I should be doing to avoid causing this pollution. However, I feel that discharging into a saltwater body is fairly safe for the environment"*

d. *Get discounts on natural yard care products*

i. This headline turned a lot of people off because they thought it was "a scam" due to the mention of discounts. Respondents expressed concerns that it was just a way of getting rid of old inventory and/or it was sponsored by a specific product to push sales.

- ◊ *"Sounds like a scam and I don't buy things based on discounts"*
- ◊ *"I would think this is a paid article advertisement and probably steer clear of it"*
- ◊ *"Why would I need a discount to sell an unproven product? I'd expect to find deep discounts on products that have been sitting on the shelf for a while. Then ask the question, why is this not selling without discounts?"*

V. ***Master Gardener Event Descriptions:***

a. *Master Gardeners will be at your local nursery offering free expert advice on understanding how best to use natural products to make your lawn healthy*

i. This event description drove the most interest because it led people to believe they would learn something new and actionable.

- ◊ *"Understanding how to use the product would be the most engaging/interesting because it would help me to retain the information better by understanding the why and how behind the products."*
- ◊ *"They are going to teach me and give me advice"*

ii. In general, when respondents thought they were going to learn something, they responded favorably.

- ◊ *"It seems the most action driven and that I would be able to learn some things that I would be able to directly apply."*

iii. To drive interest in Master Gardener events, the topics should strike the right balance between specificity and generalization. General topics were not of interest to some respondents because they felt couldn't assess whether or not they would get value out of the event.

b. *Master Gardeners will be at your local nursery offering free expert advice on the best practices for natural yard care*

i. Respondents felt this headline was too generalized and vague.

- ◊ *"This is the least engaging because it is pretty general. I'm not opposed to learning best practices, but since life is busy, I would be less likely to make time to attend this event, because it doesn't list a specific benefit."*

c. *Master Gardeners will be at your local nursery offering free expert advice on improving your yard's soil health by using natural lawn care products*

i. The specificity of this description was polarizing, with some respondents finding it highly engaging and other respondents finding it to be too narrow.

- ◊ *"Too targeted for people that just care about lawn soil health. I'm interested in other gardening next to the lawn as well"*

d. *Master Gardeners will be at your local nursery offering free expert advice on getting a healthier yard while saving money over time with natural yard care products*

i. There was a mixed response to this description's focus on saving money. Some had the impression that the event was a marketing

promotion to sell product; others were interested in learning how they could save.

- ◊ *"It sounds like they will be pitching a particular product to me"*
- ◊ *"I am most likely to attend this event based on the saving money aspect"*

VI. ***Event Venue Location:***

a. There are pros & cons for nurseries, depending on the respondent's needs:

i. Nurseries definitely have a strong reputation of credibility and expertise regarding gardening. Nurseries are also perceived as providing a better overall shopping experience. They also attract the type of people who are more likely to know more about organic products.

- ◊ *"I would prefer a Nursery instead of a hardware store. The folks who work at the nursery I shop at are extremely knowledgeable and several are Master Gardeners. I also find the nursery calming and peaceful while hardware stores are stressful and busy."*

ii. However, a trip to the nursery would be a special trip for some respondents, and they may not have the time to add a stop to their already busy schedules.

b. There are also pros & cons to Big Box Stores:

i. Big box stores provide convenience, as people can shop for more than just gardening needs while there. Also, there is a higher likelihood that people will be going to a big box store anyway, making the event an added bonus.

- ◊ *"Probably the hardware store with a garden center as I tend to go to Home Depot a lot and there would be a greater chance of my needing to go there lining up with the event."*

ii. However, they have less credibility than nurseries, and there is an impression that they might not carry organic products.

VII. ***Virtual Events:***

a. Overall, the majority of respondents are very receptive to something online, some even stating that without COVID they would prefer online forums.

- ◊ *"Now you are talking! Just make sure it's well thought out and has very good video quality. Also, have it live for Q&A at the end."*
- ◊ *"I would be very interested. It's actually been easier for me to attend virtual classes than live ones, because there isn't any commute time, and I can still be around for my kids if they need me."*

b. However, a few expressed that "Zoom fatigue" is a deterrent.

- ◊ *"I really like the idea of online events. However, I would not attend because I am all zoomed out. With my schooling, hosting a call every week for the kids that cannot attend and*

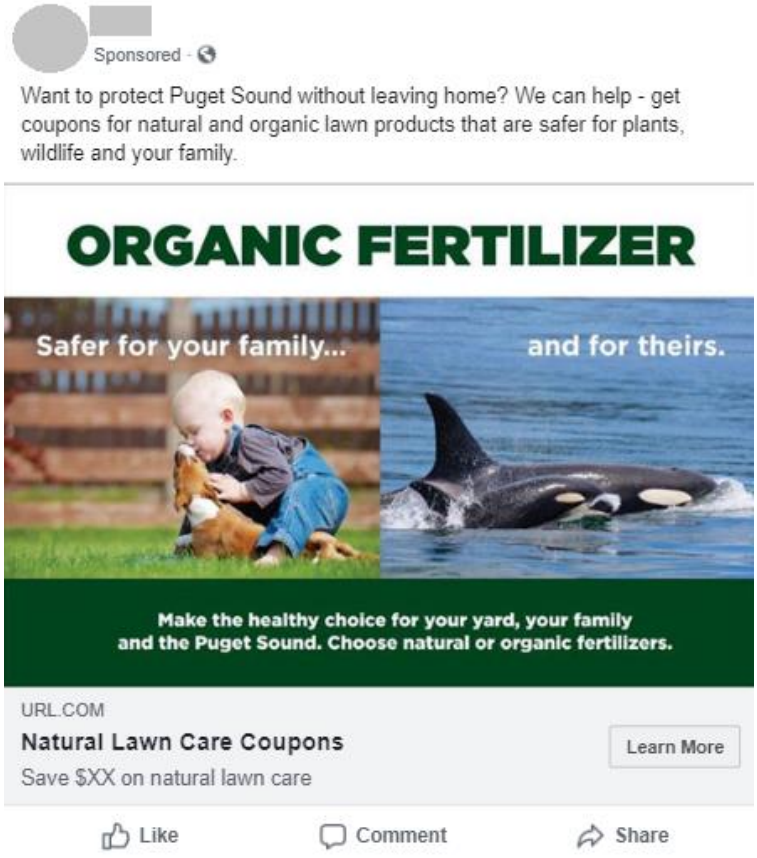
work-related conferences and training my brain is at its max with online learning."

c. The majority of respondents felt that a webinar format would be the best approach to an online event because other formats (round table discussions and town hall) can quickly go off course.
    - ◊ *"The other two don't work for me because I really don't want to listen to others talk about their lawn and those styles of events are hard to get a word in and someone ALWAYS takes us off topic or dominates the discussion."*

d. An interesting idea a few respondents had was the idea of a YouTube series, something informational and expert-led that they can consume on their own time.
    - ◊ *"My favorite would be a YouTube series that I can watch on my own time and ask questions in the comment section that can be answered by a Master Gardener or even a knowledgeable viewer."*

VIII. ***Facebook Ads:***

a. Facebook Ad A: *"Want to protect the Puget Sound without leaving home? We can help – get coupons for natural and organic lawn products that are safer for plants, wildlife and your family"*

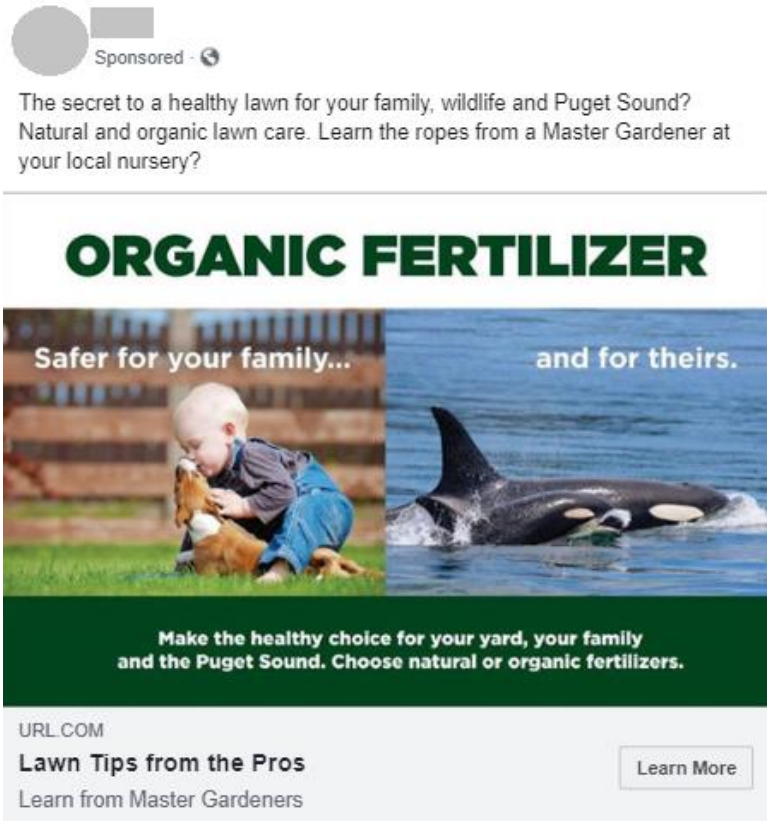


i. Facebook Ad A was polarizing; those who did not respond well were skeptical that the ad was authentic and relevant to them.
   - ◊ *"The use of the word "coupon" is a turn off to me—I am skeptical that the product would be a good one because the "expert" is trying to sell something—BUT if I went to an event I heard an expert talk about a product—they sounded knowledgeable THEN they offered a coupon I would not be skeptical—I would buy the product."*
   - ◊ *"Coupons don't excite me. Is the product so expensive that you have to give coupons away to get the product? That's insulting. I just want the info to evaluate the product, if I want the product and coupon is available then I will take one."*
   - ◊ *"Coupons are great but I want more than that. I want to learn how the organic products work and how they save me money in the long run"*

ii. Even some who were excited about the coupon wanted more information about product quality and efficacy.
   - ◊ *"VERY! I'd expect to see a link or page showing me the organic fertilizer and the price as well as the way to get a discount. I'd want to be able to access more information about why the product is safe, where it could be purchased"*
   - ◊ *"Coupons are great but do I know what they are for. Is the name of the organic fertilizer mentioned anywhere. Can I compare it with what I currently use beforehand to see if it has any additional benefits."*

iii. Having to provide contact information so that a coupon would be mailed to the respondent was a deterrent.
   - ◊ *"I'd want things to be accessible digitally- no printing or giving my email, etc."*
   - ◊ *"Nope would not do it. I would research the link and see what others have said [about] them. That to me is not okay to send my information out to this company to send me a coupon when they could email it to me."*
   - ◊ *"I don't think filling out a form just for a coupon is worth me filling out anything. But to purchase a product or sign up for a service is what I would fill out something for."*
   - ◊ *"100% no. I always close things like this. It feels too invasive and like I am getting set up for a scam or never-ending junk mail, or even worse…solicitors"*
   - ◊ *"I would need to know more about the product before I blindly provide my address. I would need to be quickly convinced that the product(s) would be helpful for my lawn."*

b. Facebook Ad B: *"The secret to a healthy lawn for your family, wildlife and Puget Sound? Natural and organic lawn care. Learn the ropes from a Master Gardener at your local nursery"*



i. Facebook ad B performed better than Facebook ad A primarily because it offered an opportunity to learn from Master Gardeners, and the coupon was positioned more as an added bonus.
   - ◊ *"It provides me with helpful information that I could then determine what to do with it. I would expect to find an overview of the benefits of natural lawn care and then links to specific articles on lawn care topics. Having links and coupons to recommended products would be a huge plus."*
   - ◊ *"It's more about education than selling things"*
   - ◊ *"I will learn something and it doesn't feel as though it is one company [running a promotion]"*
   - ◊ *"The coupons wouldn't really be a factor in that decision, just a bonus"*

ii. Respondents were fairly likely to attend the event described in the ad, especially if it was convenient for their schedules. However, there were still some respondents who felt that Facebook ad B was "click-bait."
   - ◊ *"It's very vague and feels 'click-baity' based on words like 'the secret' which tends to promise something magical that really isn't true"*
   - ◊ *"Not very, the phrase 'The secret to…' raises my click bait alarm and I'd avoid it"*

KEY:

TEXT = Headline

Text = Subtitle

Text = Copy/ Content shown to respondents (i.e. copy of event descriptions)

Text/text = key findings/ implication; anything in blue is meant to be highlighted as key takeaway

VOLUME 7 | OCTOBER 2020

THE CITY OF PORT ANGELES
STORMWATER RAINS NEWSLETTER

IMAGE PROVIDED BY MARIAN BODART

WHAT IS STORMWATER?

For more information: www.cityofpa.us/255/Stormwater-Utility

Stormwater is rainwater or snowmelt that runs over surfaces such as lawns, roofs, streets, and parking lots. With no action, stormwater can become polluted by litter, dirt, bacteria, chemicals, and oils that it picks up along its journey.

Protecting our water resources starts with each person, home, building, and work site. Generally, the City's Separate Stormwater System does not treat the water, just helps it pass to the creek and harbor.

FALL WEATHER AND STORMDRAINS

Fall is here, days are shorter, kids are back in school, and the leaves are turning. Now is the time to get your home warm and cozy for cooler temps and unpredictable weather conditions. Here are a few ways to prepare for the cooler days ahead:

- It does not take many leaves to clog a storm drain. You can prevent flooding by keeping drains in your neighborhood clear of leaves and debris. Do not attempt to remove the grate - only remove the debris on top of it.
- Clear rain gutters and repair roof leaks. Remove leaves and other debris from your gutters drain pipes to prevent clogging.
- Dispose of leaves and yard debris in your yard waste container. Do not rake or blow leaves from your yard into the street or leave them piled up in the road, parking area, or right-of-way.
- If a catch basin is not taking water due to debris covering the grate, please notify Public Works at 360-417-4543.

SPILLS HAPPEN, HELP US FIND THEM!

Call 360-417-4745 for the Port Angeles Water Pollution Hotline or go to https://www.cityofpa.us/262/Reporting-Spills to report a spill.

Spills can include:

- Paint
- Algae Blooms
- Muddy water from construction sites
- Sewage
- Chemicals
- Oily Sheens
- Gasoline
- Foam

Please include the location, proximity to the road, and as much information as possible. Spills in ditches, drains and waterways can make their way to the ocean. If it looks hazardous, please call 911!

THE STORMWATER UTILITY CREW HELP KEEP THE CITY'S STORMWATER PIPES CLEAN

LAST YEAR THEY CLEANED OVER 2,000 INDIVIDUAL CATCH BASINS
SWEPT OVER 10,000 MILES OF STREETS
INSPECTED & MAINTAINED 72 RAIN GARDENS,
30 OTHER STORMWATER FACILITIES, AND
20 FLOW CONTROL FACILITIES

STORMWATER PERMIT PROCESS

Do you need a stormwater permit for your project? If you are planning on building, clearing, grading, or placing hard surfaces such as gravel and asphalt on your property then you may be asked to consider how your project may impact water quality during and after construction. The size and scope of your project will guide what controls you will need to consider.

The first step is to determine your project's stormwater requirements! Does your project involve:

- Less than 2,000 sf of hard surfaces **AND** less than 7,000 sf of land disturbance (such as moving dirt or clearing trees)
  No Submittal > Control erosion during construction
- Greater than 7,000 sf of land disturbance **OR** greater than 100 cubic yard of cut/fill
  Small or Large Project Stormwater Plan > Control erosion during construction **AND** amend soils
- 2,000 sf to 5,000 sf of hard surfaces (such as roof, road, driveway, patio, sidewalk)
  Small Project Stormwater Plan > Control erosion during construction **AND** use rain garden, permeable pavement, downspout infiltration to manage runoff **AND** amend soils
- Greater than 5,000 sf of hard surfaces (such as roof, road, driveway, patio, sidewalk)
  Large Engineered Stormwater Plan > Control erosion during construction **AND** use bioretention, permeable pavement, downspout infiltration to manage runoff **AND** use swales, filters, ponds, for water treatment and volume control **AND** amend soils

For more information please visit: www.cityofpa.us/996/Stormwater-Permits

STORM DRAIN ART PROJECT 2021

The City of Port Angeles is seeking artists to transform storm drains into public works of art at selected sites.

This project is designed to connect residents, businesses, and visitors to the valuable resources of our local waters.

For more information please visit:
www.cityofpa.us/1020/Storm-Drain-Art

STORMWATER CFP PROJECTS

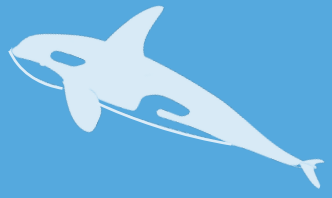
Did you know that there is a Stormwater Capital Facilities Plan (CFP)? It lists projects to build and manage stormwater drainage within the City. This includes the H Street Stormwater Outfall, the Francis Street Outfall Repair, and more.

To view the CFP, please visit:
www.cityofpa.us/774/Capital-Facilities-Plan
Stormwater begins on page 167.

ORCA HEALTH & STORMWATER

Small changes we make to reduce polluting rainwater make a huge difference! We rely on clean water for our wellbeing and so do salmon, orcas, and other wildlife.

Anyone can be an #OrcaHero through simple actions, like picking up after dogs, building rain gardens, and reducing plastic waste. Find out more at www.PugetSoundStartsHere.org



Digital & Social Media — Awareness Ad Campaign Overview

Sep 1, 2020 - Sep 30, 2020

New Users	Sessions	Total spend	Total buget
10,683	12.1K	66.0K	66.0K

	Property	Impressions	Video completions	Clicks
1.	Basis DSP	8,661,045	1,430,061	9,288
2.	Facebook.com	1,787,194	118,544	2,431
3.	Youtube.com	1,025,374	16,683	1,167

1 - 3 / 3

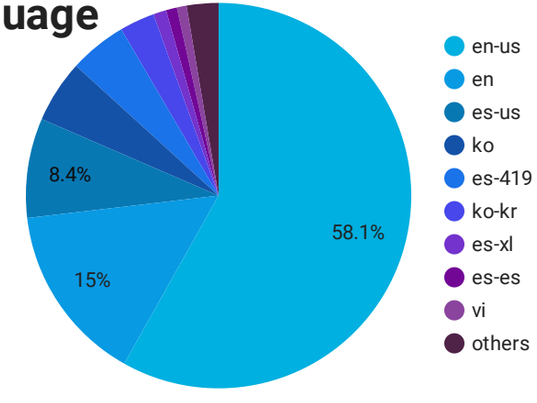
Key

Please see terminology Key on page 4.

	Line item	Impressions	Video completions	Clicks
1.	Display & Video Spanish/Vietnamese/Korean/English {:30s Creative} :: Geo - Puget Sound Counties (Facebook/Instagram)	1,787,194	118,544	2,431
2.	VIDEO KOREAN - Browser Language Targeting; DT(Low Income/HHI less than $30K/Unemployed/No HS Diploma...	527,233	366,101	1,289
3.	VIDEO SPANISH - Browser Language Targeting; DT(Low Income/HHI less than $30K/Unemployed/No HS Diploma...	330,328	195,071	1,968
4.	DISPLAY SPANISH - Browser Language Targeting; DT(Low Income/HHI less than $30K/Unemployed/No HS Diplo...	1,182,882	0	1,607
5.	DISPLAY ENGLISH - BT(Vehicle Age 10+/DIY Auto Maintenance/Auto Enthusiasts); CT(Dog); CT(Home Owners/Ga...	5,450,661	0	3,058
6.	VIDEO VIETNAMESE - Browser Language Targeting; DT(Low Income/HHI less than $30K/Unemployed/No HS Dipl...	690,965	547,241	470
7.	Video Spanish/Vietnamese/Korean/English {:30s Creative} :: Geo - Puget Sound Counties (YouTube)	1,025,374	16,683	1,167
8.	VIDEO ENGLISH - BT(Dog Owners); BT(Home Owners/Gardeners); BT(Vehicle Age 10+/DIY Auto Maintenance/Aut...	478,976	321,648	896
	Grand total	**11,473,613**	**1,565,288**	**12,886**

1 - 8 / 8

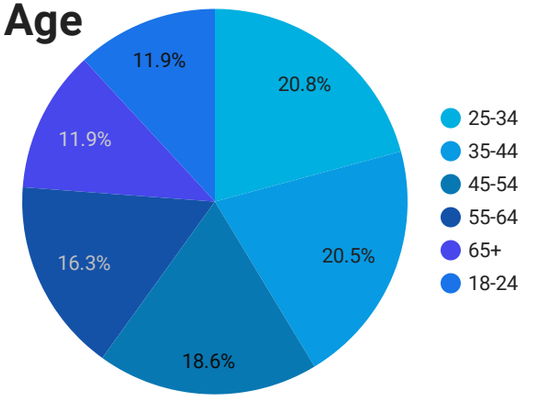
Language



Language Codes

en = English (All)
en-us = English (United States)
es = Spanish (All)
es-es = Spanish (Spain)
es-us = Spanish (United States)
es-xl = Spanish (Latin America)
es-419 = Spanish (Latin America/Caribbean)
ko = Korean
ko-kr = Korean (Korea)
vi = Vietnamese
Other = Classified as other language

Age



Digital Media Basis DSP — Awareness Ad Delivery by Zipcode/City

As of October 1, 2020

	City	Imps. Won	Audio/Video Starts	100% Complete	Clicks
1.	Seattle	2,336,357	541,322	382,120	2,497
2.	Tacoma	507,110	135,554	97,211	602
3.	Federal Way	466,824	114,854	75,940	917
4.	Everett	359,195	92,694	68,435	271
5.	Bellevue	291,393	104,128	73,023	229
6.	Olympia	282,107	56,716	41,061	327
7.	Bothell	281,991	85,030	58,091	459
8.	Kirkland	256,843	53,130	37,905	216
9.	Auburn	249,988	58,653	41,159	373
10.	Kent	249,061	84,801	64,646	244
11.	Redmond	211,075	62,224	48,489	140
12.	Puyallup	208,700	39,172	27,495	218
13.	Lynnwood	207,210	61,762	43,869	235
14.	Renton	205,390	87,999	65,866	193
15.	Bellingham	195,625	24,275	16,307	162
16.	Edmonds	119,260	35,254	25,779	134
17.	Port Orchard	104,956	15,570	12,120	98
18.	Sammamish	99,997	27,365	18,100	72
19.	Gig Harbor	91,727	10,790	7,243	53
20.	Bremerton	88,350	13,300	9,788	77

Digital Media Basis DSP — Awareness Ad Delivery by Zipcode/City

As of October 1, 2020

	City	Imps. Won ▾	Audio/Video Starts	100% Complete	Clicks
21.	Marysville	79,572	14,462	10,301	90
22.	Bonney Lake	78,378	13,863	9,626	71
23.	Snohomish	75,399	11,566	7,983	57
24.	Lakewood	74,558	20,594	15,193	89
25.	Arlington	66,937	8,745	6,032	71
26.	Oak Harbor	62,769	7,742	4,897	51
27.	Kennewick	62,094	6,524	4,438	77
28.	Lake Stevens	61,911	12,296	8,577	55
29.	Maple Valley	60,021	15,212	12,203	41
30.	Lacey	57,740	12,311	8,122	82
31.	Issaquah	57,681	16,124	11,698	34
32.	Mount Vernon	51,142	5,290	3,407	57
33.	Bainbridge Island	47,817	5,039	3,320	38
34.	Poulsbo	43,835	6,241	4,644	35
35.	Sequim	41,923	3,557	2,397	32
36.	Mercer Island	41,396	9,911	6,996	70
37.	Port Angeles	40,183	3,030	2,068	39
38.	Stanwood	38,227	4,017	2,765	39
39.	Duvall	34,754	5,901	4,755	28
40.	Richland	33,807	4,572	3,333	43

Digital Media Basis DSP — Awareness Ad Delivery by Zipcode/City

As of October 1, 2020

	City	Imps. Won ▾	Audio/Video Starts	100% Complete	Clicks
41.	Port Townsend	31,157	2,054	1,338	19
42.	Camano	30,451	2,479	1,647	20
43.	Woodinville	29,405	5,697	3,685	30
44.	Wenatchee	27,182	2,597	1,611	35
45.	Spanaway	24,995	4,925	3,544	22
46.	Silverdale	24,946	2,522	1,673	19
47.	Shelton	24,045	2,633	1,623	13
48.	Yelm	23,979	3,427	2,334	13
49.	Enumclaw	21,578	5,215	3,849	19
50.	East Wenatchee	20,749	1,950	1,330	37
51.	Anacortes	18,895	2,489	1,695	15
52.	Monroe	18,112	2,634	1,783	11
53.	Burlington	17,264	2,306	1,536	15
54.	Ferndale	16,542	2,024	1,372	12
55.	Aberdeen	16,541	1,914	1,229	23
56.	Mukilteo	15,914	7,694	6,221	9
57.	Kenmore	15,575	3,529	2,608	7
58.	Sedro-Woolley	14,980	2,209	1,668	7
59.	Graham	14,130	2,446	1,698	25
60.	Vashon	13,557	1,537	1,020	11

Digital Media Basis DSP — Awareness Ad Delivery by Zipcode/City

As of October 1, 2020

	City	Imps. Won ▾	Audio/Video Starts	100% Complete	Clicks
61.	Belfair	11,426	957	634	6
62.	Mill Creek	10,982	6,562	5,425	14
63.	Kingston	10,655	1,549	1,204	7
64.	North Bend	10,093	1,529	1,060	6
65.	Mountlake Terrace	9,519	3,011	2,224	14
66.	Lynden	9,007	1,123	709	5
67.	Langley	8,857	900	490	6
68.	Tumwater	8,279	2,750	2,082	4
69.	Clinton	8,187	652	359	7
70.	Snoqualmie	7,897	1,969	1,398	9
71.	Eatonville	7,289	1,314	1,051	24
72.	Coupeville	7,136	578	351	5
73.	Parkland	6,808	3,532	2,900	16
74.	Olalla	5,869	457	305	5
75.	La Conner	5,512	419	292	7
76.	Tenino	5,409	458	316	3
77.	Sumner	5,368	886	551	2
78.	DuPont	5,079	558	363	4
79.	Friday Harbor	5,006	427	265	7
80.	University Place	4,921	2,096	1,738	18

Digital Media Basis DSP — Awareness Ad Delivery by Zipcode/City

As of October 1, 2020

	City	Imps. Won ▾	Audio/Video Starts	100% Complete	Clicks
81.	Covington	4,833	1,786	1,284	8
82.	Carnation	4,744	746	561	6
83.	Granite Falls	4,708	485	284	2
84.	South Hill	4,589	1,829	1,485	9
85.	Concrete	4,353	391	266	4
86.	Blaine	4,189	461	287	3
87.	Allyn	4,060	305	172	1
88.	Orting	4,034	729	487	4
89.	Lakebay	3,916	430	281	6
90.	Freeland	3,873	418	257	2
91.	Eastsound	3,838	436	285	3
92.	Ocean Shores	3,671	321	211	3
93.	Bow	3,627	232	140	2
94.	Salkum	3,337	258	186	3
95.	Union	3,223	327	203	1
96.	Rochester	3,145	590	427	0
97.	Ocean Park	3,063	185	123	1
98.	Inglewood-Finn Hill	3,043	918	604	1
99.	Fall City	2,940	792	504	0
100.	Everson	2,930	229	132	2

Social Media — Awareness Ad Delivery by Campaign

Sep 1, 2020 - Sep 30, 2020

Facebook Paid Ad Delivery for PSSH

	Ad Set Name	Impressions	Video Plays	Link Clicks	Clicks (All)
1.	PSSH Geo-Target + Korean	39,152	34,767	127	261
2.	PSSH Geo-Target + Vietnamese	80,431	70,336	206	398
3.	Retargeting PSSH Spanish Video Ca…	21,065	null	76	117
4.	Secondary Sensitive Population Inter…	326,635	236,072	232	461
5.	Secondary Sensitive Population + Sp…	64,171	49,986	46	95
6.	Auto Maintenance Interests	117,568	79,226	62	115
7.	Gardening Interests + Spanish	59,076	45,491	52	79
8.	Gardening Interests	123,917	82,962	115	118
9.	Auto Maintenance Interests + Spanish	29,530	22,319	28	42
10.	Dog Owner Interests	111,066	78,840	67	151
11.	Dog Owner Interests + Spanish	14,511	11,253	15	35
12.	Retargeting PSSH Video Campaign E…	23,041	null	90	120
13.	Retargeting PSSH Video Campaign E…	23,162	null	49	79
14.	Retargeting PSSH Video Campaign E…	64,351	null	230	517

1 - 14 / 14

Facebook Paid Ad Delivery for Verde PSSH

	Campaign Name	Impressions	Video Plays	Link Clicks	Clicks (All)
1.	VPSSH | Awareness | Reach (Vide…	136,384	101,740	98	282
2.	VPSSH | Awareness | Video View…	16,293	16,038	43	62
3.	VPSSH | Retargeting | Spanish Ca…	22,210	null	81	111

1 - 3 / 3

Note: Facebook Retargeting Ads used digital images therefore no video plays were calculated.

YouTube Paid Ad Delivery

	Ad group	Impressions ▼	Clicks
1.	Garden Spanish Video Skippable…	204,925	202
2.	Garden Korean Video Skippable …	170,286	242
3.	Garden Viet Video Skippable - 20…	104,482	43
4.	Dog Owners Video Skippable - 2…	89,419	77
5.	Auto English Video Skippable - 2…	71,740	112
6.	Low Income English Video Skipp…	67,869	149
7.	Dog Viet Video Skippable - 2020-…	66,850	31
8.	Garden English Video Skippable …	52,604	110
9.	Dog Korean Video Skippable - 2…	49,473	35
10.	Dog Spanish Video Skippable - 2…	40,543	39
11.	Auto Spanish Video Skippable - …	36,113	39
12.	Auto Viet Video Skippable - 202…	24,668	10
13.	LI Spanish Video Skippable - 202…	21,352	46
14.	LI Viet Video Skippable - 2020-0…	14,826	16
15.	Auto Korean Video Skippable - 2…	7,744	11
16.	LI Korean Video Skippable - 202…	2,480	4

1 - 16 / 16

Digital & Social Media — Awareness Ad Campaign Key

Key

Impressions/Imps Won: Number of impressions won on the platform, based on the highest bid. (Reminder that Digital and Social operate in an auction environment.) The impression is the same as the number of times an ad was served to a user.

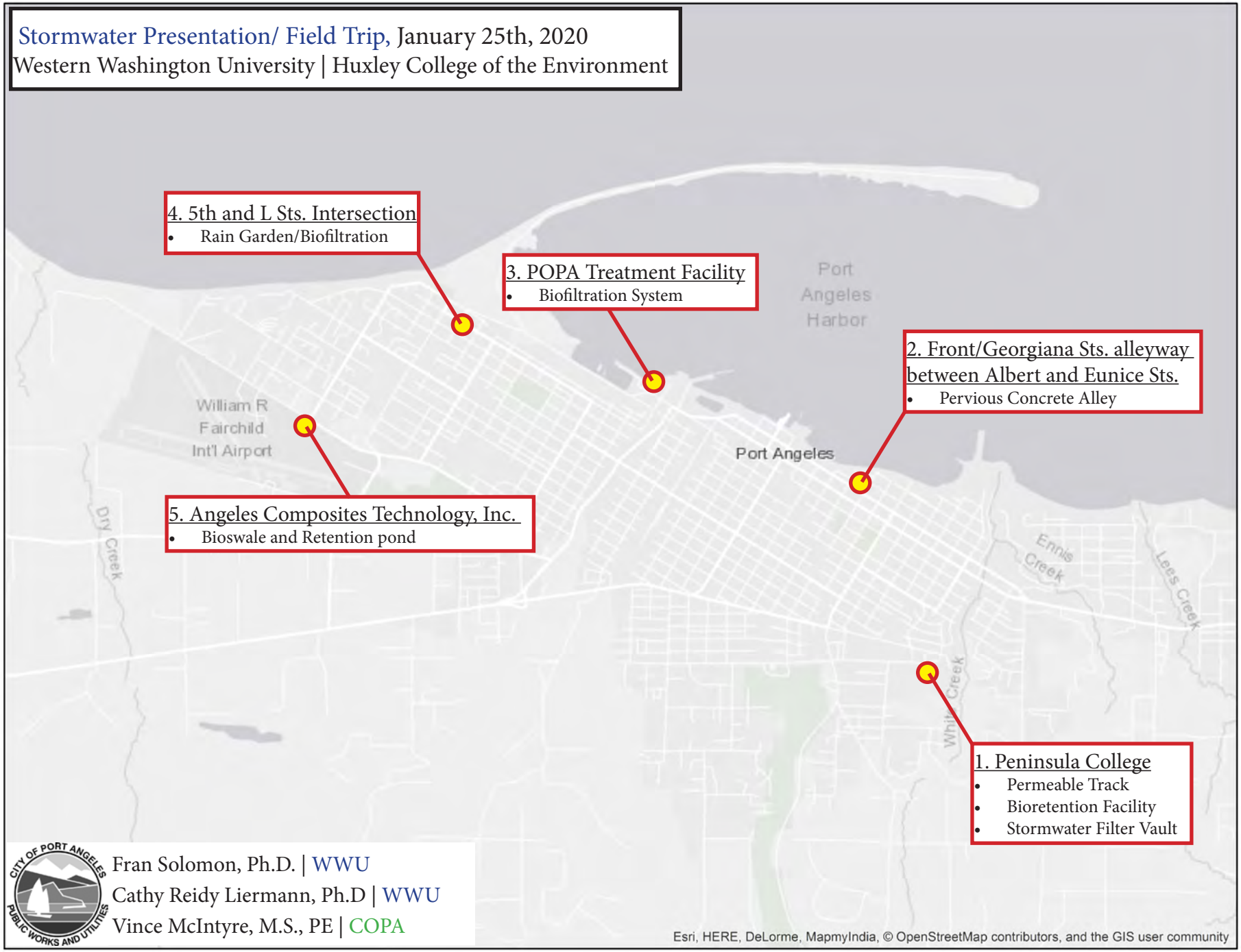
Audio/Video Starts: Number of times the video started. This metric fires when the video starts playing.

Video Plays: The number of times your video plays. This is counted for each impression of a video and excludes replays.

Video Completes/100% Complete: The number of users who have viewed the video to completion.

Clicks: In Digital media, this equates to the number of times users clicked on the ad. In Social media, this equates to any click-action taken on the social media ad (eg. link clicks, click on the Page, "See More" to drop down a longer caption, click on video in ad to expand the video full-screen, etc.)

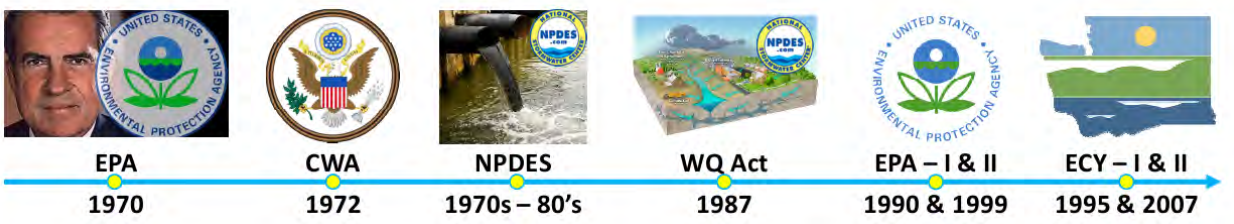
Link Clicks: The number of clicks on links within the ad that led to advertiser-specified destinations (ad URL), on or off Facebook.


Stormwater Presentation/ Field Trip, January 25th, 2020
Western Washington University | Huxley College of the Environment
4. 5th and L Sts. Intersection
• Rain Garden/Biofiltration
3. POPA Treatment Facility
• Biofiltration System
2. Front/Georgiana Sts. alleyway between Albert and Eunice Sts.
• Pervious Concrete Alley
5. Angeles Composites Technology, Inc.
• Bioswale and Retention pond
1. Peninsula College
• Permeable Track
• Bioretention Facility
• Stormwater Filter Vault
Port Angeles Harbor
William R Fairchild Int'l Airport
Port Angeles
Dry Creek
Ennis Creek
Lees Creek
Fran Solomon, Ph.D. | WWU
Cathy Reidy Liermann, Ph.D | WWU
Vince McIntyre, M.S., PE | COPA
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Stormwater Issues – the goal for "fishable swimmable" – the #1 urban water pollution problem in WA

- Degraded **Quality** – Turbidity, Temperature, pH, Dissolved Oxygen, Bacteria, dissolved metals, trash, process wastes, pesticides, fertilizers, surfactants
- Too much **Quantity** – Downstream erosion, impaired habitat, Overall volume and Peak Flow, too little flow later due to depleted recharge from groundwater

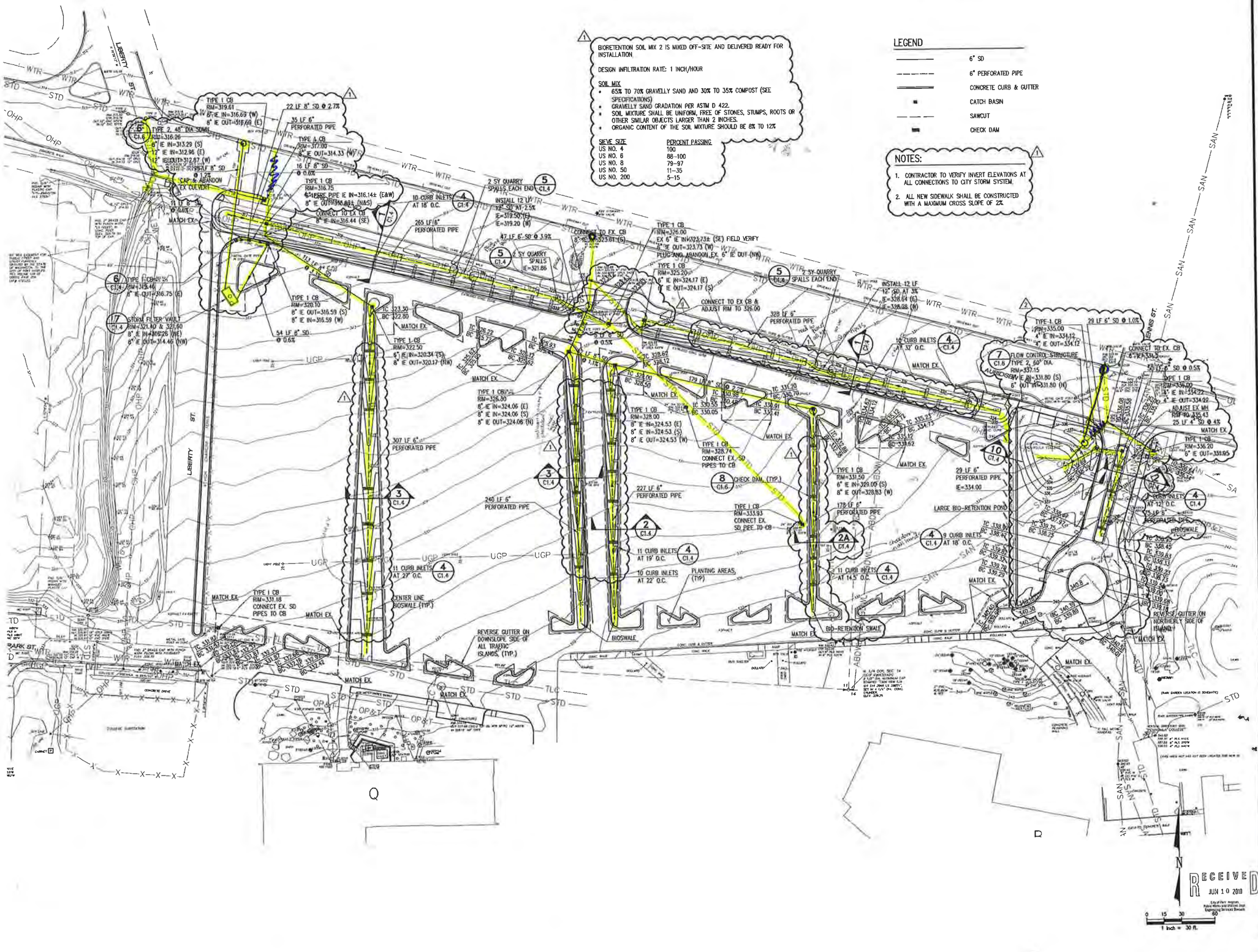
Stormwater Regulations



Clean Water Act 1970 – We as a Nation are committed to preserving and restoring the chemical, physical, and biological integrity of our nation's waters.

Stormwater Management in Port Angeles

1. Infrastructure Accountability – know where your runoff is going
2. Stormwater Ordinances – PAMC Ch. 13.64 Stormwater Utility and Regulations.
    a. Enforcement program.
3. Permitting program – new development and redevelopment, thresholds, treatment & detention
    a. Construction Standards (SWPPPs) apply to Public and Private Projects
4. IDDE Program – Hotline & Response Team, connected to the State reporting program
    a. Annual Training to City staff
5. Annual Education and Outreach Goals – spread the word, inform others,
    a. Campaigns – Don't Drip and Drive, Pet Waste, Car Wash, Natural Yard Care, ect.
6. O&M – street sweeping, vegetation management, CB cleaning, maintaining conveyance, inspections and repairs, Change out filters,
7. Capital Improvements – Peabody Street Water Quality Project, 4th Street Raingardens, Peabody Creek Culvert Rehab, Increase capacity
    a. Tack onto other Utility Projects
        i. 10th Street: Filterra Boxes, Outfall Improvement
        ii. Pump Station 4: Raingardens and Permeable sidewalks
8. Fund ongoing research and testing
    a. SAM – Stormwater Action Monitoring
        i. Nearshore Testing on mussels (bioaccumulation) and sediments (concentrations of contaminants)
        ii. In stream testing (monitor environmental health indicators)
    b. StreamKeepers of Clallam County: (Citizen Scientists, Ed Chadd) – measure and collect water quality data, submit for testing, and annual reporting to ECY
9. Rebate Program for LID – Rain Gardens, Permeable Pavement, soil amendment (soon cisterns)
10. NEW – Source Control Program for existing land uses and activities: Annual inspections of institutional, commercial, and industrial sites to enforce pollution control ordinances.



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kpff Consulting Engineers
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Seattle, Washington 98101-3665
(206) 622-5822 Fax (206) 622-8130

PENINSULA COLLEGE
Maier Hall & West Campus Improvements
Parking Lot Permit Set

1502 E Lauridsen Blvd, Port Angeles, WA 98362

CALL TWO BUSINESS DAYS BEFORE YOU DIG 1-800-424-5555

Principal D.SCHWARTZ
Project Manager J.SEELBACH
Drawn By M.STEWART
Reviewed By DES./JCS
Job No. 0506

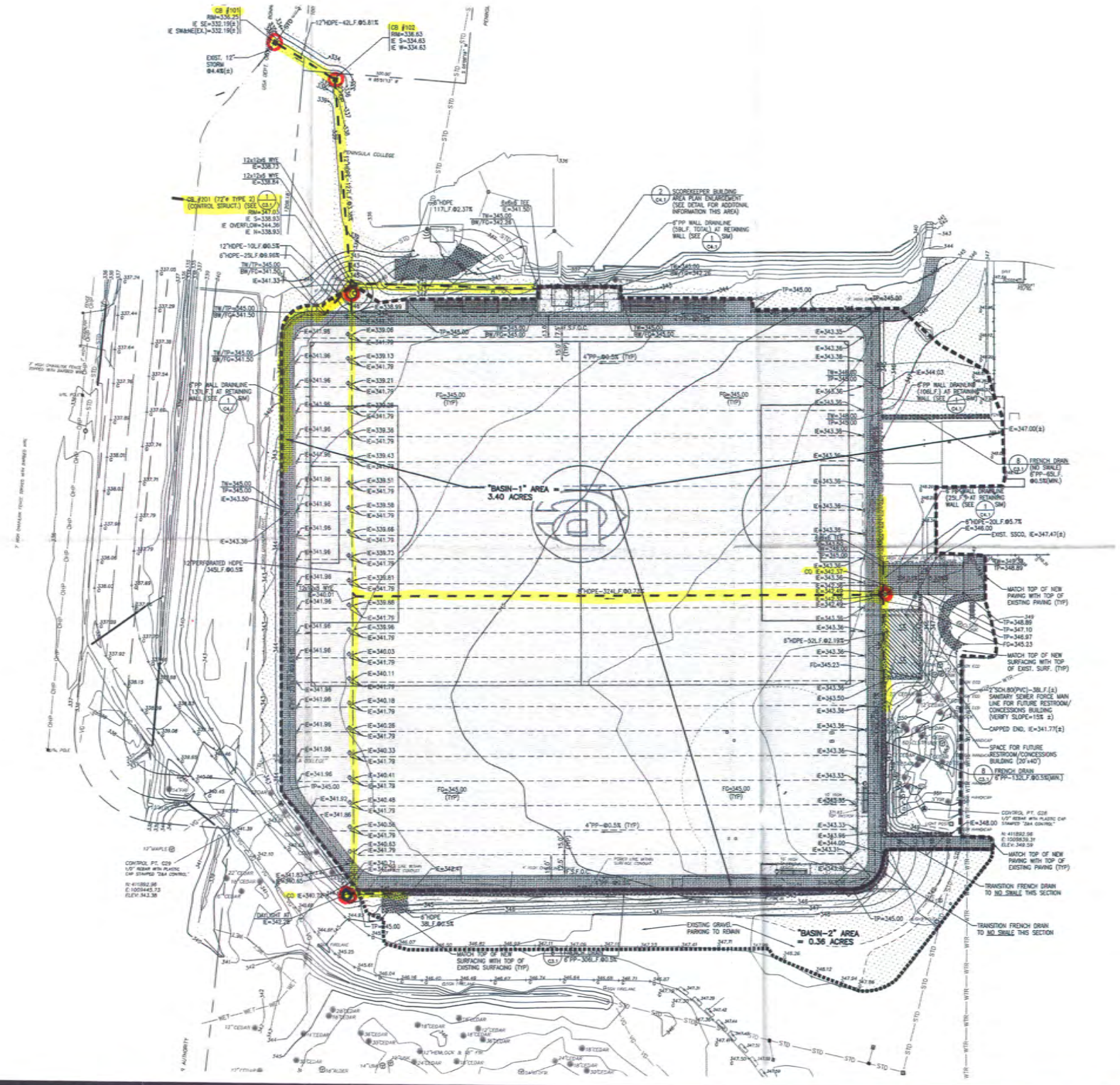
Revisions:

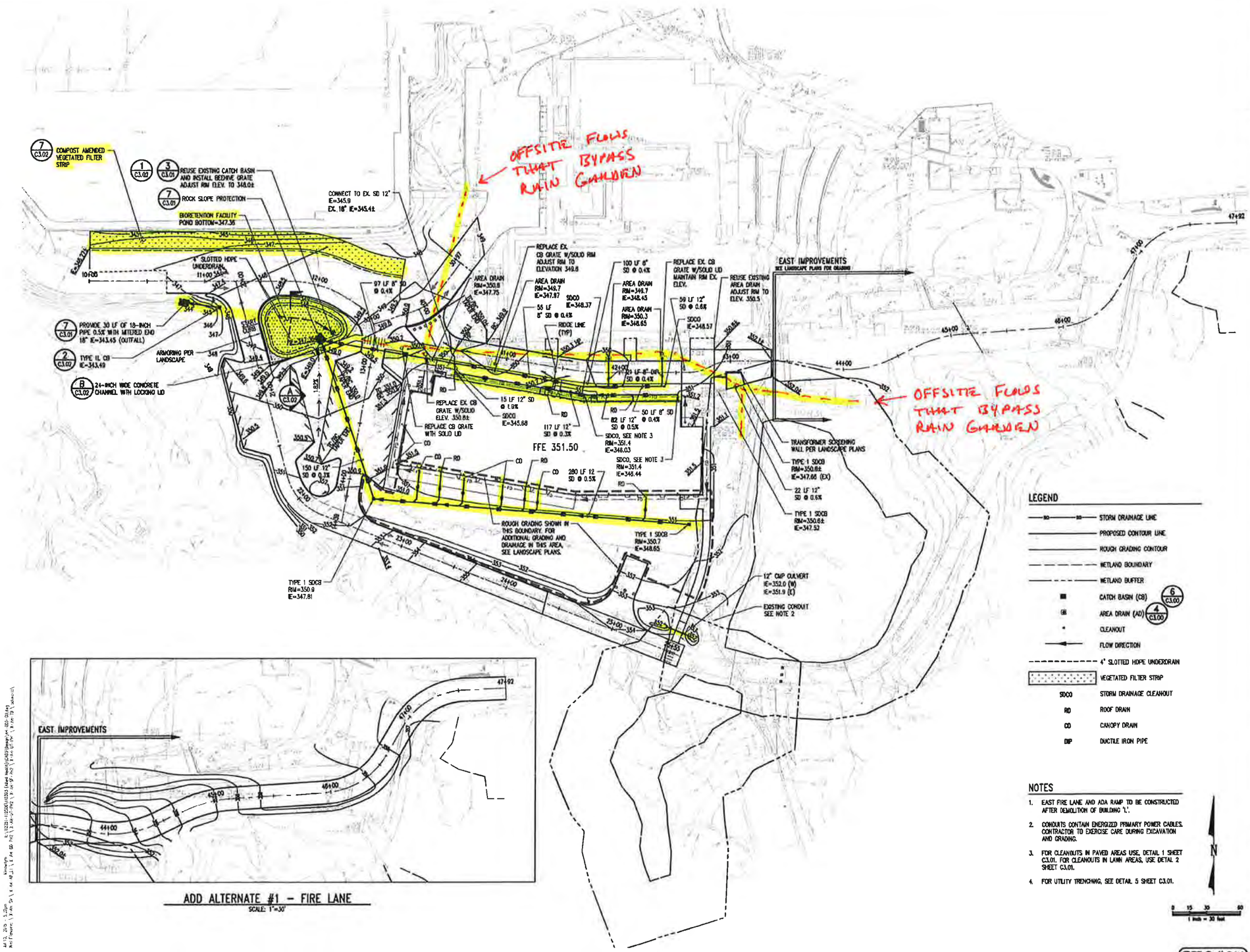
No.	Date	By
4	June 2010	JCS
8	June 2010	JDS

State Project #2006-125 I (2-2 Construction Documents
19 May 2010
Permit Set

RECEIVED
JUN 10 2010
City of Port Angeles Public Works and Utilities Dept Engineering Division

PARKING LOT GRADING & DRAINAGE
C1.2


"BASIN-1" AREA = 3.40 ACRES
"BASIN-2" AREA = 0.36 ACRES
SCOREKEEPER BUILDING AREA PLAN ENLARGEMENT (SEE DETAIL FOR ADDITIONAL INFORMATION THIS AREA)
6"PP WALL DRAINLINE (38LF, TOTAL) AT RETAINING WALL (SEE 1/C4.1 SIM)
6"PP WALL DRAINLINE (106LF) AT RETAINING WALL (SEE 1/C4.1 SIM)
6"PP WALL DRAINLINE (25LF) AT RETAINING WALL (SEE 1/C4.1 SIM)
FRENCH DRAIN (NO SWALE) 6"PP-65LF, @0.5%(MIN.)
FRENCH DRAIN 6"PP-135LF @0.5%(MIN.)
TRANSITION FRENCH DRAIN TO NO SWALE THIS SECTION
MATCH TOP OF NEW PAVING WITH TOP OF EXISTING PAVING (TYP)
MATCH TOP OF NEW SURFACING WITH TOP OF EXIST. SURF. (TYP)
MATCH TOP OF NEW SURFACING WITH TOP OF EXISTING SURFACING (TYP)
EXISTING GRAVEL PARKING TO REMAIN
SPACE FOR FUTURE RESTROOM/CONCESSIONS BUILDING (20'x40')
2"SCH.80(PVC)-38LF.(±) SANITARY SEWER FORCE MAIN LINE FOR FUTURE RESTROOM/ CONCESSIONS BUILDING (VERIFY SLOPE=15% ±)
CAPPED END, IE=341.77(±)
EXIST. SSCO, IE=347.47(±)
CB #101
CB #102
CB #201 (72"ø TYPE 2) (CONTROL STRUCT.) (SEE 1/C4.1)
CONTROL PT. CD9
CONTROL PT. CD8
DAYLIGHT AT E=342.38
DAYLIGHT AT E=347.00(±)
PENINSULA COLLEGE



ADD ALTERNATE #1 – FIRE LANE
SCALE: 1"=30'

LEGEND

- STORM DRAINAGE LINE
- PROPOSED CONTOUR LINE
- ROUGH GRADING CONTOUR
- WETLAND BOUNDARY
- WETLAND BUFFER
- CATCH BASIN (CB) — 6/C1.00
- AREA DRAIN (AD) — 4/C1.00
- CLEANOUT
- FLOW DIRECTION
- 4" SLOTTED HDPE UNDERDRAIN
- VEGETATED FILTER STRIP
- SDCO — STORM DRAINAGE CLEANOUT
- RD — ROOF DRAIN
- CD — CANOPY DRAIN
- DIP — DUCTILE IRON PIPE

NOTES

1. EAST FIRE LANE AND ADA RAMP TO BE CONSTRUCTED AFTER DEMOLITION OF BUILDING 'L'.
2. CONDUITS CONTAIN ENERGIZED PRIMARY POWER CABLES. CONTRACTOR TO EXERCISE CARE DURING EXCAVATION AND GRADING.
3. FOR CLEANOUTS IN PAVED AREAS USE, DETAIL 1 SHEET C3.01. FOR CLEANOUTS IN LAWN AREAS, USE DETAL 2 SHEET C3.01.
4. FOR UTILITY TRENCHING, SEE DETAIL 5 SHEET C3.01.

