2024 NPDES STORMWATER MANAGEMENT PROGRAM PLAN

Finalized March 2024

Puget Sound Starts Here

ONLY RAIN DOWN THE DRAIN

CITY OF KIRKLAND

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1. Introduction

The Purpose of the Stormwater Management Program Plan

This document constitutes the City of Kirkland 2024 Stormwater Management Program (SWMP) Plan as required to be annually updated under condition S5.A.2 of the Western Washington Phase II Municipal Stormwater Permit (the Permit). The purpose of the document is to detail actions that the City of Kirkland proposes to take between January 1, 2024 and December 31, 2024 to maintain compliance with conditions in the Permit.

The NPDES Program

The National Pollutant Discharge Elimination System (NPDES) is a program created under the Federal Clean Water Act with the intent of protecting and restoring water quality in lakes and streams so they can support "beneficial uses" such as fishing and swimming. Governmental and private entities wishing to discharge water or wastewater to surface waters regulated by the Federal Government (Waters of the US) must obtain permits and comply with certain conditions or face fines and other penalties. NPDES permits have been written for discharges from construction sites, concentrated animal feeding operations, industrial activities, publicly-owned wastewater treatment plants, and municipal stormwater systems.

In Washington State, the US Environmental Protection Agency has delegated the authority over NPDES permits to the Washington State Department of Ecology (Ecology). Ecology has issued several general permits for discharges from stormwater systems that apply to municipalities with different sizes of populations and locations different regions of the State (Eastern and Western Washington). Phase I refers to municipalities with a population of greater than 100,000, and Phase II to those with a population of less than 100,000 according to the 1990 census.

The Western Washington Phase II Municipal Stormwater Permit

Kirkland has been identified as a Phase II municipal stormwater permittee and therefore must establish a stormwater program that complies with conditions in the Western Washington Phase II Municipal Stormwater Permit. The Permit allows municipalities to discharge stormwater from systems it owns and operates into "waters of the state" such as rivers, lakes, streams, and ground water as long as they implement programs to reduce pollutants in stormwater to the "maximum extent practicable." To do this, permittees must conduct programs and activities in the following program areas:

- Stormwater Planning
- Public Education and Outreach
- Public Involvement and Participation
- Stormwater System (MS4) Mapping and Documentation
- Illicit Discharge Detection and Elimination
- Controlling Runoff from New Development, Redevelopment, and Construction Sites
- Municipal Operations and Maintenance
- Source Control for Existing Development
- Monitoring and Assessment

The SWMP Plan must be prepared and submitted annually and must contain the planned actions and activities that will be used in the reporting year to maintain compliance with the Permit. In addition, the Permit requires the City to submit an Annual Compliance Report by March 31st of each year that details actions taken in the previous year to achieve compliance. The full text of the Permit can be viewed at: https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Western-Washington-Phase-II-Municipal-Stormwater.

Permit History and Implementation

The original Western WA Phase II Permit was valid for 5 years, from February 17, 2007 to February 15, 2012, and allowed for phased implementation of stormwater management programs and actions. In 2012, Ecology reissued this Permit and extended the schedule to July 31, 2013 with no new permit conditions.

The second Permit became effective on August 1, 2012 and was modified on January 16, 2015. It was originally effective until July 31, 2018 and was extended until July 31, 2019. It required continued compliance with the substantial conditions of the previous Permit. It also allowed for phased implementation of new requirements over the permit cycle.

The current Permit became effective on August 1, 2019 and is set to expire July 31, 2024. As with past Permits, it requires continued compliance with the established substantial conditions and allows for phased implementation of new requirements. The table on pages 4-5 provides an overall schedule timeline including implementation due dates. Kirkland continues to be in position to meet deadlines and maintain full Permit compliance.

Kirkland anticipates a new permit will become effective on August 1, 2024. Draft permit language has been provided to the permittee community for their review and comment. Kirkland is preparing their stormwater management program for on-going compliance with the draft permit language. This plan will be updated if changes are needed to maintain compliance after final permit language is released.

Current and Planned Activities

The SWMP Plan describes a set of actions and activities implemented to maintain permit compliance. The Plan is organized to address the program components noted in Condition S5.C of the Permit.

The following sections of the SWMP Plan describe how Kirkland is currently meeting the requirements of the Permit, and how the City plans to continue to meet those requirements in 2024.

Kirkland does not currently operate their stormwater system in a location where a Total Maximum Daily Load (TMDL) Plan has been approved, thus TMDL (S7) compliance requirements have not been included in this plan.

Coordination and Responsibilities

Compliance with the Permit requires coordination and documentation of activities in several City departments. The Public Works Department Surface Water Utility staff (Surface Water staff) will coordinate City efforts and will meet with staff from other departments regularly to verify that current and planned activities meet Permit requirements. Activities required for Permit compliance will be carried out by the Public Works, Information Technology, Planning and Building, Parks, City Manager's Office (City Attorney), Finance, Fire, and Police Departments.

The Surface Water Utility – Other Activities

This SWMP Plan details actions and activities that fall under the purview of the Permit. Stormwater management is one part of the City's overall surface water management strategy as coordinated by the Surface Water staff.

The Surface Water Utility conducts a suite of related programs that reduce flooding, protect and improve water quality, inspect and maintain infrastructure, and protect and restore aquatic habitat in the City's streams and lakes. Although not directly required by the Permit, Kirkland's flood reduction and aquatic habitat restoration efforts further our stormwater management goals.

Kirkland's most recent Surface Water Master Plan (Master Plan) was adopted in early 2023. The Master Plan sets priorities and recommends projects, programs, and rates to support the utility over the next 5-10 years. The update included extensive public involvement in the form of presenting at public meetings, mailings, and online information and outreach.

