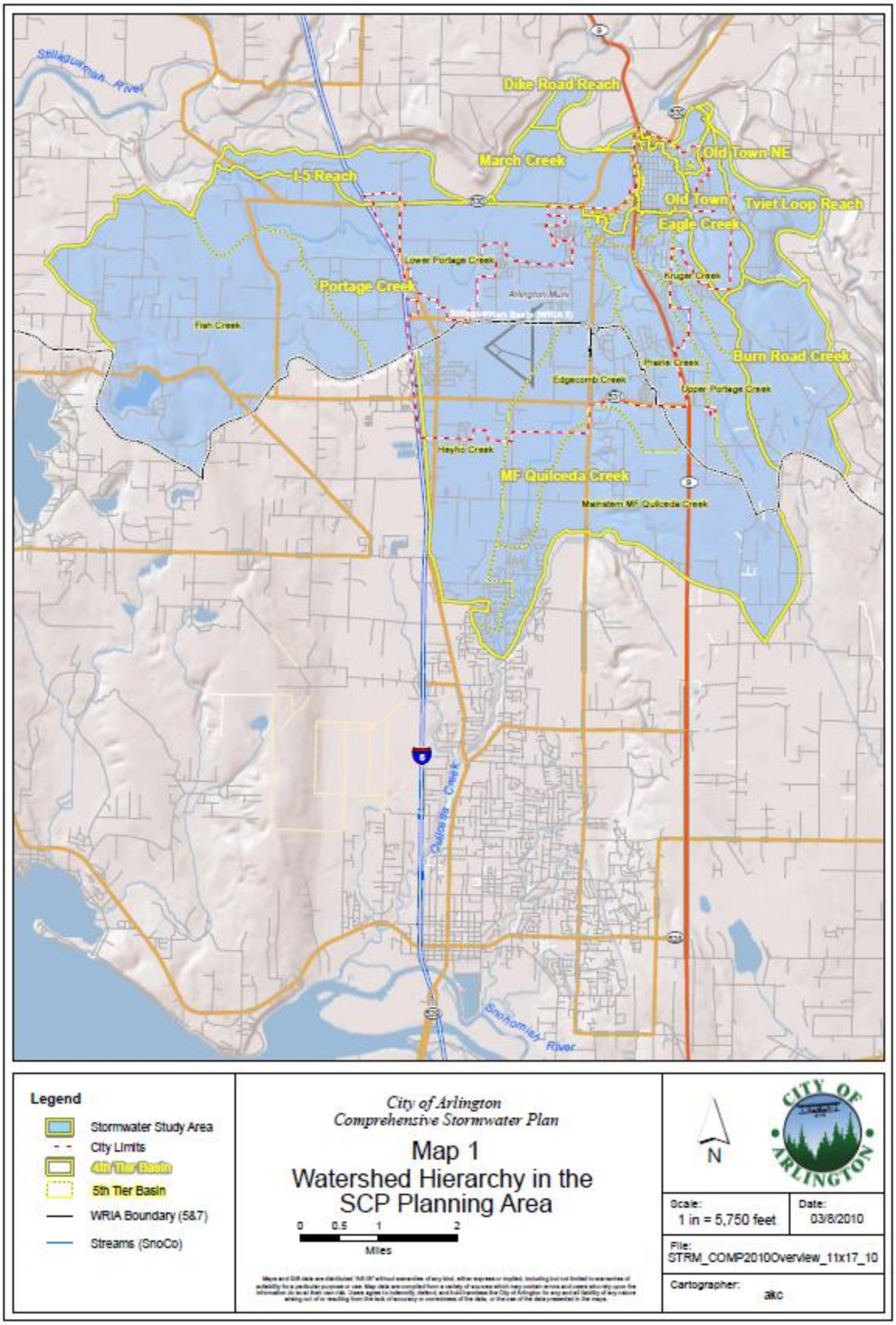
City of Arlington 2019

Stormwater Management Program

Country Charm Park


Stillaguamish River
Dike Road Reach
March Creek
Old Town NE
I-5 Reach
Old Town
Tviet Loop Reach
Eagle Creek
Lower Portage Creek
Kruger Creek
Portage Creek
Arlington Muni
Fish Creek
Burn Road Creek
Prairie Creek
Edgecomb Creek
Upper Portage Creek
Hayho Creek
MF Quilceda Creek
Mainstem MF Quilceda Creek
Quilceda Creek
Snohomish River
Legend
Stormwater Study Area
City Limits
4th Tier Basin
5th Tier Basin
WRIA Boundary (5&7)
Streams (SnoCo)
City of Arlington
Comprehensive Stormwater Plan
Map 1
Watershed Hierarchy in the
SCP Planning Area
0 0.5 1 2
Miles
N
CITY OF ARLINGTON
Scale:
1 in = 5,750 feet
Date:
03/8/2010
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https://ecology.wa.gov/Asset-Collections/Doc-Assets/Water-quality/Water-Quality-Permits/MS4-permits/WWA-PhII/WWAPhaseII-Permit-2014Final

Western Washington Phase II Municipal Stormwater Permit Special and General Conditions

1. Reader's Guide

1.1. Why We're Here

The National Pollutant Discharge Elimination System (NPDES) permit program is a tool for the management of pollutants discharged from point sources, such as where pipes and ditches empty into rivers. Initially applied to industrial dischargers and publicly-owned treatment works (POTWs), Clean Water Act amendments in 1987 expanded the program to include stormwater runoff in areas with the greatest potential to negatively impact water quality, defined as municipalities with a 1990 population of over 100,000 people. In Washington State, where the Department of Ecology (Ecology) has been delegated the NPDES permit authority; these communities were regulated under the Phase I NPDES Municipal Stormwater Permit.

In 1999, the NPDES stormwater permit program was extended—as "Phase II"—to cover point and non-point (dispersed) stormwater discharges from "small" Municipal Separate Stormwater Sewer Systems (MS4s), as well as for construction activity that disturbs between 1 and 5 acres of land. Phase II communities include those that:

- Own and operate a storm drain system
- Discharge to surface waters
- Are located in urbanized areas
- Have a population greater than 10,000

Across Washington State, 108 towns, cities and counties located within urban areas—including the City of Arlington—met these criteria and fall under the regulation of NPDES-Phase II. Other neighboring Phase II communities include the Cities of Marysville and Granite Falls. The City of Stanwood does not meet all of the criteria and is not regulated under the NPDES Phase II stormwater program.

Ecology regulates all Phase II communities in Western Washington under one permit. Drafting of the Phase II Municipal Stormwater Permit for Western Washington (the Permit) began in the Fall of 2004. The formal permit was issued on January 17, 2007, and became effective February 17, 2007. Ecology administers the permit in 5-year cycles. The past permit cycle was scheduled to expire on February 15, 2012, however it was extended through July 31, 2013.

Since August 1, 2013 the City has been operating under the updated NPDES Phase II 2013 – 2018 permit cycle. There were several appeals to the permit and Washington State Department of Ecology issued the final modified Western Washington Phase II Municipal Stormwater Permit on December 17, 2014. This modified Phase II permit only applies to Western Washington and was effective on January 17, 2015.

Additional information regarding the Phase II Municipal Stormwater Permit for Western Washington can be found on Ecology's website:

https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Western-Washington-Phase-II-Municipal-Stormwater

1.2. Program requirements

The Permit requires the City to develop and implement this Stormwater Management Program (SWMP) that addresses Permit conditions grouped according to the following components:

- Public Education and Outreach
- Public Involvement
- Illicit Discharge Detection and Elimination
- Runoff Control for New Development, Redevelopment and Construction Sites
- Pollution Prevention for Municipal Operations and Maintenance
- Total Maximum Daily Loads (TMDLs), also known as water clean-up plans

Annually the City must perform the following activities:

- Submit an updated SWMP document to Ecology describing compliance activities planned for the coming permit year (work-plan)
- Post the SWMP document on the web
- Submit an annual report documenting Permit compliance activities for the previous calendar year.

Each annual SWMP work plan is to be developed with input from the public.

Ultimately, guided by public opinion, this SWMP will direct City leaders and staff in its annual responsibilities for protecting our rivers, streams, and wetlands. City departments that may be affected by this 2019 SWMP, and their abbreviations within this SWMP, include:

- Public Works Utilities Division (PW Utilities);
- Community and Economic Development (CED) ;
- Public Works Engineering Division (PW Eng.);
- Public Works (PW Admin, Sewer, Water, Stormwater);
- Finance Department (Finance);
- Information Technology (IT);
- Human Resources Department (HR);

- Public Safety – Police and Fire Departments (PD,FD)

1.3. What's Inside

As shown in the Table of Contents, this 2019 SWMP work plan is formatted to address the following eight permit conditions groups:

- SWMP Administration ;
- Public Education;
- Public Involvement ;
- Illicit Discharges;
- Runoff Controls;
- Municipal Operations ;
- Water Clean-up Plans or TMDLs; and
- Monitoring.

Each permit condition group is in a separate section and uses a series of two tables to describe the work plan intended to address the Permit conditions in that group. The first table is a summary of the individual permit conditions and the condition's effective date. The second table identifies the associated work activities for each listed condition that will be completed in 2019, and the department(s) responsible for the implementation. Some efforts may be extended as necessary to incorporate adaptive management responses for continuous improvement of the SWMP.

Appendix A of this document includes a link to the text of the Western Washington Phase II Municipal Stormwater Permit. The Permit contains a list of useful definitions and acronyms that may be referenced within this or future SWMP work plans.

1.4. History of plan versions

You are reading Version 2019 of the City of Arlington's Stormwater Management Program work plan. The SWMP is expected to be a living, changing document, as staff and the public provide input to the SWMP. The below Table 1-1 is intended to document key changes from the previous versions of the SWMP.