N

0 15 30 60
1 inch = 30 feet

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(206) 622-3822 Fax (206) 622-9130

PENINSULA COLLEGE
ALLIED HEALTH & EARLY CHILDHOOD DEVELOPMENT CENTER
PHASE 2

1502 East Lauridsen Boulevard Port Angeles, WA 98362

Principal	DES
Project Manager	DES/KJM
Drawn By	KWP
Reviewed By	DES
Job No.	114147

Revisions:

No.	Description	Date

WA State Project Number 30000126

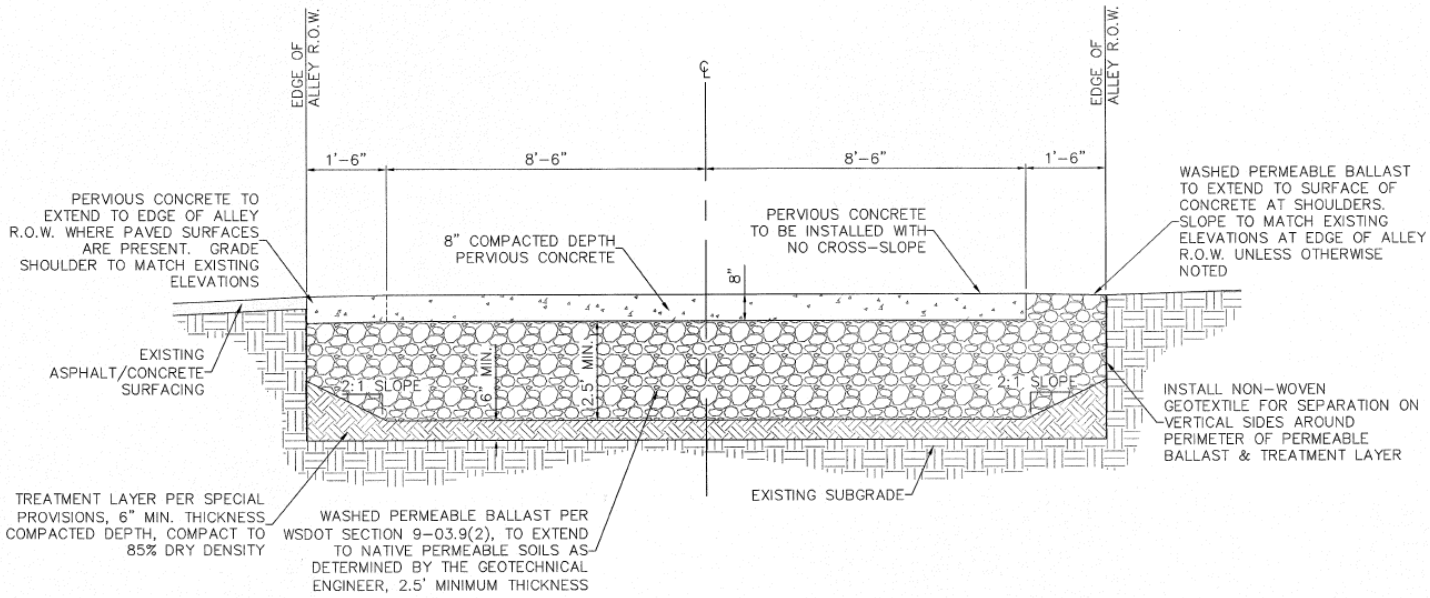
10 JULY 2015

PERMIT SET

GRADING AND DRAINAGE PLAN

C3.00

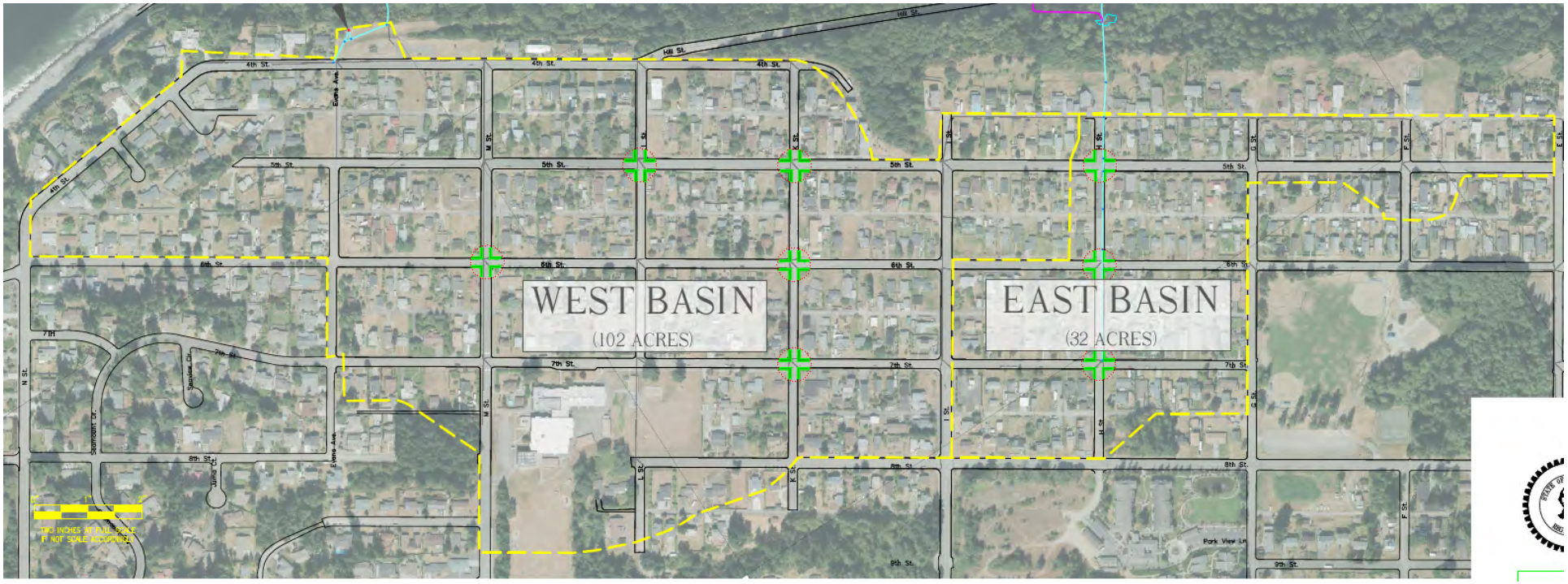
2016 Green LID Alley Project

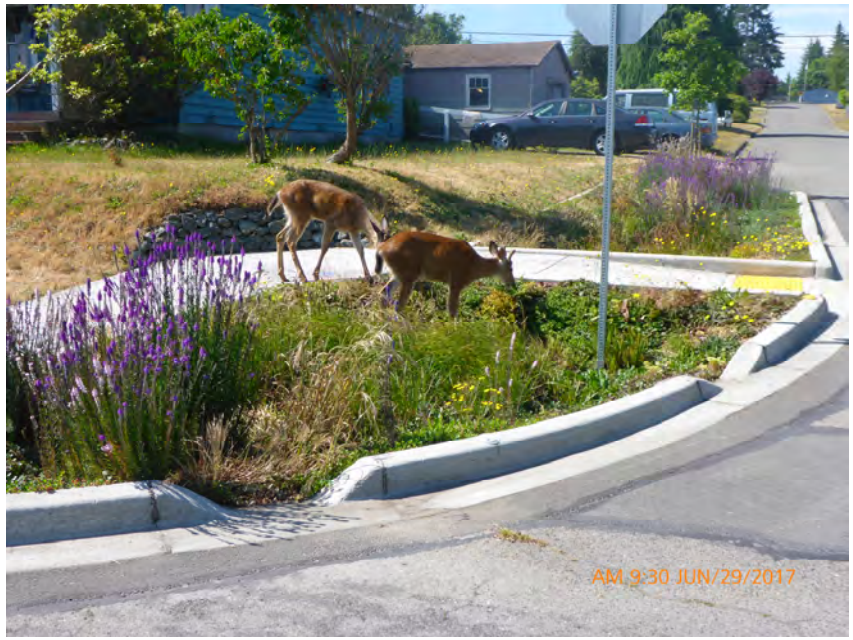


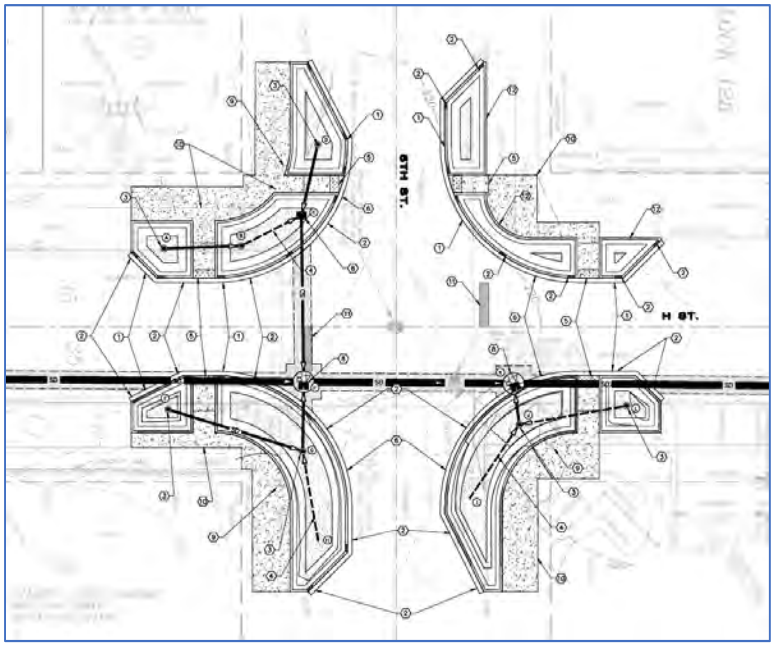
B C210 PERVIOUS CONCRETE ALLEY SECTION
Ref: C202 Scale: NTS

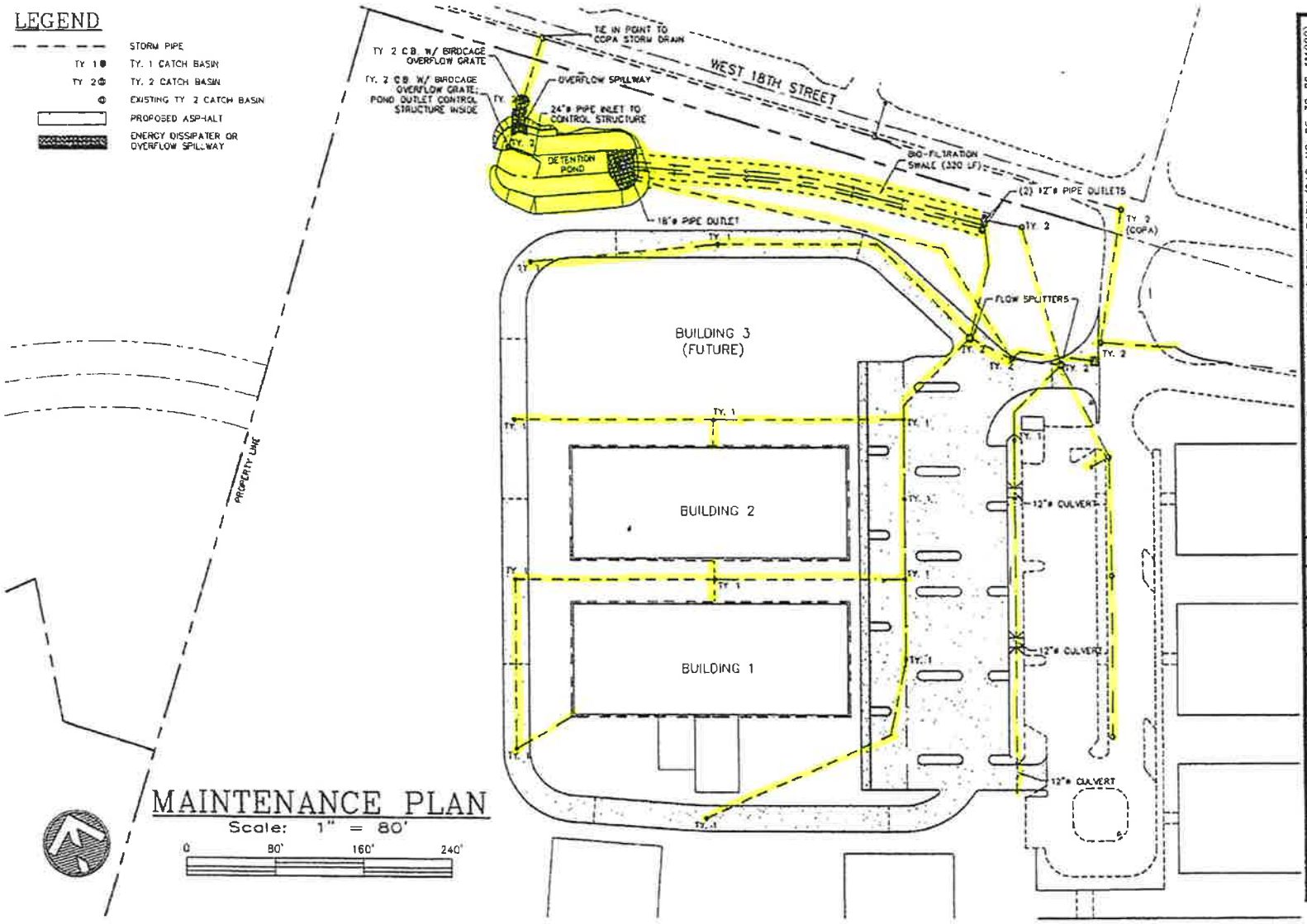

WESTPORT
YACHTS

4th Street Stormwater Improvements Project - 2014









TITLE: SITE DEVELOPMENT IN THE AIRPORT INDUSTRIAL PARK (PAR. NO. 06-30-00-111900)

STORMWATER MAINTENANCE PLAN

CLIENT:
PORT OF PORT ANGELES
P.O. BOX 1350
PORT ANGELES, WA 98362

ZENOVIC & ASSOCIATES
INCORPORATED
301 EAST 8TH ST., STE. 1
PORT ANGELES, WA 98362
PHONE: (360) 417-0501
FAX: (360) 417-0514
EMAIL: ZENOVIC@OLYMPUS.NET

SCALE: 1" = 80'

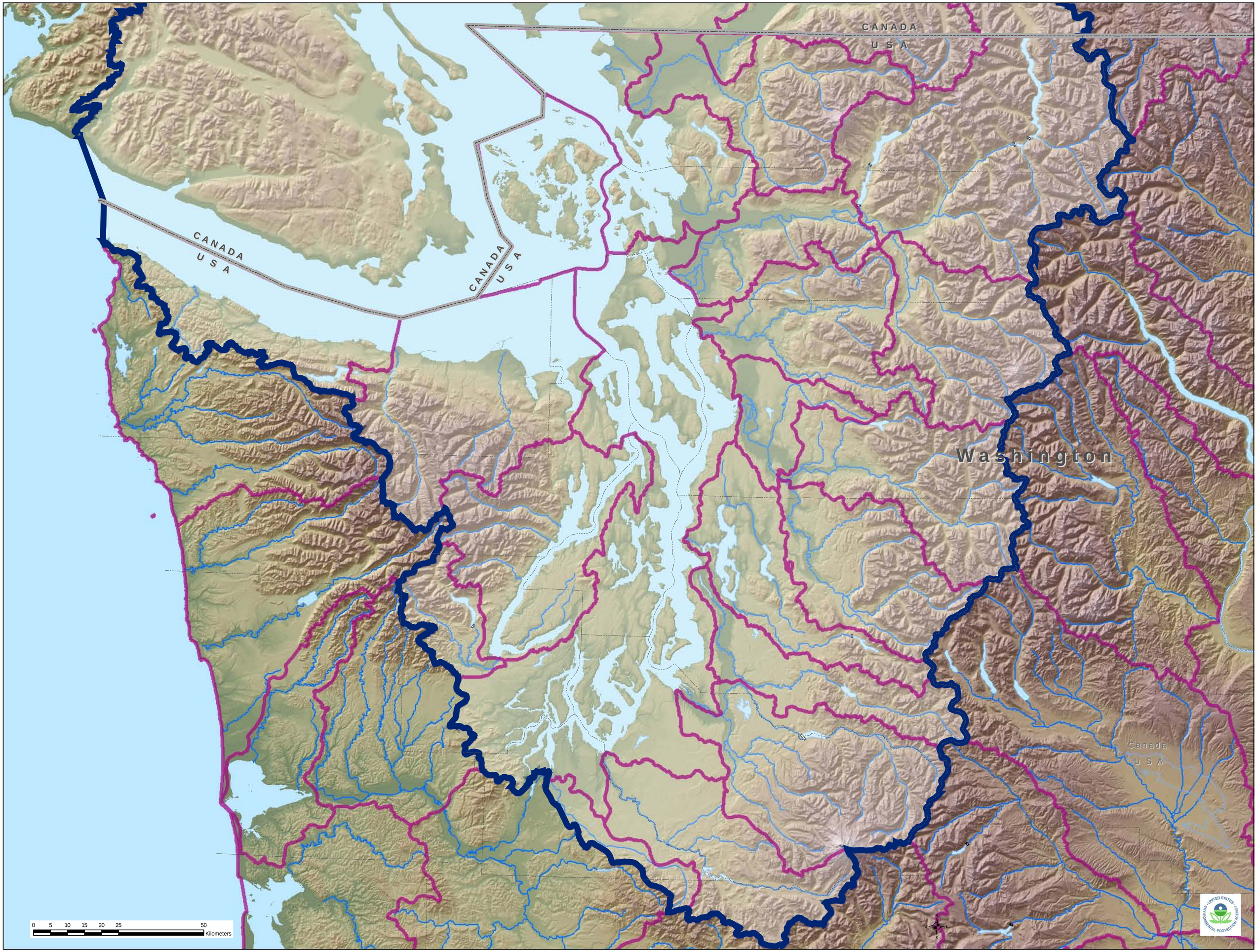
DATE: 10/20/11

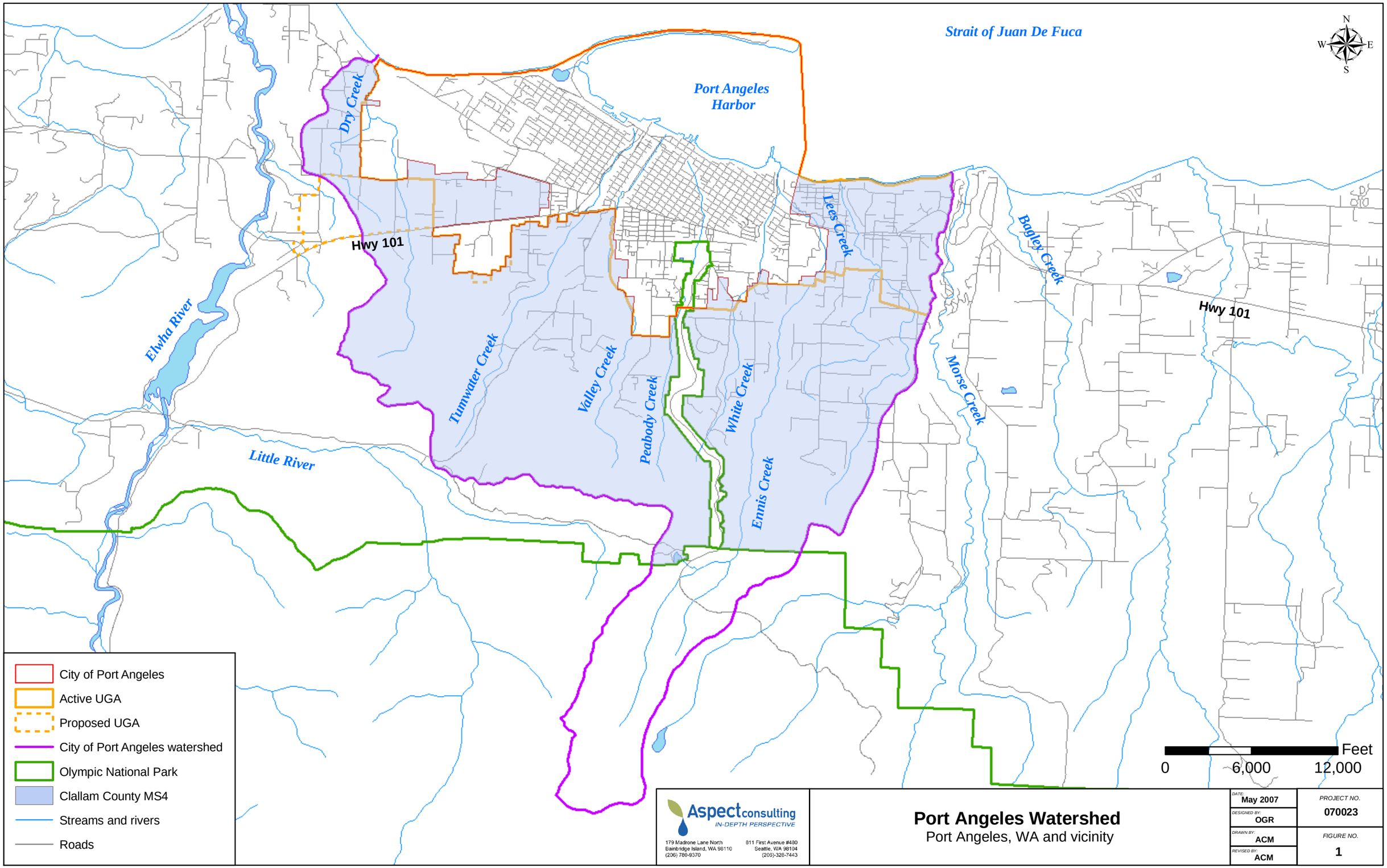
FILE: 10141-Maint.

JOB NO: 10141

STEPHEN M. ZENOVIC
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
10/20/11

SHEET 1 OF 1


CANADA
U S A
CANADA
U S A
CANADA
U S A
CANADA
U S A
Washington
Canada
U S A
0 5 10 15 20 25 50
Kilometers



Aspect consulting
IN-DEPTH PERSPECTIVE
179 Madrone Lane North
Bainbridge Island, WA 98110
(206) 780-9370
811 First Avenue #480
Seattle, WA 98104
(206)-326-7443

Port Angeles Watershed

Port Angeles, WA and vicinity

DATE: May 2007	PROJECT NO. 070023
DESIGNED BY: OGR	
DRAWN BY: ACM	FIGURE NO. 1
REVISED BY: ACM	

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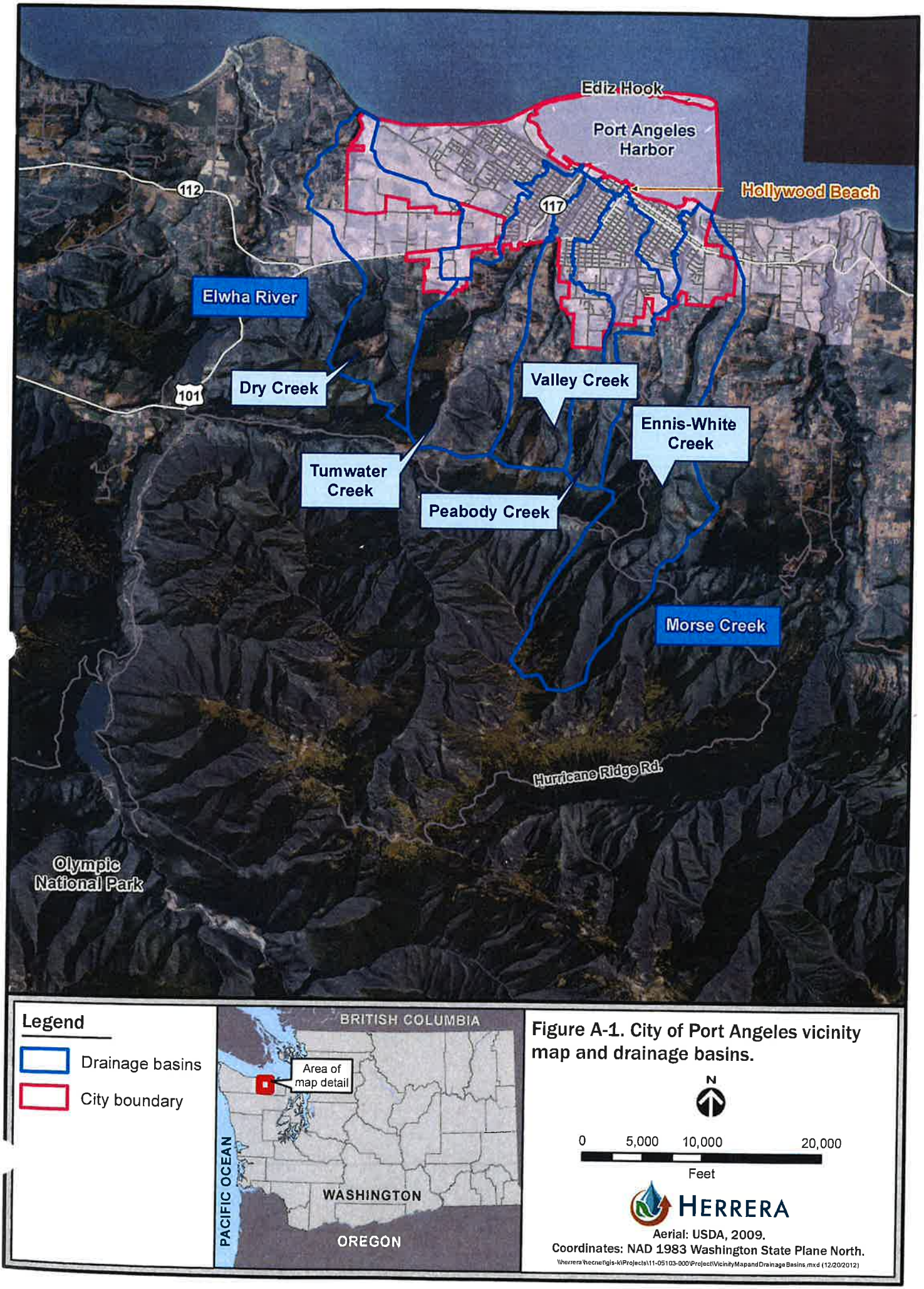
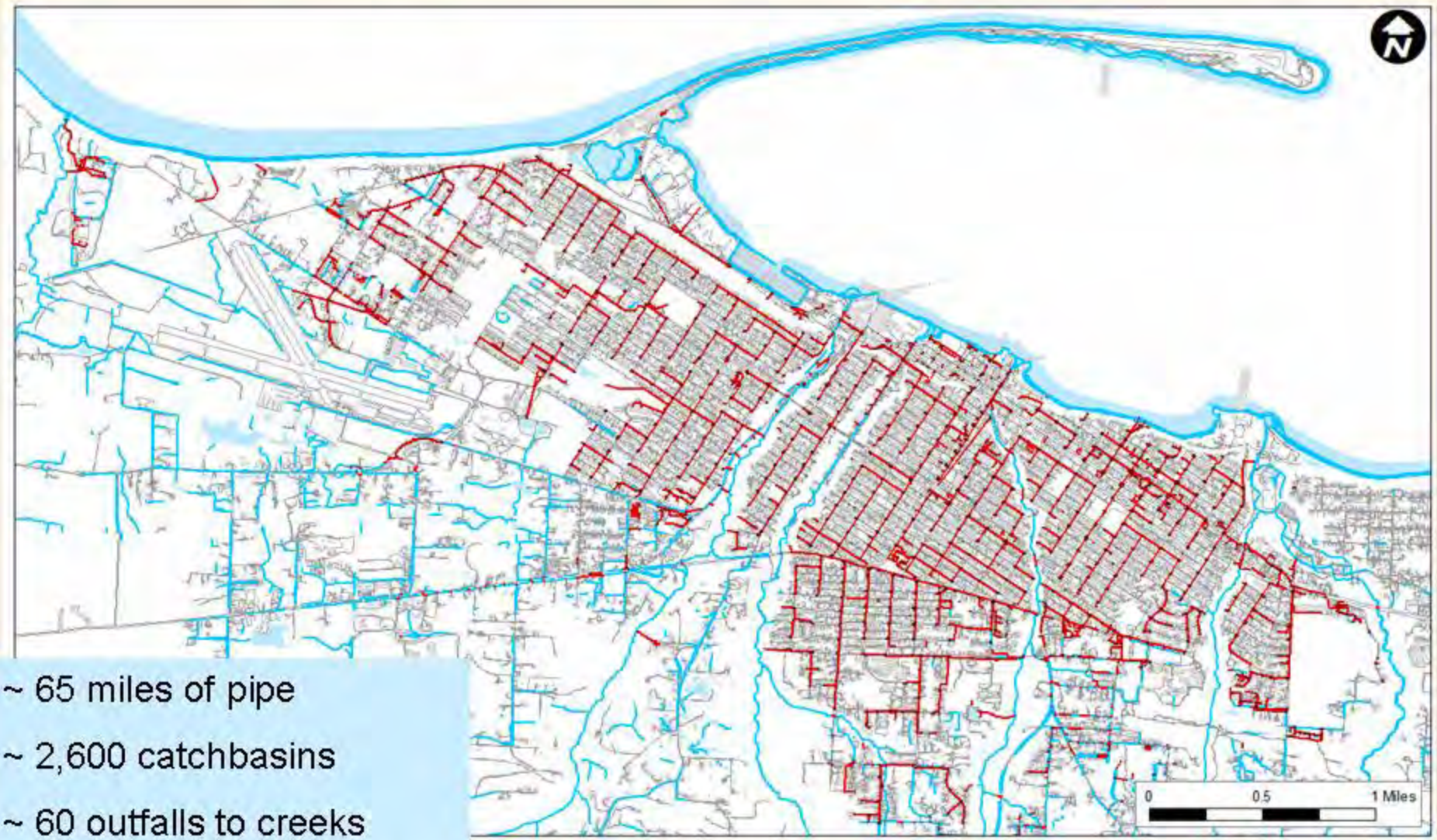
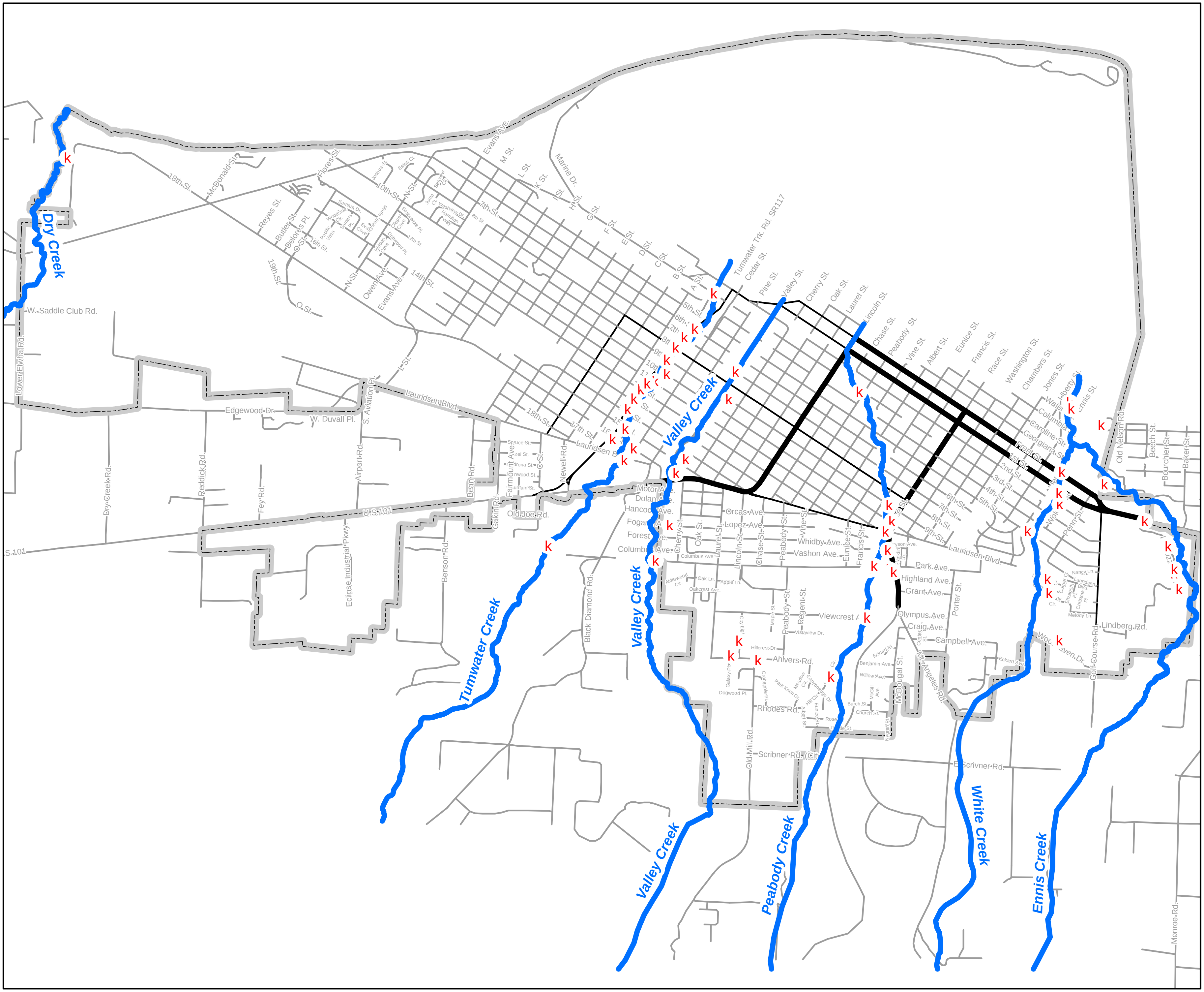


Figure A-1. City of Port Angeles vicinity map and drainage basins.

Port Angeles Stormwater System Map



- ~ 65 miles of pipe
- ~ 2,600 catchbasins
- ~ 60 outfalls to creeks
- ~ 20 outfalls to harbor/strait



Vertical Datum = NAVD 88
Horizontal Datum = NAD 83/91

3,100

Feet

SWater outfalls

Storm outfall

k

Creeks

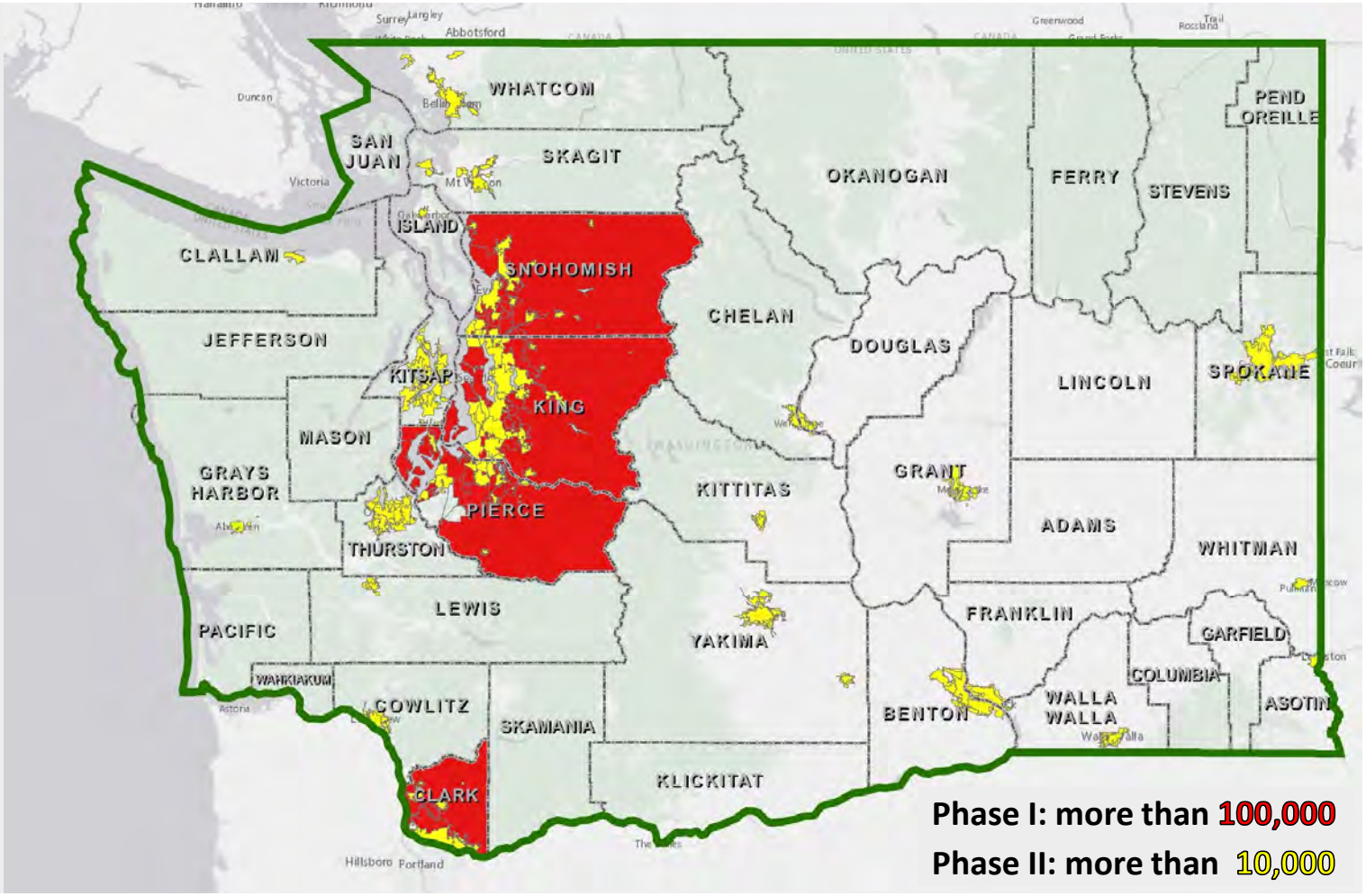
This map is not intended to be used as a legal description.
This map/drawing is produced by the City of Port Angeles for its own use and purposes.
Any other use of this map/drawing shall not be the responsibility of the City.

Washington State Phase I and Phase II Permittees

Source: WA Dept. of Ecology
Description: Municipal Stormwater Permit Areas (MSWPA) of Washington State, incorporating 2013 updates to combined incorporated City boundaries and unincorporated Urban Growth Areas (UGA) as defined by the Growth Management Act.

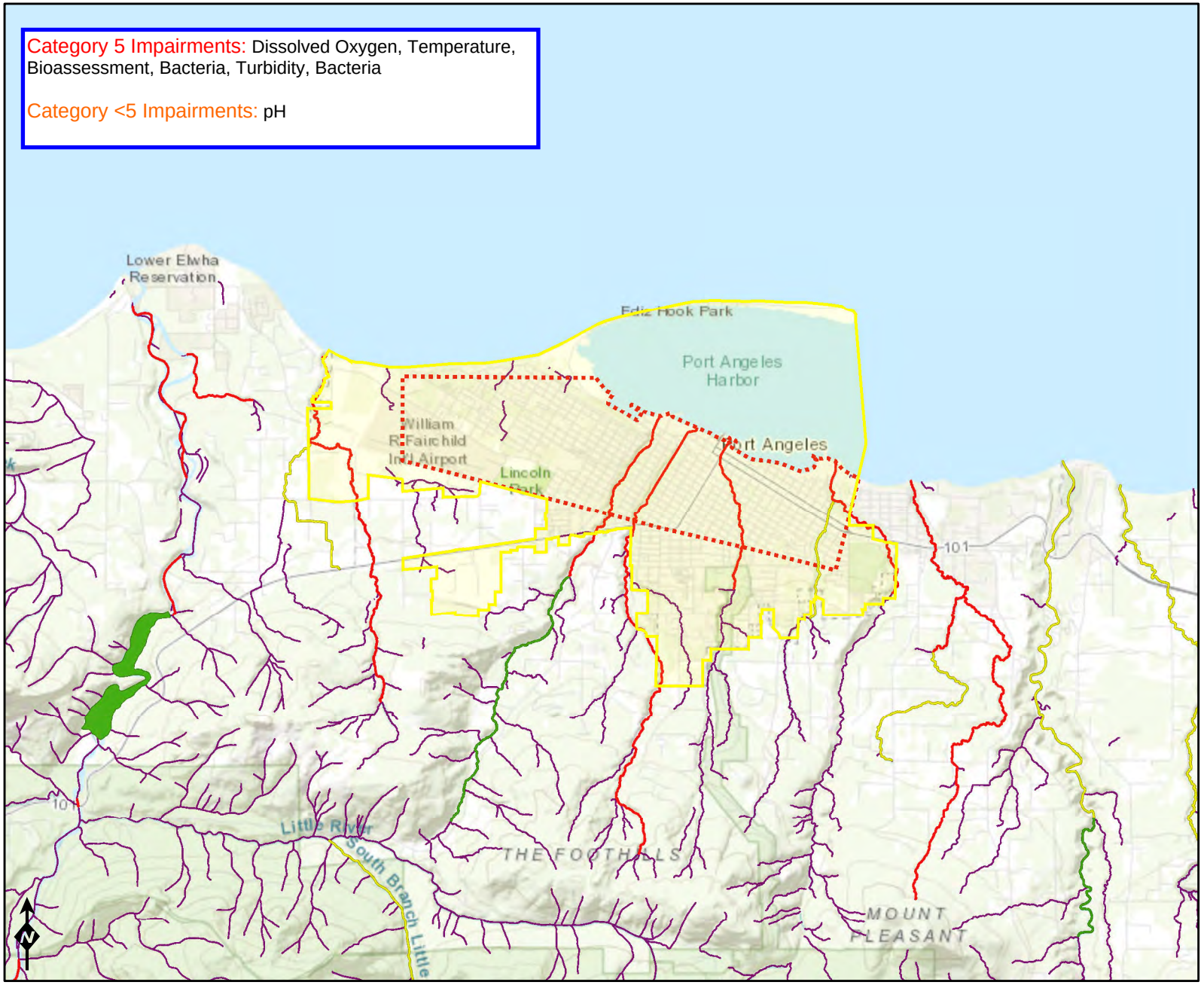
Phase 1

Phase 2



January 24, 2020

City of Port Angeles | Water Quality Map



Assessed Waters/Sediment

Water
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

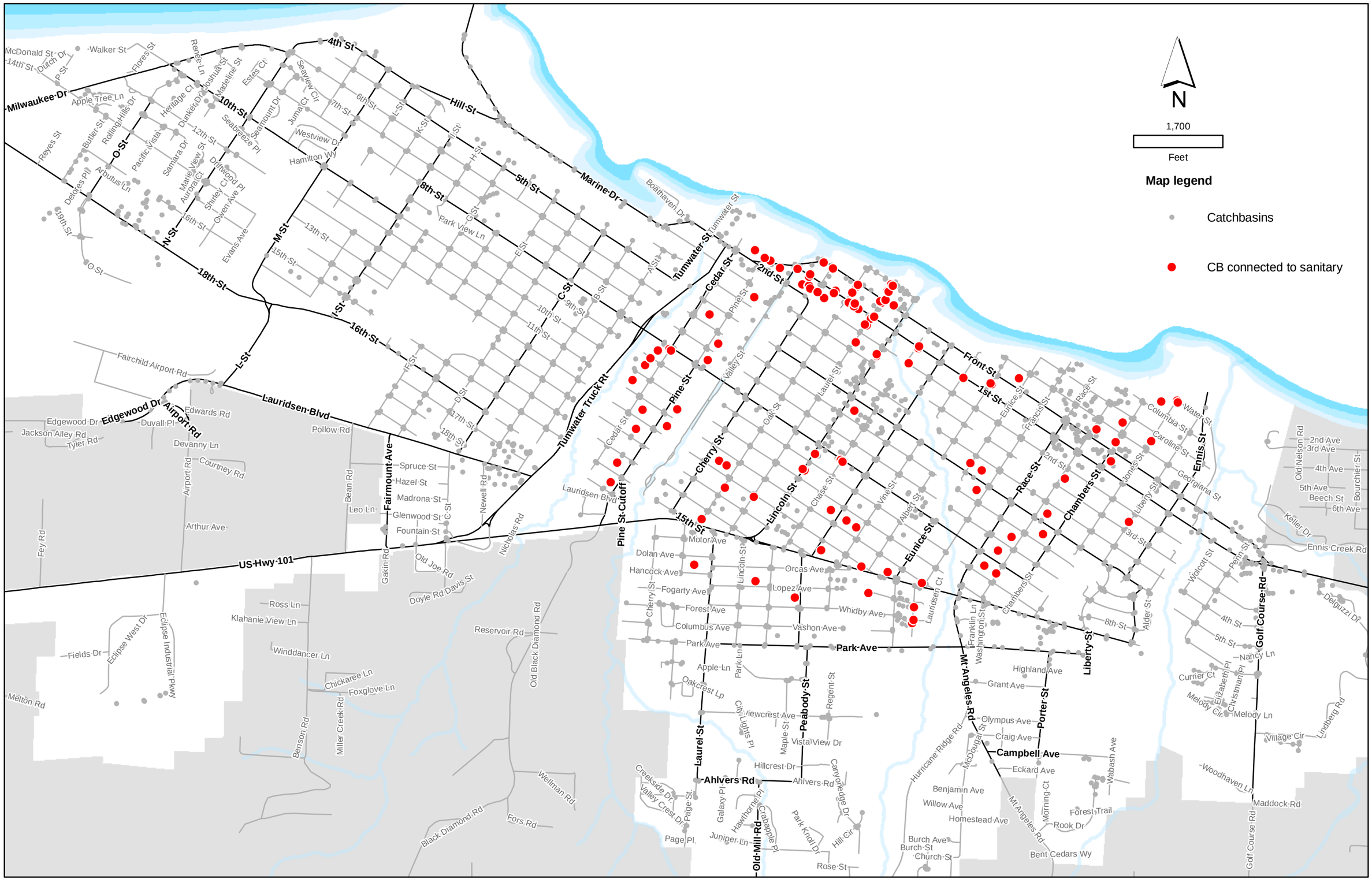
Sediment
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