Table 1: Permit Deadlines

Permit Section	Year (by Qtr)		2019		2020				2021				2022				2023				2024	
	Requirements	**Deadline**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**
S5.A.	**Stormwater Management Program Plan**																					
	Update SWMP Annually	3/31/2020			X				X				X				X				X	
	Continue to track SWMP costs	ongoing																				
S5.C.1.	**Stormwater Planning**																					
	Convene inter-disciplinary team	8/1/2020					X															
	Respond to Stormwater Annual Report questions for 2013-2019 permit cycle	3/31/2021							X													
	Respond to Stormwater Annual Report questions for current permit cycle	1/1/2023															X					
	Assess barriers to LID implementation	annually																				
	Complete Receiving Water Assessment	3/31/2022											X									
	Complete Receiving Water Prioritization	6/30/2022												X								
	Develop Stormwater Management Action Plan	3/31/2023															X					
S5.C.2.	**Public Education and Outreach**																					
	Continue education and outreach program	ongoing																				
	Evaluate existing program or adopt new program	7/1/2020					X															
	Evaluate program and use resulting measures to make changes to increase effectiveness	3/31/2024																			X	
	Create or partner with existing organizations to create stewardship opportunities	ongoing																				
S5.C.3	**Public Involvement and Participation**																					
	Ongoing public participation in SWMP development, post annual report and SWMP on Kirkland website (May 31st)	Annually post by May 31st				X				X				X				X				X
S5.C.4	**MS4 Mapping and Documentation**																					
	Continue GIS-based mapping program. Collect additional data of outfall size and material (1/1/2020) and connections from MS4 to private systems. (8/1/2023)	ongoing																				
S5.C.5	**Illicit Discharge Detection and Elimination (IDDE)**																					
	Continue implementing the enforceable mechanism to prohibit illicit discharges.	ongoing																				
	Respond to spills and illicit connections into the MS4	ongoing																				
	Continue municipal staff training, IDDE response, and citizen reporting hotline	ongoing																				

Permit Section		Year (by Qtr)	2019		2020				2021				2022				2023				2024	
	Requirements	**Deadline**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**
S5.C.6.	**Control Runoff from New Development, Redevelopment, and Construction Sites**																					
	Continue program addressing construction and post construction runoff controls	ongoing																				
	Continue plan review, inspection, and enforcement of standards for new and redevelopment	ongoing																				
	Adopt and implement revised stormwater development codes to reduce impervious surface, protect vegetation, and minimize stormwater runoff	6/30/2022												X								
S5.C.7	**Municipal Pollution Prevention, Operation, & Maintenance**																					
	Continue to annually inspect all SW treatment and flow control BMPs/facilities. Inspect and, if needed, clean all catch basins every 2 years	ongoing																				
	Update maintenance standards	6/30/2022												X								
	Document policies, procedures, and practices that reduce stormwater impacts from municipal lands.	12/31/2022														X						
S5.C.8	**Source Control for Existing Development**																					
	Adopt and implement code that requires pollution prevention source control BMPs for pollution generating activities/lands	8/1/2022													X							
	Establish inventory of sites that have the potential to generate pollutants to the stormwater system	8/1/2022													X							
	Implement inspection program of these sites. Provide inspections equal to 20% of sites annually.	1/1/2023															X					
	Implement progressive enforcement policy to require sites to comply	1/1/2023															X					
S8	**Monitoring and Assessment**																					
	Participate in and pay annually into Regional Monitoring efforts	Pay annually by August 15th	X				X				X				X				X			
S9	**Reporting**																					
	Submit 2019 Annual Report	3/31/2020			X																	
	Submit 2020 Annual Report	3/31/2021							X													
	Submit 2021 Annual Report	3/31/2022											X									
	Submit 2022 Annual Report	3/31/2023															X					
	Submit 2023 Annual Report	3/31/2024																			X	

Stormwater Planning

Stormwater Planning is a new section of the Permit (Section S5.C.1) that requires Kirkland to enhance its existing stormwater planning efforts and is designed to inform and assist in the development of policies and strategies as water quality management tools in order to protect receiving waters. Receiving waters are defined as the natural or reconstructed naturally occurring surface water bodies, such as creeks, streams, rivers, wetlands, or groundwater, to which stormwater flows.

Kirkland has operated its stormwater system under a master plan since 1994. These master plans incorporate best available science, regulatory/permit requirements, staff expertise, and citizen input to direct the work of the City with regards to storm and surface water management. That plan is updated approximately every 5-10 years and is complementary to this SWMP Plan and the work of the Permit requirements.

Kirkland's Plan to Meet the Requirements of the Permit:

- **Interdisciplinary Team:** Kirkland has formed an inter-disciplinary team to inform and assist in the development, progress and influence of the Stormwater Planning Program. This team meets quarterly and is comprised of members from the Planning Department, Transportation Division, Capital Projects Division, Parks Department, and Surface Water staff. Members may vary based on current tasks of the team.
- **Coordination with Long Range Planning:** Kirkland exhibits strong internal coordination for long-range plan updates. The City will describe how stormwater management needs and protection/improvement of receiving water health are informing the planning update processes and influencing policies and implementation strategies through a series of annual report questions. These responses were due on March 31, 2021 for the timeframe of the 2013-2019 Permit and again on January 1, 2023 for the current 2019-2024 permit cycle.
- **Low Impact Development:** Kirkland continues to implement Low Impact Development (LID) code. LID shall remain the preferred and commonly used approach to site development as local development-related codes, rules, standards, and other enforceable documents are updated and revised. See our Low Impact Development website for more details: https://www.kirklandwa.gov/Government/Departments/Development-Services-Center/Tools-and-Resources/Stormwater/LID
  - Kirkland staff will assess and document any newly identified administrative or regulatory barriers to implementation of LID principles or LID BMPs and the measures developed to address the barriers.
- **Stormwater Management Action Plan:** Kirkland completed a Stormwater Management Action Plan for the Totem Lake catchment area in the Juanita Creek Watershed in early 2023. The plan can be found at this website: https://www.kirklandwa.gov/files/sharedassets/public/v/1/public-works/surface-water/surface-water-master-plan/appendix-n-smap.pdf
- **Record Keeping:** Kirkland will continue to track and maintain records of stormwater planning activities and summarize these activities in the Annual Compliance Report.
- **Departments Engaged:** Public Works, Planning, City Manager's Office, Parks, Communications

For details on Surface Water Utility activities not addressed in this SWMP, contact the Public Works Department at (425) 587-3800, by email at stormwater@kirklandwa.gov, or visit the City website.