Table 1-1. Version History of the City of Arlington SWMP Work Plan

Version	Release Date	Chronological Changes from Previous Versions
2008-1	02/15/2008	First pre-release
2008-2	03/28/2008	More thorough documentation of current activities and proposed work activities in 2008. No public input received for consideration since previous version. This version submitted with 2007 annual report.

2008-3	3/31/2008	Provide template for future documentation of natural and built environments in Section 2.
2009-1	3/27/2009	First release of SWMP Revision 2009. Update for 2008 implemented activities and 2009 proposed activities. Complete Section 2 descriptions of stormwater system and setting. This version referenced in City's 2008 NPDES II permits annual report.
2010-1	3/31/2010	First release of SWMP Revision 2010 includes implemented activities in 2009 and proposed activities in 2010. This version referenced in City's 2009 NPDES II permit annual report.
2011-1	3/31/2011	First release of SWMP Revision 2011 includes implemented activities through 2010 and proposed activities for 2011. This version referenced in City's 2010 NPDES II permit annual report. Implementation of this SWMP version is intended to achieve full permit compliance by the end of the permit term, February 17, 2012. Also includes Bacterial Pollution Control Plan within TMDL Section 9.4.
2012/13	3/31/2012	First release of SWMP Revision 2012/13 includes implemented activities through 2011, and proposed activities through July 31, 2013. This version referenced in the City's 2011 NPDES II annual report. Implementation of this SWMP is intended to continue full compliance with the permit. This version will also include reference to monitoring and maintenance of the new Old-town stormwater wetland.
2013-1	3/31/2013	First release of SWMP Revision 2013 includes activities through 2013.
2014-1	3/31/2014	First release of SWMP Revision 2014 is modified from previous versions. This version reduces the content down from three tables per chapter to two tables. The first table shows what is required for that chapter, and the second table shows the proposed actions for the upcoming year.
2015-1	3/31/2015	First release of SWMP Revision 2015 includes several new elements required in the 2013 – 2018 updated Phase II permit.
2016-1	3/31/2016	First release of SWMP Revision 2016 includes activities through 2016. Implementation of updated LID codes a new activity.
2017-1	3/31/2017	First release of the SWMP Revision 2017 include activities through 2017. Implementation of Source Tracking procedures is the final major change required by the 2013 – 2018 permit update.

2018-1	3/31/2018	First release of the SWMP Revision 2018 includes activities through 2018.
2019-1	3/31/2019	First release of the SWMP Revision 2018 includes activities through 2019. Updates to inspection SOP and forms. Integration of work items into citywide asset management software and dedicated GIS.

2. Stormwater Management Program Administration

This section addresses Permit conditions regulating the City's administration of the overall SWMP and NPDES Phase II program.

2.1. What's Required

The Permit requires the City to meet certain SWMP administrative conditions, the requirements for 2018 are summarized in Table 2-1. See link to the current Permit at Department of Ecology's website in Appendix A for the complete text of special and general conditions in the Permit.

Table 2-1. Permit Requirements for Stormwater Management Program Administration

Reference	Permit Condition	Effective
S5.A.2	Written SWMP organized by program components, updated at least annually, and submitted with annual reports.	03/31/08
S5.A.3a	Account for SWMP program costs.	01/01/09
S5.A.3b	Document SWMP program activities, including inspections, enforcement actions, education and other activities.	02/16/07
S5.A.5	Coordinate with other NPDES stormwater permittees to assure efficient programs, particularly where MS4s and water bodies are interconnected or shared.	02/16/07
S9.A	Annual reports required for previous calendar year.	03/31/08
S9.C, D	Maintain SWMP-related records—available to the public—for at least 5 years.	02/16/07
S9.E	Annual report contents: Ecology-provided report form documenting City's evaluation of SWMP implementation and compliance, and implementation schedule, and geographic area under Permit.	03/31/08

2.2 Work Activities

Table 2-2. City of Arlington 2019 Work Plan to address permit requirements for Stormwater Management Program Administration

Reference	Proposed Effort	Who[1]	Schedule
S5.A.2	Share draft of 2019 revised SWMP with City staff.	PW Utilities	3/1/19
S5.A.2	Meet or talk with interested public to present and solicit input on draft SWMP.	PW Utilities	Variable
S5.A.2	Draft 2019 SWMP incorporating City comments.	PW Utilities	03/31/19
S5.A.3a	Through the use of financial and asset tracking the City can provide cost estimates of program components.	PW Utilities	Ongoing
S5.A.3b	Continue documentation of street and stormwater maintenance activities.	CED, PW Utilities	Ongoing
S5.A.3b	Continue implementation, development, evolution of inspection, enforcement, education and other forms for implementation of asset management database (Cartegraph – Switch to Elements was made January 2018	PW Utilities	Ongoing
S5.A.5	Continue regular participation in regional (North Sound Permittees) NPDES stormwater forum; coordinate efforts as opportunities evolve; quarterly meetings anticipated.	PW Utilities	Ongoing
S5.A.5	Continued participation with City of Marysville in regards to management of interconnecting facilities.	PW Utilities, PW Eng. CED	Ongoing
S9.A, E	Submit 2018 annual report utilizing the Ecology electronic reporting system.	PW Utilities	March 31, 2019
S9.C, D	File 2017 annual report and supporting materials electronically on Utilities server and web site.	PW Utilities	Ongoing
N/A	Implement the updated Low Impact Design (LID) land use code, standards and specifications, and citywide comprehensive plan to meet 2013 – 2018 NPDES permit.	PW Utilities, City Council CED, PW Utilities	Ongoing

Reference	Proposed Effort	Who[1]	Schedule
S5.C.3.c.i.	Identify and implement a field screening methodology appropriate to the characteristics of Arlington's MS4 water quality concerns.	PW Utilities	Adopted – 1/1/ 2018

[1] First department listed in each cell assumes lead role

3. Public Education and Outreach

This section addresses Permit conditions regulating the City's Public Education and Outreach (PEO) activities under the SWMP.

3.1. What's Required

The Permit requires the City to implement Public Education and Outreach activities, the requirements for 2018 are summarized in Table 3-1. See link to the current Permit at Department of Ecology's website in Appendix A for the complete text of special and general conditions in the Permit.

Table 3-1. Permit Requirements for Public Education and Outreach

Reference	Digest of Selected Permit Conditions	Effective
S5.C.1.a	Develop an education and outreach program to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts; target populations and topics prioritized below.	02/16/09
S5.C.1.a.i	Priority 1—General Public: general stormwater impacts, impervious surfaces, source control BMPs, stewardship for pet owners and homeowners.	02/16/09
S5.C.1.a.ii	Priority 2—Public and businesses: BMPs for automotive & other hazardous chemicals; soaps and cleaning supplies; illicit discharges.	02/16/09
S5.C.1.a.iii	Priority 3—Homeowners, landscapers, property managers: yard care practices, pesticide/fertilizer use, carpet cleaning, auto repair, LID practices, storm pond maintenance.	02/16/09
S5.C.1.a.iv	Priority 4—Engineers, contractors, developers, permit staff, planners: technical standards for plans, LID techniques, water quality & flow control BMPs.	02/16/09

Reference	Digest of Selected Permit Conditions	Effective
S5.C.1.b	Measure understanding and adoption of targeted behaviors in target audiences.	02/16/09
S5.C.1.c	Document PEO efforts.	02/16/07

3.2 Work Activities

Table 3.2. City of Arlington 2019 Work Plan to address permit requirements for Public Education and Outreach

Reference	Proposed Effort	Who[1]	Schedule
S5.C.1.a	Document and schedule the City's pertinent Public Education and Outreach efforts under Stormwater Utility.	Stormwater Utility	Ongoing in 2019
S5.C.1.a	Continue meeting with County staff and watershed groups to identify cooperative education opportunities.	Stormwater Utility	Goal of 2 meetings 2019
S5.C.1.a	Coordinate with Snohomish County, Sound Salmon Solutions, Snohomish Conservation District and Stillaguamish Tribe to identify cooperative education opportunities.	Stormwater Utility	Ongoing
S5.C.1.a	Meet with Stillaguamish Stewardship and Education Committee.	Stormwater Utility	Ongoing
S5.C.1.a.i	Participate in Phase II of the Region wide Natural Yard Care program monitoring behavior change in general public.	Stormwater Utility	Ongoing
S5.C.1.a.i	Use the business license database to identify businesses with known pollutants, and distribute brochures explaining Stormwater Best Management Practices.	Stormwater Utility (Intern)	Summer 2019
S5.C.1.a.i	Continue efforts with Arlington School District representatives to review environmental	Stormwater Utility	Ongoing

Reference	Proposed Effort	Who[1]	Schedule
	education curriculum for stormwater, water conservation, refuse/recycle.		
S5.C.1.a.i	Continue participating in Arlington School District middle school erosion curriculum.	Stormwater Utility	2018/19 School Year
S5.C.1.a.i	Integrate stormwater education curriculum in schools currently receiving stormwater rate adjustments.	Stormwater Utility	Ongoing – Natural Resource, Post Middle School and Weston
S5.C.1.a.i	Outreach at Eagle Festival; cooperative effort with Stilly Tribe; focus on stormwater treatment, ecology, wildlife; distribute brochures. Integrate the LIO Eco-system recovery plan.	Stormwater Utility	Ongoing, 11th annual Eagle Festival
S5.C.1.a.i	Outreach at Earth Day event partnering with Marysville and Snohomish Conservation District.	Stormwater Utility	April 2019
S5.C.1.a.i	Outreach at Arbor Day Tree Planting event. Coordinate with Sound Salmon Solutions at the Prairie creek sediment reduction project site.	Stormwater Utility	April 2019
S5.C.1.a.i	Outreach at Arlington Fairs.	Stormwater Utility	July 2019
S5.C.1.a.i	Outreach at Festival of River.	Stormwater Utility	August 2019
S5.C.1.a.i	Outreach at Annual Arlington Fly In	Stormwater Utility	August 2019
S5.C.1.a.ii	Continue to develop PEO approaches to address targeted behaviors in businesses and other hazardous materials users. Use of on-line inspection form priority for 2017.	Stormwater Utility	Ongoing