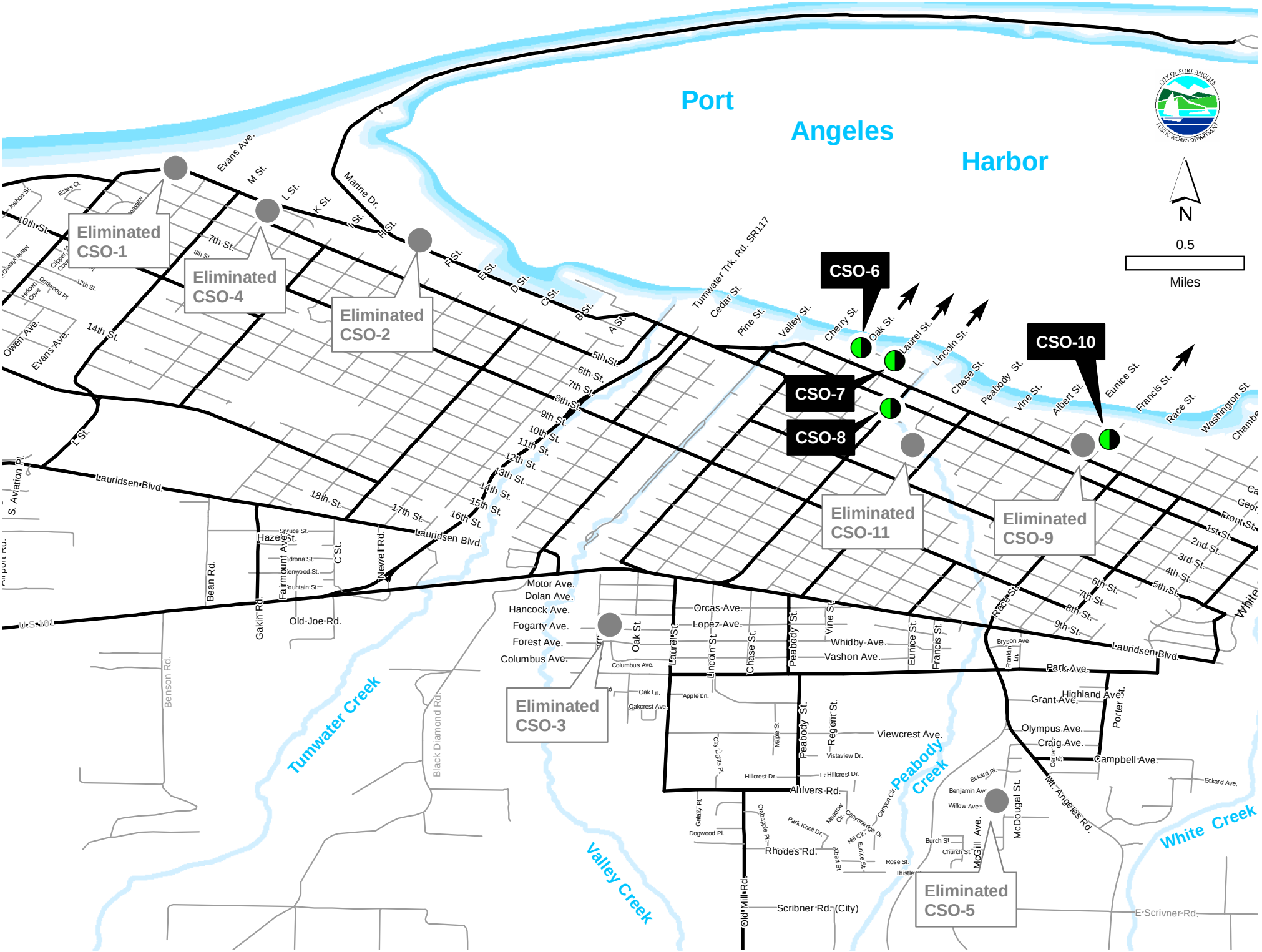
WQ Standards

Miles 0 1 2 4

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

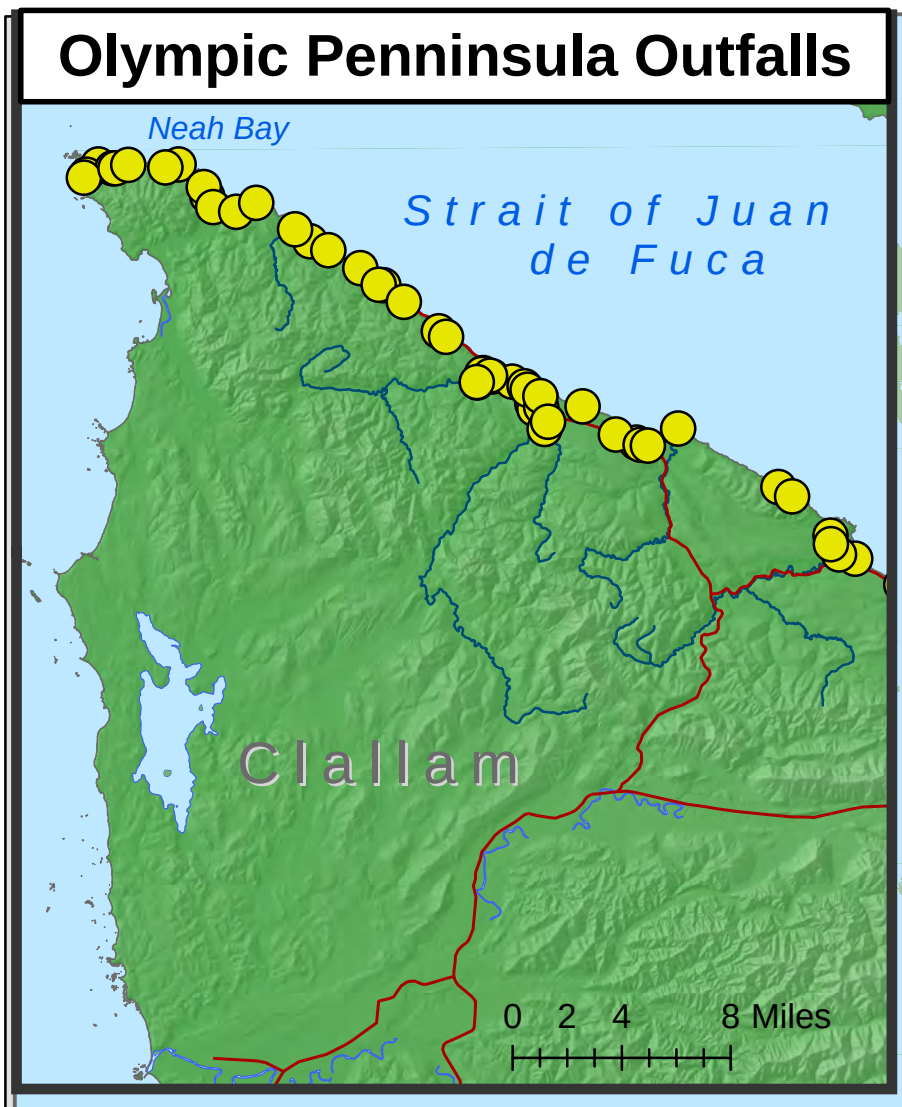
DEPARTMENT OF ECOLOGY State of Washington


N
1,700
Feet
Map legend
Catchbasins
CB connected to sanitary
4th St
Milwaukee Dr
10th St
Hill St
Marine Dr
5th St
O St
N St
M St
L St
18th St
16th St
8th St
C St
Tumwater St
Cedar St
2nd St
Front St
1st St
Pine St
Cherry St
Lincoln St
Eunice St
Race St
Chambers St
Liberty St
Ennis St
Golf Course Rd
Mt Angeles Rd
Porter St
Campbell Ave
Park Ave
Peabody St
Laurel St
Ahlvers Rd
Old Mill Rd
Pine St Cutoff
15th St
Lauridsen Blvd
Edgewood Dr
Airport Rd
Fairchild Airport Rd
Fairmount Ave
Tumwater Truck Rt
US Hwy 101
Walker St
McDonald St
14th St
Dutch Dr
P St
Flores St
Renee Ln
Joshua St
Madeline St
Estes Ct
Seaview Cir
Juma Ct
7th St
6th St
L St
K St
J St
H St
Seamount Dr
Seabreeze Pl
Westview Dr
Hamilton Wy
Apple Tree Ln
Heritage Ct
Dunker Dr
Rolling Hills Dr
Butler St
Reyes St
Pacific Vista
Samara Dr
12th St
Marie View St
Aurora Ct
Shirley Ct
Driftwood Pl
Owen Ave
Evans Ave
16th St
13th St
15th St
19th St
O St
Arbutus Ln
Delores Pl
Park View Ln
9th St
10th St
11th St
B St
A St
Boathaven Dr
Tumwater St
Pine St
Valley St
Oak St
Laurel St
Cedar St
Lincoln St
Chase St
Vine St
Albert St
Francis St
Elmira St
Columbia St
Caroline St
Water St
Georgiana St
Liberty St
Jones St
2nd St
3rd St
Old Nelson Rd
2nd Ave
3rd Ave
4th Ave
5th Ave
Beech St
6th Ave
Bourchier St
Keller Dr
Ennis Creek Rd
Penn St
Wolcott St
Delguzzi Dr
4th St
5th St
Nancy Ln
Currier Ct
Elizabeth Pl
Christman Pl
Melody Cir
Melody Ln
Village Cir
Lindberg Rd
Woodhaven Ln
Maddock Rd
Golf Course Rd
Alder St
8th St
Franklin Ln
Washington St
Highland Ave
Grant Ave
Olympus Ave
Craig Ave
Eckard Ave
Wabash Ave
Forest Trail
Rook Dr
Morning Ct
Bent Cedars Wy
Benjamin Ave
Willow Ave
Homestead Ave
Burch Ave
Burch St
Church St
Hurricane Ridge Rd
McDougall St
Orcas Ave
Lopez Ave
Whidby Ave
Vashon Ave
Dolan Ave
Hancock Ave
Fogarty Ave
Forest Ave
Columbus Ave
Park Ave
Motor Ave
Laundsen Ct
Apple Ln
Park Ln
Oakcrest Ln
Cityviewcrest Ave
City Lights Pl
Regent St
Maple St
Vista View Dr
Hillcrest Dr
Ahlvers Rd
Carryonedge Dr
Hill Cir
Park Knoll Dr
Rose St
Creekside Dr
Valley Crest Dr
Page St
Page Pl
Galaxy Pl
Hawthorne Pl
Crabapple Pl
Juniper Ln
Lauridsen Blvd
Pollow Rd
Spruce St
Hazel St
Madrona St
Glenwood St
Fountain St
Leo Ln
Bean Rd
Newell Rd
Nicholas Rd
Gakin Rd
Old Joe Rd
Doyle Rd
Davis St
Arthur Ave
Fey Rd
Airport Rd
Courtney Rd
Edgewood Dr
Duvall Pl
Jackson Alley Rd
Tyler Rd
Edwards Rd
Devanny Ln
Ross Ln
Klahanie View Ln
Winddancer Ln
Chickaree Ln
Foxglove Ln
Reservoir Rd
Old Black Diamond Rd
Black Diamond Rd
Fors Rd
Wellman Rd
Benson Rd
Miller Creek Rd
Melton Rd
Fields Dr
Eclipse West Dr
Eclipse Industrial Pkwy


Port
Angeles
Harbor
N
0.5
Miles
Eliminated CSO-1
Eliminated CSO-4
Eliminated CSO-2
Eliminated CSO-3
Eliminated CSO-11
Eliminated CSO-9
Eliminated CSO-5
CSO-6
CSO-7
CSO-8
CSO-10
Evans Ave.
M St.
L St.
K St.
J St.
Marine Dr.
I St.
H St.
G St.
F St.
E St.
D St.
C St.
B St.
A St.
Tumwater Trk. Rd. SR117
Cedar St.
Pine St.
Valley St.
Cherry St.
Oak St.
Laurel St.
Lincoln St.
Chase St.
Peabody St.
Vine St.
Albert St.
Eunice St.
Francis St.
Race St.
Washington St.
Owen Ave.
Evans Ave.
10th St.
7th St.
14th St.
5th St.
6th St.
7th St.
8th St.
9th St.
10th St.
11th St.
12th St.
13th St.
14th St.
15th St.
16th St.
17th St.
18th St.
L St.
Lauridsen Blvd.
S. Aviation Pl.
Bean Rd.
Haze St.
Fairmount Ave.
C St.
Newell Rd.
Gakin Rd.
Old Joe Rd.
U.S. 101
Benson Rd.
Motor Ave.
Dolan Ave.
Hancock Ave.
Fogarty Ave.
Forest Ave.
Columbus Ave.
Oak St.
Orcas Ave.
Lopez Ave.
Whidby Ave.
Vashon Ave.
Park Ave.
Grant Ave.
Highland Ave.
Porter St.
Olympus Ave.
Craig Ave.
Campbell Ave.
Eckard Ave.
Viewcrest Ave.
Regent St.
Hillcrest Dr.
Ahlvers Rd.
Rhodes Rd.
Scribner Rd. (City)
Old Mill Rd.
E Scrivner Rd.
McDougal St.
McGill Ave.
Mt. Angeles Rd.
Tumwater Creek
Black Diamond Rd.
Valley Creek
Peabody Creek
White Creek

Public Stormwater Outfalls to Puget Sound

Olympic Penninsula Outfalls



Strait of Juan de Fuca

Whatcom
Bellingham
San Juan
Skagit
Mt Vernon
Island
Port Townsend
Port Angeles
Sequim
Clallam
Everett
Snohomish
Jefferson
Seattle
Bremerton
Kitsap
King
Federal Way
Tacoma
Mason
Pierce
Ft. Lewis
Olympia
Thurston

- Manmade Outfalls
- Combined Sewer Overflows
- WSDOT Outfalls
- Natural Oufalls
- City Boundaries
- Tribal Lands
- Military Bases

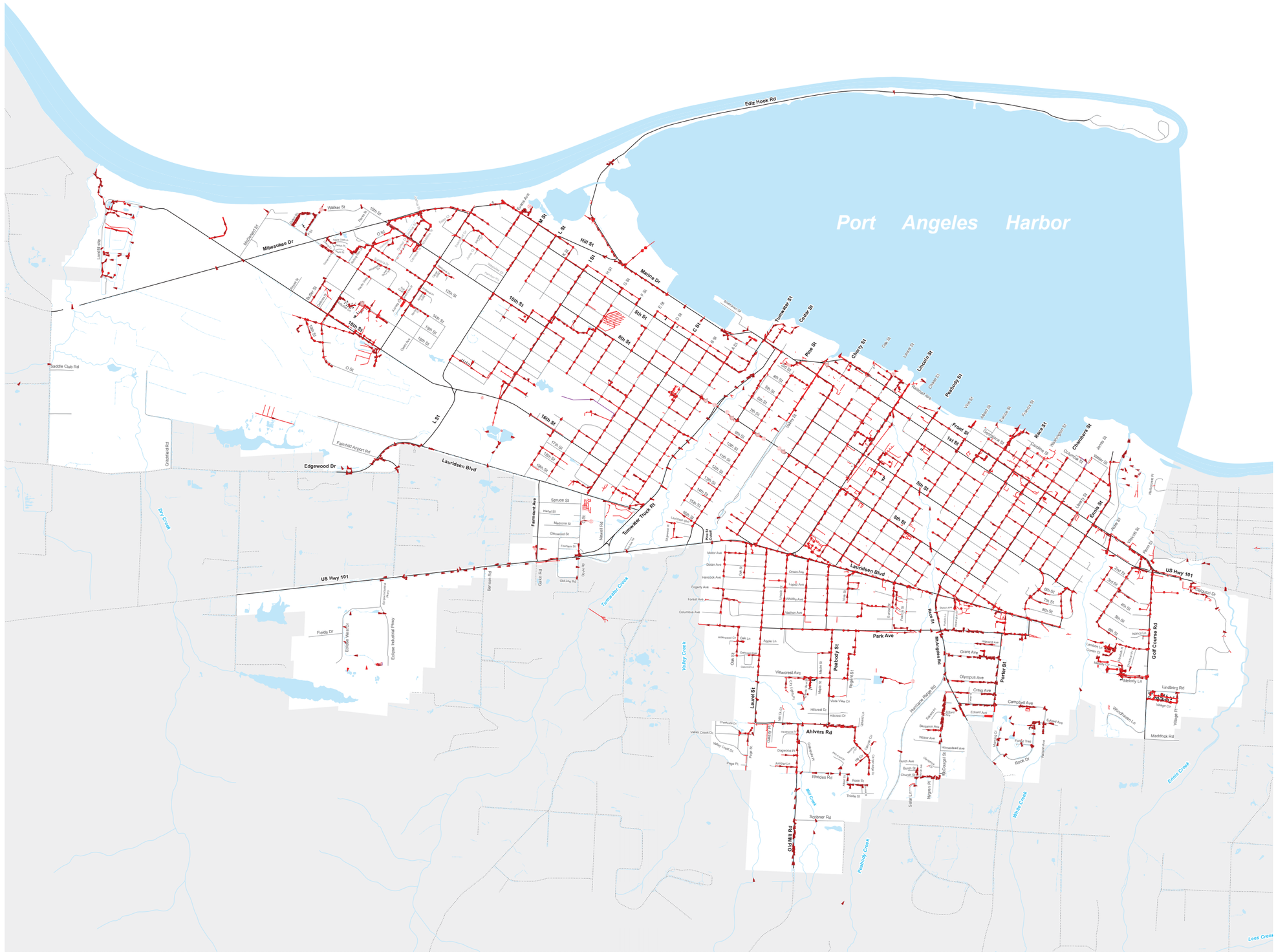
0 2.5 5 10 Miles

N

PEOPLE FOR PUGET SOUND

pugetsound.org

Map created by:
Robyn Carmichael, Liz Green, Collin O'Meara,
Matt Yarrow- University of Washington
Extension GIS Certificate Program
In collaboration with People For Puget Sound



CITY OF PORT ANGELES
PUBLIC WORKS & UTILITIES

N

825
Feet

Vertical Datum = NAVD 88
Horizontal Datum = NAD 83/91

Storm Water Map

Map legend

- Ditches and drainage
- River and creek
- Ponds and marshes
- Saltwater
- City arterial
- City side street
- County road
- County jurisdiction

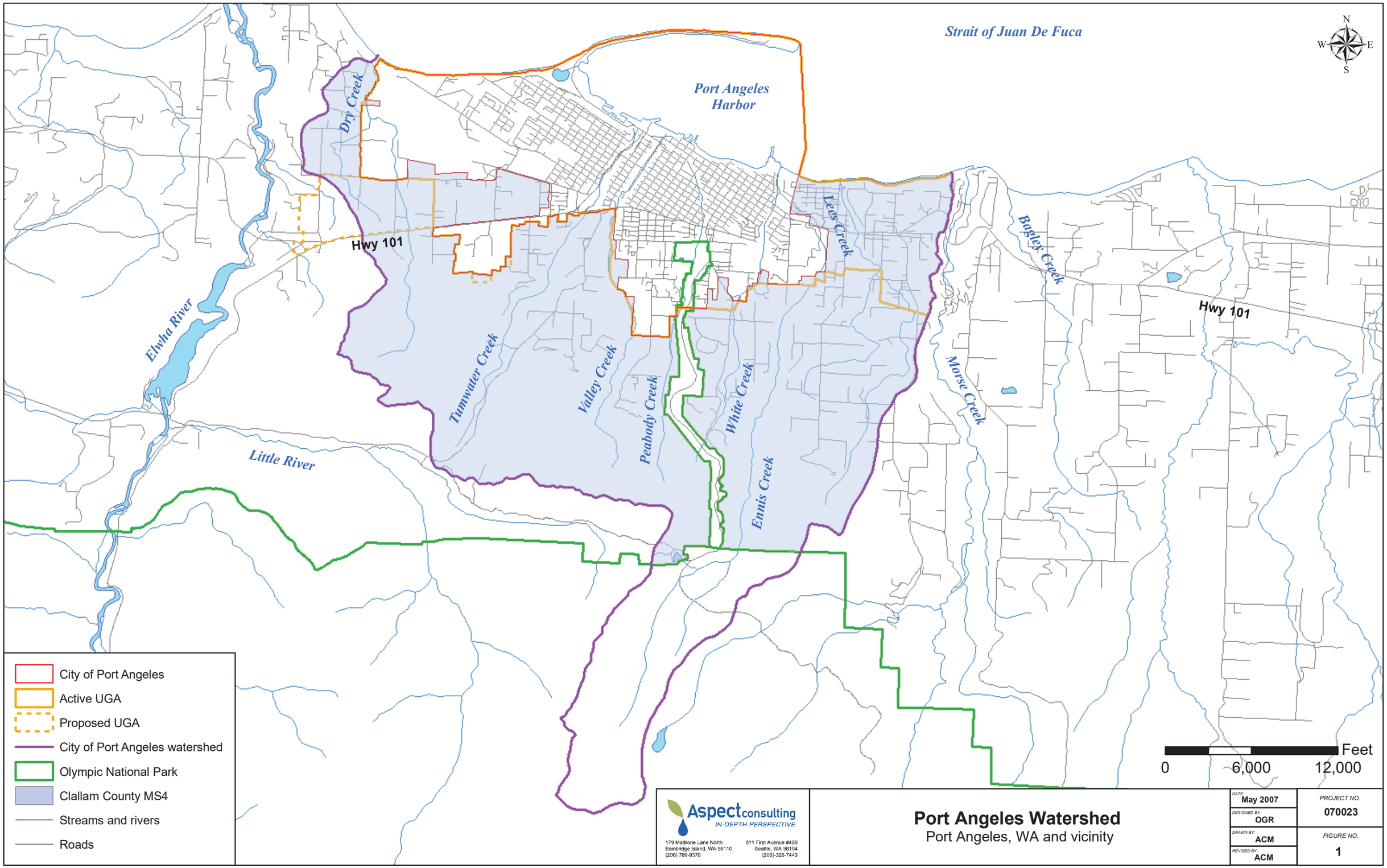
Storm utility legend

Chamber
- <all other values>
- DAquaswirl
- DDiversionChamber
- DDryWell
- DEnergyDissipator
- DFilterChamber
- DVortech
- DWetWell
- SystemValve
- ControlValve
- Manhole

Ponds

LateralLine
- DOther active mains
- DDitches
- DOverflow
- DInterceptor
- DMain
- DCulvert
- DInlineStorage
- DCollector
- DOutfall
- PressurizedMain

S:\ARC\NFO\GIS\Water\36x48 Stormwater map.mxd



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811 First Avenue #480
Seattle, WA 98104
(206)-326-7443

Port Angeles Watershed

Port Angeles, WA and vicinity

DATE: May 2007	PROJECT NO. 070023
DESIGNED BY: OGR	
DRAWN BY: ACM	FIGURE NO. 1
REVISED BY: ACM	

T:\projects_8\port_angeles\sitemap

CITY OF PORT ANGELES
PUBLIC WORKS & UTILITIES DEPARTMENT

N

Outfall Discharge Map

1,600
Feet

Vertical Datum = NAVD 88
Horizontal Datum = NAD 83/91

Printed: 3/12/2020

Legend

- COPA Outfall
- POPA Outfall
- City boundary
- Creek
- River

AssetID	LegacyID	Jurisdiction	Administration	Status	SubType	Diameter	Material
206		COPA	COPA	Active	<Null>	<Null>	<Null>
207		COPA	COPA	Active	<Null>	<Null>	<Null>
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34	01A	COPA	COPA	Active	DOutfall	<Null>	<Null>
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AssetID	LegacyID	Jurisdiction	Administration	Status	SubType	Diameter	Material
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166	<Null>	COPA	COPA	Active	DOutfall	4	PVC
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4618	<Null>	COPA	COPA	Active	DOutfall	12	DI
<Null>	<Null>	COPA	POPA	Active	DOutfall	<Null>	<Null>
<Null>	<Null>	COPA	POPA	Active	DOutfall	<Null>	<Null>
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2	2	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
3	3	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
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AssetID	LegacyID	Jurisdiction	Administration	Status	SubType	Diameter	Material
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64	2252	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
67	2268	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
71	2283	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
73	2288	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
76	2301	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
77	2304	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
78	2309	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
79	2310	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
80	2317	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
81	2334	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
82	2336	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
87	2343	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
99	3334	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
102	3565	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
103	3566	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
104	3567	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
105	3568	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
107	3570	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
108	3571	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
109	3572	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
110	3573	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
111	3574	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
112	3575	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
113	3576	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
119	3679	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
120	3587	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
121	3588	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
122	3589	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
123	3590	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
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131	2281	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
159	<Null>	COPA	COPA	Active	DOutfallCk	12	<Null>
160	<Null>	COPA	COPA	Active	DOutfallCk	<Null>	<Null>
3418	<Null>	COPA	COPA	Active	DOutfallCk	24	<Null>
5022	<Null>	COPA	COPA	Active	DOutfallCk	24	<Null>
10	3074	COPA	COPA	Active	DOutfallHarbor	30	<Null>
13	3077	COPA	COPA	Active	DOutfallHarbor	36	<Null>
14	3079	COPA	COPA	Active	DOutfallHarbor	15	<Null>
18	3087	COPA	COPA	Active	DOutfallHarbor	18	Concrete
21	07A	COPA	COPA	Active	DOutfallHarbor	84	Concrete
28	08A	COPA	COPA	Active	DOutfallHarbor	54	<Null>
30	3387	COPA	COPA	Active	DOutfallHarbor	12	<Null>
33	3396	COPA	COPA	Active	DOutfallHarbor	24	Concrete
83	2337	COPA	COPA	Active	DOutfallHarbor	42	<Null>
89	3466	COPA	COPA	Active	DOutfallHarbor	6	Concrete
167	<Null>	COPA	COPA	Active	DOutfallHarbor	12	PVC
174	174	COPA	COPA	Active	DOutfallHarbor	12	Concrete

AssetID	LegacyID	Jurisdiction	Administration	Status	SubType	Diameter	Material
176	<Null>	COPA	COPA	Active	DOutfallHarbor	24	Concrete
177	<Null>	COPA	COPA	Active	DOutfallHarbor	<Null>	<Null>
188	<Null>	COPA	POPA	Active	DOutfallHarbor	12	Ductile Iron
189	<Null>	COPA	COPA	Active	DOutfallHarbor	12	Concrete
190	<Null>	COPA	COPA	Active	DOutfallHarbor	<Null>	<Null>
193	<Null>	COPA	COPA	Active	DOutfallHarbor	<Null>	<Null>
216	<Null>	COPA	COPA	Active	DOutfallHarbor	<Null>	<Null>
217	<Null>	COPA	COPA	Active	DOutfallHarbor	<Null>	<Null>
3018	<Null>	COPA	POPA	Active	DOutfallHarbor	<Null>	<Null>
5818	<Null>	COPA	POPA	Active	DOutfallHarbor	<Null>	<Null>

2020 Illicit Discharge Detection and Elimination (IDDE) Tracking Spreadsheet

2019-2024 NPDES Stormwater Phase II Permit, per S5.C.5 and Appendix 12

0	1	2	3	4	5	6	7a	7b	8	9	10	11	12
Count	**Jurisdiction name and permit number**	**Date incident discovered or reported to you**	**Date of beginning your response**	**Date of end of your response**	**How was the incident discovered or reported to you? (select all that apply)**	**Discharge to MS4? (select one)**	**Incident Location (address or Lat.Long)**		**Pollutants Identified (select all that apply)**	**Source or Cause (select all that apply)**	**Source tracing approach(es) used (select all that apply)**	**Correction/elimination methods used (select all that apply)**	**Field notes, explanations, and/or other comments**
EXAMPLE	City of Port Angeles, WAR045028	MM/DD/YYYY	MM/DD/YYYY	MM/DD/YYYY	Pollution hotline (phone, web, app)	Yes – allowable or conditionally allowable	123 Fake St. Port Angeles, WA 98362	48.114397, -123.432281	Unconfirmed, unspecified, or not identified	Other commercial/industrial activity	Observation (color/sheen/turbidity/floatables/odor)	Add or modify operational source control BMP	None
1	City of Port Angeles, WAR045029	2/5/2020	2/5/2020	2/10/2020	Staff referral	Yes – did not notify	120 E. 5th St. Port Angeles, WA	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Education/technical assistance, Add or modify operational source control BMP, Add or modify structural source control BMP	Potable Water line break under building. Washing sediment into gutter and into CB.
2	City of Port Angeles, WAR045030	2/6/2020	2/6/2020	2/7/2020	Staff referral	Yes – notified DOH and Ecology	-	48.128935, -123.463379	Sewage/septage/pet waste/human waste	Other accident/spill	Not applicable	Clean-up	SSO from Pump Station #3 into PA Harbor during rain event. ERTS #696337
3	City of Port Angeles, WAR045031	2/10/2020	2/11/2020	8/27/2020	ERTS referral	Yes – notified DOH and Ecology	1215 HWY 101, #98 Port Angeles, WA	-	Sewage/septage/pet waste/human waste	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Enforcement,Education/technical assistance, Add or modify structural source control BMP	Failed private pump station. Required construction permitting and structural upgrades to meet current standards. 2 NOVs sent.
4	City of Port Angeles, WAR045032	2/10/2020	2/10/2020	2/10/2020	Pollution hotline (phone, web, app)	No – none found	1215 W. 10th St. Port Angeles, WA	-	Unconfirmed, unspecified, or not identified	Construction activity	Observation (color/sheen/turbidity/floatables/odor)	Education/technical assistance	Clean construction runoff onto neighboring property. Contractor to remediate the issue. No discharge to MS4.
5	City of Port Angeles, WAR045032	2/12/2020	2/18/2020	2/18/2020	Pollution hotline (phone, web, app)	No – none found	S. Cherry St. Port Angeles, WA	-	Fuel and/or vehicle related fluids	Unconfirmed, unspecified, or not identified	Observation (color/sheen/turbidity/floatables/odor)		Reported to PWKS email. Undetectable.
6	City of Port Angeles, WAR045033	2/18/2020	2/18/2020	2/18/2020	Pollution hotline (phone, web, app)	No – none found	1030 E. 9th St. Port Angeles, WA	-					Suspected cross-connection, however, inspection confirmed groundwater.
7	City of Port Angeles, WAR045034	2/18/2020	2/18/2020	2/18/2020	Pollution hotline (phone, web, app)	Yes – did not notify	S. Lincoln St. Port Angeles, WA	-	Fuel and/or vehicle related fluids	Unconfirmed, unspecified, or not identified	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Education/technical assistance	Unknown source, however, near Safeway gas station. Unable to clean-up off Street. Operations vactored out CB sumps.
8	City of Port Angeles, WAR045035	2/28/2020	2/28/2020	6/11/2020	Staff referral	Yes – did not notify	309 E. 6th St. Port Angeles, WA	-	Sediment/soil	Illicit connection	Observation (color/sheen/turbidity/floatables/odor)	Enforcement,Education/technical assistance, Add or modify structural source control BMP	Illicit sump pump connection. NOV sent 3.11.2020
9	City of Port Angeles, WAR045036	3/17/2020	3/17/2020	3/17/2020	Direct report to your staff	No – cleaned up before reached MS4	1130 Craig Ave. Port Angeles, WA	-	Fuel and/or vehicle related fluids	Intentional dumping	Observation (color/sheen/turbidity/floatables/odor)	Education/technical assistance, Referred to other agency or department	Dumping hydrolic fluid to ground on private property. Referred to Code Enforcement.
10	City of Port Angeles, WAR045037	5/13/2020	5/13/2020	3/20/2021	Direct report to your staff	Unknown	1315 Caroline St. Port Angeles, WA	-	Soap or cleaning chemicals	Vehicle-related business	Observation (color/sheen/turbidity/floatables/odor)	Education/technical assistance	C&H Lotte Trucking LLC - washing semi truck in alleyway. Intermittent occurance and difficult to locate and make contact.
11	City of Port Angeles, WAR045038	7/13/2020	7/14/2020	7/17/2020	Staff referral	Yes – did not notify	1103 S. Peabody St. Port Angeles, WA	-	Other (Explanation required)	Construction activity	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Education/technical assistance, Add or modify operational source control BMP	Concrete dust from grinding.
12	City of Port Angeles, WAR045039	7/27/2020	7/27/2020	8/14/2020	Direct report to your staff	No – none found	424 E. 3rd St. Port Angeles, WA	-	Unconfirmed, unspecified, or not identified	Construction activity	Analytical laboratory indicators		Concern of fecal discharge to Peabody Creek. Samples taken from property showed no Fecal Coliform.
13	City of Port Angeles, WAR045040	8/14/2020	8/14/2020	On going	MS4 inspection or screening	Yes – did not notify	-	48.106470, -123.426204	Sewage/septage/pet waste/human waste	Unconfirmed, unspecified, or not identified	Analytical laboratory indicators	Other (Explanation required)	High fecal count detected at SW Outfall to Peabody Creek. Traced back to 1100 Blk. of E. Lauridsen Blvd. Confirmed Human 9.23.2020. Concentration diluted during wet season - stalled efforts. Re-instate investigation during 2021 dry season.
14	City of Port Angeles, WAR045040	8/25/2020	8/25/2020	8/25/2020	Direct report to your staff	No – none found	Boat Haven Port Angeles, WA	-	Fuel and/or vehicle related fluids	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Referred to other agency or department	Fuel sheen observed in Boat Haven. Not through MS4. Referred to POPA.
15	City of Port Angeles, WAR045041	10/18/2020	10/19/2020	10/19/2020	Direct report to your staff	No – cleaned up before reached MS4	Gateway Parking Port Angeles, WA	-	Fuel and/or vehicle related fluids	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up	Vandalism & fuel theft in parking lot. Spilled fuel captured in private pump vault. Cleaned up w/ PeatSorb.
16	City of Port Angeles, WAR045042	10/24/2020	10/24/2020	10/24/2020	Direct report to your staff	Yes – notified DOH and Ecology	First & Penn Sts. Port Angeles, WA	-	Sewage/septage/pet waste/human waste	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Other (Explanation required)	Blockage in sanitary sewer. Overflow to MS4. ERTS #701476. Blockage cleared - resloving issue - and cleanup performed.
17	City of Port Angeles, WAR045043	10/27/2020	10/28/2020	10/28/2020	ERTS referral	No – none found	101, 105, 115 E. 5th St. Port Angeles, WA	-	Solid waste/trash	Intentional dumping	Observation (color/sheen/turbidity/floatables/odor)	Referred to other agency or department	Code Enforcement lead entity. NOV issued 9/30/2020. Risk to SW, however, no observed discharge into MS4. Voluntary abatement.
18	City of Port Angeles, WAR045044	11/5/2020	11/5/2020	11/12/2020	Direct report to your staff	Yes – notified DOH and Ecology	225 E. 5th St. Port Angeles, WA	-	Sewage/septage/pet waste/human waste	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Education/technical assistance, Add or modify operational source control BMP, Add or modify structural source control BMP	Blockage in private sewer lateral and no cap on cleanout caused overflow into private SW inlet connected to MS4. ERTS #701736. System repaired, cleaned, and tested prior to coming back online.
19	City of Port Angeles, WAR045045	12/8/2020	12/8/2020	12/8/2020	Direct report to your staff	Yes – did not notify		48.128516, -123.472885	Unconfirmed, unspecified, or not identified	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up	Spilled garbage can in alley. Cleaned up.
20	City of Port Angeles, WAR045046	12/8/2020	12/9/2020	12/17/2020	Pollution hotline (phone, web, app)	Unknown	1421 E. 1st St. Port Angeles, WA	-	Fuel and/or vehicle related fluids	Vehicle-related business	Not applicable	Education/technical assistance, Add or modify operational source control BMP	Flushing out boat motor.
21	City of Port Angeles, WAR045047	12/21/2020	12/21/2020	12/21/2020	Staff referral	No – none found	Peabody Creek RV Park Port Angeles, WA	-	Sewage/septage/pet waste/human waste	Other accident/spill	Not applicable	Referred to other agency or department	Sanitary line broken during high-flow event in Peabody Creek. Discharge to Creek not to MS4. Event on private property. Referred to Code Enforcement. Ongoing issue. Will require structural improvements and permitting.
22	City of Port Angeles, WAR045048	12/21/2020	12/21/2020	12/23/2020	Direct report to your staff	No – none found	2043 W. 4th St. Port Angeles, WA	-	Sewage/septage/pet waste/human waste	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Other (Explanation required)	SSO to ground. No discharge into MS4. ERTS #702640

2020 Water Main Break / Repair - Cityworks Tracking Report (query date: 3.22.2021)

0	1	2	3	4	5	6	7a	7b	8	9	10	11	12
Count	**Jurisdiction name and permit number**	**Date incident discovered or reported to you**	**Date of beginning your response**	**Date of end of your response**	**How was the incident discovered or reported to you? (select all that apply)**	**Discharge to MS4? (select one)**	**Incident Location (address or Lat.Long)**		**Pollutants Identified (select all that apply)**	**Source or Cause (select all that apply)**	**Source tracing approach(es) used (select all that apply)**	**Correction/elimination methods used (select all that apply)**	**Field notes, explanations, and/or other comments**
23	City of Port Angeles, WAR045047	12/26/2020	12/26/2020	12/26/2020	Staff referral	Yes – did not notify	521 S Cherry St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
24	City of Port Angeles, WAR045047	12/11/2020	12/11/2020	12/11/2020	Staff referral	Yes – did not notify	515 S I St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
25	City of Port Angeles, WAR045048	12/10/2020	12/10/2020	12/10/2020	Staff referral	Yes – did not notify	1104 S Valley St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
26	City of Port Angeles, WAR045049	12/9/2020	12/9/2020	12/9/2020	Staff referral	Yes – did not notify	102 W 2nd St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
27	City of Port Angeles, WAR045050	12/9/2020	12/9/2020	12/9/2020	Staff referral	Yes – did not notify	1006 S Cherry St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
28	City of Port Angeles, WAR045051	11/14/2020	11/14/2020	11/14/2020	Staff referral	Yes – did not notify	729 W 6th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
29	City of Port Angeles, WAR045052	11/13/2020	11/13/2020	11/13/2020	Staff referral	Yes – did not notify	333 E 10th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
30	City of Port Angeles, WAR045053	11/13/2020	11/13/2020	11/13/2020	Staff referral	Yes – did not notify	311 E 10th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
31	City of Port Angeles, WAR045054	11/12/2020	11/12/2020	11/12/2020	Staff referral	Yes – did not notify	2915 S Regent St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
32	City of Port Angeles, WAR045055	10/30/2020	10/30/2020	10/30/2020	Staff referral	Yes – did not notify	201 WFront St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.

0	1	2	3	4	5	6	7a	7b	8	9	10	11	12
Count	**Jurisdiction name and permit number**	**Date incident discovered or reported to you**	**Date of beginning your response**	**Date of end of your response**	**How was the incident discovered or reported to you? (select all that apply)**	**Discharge to MS4? (select one)**	**Incident Location (address or Lat.Long)**		**Pollutants Identified (select all that apply)**	**Source or Cause (select all that apply)**	**Source tracing approach(es) used (select all that apply)**	**Correction/elimination methods used (select all that apply)**	**Field notes, explanations, and/or other comments**
33	City of Port Angeles, WAR045056	10/22/2020	10/22/2020	10/24/2020	Staff referral	Yes – did not notify	1212 Craig Ave	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
34	City of Port Angeles, WAR045057	10/1/2020	10/1/2020	10/1/2020	Staff referral	Yes – did not notify	123 S Peabody St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
35	City of Port Angeles, WAR045058	9/10/2020	9/10/2020	9/10/2020	Staff referral	Yes – did not notify	709 E 6th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
36	City of Port Angeles, WAR045059	8/6/2020	8/6/2020	8/7/2020	Staff referral	Yes – did not notify	1123 Village Place	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
37	City of Port Angeles, WAR045060	7/27/2020	7/27/2020	7/27/2020	Staff referral	Yes – did not notify	352 Brown Rd	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
38	City of Port Angeles, WAR045061	7/2/2020	7/2/2020	7/2/2020	Staff referral	Yes – did not notify	1123 Village Place	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
39	City of Port Angeles, WAR045062	6/29/2020	6/29/2020	6/29/2020	Staff referral	Yes – did not notify	228 E 5th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
40	City of Port Angeles, WAR045063	6/29/2020	6/29/2020	6/29/2020	Staff referral	Yes – did not notify	102 EAST 5TH ST	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
41	City of Port Angeles, WAR045064	6/19/2020	6/19/2020	6/19/2020	Staff referral	Yes – did not notify	420 E 8th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
42	City of Port Angeles, WAR045065	6/2/2020	6/2/2020	6/2/2020	Staff referral	Yes – did not notify	1302 South I Street	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
43	City of Port Angeles, WAR045066	5/29/2020	5/29/2020	5/29/2020	Staff referral	Yes – did not notify	309 W 7th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
44	City of Port Angeles, WAR045067	4/24/2020	4/24/2020	4/24/2020	Staff referral	Yes – did not notify	1312 Campbell Ave	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
45	City of Port Angeles, WAR045068	4/21/2020	4/21/2020	4/21/2020	Staff referral	Yes – did not notify	2194 W 4th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
46	City of Port Angeles, WAR045069	4/10/2020	4/10/2020	4/10/2020	Staff referral	Yes – did not notify	611 Delguzzi Drives	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
47	City of Port Angeles, WAR045070	4/8/2020	4/8/2020	4/8/2020	Staff referral	Yes – did not notify	710 Del Guzzi Dr	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
48	City of Port Angeles, WAR045071	4/6/2020	4/6/2020	4/6/2020	Staff referral	Yes – did not notify	160 DelGuzzi Dr	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
49	City of Port Angeles, WAR045072	3/20/2020	3/20/2020	3/20/2020	Staff referral	Yes – did not notify	2608 Franklin Way	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
50	City of Port Angeles, WAR045073	3/20/2020	3/20/2020	3/22/2020	Staff referral	Yes – did not notify	927 Bryson	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
51	City of Port Angeles, WAR045074	3/6/2020	3/6/2020	3/16/2020	Staff referral	Yes – did not notify	Whites Creek	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
52	City of Port Angeles, WAR045075	3/4/2020	3/4/2020	3/4/2020	Staff referral	Yes – did not notify	514 S Valley St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
53	City of Port Angeles, WAR045076	3/2/2020	3/2/2020	3/2/2020	Staff referral	Yes – did not notify	229 Lopez Ave.	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
54	City of Port Angeles, WAR045077	2/28/2020	2/28/2020	2/28/2020	Staff referral	Yes – did not notify	506 S Ennis St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
55	City of Port Angeles, WAR045078	2/22/2020	2/22/2020	2/22/2020	Staff referral	Yes – did not notify	236 E Lauridsen Blvd.	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
56	City of Port Angeles, WAR045079	2/20/2020	2/20/2020	2/20/2020	Staff referral	Yes – did not notify	239 W 5th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
57	City of Port Angeles, WAR045080	2/14/2020	2/14/2020	2/14/2020	Staff referral	Yes – did not notify	1902 Marine Dr	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
58	City of Port Angeles, WAR045081	2/13/2020	2/13/2020	2/14/2020	Staff referral	Yes – did not notify	2051Lindberg Rd	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
59	City of Port Angeles, WAR045082	2/11/2020	2/11/2020	2/11/2020	Staff referral	Yes – did not notify	901 East Front St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
60	City of Port Angeles, WAR045083	2/10/2020	2/10/2020	2/10/2020	Staff referral	Yes – did not notify	1839 W 6th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
61	City of Port Angeles, WAR045084	1/31/2020	1/31/2020	1/31/2020	Staff referral	Yes – did not notify	1003 W 6th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
62	City of Port Angeles, WAR045085	1/31/2020	1/31/2020	1/31/2020	Staff referral	Yes – did not notify	111 W 5th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
63	City of Port Angeles, WAR045086	1/28/2020	1/28/2020	1/28/2020	Staff referral	Yes – did not notify	312 E 10th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
64	City of Port Angeles, WAR045087	1/27/2020	1/27/2020	1/27/2020	Staff referral	Yes – did not notify	1803 W 10th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
65	City of Port Angeles, WAR045088	1/27/2020	1/27/2020	1/27/2020	Staff referral	Yes – did not notify	305 E 12th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.

0	1	2	3	4	5	6	7a	7b	8	9	10	11	12
Count	**Jurisdiction name and permit number**	**Date incident discovered or reported to you**	**Date of beginning your response**	**Date of end of your response**	**How was the incident discovered or reported to you? (select all that apply)**	**Discharge to MS4? (select one)**	**Incident Location (address or Lat.Long)**		**Pollutants Identified (select all that apply)**	**Source or Cause (select all that apply)**	**Source tracing approach(es) used (select all that apply)**	**Correction/elimination methods used (select all that apply)**	**Field notes, explanations, and/or other comments**
66	City of Port Angeles, WAR045089	1/27/2020	1/27/2020	1/28/2020	Staff referral	Yes – did not notify	2915 S Regent St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
67	City of Port Angeles, WAR045090	1/24/2020	1/24/2020	1/24/2020	Staff referral	Yes – did not notify	310 E 9th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
68	City of Port Angeles, WAR045091	1/22/2020	1/22/2020	1/22/2020	Staff referral	Yes – did not notify	806 E 6th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
69	City of Port Angeles, WAR045092	1/21/2020	1/21/2020	1/21/2020	Staff referral	Yes – did not notify	1704 W 13th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
70	City of Port Angeles, WAR045093	1/20/2020	1/20/2020	1/20/2020	Staff referral	Yes – did not notify	802 E 6th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
71	City of Port Angeles, WAR045094	1/17/2020	1/17/2020	1/17/2020	Staff referral	Yes – did not notify	240 W 5th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
72	City of Port Angeles, WAR045095	1/5/2020	1/5/2020	1/5/2020	Staff referral	Yes – did not notify	2141 W 6th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.
73	City of Port Angeles, WAR045096	1/5/2020	1/5/2020	1/5/2020	Staff referral	Yes – did not notify	2140 W 6th St	-	Sediment/soil	Other accident/spill	Observation (color/sheen/turbidity/floatables/odor)	Clean-up, Referred to other agency or department, Referred to other agency or department	Discharge of municipal water and sediment to MS4. Operations staff responded to the issue, isolated the damaged water main, made repairs, restored service, and cleaned up, as appropriate.

IDDE Screening Strategy:

For the City to comply with its NPDES phase II permit, which dictates that all permittees shall complete field screening for at least 40% of the MS4 system no later than December 31, 2017. The City of Port Angeles elected to screen on average 12% of its MS4 system 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 five screening areas resulted in 83% of the cities total catch basins, meeting the 40% minimum screening goal set for phase II NPDES permittee.

In order to use the cities resources as efficiently as possible a mix of residential and commercial zoning in each year's screening area was preferred; to take 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. During dry weather primary indicator testing is performed at these manhole locations, and at the basins 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 die testing, smoke testing, or video inspections are employed to trace the discharge to its source.

20120 – Field Screening Southwest SW Basin, Basin 4:

Basin 4 spans approximately 246 acres and consist of primarily of residential properties with some notable exceptions like Peninsula College, Peninsula Golf Course, and the eastern-most section of Highway 101. To better facilitate the inspection and field screening, it was split into 3 Zones: Zone 1 consisted of Golf Course Rd., Del Guzzi Dr., and Highway 101; Zone 2 essentially encompassed everything South of Lauridsen Blvd. and between White Creek and Peabody Creek; Zone 3 included everything south of Ahlvers Rd. This effort also included an investigation of Ennis Creek from the Bonneville Power Lines northward to Highway 101.

Stormwater Operations staff drove/walked portions of system in search of potential illicit discharges. All stormwater catch basins in the ROW within Basin 4 were inspected for visual and olfactory indicators. Samples were taken at key confluences of dry-weather flow and submitted to the County Lab for testing. Maintenance and repair needs were documented and added to Operations CityWorks database for Work Order generation and assignement.

The Pollution Prevention Specialist increased focus on business inspections in the First/Front eastern corridor.

Year Inspected:	Basin #:	Description:	Catch Basins (%):	Running Total (%)	19-24 Permit (S5.C.5.d.i) Total (%)
2014	1	Urbanized Peabody Basin	14.8	14.8	-
2015	7	Lauridsen Blvd. Basin	9.4	24.2	-
2016	2	Tumwater/Valley Basin	11.7	35.9	-
2017	8	West/Airport Basin	15.5	51.4	-
2018	3	Francis/Ennis Basin	15.1	66.5	-
2019	5	A St. Basin	12.0	78.5	12.0
2020	4	Southeast Basin	13.4	91.9	25.4
2021	6	I St./Eclipse Industrial	8.1	100.0	33.5

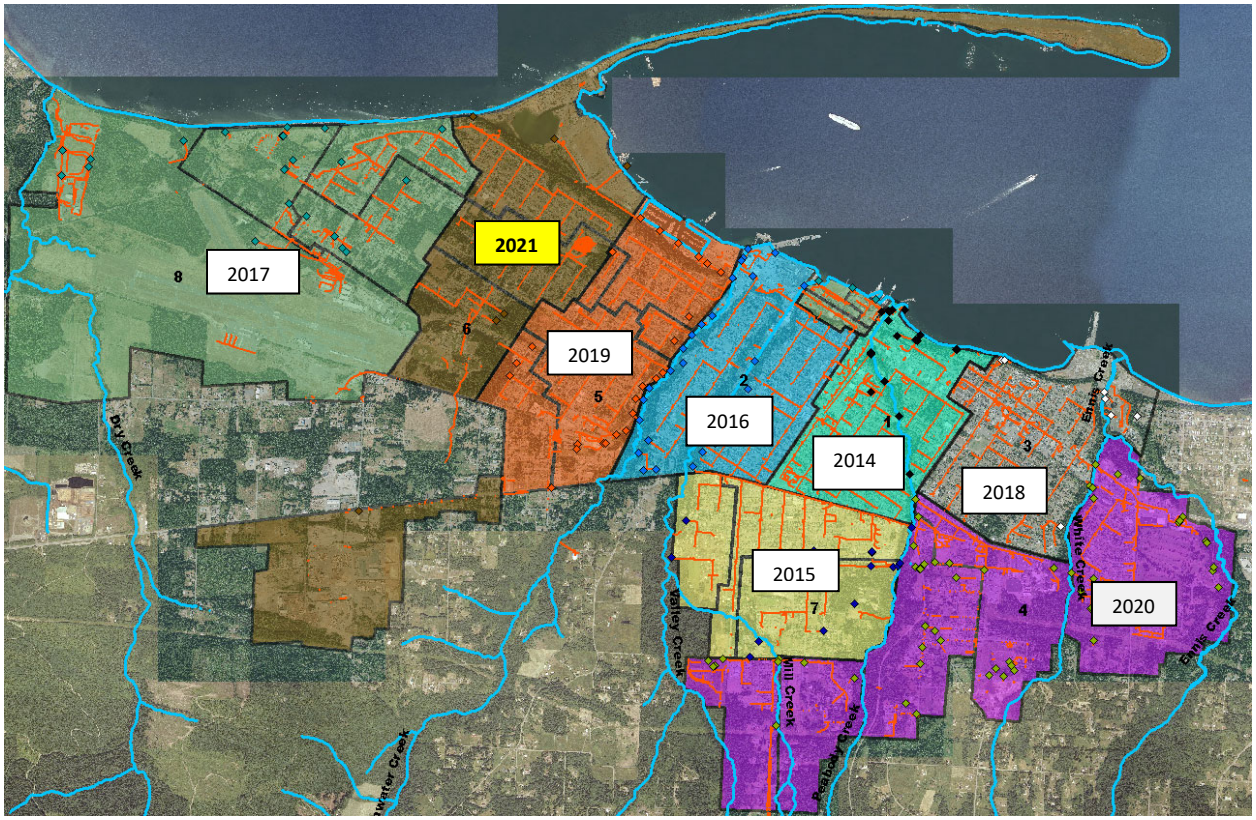


Figure 1. Basin Boundaries

A comprehensive inspection and photo-documentation of the City's various culverts was also performed in August 2020. This is scheduled to occur every 3-4 years.

Basin 4 priority manhole sampling and inspection notes are documented on the attached spreadsheet.
[Link to file: N:\PWKS\Stormwater\00 IDDE Events\2020 IDDE Screening - Basin 4\ IDDE Basin 4 Screening.xlsx]

Inspection Date: 8/12/2020
Investigators: Vince McIntyre & Greg Haskins
Rainfall (in.): Last 24hrs 0.0 inch
Last 48hrs: 0.0 inch
Temperature: 64 °F

Representative sampling performed only at primary downstream confluences with observed flow or at locations with observed IDDE indicators.