Public Education and Outreach

Kirkland provides and participates in a variety of stormwater education and outreach programs designed to build general awareness, reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts, and encourage the public to participate in stewardship activities.

Kirkland's Plan to Meet the Requirements of the Permit:

- **Regional Participation:** Kirkland is an active participant and leader in regional education and outreach groups. Staff will continue to coordinate with other permittees in Western Washington through participation in the Stormwater Outreach for Regional Municipalities (STORM) and the North King County Stormwater Outreach Group (the SOGgies).
  - Kirkland participates in STORM's awareness campaign, Puget Sound Starts Here.
  - Kirkland is an active member on the steering committee for the behavior change campaign around dumpster management.
- **General Awareness Programs:** Kirkland will continue to provide general awareness education and outreach programs for a variety of target audiences, including program considerations for overburdened communities. Kirkland incorporates behavior change principles in its general awareness programs in order to promote not just education, but a change in behavior. Examples of programs include:
  - School outreach program for K-12 students to increase awareness of stormwater impacts on surface waters, including impacts from impervious surfaces.
  - Pet waste stations and educational signage throughout the city at parks and other locations. The City will supply these stations with dog waste bags.
  - Natural yard care education and outreach to teach residents how to care for their yards in environmentally friendly ways that are protective of water quality and that reduce stormwater runoff.
  - Education, technical assistance, and financial rebates to private property owners through the Yard Smart Rain Rewards program to control the flow of runoff from their property through Green Stormwater Infrastructure (GSI) installation including rain gardens, cisterns, and native landscaping.
  - Rebates and vouchers for private property owners to plant trees to help intercept and slow rainwater runoff.
  - Online mapping portal for property owners to explore and discover the LID facilities built on their properties and resources for maintenance support.
  - General awareness promotion through a variety of media including utility bill inserts, direct mail, direct outreach, social media, BMP cards, and fliers.
  - Continue to translate outreach materials into the top languages spoken in Kirkland. Examples of translation services: Kirkland's new website incorporates Google Translate, interpretation is available to all City staff over the phone for communication with residents, and translation of program materials for non-English speaking audiences.
  - The "What You Can Do For Clean Water" section of our website offers helpful information and suggested activities to prevent pollution in our stormwater. https://www.kirklandwa.gov/Government/Departments/Public-Works-Department/Storm-Surface-Water/What-You-Can-Do-For-Clean-Water.
  - Promote Kirkland's new online dashboard and interactive map of water quality and stream health data focused on raising general awareness about local watershed health and how it is impacted by stormwater runoff and individual actions.
- **Behavior Change Campaign:** Based on the results of the evaluation completed in 2020, Kirkland implemented a new behavior change campaign for the 2019-2024 Permit cycle.
  - Dumpster management: Kirkland continues local implementation of the regionally-developed Dumpster Management campaign, known as "Shut the Lid." This program supports commercial properties to change their behavior to consistently close their dumpster lids after each use through stickers, signage, and technical assistance. Kirkland prioritizes working with businesses with lids consistently observed to be open during baseline observations. In 2023, we continued observations on almost 50 containers and noted an overall lid closure rate over 70%

- **Stewardship Opportunities:** Kirkland will continue to provide stewardship opportunities for community members through various programs.
  - Storm drain marking: Volunteers mark neighborhood storm drains with labels stating, "Puget Sound Starts Here – Only Rain Down the Drain." The purpose of these markers is to raise awareness regarding connection between our neighborhoods and local water bodies.
  - Green Kirkland Partnership stewardship events: The Green Kirkland Partnership is an alliance between the City of Kirkland, nonprofit partners, businesses and the community to restore and maintain more than 500 acres of natural areas in the City. Most of the restoration work is completed by our dedicated volunteers. The Green Kirkland mission is to restore and maintain healthy forested and natural parklands by building a supportive community that works together to protect Kirkland's valuable natural resources for current and future generations. Achieving this involves training volunteers in restoration activities and providing support from restoration partners, contractors and skilled natural areas staff. The partnership's activities include community-based restoration efforts such as replanting areas with native trees and invasive plant removal; as well as education, outreach and engagement with the community.
  - Cross Kirkland Corridor Adopt-a-Trail: Local volunteers have adopted quarter-mile segments of the corridor and pledged to remove litter twice per year. They also have the option of doing a yearly invasive plants removal project in their section. All 23 segments are currently adopted. Adopters include Kirkland neighborhood associations, businesses, individuals, families, and community service groups.
  - Park pet waste stewards: Volunteers keep existing pet waste stations stocked with bags and help monitor un-scooped pet waste in potential "hot spot" parks to gather baseline data for targeted education and outreach efforts.
  - Water Watchers volunteers: Water Watchers is a community-based water monitoring program operated by the Sno-King Watershed Council. Water Watcher volunteers in Kirkland monitor physical and chemical indicators of stream health on local creeks. Data collected by the volunteers helps inform the community regarding watershed health and supplement water quality data collected by City staff.
- **Record Keeping:** Kirkland will continue to track and maintain records of public education and outreach activities and summarize these activities in the Annual Compliance Report.
- **Departments Engaged:** Public Works, Parks Department, City Manager's Office, Communications

Public Involvement

Kirkland is committed to providing ongoing opportunities for the public, including overburdened communities, to provide input into the development of this annual plan and into other initiatives and plans designed to improve water quality.