Reference	Proposed Effort	Who[1]	Schedule
S5.C.1.a.ii	Use handouts targeted to businesses on expected /required stormwater protection practices.	Stormwater Utility	Ongoing
S5.C.1.a.ii	Outreach to businesses (TBD). Coordinate with Snohomish Conservation District combined effort with Stanwood to contact and inspect businesses.	Stormwater Utility	Ongoing
S5.C.1.a.ii	Outreach to businesses at Arlington Street Fair.	Stormwater Utility	July 2019
S5.C.1.a.ii	Outreach to residents, landscapers and property managers/owners.	Stormwater Utility	Ongoing through 2019
S5.C.1.a.ii	Outreach residents, landscapers and property managers/owners at Arlington Fair.	Stormwater Utility	July 2019
S5.C.1.a.ii	Outreach to gardeners at Arlington Garden Club. Bio-char seminar in spring.	Stormwater Utility	Schedule with Garden Club
S5.C.1.a.ii.c?	Continue to develop PEO approaches to implement targeted behavior best methods identified in the Natural Yard Care Program.	Stormwater Utility	Ongoing
S5.C.1.b	Meet with PW Director, CED inspector, Planners, Maintenance and Operations to facilitate discussion and education on general impacts of stormwater on surface waters	Stormwater Utility, PW Eng., CED	Ongoing
S5.C.1.b	Outreach to “the public”. Discussions and education on General impacts of stormwater on surface waters	Stormwater Utility, PW Eng., CED	Ongoing – 2019 Events
S5.C.1.b	Outreach to city leaders at City Council workshop – Discussions and education on General impacts of stormwater on surface waters	Stormwater Utility	Ongoing 2019

Reference	Proposed Effort	Who[1]	Schedule
S5.C.1.b	Provide stormwater literature in City Council Chambers' foyer for leaders and public use.	PW Utilities,	Ongoing
S5.C.1.b	Consider adaptive management action resulting from participation in the Region wide Natural Yard Care, Behavior change program being led by Snohomish County.	PW Utilities, All	Complete - August 2018
S5.A.5.a	Continue participation in regional stormwater forum or education group.	PW Utilities	As scheduled
S5.A.3	Document education efforts.	PW Utilities,	Ongoing
S5.A.3	Track PEO efforts across the City through including action in monthly stormwater internal report.	Stormwater Utility	Ongoing

[1] First department listed in each cell assumes lead role

4. Public Involvement and Participation

This section addresses Permit conditions regulating the City's Public Involvement and Participation (PIP) activities under the SWMP.

4.1. What's Required

The Permit requires the City to implement certain Public Involvement and Participation activities, several of which are summarized in Table 4-1. See link to the current permit at Department of Ecology's website in Appendix A for the complete text of special and general conditions in the Permit.

Table 4-1. Permit Requirements for Public Involvement and Participation

Reference	Digest of Selected Permit Conditions	Effective
S5.C.2	Provide opportunities for public involvement in stormwater matters; e.g., advisory councils, watershed committees, stewardship programs, rate structure studies.	02/16/07
S5.C.2a	Meet state and local public notice requirements when developing the SWMP; provide process for public to participate in SWMP development and updates.	02/16/08

Reference	Digest of Selected Permit Conditions	Effective
S5.C.2b	Post SWMP, annual report, and other submittals on City's web site.	03/31/08

4.2 Work Activities

Table 4-2. City of Arlington 2019 Work Plan to address permit requirements for Public Involvement and Participation.

Reference	Proposed Effort	Who[1]	Schedule
S5.C.2	Publish invitations to public participation in stormwater or water education activities on-line and through social media.	Stormwater Utility	Ongoing 2019
S5.C.2	Solicit guest articles (Arlington Times or Update) from general public involved or expressing interest in stormwater and natural resources issues.	Stormwater Utility	Goal of one guest article in 2019
S5.C.2	Continue hosting projects for Scouts and youth organizations including local Schools.	Stormwater Utility	Ongoing
S5.C.2a	Issue a notice in the e-news stating the draft SWMP is available for review.	Stormwater Utility	May 31, 2019
S5.C.2.b	Improve web page to solicit public input on the 2018 SWMP.	PW Utilities,	Ongoing
S5.C.1a.i.(a)	Maintain Streamside landowner brochures in information racks in City Hall and on web page.	PW Utilities	Ongoing 2019
S5.C.2a	Also see public involvement and participation activities identified for the SWMP under condition S5.A.2.	PW Utilities	Ongoing
S5.C.2.b	Post SWMP, annual report, and other 2018 report submittal materials on City web site.	PW Utilities	May 31, 2019

[1] First department listed in each cell assumes lead role

5. Illicit Discharge Detection and Elimination

This section addresses Permit conditions regulating the City's Illicit Discharge Detection and Elimination (IDDE) activities under the SWMP.

5.1. What's Required

The Permit requires the City to implement certain IDDE activities, the requirements for 2019 are summarized in Table 5-1. See link to the current Permit at Department of Ecology's website in Appendix A for the complete text of special and general conditions in the Permit.

Table 5-1. Permit Requirements for Illicit Discharge Detection and Elimination

Reference	Digest of Selected Permit Conditions	Effective
S5.C.3	Full implementation of an IDDE program.	08/16/11
S5.C.3.a	Prepare and maintain stormwater infrastructure map, with structures, outfalls, new connections, areas not discharging to surface waters, etc.	02/16/11
S5.C.3.b	Implement IDDE ordinance, addressing: potable water sources, lawn watering, swimming pools, street and sidewalk wash water, other non-stormwater discharges; includes enforcement strategy.	08/16/09
S5.C.3.b	Implement an ordinance or other regulatory mechanism to effectively prohibit non-stormwater, illicit discharges in to the Permittee's MS4 to the maximum extent allowable.	08/1/13
S5.C.3.c	Implement IDDE identification program, including prioritizing sites, field assessment & screenings, source ID characterization, corrective procedures.	08/16/11
S5.C.3.d.i	Inform public employees, businesses, general public of impacts of illegal discharges & improper waste disposal; distribute info to target audiences in S5.C.1.	08/16/11
S5.C.3.d.ii	Implement public hotline for reporting IDDE violations.	02/16/09
S5.C.3.e	Develop IDDE program tracking database.	02/16/07
S5.C.3.f.i	Training for City employees involved in IDDE activities.	08/16/09
S5.C.3.f.ii	Training for all City employees annually.	02/16/10
S5.C.3.c.i.	Identify and implement a field screening methodology appropriate to the characteristics of Arlington's MS4 water quality concerns.	12/31/2017

5.2 Work Activities

Table 5-2. City of Arlington 2019 Work Plan to Address Permit Requirements for Illicit Discharge Detection and Elimination

Reference	Proposed Effort	Who[1]	Schedule
S5.C.3.a	Continue infrastructure mapping to fill in gaps where historic data is not available and add new facilities to maps.	Stormwater Utility, PW Eng.	Ongoing
S5.C.3.a	Continue implementation of Elements stormwater asset management system to track facility inspections and maintenance work orders.	Stormwater Utility CED GIS	Ongoing
S5.C.3.a	Continue comprehensive mapping of hydrography in/near city with GPS or acceptable alternative.	PW Eng., Stormwater Utility,	Ongoing
S5.C.3.a	Continue comprehensive mapping of water courses in/near city in geodatabase.	PW Eng., Stormwater Utility	Ongoing
S5.C.3.a	Provide training updates as needed for use of the Geo-Spatial Analysis tool	PW GIS., Stormwater Utility	Ongoing
S5.C.3.b	Adopt revised City Engineering Standards for consistency with AMC 13.28 and IDDE permit conditions.	PW Utilities, PW Eng.,	Completed - Dec 2017
S5.C.3.c	Internal review and training of staff on SOPs for IDDE (screening priority areas, patrolling, characterization, tracing, corrective measures, and enforcement).	PW Utilities CED	Ongoing, held at department staff meetings.

Reference	Proposed Effort	Who[1]	Schedule
S5.C.3.b.v	Investigate all illicit discharges (IDDE's) as observed by or reported to the Stormwater Utility. Correct through cooperative, educational efforts with business owners.	Stormwater Utility	Ongoing
S.7 Appendix 2	Continue Stillaguamish TMDL sampling per the QAPP	Stormwater Utility	Ongoing
	The City will continue source identification work based on review of water quality data.	Stormwater Utility	Ongoing
S5.C.3.c.i	Develop a program for field screening to detect illicit connections. Review Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, October 2004. Due December 31, 2017	Stormwater Utility	Ongoing
S5.C.3.d.i	Update web site educational information to highlight IDDE; anticipated to be a multi-year effort.	Stormwater Utility, IT	Fall 2019 to prepare for rainy season
S5.C.3.d.ii	Continue to publish IDDE hotline phone number on City communication tools. Continuous hotline ad on community TV.	Stormwater Utility	Ongoing
S5.C.3.e	Investigate opportunity and appropriateness for incorporating an IDDE database component within Elements	Stormwater Utility	When IDDE event is in MS4, and can be tied to an asset
S5.C.3.e	Document feedback from IDDE public education efforts.	Stormwater Utility	Ongoing
S5.C.3.e	IDDE PEO responses will be documented and referenced in report when available.	Stormwater Utility	Ongoing
S5.C.3.c,f	Provide follow-up training to all city field crews as to the identification, reporting, and correction of illicit stormwater discharges;	Stormwater Utility,	Ongoing held at department staff meetings

Reference	Proposed Effort	Who[1]	Schedule
	request input on implementation of the city's IDDE program.	PW Eng. CED , Stormwater Utility	

Note 1 - First department listed in each cell assumes lead role

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

This section addresses Permit conditions regarding the City's activities under the SWMP to control runoff from new development, redevelopment and construction sites.