Basin #4 Priority Manhole Sampling

Type	Asset ID	Location Description	Time	Land Use	Flow Present?	Sample Taken?	IDDE Indicator	Relative Severity Index (1-3)	Additional Observations
MH	33	Front St. in sidewalk across from Days Inn	8:30 AM	Commercial	Yes	**Yes, Sample 01**	None	NA	Clear flow from upstream trunk line. No odor, color, turbidity, or other observed. No observed deficiencies with the structure.
MH	614	2nd & Wolcott St. intersection	9:00 AM	Residential	No	No	None	NA	Sump full of sediment. Requires servicing. Chunk broke off of MH lid when opening - operations to replace lid.
MH	770	5th & Golf Course intersection	9:15 AM	Residential	Yes	No	None	NA	Clear trickle. Send GIS update to Sondy.
MH	856	Pond Outlet, Lambert Ln.	9:30 AM	Residential	-	No	None	NA	Unable to locate pond outlet structure - overgrown: send notice to HOA. Clear trickle into pond observed. No odor, color, tubidity, or other observed.
MH	495	Melody Ln. & Melody Cir. Intersection - in road	9:40 AM	Residential	No	No	None	NA	No odor, color, tubidity, or other observed.
MH	553	Melody Ln. & Melody Cir. Intersection - in grass	9:45 AM	Residential	No	No	None	NA	No odor, color, tubidity, or other observed.
MH	49	1704 Melody Cir.	9:50 AM	Residential	No	No	None	NA	Backwater observed. Outfall may require serviceing. No odor, color, tubidity, or other observed.
MH	490	1702 Melody Cir.	10:00 AM	Residential	No	No	None	NA	Flow control tee requires servicing - send notice to property owner. No odor, color, tubidity, or other observed.
CB	18035	Lindberg Rd. & Village Cir. Intersection	10:15 AM	Residential	Yes	No	None	NA	Clean trickle. No odor, color, tubidity, or other observed.
CB	18055	Delguzzi Dr. & US HWY 101 intersection	10:30 AM	Commercial	Yes	No	None	NA	Clean trickle. No odor, color, tubidity, or other observed. Operations to camera, determine alignment/outfall, and update GIS.
Outfall	49	9th St. outfall to Peabody Cr., off of Race St.	10:40 AM	Res. & Comm.	Yes	**Yes, Sample 02**	None	NA	Clear flow take from outfall. No odor, color, turbidity, or other observed. No observed deficiencies.
Outfall	80	10th St. outfall to Peabody Cr., off of Race St.	10:45 AM	Res. & Comm.	No	No	None	NA	Stilling basin overgrown. Stagnant water - install weep hole? Cage access unlocked. Operations to follow-up.
CB	16714	Porter St. & Park Ave. intersection	10:50 AM	Res. & Comm.	Unknown	No	None	NA	Flow control tee possibly missaligned and stuck - unkown purpose. Operations to follow-up.
MH	144	Across from 1116 Lauridsen Blvd.	11:05 AM	Res. & Comm.	Yes	No	None	NA	Clean flow running East to West. No odor, color, tubidity, or other observed.
Outfall	114	SE corner of Park Ave. & Mt. Angeles Rd. - ditchline	11:15 AM	Res. & Comm.	No	No	None	NA	Wet with clear standing water. No odor, color, tubidity, or other observed.
Outfall	44	West of 1107 Park Ave. - outfall to ditchline	11:30 AM	Res. & Comm.	Yes	No	Abnormally large volume of clear flow.	1	Traced flow upstream to Collegiate Housing International (CHI) complex. Apt. manager reported that he had been running the hose for 3-4 days into the pond to flush-out pond scum to take care of odor and bug issue. Water was turned off. Education was provided. Follow-up email to the owner sent 8/13.
Culverts to ditchline	1947/1946	Campbell & Porter intersection - outfall to ditch	12:30AM	Residential	No	No	None	NA	No odor, color, tubidity, or other observed.
Outfall	7019	Campbell Ave, from Rook Dr. Det. Pond	12:40 PM	Residential	No	No	None	NA	No odor, color, tubidity, or other observed.
Ditch connection	45768	Just west of outfall 7019. Outfall from Upper Rook Dr. development.	12:45 PM	Residential	No	No	None	NA	No odor, color, tubidity, or other observed.
Outfall	67	W. of McDougal & Mt. Angeles Intersection	12:50 PM	Residential	unknown	No	None	NA	Unable to locate. Vegetation maintenance necessary -overgrown. Standing water observed indicating possible backwater from downstream obstruction.
Culvert to ditchline	126	near 3204 McDougal St.	12:55 PM	Residential	Yes	No	None	NA	Clear trickle. No odor, color, tubidity, or other observed.
Culvert to ditchline	127	near 3207 McDougal St.	1:00 PM	Residential	No	No	None	NA	No odor, color, tubidity, or other observed.
Outfall	181	McDougal St. & Church Ave. intersection	1:15 PM	Residential	No	No	None	NA	No odor, color, tubidity, or other observed. Extreme eroded ravine along private property line.
CB	15622	3760 Hill Cir. - beehive inlet	1:25 PM	Residential	No	No	None	NA	No odor, color, tubidity, or other observed.
Inlet	57	Peabody St. & Ahlvers Rd. intersection	1:30 PM	Residential	No	No	None	NA	No odor, color, tubidity, or other observed.
MH	289	Old Mill Rd. & Ahlvers Rd. intersection	1:40 PM	Residential	Yes	No	Bubbles	1	Unable to collect sample due to trickle and traffic. Moved upstream for sample.
MH	154	Old Mill Rd. & Hawthorne Pl. intersection	1:45 PM	Residential	Yes	**Yes, Sample 03**	Bubbles	1	Clear trickle. Minor bubbles observed. Nothing otherwise remarkable.
Inlet	168	Near 4016 Old Mill Rd.	1:55 PM	Residential	No	No	None	NA	No odor, color, tubidity, or other observed.
Culvert	71	Park Knoll Dr. & Rhodes Rd. Intersection	2:05 PM	Residential	No	No	None	NA	No odor, color, tubidity, or other observed.
Outfall	64	Near 201 Ahlvers Rd.	2:15 PM	Residential	No	No	None	NA	No odor, color, tubidity, or other observed.
*Additional samples taken in response to StreamKeeper's test results of sample taken at the upstream side of the Peabody Creek culvert.									
Outfall	27	Peabody Creek culvert discharge	2:25 PM	Res./Comm.	Yes	**Yes, Sample 04**	None	NA	No odor, color, tubidity, or other observed.
Discharge Pipe	2465	SW outfall into Peabody Cr. Culvert via top of culvert.	2:25 PM	Res./Comm.	Yes	**Yes, Sample 05**	None	NA	No odor, color, tubidity, or other observed.
Peabody Creek	NA	Taken near footbridge upstream of 424 E. 3rd. St.	2:30 PM	Res./Comm.	Yes	**Yes, Sample 06**	None	NA	No odor, color, tubidity, or other observed.

* Samples taken to Clallam County Environmental Health Lab 8/12/2020.

2020 Stormwater Development Review Tracking Sheet

Count	Public or Private?	Permit Type	Permit # or Project #	Address, Area, or Parcel Number	Project Name	MR Triggered	Plan Review Date(s)	Initials	Appendix 7 (Risk / Site Visit Date)	Initials	Pre-Con ESC Insp. Date(s)	Initials	Const. Started?	During Construction ESC Insp. Date(s)	Initials	Current ESC Status	Final Completion Inspection Date	Initials	Number of Structural BMPs Inspected	Maintenance Agreement Recorded?	As-buits recieved?	Inspection Notes:
EX.	Private	BP	20-001	123 W. Fake St. or Edgewood Rd. btwn Dry Creek & Airport Rds. or PN:07000063520	Lake Angeles Parking Lot Improvements 2020	MR 1-9	1/1/2018 1/29/2018	JD JD	Low / NA	JD	2/4/2018 2/5/2018	JD JD	Yes	**2019:** 11/6, 12/19, **2020:** 1/5, 3/4	JD	In Compliance	4/1/2018	JD	4	Yes	Yes	Concrete washout in ditchline (12/19). Appendix 8.1 filed. Education provided to sub-contractor and contractor - JD
1	Private	BP	20-0034	205 Juniper Lane	Botero SFR	MR 1-5	1/13/2020	JTB	High 1/13/20	JTB	7/9/2020	JTB	Yes	2020: 9/10	RV	In Compliance	12/21/2020	RV		NA		
2	Private	BP	20-0052	2003 W 5th St.	Wu SFR	MR 1-5	1/28/2020	JTB	High 1/22/2020	JTB			No									Plans withdrawn.
3	Private	C&G	20-0085	439 Marine Dr.	POPA Temp. Stockpile	MR 1-5	1/21/2020	JTB	High 3/12/2020	JTB	9/23/2020	RV	Yes	2020: 9/23	RV	In Compliance	Ongoing					
4	Private	BP	20-0100	1109 O St.	Ace Michaels SFR	MR 1-5	1/29/2020	JTB	Low / NA	-	12/18/2020	EW	Yes	2020: 8/4, 8/5	RV	In Compliance	Ongoing					
5	Private	BP	20-0247	1422 Rook Dr.	Green Crow	MR 1-5	3/2/2020	JTB	Low / NA	-	3/16/2020	RV	Yes	2020: 3/16, 5/29,	RV, JL	In Compliance	9/23/2020	RV		NA		
6	Private	BP	20-0235	819 Milwaukee Dr	Ace Michaels SFR	MR 1-5	3/3/2020	JTB	Low / NA	-	3/20/2020	RV	Yes	2020: 7/9, 7/20, 8/14	JTB	In Compliance	12/18/2020	EW		NA		
7	Private	C&G	20-0306	1138 W Lauridsen Blvd	Gort Tree Removal	MR 1-5	3/3/2020	JTB	High -/-/-	JTB	9/1/2020	RV	Yes			In Compliance	Ongoing					Delayed through winter. Sitkum tree service performed work in ROW (phase1). Will begin tree removal on private property Spring 2021.
8	Private	BP	20-0313	213 N Liberty St.	Morrison SFR	MR 1-5	3/24/2020	JTB	Low / NA	JTB	7/22/2020	RV	Yes	2020: 7/22, 10/15	RV	In Compliance	1/14/2021	JP		NA		
9	Private	BP	20-0375	1411 Rook Dr	Green Crow	MR 1-5	4/9/2020	JTB	Low / NA	JTB	5/8/2020	JTB	Yes	2020: 5/29,	RV		9/23/2020	RV		NA		
10	Private	BP	20-0431	2329 Jeri Lynn St.	Joel Elliot	MR 1-5	4/22/2020	JTB	Low / NA	JTB	5/6/2020	JTB	Yes	**2020:** 5/4, 5/21, 5/27	JTB	In Compliance	8/28/2020	RV		NA		
11	Private	BP	20-0449	1418 Rook Dr.	Green Crow	MR 1-5	4/30/2020	JTB	Low / NA	JTB	6/8/2020	RV	Yes	2020: 6/8,	RV	In Compliance	On going					
12	Private	C&G	20-0393	338 W 1st St.	POPA Parking Lot Re-Surfacing	MR 1-5	5/5/2020	JTB	Low / NA	JTB	*No call for Inspection		Yes			Not In Compliance	-					Construction completed w/o call for TESC inspection nor Final from Lakeside Ind.
13	Private	C&G	20-0408	832 Boathaven Dr.	POPA Parking Lot Re-Surfacing	MR 1-5	4/13/2020	JTB	Low / NA	JTB			No			In Compliance	-					Requested Permit Extension. Not started.
14	Private	BP	20-0299	1610 W 11th St.	Taylor SFR	MR 1-5	5/20/2020	JTB	Low / NA	JTB	5/22/2020	JTB	Yes	2020: 7/8	JTB	In Compliance	6/25/2020	RV		NA		
15	Private	C&G	20-0490	14th & Milwaukee	Yakovich	MR 1-5	6/3/2020	JTB	Low / NA	JTB	7/31/2020	RV	Yes	2020: 8/28, 9/29, 11/23	RV	In Compliance	On going					
16	Private	C&G	20-0312	Critchfield Rd. off Edgewood Dr.	Delhur's Industrial Site Development II	MR 1-9	6/4/2020	V. Mac	High / 12.11.2019	V. Mac	12/11/2019	V.Mac	Yes	2020: 11/10	V. Mac	In Compliance	On going					
17	Public	BP	20-0636	1707 A Street	COPA Light Ops. Building	MR 1-9	6/19/2020 12/23/2020 3/9/2021	V. Mac V.Mac V. Mac	High / 6.22.2019	V. Mac			No									
18	Private	BP	20-0662	1416 Rook Dr.	Green Crow	MR 1-5	6/26/2020	JTB	Low / NA	JTB	7/15/2020	JTB	Yes	2020: 11/4	V. Mac	In Compliance	On going					
19	Private	BP	20-0663	1414 Rook Dr.	Green Crow	MR 1-5	6/26/2020	JTB	Low / NA	JTB	8/21/2020	RV	Yes	2020: 8/21	RV	In Compliance	On going					
20	Private	BP	20-0669	1326 O St.	Joel Elliot	MR 1-5	6/26/2020	JTB	Low / NA	JTB	8/19/2020	RV	Yes	2020: 9/11	RV	In Compliance	11/25/2020	EW		NA		
21	Private	BP	20-0800	1116 Heritage Ct.	Dalman	MR 1-5	7/31/2020	JTB	Low / NA	JTB	8/17/2020	RV	Yes	2020: 8/24,	RV	In Compliance	On going					Requested extension for soil amendment requirments.
22	Private	BP	20-0820	3729 McDougal St.	Adamich	MR 1-5	7/31/2020	JTB	Low / NA	JTB	10/1/2020	RV	Yes			In Compliance	On going					
23	Private	BP	20-0795	1614 W 11th St.	Taylor/Rahlston	MR 1-5	8/12/2020	JTB	Low / NA	JTB	9/11/2020	RV	Yes			In Compliance	On going					
24	Private	PZ	20-0029	10th/L St. Subdivision	Preliminary SP Application	MR 1-9	9/2/2020	V. Mac	NA - Design Phase	V. Mac	-			-			-					
25	Private	SP	20-0008	3rd & Ennis	Juni's Short Plat, Ralston	MR 1-9	9/24/2020	V.Mac	NA - Design Phase	V. Mac	-			-			-					
26	Private	BP	20-1042	602 Milwaukee Dr	Goodfellow/Shaeffer/Dagny SFR	MR 1-5	10/1/2020	JTB	Site Visit Req'd	JTB			No			In Compliance	On-going					
27	Private	BP	20-1071	841 Milwaukee Dr.	McKnight	MR 1-5	10/1/2020	JTB	Low / NA	JTB	12/29/2020	RV	Yes			In Compliance	On-going					
28	Private	BP	20-1050	918 Madeline St.	Fobian	MR 1-5	10/13/2020	JTB	Low / NA	JTB			No	-			-					Permit approved but not issued.
29	Private	BP	20-0958-60	1015 W 17th St.	Luxton	MR 1-5	10/15/2020	JTB	Low / NA	JTB	2/2/2021	JP	Yes	2020: 11/10, 12/31 2021: 1/26		In Compliance	On going					Began Const. w/o Permit. Stop Work Order. Resolved 2.2.2021
30	Private	BP	20-1269	415 E 9th St.	Croteau	MR 1-5	12/9/2020	JTB	Low / NA	JTB	12/18/2020	EW	Yes			In Compliance	On-going					
31	Private	SP	PZ 20-0035	063000025516, 8th St. betwn F & G Sts.	Shane Short Plat, John Ralston	MR 1-9	12/9/2020	V. Mac	NA - Design Phase	V.Mac	-			-			-					
32	Private	C&G	20-1227	W. 14th St.	Trailside PRD	MR 1-9	12/23/2020	V. Mac														
33	Private	BP	20-1364	2025 W 7th St.	Green Crow	MR 1-5	1/19/2021	JTB	Low / NA	JTB	2/4/2021	RV	Yes			In Compliance	On-going					
MR #2 ONLY PROJECTS																						
1	Private	BP	19-2022	1902 Marine Dr.	Roll Bridge	MR 2 ONLY	1/3/2019	JTB	N/A													
2	Private	BP	19-2034	1338 E 7th St.	Front Porch/Interior Remodel	MR 2 ONLY	1/7/2019	JTB	N/A													
3	Private	BP	19-2047	1133 E Park Ave	Interior Remodel	MR 2 ONLY	1/9/2020	JTB	N/A													
4	Private	BP	20-0025	630 E 1st St.	Remodel	MR 2 ONLY	1/9/2020	JTB	N/A													
5	Private	BP	20-0016	212 W 4th St.	Remodel/Addition	MR 2 ONLY	1/9/2020	JTB	N/A													
6	Private	BP	20-0032	1706 W Hwy 101	2-Story Addition	MR 2 ONLY	1/14/2020	JTB	N/A													
7	Private	BP	20-0064	2439 W 14th St	Remove and Replace Deck	MR 2 ONLY	1/23/2020	JTB	N/A													
8	Private	BP	20-0217	1105 W 15th St.	Murray/Remodel	MR 2 ONLY	2/27/2020	JTB	N/A													
9	Private	BP	20-0272	111 E Park Ave	Jayson Grice	MR 2 ONLY	2/27/2020	JTB	N/A													
10	Private	BP	20-0144	1515 H St.	Don Nivens Manf. Home Demo	MR 2 ONLY	2/27/2020	JTB	N/A													
11	Private	BP	20-0277	703 E 4th St.	Joseph Chavez	MR 2 ONLY	3/11/2020	JTB	N/A													
12	Private	BP	20-0298	1028 E 3rd St.	Heilman/Shop building	MR 2 ONLY	3/24/2020	JTB	N/A													
13	Private	BP	20-0337	1515 H St.	Don Nivens New SFR	MR 2 ONLY	3/24/2020	JTB	N/A		Application											Application withdrawn 11/25/20
14	Private	C&G	20-0339	Fairchild Airport property	POPA	MR 2 ONLY	3/24/2020	JTB	N/A													
15	Private	C&G	20-0393	338 W 1st St.	POPA	MR 2 ONLY	3/25/2020	JTB	N/A													
16	Private	BP	20-0348	1624 Maloney Ct.	Habitat for Humanity	MR 2 ONLY	4/2/2020	JTB	N/A													
17	Private	BP	20-0278	1206 W 19th St.	Dave Olsen	MR 2 ONLY	4/2/2020	JTB	N/A													

18	Private	BP	20-0336	835 W 6th St.	Rivers	MR 2 ONLY	4/6/2020	JTB	N/A					2020: 6/3							
19	Private	BP	20-0396	1917 W 18th St	Romero	MR 2 ONLY	4/6/2020	JTB	N/A												
20	Private	BP	20-0397	201 Dogwood Pl.	Ray	MR 2 ONLY	4/6/2020	JTB	N/A												
21	Private	BP	20-0347	2321 W 16th St.	Habitat for Humanity	MR 2 ONLY	4/9/2020	JTB	N/A												
22	Private	C&G	20-0450	fairchild Airport property	POPA	MR 2 ONLY	4/24/2020	JTB	N/A												
23	Private	Demo	20-0447	1902 Marine Dr.	Precision Industrial Contractors	MR 2 ONLY	5/1/2020	VM	N/A												
24	Private	BP	20-0478	310 E 9th St.	Murray	MR 2 ONLY	5/5/2020	JTB	N/A												
25	Private	BP	20-0481	3606 McDougal St.	Adamich	MR 2 ONLY	5/5/2020	JTB	N/A												
26	Private	BP	20-0487	819 W 10th St.	Grice	MR 2 ONLY	5/14/2020	JTB	N/A												
27	Private	BP	20-0496	811 W 15th St.	Rogers	MR 2 ONLY	5/14/2020	JTB	N/A												
28	Private	BP	20-0529	1404.5 W 15th St.	Tobias/Alpha Builder's	MR 2 ONLY	5/20/2020	JTB	N/A												
29	Private	C&G	20-0124	214 W 2nd St.	Steep Slope Rehabiliation (P. Diede)	MR 2 ONLY	5/26/2020	JTB	N/A												
30	Private	BP	20-0599	1417 N St.	Accessory Structure/Phillips	MR 2 ONLY	5/26/2020	JTB	N/A												
31	Private	BP	20-0567	1314 W 11th St./Cozi Homes	Cover Porch	MR 2 ONLY	5/26/2020	JTB	N/A												
32	Private	BP	20-0562	201 W Front St./McKinstry	Fire Sprinkler	MR 2 ONLY	5/26/2020	JTB	N/A												
33	Private	BP	20-0570	2916 S Peabody St.	Demo Garage/Servpro	MR 2 ONLY	5/26/2020	JTB	N/A												
34	Private	Demo	20-0612	1310 W 16th St.	COPA	MR 2 ONLY	6/5/2020	JTB	N/A												
35	Private	BP	20-0568	1012 W 15th St.	ADU Addition	MR 2 ONLY	6/11/2020	JTB	N/A												
36	Private	BP	20-0616	307 Race St.	ADA ramp	MR 2 ONLY	6/11/2020	JTB	N/A												
37	Private	BP	20-0345	812 Georgiana St.	Addition	MR 2 ONLY	6/18/2020	JTB	N/A												
38	Private	BP	20-0660	1502 Bldg LH E Lauridsen Blvd	Retaining Wall/Garden	MR 2 ONLY	6/18/2020	JTB	N/A												
39	Private	BP	20-0717	111 E 8th St	Convert Car Wash to Office	MR 2 ONLY	7/7/2020	JTB	N/A												
40	Private	C&G	20-0781	216 S Francis St.	Tree Removal	MR 2 ONLY	7/16/2020	JTB	N/A												
41	Private	BP	20-0806	213 E 11th St.	Addition	MR 2 ONLY	7/31/2020	JTB	N/A												
42	Private	Demo	20-0876	1120 Caroline St.	Demo Structure	MR 2 ONLY	8/6/2020	JTB	N/A					2020: 9/3,							
43	Private	BP	20-0894	809 W 7th St.	Detached Garage	MR 2 ONLY	8/17/2020	JTB	N/A												
44	Private	BP	20-0951	929 W 11th St.	Level Foundation	MR 2 ONLY	8/27/2020	JTB	N/A												
45	Private	BP	20-0985	3905 S Albert St.	Detached Garage	MR 2 ONLY	9/11/2020	JTB	N/A												
46	Private	BP	20-1015	3161 City Lights Pl.	Detached workship	MR 2 ONLY	9/15/2020	JTB	N/A												
47	Private	BP	20-0956	1819 W 12th St.	Manuf. Home	MR 2 ONLY	9/17/2020	JTB	N/A												
48	Private	BP	20-1012	825 Georgiana St.	Dental Admin/ Storage Building	MR 2 ONLY	9/22/2020	JTB	N/A												
49	Private	BP	20-1069	1131 E 5th St.	Fire Damage Rep./ADU	MR 2 ONLY	9/29/2020	JTB	N/A												
50	Private	BP	20-1149	1209 Georgiana St.	Manuf. Home	MR 2 ONLY	10/27/2020	JTB	N/A												
51	Private	BP	20-1182	416 S Liberty St.	SFR	MR 2 ONLY	10/27/2020	JTB	N/A												
52	Private	BP	20-1039	1017 E Front St.	Interior Remodel w/exterior staircase	MR 2 ONLY	11/6/2020	JTB	N/A												
53	Private	BP	20-1373	1502 E Lauridsen Blvd	Greenhouse/ Penninsula College	MR 2 ONLY	12/14/2020	JTB	N/A												
54	Public	SW DIS.	20-1415	121 W Front St.	Winter Ice Village	MR 2 ONLY	12/14/2020	JTB	N/A												
55	Private	Demo	20-1383	807 Georgiana St.	Garage Demo	MR 2 ONLY	12/14/2020	JTB	N/A												
56	Private	BP	20-1441	1224 W 17th St.	Addition to ex. Garage	MR 2 ONLY	12/29/2020	JTB	N/A												

2020 End of Year Statistics | Phase II Municiple SW Permit, WAR045028

Category	Count	Percent	S5.C.6
Total plans reviewed for SW Review	89	100%	c.i.
Appendix 7 sites	7	-	c.ii.
Appendix 7 inspections	5	71%	c.ii.
Pre-Const. Insp. (# of sites)	24	-	-
Pre-Const. Insp. (# of insp.)	23	96%	-
During Const. Insp. (# of total sites)	23	-	c.iii.
During Const. Insp. (# of sites insp.)	16	70%	c.iii.
During Const. Insp. (total # of insp.)	30	-	-
Enforcement (# of insp.)	3	100%	-
Final Inspections Total	9	-	c.v.
Final Inspections Performed	8	89%	c.v.
Projects on-going	16	-	-
Total SW Inspections Performed	69	-	-
Total Inspections Required	66	-	-
Of Req'd, Total Inspections Achieved	55	83%	c.vi.

*In compliance with Permit by achieving at least 80% of required inspections

Stormwater Facilities- 2020	Asset ID #	Date of Inspection(s)	Cityworks WO#	Maint. Required?	Date(s) of Maintenance	Cityworks WO#(s)	NOTES:
2020							
Bioretention Cells (77)							
5th and H, NW Corner	928, 929, 930	3/13/2020	6243	yes	3/2/20 thru 11/20/20	6262	
5th and H, NE Corner	921, 922	3/13/2020	6243	yes	3/2/20 thru 11/20/20	6262	
5th and H, SE Corner	923, 924	3/13/2020	6243	yes	3/2/20 thru 11/20/20	6262	
5th and H, SW Corner	925, 926, 927	3/13/2020	6243	yes	3/2/20 thru 11/20/20	6262	several hours were spent at this intersection's bioretention cells weeding, removing garbage, water trees, trimming vegetation, power sweeping and blowing the permeable sidewalks, and blowing the curblines.
5th and K, NW Corner	897, 898	3/13/2020	6244	yes	3/2/20 thru 11/20/20	6262	
5th and K, NE Corner	904	3/13/2020	6244	yes	3/2/20 thru 11/20/20	6262	
5th and K, SE Corner	901, 902, 903	3/13/2020	6244	yes	3/2/20 thru 11/20/20	6262	
5th and K, SW Corner	899, 900	3/13/2020	6244	yes	3/2/20 thru 11/20/20	6262	
5th and L, NW Corner	889	3/13/2020	6245	yes	3/2/20 thru 11/20/20	6262	
5th and L, NE Corner	896, 895	3/13/2020	6245	yes	3/2/20 thru 11/20/20	6262	
5th and L, SE Corner	892, 893, 894	3/13/2020	6245	yes	3/2/20 thru 11/20/20	6262	
5th and L, SW Corner	890, 891	3/13/2020	6245	yes	3/2/20 thru 11/20/20	6262	
6th and H, NW Corner	936, 937, 938	3/13/2020	6246	yes	3/2/20 thru 11/20/20	6263	
6th and H, NE Corner	931, 932	3/13/2020	6246	yes	3/2/20 thru 11/20/20	6263	
6th and H, SE Corner	933	3/13/2020	6246	yes	3/2/20 thru 11/20/20	6263	
6th and H, SW Corner	934, 935	3/13/2020	6246	yes	3/2/20 thru 11/20/20	6263	several hours were spent at this intersection's bioretention cells weeding, adding medium fir bark dust, planting additional plants, removing garbage, water trees, trimming vegetation, power sweeping and blowing the permeable sidewalks, and blowing the curblines.
6th and K, NW Corner	910, 911	3/13/2020	6247	yes	3/2/20 thru 11/20/20	6263	
6th and K, NE Corner	905, 906	3/13/2020	6247	yes	3/2/20 thru 11/20/20	6263	
6th and K, SE Corner	907, 908	3/13/2020	6247	yes	3/2/20 thru 11/20/20	6263	
6th and K, SW Corner	909	3/13/2020	6247	yes	3/2/20 thru 11/20/20	6263	
6th and M, NE Corner	883, 884	3/13/2020	6251	yes	3/2/20 thru 11/20/20	6263	
6th and M, SW Corner	887	3/13/2020	6251	yes	3/2/20 thru 11/20/20	6263	
6th and M, SE Corner	885, 886	3/13/2020	6251	yes	3/2/20 thru 11/20/20	6263	
6th and M, NW Corner	888	3/13/2020	6251	yes	3/2/20 thru 11/20/20	6263	
7th and H, NW Corner	943, 944	3/13/2020	6252	yes	3/2/20 thru 11/20/20	6263	
7th and H, NE Corner	939, 940	3/13/2020	6252	yes	3/2/20 thru 11/20/20	6263	
7th and H, SE Corner	941	3/13/2020	6252	yes	3/2/20 thru 11/20/20	6263	
7th and H, SW Corner	942	3/13/2020	6252	yes	3/2/20 thru 11/20/20	6263	several hours were spent at this intersection's bioretention cells weeding, removing garbage, water trees, trimming vegetation, power sweeping and blowing the permeable sidewalks, and blowing the curblines.
7th and K, NW Corner	912	3/13/2020	6253	yes	3/2/20 thru 11/20/20	6263	
7th and K, NE Corner	919, 920	3/13/2020	6253	yes	3/2/20 thru 11/20/20	6263	
7th and K, SE Corner	915, 917, 918	3/13/2020	6253	yes	3/2/20 thru 11/20/20	6263	
7th and K, SW Corner	913, 914	3/13/2020	6253	yes	3/2/20 thru 11/20/20	6263	
Waterfront Park Phase #2 near Oak St. (west cell)	5707	3/13/2020	6254	yes	3/2/20 thru 11/20/20	6266	
Waterfront Park Phase #2 near Oak St. (east cell)	5708	3/13/2020	6254	yes	3/2/20 thru 11/20/20	6266	
Railroad Ave., furthest west	70	3/13/2020	6256	yes	3/2/20 thru 11/20/20	6268	
Railroad Ave., 2nd from the west	71	3/13/2020	6256	yes	3/2/20 thru 11/20/20	6268	
Railroad Ave., 3rd from the west	72	3/13/2020	6256	yes	3/2/20 thru 11/20/20	6268	several hours were spent at this intersection's bioretention cells weeding, adding medium fir bark dust, planting additional plants, removing garbage, water trees, trimming vegetation, power sweeping and blowing the permeable sidewalks, and blowing the curblines.
Railroad Ave., 4th from the west	73	3/13/2020	6256	yes	3/2/20 thru 11/20/20	6268	
Railroad Ave., 5th from the west	74	3/13/2020	6256	yes	3/2/20 thru 11/20/20	6268	
Railroad Ave., 6th from the west	75	3/13/2020	6256	yes	3/2/20 thru 11/20/20	6268	
Railroad Ave., 7th from the west	76	3/13/2020	6256	yes	3/2/20 thru 11/20/20	6268	
Oak St., furthest north and west	77	3/13/2020	6257	yes	3/2/20 thru 11/20/20	6269	
Oak St., furthest north and east	78	3/13/2020	6257	yes	3/2/20 thru 11/20/20	6269	
Oak St., furthest south and west	79	3/13/2020	6257	yes	3/2/20 thru 11/20/20	6269	
Oak St., furthest south and east	80	3/13/2020	6257	yes	3/2/20 thru 11/20/20	6269	
Pump Station #4	3298, 3301, 3302	3/13/2020	6261	yes	3/2/20 thru 11/20/20	6270	
Catch Basins REBUILT (8)	16734 (grid 58)		6240		6/24/2020		several hours were spent at this intersection's bioretention cells weeding, mowing, removing garbage, trimming vegetation, power sweeping and blowing the permeable sidewalks, and blowing the curblines by the wastewater and water department crew members.
	15669 (grid 23)		6240		6/24/2020		
	15659 (grid 65)		6240		6/24/2020		
	16287 (grid 32)		6240		6/24/2020		
	16943 (grid 22)		6240		6/24/2020		
	17225 (grid 21)		6240		8/19/2020		
	16315 (grid 58)		6240		10/8/2020		
	16547 (grid 18)		6240		10/8/2020		
	16799 (grid 21)		6240		10/30/2020		
	17026 (grid 58)		6240		10/30/2020		
	16282 (grid 32)		6240		10/30/2020		
CAVFS (7)							
C St. Ext.	6759	7/16/2020	6214	yes	7/16/2020	6215	
C St. Ext.	6760	7/16/2020	6214	yes	7/16/2020	6215	
C St. Ext.	6761	7/16/2020	6214	yes	7/16/2020	6215	
C St. Ext.	6762	7/16/2020	6214	yes	7/16/2020	6215	
C St. Ext.	6763	7/16/2020	6214	yes	7/16/2020	6215	
C St. Ext.	6764	7/16/2020	6214	yes	7/16/2020	6215	
C St. Ext.	6751	7/16/2020	6214	yes	7/16/2020	6215	
ConTech Filters (5)							
8th and A St.	20	2/20/2020	6271	yes	8/27/2020	6272	
8th and Cedar	17	2/20/2020	6273	no			
8th and Pine	15	2/20/2020	6274	no			
8th and Cherry	13	2/20/2020	6275	no			
16th and Maloney	26	2/20/2020	6276	no			
Culvert (LARGE) Annual Summer Inspection- walk thru with engineering dep. rep.							

Whites Creek	721, 2673, 2847, 4344	7/26/2020	6334	no		
6th and Valley	337, 338	7/26/2020	6334	no		
Marine Dr. and Tumwater St.	4340	7/26/2020	6334	no		
Peabody RV Park to Harbor	4346, 3380, 4345, 4025	7/26/2020	6334	no		
5th and Peabody	1909	7/26/2020	6334	no		
3rd and Peabody	1911	7/26/2020	6334	no		
8th and Francis	1930, 1910	7/26/2020	6334	no		
Park St. at dip just west of Race St.	910	7/26/2020	6334	no		
Detention Pipes (Dgravity or DInline Storage) & Flow Control (33)	**pipe#/flow control#**	**Date of Inspection(s)**	**Cityworks WO#**	**Maint. Required?**		
8th and A	6136/18409	8/25/2020	6336	no		
8th and Cedar	6130/na	8/25/2020	6336	no		
8th and Cherry	6116/na	8/25/2020	6336	no		
8th and Pine	6124/na	8/25/2020	6336	no		
O St. on W. side, just S. of 10th (adjacent to house # 1002)	266/18223	8/25/2020	6337	no		
O St. on W. side, S. of 10th (south of #266)	267/18223	8/25/2020	6337	no		
Heritage Ct. (~100' west of Heritage Ct on priv. prop.)	1987/846	8/25/2020	6338	no		
14th on S. side, just E. of N St.	1363/504	8/25/2020	6339	no		
14th on S. side, just W. of Aurora Ct.	1064/17937	8/25/2020	6340	no		
Aurora Ct on W. side	299/17937	8/25/2020	6341	no		
Aurora Ct on E. side	300/17937	8/25/2020	6341	no		
15th on N. side, between H St. and I St.	4528/18062	8/25/2020	6342	no		
16th on N. side, bordering W. side of house #2239	1058/17905	8/25/2020	6343	no		
16th on N. side, bordering S. side of house #2239	1057/17905	8/25/2020	6343	no		
16th on N. side across from Maloney Ct.	6343/18482	8/25/2020	6344	no		
16th on N. side across from Maloney Ct.	6342/18482	8/25/2020	6344	no		
16th on N. side across from Maloney Ct.	6341/18482	8/25/2020	6344	no		
Lauridsen Blvd Bridge	15205/25898	8/25/2020	6345	no		
Cathleen St. on westside, just S. of 10th St.	4660/18093	8/25/2020	6346	no		
Cathleen St. on eastside, just S. of 10th St.	2803/18093	8/25/2020	6346	no		
Jeri Lynn St., near Joshua	1067/818	8/25/2020	6346	no		
Milwaukee Dr. (between 10th and Renee Ln.)	2099/18041	8/25/2020	6347	no		
Milwaukee Dr. (between Renee and Joshua)	46/18041	8/25/2020	6348	no		
Pendley Ct	6804/18704	8/25/2020	6349	no		
Pendley Ct	6805/18704	8/25/2020	6349	no		
Pendley Ct	6806/18704	8/25/2020	6349	no		
Rolling Hills Ct.	303/16728	8/25/2020	6350	no		
Rolling Hills Dr., W. side	304/16728	8/25/2020	6350	no		
Rolling Hills Dr., E. side	247/16728	8/25/2020	6350	no		
Eckard on N. side, just west of Porter	1942/na	8/25/2020	6351	no		
Eckard on S. side, just west of Porter	1943/na	8/25/2020	6351	no		
Porter on E. side, just S. of Campbell	115/18082	8/25/2020	6351	no		
Juniper Ln, N. side from 201 to 217	224/18111	8/25/2020	6352	no		
EcoStorm Block Media Filter (2)						
Eco Storm Plus (Front and Valley)	25	2/6/2020	6353	yes	2/6/2020	6354
Eco Storm Plus (Front and Valley)	25			yes	10/28/2020	6355 replacement of filters by Pro-Vac
Eco Storm Plus (old PS#4)	2433	2/6/2020	6356	yes	2/6/2020	6357
Eco Storm Plus (old PS#4)	2433	10/28/2020	6358	yes	10/28/2020	6359
Energy Dissapators (Ddischargepoint- 'Storm Vortech, … misc.)						
Under the 8th St Bridge over Valley St.	14 (west)	2/5/2020	6333	no		
Under the 8th St Bridge over Valley St.	16 (east)	2/5/2020	6333	no		
Under the 8th St Bridge over Tumwater Truck Rt.	19 (west)	2/5/2020	6333	no		
Under the 8th St Bridge over Tumwater Truck Rt.	18 (east)	2/5/2020	6333	no		
Bottom of ravine at Cemetary	100	2/5/2020	6333	no		
Under Lauridsen Blvd. Bridge	3418	2/5/2020	6333	no		
Crown Park Aquaswirl	21	2/5/2020	6333	no		
10th and N (NW corner)	200	2/5/2020	6333	no		
Filterra Units (2x's per year INSPECT) (17)						
Lauridsen Blvd Bridge - 817 E Blvd	1234	2/4/20 and 9/15/20	6277 and 6278	yes	3/2/20 thru 11/20/20	6360
10th and Race St.(north)	1235	2/4/20 and 9/15/20	6279 and 6280	yes	3/2/20 thru 11/20/20	6360
10th and Race St.(south)	1236	2/4/20 and 9/15/20	6281 and 6282	yes	3/2/20 thru 11/20/20	6360
SW Corner of 6th and Francis	840	2/4/20 and 9/15/20	6283 and 6284	yes	3/2/20 thru 11/20/20	6360
SW Corner of 4th and Francis	838	2/4/20 and 9/15/20	6285 and 6286	yes	3/2/20 thru 11/20/20	6360
NE Corner of 4th and Francis	837	2/4/20 and 9/15/20	6287 and 6288	yes	3/2/20 thru 11/20/20	6360
NW Corner of 4th and Francis	839	2/4/20 and 9/15/20	6289 and 6290	yes	3/2/20 thru 11/20/20	6360
SW corner of 2nd and Francis	836	2/4/20 and 9/15/20	6291and 6292	yes	3/2/20 thru 11/20/20	6360
NE Corner of 4th and Albert	835	2/4/20 and 9/15/20	6293 and 6294	yes	3/2/20 thru 11/20/20	6360
SW Corner of 3rd and Albert	833	2/4/20 and 9/15/20	6295 and 6296	yes	3/2/20 thru 11/20/20	6360
SE Corner of 2nd and Albert	834	2/4/20 and 9/15/20	6297 and 6298	yes	3/2/20 thru 11/20/20	6360
10th and M (new install spring 2019)	6434	2/4/20 and 9/15/20	6299 and 6300	yes	3/2/20 thru 11/20/20	6361
10th and Westview Dr. (new install spring 2019)	6038	2/4/20 and 9/15/20	6301 and 6302	yes	3/2/20 thru 11/20/20	6361
10th and Seamount Dr. (south side)(new install spring 2019)	6037	2/4/20 and 9/15/20	6303 and 6306	yes	3/2/20 thru 11/20/20	6361
10th and Seamount Dr. (north side)(new install spring 2019)	6036	2/4/20 and 9/15/20	6308 and 6309	yes	3/2/20 thru 11/20/20	6361
10th and N St. (south side)(new install spring 2019)	6034	2/4/20 and 9/15/20	6310 and 6311	yes	3/2/20 thru 11/20/20	6361
10th and N St. (north side)(new install spring 2019)	6035	2/4/20 and 9/15/20	6313 and 6314	yes	3/2/20 thru 11/20/20	6361
Permeable Surfaces (45)						
5th and H St. (sidewalks)	1309, 1310, 1311, 1312	7/29/2020	6315	no		**Cityworks WO#(s)**

5th and K St. (sidewalks)	1700, 1701, 1702	7/29/2020	6316	no				
5th and L St. (sidewalks)	1703, 1704, 1705	7/29/2020	6317	no				
6th and H St. (sidewalks)	1313, 1314, 1315	7/29/2020	6318	no				
6th and K St. (sidewalks)	1697, 1698, 1699	7/29/2020	6319	no				
6th and M St. (sidewalks)	1706, 1707, 1708	7/29/2020	6320	no				
7th and H St. (sidewalks)	1316, 1317	7/29/2020	6321	no				
7th and K St. (sidewalks)	1318, 1319, 1320	7/29/2020	6322	no				
Solar Lane	2097	7/29/2020	6323	yes- moss cleaning	11/17/2020	6362	cleaned once a month by vacuum sweeper	
18th St. sidewalk, west of N ST.	5704	7/29/2020	6324	no				
Dunker Dr. sidewalk on west side of road	5697-5702	7/29/2020	6325	no				5800
1st and Race St.	1299, 1300 ,1301, 1302	7/29/2020	6326	no				
1st and Race St.	1304, 1305, 1306, 1307	7/29/2020	6326	no				
1st and Race St.	1308	7/29/2020	6326	no				
Race St. between 1st and 2nd St.	1297, 1298	7/29/2020	6326	no				
4/5 Alley Chambers-Washington	2897	7/29/2020	6327	no			cleaned once a month by vacuum sweeper	
Front-Georgiana, Francis-Eunice	2898	7/29/2020	6328	yes- moss cleaning	11/18/2020	6363	cleaned once a month by vacuum sweeper	
Ponds and bioswales (4)								
Airport Corners - East of Access Rd	51	2/5/2020	6329	yes	3/2/20 thru 11/20/20	6364		
Airport Corners - West of Access Rd - South Pond	50	2/5/2020	6330	yes	3/2/20 thru 11/20/20	6364		
Airport Corners - West of Access Rd - North Pond	481	2/5/2020	6331	yes	3/2/20 thru 11/20/20	6364		
Red Lion Motel - East of Parking Area	18	2/5/2020	6332	yes	3/2/20 thru 11/20/20	6365		
Pump Stations								
Stevens School Pumpstation	2	12/2/2020	6370	no				
Swirl Concentrator (3)								
Crown Park Aquaswirl	9	12/2/2020	6371	no				
1100 Walker St. Vortech (by Contech)	22	12/2/2020	6372	no				
Blackball Ferry Vortech (by Contech)	12	12/2/2020	6373	no				
Catch Basins: (2681 total as of 3/3/20)								
Catch Basins Inspected	1496							
Catch Basins Cleaned	1496							

Catch Basins: EASTSIDE of LAUREL, NIGHT SHIFT, and PRIORITY

MAINTENANCE GRID	Inspect WO#	Amount Inspected:	Clean WO#	Amount Cleaned	notes:
5	6374	1	6375	1	
7	6374	1	6375	1	
12	6374	3	6375	3	
13	6374	9	6375	9	
16	6374	15	6375	15	(2) could not be located
17	6374	11	6375	11	
18	6374	35	6375	35	
19	6376	123	6377	123	(4) sewer lids, (5) landscape plaza yard drains, (12) could not locate
20	6378	84	6379	84	(9) could not locate, (1) offline sewer connected, (1) inside Marine Science building
21	6378	157	6379	157	(5) could not locate, (2) rebuilt
22	6380	103	6381	103	(1) could not locate, (1) manhole, (3) rebuilt
23	6382	45	6383	45	(1) rebuilt
26	6384	34	6385	34	
27	6384	28	6385	28	
28	6384	22	6385	22	(2) Contech Filter Vaults, (1) could not locate
29	6384	61	6385	61	(2) Contech Filter Vaults, (1) could not locate
30	6382	154	6383	154	(1) could not locate
31	6382	117	6383	117	(1) could not locate
32	6390	61	6391	61	(1) rebuilt
37	6392	26	6393	26	(1) drain, not a CB
38	6392	20	6393	20	
40	6392	2	6393	2	
41	6390	37	6391	37	
47	6392	3	6393	3	
57	6392	56	6393	56	
58	6390	66	6391	66	(1) could not locate, (3) rebuilt
59	6390	16	6391	16	(1) could not locate
60	6390	25	6391	25	(1) could not locate
61	6392	16	6393	16	
62	6394	45	6395	45	
63	6394	2	6395	2	(1) overflow inside reservior not a CB
64	6394	27	6395	27	(4) could not locate
65	6394	22	6395	22	(1) Rebuilt
67	6394	20	6395	20	(1) manhole
68	6394	13	6395	13	(2)could not locate
69	6394	4	6395	4	(1) could not locate
90	6394	26	6395	26	(1) could not locate
91	6394	6	6395	6	(1) could not locate
			TOTAL Cleaned:	1496	

Catch Basins REBUILT (8):			
	16734 (grid 58)	6240	6/24/2020
	15669 (grid 23)	6240	6/24/2020
	15659 (grid 65)	6240	6/24/2020
	16287 (grid 32)	6240	6/24/2020
	16943 (grid 22)	6240	6/24/2020
	17225 (grid 21)	6240	8/19/2020
	16315 (grid 58)	6240	10/8/2020
	16547 (grid 18)	6240	10/8/2020
	16799 (grid 21)	6240	10/30/2020
	17026 (grid 58)	6240	10/30/2020
	16282 (grid 32)	6240	10/30/2020

Lincoln Park Ponds to Big Boy Pond to Stevens Pump Station to CB				
Lincoln Park Pond concrete draw box (Dinlet)	83	12/2/2020	6370	no

Manhole in backyard of 1606 W. 15th	259	easement access, private property	na	no	
Manhole on 15th in front of 1606	123	12/2/2020	6370	no	
Manhole at 15th and I St. in the intersection	260	12/2/2020	6370	no	
Manhole at 14th and I St. in the intersection	671	12/2/2020	6370	no	
Culvert in 14th St. wetland easement, behind 1509 W. 14th	4484	12/2/2020	6370	no	
Catchbasin in 14th St. wetland easement, behind 1509 W. 14th	18239	12/2/2020	6370	no	
Manhole in 14th St. wetland easement, SE 60'of 1501 W. 14th	620	12/2/2020	6370	no	
Culvert with outlet into Big Boys Pond from MH 620	1378	12/2/2020	6370	no	
Overflow (intake) from Big Boys Pond to Stevens Pump Station (PS)	7	12/2/2020	6370	no	
Pump Stations					
Stevens School Pump Station	2	12/2/2020	6370	no	
Catchbasin on D St. near 13th that receives water from Stevens PS	17328	12/2/2020	6370	no	

Storm Event Inlet and Flood Prevention Inspection		winter 2020 several dates			
Storm Inlets Annual Storm Prep Liability Inspection (September)		9/1/2020			
10 Year Storm Event (if occurs)		na	na		
Corp Yard- SWPPP inspections	wet weather 1st quarter	1/9/2020	na	yes	October - June
	wet weather 2nd quarter	4/9/2020	na	yes	October - June
	dry weather 3rd quarter	10/5/2020	na	yes	July - September
	wet weather 4th quarter	12/28/2020	na	yes	October - June

2020 Stormwater Treatment Facilities - TOTAL AMOUNT: based on individual asset ##'s

Flow Conotrol BMP's	###
Biofiltration Cells	**77**
CAVFS	**7**
ConTech Filters Chambers	**5**
Detention Pipes (DGravity)	**33**
Eco Storm Plus Block Media Filter Chambers	**2**
Filterra Units	**17**
Permeable Surfaces	**45**
Ponds and bioswales	4
Swirl Concentrator	**3**