Kirkland's Plan to Meet the Requirements of the Permit:

- **Opportunities for Public Input:** The City welcomes comments from the public throughout the year.
  - To facilitate public comment, the City provides a contact number for residents to call on the customer service portal, Our Kirkland (https://kirklandwa.qscend.com/ourkirkland). The contact number is posted on Kirkland's stormwater webpage. Public comment can also be provided to City Council members at twice a month City Council Meetings.
  - Kirkland invites the public to review and comment on this Stormwater Management Program Plan annually. As with prior years, this year staff will post the draft plan to the City website. Feedback is solicited through a Press Release, promotion on City social media outlets- Twitter and Facebook, and through City e-newsletters.
  - Kirkland also seeks to involve the public in other stormwater management and clean water related decisions by engaging people during the planning and construction of stormwater infrastructure projects and during development of stormwater-related policy and master plans.
- **Accessibility:** Kirkland contracts with a language translation service. This verbal translation is available to all staff for communication with the public. Additionally, Kirkland's website features include an intuitive and visual based experience, as well as Google Translate. Computers are available at City Hall for customer service. Kirkland has been providing access to public meetings through virtual platforms and has continued this enhanced access as meetings have transitioned to hybrid settings.
- **Transparency:** Kirkland posts their annual Stormwater Management Program Plan and Annual Compliance Reports to our website each year before May 31st. These documents can be found on this website: https://www.kirklandwa.gov/Government/Departments/Public-Works-Department/Storm-Surface-Water/Stormwater-Policies-and-Regulations.
- **Record Keeping:** Kirkland will continue to track and maintain records of public involvement activities and summarize these activities in the Annual Compliance Report.
- **Departments Engaged:** Public Works, Planning and Building, City Manager's Office, Communications

Stormwater System (MS4) Mapping and Documentation

Kirkland maintains an internal and external facing GIS-based map of the stormwater system.

Kirkland's Plan to Meet the Requirements of the Permit:

- **Mapping:** Kirkland will continue to maintain and build on the existing map of the municipal stormwater system. This will include attributes of stormwater system outfalls with size and material, discharge points, receiving waters (other than groundwater), stormwater treatment and flow control BMPs/facilities owned and operated by the City, geographic areas that do not discharge stormwater to surface waters, tributary conveyances to all known outfalls and discharge points (24-inch diameter or larger), connections between other municipalities and public entities, all connections authorized after February 16, 2007, and all known connections from the MS4 to privately-owned stormwater systems. New mapping requirements in this permit are outfall size and material, started by January 1, 2020 and all known connections from the public stormwater system to a privately owned stormwater system, started by August 1, 2023.
  - Updating and managing GIS data is done according to documented procedures and quality control standards. Kirkland receives records drawings, including stormwater infrastructure, from development activities. These are field verified by Public Works staff prior to being integrated into the online GIS map.
  - Kirkland actively improves their maps by incorporating data that is gathered from field inspections (CCTV, catch basin inspection, IDDE, etc.) to progressively update and improve the accuracy of the stormwater system map.
  - This process builds the public and private stormwater treatment and flow control inspections lists. The inspections are performed under the Operations and Maintenance section of this Plan.
- **Transparency:** Kirkland maintains a public facing GIS- based interactive map of their stormwater system. The map can be found on this website: http://maps.kirklandwa.gov. Maps are available to Ecology and other permittees upon request in electronic format.
- **Record Keeping:** Kirkland will continue to track and maintain records of MS4 Mapping and Documentation activities and summarize these activities in the Annual Compliance Report.
- **Departments Engaged:** Public Works, Information Technology

Illicit Discharge Detection and Elimination (IDDE)

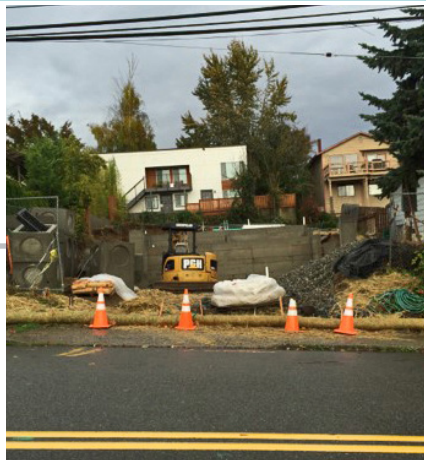
Kirkland's Illicit Discharge Detection and Elimination (IDDE) program is designed to prevent contamination of surface water and groundwater by monitoring, tracking, and removing non-stormwater discharges into the stormwater drainage system.

Kirkland's Plan to Meet the Requirements of the Permit:

- **Ongoing IDDE program to detect and address non-stormwater discharges and illicit connections:** The City's on-going IDDE program is designed to characterize, trace the source, and eliminate illicit discharges, including spills and illicit connections, into the municipal stormwater system.
  - The City responds to and investigates all calls and reports regarding environmental concerns such as illegal dumping, spills, illicit discharges, and illicit connections.
  - Spills Hotline: 425-587-3900, is Kirkland's hotline for reporting of spills, water quality concerns, and other illicit discharges and is publicized and operated as a 24-hour, 7-days a week hotline.
    - During regular business hours, calls are received and followed up on by Surface Water Engineering staff and the Storm Operations and Maintenance crew of Public Works.
    - After-hour calls are managed by Kirkland's emergency dispatch and standby maintenance crews.
    - Kirkland investigates all calls received and records are kept of calls received and actions taken as a result of these calls.
    - The hotline is publicized on the City's website, annual winter preparedness utility bill inserts, BMP rack cards, the business pollution prevention guide, Kirkland's erosion and sedimentation control plans, business cards/ email signatures of select staff, and Kirkland's public facing service request portal. The hotline is also promoted at presentations and educational events to the public and City staff, at discharge response outreach, and on stickers available at City Hall and public events.
  - Kirkland takes pride in our IDDE program response time. The Permit requires that all activities are performed at these minimum timelines:
    - Immediately respond to all illicit discharges which constitute a threat to human health, welfare, or the environment
    - Investigate within 7 days any potential illicit discharge
    - Initiate an investigation within 21 days for any suspected illicit connection
    - Use of a compliance strategy to eliminate illicit connections within 6-months
  - Documentation of IDDE procedures are detailed in the City's IDDE Manuals, which are adapted from 2020 Illicit Connection and Illicit Discharge Field Screening & Source Training Manual.
  - Kirkland educates public employees, businesses, and the general public about illicit discharges and the hazards associated with improper disposal of waste through the Department of Ecology's Pollution Prevention Assistance Program, King County Local Hazardous Waste Management Program, and general awareness campaigns. Kirkland also provides spill kits to businesses.