6.1. What's Required

The Permit requires the City to implement certain Best Management Practices (BMPs) for controlling runoff related to development and construction activities, the requirements for 2018 are summarized in Table 6-1. See link to the current Permit at Department of Ecology's website in Appendix A for the complete text of special and general conditions in the Permit.

Table 6-1. Permit Requirements for Controlling Runoff from New Development, Redevelopment And Construction Sites

Reference	Digest of Selected Permit Conditions	Effective
S5.C.4.a	Adopt an ordinance addressing runoff during development and construction projects, including specified minimum technical requirements.	02/16/10
S5.C.4.b	Modify permit process, with plan review, inspection, and enforcement capability, to meet specified standards.	02/16/10
S5.C.4.c.i	Adopt O&M ordinance to enforce maintenance responsibilities to assure adequate long-term function of stormwater facilities after construction.	02/16/10

Reference	Digest of Selected Permit Conditions	Effective
S5.C.4.c.ii	Establish maintenance standards at least as protective of stormwater facility function as the 2005 Stormwater manual, Volume V, Chapter 4.	02/16/10
S5.C.4.c.iii, iv	Annual inspections of all stormwater treatment and flow control facilities, or justified alternatives; construction inspections.	02/16/10
S5.C.4.d	Record keeping re: runoff control program, including documenting inspections and enforcement actions.	02/16/10
S5.C.4.e	Make available to developers and project proponents copies of "Notice of Intent for Construction Activity" and "Notice of Intent for Industrial Activity".	02/16/10
S5.C.4.e	Training for City employees involved in activities associated with the program to control stormwater runoff.	02/16/10
S5.C.4 a, f	The City will adopt an updated ordinance including minimum thresholds, and adopt updated Low Impact Design Criteria	08/01/13

6.2 Work Activities

Table 6-2. City of Arlington 2019 Work Plan to Address Permit Requirements for Controlling Runoff from New Development, Redevelopment and Construction Sites

Reference	Proposed Effort	Who[1]	Schedule
S5.C.4.a	Integrate the recommendations developed during the LID code update in to the Engineering Standards and Specifications.	Stormwater Utility, PW Eng., CED	In-development
S5.C.1.a.i.a	Draft outreach materials (brochure, web site, PowerPoint) for "LID in Arlington for Developers".	Stormwater Utility, PW Eng.,	Ongoing.

Reference	Proposed Effort	Who[1]	Schedule
S5.C.1.a.i.a	Provide outreach opportunities for developers to discuss stormwater issues and LID. Use of the Geo-spatial tool by the Permit Center will provide site specific LID alternatives.	Stormwater Utility, PW Eng., CED	Ongoing
S5.C.4.c	Verify that adequate long-term site-specific O&M manuals for all applicants preparing stormwater site plans are submitted with Site Civil.	CED Stormwater Utility, PW Eng.	Ongoing
S5.C.4.b	Improve IWORQ permit process to identify various application mileposts and LID techniques. Review existing application, permit, and inspection process. Identify information tracking needs.	Stormwater Utility, PW Eng., CED	Completed - July 2018
S5.C.4.b	Improve existing recordkeeping system. Utilize electronic tablets to document while in field.	PW Utilities, Stormwater Utility, PW Eng., CED	Ongoing
S5.C.4.b	Improve existing recordkeeping system. City staff revises field forms and reports as necessary for site inspections before, during, and after the building permit process.	Stormwater Utility, PW Eng., CED	Ongoing
S5.C.4.b	Continue to track LID technique implementation.	CED Stormwater Utility,	Ongoing

Reference	Proposed Effort	Who[1]	Schedule
		PW Eng.,	
S5.C.4.b, c	Use IWORQ for frontloading the subsequent inspection and credit process which may transfer by site address to the stormwater asset management system (Elements).	PW Utilities, PW Eng., CED	Completed - September 2018
S5.C.4.c.iii	Adapt self-inspection forms to be on the I-pad and downloadable to either Elements or IWORQ. If available use an alternate web-based reporting tool for landowners to complete and submit inspection forms.	Stormwater Utility	August 2019
S5.C.4.c.iii	Implement the sending of approved letters for the self-inspection and reporting process. Including the letters sent by Airport Management to their lease clients.	Stormwater Utility	September 2019
S5.C.4.c.iii	Implement cycle of notification letters for inspection and reporting.	Stormwater Utility	Ongoing; probably bi-monthly in 2019
S5.C.4.c.iii	Storm staff monitors/audits selected self-inspection forms when performed by facility owner.	Stormwater Utility	September 2019
S5.C.4.c.iii S5.C.4.c.iv	Use GIS to confirm all control structures are appropriately identified and labeled in existing inventory.	Stormwater Utility, PW Utilities, PW GIS	Ongoing
S5.C.4.c.iii S5.C.4.c.iv	Expand recordkeeping process from S5.C.4.b to handle all stormwater treatment and flow control facilities permitted by the City.	PW Utilities, PW Eng.	Enter as identified

Reference	Proposed Effort	Who[1]	Schedule
S5.C.4.d	Continue to provide a link to the Ecology Notices of Intent for Construction and Industrial Activities.	CED	Ongoing
S5.C.4.e	Identify appropriate training requirements for various City staff and schedule for 2018.	PW Utilities, All departments	Ongoing
S5.C.4.e	Provide training to all city staff responsible for implementing these permit conditions, including permitting, plan review, site inspections, and enforcement.	Stormwater Utility, PW Eng., CED	Ongoing, during staff meetings

Note 1 - First department listed in each cell assumes lead role

7. Pollution Prevention and Operation and Maintenance for Municipal Operations

This section addresses Permit conditions regulating the City's responsibilities under the SWMP to prevent or minimize pollution from municipal operations and maintenance activities.

7.1. What's Required

The Permit requires the City to implement certain activities for preventing pollution from municipal operations and maintenance activities, the requirements for 2019 are summarized in Table 7-1. See link to the current Permit at Department of Ecology's website in Appendix A for the complete text of special and general conditions in the Permit.

Table 7-1. Permit Requirements for Pollution Prevention and Operation and Maintenance for Municipal Operations

Reference	Digest of Selected Permit Conditions	Effective
S5.C.5.a	Establish City maintenance standards that are, at a minimum, as protective of stormwater facility functions as the 2012 Stormwater manual, Volume V, Chapter 4.	02/16/10
S5.C.5.b	Annual inspections of all stormwater treatment and flow control facilities (except catch basins), or justified alternatives.	02/16/10

Reference	Digest of Selected Permit Conditions	Effective
S5.C.5.c	Spot checks of potentially damaged permanent treatment and flow control facilities after 24-hour 10-year storm events.	02/16/10
S5.C.5.d	Inspection and maintenance of all catch basins & inlets at least once before the end of the Permit term (No later than Aug 1, 2017).	02/16/10
S5.C.5.e	Establish an inspection program to inspect all sites; achieve 95% inspection rate.	02/16/10
S5.C.5.f	Establish and implement road maintenance program to reduce stormwater impacts, including: cleaning pipes, culverts, ditches, streets; snow & ice control; roadside maintenance & vegetation control; pavement repair & maintenance; dust control.	02/16/10
S5.C.5.f	Establish policies and procedures to reduce pollutant discharges from City common areas (e.g., parks, open space, ROWs), including: fertilizer, herbicide and pesticide use; sediment and erosion control; landscape maintenance; trash management; building maintenance.	02/16/10
S5.C.5.g	Training for City employees involved in O&M activities that may impact stormwater quality.	02/16/10
S5.C.5.h	Develop SWPPP(s) for all equipment maintenance and storage yards.	02/16/10
S5.C.5.i	Record keeping re: O&M program.	02/16/10

7.2 What's Next

Table 7-2. City of Arlington 2019 Work Plan to Address Permit Requirements for Pollution Prevention and Operation and Maintenance for Municipal Operations

Reference	Proposed Effort	Who[1]	Schedule
S5.C.5.b	Inventory update and inspection of facilities under City jurisdiction; record in Elements during inventory process.	PW Utilities	Ongoing
S5.C.5.c	Design Elements (asset management system) database with "spot check" field and automated report to identify facilities requiring field inspections after	PW Utilities	August 1, 2019

Reference	Proposed Effort	Who[1]	Schedule
	storms in which the water department (NWS station) rain gage records 2.75 inches or more of water in a 24-hour period.		
S5.C.5.c	Identify, create list and document spot checks of potential damages stormwater facilities/locations frequently requiring maintenance during intense storms; anticipate checks during Thanksgiving storms (typical).	Stormwater Utility	Ongoing to protect downstream known urban flooding areas
S5.C.5.d	Set-up maintenance schedule in Outlook and document in Stormwater Web App (asset management system) the inspections of stormwater catch basins, inlets, and manholes on known routes requiring increased servicing (est. 1/2 of all CBs scheduled).	Stormwater Utility	June 2019
S5.C.5.d	Inspect and vactor scheduled stormwater catch basins, inlets, and manholes (est. 1/2 of all CBs scheduled); record CB conditions and vactor date using the GIS created Stormwater Web app.	Stormwater Utility CED	Ongoing throughout 2019
S5.C.5.e	Meet to evaluate stormwater inspections of 1) treatment/flow control facilities, 2) intense storm reviews; and 3) CBs are on track to achieve 95% compliance rate; confirm recordkeeping; schedule remaining work.	Stormwater Utility, CED	Quarterly with Maintenance and Operations
S5.C.5.e	Stormwater inspections and maintenance of inspection records must achieve 95% compliance rate by July 31, 2019.	Stormwater Utility, PW	Ongoing
S5.C.5.f	Review road management program to create a training program; consider any needs for improvement.	CED, Stormwater Utility	Ongoing

Reference	Proposed Effort	Who[1]	Schedule
S5.C.5.f	Review parks and open space management programs in advance of creating a training program; consider any needs for improvement.	CED, Stormwater Utility	Ongoing
S5.C.5.g	Review facility management programs in advance of creating a training program; consider any needs for improvement.	CED, Stormwater Utility	Ongoing
S5.C.5.g	Develop training module for Facilities Maintenance specific to Arlington operations if not covered in the specific SWPPPs for each property.	CED, Stormwater Utility	Ongoing
S5.C.5.g	Train PW Staff in Materials Storage and Spill Cleanup specific to Arlington operations.	Stormwater Utility	Ongoing
S5.C.5.g	Train PW Streets Staff in Streets and Drainage Maintenance specific to Arlington stormwater operations.	Stormwater Utility	Ongoing
S5.C.5.g	Train PW Parks Staff in Parks and Grounds Maintenance specific to Arlington stormwater operations.	Stormwater Utility	Ongoing
S5.C.5.g	Train Facilities Manager in Facilities Maintenance specific to Arlington stormwater operations.	Stormwater Utility	Ongoing
S5.C.5.h	Review SWPPP(s) implementation at equipment maintenance and storage yards at the Public Works O&M and Utilities facilities.	CED, Stormwater Utility	Ongoing
S5.C.5.i	Evaluate O&M reporting process and database for opportunities for improvement with respect to permit conditions.	PW Utilities, CED	Ongoing

8. Total Maximum Daily Load (TMDL) Requirements

This section addresses Permit conditions regarding the City's responsibilities under existing water clean-up plans (TMDLs).