City of Port Angeles | Private Stormwater Facility Annual Inspections - 2020

Count	Development Title	Annual Inspection Due Date	Inspection Date(s)	Initials	Maintenance Plan? Yes or No	Number of Structural BMPs Inspected?	Private Facility Submited Check List Complete? Yes or No	Deficiencies found? Yes or No	Enforcement	Enforcement Resolution	Site Address	Contact Person responsible for maintenance	Contact Infromation	Notes:
1	Maloney Heights	Aug-20	-		Yes	13					Between N and O and 16th and 18th Streets			
	Habitat for Humanity	Aug-20	8.21.2020	VM	Yes	7	No	No	NA	NA	Off 16th St.	Colleen Robinson	Colleen@habitatclallam.org	2 lots under construction
	Serenity House	Aug-20	8/20/2020	VM	Yes	6	Yes	Yes	Email sent 8.20.2020	Resolved 11/13/2020. Serviced by RJ Services.	2321 W. 18th St.	Habitat For Humanity Donny Tyler	donny.tyler@serenityhouseclallam.org (360) 215-0476	Site fully established, Yearly Inspections
2	Port of Port Angeles - ACTI Site	Oct-20	10/28/2020	VM	Yes	36	Yes	Yes	Verbal at Site	Ongoing. Monthly Insp. Req'd.	2200 W 18th ST	Jesse Waknitz	jessew@portofpa.com	Site stabilized, no new construction. Yearly inspections
3	Family Medicine	Aug-20	9.29.2020	VM	Yes	12	Yes	No	NA	NA	240 E Front St	Stan Garlick	garlick@olypen.com	Site fully established, Yearly Inspections
4	Peninsula College Parking Lot and Soccer Fields	Dec-20	12/2/2020	VM	Yes	Parking 28 Soccer 9	Yes	No	NA	NA	1502 E Lauridsen Blvd	Rick Croot / Kevin Field	360-460-1373 RCroot@pencol.edu	Site fully established, Yearly Inspections
5	Peninsula College Alied Health Building	Dec-20	12/2/2020	VM	Yes	10	Yes	No	NA	NA	1503 E Lauridsen Blvd	Rick Croot / Kevin Field	360-460-1373 RCroot@pencol.edu	Site fully established, Yearly Inspections
6	Pendley Estates	Oct-20	12/31/2020	VM	Yes	15	No	Yes	Email 12/31/2021	Forwarded to Legal Dept. for Enforcement.	Southside of West 14th Street, across from Samara Drive	Peninsula Housing Authority	aorourke@peninsulapha.org 360-	Site fully established, Yearly Inspections
7	Olympic Medical Center Parking Lots Columbia St, Medical Expansion	Sep-20	9/30/2020	VM	Yes	10	Yes	No	NA	NA	Columbia St and Caroline St	Rockie Lee	Phone: 360-417-7235 rlee@olympicmedical.org	Site fully established, Yearly Inspections
8	Olympic Medical Center -Medical Office Building, 3 parking lots	Oct-20	11/17/2020	VM	Yes	25	No	No	NA	NA	907 Georgiana St.	Rockie Lee	rlee@olympicmedical.org	Site fully established, Yearly Inspections
9	Around Again (POPA) **3 YR Interval**	Jul-22	-	VM	Yes	3	No	No	NA	NOTE: No Use. Revised Insp. Schedule for 2020 and beyond	2604 W. 18th St.	POPA - Jesse Waknitz	jessew@portofpa.com	Site fully established, Yearly Inspections
10	Blackball Ferry Terminal West Pier Replacement	Jul-20	8.21.2020	VM	No	6	No	No	NA	NA	101 Railroad Ave.	Rian Anderson	randerson@cohoferry.com	Site fully established, Yearly Inspections
11	Peninsula Behavioral Health 2016 Parking Lot	Aug-20	11/10/2020	VM	Yes	12	Yes	No	NA	NA	118 E. 8th St.	Wes Zimmer	(360) 461-7386 wesz@peninsulabehavioral.org	Site fully established, Yearly Inspections
12	North Olympic Library System	Dec-20	12/9/2020	VM	Yes	2	Yes	No	NA	NA	401 Orcus Ave	Brian Phillips	bphillips@nols.org	Site fully established, Yearly Inspections
13	Clallam County Courthouse Raingarden Retrofit	Dec-20	12/9/2020	VM	Yes	10	Yes	Yes	NA	Note: Ongoing issue with P. Pave. Working to remove from maint. Req. as built incorrectly - runon.	223 E. 4th St.	Joel Winborn	jwinborn@co.clallam.wa.us	Site fully established, Yearly Inspections
14	McDonalds	May-20	4/27/2020 12/16/2020	VM	Yes	12	No	Yes	Phone call to Doug.	BayFilter found submurged. Forced cyling indicates the filter may not be the issue. Possible flow control issue. TBD.	1706 E. Front St.	Doug Fenwick Director of Operations Peninsula McDonald's Rest.	doug@peninsulamcdonalds.com 360-271-8582	Site fully established, Yearly Inspections NOTE: Never met initial insp. Req.
15	Green Crow, Campell Ave. PRD Phase 2A	Jun-20	11/4/2020	VM	Yes	17	No	No	NA	NA	Rook Drive	Bruce Emery	bruce@greencrow.com 360-417-3669	Site fully established, Final'd 6/28/2018
16	POPA - Marine Terminal SW Treatment Facility & Marine Trades Area Wash-down Facility	Oct-20	11/6/2020	VM VM	Yes	12	No	No	NA	NA	615 Marine Drive	Jesse Waknitz	jessew@portofpa.com	Site fully established, Final'd 10/25/2018
17	Collegiate Housing International (CHI)	Jun-20	11/4/2020	VM	Yes	16	No	Yes	NOV being drafted	Ongoing (Failed Filterra unit and Skimmer issues)	1134 E. Park Ave	Joel Crosby Curtis Brackett	crosbycommercial@gmail.com (415) 662-0750	Site fully established, Final'd 6/12/2019
18	Cook-Ainscough SFR	Jul-20	8/20/2020	VM	Yes	5	No	Yes	Email sent 8.20.2020	To be re-evaluated upon next annual insp.	844 Willow Ave.	Kerri Cook	(360) 333-5042 upriversoul@hotmail.com	Site fully established, Final'd 7/26/2019
19	Shore Aquatic Center	April-21 Oct-21	-	-	Yes	13			NA	NA	225 East 5th St.	Steve Burke	steve@sacpa.org 360.460.3526	6 mo. Inspections Final'd Oct. 2020
20	Critchfield Industrial Site	Ongoing Construction	11/10/2020	VM										
21	Mt Angeles View Phase 1	Ongoing Construction	6/2/2020	VM										
22	Boys and Girls Club	Ongoing Construction	2/1/2021 3/3/2021	VM										
23	Port Angeles Waterfront Center	Ongoing Construction	3/27/2020 12/2/2020	JB VM										
24	LEKT Downtown Hotel	Project in Suspension	3/27/2020	JB										

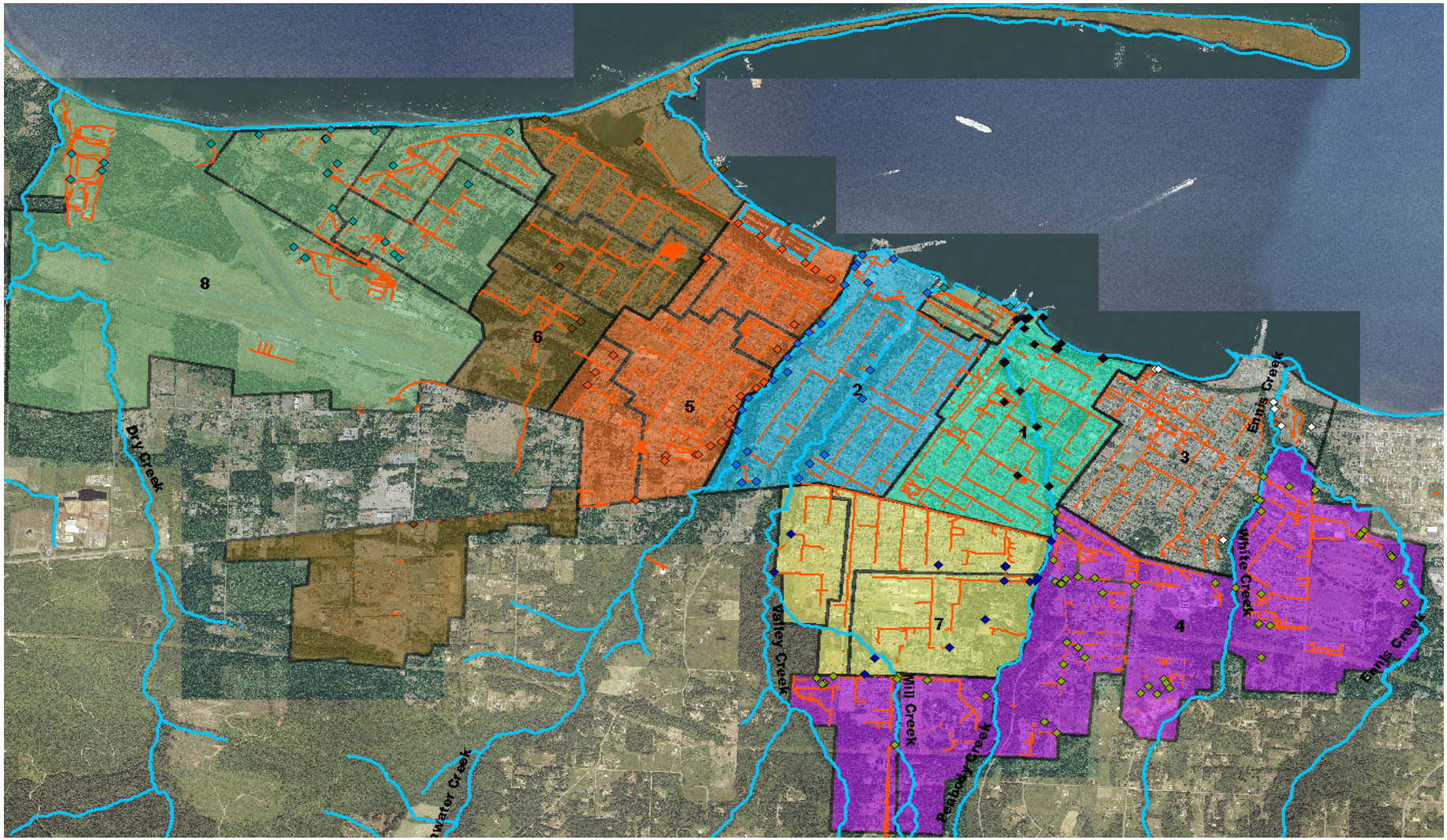
Year end Stats:	Scheduled	Achieved
	19	19
	100%	

Passed 1st time	Deficient Sites	Resolved	In-progress	Compliant sites
12/19	7/19	3/7	4/7	17/19
63%	37%	43%	57%	89%

CITY OF PORT ANGELES

Stormwater Education Tracking for IDDE

Date:	Address:	Contact Name:	Business Name	Business/ Residential:	Method of Contact:	City Staff:	Type of Education:	Basin:
3/12/2020	128 West Railroad Ave	Thomas	The Rail	business	in person	Bowen, Rachel	Talked about stormwater ordinances; only rain down the drain	8
3/12/2020	104 W. 11th Street	Tim Summers	barbecue.	business	in person	Bowen, Rachel	Talked about stormwater ordinances; only rain down the drain	8
3/12/2020	205 East 8th Street	Sean Wheeler	Grayson's	business	in person	Bowen,Rachel	talked about stormwater odinances; only rain down the drain	1
3/12/2020	1116 E. Lauridsen Boulevard	Joel Fletcher	Crestwood Convalescent Cent	business	Phone Call	Bowen,Rachel	talked about recent WW overflow causing SW pollution; gave out	4
3/13/2020	1133 East Park Avenue	unknown	Laurel Place	business	Phone Call	bowen,rachel	talked about recent WW overflow causing SW pollution	4
3/18/2020	333 Eclipse Industrial Parkway	Jason Thompson	Port Angeles Hardwood	Business	in person	Bowen, Rachel	Talked about stormwater ordinances; only rain down the drain	6
3/18/2020	50 Eclipse West Drive	Bret McGuire	Lakeside Industries	business	in person	Bowen, Rachel	Talked about stormwater ordinances; only rain down the drain	6
3/18/2020	404 Eclipse Industrial Parkway	Thor	Hermann Brothers Logging and	business	in person	Bowen, Rachel	Talked about stormwater ordinances; only rain down the drain	6
3/31/2020	221 North Lincoln	Petr Karpuk	Crab House/ Red lion	business	in person	Bowen,Rachel	talked about grease interceptor maintenance and SW pollution	8B
7/17/2020	819 S. Lincoln Street	Opal Trussell	Drake's U Bake Pizza	business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	1
7/17/2020	116 North Lincoln Street	unknown	Angeles Brewing Supplies	business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	1
8/3/2020	not listed; home business	Paul Collins	Enviroclean NW	business	email	Bowen,Rachel	Paul reported a neighbor's equipment washing; talked about city regulations for residential washing	6
8/20/2020	402 Marine Drive	Choi Paik	Chevron Port Angeles	business	email	Bowen,Rachel	emailed Chevron corporate about improperly stored chemicals and SW pollution potential	2
8/24/2020	135 East 1st Street	Orion Laidig	Sasquatch Donuts	business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	1
8/27/2020	2435 Samara Drive	unknown	residential	business	letter	Bowen,Rachel	talked about regulations for equipment washing and BMPs	8B
8/27/2020	102 W. Front Street	John	New Day Eatery	business	Phone Call	Bowen,Rachel	talked about GRS recycler maintenance and SW pollution potential	8E
8/27/2020	106 W Front Street	Kawn	Pho New Saigon	business	Phone Call	Bowen,Rachel	talked about GRS recycler maintenance and SW pollution potential	8E
8/27/2020	134 West Front Street	Unknown	Songoku Hibachi	business	Phone Call	Bowen,Rachel	talked about GRS recycler maintenance and SW pollution potential	8E
9/1/2020	113 West 1st Street	Angela Oppelt	Next Door Gastropub	business	email	Bowen,Rachel	talked about GRS recycler maintenance and SW pollution potential	8E
9/3/2020	930 Marine Drive	Paul Scott	Waterfront Automotive	business	in person	Bowen,Rachel	talked about stormwater ordinances; only rain down the drain	5
9/8/2020	636 E Front Street	Jaime	Fiesta Jalisco	business	in person	Bowen,Rachel	talked about GRS recycler maintenance and SW pollution potential; city ordinances	1
9/18/2020	128 West 1st Street	Mac Smith	Easy Street Coffee & Tea Hous	Business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	8
9/18/2020	612 South Lincoln Street	John	Shirley's Café	business	in person	Bowen,Rachel	talked about stormwater ordinances; only rain down the drain	2
10/2/2020	1603 East Front Street	Steve Voang	Fresh Wok	Business	in person	Bowen, Rachel	Talked about stormwater ordinances; only rain down the drain	3
10/2/2020	1123 East 1st Street	Randy	Gordy's Pizza	business	in person	Bowen, Rachel	Talked about stormwater ordinances; only rain down the drain	3
10/6/2020	402 Marine Drive	Janelle	Chevron Port Angeles	business	email	Bowen, Rachel	talked about oil drums left on property and SW ordinances and pollution	5
10/7/2020	111 East 2nd Street	Joanne Swegel	Port Angeles Inn	Business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	2
10/7/2020	111 East 2nd Street	Unknown	n/a	resident	in person	Bowen,Rachel	talked to someone about stormwater ordinances outside of Port Angeles Inn; talked about SW pollution sources and only rain down the drain	2
10/7/2020	403 South Lincoln Street	Rebeka Tunstall	Subway #599	business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	1
10/8/2020	1706 E. Front Street	Doug Fenwick	Peninsula Mcdonalds	business	Phone Call	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	4
10/8/2020	200 West 1st Street	Kyla	Country Aire	Business	Phone Call	Bowen,Rachel	Talked about stormwater ordinances and future regulations and what that means for her business	8
10/9/2020	415 East 1st Street	David Patel	Flagstone Motel	business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	1
10/9/2020	2909 E highway 101	Pam Woodward	Sportsmen Motel	business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	4
10/14/2020	113 West 1st Street	Jacob Oppelt	Next Door Gastropub	business	email	Bowen,Rachel	talked about GRS recyclers and SW pollution	8
10/16/2020	118 West 1st Street	Mark Ray	The Great Northern Coffee Bar	business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	8
10/22/2020	200 West 1st Street	Ty	Country Aire	business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	8
10/22/2020	200 West 1st Street	Alma	Country Aire	business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	8
10/30/2020	1830 East 1st Street	Cindy	Wendys	business	Phone Call	Bowen,Rachel	Talked about GRS interceptor cleaning and GRS recycling in regards to preventing SW pollution	4
11/2/2020	114 East Lauridsen Boulevard	Joe Sabutis	Saar's Super Saver Foods	business	phone call	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	7
11/3/2020	113 South Del Guzzi Drive	Josh	Joshua's Restaurant	business	in person	Bowen, Rachel	Talked about stormwater ordinances; only rain down the drain	4
11/3/2020	802 South C street	Jim Cromer	Grandview Grocery	business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	5
11/9/2020	108 South Del Guzzi Drive	Kailee	jimmy johns	business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	4
11/9/2020	612 South Lincoln Street	Ryan	Westside Pizza	business	in person	Bowen, Rachel	Talked about stormwater ordinances; only rain down the drain	1
11/9/2020	downtown PA- alley between Oa	Zach	General Biodiesel	business	Phone Call	Bowen, Rachel	GRS recycler in downtown alley has overflowed	8
11/13/2020	203 East Front Street	Brian	Kokopelli Grill/ coyote BBQ	business	in person	Bowen, Rachel	Talked about stormwater ordinances; only rain down the drain	8
11/13/2020	203 East Front Street	Michael	Kokopelli Grill/ coyote BBQ	business	in person	Bowen, Rachel	Talked about stormwater ordinances; only rain down the drain	8
11/13/2020	113 West 1st Street	Jacob Oppelt	Next Door Gastropub	business	phone call	Bowen, Rachel	talked about GRS recycler overflow, clean up, and stormwater regulations	8
11/17/2020	113 West 1st Street	Mike	Next Door Gastropub	business	in person	Bowen,Rachel	Gastropub employee dumping out oil in recycler. Talked about GRS recycler overflow, clean up, and stormwater	8
11/24/2020	113 West 1st Street	Jacob Oppelt	Next Door Gastropub	Business	in person	Bowen, Rachel	talked about GRS recycler overflow, clean up, and stormwater regulations	8
12/8/2020	2321 West 18th Street	Donny	Serenity House	business	in person	Bowen,Rachel	Talked about stormwater ordinances; only rain down the drain	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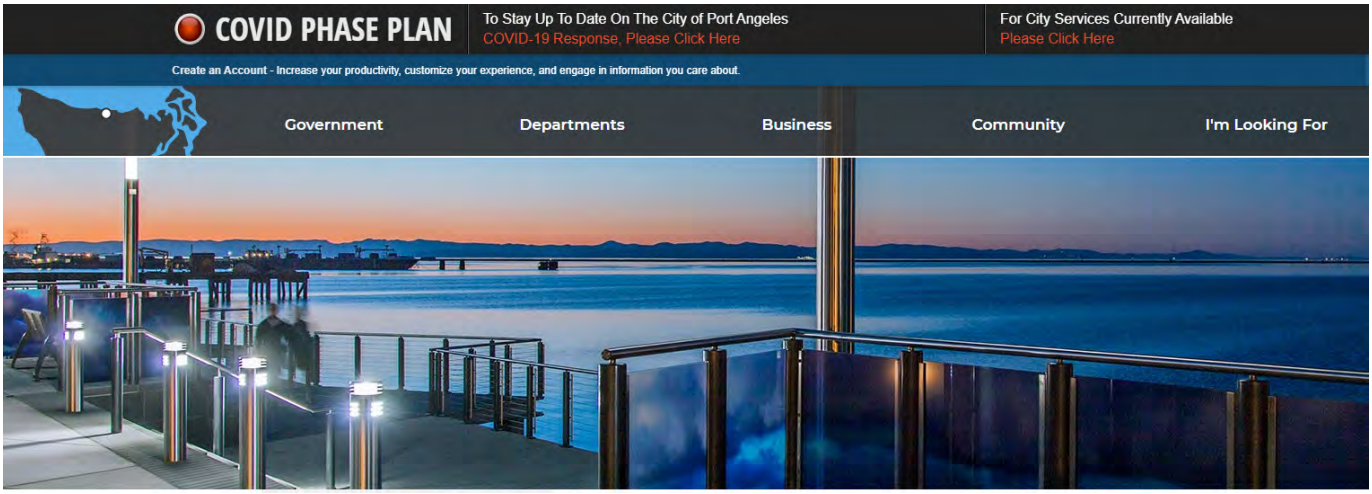
Ennis Creek
White Creek
Valley Creek
Mill Creek
Peabody Creek
Ennis Creek



Conservation

Pollution Prevention

Stormwater Program

Contact Us

Pollution Prevention Specialist

Email Pollution Prevention Specialist

Phone: 360-417-4693

Quick Links

- Hazardous Waste Service Provider Search
- Best Practices for Businesses
- Pollution Prevention Assistance

View All

Pollution Prevention

Overview

Pollution prevention is reducing or eliminating waste at the source by modifying production processes, promoting the use of non-toxic or less-toxic substances, implementing conservation techniques, and re-using materials rather than putting them into the waste stream.

The City of Port Angeles received a grant from the Washington Department of Ecology to provide no-charge, on-site advice to small businesses that generate dangerous wastes.

The goal of this grant funded program is to help Port Angeles businesses avoid polluting local waters, reduce the impacts of stormwater pollution, and eliminate potential sources of toxic materials and dangerous waste.

Pollution Prevention Specialist - Ready to Assist

The City's Pollution Prevention Specialist is visiting local businesses in order to demystify regulations about dangerous waste and help implement pollution prevention practices. The goal of this program is to protect water quality and help businesses deal with pollution at its source, before it pollutes local waters.

This approach not only protects our city's water quality and standard of living, but it is also expected to save businesses money through conservation of resources, improved worker safety, reduction and avoidance of risk, possible decrease in insurance premiums, and an increase in business efficiencies.

This position is 100% grant funded through the Washington State Department of Ecology's Local Source Control Partnership. This partnership gives the City's Pollution Prevention Specialist access to the resources and expertise of twenty-five partner jurisdictions around Puget Sound and the Spokane River Basin.

Qualified Businesses

This program is for businesses that:

- Accumulate less than 2,200 pounds of most dangerous wastes
- Create less than 220 pounds of most dangerous wastes per month
- Would like to avoid paperwork, mandatory inspections, and emergency plans

You'll be provided with:

- Inspection of dangerous waste handling and storage facilities
- List of licensed dangerous waste recyclers / haulers
- No charge, on-site dangerous waste evaluation
- Recommendations to fix any issues we find

What to expect:

- The inspector is available Monday through Friday, from 7:00 a.m. to 3:30 p.m.
- Most evaluations will take 15 to 45 minutes

Businesses within Port Angeles city limits and its urban growth areas are welcome to participate in the voluntary program.

RESOURCES

Please click on the following tabs for more information.

Preventing Water Pollution

Port Angeles is home to a very unique environment with the majestic Olympic Mountains nestled alongside the Strait of Juan de Fuca. Many mountain-fed streams run right through our city as they make their way to the Strait, picking up pollution from our storm drains in the process. As a result, stormwater pollution has become a serious problem for both the wildlife and citizens that use these waterways for fishing, boating, and swimming. This beautifully drawn flier (PDF) explores sources of local water pollution and offers ways for eliminating the pollution from our streams and waterways. Feel free to print it out and post it in your business.

Answers to Basic Questions

This brochure (PDF) answers the most basic questions about your waste. How do I know if my waste is hazardous? How do I handle hazardous waste? Will I be regulated? Do I need to file any special documentation with the government? Where do I go for help?

Shop Guide for Dangerous Waste

Do you run a maintenance shop? Auto body shop? Auto repair shop? If so, this is the guide (PDF) for you. It discusses proper waste management for common shop items such as aerosol cans, antifreeze, used oil, towels and rags, batteries, waste storage regulations and more.

Safer Choice Products

Have you ever wondered if there are less hazardous chemicals available that can do the same job? The EPA Safer Choice label helps consumers and businesses find products that are less hazardous to human health and the environment. Safer Choice products must pass category specific performance standards so you can trust that the Safer Choice products perform as well as their more hazardous counterparts. Click here to find over 2,000 safer alternatives for your home and business.

Fat Oil and Grease Program

Port Angeles has a big grease problem. Fats, oils, and grease (FOG) are clogging the City's sewers and costing us all a lot of money each year to respond to and clear these grease-clogged pipes. FOG waste from cooking and cleaning equipment hardens and builds up inside our drain and sewer pipes, constricting water flow the way cholesterol affects blood flow in arteries. In 2010, the City adopted a FOG control ordinance to address these problems. This document (PDF) clearly states the steps restaurants must take to be in compliance with local laws and help reduce grease clogged sewers.

Cost Analysis

Pollution prevention can save money on the costs involved in an industrial production process, as well as provide new sources of revenue. Many pollution prevention opportunities cost very little to carry out, and can be quite profitable,

while others must be analyzed carefully to weigh their profitability. This analysis (PDF) involves identifying all the major costs involved in a current process and possible pollution prevention alternatives, and then comparing the costs and savings.

Contact Us

Pollution Prevention Specialist

Email Pollution Prevention Specialist

Phone: 360-417-4693

Quick Links

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View All

What is pollution prevention assistance?

DEPARTMENT OF ECOLOGY
State of Washington

AUGUST 2018
ECOLOGY PUBLICATION 18-04-024

Hands-on assistance for Washington businesses

Small businesses typically have limited access to expertise on stormwater management and hazardous waste handling and disposal. Ecology's Local Source Control Partnership program funds jurisdictions throughout Washington to offer pollution prevention assistance to local businesses.

Specialists in participating jurisdictions offer free, on-site technical assistance to help small businesses identify and resolve possible causes of pollution. This hands-on assistance and regulatory advice reduces health risks for employees and prevents polluted runoff from harming Washington's streams, rivers, and Puget Sound.

As a result of pollution prevention assistance, Washington businesses:

- Adopt safer materials handling and storage practices.
- Manage interior and exterior drainage systems to reduce impacts to stormwater.
- Create a plan for spill prevention and preparedness.
- Use fewer toxics in their processes or replace toxic chemicals with safer alternatives.

Since the program began in 2008

More than
26,000
Completed visits

More than
32,000
Problems found

90%
Problems resolved

Top 5 problems specialists find during visits

[Based on data collected July 2015–June 2017]

1. **No or inadequate spill response procedures.**
2. **No or inadequate spill response materials.**
3. **Employees need proper training.**
4. **Other hazardous waste issues.**
5. **Need to implement proper housekeeping.**

Top 5 business sectors where specialists find problems

[Based on data collected July 2015–June 2017]

- **Auto repair shops**
- **Restaurants**
- **Construction contractors**
- **Gas stations**
- **Auto dealers**

Current partner jurisdictions

Partners funded through the July 2017–June 2019 biennium are located in three critical areas—the Columbia River, Puget Sound, and the Spokane River.

Clallam
- City of Port Angeles

Clark
- Clark County Environmental Services
- Clark County Public Health

Jefferson
- Jefferson County Public Health

King
- City of Bothell
- City of Issaquah
- City of Kirkland
- City of Redmond
- City of Shoreline
- King County Water and Land
- Seattle Public Utilities

Kitsap
- Kitsap Public Health District (includes Mason County)

Pierce
- City of Puyallup
- City of Sumner
- Tacoma-Pierce County Health Department

Skagit
- Skagit County Department of Public Health

Snohomish
- Snohomish Health District

Spokane
- Spokane Regional Health District

Thurston
- Thurston County Public Health

Whatcom
- City of Bellingham
- Whatcom County Health Department

Visit ecology.wa.gov/PollutionPreventionAssistance to learn more about this program.

Does your business produce hazardous waste?

WHAT IS "HAZARDOUS WASTE"?

In Washington, a waste is "*hazardous*" if:

- It is ***listed*** (discarded products and sources; WAC 173-303-080),
- Meets ***characteristics*** (ignitability, corrosivity, reactivity, or toxicity; WAC 173-303-090), or
- Meets ***criteria*** (environmental persistence or toxicity; WAC 173-303-100)

Common materials that are hazardous waste:

- Paints, thinners, solvents, pesticides, or cleaning fluids
- Products with a warning label such as "flammable," "caustic," "danger," "hazardous," or "poison" or contain any hazard pictograms like those shown on the right

HAZARDOUS WASTES REQUIRE SPECIAL HANDLING

Hazardous wastes cannot be put in the dumpster, poured down the drain or evaporated. They cannot be taken to the transfer station or municipal landfill. They must be transported by a licensed waste service provider unless your business is a small quantity generator (see below). Regardless of generator status, all businesses MUST:

- Identify and designate all hazardous wastes and how much is generated each month
- Keep wastes stored in containers that are in good condition with proper hazard labels
- Assure proper disposal, treatment and/or recycling of their hazardous waste
- Comply with regulations, no matter how little hazardous waste they generate
- Follow all required procedures for your generator status (small, medium, or large quantity generator)

LESS WASTE= FEWER REGULATIONS

Small quantity generators are exempt from most state and federal regulations. To be exempt, they must stay within the legal generation and accumulation limits and they must manage and dispose of their waste in a way that does not pose a threat to human health or the environment.

A Small Quantity Generator, or SQG, is a business that:

- Creates less than 220 pounds (about 27 gallons) per month of hazardous waste and
- Stores less than 2,200 pounds (about five 55-gallon drums) of hazardous waste and
- Creates and stores less than 2.2 pounds (about a quart) of *acutely hazardous waste* per month

REGULATED GENERATORS

Businesses that produce larger amounts of hazardous waste must comply with extensive regulations and periodic reporting. While Ecology provides compliance assistance to all generators, medium and large quantity generators are also subject to regulatory inspections from Ecology. Small quantity generators can receive non-regulatory pollution prevention assistance through the Local Source Partnership. Contact the City of Port Angeles's Pollution Prevention Specialist for more information.

DESIGNATING HAZARDOUS WASTE

"Waste designation" is the process of determining if a certain waste is hazardous and selecting the applicable dangerous waste codes. Designation often involves identifying the chemical ingredients or contaminants in the waste. This helps ensure that the waste is properly labeled and handled. Washington's Department of Ecology provides guidance for designating waste according to the dangerous waste regulations (LINK).

To find out more information about the hazardous chemicals a product may contain, refer to the product's Safety Data Sheet (SDS). Chemical suppliers and manufacturers are required to have SDS for all their products. They can often be found with the product or on the manufacturer's website.

A "waste profile" describes the chemical ingredients and the dangerous waste numbers assigned to the waste. Firms that transport, broker, reclaim or dispose of hazardous waste need a waste profile so that they can manage the waste safely and legally. Most private companies and solid waste landfills require a profile or other identification before accepting potentially hazardous wastes. Businesses should retain receipts for waste removal as well as any waste profiles produced.

WASTE TESTING

Hazardous waste may need to be tested if the waste is unknown or may contain other hazardous materials. For example, used oil is often field-tested to detect chlorinated solvents. Containerized wastes, such as aerosol cans, do not need to be tested and are designated according to the hazardous chemicals listed on their SDS. Most waste handlers will profile a waste and can arrange to have it tested, if necessary. Use the following guidelines to help waste service providers develop an accurate waste profile as well as save your business money:

- Explain how the waste was created
- Provide the chemical ingredients from container labels and SDS sheets
- List anything that was mixed with the material including water, solvents or potential contaminants
- Only run tests on chemicals that have a possibility of being in your sample
- Do not run tests on containerized products that are no longer being used or have expired. Look up the product's SDS to find hazardous characteristics

Though waste handlers will help a business develop a waste profile, the business is ultimately responsible for the proper disposal of the waste it produces.

~Example~

A shop mixes concentrated cleaner with water and uses the solution to clean oily, corroded auto parts. The shop's waste management firm suggests testing the solution for solvents and heavy metals. In the preceding year the shop had eliminated all solvents from its cleaning process. The shop shows the material safety data sheets to the waste management firm and explains its "no solvent" policy. The firm agrees that solvent testing is unnecessary. Because parts are corroded before cleaning, it is a good idea to test for heavy metals.

THE CITY OF PORT ANGELES WASHINGTON, U.S.

Rachel Bowen
Pollution Prevention Specialist
rbowen@cityofpa.us
360-417-4693

DEPARTMENT OF ECOLOGY State of Washington

Southwest Regional Office
300 Desmond Drive
Lacey, WA 98503
360-407-6300

other resources:

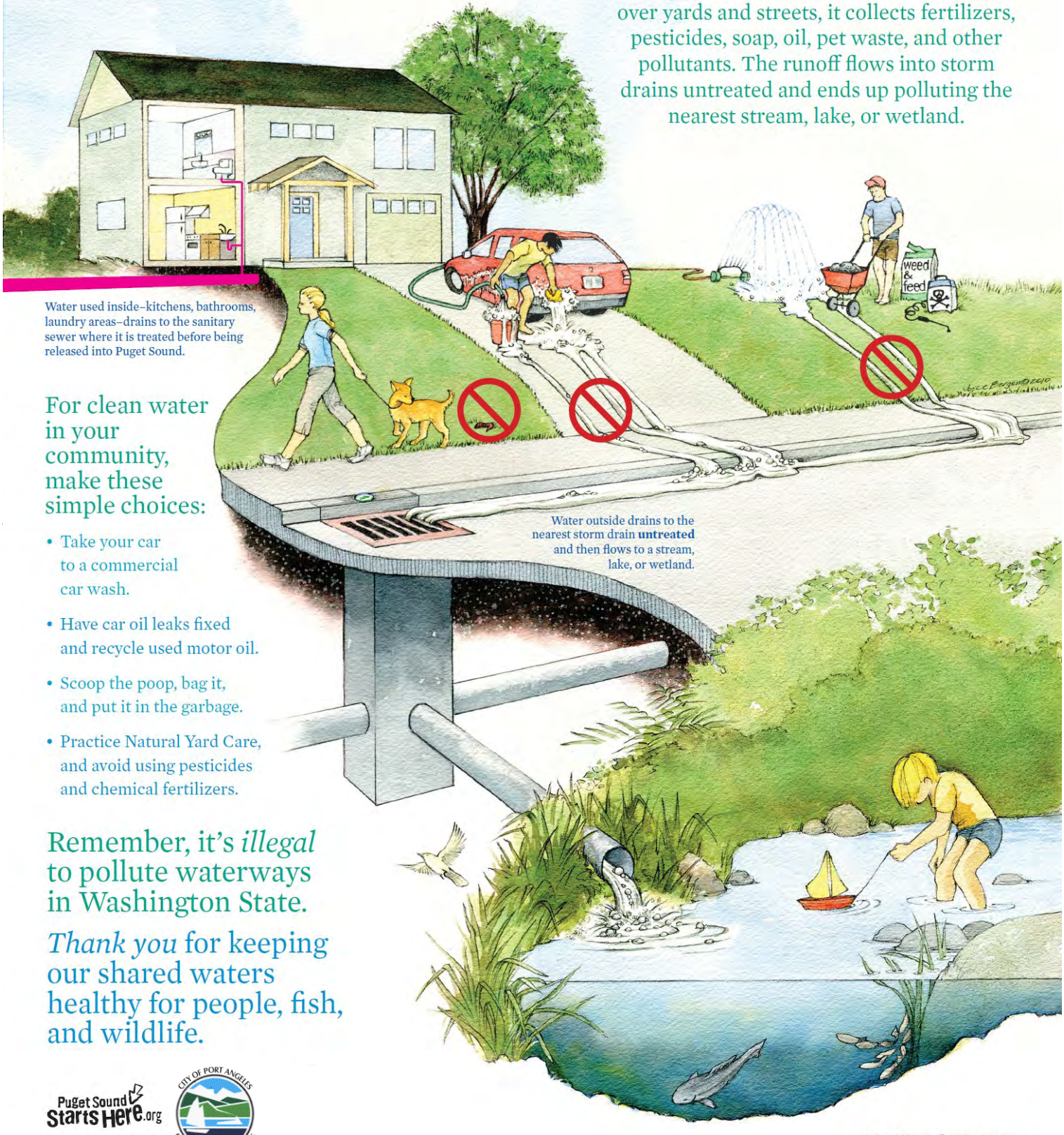
Dept. of Ecology Hazardous Waste Program
Clallam County Hazardous Waste Program
Dept. of Ecology Dangerous Waste Regulations
City of Port Angeles Pollution Prevention Program

Do You Want *Clean Water* in Your Community?

Making simple choices prevents water pollution

Everyday activities can lead to water pollution.

When water from irrigation and rain washes over yards and streets, it collects fertilizers, pesticides, soap, oil, pet waste, and other pollutants. The runoff flows into storm drains untreated and ends up polluting the nearest stream, lake, or wetland.



Water used inside–kitchens, bathrooms, laundry areas–drains to the sanitary sewer where it is treated before being released into Puget Sound.

Water outside drains to the nearest storm drain **untreated** and then flows to a stream, lake, or wetland.

For clean water in your community, make these simple choices:

- Take your car to a commercial car wash.
- Have car oil leaks fixed and recycle used motor oil.
- Scoop the poop, bag it, and put it in the garbage.
- Practice Natural Yard Care, and avoid using pesticides and chemical fertilizers.

Remember, it's *illegal* to pollute waterways in Washington State.

Thank you for keeping our shared waters healthy for people, fish, and wildlife.

Puget Sound Starts Here.org

City of Port Angeles Public Works & Utilities

Design: Vivitiv.com Illustration: Joyce Bergen

Fats, Oil, and Grease

Best Management Practices Manual

Pollution Prevention and Compliance Information for Kitchens, Restaurants, and other Business Owners and Managers in the City of Port Angeles, Washington

This manual was developed from a BMP Manual originally published by the Oregon Association of Clean Water Agencies

Table of Contents

Important Telephone Numbers:

Sewer backups on city streets or alleys	(360) 417-0190 or (360) 461-0111 or (360) 460-3976
Water pollution or spill hotline	(360) 417-4745
Wastewater treatment plant	(360) 417-4845
City permit center	(360) 417-4817

Chapter 1
Introduction

Fats, oil, and grease — also called FOG in the wastewater business — can have negative impacts on wastewater collection and treatment systems. Most wastewater collection system blockages can be traced to FOG. Blockages in the wastewater collection system are serious, causing sewage spills, manhole overflows, or sewage backups in homes and businesses.

Two types of FOG pollutants are common to wastewater systems. Petroleum-based oil and grease (non-polar concentrations) occur at businesses using oil and grease, and can usually be identified and regulated by municipalities through local limits and associated pretreatment permit conditions. Animal and vegetable-based oil and grease (polar concentrations) are more difficult to regulate due to the large number of restaurants and fast-food outlets in every community.

This manual is written to provide Port Angeles kitchen, restaurant and fast food business managers and owners — along with City of Port Angeles staff — information about animal and vegetable-based oil and grease pollution prevention techniques focused on their businesses, effective in both reducing maintenance costs for business owners, and preventing oil and grease discharges to the sewer system.

Many of the nation's fast-food restaurant chains participate in FOG recycling programs. Ensuring that grease interceptors are properly installed — and most importantly, properly maintained — is more difficult. This manual focuses on proper maintenance of grease interceptors.

Knowledgeable municipal staff, working with business owners, can effectively prevent oil and grease buildup, and associated problems, for both the sewerage agency and the restaurant owner.

Chapter 2
Frequently Asked Questions about Fats, Oil, and Grease

Is grease a problem?

In the sewage collection and treatment business, the answer is an emphatic YES! Grease is singled out for special attention because of its poor solubility in water and its tendency to separate from the liquid solution.

Large amounts of oil and grease in wastewater cause trouble in the collection system pipes. It decreases pipe capacity and, therefore, requires that piping systems be cleaned more often and/or some piping to be replaced sooner than otherwise expected. Oil and grease also hamper effective treatment at the wastewater treatment plant.

Grease in a warm liquid may not appear harmful. But as the liquid cools the grease or fat congeals and causes nauseous mats on the surface of settling tanks, digesters, and the interior of pipes and other surfaces which may cause a shutdown of wastewater treatment units.

Problems caused by wastes from restaurants and other grease-producing establishments have served as the basis for ordinances and regulations governing the discharge of grease materials to the sanitary sewer system. This type of waste has forced the requirement of the installation of preliminary treatment facilities, commonly known as grease interceptors.

The City of Port Angeles adopted Ordinance No. 13.06.030(B) that regulates the discharge of FOG into the City's sewer system. The ordinance requires pretreatment devices in new construction and retrofit of existing facilities as necessary to comply with the City's FOG discharge limit.

What is a grease interceptor and how does it work?

A grease interceptor is a reservoir built into the wastewater piping downstream from the grease producing area. Baffles in the reservoir retain the wastewater long enough for the grease to congeal and rise to the surface. The grease can then be removed and disposed properly. See *How Grease Interceptors Work* (Chapter 5) for a description of how the various components of grease interceptors function.

What types of grease interceptors exist?

A *hydro-mechanical* grease interceptor is a small (20 – 50 gallons) tank usually located inside a food service establishment, under a counter or sink. A *gravity* grease interceptor is a vault with a minimum capacity of 500 – 750 gallons that is located on the exterior of the building. The vault includes a minimum of two compartments, and flow between each compartment is through a 90° fitting designed for grease retention. The capacity of the *gravity* grease interceptor provides adequate residence time so that the wastewater has time to cool, allowing any remaining grease not collected by any *hydro-mechanical* grease interceptors time to congeal and rise to the surface where it accumulates until it is cleaned. See *How Grease Interceptors Work* (Chapter 5) for a description of how the various components of a grease interceptor function.

How do I clean my grease interceptor?

Refer to *Maintenance of Grease Interceptors* (Chapter 6).

Can you recommend a grease interceptor maintenance schedule?

Hydro-mechanical grease interceptors (20 – 50 gallons), must be cleaned weekly. *Gravity* grease interceptors (500 + gallons) should be cleaned at least every 90 days. If the grease interceptor requires more frequent cleaning than these intervals to remain effective, the owner should consider installing a larger interceptor.

Do I have a grease interceptor?

If the establishment is uncertain whether it has a grease interceptor, the owner should contact the City of Port Angeles Wastewater Treatment Plant at (360) 417-4845 for a no-charge consultation and site visit.

Do I need a grease interceptor?

Per Sewer Use Ordinance No. 3397, Sections 13.06.032 and 13.06.033, all new and existing Food Service Establishments (FSEs) and Non-FSE FOG Dischargers (NFDs) shall be required to install and maintain a properly sized and functioning Grease Removal System (GRS).

Is my grease interceptor adequate?

The Uniform Plumbing Code (UPC) requires that no grease trap have a capacity less than 20 gallons per minute (GPM) or more than 55 GPM. The size of the interceptor depends upon the size, type, and number of fixtures connected to it. The size will also depend largely upon the maintenance schedule. If a grease interceptor is not maintained regularly it will not provide the necessary grease removal. The establishment should work out a specific cleaning schedule that is right for them. All grease interceptors need to have the grease cleaned out periodically and no one likes to do it- it's a dirty job. Running extremely hot water down the drain only moves the problem down stream. It does not go away. Catch the grease at the source! This is the most economical way to reduce all costs.

What if I don't install a grease interceptor?

If the establishment uses grease and oil in food preparation, it will eventually encounter a maintenance problem with a plugged building sewer line. The blockage can create a sewer backup and ultimately a potential health problem in the establishment. Someone will have to pay for removing the blockage. If the problem is in the building sewer line, then the establishment has direct responsibility for paying for the maintenance. If the blockage or restriction is in the public sewer main and it can be proven that the establishment is the cause of the blockage, then the establishment may have to pay for the public sewer to be maintained. The City of Port Angeles ordinance gives the City the authority to recover costs for repairs to the City sewer system due to failure to comply with the City requirements. Blocking a sanitary sewer line is also a violation of the federal Clean Water Act.

Who determines if I need a grease interceptor?

When waste pretreatment is required by the City of Port Angeles, an approved grease interceptor shall be installed according to the currently adopted plumbing code. The City of Port Angeles prohibits the discharge of materials that can solidify and create blockages in the wastewater collection system or treatment plants. The Clallam County Health Department makes periodic inspections to see that no health problems exist due to improperly maintained grease interceptors. City of Port Angeles staff may periodically inspect to ensure proper grease interceptor maintenance. These rules will be enforced if a problem exists.

How can I get in compliance?

The establishment should contact the City of Port Angeles. The establishment will be asked to purchase a permit for the grease trap. This will enable the City of Port Angeles to assist the establishment in cleaning schedules and advise them of a problem showing up in the wastewater collection system. A grease interceptor permit is required regardless of whether the establishment has an existing interceptor or is installing a new one.

What are the criteria for inspecting grease interceptors?

All food service establishment grease interceptors will be inspected. In general, grease interceptors should not have more than ¼ (25%) of the tank depth filled with floating grease and/or settled solids (or a combination of them).

If the floating grease and/or settled solids level exceeds ¼ (25%) of the tank depth, the establishment is advised to keep an eye on the maintenance schedule. The cleaning frequency may need to be increased. If the sediment level exceeds ½ of the tank depth, the establishment may be issued a compliance order to have it cleaned immediately. The establishment may be required to contact the city within 30 days to verify that the grease interceptor has been properly cleaned.

Chapter 3
Best Management Practices

Fats, oil, and grease (FOG) can be managed effectively in the food service industry to minimize adverse impacts on municipal wastewater systems and the environment. Municipal pretreatment staff and food service industry workers have developed Best Management Practices (BMPs) that, when implemented, will minimize the adverse impacts of FOG. This chapter summarizes these BMPs, and other important information, including the reason for BMPs, the benefit of BMPs to the food service industry, and inspection tips for City of Port Angeles staff to determine if the BMPs are being implemented.

Train kitchen staff

BMP	Train kitchen staff and other employees about how they can help ensure BMPs are implemented.
Reason For	People are more willing to support an effort if they understand the basis for it.
Benefit to food service establishment	All of the subsequent benefits of BMPs will have a better chance of being implemented.
Pretreatment inspection tips	Talk to the establishment manager about the training program that he/she has implemented.

Post “No Grease” signs

BMP	Post “No Grease” signs above sinks and on the front of dishwashers.
Reason For	Sign serves as a constant reminder for staff working in kitchens.
Benefit to food service establishment	These reminders will help minimize grease discharge to the interceptors and reduce the cost of cleaning and disposal.
Pretreatment inspection tips	Check appropriate locations for “No Grease” signs.

Use water temperatures less than 140° F

BMP	Use water temperatures less than 140° F in all sinks, especially the pre-rinse sink before the mechanical dishwasher. The mechanical dishwasher requires a minimum temperature of 160° F, but the UPC prohibits discharging the dishwasher to grease interceptors.
Reason For	Temperatures in excess of 140° F will dissolve grease, but the grease can re-congeal or solidify in the sanitary sewer system as the water cools.
Benefit to food service establishment	The food service establishment will reduce its costs for the energy – gas or electric – to heat the water.
Pretreatment inspection tips	Check boiler or hot water heater discharge temperature. Measure the temperature of the hot water being discharged from the closest sink.

Use a three-sink dishwashing system

BMP	Use a three-sink dishwashing system, which includes sinks for washing, rinsing, and sanitizing in a 50 to 100-pip bleach solution. Water temperatures are less than 140° F.
Reason For	The three-sink system uses water temperatures less than 140° F where a mechanical dishwasher requires a minimum temperature of 160° F. Note: The UPC prohibits the discharge of mechanical dishwasher water to grease interceptors.
Benefit to food service establishment	The food service establishment will reduce its costs for the energy – gas or electric – to heat the water for the mechanical dishwasher and to run it.
Pretreatment inspection tips	Measure the temperature of the hot water at the three-sink system.

Recycle waste cooking oil

BMP	Recycle waste cooking oil.
Reason For	There are many waste oil recyclers throughout Washington. This is a cost recovery opportunity.
Benefit to food service establishment	The food service establishment may be paid for the waste material and will reduce the amount of garbage it must pay to have hauled away.
Pretreatment inspection tips	Obtain the name of the recycler used. Review recycling records. Confirm records with the recycler.

"Dry wipe" pots, pans, and dishware prior to dishwashing

BMP	"Dry wipe" pots, pans, and dishware prior to dishwashing.
Reason For	The grease and food that remains in pots, pans, and dishware will likely go to the landfill. By "dry wiping" and disposing in garbage receptacles, the material will not be sent to the grease interceptors.
Benefit to food service establishment	This will reduce the amount of material going to grease interceptors, which will require less frequent cleaning, reducing maintenance costs.
Pretreatment inspection tips	Observe dishwashing practices.

Don’t put food waste down the drains- recycle or trash it

BMP	Dispose of food waste by recycling and/or solid waste removal.
Reason For	Some recyclers will take food waste for animal feed. In the absence of such recyclers, the food waste can be disposed as solid waste in landfills by solid waste haulers.
Benefit to food service establishment	Recycling food wastes will reduce the cost of solid waste disposal. Solid waste disposal of food waste will reduce the frequency and cost of grease interceptor cleaning.
Pretreatment inspection tips	Inspect grease interceptors for food waste accumulation. Confirm the recycler or solid waste removal company with the establishment manager.

Witness all grease interceptor cleaning and maintenance

BMP	Witness all grease interceptor cleaning and maintenance activities to ensure that the device is properly operating.
Reason For	A *few* grease interceptor cleaners and recyclers may take shortcuts. If the establishment manager watches the cleaning operation and ensures it is consistent with the procedures in *Grease Interceptor Maintenance* (Chapter 6) they are more likely to get full value for their money.
Benefit to food service establishment	The establishment will ensure it is getting value for the cost of cleaning the grease trap or interceptor. Otherwise the establishment may be paying for cleaning more often than necessary.
Pretreatment inspection tips	None.

Keep a maintenance log

BMP	Keep a maintenance log of the grease interceptor.
Reason For	The maintenance log serves as a record of the frequency and volume of cleaning the interceptor. It is required by the City of Port Angeles to ensure that grease interceptor maintenance is performed on a regular basis.
Benefit to food service establishment	The maintenance log serves as a record of cleaning frequency and can help the establishment manager optimize cleaning frequency to reduce cost.
Pretreatment inspection tips	Inspect maintenance log. Provide the establishment with a sample maintenance log if it does not have one. Confirm the maintenance log with the grease hauler identified.

Clean hydro-mechanical grease interceptors weekly

BMP	Clean hydro-mechanical grease interceptors weekly. If grease interceptors are more than 25% full with grease and/or solids when cleaned weekly, the cleaning frequency needs to be increased.
Reason For	Hydro-mechanical grease interceptors have less volume than gravity grease interceptors. Weekly cleaning of hydro-mechanical grease interceptors by the establishment's own maintenance staff will reduce the cost of cleaning the establishment's gravity grease interceptor. If the establishment does not have a gravity grease interceptor, the hydro-mechanical grease interceptor is the only means of preventing grease from entering the sanitary sewer system. If the hydro-mechanical grease interceptor is not providing adequate protection, the local sewer agency may require installation of a gravity grease interceptor.
Benefit to food service establishment	This will extend the length of the cleaning cycle for any gravity grease interceptors that the establishment maintains.
Pretreatment inspection tips	Visually inspect the contents of the hydro-mechanical grease interceptor. Inspect cleaning records.

Pump and clean gravity grease interceptors routinely

BMP	Clean gravity grease interceptors at least every 90 days.
Reason For	Gravity grease interceptors must be cleaned routinely to ensure that grease accumulation does not cause the interceptor to operate poorly. The cleaning frequency is a function of the type of establishment, the size of the interceptor, and the volume of flow discharged by the establishment.
Benefit to food service establishment	Routine cleaning will prevent plugging of the sewer line between the food service establishment and the sanitary sewer system. If the line plugs, the sewer line may back up into the establishment, and the business will need to hire someone to unplug it.
Pretreatment inspection tips	No more than 25% of the total liquid depth should be grease, solids, or a combination of the two.

Cover outdoor grease and oil storage containers

BMP	Cover outdoor grease and oil storage containers.
Reason For	Uncovered grease and oil storage containers can collect rainwater. Since grease and oil float, the rainwater can cause an overflow onto the ground. Such an overflow will eventually reach the stormwater system and nearby streams. The discharge of grease and oil to the storm drain system will degrade the water quality of receiving waters by adding biological and chemical oxygen demand to the water.
Benefit to food service establishment	Establishment can avoid legal penalties or fines that might result from discharge of grease and oil to the storm drain.
Pretreatment inspection tips	Observe storage area for signs of oil and grease. Inspect containers for covers. Open covers to ensure containers have not overflowed and do not have excess water.

Locate grease dumpsters and storage containers away from storm drain catch basins

BMP	Locate grease dumpsters and storage containers away from storm drain catch basins. Be aware of oil and grease dripped on the ground while carrying waste to the dumpster, as well as oil and grease that may “ooze” from the dumpster
Reason For	The farther away from the catch basin, the more time someone has to clean up spills or drainage prior to it entering the storm drain system. The discharge of grease and oil to the storm drain system will degrade the water quality of receiving waters by adding biological and chemical oxygen demand to the water.
Benefit to food service establishment	Establishment can avoid legal penalties or fines that might result from discharge of grease and oil to the storm drain.
Pretreatment inspection tips	Observe storage area for signs of oil and grease. Inspect the closest catch basin for signs of accumulated grease and oil.