- **Kirkland Municipal Code: 15.52.090 & 1.12.200: Illicit Discharge Detection and Elimination:**
  - Kirkland Municipal Code (KMC) 15.52.090 & 1.12.200 prohibits non-stormwater, illicit discharges into Kirkland's stormwater system and provides the regulatory authority and framework for enforcement. Kirkland code adopted the Permit definitions for allowable discharges and conditionally allowable discharges. These code sections are updated periodically to support the program.
  - **Code Implementation:**
    - The on-going IDDE compliance strategy strives to achieve compliance initially through public education and technical assistance. When education, technical assistance, and voluntary correction agreements do not achieve compliance, KMC 1.12 and 15.52 provides for progressive enforcement.
    - Pollution discharged into the municipal storm drain system and/or surface and ground waters (illicit discharges) violates KMC 15.52 and subjects the violator(s) to fines and/or cleanup costs imposed by City and/or State agencies (KMC 1.12). Enforcement is only pursued if education has been initially provided.
- **MS4 Screening:** Kirkland has an on-going program to screen the stormwater system for potential sources of non-stormwater discharges and illicit connections. Kirkland performs this screening through catch basin inspection. During each inspection, staff are observing the structural integrity of the catch basin and adjoining pipes, sediment accumulation levels, and if there is any unusual flow, odor, color, or other visual indicators that would suggest a pollutant is present. If there is a water quality concern, the staff will then report a spill through the spill hotline. This will trigger notification to the storm maintenance crew to respond and maintain storm structures affected and the water quality team for further investigation and follow up.
  - The City field screens on average at least 12% of the stormwater system each year and annually tracks the percentage screened as well as the total percentage screened beginning August 1, 2019.
- **Training:** Kirkland has an on-going training program for city staff, including field staff, on the identification, reporting, and response to illicit discharges into the municipal stormwater system. Additionally, Kirkland ensures that all IDDE response staff is trained on the characterization, source tracing, and elimination of illicit discharges, including spills and illicit connections, into the stormwater system. Kirkland provides this training through a combination of on-line and possibly in-person training.
- **Record Keeping:** Kirkland will continue to track and maintain records of illicit discharge detection and elimination activities and summarize these activities in the Annual Compliance Report and as required by Appendix 12 of the Permit.
  - Kirkland will maintain their own internal data tracking system and will import data periodically into Ecology's Water Quality Web IDDE portal. Data upload into this system began in 2020.
- **Departments Engaged:** All City departments- Public Works, Planning and Building, City Manager's Office, Communications, Information Technology, Parks, Fire, Police

Controlling Runoff from New Development, Redevelopment and Construction Sites



Kirkland reviews development plans and inspects development sites during construction to ensure erosion and sediment control best management practices are in place and stormwater facilities are installed and maintained as designed. In addition, the City requires the use of Low Impact Development stormwater practices and principles. Kirkland plans to carry forward these policies and approaches in 2023.

Kirkland's Plan to Meet the Requirements of the Permit:

- **Ongoing Program: Stormwater Management Standards for Development, Redevelopment, and Construction Sites.** The program applies to private and public development, including transportation projects.
  - Kirkland Municipal Code Chapter 15.52 addresses runoff from new development, redevelopment and construction sites and provides authority to inspect and enforce adopted standards.
  - Kirkland adopted the 2021 King County Surface Water Design Manual effective July 1, 2022. These stormwater design standards are equivalent to the minimum technical requirements in Appendix 1, as required by the Permit.
  - In addition to the King County Surface Water Design Manual, Kirkland has adopted an addendum of pre-approved plans and designs for site development. These policies are reviewed and updated annually. They can be found at this website: https://www.kirklandwa.gov/Government/Departments/Development-Services-Center/Tools-and-Resources/Pre-Approved-Plans/Storm-Drainage-Pre-Approved-Plans.
  - Kirkland will continue to track the number of adjustments granted to the minimum requirements in Appendix 1. Kirkland does not currently grant exceptions or variances.
- **Review Plans and Inspect Development/Redevelopment Sites**
  - Kirkland implements a program (permitting process) to review plans, inspect sites during construction, and take enforcement action against those failing to follow approved guidelines or to provide facilities as required during plan review. This program ensures proposed development projects comply with the adopted Surface Water Design Manual.
  - The City's cross-departmental permitting process includes civil/site plan review and approval process, inspection, and enforcement to meet standards established by the permit for all qualifying new and redeveloped sites. This established approach will carry forward in 2023. The City's oversight of new and redevelopment projects occurs in phases: (1) prior to construction during the plan review and acceptance process; (2) before the site is cleared during an initial site construction inspection; (3) during construction via construction site inspections; and (4) post construction as part of the stormwater infrastructure acceptance inspection. Proposals for public and private projects are reviewed by City engineers or qualified engineering firms for compliance with Kirkland's standards, including LID requirements. City staff inspect qualifying public and private construction sites on a continuous basis to ensure that the proper temporary erosion and sediment control measures have been selected, properly placed, and installed correctly.
  - City inspectors also inspect the stormwater drainage system that can potentially be impacted by home construction activity. This occurs, at a minimum, every six months until 90% of the lots have been built out, or when construction has stopped, and the site is stabilized. If facilities and stormwater conveyance require cleaning during home construction, responsible parties perform maintenance/cleaning.
  - Kirkland inspectors have the authority to enforce Kirkland Municipal Code 15.52, using corrective action notices and stop work orders, to ensure the protection of receiving waters from construction impacts.
- **Notice of Intent:** Kirkland will continue to provide copies of or links to the "Notice of Intent for Construction Activity" and "Notice of Intent for Industrial Activity" to applicants as part of the development and redevelopment permit process.