8.1. What's Required

The Permit requires the City to implement certain activities to satisfy its role in cleaning up impaired streams in and near the City. Current water bodies include the Lower Snohomish Tributaries TMDL, which identifies the City's responsibilities toward cleaning up Edgecomb and Heyho Creeks, tributaries to Middle Fork Quilceda Creek. The 2017 permit conditions and TMDL requirements are summarized in Table 8-1. See Appendix A for the complete text of TMDL requirements found in Permit special condition S7 and Permit appendix 2.

The Stillaguamish River TMDLs coverage began in 2015. The City completed a draft Quality Assurance Project Plan (QAPP) in February 2015, with responses to Ecology's comments included in 2016. The QAPP provides details on the sample locations, sample collection procedure, and laboratory analysis for the Stillaguamish TMDL. The location included in the QAPP is on Portage Creek, monthly samples will collected and analyzed to provide a measurement of the fecal coliform levels in Portage Creek as they leave the City Limits and enter the County. Ecology considers compliance with Permit conditions to constitute compliance with the Stillaguamish TMDLs.

The Washington State Department of Ecology recently proposed amendments to the watershed assessment 303(d) listings associated with TMDL clean-up activities. Interested readers may access the current and proposed listings on the project web page below.

https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Assessment-of-state-waters-303d/EPA-approved-assessment

Table 8-1. Permit Requirements for Total Maximum Daily Loads

Reference	Digest of Selected Permit Conditions	Effective
S7.A	Meet Lower Snohomish Tributaries and Stillaguamish River TMDL requirements.	Variable, described below
S7.B	City compliance with the Permit constitutes compliance with stormwater requirements in the Stillaguamish River TMDLs.	Evaluated in each annual report

Reference	Digest of Selected Permit Conditions	Effective
Appendix 2,	Runoff control requirements in S5.C.3.b also address commercial animal handling areas and commercial composting facilities; source control BMPs equivalent to 2005 Stormwater Manual, Volume 4, pages 2-10 through 2-12.	08/16/09
Appendix 2,	Compile list of existing composting and animal waste handling facilities.	08/16/09
Appendix 2,	Inspect and enforce source control BMPs at listed sites.	08/16/09
Appendix 2,	Update list of existing composting and animal waste handling facilities.	08/16/11
Appendix 2,	Complete facility inspections to assure source control BMPs at listed sites.	12/16/10
Appendix 2,	Complete QAPP to guide water quality monitoring; sample streams and potential pollution sources for fecal coliform bacteria; adequate frequency to characterize water quality.	05/17/07, extended to July 2007
Appendix 2,	Implement water quality monitoring according to QAPP; monthly sampling frequency.	10/16/07, ongoing
Appendix 2,	Develop Bacterial Pollution Control Plan (BPCP), including evaluation of: pet waste ordinance; water pollution control enforcement capabilities; critical areas ordinance; bacterial reduction education program; other treatment and reduction options; water quality monitoring to identify sources.	02/16/11
Appendix 2,	Conduct public review of BPCP.	05/16/11
Appendix 2,	Submit BPCP to Ecology with Permit renewal application at end of Permit Term.	Prior to 02/16/12
TMDL	Stillaguamish River Tributary QAPP will be written and submitted for approval.	February 2, 2015

8.2 Work Activities

Table 8-2. City of Arlington 2019 Work Plan to address the Lower Snohomish Tributaries TMDL Requirements are as follows:

Reference	Proposed Effort	Who[1]	Schedule
Appendix 2,	Inspections at commercial animal handling and composting facilities; ensure implementation of source control BMPs and enforce as necessary.	PW Utilities	Ongoing
Appendix 2,	Water quality monitoring of 2 locations on Edgecomb.	PW Utilities	Monthly, ongoing
Appendix 2	Water quality monitoring at 1 location on Portage creek as it leave the City of Arlington.	PW Utilities	Monthly, ongoing
Appendix 2,	Evaluate monitoring data collected in Edgecomb/Heyho Creeks to date; coordinate and exchange data with City of Marysville.	PW Utilities,	Annually
Appendix 2,	Evaluate monitoring data collected in Portage Creek.	PW Utilities	Annually
Appendix 2,	Coordinate with Ecology on implementation of BMP's for the National Foods processing and operation.	PW Utilities	Ongoing based on Ecology visits
Appendix 2,	Continue outreach to veterinary clinics and animal handling facilities as new businesses come to town.	PW Utilities	Ongoing

[1] First department listed in each cell assumes lead role

9. Monitoring

The Permit does not require that Permit conditions for monitoring be addressed within the SWMP work plan, except for monitoring related to requirements for runoff control [S5.C.3] and TMDL [S7.A]. However, monitoring is a Permit requirement that is appropriate for inclusion in work load planning with many other Permit conditions. The City of Arlington has chosen to incorporate monitoring into this SWMP work plan to assure that monitoring-related Permit requirements are efficiently planned and implemented. This section addresses Permit conditions regulating the City's monitoring responsibilities.

9.1. What's Required

The Permit requires the City to implement certain stormwater monitoring and SWMP effectiveness monitoring activities, the 2019 requirements are summarized in Table 9-1. See link to the current Permit at Department of Ecology's website in Appendix A for the complete text of special and general conditions in the Permit.

Table 9-1. Permit Requirements for Stormwater Monitoring and SWMP Effectiveness Monitoring

Reference	Digest of Selected Permit Conditions	Effective
S8.A.	Monitoring required by TMDLs—see Section 9 of this SWMP.	See Section 9
S8.A.	Monitoring required for runoff control—see Section 6 of this SWMP.	See Section 6
S8.B	Include stormwater monitoring studies and results in annual reports, or buy-in to the Regional Stormwater Management Program. (RSMP)	March 31 of each year

9.2 Work Activities

Table 9-2. City of Arlington 2019 Work Plan to Address Permit Requirements for Stormwater Monitoring and SWMP Effectiveness Monitoring

Reference	Proposed Effort	Who[1]	Schedule
S8.A	Participate in the Regional Stormwater Management Program.	PW Utilities	Ongoing
S8.A	Water quality monitoring activities summarized in 2018 annual report.	PW Utilities	06/30/19
Optional	Add review of water quality monitoring data to agenda of one Watershed group meeting.	PW Utilities	06/31/19
S8.	Monitoring data associated with measuring the efficiency of the Old Town Stormwater Wetland.	PW Utilities	Ongoing
S8.	Monitoring data associated with in-situ monitoring of Prairie creek.	PW Utilities	Nov 2017 – Nov 2019

[1] First department listed in each cell assumes lead role

10. Background Information

10.1. Natural and Built Environments

This section provides a brief overview of the natural and built environments that the Stormwater Utility manages, and which the Permit governs. Only key components are summarized here. Readers are directed to the City's Stormwater Comprehensive Plan basins.

The City straddles the divide between two river basins, the Stillaguamish and the Snohomish, which are regionally recognized as Water Resource Inventory Areas (WRIAs) 5 and 7, respectively. For management purposes, the City has further delineated five levels of nested subbasins within each of these larger basins, resulting in a six-tier watershed hierarchy. The first four tiers are described in the table below with respect to their jurisdiction, whether under the City, or under Snohomish County's management inside and outside of the City's Urban Growth Area (UGA).

Basin Tier				4th Tier Basin Area (acres)	Basin Area by Jurisdiction (acres) [percent of 4th Tier Basin]		
1	2	3	4		City Limits	Outside City Inside UGA	Outside UGA Inside County
Stillaguamish	Mainstem Stillaguamish	Upper Mainstem Stillaguamish	Old Town	339	299 [88%]	0	40 [12%]
		Middle Mainstem Stillaguamish	March	954	104 [11%]	0	850 [89%]
			Dike Road	127	0	0	127 [100%]
		Lower Mainstem Stillaguamish	Portage	12,362	2,422 [20%]	440 [3%]	9,500 [77%]
			I-5	811	0	35 [4%]	776 [96%]
	South Fork (SF) Stillaguamish	Lower SF Stillaguamish	Eagle	657	374 [57%]	106 [16%]	177 [27%]
			Old Town NE	189	96 [51%]	89 [47%]	4 [2%]
		Upper SF Stillaguamish	Burn Road	1,633	0	0	1,633 [100%]
			Tviet Loop Road	683	9 [1%]	34 [5%]	640 [94%]
Snohomish	Ebey Slough	Quilceda	Middle Fork (MF) Quilceda	7,692	2,335 [30%]	81 [1%]	5,276 [69%]
			Multiple other 4th tier basins	*Not included in study area*			
Study Area Totals (acres) [percent]				25,447	5,640 [22%]	785 [3%]	19,023 [75%]

10.2. Geology/Soils/Topography

The geology in and around Arlington is largely determined by the erosion and deposition of two forces of nature--glaciers that covered much of Puget Sound 10,000 years ago, and the Stillaguamish River. The glaciers left behind formations that can generally be grouped into two types. Those that readily soak up water, allowing it to infiltrate and percolate to groundwater may be called "outwash formations". Those that are hard, compacted, and largely impermeable to water, causing it to run laterally near the surface, may be called "till formations". In addition, the river creates layers of sands and gravels called alluvium that water also moves through very easily.