Use absorbent pads or other material in storm drain catch basins

BMP	Use absorbent pads or other material in the storm drain catch basins if grease dumpsters and containers must be located nearby. The City of Port Angeles stormwater engineer may assist in implementation of this BMP. Do not use free flowing absorbent materials such as "kitty litter" or sawdust.
Reason For	Absorbent pads and other materials can serve as an effective barrier to grease and oil entering the storm drain system. The discharge of grease and oil to the storm drain system will degrade the water quality of receiving waters by adding biological and chemical oxygen demand to the water.
Benefit to food service establishment	Establishment can avoid legal penalties or fines that might result from discharge of grease and oil to the storm drain.
Pretreatment inspection tips	Check the nearest catch basin and drainage paths for signs of grease and oil. Require absorbent pads if the basin is within 20 feet of grease dumpsters or containers, or if there are signs of grease in the catch basin at any distance. Do not permit the use of free flowing absorbent material such as "kitty litter" or sawdust.

Use absorbent pads or other material to clean up spilled material

BMP	Use absorbent pads or other material to clean up spilled material around outdoor equipment, containers or dumpsters. Do not use free flowing absorbent materials such as “kitty litter” or sawdust that can be discharged to the storm drain system.
Reason For	Absorbent pads or materials can help clean up grease and oil that is spilled on the ground and prevent it from flowing to the storm drain system. The discharge of grease and oil to the storm drain system will degrade the water quality of receiving waters by adding biological and chemical oxygen demand to the water.
Benefit to food service establishment	Establishment can avoid legal penalties or fines that might result from discharge of grease and oil to the storm drain.
Pretreatment inspection tips	If grease and oil are observed on the ground in the storage area, recommend the use of absorbents to minimize movement of the grease and oil. Do not permit the use of free flowing absorbent material such as “kitty litter” or sawdust.

Routinely clean kitchen exhaust system filters

BMP	Routinely clean kitchen exhaust system filters.
Reason For	If grease and oil escape through the kitchen exhaust system, it can accumulate on the roof of the establishment and eventually enter the storm drain system when it rains. The discharge of grease and oil to the storm drain system will degrade the water quality of receiving waters by adding biological and chemical oxygen demand to the water.
Benefit to food service establishment	Establishment can avoid legal penalties or fines that might result from discharge of grease and oil to the storm drain.
Pretreatment inspection tips	Inspect roof (if safely accessible) for signs of oil and grease. Require a maintenance schedule and records for cleaning exhaust filters. Cleaning is usually by washing, which will discharge the grease to the interceptor where it can be controlled.

Chapter 4
Prohibitions Relating to Discharge of Fats, Oil, and Grease

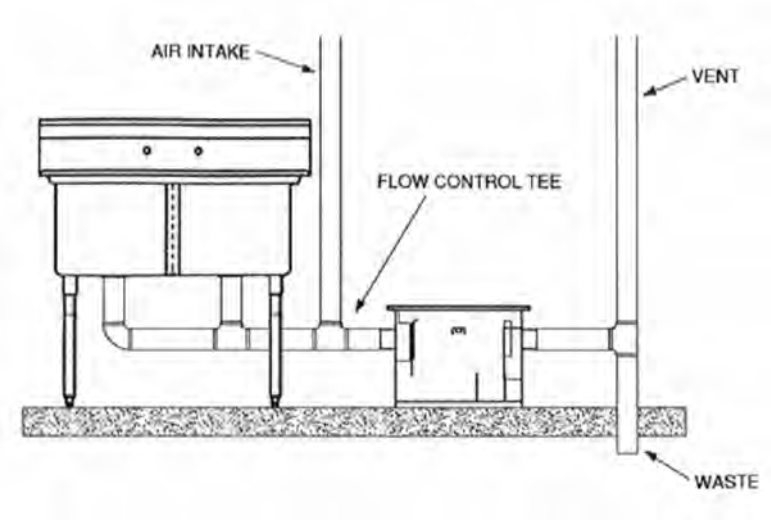
Certain activities relating to discharge of fats, oil, and grease are prohibited. These activities, if allowed, would interfere with the proper operation of grease interceptors and potentially have an immediate, negative effect on the municipal wastewater system or the environment. This chapter provides a list of prohibited activities and the basis for each prohibition.

Prohibitions	Basis
Do not discharge fats, oil, and grease in concentrations that will cause an obstruction to the flow in a sewer, or pass through or cause interference at a wastewater treatment facility.	Grease can solidify and trap other solid particles to completely plug the wastewater collection system.
Do not discharge grease, improperly shredded garbage, animal guts or tissues, paunch manure, bones, hide, hair, fleshings, or entrails.	These materials in combination or alone can cause blockages and other operations and maintenance problems in the wastewater collection and treatment system.
Do not discharge wastewater with temperatures in excess of 140° F to any hydro-mechanical grease interceptors. This includes water from mechanical dishwashers that have a minimum required temperature of 160° F.	Temperatures in excess of 140° F will dissolve grease, but the grease can re-congeal and cause blockages farther downstream in the sanitary sewer collection system as it cools. Note: High temperature water, such as from a mechanical dishwasher, is discharged to the remotely located gravity grease interceptor, if there is one. The remote location and the high volume of the gravity grease interceptor allows the water time to cool so that there is not a problem with dissolving grease and moving it farther downstream. The high volume also provides dilution of the detergents in the dishwasher waste.
Do not discharge waste from a food waste disposal unit to any grease interceptor.	The food waste will greatly reduce the capacity of the grease interceptor for retaining grease and can cause worse problems with blockages.

Prohibitions	Basis
Do not discharge caustics, acids, solvents, or other emulsifying agents.	Though emulsifying agents can dissolve solidified grease, the grease can re-congeal further downstream in the sanitary sewer collection system. Caustics, acids, and solvents can have other harmful effects on the wastewater treatment system and can be hazardous to those working in the wastewater collection system.
Do not discharge fats, wax, grease or oils containing substances that will become viscous between 32° F (0°C) and 150°F (65°C).	The temperatures shown are temperatures that can occur in the wastewater collection and treatment system. If these substances congeal, solidify, or become too viscous, they can cause blockages and other operations and maintenance problems.
Do not utilize biological agents for grease remediation without permission from the sewerage agency receiving the waste.	The biological agents may disrupt the biological treatment process at the wastewater treatment plant.
Do not clean equipment outdoors in an area where water can flow to the gutter, storm drain, or street.	Grease and dirt will be washed off the equipment and enter the storm drain system and flow to nearby streams.

Chapter 5
How Grease Interceptors Work

Understanding how treatment devices work improves operation and maintenance. The chapter uses a graphic of each device, with a description keyed to each element of the graphic. The description is designed to follow the flow of wastewater through the grease interceptor.



Typical installation of a hydro-mechanical grease interceptor.

What Size Grease Interceptor Does My Business Need?

The City of Port Angeles requires food service establishments and other affected businesses to size pretreatment devices in accordance with the currently adopted plumbing code and State-adopted amendments.

Essentially, the size of the grease interceptor is determined by the volume of water and other material that can be discharged to it at any one time, and the period of time required to drain the fixtures, equipment, and appliances that drain to the interceptor.

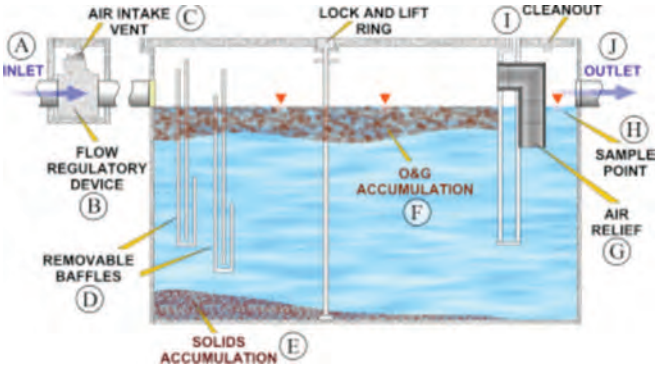
Grease interceptor sizes are expressed in terms of their incoming flow rate (in gallons per minute- GPM), or their rated capacity (in pounds- lbs.), which is twice the GPM. For example, a grease interceptor with a 25 GPM incoming flow rate has a rated capacity of 50 lbs. of grease storage.

To determine the proper permitting, sizing, and installation of your grease interceptor, consult with the Port Angeles Building Department @ (360) 417-4817, a licensed commercial plumber, and/or the currently adopted plumbing code and State-adopted amendments.

(In the 2009 Uniform Plumbing Code, refer to Tables 7-3, 7-5, 10-2, and 10-3, as well as Section 1014.0 Grease Interceptors. Please note these references may change in later-adopted or -revised versions of the plumbing code.)

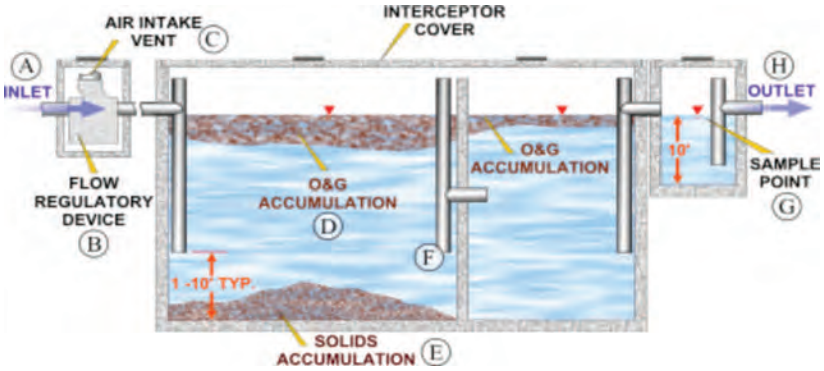
- A ***hydro-mechanical*** grease interceptor is a small (20 – 50 gallons) tank usually located inside a food service establishment, under a counter or sink.
- A ***gravity*** grease interceptor is a vault with a minimum capacity of 500 – 750 gallons that is located on the exterior of the building.

How Hydro-mechanical Grease Interceptors Work



Item	Description
A	Flow from four or fewer kitchen fixtures enters the hydro-mechanical grease interceptor.
B	An approved flow control or restricting device is installed to restrict flow to the grease interceptor to its rated intake capacity.
C	An air intake valve allows air into the open space of the grease interceptor to prevent siphoning and backpressure.
D	Baffles help to retain grease toward the upstream end of the grease interceptor since grease floats and will generally not go under the baffle. This helps to prevent grease from leaving the grease interceptor and moving farther downstream where it can create blockages.
E	Solids in the wastewater that do not float will be deposited on the bottom of the grease interceptor and will need to be removed during routine grease interceptor cleaning.
F	Oil and grease floats on the water surface and accumulates behind the baffles. The oil and grease will be removed during routine grease interceptor cleaning.
G	Air relief is provided to maintain proper air circulation within the grease interceptor.
H	Some grease interceptors have a sample point at the outlet end of the trap to sample the quality of the effluent.
I	A cleanout is provided at the outlet or just downstream of the outlet to provide access into the pipe to remove any blockages.
J	The water exits the grease interceptor through the outlet pipe and continues on to a gravity grease interceptor or the sanitary sewer system.

How Gravity Grease Interceptors Work



Item	Description
A	Flow from hydro-mechanical grease interceptors or directly from plumbing fixtures enters the gravity grease interceptor. The UPC requires that all flow entering the gravity grease interceptor enter through the inlet pipe.
B	An approved flow control or restricting device is installed to restrict the flow to the grease interceptor to its rated intake capacity.
C	An air intake valve allows air into the open space of the grease interceptor to prevent siphoning and backpressure.
D	Oil and grease floats on the water surface and accumulates behind the grease retaining fittings and the wall separating the compartments. The oil and grease will be removed during routine grease interceptor cleaning.
E	Solids in the wastewater that do not float will be deposited on the bottom of the grease interceptor and will need to be removed during routine grease interceptor cleaning.
F	Grease retaining fittings extend down into the water to within 12 inches of the bottom of the interceptor. Because grease floats, it generally does not enter the fitting and is not carried into the next compartment. The fittings also extend above the water surface to provide air relief.
G	Some grease interceptors have a sample box so that inspectors or employees of the establishment can periodically take effluent samples. Having a sample box is recommended by the UPC but not required.
H	Flow exits the grease interceptor through the outlet pipe and continues on to the sanitary sewer system.

Chapter 6
Grease Interceptor Maintenance

Grease interceptors must be cleaned on a regular basis to ensure that they work properly. Regular cleaning can improve their efficiency and effectiveness. This chapter describes step-by-step maintenance actions that can be used to clean these devices.

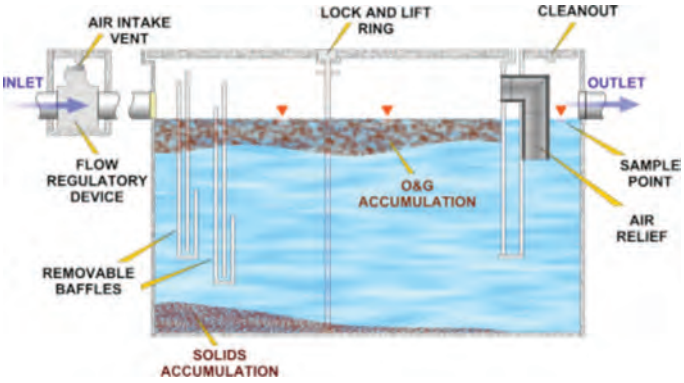
Maintenance staff, or other employees, usually perform hydro-mechanical grease interceptor maintenance. Gravity grease interceptor maintenance, which is usually performed by permitted haulers or recyclers (*See Fats, Oil, and Grease Haulers and Recyclers* (Chapter 7)), consists of removing the entire volume (liquids and solids) from the gravity grease interceptor and properly disposing of the material in accordance with all Federal, State, and/or local laws. When performed properly and at the appropriate frequency, grease interceptor maintenance can greatly reduce the discharge of FOG into the wastewater collection system.

The required maintenance frequency for grease interceptors depends greatly on the amount of FOG a facility generates as well as any BMPs implemented to reduce FOG discharges. In many cases, an establishment that implements BMPs may save money by extending their grease interceptor maintenance intervals. Refer to *Best Management Practices* (Chapter 3) for examples of BMPs that FOG generating establishments can implement.

WARNING!

Do not use hot water, acids, caustics, solvents, or emulsifying agents when cleaning grease traps and interceptors.

Hydro-mechanical Grease Interceptor Maintenance



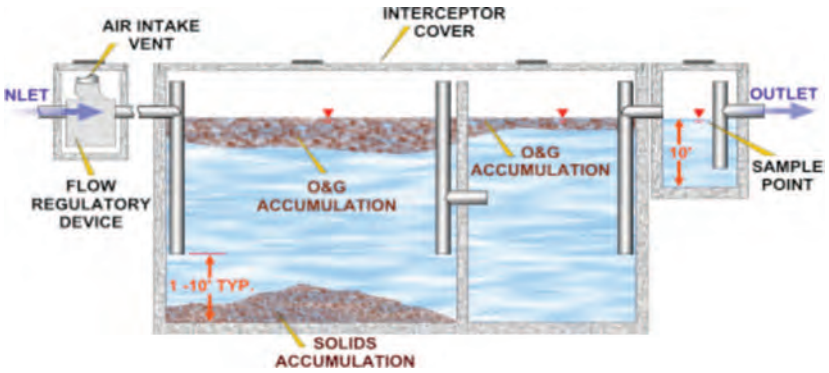
Item	Description
1	Dip the floating grease out of the interceptor and deposit in a watertight container.
2	Remove baffles if possible.
3	Bail out any water in the interceptor to facilitate cleaning. Store it in a separate container temporarily.
4	Scrape the sides, the lid, and the baffles with a putty knife to remove as much of the grease as possible. Add this grease and the settled solids to the grease in the watertight container.
5	Record the volume of grease and solids removed on the maintenance log.
6	Replace the baffles and refill the interceptor with clean cold water. Close the lid securely.
7	Dispose of the “dirty” water in a toilet, or upstream of the grease interceptor via a mop sink, but NEVER via a food preparation or hand washing sink.
8	Dispose of the grease and solids, in the closed container, with your solid waste.

Gravity Grease Interceptor Maintenance

Gravity grease interceptors, due to their size, are usually cleaned by grease haulers or recyclers. Licensed septic haulers can also pump out grease interceptors and haul the waste to the treatment plant. A proper maintenance procedure for a gravity grease interceptor is outlined below:

Since the establishment is liable for the condition of their pretreatment devices, the establishment owners/representatives should witness all cleaning/maintenance activities to verify that the interceptor is being fully cleaned and properly maintained.

SAFETY NOTE: Because of their large volume and limited access, some gravity grease interceptors could pose special confined space hazards (drowning, hazardous atmospheres). NEVER enter a confined space- contact a qualified professional.



Item	Description
1	Contact a grease hauler or recycler for cleaning. *See Fats, Oil, and Grease Haulers and Recyclers* (Chapter 7).
2	Ensure that all flow is stopped to the interceptor by shutting the isolation valve in the inlet piping to the interceptor.
3	Remove the lid and dip the accumulated grease out of the interceptor and deposit in a watertight container.
4	Remove baffles if possible.
5	Bail or pump out any water in the interceptor to facilitate cleaning. The water should be discharged to the sanitary sewer system.
6	Pump out the settled solids and any remaining liquids.
7	Scrape the sides, the lid, and the baffles to remove as much grease as possible, and deposit it into a watertight container.
8	Replace the baffles and the lid.
9.	Record the volume of grease removed on the maintenance log.

Grease Interceptor Cleaning Record

Facility Name: _____

Address: _____

Service Company used: _____

Date	Cleaned by	Witnessed by	Gallons pumped	Grease disposal site	Remarks

Chapter 7
Fats, Oil, and Grease Haulers and Recyclers

Regular cleaning of grease interceptors requires that the accumulated fats, oil, and grease be physically removed from the interceptor and properly disposed or recycled. This chapter provides a list of FOG hauling and recycling businesses that serve the North Olympic Peninsula. Phone numbers and acceptance criteria are provided for each business.

NOTE: Only Clallam County licensed septic haulers may pump grease interceptors in Port Angeles, so please check with Clallam County Environmental Health if your pumper does not appear on this list, which was updated in November 2012.

Septic Haulers	Phone number	Acceptance criteria
Acme Portable Toilets LLC Port Angeles, WA	360-457-8766	Pumps out grease interceptors.
Arrow Septic Port Angeles, WA	360-457-8481 360-683-3810	Pumps out grease interceptors.
Goodman Septic Services Port Angeles, WA	360-457-5596	Pumps out grease interceptors.
Good Man, Inc. Port Angeles, WA	360-385-7155 1-800-743-2515	Pumps out grease interceptors.
Northwest Cascade, Inc. Puyallup, WA	253-848-2371	Pumps out grease interceptors.
On-Site Monitoring and Inspections (O.M.I.) Port Angeles, WA	360-457-9438	Pumps out grease interceptors.
Peninsula Drain & Septic Port Angeles, WA	360-928-9583 360-457-5494	Pumps out grease interceptors.

Grease Recyclers	Phone number	Acceptance criteria
Baker Commodities	206-242-7387	Picks up and recycles cooking oil. Provides storage container for oil. Renders meat trimmings and "BBQ slop."
Darling International	800-524-2401	Picks up and recycles cooking oil. Provides storage container for oil.
Encore Oils (also known as SeQuential Pacific & Standard Biodiesel)	206-999-8501	Picks up and recycles cooking oil. Provides storage container for oil.
Evergreen Sanitation, Inc.	800-433-1678	Picks up and recycles cooking oil. Provides storage container for oil.
General Biodiesel	206-932-1600	Clear vegetable oils only. Provides storage container for oil.
Rainier Rendering	206-938-2061	USDA-approved scraps ONLY. No dead livestock or roadkill.

Acknowledgements

The authors gratefully acknowledge the input and review provided by the members of the Oregon Association of Clean Water Agencies Industrial Pretreatment Committee and the material contributed by the Unified Sewerage Agency of Washington County, Oregon and the City of Woodburn Oregon.

Appendix A
Port Angeles Sewer Use Ordinance No. 3397
Sections 13.06.011, 13.06.012, & 13.06.030 through 13.06.039 (4/30/2010)

Chapter 13.06 – INDUSTRIAL WASTEWATER PRETREATMENT

13.06.011 - Definitions.

Unless a provision explicitly states otherwise, the following terms and phrases, as used in this chapter, shall have the meanings hereinafter designated:

A. *"Act"* - The Clean Water Act (33 U.S.C. 1251 et seq.), as amended.

B. *"Additive"* - Any material put into a grease removal system (GRS) or any drain lines or appurtenances discharging to a GRS intended in any way to modify the operation of the GRS.

C. *"AKART"* - All known available and reasonable treatment technology.

D. *"Applicable Pretreatment Standards"* - For any specified pollutant, the City's prohibitive discharge standard, the City's specific limitations on discharge, the State of Washington pretreatment standards, or the National Categorical Pretreatment Standards (when effective), whichever standard is most stringent.

E. *"Authorized or duly authorized representative of the user"* -

1. If the user is a corporation:

   a. The president, secretary, treasurer, or a vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

   b. The manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital

investment recommendations, and initiate and direct other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; can ensure that the necessary systems are established or actions taken to gather complete and accurate information for control mechanism requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. If the user is a partnership or sole proprietorship: a general partner or proprietor, respectively.
3. If the user is a Federal, State, or local governmental facility: a director or highest official appointed or designated to oversee the operation and performance of the activities of the regulated facility, or their designee.
4. The individuals described in paragraphs 1. through 3., above, may designate another authorized representative if the authorization is in writing, the authorization specifies the individual or position responsible for the overall operation of the facility from which the discharge originates or having overall responsibility for environmental matters for the company, and the written authorization is submitted to the City.

F. *"Automatic grease removal system (AGRS)"* - A GRS that has provision to automatically remove separated FOG and/or settled solids from the tank and collect them for disposal.

G. *"Biochemical oxygen demand or BOD"* - The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedures for five days at 20 degrees centigrade, usually expressed as a concentration (e.g., mg/l).

H. *"Best Management Practices or BMPs"* - means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to implement the prohibitions listed in section 13.06.030.A. and B. [40 CFR 403.5(a)(1) and (b)]. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage.

I. *"Categorical Pretreatment Standard or Categorical Standard"* - Any regulation containing pollutant discharge limits promulgated by EPA in accordance with Sections 307(b) and (c) of the Act (33 U.S.C. Section 1317) which apply to a specific category of users and which appear in 40 CFR Chapter I, Subchapter N, Parts 405-471.

J. *"Categorical Industrial User"* - An industrial user subject to a Categorical Pretreatment Standard or Categorical Standard.

K. *"City"* - City of Port Angeles, Washington.

L. *"Composite sample"* - A composite of several samples taken throughout the period of a day when a regulated discharge is occurring. Several brands of electric samplers, some with a refrigerated sample collection area, may be used. Approvable composite samplers may either use a flow paced or time paced algorithm.

M. *"Daily limit or daily maximum limit"* - The maximum allowable discharge of a pollutant over a calendar day or equivalent representative 24-hour period.

N. *"Director"* - The City of Port Angeles' Public Works and Utilities Director. The term also means a duly authorized representative of the Director. Whenever in this chapter the Director is given authority to establish limits, extend or shorten time, make a determination or finding, or make other decisions, he shall do so within the bounds of applicable local, state, and federal law and in accordance with BMPs.

O. *"Discharge authorization"* - A wastewater discharge permit authorizing users to discharge wastewater to the Port Angeles POTW. These permits would be for users other than minor industrial dischargers but still requiring a control mechanism.

P. *"Discharger"* - Any non-residential user who, by any means, discharges an effluent into a POTW.

Q. *"Environmental Protection Agency"* - The U.S. Environmental Protection Agency or, where appropriate, the Regional Water Management Division Director, the Regional Administrator, or other duly authorized official.

R. *"Existing source"* - Any source of discharge subject to Categorical Standards that does not meet the definition of a "new source."

S. *"Fats, oils, and grease (FOG)"* - The term fats, oils, and grease shall mean those components of wastewater amenable to measurement by the methods described in Standard Methods for the examination of water and wastewater, latest approved edition or other methods approved by 40 CFR136. For the purposes of this chapter, the term fats, oils and grease shall include polar fats, oils, and grease and other components extracted from wastewater by these methods, excluding the non-polar fraction.

T. "*Food service establishment (FSE)"* - Any establishment, commercial or noncommercial, primarily engaged in the preparing, serving, or otherwise making available for consumption foodstuffs in or on a receptacle that requires washing more than two days per week and that discharges to the POTW.

U. *"Grab sample"* - A sample which is taken from a wastestream without regard to the flow in the wastestream and over a period of time not to exceed 15 minutes.

V. *"Grease interceptor/interceptor/interceptor-style GRS"* - Any relatively large in- ground or above-ground tank, generally, but not always, of precast concrete, with internal plumbing and baffling intended to act as a GRS or AGRS to serve one or more fixtures and that is remotely located.

W. *"Grease removal system (GRS)"* - Any device designed for, and intended for, separating, collecting, and removing waterborne FOG and settleable solids prior to discharging to the POTW. This includes any AGRS.

X. *"Grease trap/trap/trap-style GRS"* - Any relatively small appurtenance, generally, but not always, of cast iron or fabricated steel, with internal configuration and internal or external flow control, intended to function as a GRS or AGRS. All trap-style grease removal systems must be PDI or IAPMO approved.

Y. *"Indirect discharge"* - The discharge or the introduction of pollutants into the POTW from any non-domestic source regulated under Section 307(b) (c) or (d) of the Act.

Z. *"Industrial waste"* - Solid, liquid or gaseous waste resulting from any industrial, manufacturing, trade or business process or from the development, recovery or processing of natural resources.

AA. *"Instantaneous maximum discharge limit"* or *"instantaneous limit"* - The maximum concentration of a pollutant allowed to be discharged at any time, determined from the analysis of a discrete sample. Where a user is required to take a grab sample for purposes of determining compliance with local limits, this standard is the same as the daily maximum standard. For pollutants for which users are required to take composite samples, (or for metals if no permit has been issued) the instantaneous limit shall be twice the daily limit.

BB. *"Interference"* - A discharge which causes (either by itself or in combination with other discharges) a violation of the City's NPDES permit or prevents the intended sewage sludge use or disposal by inhibiting or disrupting the POTW, including its collection systems, pump stations, and wastewater and sludge treatment processes. An example is a discharge from a user which causes a blockage resulting in a discharge at a point not authorized under the City's NPDES permit.

CC. *"Local limits"* - Effluent limitation developed for users by the director to specifically protect the POTW from the potential of pass through, interference, vapor toxicity, explosions, sewer corrosion, and contaminations of biosolids. Such limits shall be based on the POTW's site-specific flow and loading capacities, receiving water considerations, and reasonable treatment expectations for non-domestic wastewater.

DD. *"May"* - Is permissive (see "shall").

EE. *"Medical waste"* - Isolation wastes, infectious agents, human blood and blood products, pathological wastes, sharps, body parts, contaminated bedding, surgical wastes, potentially contaminated laboratory wastes, and dialysis wastes.

FF. *"Minor industrial user (MIU)"* - A non-categorical industrial or commercial user of the POTW that does not qualify as a significant industrial user, but that operates facilities that:

1. Have some discharges of wastewater that could cause detectably elevated concentrations of metals or toxics in the pretreatment quarterly analysis; or

2. Have a discharge of small quantities of dangerous waste to the POTW which have been excluded from regulation under Chapter 173-303 WAC, or its successors, through the domestic sewage exclusion; or

3. Have a potential to discharge or spill chemicals to the POTW.

GG. *"Monthly average"* - The arithmetic mean of the effluent samples collected during a calendar month or specified 30-day period. Where the control authority has taken a sample during the period, it must be included in the monthly average if provided in time. However, where composite samples are required, grab samples taken for process control or by the control authority are not to be included in a monthly average.

HH. *"Monthly average limit"* - The limit to be applied to the monthly average to determine compliance with the requirements of this chapter (see section 13.06.045 for listing).

II. *"Natural outlet"* - Any outlet, including storm sewer overflows, into a watercourse, pond, ditch, lake or other body of surface or ground water.

JJ. *"New source"* -

1. Any building, structure, facility, or installation from which there is (or may be) a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards under Section 307(c), or its successors, of the Act which will be applicable to such source if such standards are thereafter promulgated in accordance with that section, provided that:

   a. The building, structure, facility, or installation is constructed at a site at which no other source is located; or

   b. The building, structure, facility, or installation totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or

c. The production or wastewater generating processes of the building, structure, facility, or installation are substantially independent of an existing source at the same site. In determining whether these are substantially independent, factors such as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity as the existing source, should be considered.

2. Construction on a site at which an existing source is located results in a modification rather than a new source if the construction does not create a new building, structure, facility, or installation meeting the criteria of subsection (1)(b) or (c) above but otherwise alters, replaces, or adds to existing process or production equipment.

3. Construction of a new source has commenced if the owner or operator has:

a. Begun, or caused to begin, as part of a continuous onsite construction program:

i. Any placement, assembly, or installation of facilities or equipment; or

ii. Significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment; or

b. Entered into a binding contractual obligation for the purchase of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts that can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under this paragraph.

KK. *"Non-FSE FOG discharger (NFD)"* - Any establishment, such as a church, synagogue, worship hall, banquet facility, or meeting space, with a commercial-style kitchen that is used for preparing, serving, or otherwise making available for consumption foodstuffs in or on a receptacle that requires washing two days a week or less and that discharges to the POTW.

LL. *"NPDES"* - National Pollutant Discharge Elimination System Permit program as administered by the USEPA or State.

MM. *"O and M"* - Operation and maintenance.

NN. *"Other wastes"* - Decayed wood, sawdust, shavings, bark, lime, refuse, ashes, garbage, offal, oil, tar, chemicals and all other substances except sewage and industrial wastes.

OO. *"Pass through"* - A discharge that exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the [City]'s NPDES permit, including an increase in the magnitude or duration of a violation.

PP. *"Person"* - Any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or any other legal entity; or their legal representatives, agents, or assigns. This definition includes all Federal, State, and local governmental entities.

QQ. *"pH"* - A measure of the acidity or alkalinity of a solution, expressed in standard units.

RR. *"POTW (public owned treatment works)"* - A treatment works, as defined by Section 212 of the Act (33 U.S.C. Section 1292), that is owned by the City. This definition includes any devices or systems used in the collection, storage, treatment, recycling, and reclamation of sewage or industrial wastes of a liquid nature and any conveyances, that convey wastewater to a treatment plant.

SS. *"Pollutant"* - Dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, medical wastes, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, municipal, agricultural and industrial wastes, and certain characteristics of wastewater (e.g., pH, temperature, TSS, turbidity, color, BOD, carbonaceous oxygen demand, toxicity, or odor).

TT. *"Pretreatment"* - The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to, or in lieu of, introducing such pollutants into the POTW. This reduction or alteration can be obtained by physical, chemical, or biological processes; by process changes; or by other means, except by diluting the concentration of the pollutants unless allowed by an applicable pretreatment standard.

UU. *"Sewage"* - Water-carried human wastes or a combination of water-carried wastes from residence, business buildings, institutions and industrial establishments, together with such ground, surface, storm or other waters as may be present.

VV. *"Sewer"* - Any pipe, conduit, ditch or other device used to collect and transport sewage or storm water from the generating source.

WW. *"Shall"* Is mandatory.

XX. *"Significant industrial user (SIU)"* - Except as provided in paragraph (3) below, a significant industrial user is:

1. A user subject to categorical pretreatment standards; or
2. A user that:
    a. Discharges an average of 25,000 gpd or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blowdown wastewater);
    b. Contributes a process wastestream which makes up five percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or
    c. Is designated as such by the City on the basis that it has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.
3. Upon a finding that a user meeting the criteria in paragraph (2) above has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the City may at any time, on its own initiative or in response to a petition received from a user, and in accordance with procedures in 40 CFR 403.8(f) (6), or its successors, determine that such user should not be considered a significant industrial user.

YY. *"Slugload"* or *"slug discharge"* - Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge, which has a reasonable potential to cause interference or pass through, or in any other way violate the POTW's regulations, local limits or permit conditions. This includes discharges at a flow rate or concentration that could cause a violation of the prohibited discharge standards of section 13.06.030 of this chapter.

ZZ. *"Storm water"* - Any flow occurring during or following any form of natural precipitation, and resulting from such precipitation, including snowmelt.

AAA. *"Suspended solids"* - The total suspended matter that floats on the surface of, or is suspended in, water, wastewater, or other liquid, and that is removable by laboratory filtering.

BBB. *"Toxic pollutants"* - Those substances, and any other pollutant or combination of pollutants listed as toxic in regulations promulgated by the Administrator of the Environmental Protection Agency under Section 307, or its successors, of the Clean Water Act.

CCC. *"Upset"* - An exceptional incident in which a discharger unintentionally and temporarily is in a state of noncompliance with the standards set forth in this chapter due to factors beyond the reasonable control of the discharger, and excluding noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation thereof.

DDD. *"User or industrial user"* - A source of indirect discharge.

EEE. *"Wastewater"* - Industrial waste, or sewage or any other waste including that which may be combined with any ground water, surface water or storm water, that may be discharged to the POTW.

(Ord. 3397, 4/30/2010)

13.06.012 - Abbreviations.

A. AGRS - Automatic grease removal system.

B. BOD - Biochemical oxygen demand.

C. BMP - Best Management Practice.

D. CFR - Code of Federal Regulations.

E. CIU - Categorical Industrial User.

F. DOE - Department of Ecology.

G. EPA - U.S. Environmental Protection Agency.

H. FSE - Food Service Establishment.

I. FOG - Fats, oils and greases.

J. gpd - gallons per day.

K. GRS - Grease removal system.

L. mg/l - milligrams per liter.

M. MIU - Minor industrial user.

N. NFD - Non-FSE FOG discharger.

O. NPDES - National Pollutant Discharge Elimination System.

P. POTW - Publicly owned treatment works.

Q. RCRA - Resource Conservation and Recovery Act.

R. SIU - Significant industrial user.

S. TSS - Total suspended solids.

T. USC - United States Code.

(Ord. 3397, 4/30/2010)

13.06.030 - Discharge prohibitions.

A. No user shall introduce or cause to be introduced into the POTW any pollutant or wastewater that causes pass through or interference. These general prohibitions apply to all users of the POTW whether or not they are subject to Categorical Pretreatment Standards or any other National, State, or local pretreatment standards or requirements.

B. No user shall introduce or cause to be introduced into the POTW the following pollutants, substances, or wastewater:

1. Pollutants that either alone or by interaction may create a fire or explosive hazard in the POTW, a public nuisance or hazard to life, or prevent entry into the sewers for their maintenance and repair or are in any way injurious to the operation of the system or operating personnel. This includes waste streams with a closed-cup flashpoint of less than 140 degrees F (60 degrees C) using the test methods specified in 40 CFR 261.21, or its successors.
2. Any soluble waste or wastes having a pH lower than 5.0 or higher than 10.0 or having any other corrosive property that reasonably could be hazardous to structures, equipment, or personnel of the City, such as, but not limited to, battery or plating acids and wastes, copper sulfate, chromium salts and compounds, or salt brine.
3. Solid or viscous substances in amounts that may cause obstruction to the flow in the sewer or other interference with the operation of the system. In no case shall solids greater than one-quarter inch (0.64 cm) in any dimension be discharged.
4. Pollutants, including oxygen-demanding pollutants (BOD, etc.), released in a discharge at a flow rate and/or pollutant concentration that, either singly or by interaction with other pollutants, will cause interference with the POTW.
5. Wastewater having a temperature that will interfere with the biological activity in the system, has detrimental effects on the collection system, or prevents entry into the sewer. In no case shall wastewater be discharged that causes the wastewater temperature at the treatment plant to exceed 104 degrees F (40 C).
6. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin, in amounts that will cause pass through or interference.
7. Pollutants that result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems.
8. Trucked or hauled pollutants, except at discharge points designated by the Director in accordance with section 13.06.051 of this chapter.

C. The following classes of discharge are prohibited unless approved by the Director because of extraordinary circumstances, such as lack of direct discharge alternatives due to combined sewer service or need to augment sewage flows due to septic conditions:

1. Noncontact cooling water in significant volumes.
2. Stormwater, or other direct inflow sources.
3. Wastewaters significantly affecting system hydraulic loading that do not require treatment or would not be afforded a significant degree of treatment by the system.
4. New discharges of stormwater, surface water, ground water, artesian well water, roof runoff, subsurface drainage, condensate, deionized water, noncontact cooling water, and unpolluted wastewater, unless specifically authorized by the Director.

5. Sludges, screenings, or other residues from the pretreatment of industrial wastes, unless specifically authorized by the Director.
6. Medical wastes, except as specifically authorized by the Director in a wastewater discharge permit.

D. Noxious or malodorous liquids, gases, solids, or other wastewater that either singly or by interaction with other wastes, are sufficient to create a public nuisance or a hazard to life, or to prevent entry into the sewers for maintenance or repair.

E. Wastewater that imparts color that cannot be removed by the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions, that consequently imparts color to the treatment plant's effluent, thereby violating the City's NPDES permit.

F. Wastewater containing any radioactive wastes or isotopes except in compliance with applicable State or Federal regulations.

G. Wastewater causing, alone or in conjunction with other sources, the treatment plant's effluent to fail toxicity test.

H. Detergents, surface-active agents, or other substances that may cause excessive foaming in the POTW.

I. Wastewater causing two readings on an explosion hazard meter at the point of discharge into the POTW, or at any point in the POTW, of more than ten percent or any single reading over 20 percent of the lower explosive limit based on an explosivity meter reading.

J. Pollutants, substances, or wastewater prohibited by this section shall not be processed or stored in such a manner that an unintended discharge to the sanitary sewer or the storm sewer could occur.

(Ord. 3397, 4/30/2010)

13.06.031 - Fats, oil and grease (FOG).

A. No user shall discharge more than 100 mg/l of fats, oils or greases into the sewer system at any instant. The City may sample and inspect grease traps of commercial establishments to ensure they are being maintained to reduce buildup of grease in the sewer system. The City recognizes that preventative measures are necessary to control discharges containing FOG that might cause wastewater treatment plant interference. The City may require commercial establishments to initiate Best Management Practices (BMPs) to control and maintain grease interceptors or traps.

B. All FSEs and NFDs shall have an adequate grease removal system installed and exercise proper kitchen best management practices to ensure that excess concentrations of FOG are not discharged to the POTW. The property owner shall maintain all grease interceptors or traps in accordance with manufacturer recommendations.

C. In the event that the City cleans a sewer main blocked by FOG originating from a commercial establishment, the commercial establishment shall reimburse the City for those costs.

(Ord. 3397, 4/30/2010)

13.06.032 - New construction.

A. Prior to construction of a new FSE or NFD, a building permit shall be obtained from the appropriate jurisdiction. Plan submittals shall include kitchen fixture plan views and kitchen waste plans showing all potential grease discharging lines, all GRSs, and connecting piping. The application shall be routed to the Director or his designee for review and approval prior to connecting new construction to the POTW.

B. All new single occupancy food service establishment buildings shall be constructed with properly sized grease removal systems. All kitchen drains and any other drains that may carry grease-laden waste shall be connected to a GRS. A dishwasher shall not be connected to trap-style grease removal systems. If a trap-style GRS is installed, the kitchen may not have a garbage disposal/garbage grinder/macerator or similar unit connected to it.

C. All new construction, multiple occupancy, and food service establishment buildings, shall include a separate waste line for all leasable spaces that discharge to a common 2,000 gallon or larger interceptor. This waste line shall be permanently marked to identify it as required by the Director. When a space is leased, sold, or rented to a FSE or NFD, all kitchen drains and any other drains that may carry grease-laden waste shall be connected to this waste line; no domestic sewage may be connected to this line. The property owner shall be responsible for proper maintenance of this interceptor in accordance with the provisions of this chapter.

D. All new single occupancy non-FSE FOG discharger buildings shall install a properly sized GRS. Interceptor-style GRSs are recommended, but trap-style GRSs are permissible. All kitchen drains and any other drains that may carry grease-laden waste shall be connected to this GRS (except the dishwasher if a trap-style GRS is installed). If a trap-style GRS is installed, the kitchen may not have a garbage disposal/garbage grinder/macerator or similar unit installed.

E. Any FSE or NFD undertaking a substantial remodel will be considered to be new construction for the purposes of this chapter.

(Ord. 3397, 4/30/2010)

13.06.033 - Existing construction.

A. Every person owning or operating an FSE without a functional GRS shall be required to install a functional GRS. The type of GRS required will be determined by the Director, taking into account cost, available space and gradient, and any other pertinent information. Where feasible, all kitchen drains and any other drains that may carry grease-laden waste shall be connected to the GRS. Dishwashers shall not be connected to trap-style grease removal systems. If a trap-style GRS is installed, the kitchen may not have a garbage disposal/garbage grinder/macerator or similar unit installed.

B. Any existing NFD without a functional GRS may be required to install one. The type of GRS required will be determined by the Director, taking into account cost, available space and gradient, whether the user is in a grease impact area, and any other pertinent information. Where feasible, all kitchen drains and any other drains that may carry grease-laden waste shall be connected to this GRS (except the dishwasher if a trap-style GRS is installed). If a trap-style GRS is installed, the kitchen may not have a garbage disposal/garbage grinder/macerator or similar unit installed.

(Ord. 3397, 4/30/2010)

13.06.034 - Grease removal system maintenance.

A. All grease removal systems shall be maintained to ensure proper operation. At a minimum, interceptor-style GRSs shall be cleaned at least once every 90 days and trap-style GRSs cleaned at least once per week. These required frequencies may be extended with the approval of the Director. Grease removal systems must be cleaned whenever the combined thickness of the floating greases and settled solids is equal to, or greater than, 25 percent of the total liquid depth in the GRS.

B. When cleaned, an interceptor-style GRS must be completely pumped out, all solids removed, solidified grease scraped from the interior and the structure and all internal plumbing inspected for damage and corrosion. The GRS shall be refilled with water prior to being placed back into operation. If repairs are required, they shall be performed within seven days.

C. When cleaned, a trap must have surface grease and oil removed, settled solids removed, all sides scraped, removable parts removed and cleaned, be inspected for damage and corrosion, and be properly reassembled. If repairs are required, they shall be performed within seven days.

D. The material that is removed in the process of cleaning a GRS shall not be discharged back into the GRS, any part of the POTW, any private sewer, any drainage piping, or storm sewer system. All materials removed shall be handled and disposed of in accordance with Federal, State, County and Local laws, rules and regulations.

E. In addition to the maintenance required above, automatic grease removal systems shall be maintained in accordance with the manufacturers' guidelines.

(Ord. 3397, 4/30/2010)

13.06.035 - Grease removal system additives.

No additive may be introduced to the plumbing system that would reduce the effectiveness of the GRS.

(Ord. 3397, 4/30/2010)

13.06.036 - Solids interceptor.

If a garbage disposal/garbage grinder/macerator or similar unit is installed in a kitchen, it must discharge to the GRS through a solids interceptor plumbed immediately after the garbage disposal/garbage grinder/macerator or similar unit. The solids interceptor shall be maintained in proper operating condition at all times.

(Ord. 3397, 4/30/2010)

13.06.037 - Grease removal system sizing.

Trap-style grease removal systems shall be sized in accordance with the standards in the currently adopted Plumbing Code.

(Ord. 3397, 4/30/2010)

13.06.038 - Flow controls.

All trap-style grease removal systems shall have an internal or external flow control installed to ensure that wastewater flow through the trap does not exceed the manufacturer's design flow rating. This flow control shall be maintained in operating condition at all times.

(Ord. 3397, 4/30/2010)

13.06.039 - Record keeping.

Users subject to this chapter shall document all cleaning and maintenance activities performed on their GRS. These records shall be maintained for a minimum of three years and be available for inspection and copying by the Director or his representative. This period shall be automatically extended for the duration of any litigation concerning the user or the POTW, or where the user has been specifically notified of a longer retention period required by the Director.

(Ord. 3397, 4/30/2010)

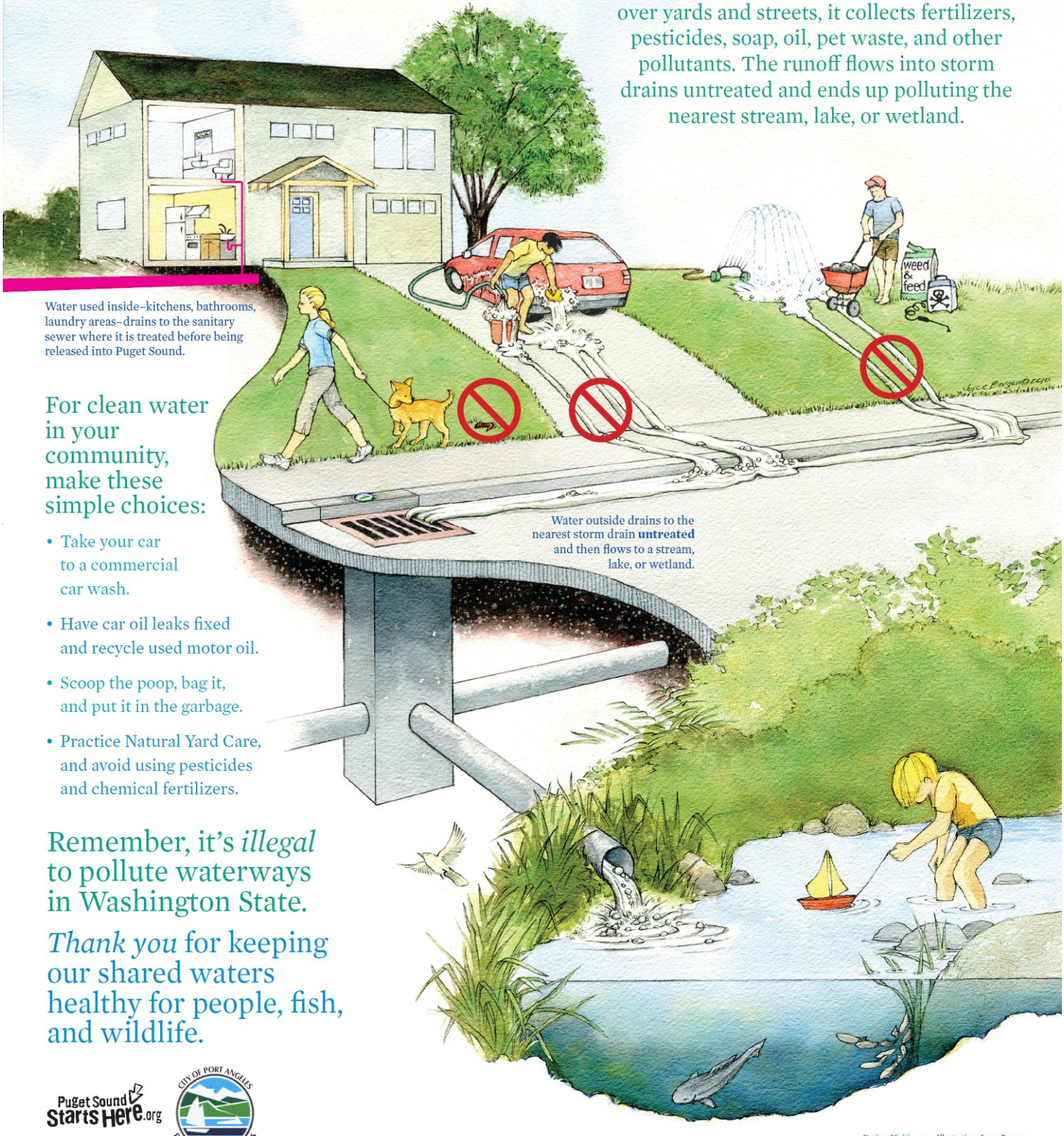
321 East 5th Street - P.O. Box 1150 / Port Angeles, WA 98362
360-417-4800
Email: publicworks@cityofpa.us
www.cityofpa.us/publicworks.htm

Do You Want *Clean Water* in Your Community?

Making simple choices prevents water pollution

Everyday activities can lead to water pollution.

When water from irrigation and rain washes over yards and streets, it collects fertilizers, pesticides, soap, oil, pet waste, and other pollutants. The runoff flows into storm drains untreated and ends up polluting the nearest stream, lake, or wetland.



For clean water in your community, make these simple choices:

- Take your car to a commercial car wash.
- Have car oil leaks fixed and recycle used motor oil.
- Scoop the poop, bag it, and put it in the garbage.
- Practice Natural Yard Care, and avoid using pesticides and chemical fertilizers.

Remember, it's *illegal* to pollute waterways in Washington State.

Thank you for keeping our shared waters healthy for people, fish, and wildlife.

Puget Sound Starts Here.org

City of Port Angeles Public Works & Utilities

Design: Vivitiv.com Illustration: Joyce Bergen

Appendix A.18

City of Port Angeles
Public Works and Utilities Department
Division Safety Training / Meeting

Topic: IC/ID Field Screening & Tracing Department or Division: PWKS, Engineering

Date: 10/6/2020 Time Start: 9:00 am End: 12:00 pm

Employees Present

Name (Print Clearly)	Signature	Date
Vince McIntyre	PWKS, Engineering	10/6/2020
Greg Haskins	PWKS, SW Operations	10/6/2020
Mike Poats	PWKS, SW Operations	10/6/2020

Virtual Training: Illicit Connection and Illicit DIscharge Field Screening and Source Tracing Training
Presenter: King County, Aspect Consulting, Herrera, & ECY Stormwater Action Monitoring
POC: Rebecca Dugopolski, Herrera
Method: Zoom

Minutes:

Copy to be maintained in division safety training file.