- **Training**
  - Staff continues to increase their knowledge by remaining current with new/revised stormwater regulations, along with attending internal and external trainings on erosion control, LID techniques, stormwater design models, standards, and practices.
  - Through the Developer's Forum and associated listserv, Kirkland provides the development community and the public with information and updates on proposed changes to stormwater design requirements, codes, processes and procedures.
- **Record Keeping:** Kirkland will continue to track and maintain records of actions related to controlling runoff from development, redevelopment, and construction sites and summarize these activities in the Annual Compliance Report.
- **Departments Engaged:** Public Works, Planning and Building

Operations and Maintenance

Kirkland has a robust Operations and Maintenance (O&M) program that ensures the stormwater system is inspected and maintained in a manner that prevents or reduces potential impacts to stormwater drainage and receiving waters.

Kirkland's Plan to Meet the Requirements of the Permit

- **Maintenance Standards:** Kirkland implements maintenance standards from the King County Surface Water Design Manual and proprietary system recommendations as necessary, such as Contech's Filterra or Oldcastle's Biopod system.
- **Ongoing Program to Inspect and Maintain the MS4:**

Public System:

- Kirkland inspects all municipally owned catch basins and inlets every two years. If inspection indicates that cleaning or repair is needed, those activities are completed within the permit allowed timelines, generally within 6 months.
- Kirkland inspects all municipally owned and operated water quality treatment and flow control facilities. If inspection indicates that cleaning or repair is needed, those activities are completed within the permit allowed timelines, generally within 1 year.
- Kirkland spot checks multiple locations throughout the storm and surface water system, including stormwater treatment and flow control facilities, after storm events. If these spot checks indicate widespread damage or maintenance needs, Kirkland will continue to investigate and take maintenance actions on affected areas/facilities.
- Kirkland will continue to maintain compliance by achieving at least 95% of required inspections.

Private System:

- The City operates a program to annually inspect and require maintenance of private water quality treatment and flow control facilities regulated by Kirkland that discharge to the MS4 and were permitted after 2010. Maintenance standards are established in the King County 2021 Surface Water Design Manual (Appendix A). KMC 15.52 establishes enforcement procedures. Kirkland will continue to achieve at minimum 80% of required inspections and will keep records of all actions taken through this program.

- **Practices, Policies, and Procedures to Reduce Stormwater Impacts of Municipal Operations.** The City O&M program implements practices, policies and procedures to reduce stormwater impacts associated with runoff from land owned or maintained by Kirkland and road maintenance activities. These were documented in 2022 and will be updated as needed.
- **Stormwater Pollution Prevention Plan (SWPPP) for Kirkland's Maintenance Facility Yard.** A SWPPP for the City's Public Works Maintenance Facility Yard, which qualifies as a heavy equipment/material maintenance or storage yard, is being implemented and updated as needed by a team of Public Works staff. The SWPPP includes detailed descriptions of the operational and structural BMPs in use, inspection schedule and results, an inventory of materials and equipment stored on-site, a list of activities conducted that may be exposed to rain, a map of the facility's stormwater drainage, discharge points, and areas of potential pollutant exposure, and a plan for responding to spills.
- **Training:** O&M staff receives training on the importance of protecting water quality during maintenance operations, inspection procedures, relevant water quality and operations and maintenance standards, selecting appropriate BMPs, ways to perform their job activities to prevent or minimize impacts to water quality, and procedures for reporting water quality concerns. Training is conducted in a variety of ways, including meetings, in the field, and through training events.
- **Record Keeping:** Kirkland will continue to track and maintain records of Operations and Maintenance activities and summarize these activities in the Annual Compliance Report.
- **Departments Engaged:** Public Works, Parks

Source Control

The Source Control Program is a new NPDES permit requirement. The program is designed to prevent and reduce pollutants in runoff from areas of existing development that discharge to the stormwater system by implementing an inspection and enforcement program.

Kirkland's Plan to Meet the Requirements of the Permit

- **Source Control Ordinance:** Kirkland has adopted KMC 15.52.100, which requires Best Management Practices (BMPs) for pollutant generating sources on existing development. The City has adopted King County's Pollution Prevention Manual for Source Control BMPs.
- **Source Control Program Development:** This new program requires the activities listed below.
  - **Maintain an inventory:** This current inventory identifies institutional, commercial, and industrial sites that have the potential to generate pollutants to the stormwater system. The list of applicable activities is available in Appendix 8 of the NPDES Permit. Kirkland will continue to take steps to identify sites that have the potential to generate pollutants and maintain the list with information gathered through inspections or outreach efforts.
  - **Inform all Sites:** Inform all sites on the inventory about activities that may generate pollutants and the source control requirements applicable to those activities. Kirkland expects to communicate with the inventory of sites throughout the permit cycle and with outreach specific to either geographic location or type of business.
  - **Implement Inspection Program:** Kirkland is implementing an inspection program that supports these sites in applying operational and/or structural BMPs to prevent illicit discharges or violations of surface water, ground water, or sediment management standards as well as practices to reduce pollution from the application of pesticides, herbicides, and fertilizers. Staff will annually complete the number of inspections equal to 20% of the businesses or sites listed in the inventory and 100% of sites identified through credible complaints.
  - **Enforce the Program:** Kirkland will take follow up action for any site that has failed to adequately implement BMPs, prioritizing technical assistance and support to achieve compliance. These actions may include phone calls, letters, emails, follow up inspections, or enforcement.
  - **Maintain Records:** Kirkland will maintain program records including documentation of each site visit, inspection records, denial of entry occurrences, warning letters, notices of violation, and other enforcement records that demonstrate an effort to bring sites into compliance.
  - **Train Staff:** Kirkland will train all staff responsible for implementing the program. Training topics will include the legal authority for source control, source control BMPs and their proper application, inspection protocols, lessons learned, typical cases, and enforcement procedures. Staff may receive training through Ecology's Pollution Prevention Assistance Program and through the Washington Stormwater Center's Source Control Training.
- **Departments Engaged:** Public Works