Soils that develop on and overlay these formations also serve to absorb, store, and release water. The potential for stormwater to be generated from any site, then, varies with the geology and soils (and other variables such as vegetative cover and types of development) on that site.

The City is fortunate in that it has more area prone to infiltration (60%) than area prone to runoff (40%). This is because runoff generally results in greater stormwater infrastructure costs in an effort to reduce the greater potential for impacts to flooding and water quality in area streams. Nevertheless, each site proposed for development must be evaluated for stormwater requirements during the permitting process.

10.3. Streams

The City administers its stormwater programs within its city limits, but also in the context of a larger stormwater management area composed of the basins identified in Section 2.1 above. This management area abuts about 14 miles of the main stem and South Fork Stillaguamish Rivers. It includes nearly 85 miles of tributaries that drain either to the Stillaguamish River or to Quilceda Creek. Within the City's UGA, there are about 2.2 miles of riverfront, and 14.1 miles of streams (82% in the Stillaguamish and 18% in the Snohomish basins).

More than 52 miles of streams (about 62%) in the management area (not river front) are fish-bearing and have high to moderate value for fish, wildlife, and human use that could be negatively impacted by stormwater. More than 25 miles of streams (almost 1/3) are non-fish streams, many of which flow intermittently. Intermittent stream may also provide spawning and rearing of fish and can have moderate to high habitat values. About 6.5 miles of streams (8%) are not yet classified.

10.4. Surface Water Quality

The water quality of the main stem Stillaguamish River, its lower North and South Forks, and Portage Creek is managed to meet water quality standards that protect the beneficial uses of those channels, including salmon and trout aquatic uses, contact recreation, and water supply. However, in the past a number of these channel segments have been observed to not meet the standards for one or more parameters. These impaired water bodies have clean-up plans prepared by Ecology (2005, 2007), with assistance from the City of Arlington and others. The water quality parameters, their standards, and the impaired water bodies near Arlington are summarized in the table below.

Beneficial Use Designation	Water Quality Parameter	173-201A WAC Requirements[2]	Channels (Segment Location) with Impaired Water Quality
Class A (Noncore Salmon/Trout Aquatic Use)	Temperature	Maximum ≤ 17.5°C; and/or receiving water temperature will not be increased by more than 0.3°C	Stillaguamish River (I-5), NF Stillaguamish River (Twin Rivers Park), SF Stillaguamish River (River Meadows Park)
	Dissolved Oxygen	Minimum ≥ 8.0 mg/L	March Creek (mouth), Portage Creek (43rd Ave),
Class A (Primary Contact Recreation)	Fecal Coliform	Geometric mean ≤ 100 colonies/100 mL and ≤ 10% of samples > 200 colonies/100 mL	March Creek (mouth), Portage Creek (43rd Ave),Stillaguamish River (I-5), NF Stillaguamish River (mouth), SF Stillaguamish River (mouth), Quilceda Creek

Sources of contaminants contributing to these impairments don't just come from pipes pouring out polluted water, but from non-point stormwater runoff from throughout the basin. Typical sources within the city limits are identified here. Pet wastes, failing on-site septic systems, and road and urban surfaces are probable sources of bacteria (fecal coliform). Common sources contributing to low dissolved oxygen levels include the bacterial sources, as well as nutrients, fertilizers, pesticides, and other contaminants attached to sediments from urban and suburban areas. Elevated water temperatures in rivers and streams most often begin with loss of native trees and shrubs near streams, and changes in channel shape (wider, shallower streams) that accompany changes in land use.

This SWMP is a significant part of the water clean-up plans intended to improve water quality in the Stillaguamish and Quilceda basins. Since adoption of the plans Arlington has coordinated with Ecology, Snohomish County, Stillaguamish Tribe and City of Marysville to implement BMP's. The Department of Ecology performed a comprehensive WQ study on the Stillaguamish in the summer and fall of 2012 to measure what changes may have occurred since the initial TMDL studies were performed to establish allocations and cleanup plans.

10.5. Fisheries

Fish species are present year-round in streams within the management area including most ocean-going salmonids, resident native trout and other species. These include recognized threatened species, such as Chinook salmon, bull trout and steelhead. The returning Stillaguamish Chinook returning spawners were near record low numbers in 2015 with three hundred and fifty Northfork and Eighty Southfork fish. In 2016 there was a total of around 850 spawning chinook in the entire Stillaguamish System. The historic estimate was a total of forty thousand fish. Fish and aquatic habitat are a primary concern for stormwater management because, in part:

- Degraded water quality has direct detrimental impacts on fish, or places their habitat at risk;

- Sedimentation of spawning beds limits reproductive success;
- Culverts have high potential for becoming barriers to fish passage; and
- Changes in the extremes of streamflow's (higher peak flows and lower low flows) affect fish and their habitat;
- Pre-spawning mortality occurs in the more urbanized stream systems

Table 3-10. Fish presence in streams by 4th Tier Basin in the SCP Study Area

Basin Tier				Species Presence [a]								
1	2	3	4	Chinook	Chum	Coho	Pink	Steel-head	Bull Trout	Sea-run Cut-throat	Other Salmonids	Other Resident Fish
Stillaguamish	Mainstem Stillaguamish	Upper Mainstem Stillaguamish	Old Town	K	K	K	K	K	K	K	K	K
		Middle Mainstem Stillaguamish	March	U	U	S	U	U	U	S	U	K
			Dike Road Reach	K	K	K	K	K	K	K	K	K
		Lower Mainstem Stillaguamish	Portage	U	K	K	U	S	S	K	U	K
			I-5 Reach	K	K	K	K	K	K	K	K	K
	South Fork (SF) Stillaguamish	Lower SF Stillaguamish	Eagle	U	U	K	U	U	U	S	S	K
			Old Town NE	K	K	K	K	K	K	K	U	K
		Upper SF Stillaguamish	Burn Road	U	U	U	U	U	U	U	S	S
			Tviet Loop Reach	K	K	K	K	K	K	K	U	K
Snohomish	Ebey Slough	Quilceda	Middle Fork (MF) Quilceda	U	K	K	U	U	U	S	S	S

[a] Species presence Known (K), Suspected (S), or Unknown (U). Note that resident cut-throat trout may exist upstream of barriers to anadromous fish passage.

10.6. City Zoning

The City's zoning may impact the quantity and quality of its stormwater runoff because of reductions in vegetative cover and increases in impervious surfaces characteristic of the different types of development (residential, commercial, and industrial land uses).

Low to moderate density residential (RLMD) is the dominant zoning within the City's jurisdiction in most 4th tier basins (range of 8% to 52% of 4th tier basins when the City occupies more than about 20% of the basin). RLMD and high density residential are generally well-distributed across basins containing significant city area.

Intensively developed areas are found throughout most basins, although Portage and Middle Fork Quilceda contain 83% and 99% of all commercial and industrial areas, respectively. These areas are predominately in the central and southeast areas of the City. However, they commonly infiltrate all of their stormwater on-site.

10.7. Stormwater Infrastructure

The City of Arlington's stormwater infrastructure is summarized by 4th tier basins in the table below. Across the entire City, the subsurface network includes 3,253 catch basins and manholes, and about 48 miles of pipe. The surface network includes more than 18 miles of ditches and swales, and 2.9 miles of

culverts. There are about 86 known outfalls and discharge points of interchange where stormwater is discharged from City infrastructure to a natural feature, whether river, stream, wetland, or ground surface. The City has inventoried 114 detention ponds and vaults to date. The City will continue to add additional stormwater management systems to the inventory as they are identified. In 2016 the City updated the infrastructure inventory by delineating the difference between “outfall” and/or “discharge point” as defined in the 2013 – 2018 NPDES permit.

City of Arlington Stormwater Utility Public Education and Outreach - 2018

Date	Event	Contacts	
2/3/2018	Eagle Festival	200	
Description			
Setup education table in city council chambers with other agency booths. Provided Provided published educational material, pet waste bags, spill hotline items, and water conservation material and setup watershed model.			

Date	Event	Contacts	
4/21/2018	Earth Day Festival	100	
Description			
Setup education table other agency booths. Provided published educational material, pet waste bags, spill hotline items, and water conservation material and setup watershed model.			

Date	Event	Contacts	
7/13/2018	Arlington Street Fair	100	
Description			
Setup education table on Olympic Ave. Provided published educational material, pet waste bags, spill hotline items, and water conservation material.			

Date	Event	Contacts	
8/11 & 12/18	River Festival	350	
Description			
Setup education table in River Meadows County Park. Provided published educational material, pet waste bags, spill hotline items, and water conservation material.			

City of Arlington Stormwater Utility Public Education and Outreach - 2018

Date	Event	Contacts	
11/15/2018	Post Middle School Tree Planting	72	

Description

Coordination with Stillaguamish Tribe Conservation District and Post Middle School to hold a tree planting at County Charm Park in Arlington. Approximately 300 trees planted and existing trees weeded. Used opportunity to talk about benefits of trees and other plants for stormwater and water quality.

Date	Event	Contacts	
12/31/2018	ILA Stormwater Education	600	

Description

Coordination with Snohomish Conservation District ILA Stormwater Education Program to provide classroom education outreach to Arlington Public Schools.