ILLICIT CONNECTION AND ILLICIT DISCHARGE FIELD SCREENING AND SOURCE TRACING TRAINING

Dates: October 6, October 13, October 20, and November 10, 2020

Time: 9:00am to 12:00pm

Time	Topic	Length
9:00 – 9:30	Introduction and Warm-Up • Background • Municipal Stormwater Permit requirements	30 min
9:30 – 10:15	Manual Overview • Field Screening Methodologies • Indicators • Source Tracing Methodologies	45 min
10:15 – 10:50	Team Exercise • Work with your team in a breakout room to trace the source of an illicit discharge for the lowest cost	35 min
10:50 – 11:00	Break	10 min
11:00 – 11:45	Field Equipment Demos/Videos • Demonstrate a variety of indicator and source tracing field equipment	45 min
11:45 – 11:55	Field Exercise Video and Q&A • Demonstrate proper techniques for sampling and catch basin/manhole inspections	10 min
11:55 – 12:00	Q&A and Wrap-up	5 min

PORT ANGELES
PUBLIC WORKS AND UTILITIES

VIRTUAL TRAINING - 2020
IDDE Staff Training: Tracking Spreadsheet
Click here to watch the Training Video

Presented By: V. McIntyre
Recorded Date: 12/21/2020
SW Permit Section: S5.C.5.d.iii

Count	Department	Division	Name	Date Viewed
1	Public Works & Utilities	Administration	Diana Bagwell	12/21/2020
2	Public Works & Utilities	Engineering	Jonathan Boehme	12/23/2020
3	Public Works & Utilities	Engineering	Roger Vess	2/26/2021
4	Public Works & Utilities	Engineering	Jeremy Pozernick	12/31/2020
5	Public Works & Utilities	Engineering	Eric Walrath	1/11/2021
6	Public Works & Utilities	Light Operations	Tim Amiot	2/12/2021
7	Public Works & Utilities	Light Operations	Alan Oman	2/12/2021
8	Public Works & Utilities	Light Operations	Lisa Hainstock	2/12/2021
9	Parks & Recreation	Parks	Leon Leonard	2/12/2021
10	Parks & Recreation	Parks	Jim Breitbach	2/12/2021
11	Parks & Recreation	Parks	Darryl Anderson	2/12/2021
12	Parks & Recreation	Parks	Brooke Keohokalole	2/12/2021
13	Parks & Recreation	Parks	Elijah Hammel	2/12/2021
14	Parks & Recreation	Parks	Lukas Cox	2/12/2021
15	Public Works & Utilities	Stormwater	Greg Haskins	2/12/2021
16	Public Works & Utilities	Solid Waste	Jason Paynter	2/12/2021
17	Public Works & Utilities	Light Operations	Bruce Raymond	2/12/2021
18	Public Works & Utilities	Wastewater	Rachel Bowen	2/12/2021
19	Public Works & Utilities	Stormwater	Michael Poats	2/12/2021
20	Public Works & Utilities	Water	Tim Wright	2/12/2021
21	Public Works & Utilities	Electrical Engineering	Richard Smith	2/12/2021
22	Public Works & Utilities	Water	Dennis Edgington	2/12/2021
23	Public Works & Utilities	Water	Eric Johnson	2/13/2021
24	Police Department	Investigations	Joshua Powless	2/16/2021
25	Police Department	Records	Carla Jacobi	2/16/2021
26	Public Works & Utilities	Water	Benjie Flores	2/16/2021
27	Parks & Recreation	Parks	Brian Flores	2/16/2021
28	Parks & Recreation	Ocean View Cemetery	Tom Morse	2/16/2021
29	Public Works & Utilities	Light Operations	George Drake	2/17/2021
30	Public Works & Utilities	Light Operations	Jim Shay	2/17/2021
31	Public Works & Utilities	Light Operations	Logan Deane	2/17/2021
32	Public Works & Utilities	Light Operations	Brent Robinson	2/17/2021
33	Public Works & Utilities	Light Operations	Mike Smith	2/17/2021
34	Public Works & Utilities	Light Operations	Brian Van Ness	2/17/2021
35	Public Works & Utilities	Light Operations	Sean Glenn	2/17/2021
36	Public Works & Utilities	Wastewater	David Freed	2/17/2021
37	Finance	Accounting	Jason Jones	2/17/2021
38	Public Works & Utilities	Wastewater	Gary Richmond	2/17/2021
39	Public Works & Utilities	Wastewater	Tyler White	2/18/2021
40	Public Works & Utilities	Water	Jason Holbrook	2/18/2021
41	Public Works & Utilities	Administration	Michelle Hale	2/18/2021
42	Parks & Recreation	Recreation	Richard Foster	2/17/2021
43	Parks & Recreation	Recreation	Matthew Cook	2/17/2021
44	Public Works & Utilities	Water/Wastewater	Jeff Groves	2/19/2021
45	Public Works & Utilities	Street/Stormwater	Cody Romero	2/19/2021
46	Public Works & Utilities	Wastewater	Nathan Gaul	2/19/2021
47	Police Department	PenCom	Dennis Laboy	2/22/2021
48	Public Works & Utilities	Streets	Jad Groves	2/22/2021
49	Public Works & Utilities	Streets	Steve Rutz	2/22/2021
50	Public Works & Utilities	Streets	Travis Trukenmiller	2/22/2021
51	Public Works & Utilities	Streets	Jarod Bridges	2/22/2021
52	Finance	Accounting	Melody Schneider	2/23/2021
53	Public Works & Utilities	Streets	Dave Cameron	2/23/2021
54	Public Works & Utilities	Streets	Gavin Medley	2/23/2021
55	Police Department	Administration	Brian S. Smith	2/23/2021
56	Finance	Customer Service/Meter Reader	Steven Saiz	2/23/2021
57	Finance	Utility Service Coordinator/ CSR	Teresa Owen	2/23/2021
58	Finance	Accounts Payable	Julie Powell	2/23/2021
59	Police Department	Records	Katie Butler	2/23/2021
60	Fire Department	Administration	Ken Dubuc	2/23/2021

PORT ANGELES PUBLIC WORKS AND UTILITIES

VIRTUAL TRAINING - 2020
IDDE Staff Training: Tracking Spreadsheet
Click here to watch the Training Video

Presented By: V. McIntyre
Recorded Date: 12/21/2020
SW Permit Section: S5.C.5.d.iii

Count	Department	Division	Name	Date Viewed
61	Public Works & Utilities	Administration	Yvette Nichols	2/24/2021
62	Fire Department	Administration	Mike Sanders	2/24/2021
63	Community & Economic Development	Building	Pat Bartholick	2/24/2021
64	Public Works & Utilities	Water	RQ Meyer	2/24/2021
65	Police Department	Investigations	Kori Malone	2/11/2021
66	Public Works & Utilities	Light Operations	Trent Peppard	2/24/2021
67	City Manager's Office	IT Division	Todd Weeks	2/24/2021
68	Public Works & Utilities	Engineering	Sondya Moriarity	2/24/2021
69	Finance	Customer Service/Meter Reader	Luke Anderson	2/24/2021
70	Fire Department	Firefighter/ Paramedic	Tyler Gage	2/24/2021
71	Fire Department	Firefighter/ Paramedic	Dayvid Rypinski	2/24/2021
72	Fire Department	Firefighter/ paramedic	Michael Stroobant	2/24/2021
73	Police Department	PAPD	Kevin Miller	2/24/2021
74	Public Works & Utilities	Engineering	Lucy Hanley	2/24/2021
75	Public Works & Utilities	Solid Waste	Bruce Dorcy	2/24/2021
76	Public Works & Utilities	Solid Waste	Jordan Sage	2/24/2021
77	Public Works & Utilities	Solid Waste	Kevin Schmidt	2/24/2021
78	Public Works & Utilities	Solid Waste	Jeff Heustis	2/24/2021
79	Public Works & Utilities	Solid Waste	Nick Scott	2/24/2021
80	Parks & Recreation	Parks	Tim Tucker	2/24/2021
81	Police Department	Administration	Jason Viada	2/24/2021
82	Parks & Recreation	Administration	Tim Tucker	2/24/2021
83	Public Works & Utilities	Wastewater	Jeff Gagnon	2/24/2021
84	Public Works & Utilities	Wastewater	Josh Borte	2/24/2021
85	Public Works & Utilities	Wastewater	Rick Hartley	2/25/2021
86	Public Works & Utilities	Water	Luke Leonard	2/24/2021
87	Public Works & Utilities	Water	Josh Roening	2/24/2021
88	Public Works & Utilities	Water	Hunter Heckenlaible	2/24/2021
89	Fire Department	Operations	Keith Bogues	2/25/2021
90	Community & Economic Development	Building	Jim Lierly	2/25/2021
91	Finance	Administrative Analyst	Nicole Blank	2/25/2021
92	Public Works & Utilities	Equipment Services	Brian Coburn	2/25/2021
93	Public Works & Utilities	Equipment Services	Robert Lane	2/25/2021
94	Public Works & Utilities	Equipment Services	Brian Shimko	2/25/2021
95	Public Works & Utilities	Equipment Services	Jeff Long	2/25/2021
96	Public Works & Utilities	Equipment Services	Darren Voyles	2/25/2021
97	Fire Department	Lt./Paramedic	Mark Karjalainen	2/25/2021
98	Public Works & Utilities	Engineering	Rob Feller	2/25/2021
99	Public Works & Utilities	Electric Utility	Shailesh Shere	2/26/2021
100	Police Department	PAPD	Bruce Fernie	2/26/2021
101	Public Works & Utilities	Wastewater	Richard Ballard	2/26/2021
102	Public Works & Utilities	Wastewater	Randy Raymond	2/26/2021
103	Public Works & Utilities	Wastewater	Larry Waldron	2/26/2021
104	Finance	Cost and Capital	MarySue French	2/26/2021
105	Fire Department	Community Paramedics	Brian Gerdes, Daniel Montana	2/26/2021
106	City Manager's Office	IT Division	Joe Matthews	2/26/2021
107	Finance	Customer Service/Utility Billing	Tracy Rooks	2/26/2021
108	Fire Department	Lt./Paramedic	Travis McFarland	2/26/2021
109	City Manager's Office	N/A	Nathan West	2/26/2021
110	Fire Department	Medic 1	Bruce Symonds	2/26/2021
111	Fire Department	Captain/Paramedic	Jeremy Church	2/28/2021
112	Fire Department	FF/EMT	Chad Schoonhoven	2/28/2021
113	Police Department	Code Enforcement	Kyle Buchanan	2/28/2021
114	Police Department	Detectives	David Arand	3/1/2021
115	Police Department	Detectives	Trevor Dropp	3/1/2021
116	Police Department	Detectives	Jeffery Ordona	3/1/2021
117	Police Department	Detectives	Erik Smith	3/1/2021
118	Police Department	PenCom	Tom Bock	3/1/2021
119	Police Department	PenCom	Susan Craig	3/1/2021
120	Police Department	PenCom	Karl Hatton	3/1/2021

VIRTUAL TRAINING - 2020
IDDE Staff Training: Tracking Spreadsheet
Click here to watch the Training Video

Presented By: V. McIntyre
Recorded Date: 12/21/2020
SW Permit Section: S5.C.5.d.iii

Count	Department	Division	Name	Date Viewed
121	Police Department	PenCom	Jodi Simmons	3/1/2021
122	Police Department	PenCom	Mary Rife	3/1/2021
123	Police Department	PenCom	Jeff Christopher	3/1/2021
124	Police Department	PenCom	Jessica Connor	3/1/2021
125	Police Department	PenCom	Mike O'Connor	3/1/2021
126	Police Department	PenCom	Olivia Hatton	3/1/2021
127	Police Department	PenCom	Chelsea Jensen	3/1/2021
128	Police Department	PenCom	Ryan Bell	3/1/2021
129	Police Department	Code Enforcement	Erin Brown	3/1/2021
130	Public Works & Utilities	Electrical Engineering	Angel Torres	3/1/2021
131	City Manager's Office	Administrative	Sherry Curran	3/1/2021
132	Police Department	Patrol	Jared Tait	3/1/2021
133	Police Department	Patrol	Swift Sanchez	3/1/2021
134	Fire Department	Lieutenant / FF / Paramedic	Andrew Cooper	3/1/2021
135	Fire Department	FF/EMT	Tyler Carlson	3/1/2021
136	Police Department	Patrol	Brian Stamon	3/1/2021
137	Police Department	Patrol	Harold Balderson	3/1/2021
138	Police Department	Patrol	Elizabeth Hollis	3/1/2021
139	Police Department	PenCom	Brooke Pucciarelli	3/2/2021
140	Police Department	PenCom	Deb Homan	3/2/2021
141	Police Department	PenCom	Dennis Laboy	3/2/2021
142	Police Department	PenCom	Cody Brooks	3/2/2021
143	Police Department	PenCom	Gabrielle Dumler	3/2/2021
144	Fire Department	Firefighter/Paramedic	Tyler Jacobson	3/2/2021
145	Fire Department	Firefighter/EMT-B	Ryan Gonzales	3/3/2021
146	Police Department	Reoords	Joanne Droz	3/3/2021
147	Fire Department	Firefighter/EMT-B	Todd German	3/3/2021
148	City Manager's Office	IT Division	Elizabeth Strait	3/3/2021
149	Fire Department	Firefighter/Paramedic	Doug Eaton	3/3/2021
150	Fire Department	Firefighter/Paramedic	Chase Laubach	3/4/2021
151	Police Department	Patrol	Sean Ryan	3/6/2021
152	Police Department	Patrol	Clay Rife	3/6/2021
153	Public Works & Utilities	Engineering	Lucio Baack	3/8/2021
154	Public Works & Utilities	Power Resources	Joey Currie	3/9/2021
155	City Manager's Office	iT Division	James Harper	3/11/2021
156	Fire Department	firefighter/Paramedic	John Hall	3/11/2021

Certified Erosion and Sediment Control Lead (CESCL) Certification Information

First Name	Last Name	Company	City	CESCL #	Expired	Status	Training Provider
Brent	Robinson	COPA	Port Angeles	CWT18-1114	4/24/2021	Current	CWT
Cody	Romero	COPA	Port Angeles	CWT18-1115	4/24/2021	Current	CWT
Dennis	Edgington	COPA	Port Angeles	CWT18-1117	4/24/2021	Current	CWT
Eric	Wheatley	COPA	Port Angeles	CWT18-1118	4/24/2021	Current	CWT
Eric	Walrath	COPA	Port Angeles	CWT18-1119	4/24/2021	Current	CWT
Greg	Haskins	COPA	Port Angeles	CWT18-1120	4/24/2021	Current	CWT
Jad	Groves	COPA	Port Angeles	CWT18-1121	4/24/2021	Current	CWT
Jason	Hart	COPA	Port Angeles	CWT18-1123	4/24/2021	Current	CWT
Jason	Paynter	COPA	Port Angeles	CWT18-1124	4/24/2021	Current	CWT
Jeff	Bender	COPA	Port Angeles	CWT18-1126	4/24/2021	Current	CWT
Jeremy	Pozernick	COPA	Port Angeles	CWT18-1128	4/24/2021	Current	CWT
Jim	Lierly	COPA	Port Angeles	CWT18-1130	4/24/2021	Current	CWT
John	Hayduk	COPA	Port Angeles	CWT18-1131	4/24/2021	Current	CWT
Jonathan	Boehme	COPA	Port Angeles	CWT18-1132	4/24/2021	Current	CWT
Jordan	Sage	COPA	Port Angeles	CWT18-1133	4/24/2021	Current	CWT
Josh	Borte	COPA	Port Angeles	CWT18-1134	4/24/2021	Current	CWT
Leon	Leonard	COPA	Port Angeles	CWT18-1129	4/24/2021	Current	CWT
Lucio	Baack	COPA	Port Angeles	CWT18-1135	4/24/2021	Current	CWT
Michael	Poats	COPA	Port Angeles	CWT18-1136	4/24/2021	Current	CWT
Roger	Vess	COPA	Port Angeles	CWT18-1137	4/24/2021	Current	CWT
Steve	Rutz	COPA	Port Angeles	CWT18-1138	4/24/2021	Current	CWT
Vince	McIntyre	COPA	Port Angeles	CWT18-1139	4/24/2021	Current	CWT

Certified Erosion and Sediment Control Lead (CESCL) Certification Information

Andy	Reandeau	COPA	Port Angeles	CWT18-1144	4/26/2021	Current	CWT
Brian	Anders	COPA	Port Angeles	CWT18-1147	4/26/2021	Current	CWT
Gavin	Medley	COPA	Port Angeles	CWT18-1155	4/26/2021	Current	CWT
Jared	Bridges	COPA	Port Angeles	CWT18-1157	4/26/2021	Current	CWT
Jeff	Gagnon	COPA	Port Angeles	CWT18-1159	4/26/2021	Current	CWT
Mindie	Hart	COPA	Port Angeles	CWT18-1166	4/26/2021	Current	CWT
Pat	Bartholick	COPA	Port Angeles	CWT18-1168	4/26/2021	Current	CWT
Richard	Smith	COPA	Port Angeles	CWT18-1169	4/26/2021	Current	CWT
Rick	Hartley	COPA	Port Angeles	CWT18-1170	4/26/2021	Current	CWT
Timmy	Wright	COPA	Port Angeles	CWT18-1175	4/26/2021	Current	CWT

Appendix A.18

City of Port Angeles
Public Works and Utilities Department
Division Safety Training / Meeting

Topic: 2019 SWMMWW - Dev. Rev. Department or Division: PWKS, Engineering

Date: 12/18/2020 Time Start: 12:00 pm End: 4:00 pm

Employees Present

Name (Print Clearly)	Signature	Date
Vince McIntyre	V. McIntyre	12/18/2020

Virtual Training: Stormwater Management Manual for Western Washington (2019)
Presenter: Doug Howie, WA Dept. of Ecology
Host: City of Anacortes. Diane Hennebert
Recorded: 11/17/2020
Distributed By: Laurie Larson-Pugh, WA Stormwater Center
Link: https://us02web.zoom.us/rec/play/AuFPUZG8TH4lt1J1LTvwwqzXyPQU4EvxqF9123bZ1DU8ho3j0JChYJLQJWHtDLoExmI81IQIqAsAU4sW.H3yn4Y-d3X96fWKY?continueMode=true&_x_zm_rtaid=dgbGnNSlQLSXWHQ27gqNxg.1616359429516.c9460f303f8b38297004617e5606792a&_x_zm_rhtaid=473

Minutes:

Copy to be maintained in division safety training file.

CITY OF PORT ANGELES
WASHINGTON, U.S.A.
Public Works & Utilities Department

November 8th, 2019

Angela Vincent
Department of Ecology
Southwest Regional Office
Water Quality Program
PO Box 47775
Olympia, WA 98504-775

RE: S8. Monitoring and Assessment | 2019-24 Western WA Phase II Municipal Stormwater Permit (WAR045028)

Dear Angela Vincent,

This letter is to serve as official written notification of the City's intent to meet the requirements of Section S8 of our 2019-2024 Phase II Municipal Stormwater Permit with Ecology.

In lieu of conducting our own stormwater discharge monitoring program, the City intends to continue participating in the regional Stormwater Action Monitoring (SAM) program for both Status and Trends Monitoring (S8.A.2.a) and SWMP Effectiveness and Source Identification Studies (S8.B.2.a). It is understood that partnership in this regional effort requires an annual payment into a collective fund.

If you have any questions, please contact the City's Stormwater Engineer, Vince McIntyre, at (360) 417-4701.

Sincerely,

Thomas Hunter
Director of Public Works and Utilities

"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 gathered and evaluated 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 willful violations."

CC: Nathan West, City Manager
Jonathan Boehme, City Engineer
Vince McIntyre, Stormwater Engineer

Phone: 360-417-4800 / **Fax**: 360-417-4542
Website: www.cityofpa.us / **Email**: publicworks@cityofpa.us
321 East Fifth Street / Port Angeles, WA 98362-0217

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

June 11, 2020

City of Port Angeles
321 E 5th St
Port Angeles, WA 98362
WAR045028

RE: Annual SAM Invoice 2020 - City of Port Angeles

Dear Vince McIntyre:

According to our records, your municipality is participating in the Stormwater Action Monitoring (SAM) program to comply with Special Condition S8. of the:

- Phase I Municipal Stormwater Permit, or
- Phase II Western Washington Municipal Stormwater Permit

This year we are sending the SAM invoice and annual SAM report electronically rather than a hard copy that was sent in prior years. In addition, Ecology launched a new billing system this spring and we are happy to announce we can now take electronic payments. All the information is provided in the invoice.

Receipts for SAM payments are maintained in Ecology's Water Quality Permitting and Reporting Information System (PARIS) database.

The 2020 SAM invoice and the 2019 SAM Annual Report are enclosed. Learn more about SAM at ecology.wa.gov/SAM.

Please direct questions to Keunyea Song at kson461@ecy.wa.gov.

Sincerely,

Jeff Killelea, Acting Manager
Program Development Services Section
Water Quality Program

Enclosures

DEPARTMENT OF ECOLOGY
State of Washington

INVOICE

STORMWATER ACTION MONITORING

CITY OF PORT ANGELES

VINCE MCINTYRE

321 E 5TH ST
PORT ANGELES, WA 98362
USA

Invoice date	5/18/2020
Invoice number	RS-000000048
Due date	8/15/2020
@PaymentPredictor:AmountDue	9,059.00
Reference	WAR045028 Special Condition S8.A and S8.

Description	Line amount
Puget Sound Status and Trends (F92AA500)	3,204.00
Effective Studies and Source ID (F92AB500)	5,855.00
Total	**9,059.00**

Pay online

Pay by credit card (Visa/Mastercard/Discover) or bank account (electronic check) at https://ecology.wa.gov/EcoEPay.

Please have your invoice number ready: RS-000000048

Pay by mail

Detach the bottom of this invoice and send check or money order payable to:
Department of Ecology, Cashiering Unit, PO Box 47600 Olympia, WA 98504-7600 USA

Questions about your bill?

Invoice amounts are from the MS4 permits. For questions about SAM see ecy.wa.gov/SAM

INVOICE RECIEVED: 6/15/2020
BUDGET CODE: 406-7412-538-4990
LINE ITEM: ECY Monitoring & Assess. Fee
DEPT/DIV APPROVAL: PW/Engineering/SW
DATE: 6/15/2020
SIGNATURE: V. McIntyre

DETACH HERE

Detach and return this portion with your check/money order. Please write the invoice number on your check.

DO NOT SEND CASH

STORMWATER ACTION MONITORING

Total amount due $9,059.00 by 08/15/2020

Invoice number	RS-000000048
Reference	WAR045028 Special Condition S8.A and S8.

CITY OF PORT ANGELES

VINCE MCINTYRE

321 E 5TH ST
PORT ANGELES, WA 98362
USA

Mail payment to

PO BOX 47600
OLYMPIA, WA 98504-7600
USA

Stormwater Action Monitoring

2019 Annual Report

May 2020

This is the fifth annual report from the Washington State Department of Ecology (Ecology) on implementation of Stormwater Action Monitoring (SAM), a collaborative program funded by more than 90 Western Washington cities and counties, the ports of Seattle and Tacoma, and the Washington State Department of Transportation (WSDOT). Ecology manages SAM's revenues, expenditures, agreements, and communication of findings.

About SAM

Stormwater Action Monitoring (SAM) is the regional stormwater monitoring program for the municipal stormwater permits.

The goal of SAM is to improve stormwater management, reduce pollution, improve water quality, and reduce flooding. We do this by measuring stormwater impacts on the environment and evaluating the effectiveness of stormwater management techniques.

All jurisdictions, large and small, can benefit from SAM projects that are designed to produce regionally transferable findings. All permittees can implement SAM findings to protect local lakes, rivers, streams, and Puget Sound.

SAM communication webpage

SAM's website https://ecology.wa.gov/SAM has a new communication page for all SAM publications, including project fact sheets, newsletters, videos, presentation templates, and more. Ecology maintains between 17-20 webpages for SAM annually, with most detailing individual projects for active studies. Additional pages give overviews and provide transparency on the administration of SAM.

Highlights

Status and Trends monitoring

Are conditions in receiving waters getting better or worse?

In 2019, SAM scientists finalized the study design for long-term streams and nearshore monitoring in the Puget Sound region. Water level loggers were deployed at the first 33 stream sites in 2019-2020, and have been monitoring continuous water level and temperature. Round 3 mussel monitoring was completed at 41 nearshore marine sites.

Effectiveness Studies

How well are required or innovative stormwater management practices working?

The final two Round 2 SAM Effectiveness Studies began in 2019. Planning for a third round of studies was well underway in 2019; solicitation and selection will occur in 2020. Source Identification projects are going to be combined with Effectiveness Studies for Round 3.

Source Identification projects

What are the common sources of illicit discharges and best ways to reduce them?

Two Source Identification projects are underway: the feasibility of a regional spill hotline, and updates to the *Illicit Connection & Illicit Discharge Manual*.

Future studies

What SAM activities are planned for2020?

Several SAM projects will wrap up in mid 2020. The Round 3 study selection process will begin in January, with a request for proposals. Stakeholder and technical reviews will occur over the summer. SWG will host a workshop in September and recommend which projects to fund in November 2020.

Program Management

Stormwater Work Group

The Stormwater Work Group (SWG) of the Puget Sound Ecosystem Monitoring Program (PSEMP) is a coalition of representatives of local, state, and federal governments, environmental and business organizations, public ports, tribes, and agriculture. The SWG formed in 2008 to develop a strategic, coordinated, and integrated approach to understanding and addressing the stormwater problem in Western Washington.

The SWG welcomes participation on the group's subcommittees and caucuses. All meetings are open to the public. See the SWG website: https://sites.google.com/site/pugetsoundstormwaterworkgroup/

What is the connection between SAM and the SWG?

All SAM projects are selected and approved by the SWG. The SWG sets priorities and makes recommendations to support SAM implementation and other stormwater-related monitoring.

Permittees and state and federal agencies provide funding and leadership on SAM projects. Ecology serves as the administrative entity that manages SAM funds and executes SAM contracts.

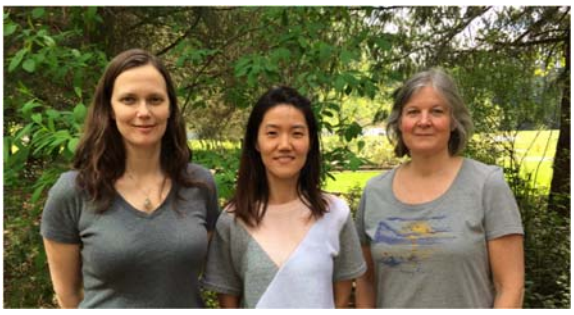
The Pooled Resources Oversight Committee (PRO-C), a subgroup of SWG, oversees Ecology's administration of SAM and approves all SAM contracting decisions and spending. The PRO-C reviews and approves scopes of work and budgets for SAM projects. In 2018, the PRO-C agreed to provide the oversight role for Lower Columbia urban streams monitoring, a new SAM project beginning in 2020 with decision-making by a different group of regional stakeholders and a separate, new SAM account.

Both the SWG and PRO-C are formal committees whose members represent stakeholder groups.

Oversight

The PRO-C approves contract scopes of work and amendments for SAM-funded projects. In 2019, Ecology published four quarterly reports and the 2018 Annual Report on SAM implementation. The SWG and subgroups worked through the process to identify study topics and questions for a third round of Effectiveness Studies and new Source Identification projects that PRO-C will oversee in late 2020 and beyond.

Also in 2019, the PRO-C produced a second "report card" evaluation of Ecology's administration of the SAM program for the SWG. Ecology met expectations for coordination, timely management of contracted SAM studies, and SAM budget management.



Brandi Lubliner, SAM Coordinator; Keunyea Song, SAM Scientist; and Karen Dinicola, SWG Project Manager

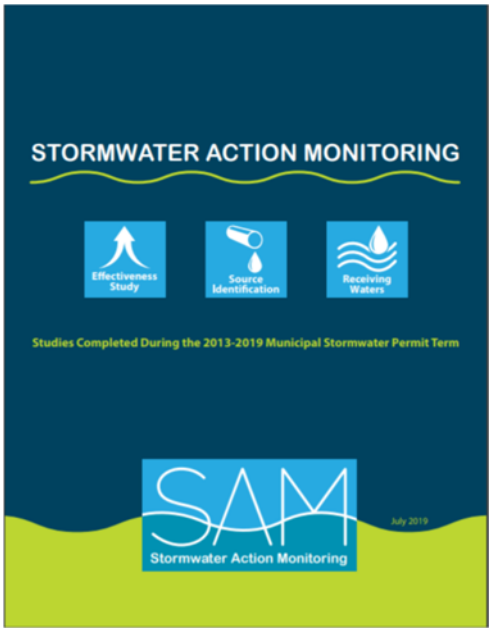
Staff

Ecology is committed to the success of SAM and continues to fund staff for the SWG.

The SAM Coordinator and SAM Scientist work with project leads to develop detailed scopes of work for contracting. They review deliverables, approve project invoices, manage cash flow for the SAM accounts, and maintain transparency to permittees and SWG stakeholders. The SWG Project Manager ensures all stakeholders work together to set priorities for studies that will provide meaningful information for stormwater managers.

Communications

The Association of Washington Cities is SAM's partner for communication products. This year we learned that stormwater managers mostly use the SAM Booklet, completed study fact sheets, and videos to communicate SAM study findings and progress.



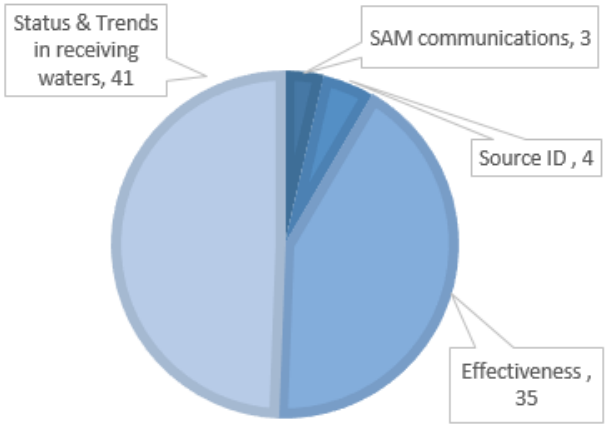
Look for the following communication products on the SAM website:

- The scopes of work, amendments, and deliverables posted to each project's page on the SAM website.
- The SAM Booklet that binds together all completed study fact sheets for the 2013-2018 permit term.
- Individual fact sheets written for stormwater managers about SAM and the findings of completed studies.
- Videos about bioretention, receiving water studies, and a downloadable presentation on how SAM works.
- Newsletters, quarterly reports, and prior annual reports on SAM activities.

Ecology has organized the SAM webpages to provide transparency on overall SAM administration and studies and share findings. In 2019, SAM projects were featured at MuniCon, local APWA stormwater managers meetings, the National Water Quality Monitoring Council conference, and PSEMP Freshwater and Toxics workgroup meetings.

Contracts and Agreements

In 2019, 4 new contracts were signed bringing the total number of unique contracts up to 51. This chart shows number of contracting actions (initial contract and amendments) for SAM projects from program launch in 2014 through the end of 2019. The total number of actions is 83.



Budget

At the close of 2019, 92% of all SAM funds were obligated or spent. Ecology's SAM administration costs were less than 10% of the total program budget.

PRO-C oversees SAM spending and recommended that any unspent funds be carried forward to the new permit term. At the close of 2019, approximately 17% of the Status and Trends budget was unobligated and will be used for 2020-2024 studies. PRO-C approved obligating all effectiveness study funds to get the last Round 2 uncontracted studies under contract, bringing this SAM account to less than 1% unobligated at the end of 2019.

Based on decisions made by permittees as of December 1, 2019, the anticipated annual revenue for the 2019-2024 permit term is approximately $1.4M for Effectiveness and Source ID, $750K for Puget Sound Status and Trends of streams and nearshore, and $136K for Lower Columbia urban streams.

Ecology manages permittees' annual funding receipts in PARIS; https://apps.ecology.wa.gov/paris/.

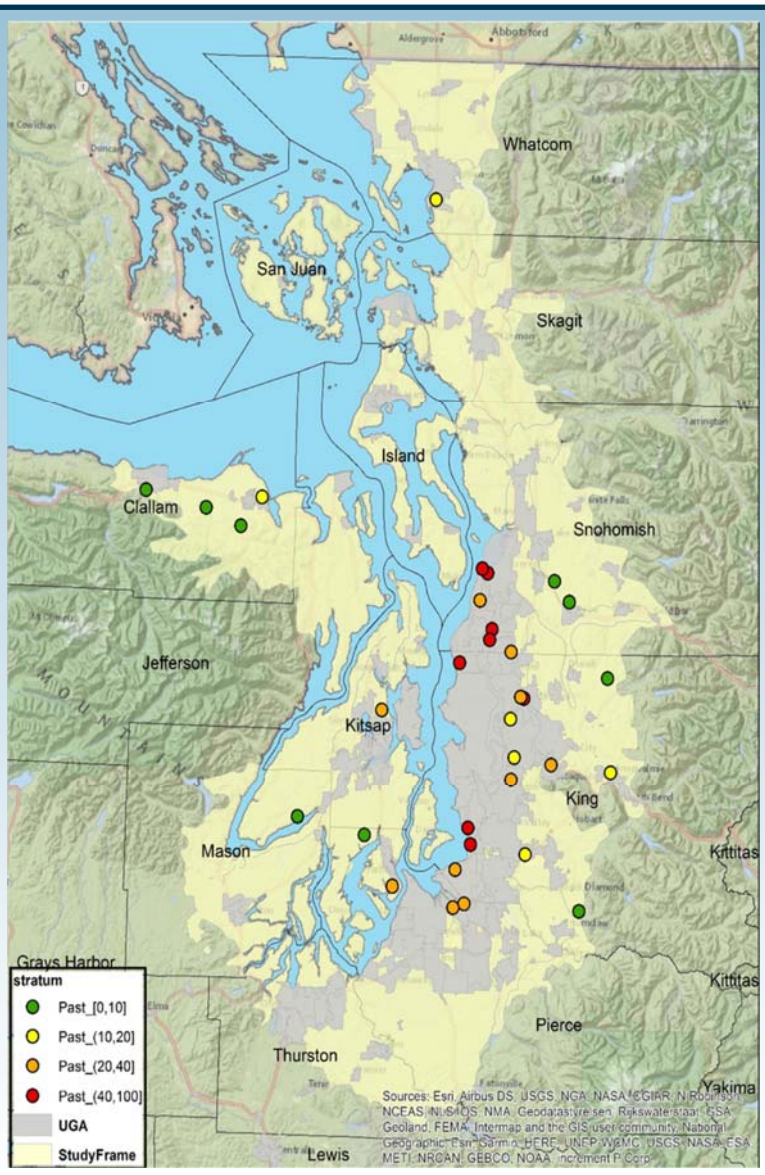
Status & Trends

Puget Sound Region Receiving Waters Studies

SAM is monitoring and assessing the impacts of stormwater runoff in urban and urbanizing areas in the Puget Sound nearshore and small stream environments. The 2019 update to the study design increased statistical robustness and efficiency of monitoring for both long-term streams and nearshore receiving water studies. Monitoring under the new design will begin for small streams in 2020, and in the nearshore in 2021.

The main adjustments to the Puget Sound region Status & Trends study design are to:

- Stratify the study area into four groups using average percent of impervious surface cover in watershed to better represent the full gradient of urban and urbanizing conditions.
- Sample stream conditions every year at 33 sites, rather than 100 sites every five years, to improve trend detection power and capture year-to year variability.
- Expand the nearshore study area from inside the UGA to the whole Puget Sound nearshore.



Puget Lowland Small Streams

Watershed delineation and stratification

New design requires to stratify sampling sites by the percent impervious cover in the contributing watershed area. To do this and maintain statistical robustness, SAM needed the delineated watershed area and associated landscape information for every one of the 19,970 potential sampling points for stream monitoring.

The U.S. Geological Survey (USGS) GIS experts led and conducted these tasks, delineating and characterizing watersheds for 19,970 potential sampling points using USGS-developed, automated watershed delineation tools and the 2016 updated National Land Cover Database.

Site evaluation and level logger deployment

The USGS evaluated each of the 2020 summer sampling sites to verify sampling suitability and accessibility. The 33 sites for 2020 summer sampling are a subset of past 2015 sampling sites that met the new study design criteria. The map shows these sites labeled by strata (impervious cover %) as: Past (0-10), Past (10-20), Past (20-40) and Past (40-100).

Level loggers were deployed in these sites to continuously monitor water level for a full water year (October 2019-September 2020), inclusive of the summer sampling timeframe.

Puget Sound Mussel Tissue Contaminant Monitoring

Washington Department of Fish & Wildlife (WDFW) successfully deployed mussel cages in late October for the third round winter deployment. Monitoring is at the same 41 probabilistically selected monitoring sites along the Puget Sound urban shoreline and one reference site established in Penn Cove. The cages will be retrieved in late January 2020.

WDFW has been working on data analysis and reporting for second round of SAM mussel monitoring (2017-2018 winter deployment). The second round monitoring report will be published in spring 2020. Preliminary results shared in 2019 were similar to the first round (2015-2016 winter deployment) results, showing a strong correlation between the concentrations of the most abundant contaminants (i.e., PAHs, PCBs, PBDEs and DDTs) and urban development in the contributing watershed.

Lower Columbia Region Urban Stream Monitoring (LCUS)

The 2019-2024 Phase I NPDES Municipal Stormwater Permit requires a new Status and Trends monitoring study for Lower Columbia Region. The permittees participating in LCUS monitoring are Clark and Cowlitz counties, the cities of Battle Ground, Camas, Kelso, Longview, Vancouver, and Washougal, and the Washington State Department of Transportation (WSDOT). Clark County is the lead entity for the study.

In 2020, Clark County and Ecology will work together to finalize the monitoring design, identify sampling sites, sampling frequency, and finalize parameters. The monitoring Quality Assurance Project Plan (QAPP) including final study design will be published in 2020, and summer sampling will begin in 2021. Level loggers will be deployed in 2020 for continuously monitor water level for a full water year (October 2020-September 2021).

Many of the area streams are engineered or structurally altered, limiting suitable monitoring sites. Instead of using a random site selection, LCUS will likely monitor fixed locations in all suitable streams in a long-term rotation. The photo on the left is an example of stream conditions in the region.

Effectiveness Studies

SAM is measuring the effectiveness of BMPs and management actions to reduce negative hydrologic impacts and the discharge of pollutants to receiving waters. These studies were active in 2019. Completed studies are shown in the boxes.

Low Impact Development (LID)

- ***Hydrologic benefit of individual trees***
  Washington Department of Natural Resources is quantifying the hydrologic benefits of retaining mature trees during development. Native evergreen and deciduous trees are being monitored at two locations in Western Washington. The report is expected in 2021.

Alternative blends for bioretention soil media

King County led a bench-scale study to test bioretention soil media blends to develop a low-to-no phosphorus export specification for use in bioretention facilities. The successful media provides an alternative to the default bioretention soil media that meets treatment goals for suspended solids, copper, zinc, and phosphorus, and also prevents toxicity to aquatic organisms.

The new media components (sand, coir, biochar, activated alumina, and iron aggregate) are available at a reasonable cost .

The authors recommend the alternative blend be added to Ecology's stormwater management manuals to greatly expand the settings where designers and jurisdictions can confidently apply bioretention systems to manage stormwater runoff. The alternative blend is intended for stormwater treatment projects in areas where receiving waters are sensitive to nutrient enrichment.

Bioretention reduction of PCBs

King County-studied bioretention treatment and sequestration of poly-chlorinated biphenyls (PCBs) using the same mesocosms as the fungi amendment study. On average, effluent concentrations of PCBs were approximately 90% lower than stormwater influent when filtered through the default 60:40 bioretention soil mix. Seasonality was not found to change PCB concentrations in bioretention soils or effluents and PCBs did not accumulate in bioretention soils over the 2-year study.

The study provides some assurance that bioretention will not accumulate dangerous concentrations in residential settings.

- ***Bioretention hydrologic performance of current designs***
  The City of Olympia is evaluating the hydrologic performance of ten bioretention facilities designed and built in accordance with the 2012 SWMMWW. The report is expected in mid 2020. The earlier phase of the study found "early designs" (pre-2012 SWMMWW) performed as modeled, despite the variety of models used.
- ***Bioretention amendment with fungi and plants***
  U.S. Fish & Wildlife Service (USFWS) and Washington State University (WSU) are monitoring treatment performance of bioretention mesocosms with fungal amendments. The report is expected in 2020.

Low Impact Development (LID)
(continued)

- ***Mulch choices for bioretention:*** The WSU Stormwater Center is evaluating impacts of three types of mulch on stormwater treatment: bark mulch (fir), shredded bark mulch (cedar), and arborist wood chips.
- ***Orifice control of bioretention for water quality treatment:*** The WSU Stormwater Center is evaluating impacts of smaller orifices on underdrains to stormwater quality and water quantity treatment.
- ***Longevity of bioretention soil mix for toxicity reduction:*** USFWS and WSU aim to learn how long bioretention treatment of toxicity lasts and test soil media depth most effective to reduce toxicity. This study will test ten water-year volumes passed through the bioretention soil media mescosms over a two-year period. The report is expected in 2022.

Retrofits

- ***Oyster shell retrofits in catch basins:*** King County is evaluating the effectiveness of dissolved metals treatment using crushed oyster shells added to catch basins on Mercer Island. The report is expected in 2021.

- ***Watershed scale retrofit and restoration:*** The City of Redmond is actively monitoring seven sites in a paired watershed design. This watershed-scale study will continue for several more years. An interim report is expected in 2020.

Source Identification

SAM Source Identification projects identify common problems and propose regional actions on source control to prevent transport of pollutants in stormwater.

- ***Regional Spill Hotline Feasibility:*** King County is investigating feasibility of and potential options for a regional or statewide single reporting hotline for spills to stormwater systems. The report and recommendations are expected in 2020.
- **Illicit Connection and Illicit Discharge (IC/ID) Manual *Update:*** King County is updating methods to detect, identify, and trace sources of pollutants in stormwater. Two workshops were held in early 2019 to identify new techniques and gaps. Eight trainings on the IC/ID manual and updates will be scheduled in 2020. The report is expected in 2020.

Radiator fluid (photo courtesy Federal Way)

New permit term started in 2019

Western Washington municipal stormwater permittees made their choices to either collaborate and pay into the SAM pooled funds under S8 of the permit or conduct their own outfall monitoring. By December 2019, all permittees opted to join SAM's Status and Trends in receiving waters in both the Puget Sound watersheds and the Lower Columbia watersheds. All but one permittee opted to join SAM for Effectiveness Studies and Source Identification projects for the permit term.

Putting together SAM study solicitation Round 3

The SWG spent much of 2019 refining priority questions and topics for SAM projects to be funded by permittees' SAM funding contributions during the 2019-2024 permit term. More than 75 people attended the SAM Priorities Workshop on February 27, 2019, to prioritize SAM studies for the 2019 permit term. Attendees provided input to finalize the Status and Trends study design and parameters for Puget Sound receiving waters and ranked topics for Effectiveness Studies and Source Identification projects. The SWG finalized the SAM priority topic list for SAM Round 3 request for proposals in June 2019, and worked with subgroups on clarifications into the fall.

Ecology finalized the Round 3 application and funding guidelines and worked with PRO-C on total funding available for new projects. SAM funding for the 2019-2024 permit term is based on both unobligated funds from the prior term and permittee's December 2019 decisions to join SAM for the 2019 permit term. The Round 3 SAM request for proposals went out in early January 2020.

SAVE THE DATE!

SAM Round 3 Study Selection Workshop is September 16, 2020

SWG welcomes participation in its caucuses and subgroups, contact the SWG Project Manager. Join the listservs! https://Listserv.ecology.wa.gov

STORMWATER-ACTION-MONITORING: newsletter: three issues per year to hear about SAM study findings and upcoming workshops.
SWG-REPORTER: four issues per year to hear about study findings and the process for prioritizing and selecting studies.
STORMWATER-WORK-GROUP: meeting agendas, materials, and summaries, and additional announcements related to our work.

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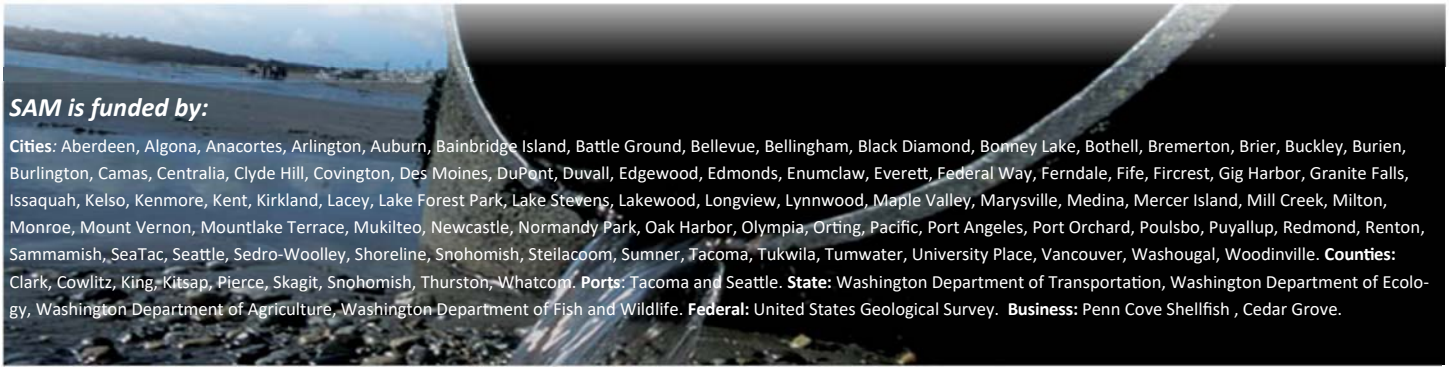
Special accommodations

To request materials in a format for the visually impaired, visit https://ecology.wa.gov/accessibility, or call Ecology at (360) 407-6600, Relay Service 711, or TTY (877) 833-6341.



SAM is funded by:

Cities: Aberdeen, Algona, Anacortes, Arlington, Auburn, Bainbridge Island, Battle Ground, Bellevue, Bellingham, Black Diamond, Bonney Lake, Bothell, Bremerton, Brier, Buckley, Burien, Burlington, Camas, Centralia, Clyde Hill, Covington, Des Moines, DuPont, Duvall, Edgewood, Edmonds, Enumclaw, Everett, Federal Way, Ferndale, Fife, Fircrest, Gig Harbor, Granite Falls, Issaquah, Kelso, Kenmore, Kent, Kirkland, Lacey, Lake Forest Park, Lake Stevens, Lakewood, Longview, Lynnwood, Maple Valley, Marysville, Medina, Mercer Island, Mill Creek, Milton, Monroe, Mount Vernon, Mountlake Terrace, Mukilteo, Newcastle, Normandy Park, Oak Harbor, Olympia, Orting, Pacific, Port Angeles, Port Orchard, Poulsbo, Puyallup, Redmond, Renton, Sammamish, SeaTac, Seattle, Sedro-Woolley, Shoreline, Snohomish, Steilacoom, Sumner, Tacoma, Tukwila, Tumwater, University Place, Vancouver, Washougal, Woodinville. **Counties:** Clark, Cowlitz, King, Kitsap, Pierce, Skagit, Snohomish, Thurston, Whatcom. **Ports**: Tacoma and Seattle. **State:** Washington Department of Transportation, Washington Department of Ecology, Washington Department of Agriculture, Washington Department of Fish and Wildlife. **Federal:** United States Geological Survey. **Business:** Penn Cove Shellfish , Cedar Grove.