Monitoring and Assessment

An important part of understanding impacts of management actions on the health of stormwater is to monitor and assess progress. The Permit allows for jurisdictions to undertake monitoring and assessment in their jurisdiction or contribute to a regional fund called the Stormwater Action Monitoring (SAM) Group where studies are undertaken by consensus of the contributing members.

Kirkland's Plan to Meet the Requirements of the Permit

- **Regional Participation:** Kirkland has opted to participate in the SAM Group for both (Permit section S8.A) Regional Status and Trends Monitoring and (Permit section S8.B) Effectiveness and Source Identification Studies. The City is an active member in the decision-making process and participates in SAM through several sub-committees. Additionally, staff provide data for regional SAM studies as requested. For information about SAM-sponsored monitoring projects, please visit the SAM website: https://ecology.wa.gov/Regulations-Permits/Reporting-requirements/Stormwater-monitoring/Stormwater-Action-Monitoring
  - Regional Status and Trends Monitoring: Kirkland contributes $14,238 annually to this program and will pay by the required due date of August 15th.
  - Effectiveness and Source Identification Studies: Kirkland contributes $26,021 annually to this program and will pay by the required due date of August 15th.
- **Kirkland Monitoring Programs:** Kirkland conducts water quality sampling and aquatic macroinvertebrate (bug) sampling in several creeks to evaluate stream health. While not required under the permit, these activities complement and inform other permit activities.
- **Record Keeping:** Kirkland will continue to track and maintain records of Monitoring and Assessment activities and summarize these activities in the Annual Compliance Report
- **Departments Engaged:** Public Works

Underground Injection Control Wells (UIC) Program

The NPDES Permit does not authorize discharges to groundwater from facilities regulated under the Underground Injection Control (UIC) Wells Program. Kirkland, however, does operate an Underground Injection Control Wells Program according to chapter 173-218 of the Washington Administrative Code and under a jurisdiction-wide Stormwater Management Program. Full details of our UIC program can be found at https://www.kirklandwa.gov/Government/Departments/Public-Works-Department/Storm-Surface-Water/Stormwater-Policies-and-Regulations.

Appendix: Public Comments

From: Andre Turner
To: Stormwater
Subject: Stormwater monitoring and improvement suggestions.
Date: Friday, February 23, 2024 5:14:45 PM

My name is André Turner and I've a Bachelor's in Sustainable Practices from Cascadia College and a MAEd in Urban Environmental Education. I have also taught students in grades 3-8 about water quality, watersheds and stormwater runoff as well as mitigation techniques.

As a suggestion to improve stormwater quality. The frequent inspection and cleaning of gully pots (catch basins) at the bottom of the stormwater drain would assist in monitoring tyre dust collected by them. It's important they are regularly maintained and locations where they are placed is marked on a map. ArcGIS would be a great way of recording the locations. Cascadia College has a bachelor program, Sustainable Practices, this would make for a great internship, or capstone project for a student(s). The Sustainable Practices program is morning and expanding its current Stormwater program for students.

The EPA now has 6PPD-q test kits, the testing and monitoring of Kirkland's watershed would help in accessing and address tyre dust through mitigation measures.

https://www.epa.gov/newsreleases/epa-develops-6ppd-q-water-testing-method- widespread-use

The use of and proper maintenance and disposal of gully pots would dramatically improve water quality. In Norway, Sweden, the UK, and elsewhere in Europe, they use gully pots to collect tyre dust, paint particles, and other pollutants from homes, businesses, and roads, yet here in the USA, if they are used, it's not widespread from what I've found. It would be great if we could put them in place to dramatically reduce tyre dust and other microplastics from paint, which are polluting streams and waterways. In order for them to be effective, they need regular cleaning and proper disposal maintenance.

4. Implication for environmental pollution management
Gully pots are established to retain solid particles in order to facilitate the well-functioning of drainage systems and protect downstream waters against pollution. They have been found to retain a range of environmental pollutants (Lindholm 2015) and are often the only pollution control infrastructure before road runoff reaches downstream recipient water.

https://www.sciencedirect.com/science/article/pii/S0048969720383182

It isn't just tyre dust, paint is a major source of microplastics. Gully pots also assist in capturing paint particles. Road paint as well as paint on buildings and other structures are two major contributors to microplastics in our streams, lakes, and oceans.

"For these reasons, the real level of paint microplastics entering the environment and ocean each year could be much, much higher than 60,000 tonnes. Other reports also conclude that paint is the second-largest source of microplastics in the ocean".
https://www.weforum.org/agenda/2020/09/how-to-reduce-microplastics-from-paint/

Appendix: Public Comments Continued

My thoughts on preventing pollution and improving water quality when it comes to car washing. This also helps address financial barriers some may face. It can be included on the website as well as Kirkland Conserves Facebook page (abbreviated of course).