City of Arlington Illegal Discharge Program

1. Detection Tools

Detecting and eliminating illegal discharges is a required task under Department of Ecology's Phase II storm water permit, and also an important part of protecting water quality. City personnel that frequently work in the field can help the City of Arlington Storm Department deal with illegal discharge problems by serving as an "extra set of eyes." To do this, field personnel first must be able to identify illegal discharges using multiple physical and sensory characteristics. Once a person has identified an apparent illegal discharge, the information should be written on the Illegal Discharge Form, and if help is needed, call the Storm Department. Note that **illegal discharges are best detected during dry weather conditions.** During and after a rain, any illegal discharges that may be present will likely be diluted or masked by other pollutants being carried by storm water runoff.

2. Identification of Illegal Discharge

Indicators

Each illegal discharge possesses distinct physical characteristics. Based on these distinctions, unique observations can be made that point to a specific source or generating site so that the illegal discharge can be addressed. *Sensory indicators* are observations that can be made using smell and/or sight, and require no measurement equipment initially. There are seven indicators that can predict an illegal discharge: *flow, odor, color, turbidity, floatables, deposits/stains* and *vegetation*. Although only a preliminary observation of a suspected illegal discharge, *sensory indicators* can be documented, sampled, and utilized for further study and ultimately the elimination of illegal discharges. Here are some ordinary sensory indications of an illegal discharge: Any of the *sensory indicators* can leave physical traces of an illegal discharge, whether it is a continuous, intermittent, or one-time event. Physical indication of *past* illegal discharge can be outfall damage, deposits or stains, uncharacteristic vegetative growth on or around the outfall, or scour which signifies intermittent or past transitory discharge.

- Flow during dry weather
- Unusual color or cloudiness
- Strong odors
- Floating debris
- Surface scum or foam
- Oil sheen
- Dead vegetation or inhibited growth
- Stains on channel bottom, sides or rocks
- Pipe corrosion
- Algae

TIP: It is also very helpful to capture the existing conditions of the discharge on camera when first detected (record time and date) so that any change in condition can be verified upon further monitoring of the site. A digital photograph of the discharge is the most helpful.

Flow

Flow coming from storm water pipes during extended periods of dry weather may be an indication of an illegal discharge. The presence of such flow should be noted on the Illegal

Discharge Form.

Odor

Before taking any steps in determining an illegal discharge due to *odor*, the field crew must establish where the odor is coming from. In some situations the source of the odor can be misleading; it may actually be shrubs, trash, carrion or animal waste. If the crew decides (after further inspection) that the outlet pipe is indeed the source of the odor, a sample of the stream can be taken as close to the source as possible even though there may not be another sensory indicator present. If samples are collected, call the Storm Department to arrange for sample analysis.

Color

C*olor* refers to the tinge of the discharge which can be categorized as clear, slightly tinted, or intense. When chemical discharges are present, the entire spectrum of colors is potentially visible: green, red, yellow, blue, white, and even brown or orange are possible. A rainbow sheen floating on the water surface may indicate a petroleum-based discharge. If it can be determined that the cause of the color is not natural, the physical characteristics should be recorded, and if possible, a sample should be taken. The sample should be captured in a clean, clear bottle and held up to the light so that an accurate judgment about its intensity and color can be made. Many times the source of the discharge can easily be traced by following the color plume upstream.

Illegal discharge of food grease flowing into the storm system

Turbidity

Turbidity is a measure of the cloudiness of the water sampled at the discharge site. It is easy to confuse *turbidity* and *color*. The elemental difference is that turbidity is a measure of how easily the sample is penetrated by light, whereas color is a measure of the tint of the water. A turbid sample will contain a high concentration of suspended sediment whereas color will appear solid and may be clear or turbid (cloudy). Other sensory indicators can also be identified in the same sample with *turbidity*; such as *odor or floatables*. A sample of the suspect illegal discharge may be collected in a clear bottle, much like *color*, where it can be scrutinized closely for suspended solids or other sensory indicators. Sometimes *turbidity* occurs in a scour or plunge pool underneath the outlet pipe. Often the origin of a discharge is not readily apparent, but can be traced by looking upstream for any *turbidity* plumes.

Floatables

This sensory indicator is a visual observation and can usually be seen from a distance making it more noticeable than other indicators. Sewage, oil sheen, and suds are examples of *floatables.* Different types of *floatables* have different characteristics associated with them. Sewage should automatically be considered as an urgent situation because of the threat level to the health and well-being of the stream and downstream inhabitants. Oil sheens that occur on the surface can be evaluated for amount according to their thickness and coverage. Naturally occurring suds will break up quickly and are generally clear or white.

Sheen from a diesel spill

Deposits or Staining

There may be indications of past illegal discharges in the form of deposits and staining. Staining can occur at the base of the discharge pipe or on rocks below the outfall and may be a sign of persistent, intermittent discharges. Any deposits or stains should be marked on the IDDF as mineral, sediment, oily, grease or other. The color of the stain should also be noted.

Concrete slurry stain from an unreported illegal discharge.

Vegetation

Another sign of illegal discharges may be changes in vegetation. Some pollutants may kill vegetation around an outfall while others may promote excessive growth of algae or other vegetation. Changes in vegetation should be noted on the IDDE as none/dead, excessive, algae or other.

Dead grass and staining from a discharge of petroleum product to the storm system