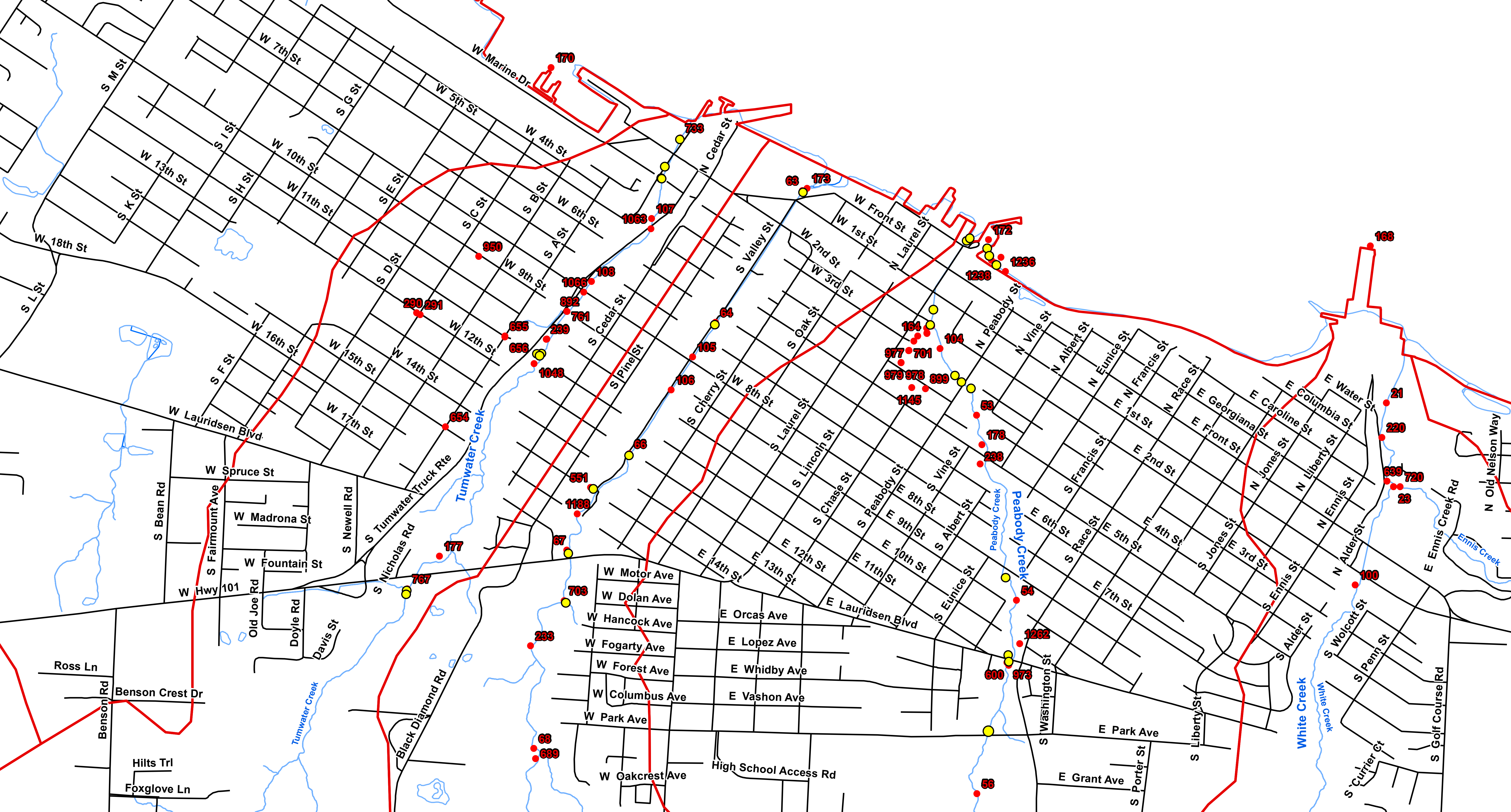
City of Port Angeles project: Streamkeepers Grab-Sample Plan, *revised 4/30/18*

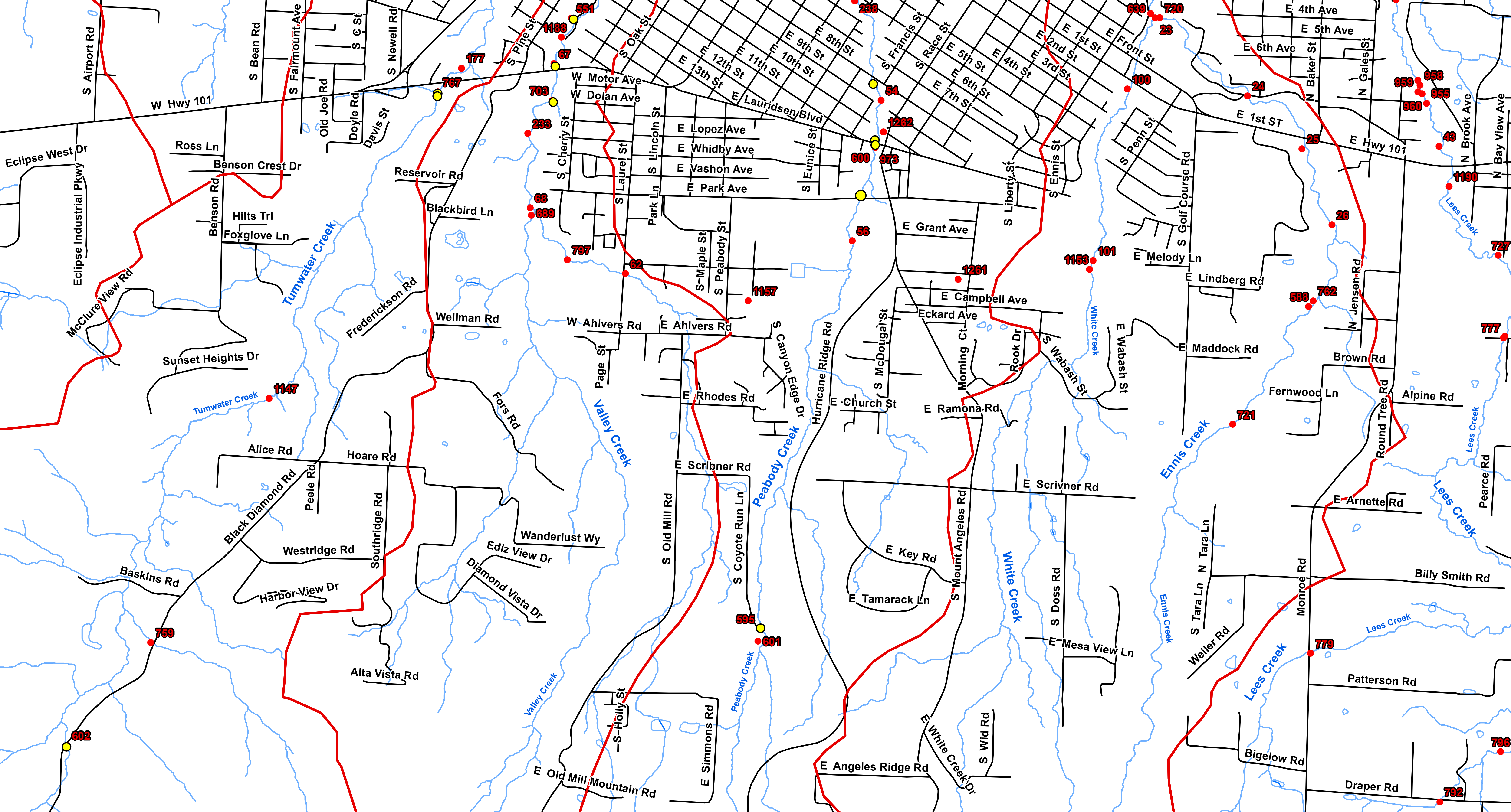
****Include Precip (24 hr) readings or multi-day retrospectives of preceding wet and dry periods, based on a reliable local weather station****

--Organize sampling tours around volunteer/lab availability; min. 2 volunteers needed, and lab is generally available M-Th before 2 PM.
--Try for 50% monthly wet-weather tours during the year, where "wet" is defined as ≥ 0.15" of rain-equivalent within the prior 24 hours.
--If 50% wet-weather tours have not been taken as the year progresses, conduct a wet-weather tour if volunteers are available even if a dry-weather tour has already been conducted that month.
--Conduct two "storm" (defined as ≥ 1" of rain-equivalent within the prior 24 hours) tours per year, preferably in different seasons, with or without volunteers, even if a sample has already been taken that month.
--If volunteers are available, precede "storm" sampling tours with pre-storm tours, preferably the day prior to the storm.
--If a "storm" tour has been conducted during a month, no further tours will be conducted that month.
--If two "storm" tours have not been conducted by the end of November, consider relaxing the 1" criterion in December.
--For "wet-weather" or "storm" sampling, use best judgment to label each visit as Baseflow; First-Flush; Rising-Curve; Peak; or Post-Peak, considering storm intensity, turbidity, flow velocity, and stream stage relative to what it was pre-storm. The storm may iterate back and forth through multiple stages during a sampling tour.

	Monthly Samples--Organize around volunteer availability; Aim for 6 dry-weather and 6 wet-weather samples
	Peabody 0.0 (when possible)
	Peabody 0.2 (just u/s of final culvert; include stage reading)
	Peabody 0.2 rep
	Peabody 0.2a (pipe d/s of trailer park office)
	Peabody 0.2b (u/s of pipe)
	Peabody 0.4b (u/s of trailers, d/s of plunge pool below culvert)
	Peabody 0.4 (u/s of Peabody St.)
W	Peabody 0.4a (storm input under Peabody St.)
	Peabody 0.9 (beneath water pipe, d/s of kids' play area)
	Peabody 1.2 (beneath Lauridsen, u/s of stormwater flume)
	Peabody 1.2c (beneath Lauridsen, stormwater flume)
C	Peabody 1.4 (National Park loop trail, u/s of u/s crossing)
	Tumwater 0.0 (across from Westport side door)
	Tumwater 0.0 rep
	Tumwater 0.8 (d/s of storm input below Tumwater Truck Rt)
	Tumwater 0.8d (storm pipe below Tumwater Truck Route)
	Tumwater 0.8e (u/s of storm input below Tumwater Truck Rt)
	Tumwater 1.5 (u/s of Hwy 101, d/s of storm input from west)

	Additional sites for storm sampling (see above)--aim for 1 pre-storm and 1 during-storm or just-after-storm sample (preferably on consecutive days) 2x/yr if possible (preferably in different seasons)
C	Peabody 2.9 (Coyote Run Lane off Scrivner Rd)
	Tumwater 0.1 (d/s of storm pipe)
W	Tumwater 0.1b (LB storm drain input @ 3rd St.)
	Tumwater 0.1a (@ 3rd St. u/s of LB storm drain input)
	Tumwater 1.5a (u/s of Hwy 101, u/s of storm input from west)
	Tumwater 1.5b (u/s of Hwy 101, storm channel from west)
	Tumwater 4.4 (3142 Black Diamond Rd)
	Valley 0.0 (when possible)
	Valley 0.4 (u/s of final culvert @ 6th St)
	Valley 0.4 rep
	Valley 0.7 (@ 12th St., near end of Valley Street)
	Valley 1.0 (u/s of "flatbed" bridge @ 14th St)
	Valley 1.2 (d/s of Hwy 101)
	Valley 1.4 (Vern Samuelson Trail ~0.1 mile u/s of Hwy 101)
	Semi- Annual Marine Samples--fecal + entero (big 500 mL bottles)
	PA Harbor @Hollywood west
	PA Harbor @Hollywood central
	PA Harbor @Hollywood east
	PA Harbor @Peabody mouth
	PA Harbor @Peabody mouth rep


W Marine Dr
170
W 7th St
S M St
S G St
W 5th St
W 4th St
733
S Cedar St
N Cedar St
W 10th St
S I St
W 13th St
S H St
W 11th St
S E St
S K St
S C St
S B St
W 6th St
1063
107
63
173
W Front St
W 1st St
N Laurel St
S Valley St
W 2nd St
W 3rd St
172
168
1236
1238
W 18th St
950
S A St
W 9th St
S D St
1066
108
892
761
S L St
290
291
W 16th St
W 12th St
655
239
S Cedar St
64
S Oak St
164
104
N Peabody St
N Vine St
N Albert St
N Eunice St
N Francis St
N Race St
E Water St
W 15th St
656
1048
S Pine St
105
977
701
979
978
899
E Georgiana St
E Caroline St
E Columbia St
W 14th St
S Cherry St
W 8th St
106
S F St
W 17th St
1145
53
E Front St
E 1st St
21
654
S Laurel St
S Lincoln St
220
W Lauridsen Blvd
Tumwater Creek
178
E 2nd St
N Jones St
N Liberty St
N Old Nelson Way
66
238
S Francis St
S Vine St
639
720
W Spruce St
S Tumwater Truck Rte
551
S Chase St
S Peabody St
E 8th St
N Ennis St
23
S Bean Rd
S Fairmount Ave
S Newell Rd
W Madrona St
1188
E 9th St
S Albert St
Peabody Creek
E 6th St
E 5th St
E 4th St
S Race St
N Ennis Creek Rd
S Nicholas Rd
177
67
E 14th St
E 13th St
E 12th St
E 11th St
E 10th St
S Jones St
E 3rd St
N Alder St
Ennis Creek
W Fountain St
W Motor Ave
767
S Eunice St
E 7th St
S Ennis St
100
W Hwy 101
703
W Dolan Ave
E Orcas Ave
E Lauridsen Blvd
54
Old Joe Rd
Doyle Rd
S Davis St
W Hancock Ave
E Lopez Ave
S Wolcott St
S Alder St
S Penn St
233
W Fogarty Ave
1262
Ross Ln
W Forest Ave
E Whidby Ave
600
973
S Washington St
Benson Crest Dr
W Columbus Ave
E Vashon Ave
Black Diamond Rd
White Creek
Benson Rd
Tumwater Creek
W Park Ave
E Park Ave
S Liberty St
S Golf Course Rd
68
689
Hilts Trl
High School Access Rd
E Grant Ave
S Porter St
S Currier Ct
Foxglove Ln
W Oakcrest Ave
56



S Airport Rd
S Bean Rd
S Fairmount Ave
S C St
S Newell Rd
Old Joe Rd
Doyle Rd
Davis St
W Hwy 101
Eclipse West Dr
Ross Ln
Benson Crest Dr
Eclipse Industrial Pkwy
Benson Rd
Hilts Trl
Foxglove Ln
McClure View Rd
Tumwater Creek
Sunset Heights Dr
Tumwater Creek
1147
Alice Rd
Black Diamond Rd
Peele Rd
Hoare Rd
Southridge Rd
Westridge Rd
Baskins Rd
Harbor View Dr
759
602
Alta Vista Rd
S Pine St
1188
551
67
177
767
S Oak St
W Motor Ave
W Dolan Ave
703
233
S Cherry St
Reservoir Rd
Blackbird Ln
68
689
797
Fredrickson Rd
Wellman Rd
Fors Rd
Wanderlust Wy
Ediz View Dr
Diamond Vista Dr
Valley Creek
Valley Creek
W Ahlvers Rd
Page St
S Laurel St
S Lincoln St
Park Ln
62
E Lopez Ave
E Whidby Ave
E Vashon Ave
E Park Ave
S Maple St
S Peabody St
1157
E Ahlvers Rd
E Rhodes Rd
S Canyon Edge Dr
E Scribner Rd
S Old Mill Rd
S Coyote Run Ln
Peabody Creek
Peabody Creek
595
601
S Holly St
E Old Mill Mountain Rd
E Simmons Rd
E 13th St
E 12th St
E 11th St
E 10th St
E 9th St
E 8th St
E Lauridsen Blvd
S Eunice St
238
S Francis St
S Race St
E 5th St
E 6th St
E 7th St
E 4th St
E 3rd St
E 2nd St
E 1st St
E Front St
54
1262
600
973
56
Hurricane Ridge Rd
E Grant Ave
1261
E Campbell Ave
Eckard Ave
S McDougal St
E Church St
Morning Ct
Rook Dr
S Wabash St
E Wabash St
E Ramona Rd
S Liberty St
S Ennis St
E Scrivner Rd
E Key Rd
E Tamarack Ln
S Mount Angeles Rd
White Creek
White Creek
S Doss Rd
E Mesa View Ln
E Angeles Ridge Rd
E White Creek Dr
S Wid Rd
639
720
23
100
S Penn St
S Golf Course Rd
101
1153
E Melody Ln
E Lindberg Rd
E Maddock Rd
Ennis Creek
Ennis Creek
721
N Tara Ln
S Tara Ln
Weiler Rd
E 4th Ave
E 5th Ave
E 6th Ave
N Baker St
N Gales St
24
E 1st ST
25
E Hwy 101
26
588
762
N Jensen Rd
Brown Rd
Fernwood Ln
Round Tree Rd
Alpine Rd
E Arnette Rd
Monroe Rd
Billy Smith Rd
Lees Creek
Lees Creek
779
Patterson Rd
Bigelow Rd
Draper Rd
792
796
959
958
955
960
43
N Brook Ave
N Bay View Ave
1190
Lees Creek
727
777
Lees Creek
Lees Creek
Pearce Rd

1137 PROJECTS LAURIDSON storm flume

GRAB SAMPLE DATA SHEET - STREAMKEEPERS OF CLALLAM COUNTY - PORT ANGELES, WASHINGTON, USA - 360-417-2281 Revised 10/24/18

Project: *City of Port Angeles* / **Tour descriptor:** *GrabTours* / **Period:** *Monthly*

Date: 12/01/20 **(Incl. last name + all initials:) Sampler in charge:** SB Nattinga *Tour ID (from database entry):* _____

Other samplers: GC Byrnes *Episode ID (if tour is an entire episode):* _____

Check sampling plan to determine projects and sites for samples & replicates; enter each bottle-grab on a separate line (so sample + replicate = 2 lines)

Lab delivery temperatures:	Bottle #	Temperature °C
Earliest:	187	3.8
Latest:	103	6.5
Warmest:	28	4.4

Bottle #	Site name	Site description	Enter "FR" if a field replicate	Time of fecal sample collection (military)	Sample collector (all initials)	Water temp (°C)	Tour-wide comments: In cells below, make Visit comments: Precip(24 hr) / Other comments: (precip from Lincoln HS unless noted)		Lab # 092-105--	Complete in lab: Sample/ Lab Rep (LR) fecal reading (colonies per 100 mL)	EIM Qualifier
—	Peabody 0.0	Peabody @ mouth						high tide	—	—	
87	Peabody 0.2	Peabody @ 2nd St.		1005	4	GCB			573	18	
113	Peabody 0.2	Peabody @ 2nd St.	FR	1006	6	GCB			574	14/22	
X	Peabody 0.2	**STAGE GAGE ON d/s SIDE OF BRIDGE**		1010	6	X	Stage (ft):	0.8	—	—	
28	Peabody 0.2a	Peabody storm pipe d/s of RV park office		1015	12				575	< 2	U
116	Peabody 0.2b	Peabody u/s of storm pipe d/s of RV office		1016	6	GCB			576	36	
50	Peabody 0.4b	Peabody trailer park 30' d/s of culvert under Peabody St.		1027	6	SBN			577	42	
42	Peabody 0.4	Peabody u/s end Peabody St. culvert		1050		GCB			578	60	
X	Peabody 0.4	**STAGE GAGE ON RB CULVERT WING**				X	Stage (ft):	0.32	—	—	
84	Peabody 0.4a	Peabody storm pipe inside culvert		1048	11	GCB			579	7	
105	Peabody 0.9	Peabody u/s of 8th St.		1102	5	SBN			580	90	
96	Peabody 1.2	Peabody u/s of storm flume @Lauridsen		1129	5	SBN			581	64	
32	Peabody 1.2c	Peabody storm flume d/s of Lauridsen		1132	11	GCB			582	44	
148	Peabody 1.4	Peabody @ ONP Visitor Ctr		1152	SBN	5			583	18	

82

Bottle #	Site name	Site description	Enter "FR" if a field replicate	Time of fecal sample collection (military)	Sample collector (all initials)	Water temp (°C)	Tour-wide comments: In cells below, make Visit comments: Precip(24 hr) / Other comments: (precip from Lincoln HS unless noted)		Lab # 092-05-	Sample/ Lab Rep (LR) fecal reading (colonies per 100 mL)	EIM Qualifier
82	Tumwater 0.0	Tumwater d/s of Marine Dr. (mouth)		1219	GCB	6			567	6	
46	Tumwater 0.0	Tumwater d/s of Marine Dr.	FR	1222	GCB	6			568	14/14	
X	Tumwater 0.1	**STAGE GAGE d/s SIDE OF RAMP PILING**		1230	SBN	X	Stage (ft):	0.68			
142	Tumwater 0.8	Tumwater nr. 11 St., d/s of storm outflow		1246	SBN	5			569	16	
34	Tumwater 0.8d	Tumwater storm outfall pipe @ 11 St.		1245	GCB	10			570	18	
97	Tumwater 0.8e	Tumwater u/s of 11 St. outfall pipe		1248	SBN 1244	5			571	6	
103	Tumwater 1.5	Tumwater d/s of LB storm input channel u/s of Hwy 101 culvert		1315	SBN	5			572	10	

Lab samples submitted by (incl. initials): Sue Nottinger Date: 12/1/20 Time: 1345 Rec'd by: SWaldrop Date: 12-1-20 Time: 1345

Lab samples analyzed by (incl. initials): _____ Analysis date: _____ Time: _____

When finished, leave original form with water samples at lab and bring signed copy back to be filed at Streamkeepers Office.

GRAB SAMPLE DATA SHEET - STREAMKEEPERS OF CLALLAM COUNTY - PORT ANGELES, WASHINGTON, USA - 360-417-2281 Revised 2/20/19

Project: *City of Port Angeles* / **Tour descriptor:** *GrabTours* / **Period:** *Monthly*

Date: 04/28/2020 **(Incl. last name + all initials:) Sampler in charge:** Nordstrom, N *Tour ID (from database entry):* ____

Other samplers: — *Episode ID (if tour is an entire episode):* ____

Check sampling plan to determine projects and sites for samples & replicates; enter each bottle-grab on a separate line (so sample + replicate = 2 lines) **Complete in lab:**

Lab delivery temperatures: Bottle # Temperature °C
Earliest:
Latest:
Warmest:

Tour-wide comments:

Bottle #	Site name	Site description	Enter "FR" if a field replicate	Time of fecal sample collection (military)	Sample collector (all initials)	Water temp (°C)	*In cells below, make Visit comments:* **Precip(24 hr) / Other comments:** *(precip from Lincoln HS unless noted)*		Lab # 092-039-	Sample/ Lab Rep (LR) fecal reading *(colonies per 100 mL)* Fecal	E.coli	EIM Qualifier
101	Tumwater 0.0 (lab temp 7.8)	Tumwater d/s of Marine Dr. (mouth)		9:36	NN	8.3		light rain past 24 hrs currently high clouds	33	12	39.6	
128/133	Tumwater 0.0	Rep--**ALSO READ GAGE AT 0.1**	FR				**Stage at 0.1 (ft):**	could not locate	34/35	16/20	21.6/17.2	
21	Tumwater 0.8	Tumwater nr. 11 St., d/s of storm outflow		10:24	NN	8.2			36	6	4	
51	Tumwater 0.8d	Tumwater storm outfall pipe @ 11 St.		10:31	NN	10.3			37	24	12.6	
15	Tumwater 0.8e	Tumwater u/s of 11 St. outfall pipe		10:41	NN	8.3			38	6	4	
8	Tumwater 1.5	Tumwater d/s of LB storm input channel u/s of Hwy 101 culvert		11:13	NN	8.2			39	4	6	
X	Valley 0.4	Valley u/s of final culvert--**STAGE ONLY**		11:40	NN	X	**Stage(ft):**	0.58	—	—		
38	Peabody 0.0	Peabody @ mouth		11:52	NN	9.4		increased clouds occassional raindrops	40	32	29.2	
106	Peabody 0.2	Peabody @ 2nd St.		12:12	NN	9.4		smells like hydraulic fluid + slightly soapy	41	36	21.8	
33/69	Peabody 0.2	Rep--**ALSO READ GAGE AT 0.2**	FR	12:13	NN	9.4	**Stage(ft):**	0.58	42/43	26/24	22.6/10.4	
50	Peabody 0.2a 6.2	Peabody storm pipe d/s of RV park office		12:23	NN	12.8		Probe right in outfall flow	44	4	6.2	
142	Peabody 0.2b	Peabody u/s of storm pipe d/s of RV office		12:25	NN	9.5		regular creek water	45	22	34.6	
5	Peabody 0.4b	Peabody trailer park 30' d/s of culvert under Peabody St.		12:42	NN	9.3		a few raindrops	46	44	45.2	
79	Peabody 0.4	Peabody u/s end Peabody St. culvert -- **ALSO READ GAGE AT 0.4**		13:15	NN	9.5	**Stage(ft):**	0.20 / light rain	47	22	33.8	
98	Peabody 0.4a	Peabody storm pipe inside culvert		12:52	NN	9.4			48	190	319.4 ~~344~~	
59	Peabody 0.9	Peabody u/s of 8th St.		13:32	NN	9.2		sprinkles	49	8	24.4	
7	Peabody 1.2	Peabody u/s of storm flume @Lauridsen		13:48	NN	8.9		caddis fly larvae	50	20	10.4	
28	Peabody 1.2c	Peabody storm flume d/s of Lauridsen		13:54	NN	10.7			51	<2	<2	U/U
37	Peabody 1.4 12.6	Peabody @ ONP Visitor Ctr		14:15	NN	8.7			52	<2	4	U

Lab samples submitted by (incl. initials): Noelle Nordstrom NN Date: 4/28/20 Time: 14:50 Rec'd by: SWaldup Date: 4/28/20 Time: 14:50

Lab samples analyzed by (incl. initials): ____ Analysis date: ____ Time: ____

When finished, leave original form with water samples at lab and

Streamkeepers\Monitoring\Forms_SK regular forms\Data forms\GrabSampForm_multiple-versions\PA monthly 1-sided.xlsx

GRAB SAMPLE DATA SHEET - STREAMKEEPERS OF CLALLAM COUNTY - PORT ANGELES, WASHINGTON, USA - 360-417-2281 Revised 2/20/19

Project: *City of Port Angeles* / **Tour descriptor:** *GrabTours* / **Period:** *Monthly*

Date: 6/16/20 **(Incl. last name + all initials:) Sampler in charge:** Noelle Nordstrom

Other samplers: none

Tour ID (from database entry): _____

Episode ID (if tour is an entire episode): _____

Check sampling plan to determine projects and sites for samples & replicates; enter each bottle-grab on a separate line (so sample + replicate = 2 lines)

Lab delivery temperatures: Bottle # Temperature °C
Earliest:
Latest:
Warmest:

Bottle #	Site name	Site description	Enter "FR" if a field replicate	Time of fecal sample collection (military)	Sample collector (all initials)	Water temp (°C)	Tour-wide comments: In cells below, make Visit comments: Precip(24 hr) / Other comments: (precip from Lincoln HS unless noted)		Lab # 092-04---	Complete in lab: Sample/ Lab Rep (LR) fecal reading (colonies per 100 mL)	EIM Qualifier
8B	Tumwater 0.0 FC/EC	Tumwater d/s of Marine Dr. (mouth)		10:16	NN	10.6		Ecoli 273	291	80	
27	Tumwater 0.0	Rep--**ALSO READ GAGE AT 0.1**	FR	10:17	[redacted]	[redacted]	Stage at 0.1 (ft):	0.88 ft @ 10:27	292	74/78	
58	Tumwater 0.8	Tumwater nr. 11 St., d/s of storm outflow		10:54		10.4			293	54	
101	Tumwater 0.8d	Tumwater storm outfall pipe @ 11 St.		10:46		14.0			294	108	
10B	Tumwater 0.8e FC/EC	Tumwater u/s of 11 St. outfall pipe		11:00		10.4		Ecoli >2419.6	295	TNTC	
5	Tumwater 1.5	Tumwater d/s of LB storm input channel u/s of Hwy 101 culvert		11:26		10.4			296	48	
X	Valley 0.4	Valley u/s of final culvert--**STAGE ONLY**				X	Stage(ft):	0.72 @ 11:48	—	—	
7B	Peabody 0.0 FC/EC	Peabody @ mouth tidal influence		12:25		11.7		tide is in Ecoli >2419.6	297	562	
39	Peabody 0.2	Peabody @ 2nd St.		12:46		11.8		no bad smells today!	298	444	
112	Peabody 0.2	Rep--**ALSO READ GAGE AT 0.2**	FR	12:46		11.8	Stage(ft):	0.68 @ 12:47	299	570/474	
12B	Peabody 0.2a FC/EC	Peabody storm pipe d/s of RV park office		12:52		11.9		Ecoli 24	300	6	
113	Peabody 0.2b [redacted]	Peabody u/s of storm pipe d/s of RV office		12:53		11.8			301	517	
	~~Peabody 0.4b~~	Peabody trailer park 30' d/s of culvert under Peabody St.									
33	Peabody 0.4	Peabody u/s end Peabody St. culvert -- **ALSO READ GAGE AT 0.4**		13:25		11.7	Stage(ft):	0.30 @ 13:27	302	550	
2B	Peabody 0.4a FC/EC	Peabody storm pipe inside culvert		13:22		11.7		Ecoli 89	303	118	
37	Peabody 0.9	Peabody u/s of 8th St.		13:38		11.3			304	154	
5B	Peabody 1.2 FC/EC	Peabody u/s of storm flume @Lauridsen		13:50		11.1		Ecoli 333	305	250	
6B	Peabody 1.2c FC/EC	Peabody storm flume d/s of Lauridsen		13:53	↓	13.5		Ecoli 69	306	54	
	Peabody 1.4	Peabody @ ONP Visitor Ctr									

Lab samples submitted by (incl. initials): NNordstrom Date: 6/16/20 Time: 14:20 Rec'd by: _____ Date: _____ Time: _____

Lab samples analyzed by (incl. initials): _____ Analysis date: _____ Time: _____

When finished, leave original form with water samples at lab and

GRAB SAMPLE DATA SHEET - STREAMKEEPERS OF CLALLAM COUNTY - PORT ANGELES, WASHINGTON, USA - 360-417-2281 Revised 2/20/19

Project: *City of Port Angeles* / **Tour descriptor:** *GrabTours* / **Period:** *Monthly*

Date: 7/21/20 **(Incl. last name + all initials:) Sampler in charge:** _____ *Tour ID (from database entry):* _____

Other samplers: _____ *Episode ID (if tour is an entire episode):* _____

Check sampling plan to determine projects and sites for samples & replicates; enter each bottle-grab on a separate line (so sample + replicate = 2 lines)

Lab delivery temperatures: Earliest: Bottle # 103 Temperature °C 9.7; Latest: 12 12.0; Warmest:

Bottle #	Site name	Site description	Enter "FR" if a field replicate	Time of fecal sample collection (military)	Sample collector (all initials)	Water temp (°C)	Tour-wide comments: In cells below, make Visit comments: Precip(24 hr) / Other comments: (precip from Lincoln HS unless noted)	Lab # 092-04--	Complete in lab: Sample/ Lab Rep (LR) fecal reading (colonies per 100 mL)	EIM Qualifier
103	Tumwater 0.0	Tumwater d/s of Marine Dr. (mouth)		09:26	NN	14°	Ecoli 275 9.7° lab	582	246	
9B	Tumwater 0.0	Rep--**ALSO READ GAGE AT 0.1**	FR	09:30	NN		Stage at 0.1 (ft): 0.75	583	258/240	
28	Tumwater 0.8	Tumwater nr. 11 St., d/s of storm outflow		09:45	NN	14		584	56	
19	Tumwater 0.8d	Tumwater storm outfall pipe @ 11 St.		09:40		15		585	<2	U
28	Tumwater 0.8e	Tumwater u/s of 11 St. outfall pipe		09:48		14	E.coli 34	586	24	
27	Tumwater 1.5	Tumwater d/s of LB storm input channel u/s of Hwy 101 culvert		10:04		14		587	110	
X	Valley 0.4	Valley u/s of final culvert--**STAGE ONLY**		10:20		X	Stage(ft): .48	—	—	
8B	Peabody 0.0	Peabody @ mouth		10:56		16	E.coli 606	588	616	
37	Peabody 0.2	Peabody @ 2nd St.		11:09		16		589	502	
58	Peabody 0.2	Rep--**ALSO READ GAGE AT 0.2**	FR	11:09		16	Stage(ft): .48	590	476/500	
64	Peabody 0.2a	Peabody storm pipe d/s of RV park office		11:14		15		591	4	
51	Peabody 0.2b	Peabody u/s of storm pipe d/s of RV office		11:15		17		592	642	
X	Peabody 0.4b	Peabody trailer park 30' d/s of culvert under Peabody St.						—	—	
133	Peabody 0.4	Peabody u/s end Peabody St. culvert -- **ALSO READ GAGE AT 0.4**		11:36		16	Stage(ft): 0.12	593	650	
6B	Peabody 0.4a	Peabody storm pipe inside culvert		11:38		15	E.coli 546	594	506	
142	Peabody 0.9	Peabody u/s of 8th St.		11:56		16		595	130	
145	Peabody 1.2	Peabody u/s of storm flume @Lauridsen		12:14		16		596	138	
69	Peabody 1.2c	Peabody storm flume d/s of Lauridsen		12:19		14		597	2	
12	Peabody 1.4	Peabody @ ONP Visitor Ctr		12:31		15°	12.0 lab	598	110	

Lab samples submitted by (incl. initials): NNockleby Date: 7/21 Time: 13:10 Rec'd by: SWaldrup Date: 7/21 Time: 13:10

Lab samples analyzed by (incl. initials): _____ Analysis date: _____ Time: _____

When finished, leave original form with water samples at lab and

GRAB SAMPLE DATA SHEET - STREAMKEEPERS OF CLALLAM COUNTY - PORT ANGELES, WASHINGTON, USA - 360-417-2281 Revised 2/20/19

Project: *City of Port Angeles* / **Tour descriptor:** *GrabTours* / **Period:** *Monthly*

Date: 7/27/20 **(Incl. last name + all initials:) Sampler in charge:** N. Nordstrom *Tour ID (from database entry):* _____

Other samplers: _____ *Episode ID (if tour is an entire episode):* _____

Check sampling plan to determine projects and sites for samples & replicates; enter each bottle-grab on a separate line (so sample + replicate = 2 lines)

Bottle #	Site name	Site description	Enter "FR" if a field replicate	Time of fecal sample collection (military)	Sample collector (all initials)	Water temp (°C)	Tour-wide comments / In cells below, make Visit comments: Precip(24 hr) / Other comments: (precip from Lincoln HS unless noted)		Lab #	Complete in lab: Sample/ Lab Rep (LR) fecal reading (colonies per 100 mL)	EIM Qualifier
Lab delivery temperatures: Earliest: / Latest: / Warmest:		Bottle #: 119 / 30 / 136 — Temperature °C: 6.2 / 7.0 / 6.0									
119	Tumwater 0.0	Tumwater d/s of Marine Dr. (mouth)		09:17	NN	14			6635	336	
122	Tumwater ~~0.1~~ 0.1	Rep--**ALSO READ GAGE AT 0.1**	FR	09:27		14	Stage at 0.1 (ft):		6636	128	
8	Tumwater ~~0.8~~ Pacific Rd	Tumwater nr. 11 St., d/s of ~~storm outflow~~		09:43		14		downstream of culvert under highway	6637	98	
	Tumwater 0.8d	Tumwater storm outfall pipe @ 11 St.									
	Tumwater 0.8e	Tumwater u/s of 11 St. outfall pipe									
	Tumwater 1.5	Tumwater d/s of LB storm input channel u/s of Hwy 101 culvert									
X	Valley 0.4	Valley u/s of final culvert--**STAGE ONLY**				X	Stage(ft):				
136	Peabody 0.0	Peabody @ mouth		10:00		15			6638	532	
	Peabody 0.2	Peabody @ 2nd St.									
	Peabody 0.2	Rep--**ALSO READ GAGE AT 0.2**	FR				Stage(ft):				
	Peabody 0.2a	Peabody storm pipe d/s of RV park office									
	Peabody 0.2b	Peabody u/s of storm pipe d/s of RV office									
	Peabody 0.4b	Peabody trailer park 30' d/s of culvert under Peabody St.									
7	Peabody 0.4	Peabody u/s end Peabody St. culvert -- **ALSO READ GAGE AT 0.4**				15	Stage(ft):	≤ 0.12 attempted count 7 18 16	6639	TNTC	
	Peabody 0.4a	Peabody storm pipe inside culvert									
	Peabody 0.9	Peabody u/s of 8th St.									
16	Peabody 1.2	Peabody u/s of storm flume @Lauridsen		10:30		15			6640	160	
47	Peabody 1.2c	Peabody storm flume d/s of Lauridsen				15			6641	4	
30	Peabody 1.4	Peabody @ ONP Visitor Ctr		10:52		14			6642	60	

Lab samples submitted by (incl. initials): N Nordstrom Date: 7/27/20 Time: 12:00 Rec'd by: SWaldrup Date: 7-27-20 Time: 12:00

Lab samples analyzed by (incl. initials): SWaldrup Analysis date: 7-27-20 Time: 2:50

When finished, leave original form with water samples at lab and

GRAB SAMPLE DATA SHEET - STREAMKEEPERS OF CLALLAM COUNTY - PORT ANGELES, WASHINGTON, USA - 360-417-2281 | Revised 2/20/19

Project: *City of Port Angeles* / **Tour descriptor:** *GrabTours* / **Period:** *Monthly*

Date: 04/28/2020 **(Incl. last name + all initials:) Sampler in charge:** Nordstrom, N *Tour ID (from database entry):* ______

Other samplers: — *Episode ID (if tour is an entire episode):* ______

Check sampling** plan to determine projects and sites **for samples & replicates; enter each bottle-grab on a separate line (so sample + replicate = 2 lines) **Complete in lab:**

Lab delivery temperatures: Bottle # Temperature °C
Earliest:
Latest:
Warmest:

Tour-wide comments:

Lab # 092-039-

Bottle #	Site name	Site description	Enter "FR" if a field replicate	Time of fecal sample collection (military)	Sample collector (all initials)	Water temp (°C)		In cells below, make Visit comments: Precip(24 hr) / Other comments: (precip from Lincoln HS unless noted)	Lab #	Sample/ Lab Rep (LR) fecal reading (colonies per 100 mL) Fecal	E.coli	EIM Qualifier
101	Tumwater 0.0 lab temp 7.8	Tumwater d/s of Marine Dr. (mouth)		9:36	NN	8.3		light rain past 24 hrs currently high clouds	33	12	39.6	
128/133	Tumwater 0.0	Rep--**ALSO READ GAGE AT 0.1**	FR				**Stage at 0.1 (ft):**	could not locate	34/35	16/20	21.6/17.2	
21	Tumwater 0.8	Tumwater nr. 11 St., d/s of storm outflow		10:24	NN	8.2			36	6	4	
51	Tumwater 0.8d	Tumwater storm outfall pipe @ 11 St.		10:31	NN	10.3			37	24	12.6	
15	Tumwater 0.8e	Tumwater u/s of 11 St. outfall pipe		10:41	NN	8.3			38	6	4	
8	Tumwater 1.5	Tumwater d/s of LB storm input channel u/s of Hwy 101 culvert		11:13	NN	8.2			39	4	6	
X	Valley 0.4	Valley u/s of final culvert--**STAGE ONLY**		11:40	NN	X	**Stage(ft):**	0.58	—	—		
39	Peabody 0.0	Peabody @ mouth		11:52	NN	9.4		increased clouds occassional raindrops	40	32	29.2	
106	Peabody 0.2	Peabody @ 2nd St.		12:12	NN	9.4		Smells like [illegible] fluid + slightly [illegible]	41	36	21.8	
33/69	Peabody 0.2	Rep--**ALSO READ GAGE AT 0.2**	FR	12:13	NN	9.4	**Stage(ft):**	0.58	42/43	26/24	22.6/10.4	
50	Peabody 0.2a 6.2	Peabody storm pipe d/s of RV park office		12:23	NN	12.8		Probe [illegible] in outfall flow.	44	4	6.2	
142	Peabody 0.2b	Peabody u/s of storm pipe d/s of RV office		12:25	NN	9.5		regular creek water	45	22	34.6	
5	Peabody 0.4b	Peabody trailer park 30' d/s of culvert under Peabody St.		12:42	NN	9.3		a few raindrops	46	44	45.2	
79	Peabody 0.4	Peabody u/s end Peabody St. culvert -- **ALSO READ GAGE AT 0.4**		13:15	NN	9.5	**Stage(ft):**	0.20 / light rain	47	22	33.8	
98	Peabody 0.4a	Peabody storm pipe inside culvert		12:52	NN	9.4			48	190	~~344~~ 319.4	
59	Peabody 0.9	Peabody u/s of 8th St.		13:32	NN	9.2		sprinkles	49	8	24.4	
7	Peabody 1.2	Peabody u/s of storm flume @Lauridsen		13:48	NN	8.9		Caddis fly larvae.	50	20	10.4	
28	Peabody 1.2c	Peabody storm flume d/s of Lauridsen		13:54	NN	10.7			51	<2	<2	U/U
37	Peabody 1.4 12.6	Peabody @ ONP Visitor Ctr		14:15	NN	8.7			52	<2	4	U/

Lab samples submitted by (incl. initials): Noelle Nordstrom (NN) Date: 4/28/20 Time: 14:50 Rec'd by: SWaldup Date: 4/28/20 Time: 14:50

Lab samples analyzed by (incl. initials): ______ Analysis date: ______ Time: ______

When finished, leave original form with water samples at lab and

Streamkeepers\Monitoring\Forms_SK regular forms\Data forms\GrabSampForm_multiple-versions\PA monthly 1-sided.xlsx

Lab ID	Bottle #		Fecal	E. coli	Total coliform
03933	101	Tumwater 0.0	12	19.6	181
03934/35	128/133	Tumwater 0.0 field dup	16	21.6	290
03936	21	Tumwater 0.8	6	4	420
03937	51	Tumwater 0.8d	24	12.6	>4800
03938	15	Tumwater 0.8e	6	4	122
03939	8	Tumwater 1.5	4	6	121
03940	39	Peabody 0.0	32	29.2	409
03941	106	Peabody 0.2	36	21.8	384
03942/43	33/69	Peabody 0.2 field rep	26	22.6	392
03944	50	Peabody 0.2a	4	6.2	429
03945	142	Peabody 0.2b	22	34.6	224
03946	5	Peabody 0.4b	44	45.2	387
03947	79	Peabody 0.4	22	33.8	258
03948	98	Peabody 0.4a	190	319.4	922
03949	59	Peabody 0.9	8	24.4	255
03950	7	Peabody 1.2	20	10.4	108
03951	28	Peabody 1.2c	<2	<2	922
03952	37	Peabody 1.4	<2	4	56

	PA Streamkeeper follow-up
Report To:	Noelle
Fecal Coliform	Method 9222D

Sampling Date: 5/4/2020 Time 09:50

Clallam County Environmental Health Lab
223 East 4th St, Suite 14
Port Angeles, WA 98362
(360) 417-2334

Bottle #	Location Sample Collected	Lab ID #	Fecal Coliform CFU/100ml	E. coli MPN /100 ml	Total coliform MPN/100ml
12B	PA Peabody 0.4a - stormdrain in culvert	092-03958	554	774.6	3106
	labdup	092- ———	510	597.4	4838.4
		092-			
		092-			
		092-			
		092-			
		092-			
		092-			
		092-			
		092-			
		092-			
		092-			

Consistent but odd results - maybe if I use a higher dilution rate next time ...

Samples Relinquished by: Noelle Nordstrom Noelle Nordstrom

Date & Time: 5/4/2020 10:28

Samples Received by: SWaldrup

Date & Time: 5/4/20 10:28

Samples received chilled? (Yes) No

Date Reported 5/5/20 Initials SW

GRAB SAMPLE DATA SHEET - STREAMKEEPERS OF CLALLAM COUNTY - PORT ANGELES, WASHINGTON, USA - 360-417-2281 Revised 2/20/19

Date: 09/24/2020 **(Incl. last name + all initials:) Sampler in charge:** SB Nattinger *Tour ID (from database entry):* _____

Other samplers: GCByrnes *Episode ID (if tour is an entire episode):* _____

Project: City of Port Angeles / Other (list):

Check sampling plan to determine projects and sites for samples & replicates; enter each bottle-grab on a separate line (so sample + replicate = 2 lines)

Bottle #	Site name	Site description	Enter "FR" if a field replicate	Time of sample collection (military)	Sample collector (all initials)	Water temp (°C)	Tour-wide comments: In cells below, make Visit comments: Precip(24 hr) / Other comments: (precip from Lincoln HS unless noted)	Lab # (---50-260)	Complete in lab: Sample/ Lab Rep (LR) fecal reading (colonies per 100 mL)	ElM Qualifier
X	Peabody 0.2 stage reading?					X	Stage at 0.2 (ft):	—	—	
	Peabody 0.0 (when possible)						high tide	—	—	
7B	PA Harbor @Peabody mouth			0940	SBN	11		104	132	G
14B	PA Harbor @Peabody mouth rep		FR	0940	SBN	11	entercocci 798	105	124/142	
128	PA Harbor @Hollywood west			0935	GCB	10	enterococci: 708/379	106	122	
6B	PA Harbor @Hollywood central			0948	GCB	10	entero 309	107	286	
9B	PA Harbor @Hollywood east			0938	GCB	10	entero 637	108	30	
17	Valley 0.0 (when possible) ★			1134	SBN	14	entero 30	109	368	J
45	Valley 0.4 (u/s of final culvert) (include stage reading)			1144	SBN	13	E.coli 2826	110	240	
★ 46	Valley 0.4 rep		FR	1144	SBN	13	Stage at 0.4 (ft):	111	276	
58	Valley 0.7 (end of Valley St.)			1150	GCB	13		112	322	
87	Valley 1.0 (u/s of flatbed bridge)			1155	SBN	13		113	300	
	Valley 1.2 (d/s of Hwy 101)							—	—	
52	Tumwater 0.0 ★			1215	GCB	13	E.coli 2826	114	584	J
133	Tumwater 0.0 rep		FR	1215	GCB	13		115	760/672	J/J
141	Tumwater 0.1 (d/s of storm pipe) (include stage reading)			1211	SBN	14	Stage at 0.1 (ft): 0.82	116	TNTC	
3	Tumwater 0.1b (storm pipe)			1218	SBN	17		117	TNTC	
124	Tumwater 0.1a (u/s of storm pipe)			1216	SBN	13		118	600	J
25	Tumwater 0.8 (d/s of storm input)			1235	SBN	13		119	262	
119	Tumwater 0.8d (storm pipe)			1232	GCB	18	confluent growth	120	—	N
113	Tumwater 0.8e (u/s of storm input)			1238	SBN	12		121	152	

GRAB SAMPLE DATA SHEET - STREAMKEEPERS OF CLALLAM COUNTY - PORT ANGELES, WASHINGTON, USA - 360-417-2281 -- page 2

(See other side for header information)

Complete in lab:

Lab delivery temperatures:	Bottle #	Temperature °C
Earliest:	78	2.3
Latest:	125	7.4
Warmest:	134	4.4

Bottle #	Site name	Site description	Enter "FR" if a field replicate	Time of sample collection (military)	Sample collector (all initials)	Water temp (°C)	Tour-wide comments: In cells below, make Visit comments: Precip(24 hr) / Other comments: (precip from Lincoln HS unless noted)		Lab # (--50-280)	Sample/ Lab Rep (LR) fecal reading (colonies per 100 mL)	EIM Qualifier
23	Tumwater 1.5 (u/s of Hwy 101, d/s of storm channel)			1301	SBN	12			122	96	
82	Tumwater 1.5b (storm channel)			1303	"	14			123	256	J
125	Tumwater 1.5a (u/s of storm channel)			1305	"	12			124	72	
139	Valley 1.4 (u/s of Hwy 101)			~~1300~~ 1300	GCB	14			125	228	
	Tumwater 4.4 (u/s of 3142 Black Diamond Rd)								—	—	
	Peabody 2.9 (Coyote Run Ln off Ahlvers/Mill/Scribner Rds)								—	—	
28	Peabody 1.4 (ONP Visitor Center loop trail u/s crossing)			1109	SBN	13		clear water	126	82	
109	Peabody 1.2 u/s of stormwater flume			1052	SBN	13		more turbid than 09	127	536	J
89	Peabody 1.2c (stormwater flume)			1052	GCB	17		turbid - high flow	128	confluent growth	N
61	Peabody 0.9 (u/s of 8th St)			1041	SBN	15		visibly turbid	129	368	J
★ 46	Peabody 0.2 (RV Park d/s end) (include stage reading)			1000	GCB	14	Stage at 0.2 (ft):	0.63	130	TNTC	
132	Peabody 0.2 rep		FR	1000	GCB	14			131	EST > 1370 TNTC	
143	Peabody 0.2a (pipe d/s of RV Park office)			1013	GCB	16			132	244	
148	Peabody 0.2b (u/s of pipe)			1011	GCB	14			133	TNTC	
137	Peabody 0.4b (u/s of trailers, d/s of pool)			1003	SBN	14			134	TNTC	
134	Peabody 0.4a (storm input inside Peabody St culvert)			1029	SBN	18			135	EST > 1600 TNTC	
12	Peabody 0.4 (u/s of Peabody St.) (include stage reading)			1028	GCB	14	Stage at 0.4 (ft):	0.23	136	616	
	Note: Valley 0.4 rep + Peabody 0.2 were both labeled as bottle # 46 (actual #'s were 46 + 146)										
	Results of the 2 sites are based on the results of #45 Valley 0.4 - field rep matches primary.									SW	

Lab samples submitted by (incl. initials): SB Nattinger Date: 9/24/20 Time: 1350 Rec'd by: SWaldrop Date: 9-24-20 Time: 13:55

Lab samples analyzed by (incl. initials): _____ Analysis date: _____ Time: _____

When finished, leave original form with water samples at lab and bring signed copy back to be filed at Streamkeepers Office.

GRAB SAMPLE DATA SHEET - STREAMKEEPERS OF CLALLAM COUNTY - PORT ANGELES, WASHINGTON, USA - 360-417-2281 Revised 10/24/18

Project: *City of Port Angeles* / **Tour descriptor:** *GrabTours* / **Period:** *Monthly*

Date: 10/27/2020 **(Incl. last name + all initials:) Sampler in charge:** SBWattinger *Tour ID (from database entry):* _____

Other samplers: GCByrnes *Episode ID (if tour is an entire episode):* _____

Check sampling plan to determine projects and sites for samples & replicates; enter each bottle-grab on a separate line (so sample + replicate = 2 lines)

Bottle #	Site name	Site description	Enter "FR" if a field replicate	Time of fecal sample collection (military)	Sample collector (all initials)	Water temp (°C)	Tour-wide comments: / In cells below, make Visit comments: Precip(24 hr) / Other comments: (precip from Lincoln HS unless noted)	Lab #	Complete in lab: Sample/ Lab Rep (LR) fecal reading (colonies per 100 mL)	EIM Qualifier
Lab delivery temperatures: Earliest: / Latest: / Warmest:		Bottle # 144 / 131 / 98 — Temperature °C 6.6 / 7.0 / 8.6					#8 = 20 SKI ProDss	092-05--		
144	Peabody 0.0	Peabody @ mouth		1030	GCB	8		366	186	
133	Peabody 0.2	Peabody @ 2nd St.		1040	GCB	8		369	338	
134	Peabody 0.2	Peabody @ 2nd St.	FR	1041	GCB	8		370	220/264	
X	Peabody 0.2	**STAGE GAGE ON d/s SIDE OF BRIDGE**				X	**Stage (ft):** 0.60	—	—	
138	Peabody 0.2a	Peabody storm pipe d/s of RV park office		1042	GCB	13		371	16	
88	Peabody 0.2b	Peabody u/s of storm pipe d/s of RV office		1043	GCB	9		372	660	
146	Peabody 0.4b	Peabody trailer park 30' d/s of culvert under Peabody St.		1045	SBN	7		373	82	
66	Peabody 0.4	Peabody u/s end Peabody St. culvert		1105	SBN	7		374	92	
X	Peabody 0.4	**STAGE GAGE ON RB CULVERT WING**		1108	SBN	X	**Stage (ft):** .13	—	—	
122	Peabody 0.4a	Peabody storm pipe inside culvert		1114	GCB	14		375	70	
3	Peabody 0.9	Peabody u/s of 8th St.		1124	GCB	8		376	120	
98	Peabody 1.2	Peabody u/s of storm flume @Lauridsen		1133	GCB	14	ProDss	377	46	
67	Peabody 1.2c	Peabody storm flume d/s of Lauridsen		1131	GCB	14		378	8	
132	Peabody 1.4	Peabody @ ONP Visitor Ctr		1153	SBN	7	ProD 1153	379	18	

Bottle #	Site name		Site description	Enter "FR" if a field replicate	Time of fecal sample collection (military)	Sample collector (all initials)	Water temp (°C)	Tour-wide comments: In cells below, make Visit comments: Precip(24 hr) / Other comments: (precip from Lincoln HS unless noted)		Lab # 092-05--	Sample/ Lab Rep (LR) fecal reading (colonies per 100 mL)	EIM Qualifier
74	Tumwater 0.0	74	Tumwater d/s of Marine Dr. (mouth)		1218	GCB	8			362	<2	U
89	Tumwater 0.0	89	Tumwater d/s of Marine Dr.	FR	1219	GCB	8			363	6/2	
X	Tumwater 0.1		**STAGE GAGE d/s SIDE OF RAMP PILING**		1215	SBN	X	**Stage (ft):**	0.75	—	—	
135	Tumwater 0.8	135	Tumwater nr. 11 St., d/s of storm outflow		1241	SBN	7			364	X 4	
57	Tumwater 0.8d	57	Tumwater storm outfall pipe @ 11 St.		1233	GCB	13			365	X 2	
102	Tumwater 0.8e	102	Tumwater u/s of 11 St. outfall pipe		1244	SBN	7			366	6	
131	Tumwater 1.5		Tumwater d/s of LB storm input channel u/s of Hwy 101 culvert		1304	SBN	6			367	6	

Lab samples submitted by (incl. initials): SB Nattinger Date: 10/27/20 Time: 1340 Rec'd by: SWaldy Date: 10-27-20 Time: 13:40

Lab samples analyzed by (incl. initials): _____ Analysis date: _____ Time: _____

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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 analyzed monthly and compared against the City IDDE Response Policy. This work has resulted in the identification (2016) and disconnection (2017) of a broken subsurface side sewer line leaking into a Storm main which was discharging into Peabody Creek. Attached is the 2018 sampling plan. This plan was also utilized in 2019 and 2020.