While automatic car wash stations are great for some, the cost can be prohibitive. A single car wash can run between 14 and 18 dollars, depending on the company (before tax). The unlimited monthly car wash, from what I found, ranges from 28 to 45 dollars before tax. For those who want to wash their vehicle at home, it's best to do so on grass or gravel since it acts as a natural filter.

A great low-cost (around 1-2 dollars per wash) and very minimal water usage method (4-5 gallons) is the Rinseless Car Wash. It's especially useful for those who live in apartments or condos and can't wash them using the standard hose and bucket method.

To use, put 2 ounces of Optimum No Rinse (ONR) in a 5-gallon bucket with 4 gallons of water and mix. Fill a spray bottle with the product, then spray each panel separately and let it dwell for around 30 seconds. Then, with a microfiber towel or ONR's Big Red Sponge (20 dollars on Amazon), wash the panel by wiping it, and dry the vehicle with drying towels. There is no need to rinse off the car, which saves water. Then dump the water in the bucket in your yard.

A quart container will cost about 20 dollars on Amazon (many stores also sell it and similar products) and provide one with 16 washes. It's also great for wheels, glass, and as a quick interior detailer. Wash and wax versions are also available, at a slightly higher cost. Gallon size options are also available and while a higher initial cost, it'll save money long term.

I like using a two-bucket method, one for the product and the other to wash out the microfiber towel, then placing it back in the bucket with the rinseless product before I wash the panel off.
For especially dirty vehicles, spray the product on, let it dwell, then use a microfiber towel on each pass, then flip to a clean section. As one wipes the panel, lift the towel as you go so only the edge of your hand is at the end of the panel.

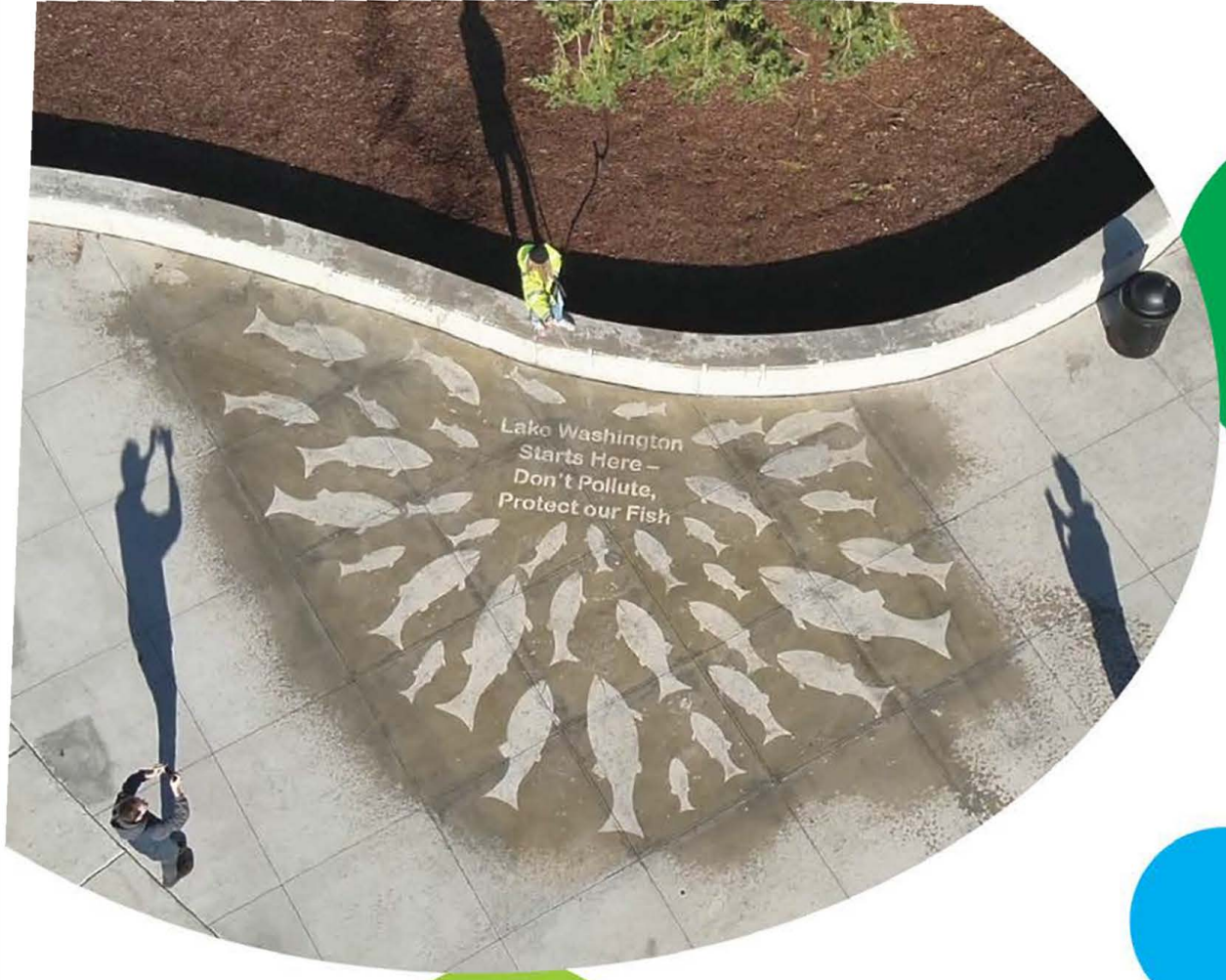
Wolfgang is another, but ONR is a popular one with detailers and is cheaper than most.

Two-part Rinseless method.

https://m.youtube.com/watch?v=VNOrxWHr32Y

A towel around the drain can help collect contaminated water that may make its way to the street if you wash on the grass or gravel. Then rinse off the towel on the grass or gravel.

https://www.kirklandwa.gov/files/sharedassets/public/v/1/public-works/surface-water/residential-car-washing.pdf



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