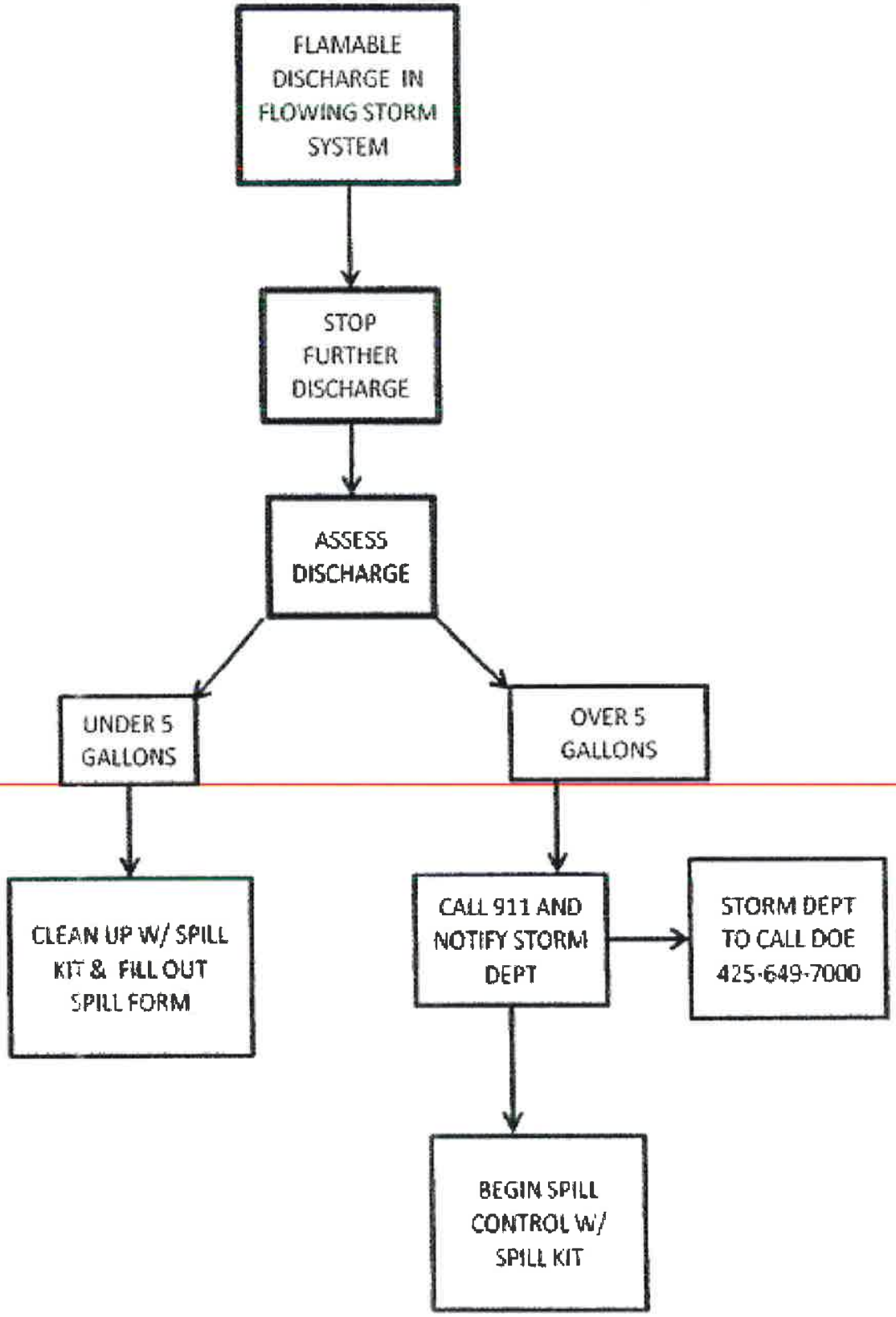
3. Filling out the Reporting Form

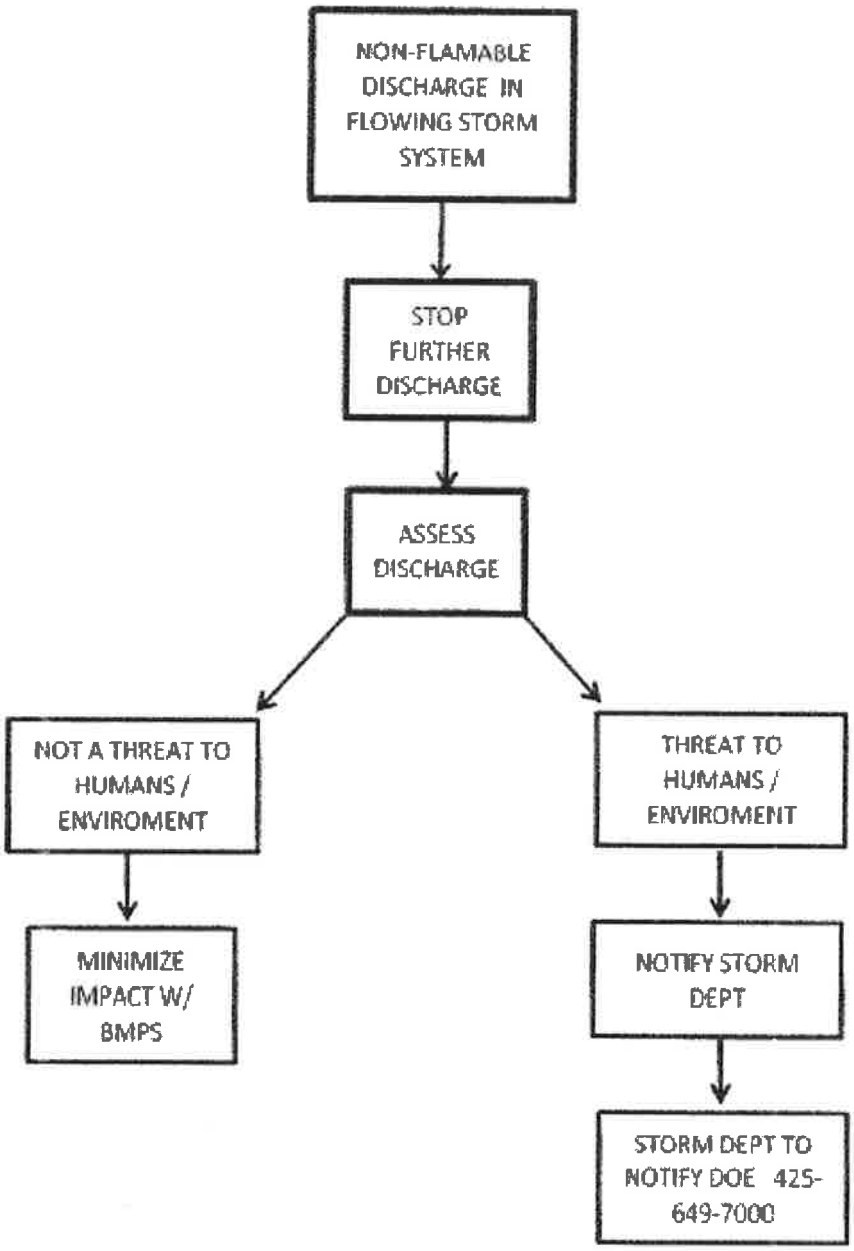
Once a suspected illegal discharge has been identified, the attached **Illegal Discharge Form** should be filled out as completely as possible. Something should be recorded in all fields. The location should be identified as clearly as possible. If something does not apply, record "N/A." Keep chronological documentation of events as they happen. This should be recorded in the "Notes" section on the back of the form. Use as many forms as needed. Completed discharge events will be given an identity number and kept on file with the Storm Department.

4. Reporting Spills and Illegal Discharges

If the incident is severe and immediately threatens public health or safety, call 911 and the City of Arlington Stormwater Department. Significant petroleum spills (over 5 gallons) should also be reported by calling 911. If a sewage problem is suspected in an area that is served by public sewers, call The Arlington Wastewater Department. If the problem is suspected to be the result of a failing septic system notify the Health District. For all discharges, including suspected sewage spills and emergency situations, the Illegal Discharge Form should be completed and returned to the Storm dept. If a form is not available to fill out, document all details on a piece of paper and transfer the information at a later time. Call the stormwater department if there are any

questions as to whether something is an illegal discharge.


FLAMABLE DISCHARGE IN FLOWING STORM SYSTEM
STOP FURTHER DISCHARGE
ASSESS DISCHARGE
UNDER 5 GALLONS
OVER 5 GALLONS
CLEAN UP W/ SPILL KIT & FILL OUT SPILL FORM
CALL 911 AND NOTIFY STORM DEPT
STORM DEPT TO CALL DOE 425-649-7000
BEGIN SPILL CONTROL W/ SPILL KIT


NON-FLAMABLE DISCHARGE IN FLOWING STORM SYSTEM
STOP FURTHER DISCHARGE
ASSESS DISCHARGE
NOT A THREAT TO HUMANS / ENVIROMENT
THREAT TO HUMANS / ENVIROMENT
MINIMIZE IMPACT W/ BMPS
NOTIFY STORM DEPT
STORM DEPT TO NOTIFY DOE 425-649-7000

Illegal Discharge Form (Below)
The concept of the illegal discharge form is to document and establish a record of the events of the discharge, the present indicators at the time of detection, and the exact location of the discharge site. The form requires specific physical observations so that the discharge can be identified and evaluated properly.

DATE TIME NOTIFIED OF DISCHARGE AM PM

WHO NOTIFIED YOU OF SPILL?

ADDRESS OF DISCHARGE SITE CONTACT

TIME ARRIVED ON SITE AM PM

ORIGIN OF DISCHARGE?

MATERIAL DISCHARGED?

IS DISCHARGED STOPPED? IS DISCHARGE CONTAINED?

DID DISCHARGE ENTER STORM SYSTEM ? IS STORM SYSTEM FLOWING?

APPROXIMATE AMOUNT DISCHARGED GALLONS / LBS

ENVIROMENTAL CLEAN UP CALLED? IF YES, WHO:

WHO CALLED ENVIROMENTAL CLEANUP COMPANY?

INTENTIONAL OR ACCIDENTAL DISCHARGE?

RAINING? NONE HEAVY MODERATE LIGHT/ DRIZZLE INTERMITTENT

RESPONSIBLE PARTY? RESPONSIBLE PARTY NOTIFIED?

Department of Ecology called?
(425-649-7000) Y N

ERTS #

As a part of the City of Arlington's efforts to continually assist and educate others in the importance of clean stormwater runoff, two carwash kits have been purchased and are available for fundraising events. There is no charge for using the kit although a deposit will be collected and refunded when the kit is returned complete and in working order.

City of Arlington Stormwater Utility – Illicit Discharge 2018 Summary Report.

CLOSED 2018-001 27630 55th Ave. ERTS # 679877 Not in Arlington

CLOSED 2018-002 6405 172nd Wilcox & Flagel

Oil tank overfilled, caught by secondary containment no discharge to storm system.

CLOSED 2018-003 115 Haller

Discharge found coming from travel trailer. Forwarded to Code Enforcement

CLOSED 2018-004 1st and Lenore

Sod and dirt in road from landscaping. Forwarded to Code Enforcement

CLOSED 2018-005 3522 172nd ERTS # 682756 Safeway fuel

Mechanical failure with fuel pump – 2 gallons spilled and contained. Clean up and repairs called in and performed.

CLOSED 2018-006 118 Haller

Resident dumped out oil – City cleaned up. Homeowner charged and fined. Further legal action being explored.

CLOSED 2018-007 17904 Oxford

Contractor dumped paint in CB

Educated contractor (Minimal paint, no clean up performed)

CLOSED 2018-008 6209 192nd ERTS # 683680 Commercial Aircraft Interiors

Report of paint spill – no paint found. Coordinated inspection with Department of Ecology Hazardous Waste and Toxics Reduction Program staff.

CLOSED 2018-009 19600 63rd ERTS # 684083 North County Recycling

Report of sewage in storm – Nothing found onsite.

CLOSED 2018-010 6405 172nd ERTS # 685693 Wilcox and Flegal

Release of diesel during fuel theft

Vactored storm and placed boom downstream

Closed 2018-011 17930 31st Dr.

NE Camper discharging into CB

Referred to Code Enforcement. Site was re-inspected with discharge hose removed from basin.

Closed 2018-012 19604 67th ERTS # 685843 Cuz Concrete

Truck dumped concrete slurry on road. Concrete pressure washed off road surface and effected basins cleaned with vactor truck.

2018 SWWP and Appendix 2 Activities

1. Public Education and Outreach at community events.

2. The City continues to samples at the two stations identified in the Snohomish Tributaries (Quilceda basin) TMDL. Stations are Edgecomb Creek at 67th and Edgecomb Creek at 59th (Crown Distributing).

3. The City continues to sample for fecal coliform at one station on Portage Creek per the Stillaguamish Tributaries TMDL. The station is located at Portage at 59th Ave NE.

4. IDDE investigation being performed to identify fecal coliform sources to surface waters through monitoring. Locations have been selected at identified reaches to isolate sources.

2018 Sampling and Monitoring Summary

The City of Arlington has been conducting one sampling effort above and beyond the IDDE and TMDL required sampling. The effort includes sampling fecal coliforms in Portage Creek in a manner that is bracketing potential sources. The results in 2016 showed a reduction in fecal levels both upstream and downstream.

The effort may be moved to old-town where there were two events of high fecal coliform entering the stormwater wetland. There is anecdotal evidence of motor homes being parked in old-town that house otherwise homeless persons. There was question as to how the bathroom contents are being disposed of. The stormwater staff will make a more targeted effort in 2017 to identify and address this situation if it is repeated. The issue was not repeated, staff closed this item.

The City continues to monitor the Old Town Wetland for scientific and effectiveness purposes. The City monitors DO, Temperature, Conductivity, Turbidity and total flow. The City occasionally samples fecals, but based on initial years sampling the numbers are low leaving the wetland. 2018 sampling and monitoring has indicated intermittent elevated bacteria results. All evidence from followup investigations suggests pet waste and or wildlife contributions. Increasing education for pet waste is planned for 2019.

The City is also monitoring sediment entering the Old Town Wetland based on a gauge that is installed in the initial settling basin.

The City did purchase a digital microscope and trained a volunteer to collect and catalog instream invertebrates beginning in 2017.