

2023

Stormwater Management Action Plan



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Table of Contents

Executive Summary.....	1
Introduction	1
Permit Requirements.....	1
Fry Creek Stormwater Plans.....	3
City of Aberdeen's Required Stormwater Management Action Plan (SMAP) Summary.....	4
Stormwater Facility Retrofits.....	4
Land Management/Development Strategies.....	6
Stormwater Management Activities.....	7
Implementation Schedule.....	8
Future Assessment Process and Schedule.....	9
Acronyms	9

Executive Summary

Introduction

The Stormwater Management Action Plan (SMAP) is a requirement for the City of Aberdeen as part of the National Pollutant Discharge Elimination System 2019-2024 Phase II Municipal Stormwater Permit administered by the Department of Ecology. In 2022, the City of Aberdeen was required to identify the significant drainage catchments within the city and rank them according to the potential benefit created by stormwater improvements. The City found that all drainage basins would benefit from future funding. Fry Creek was selected as the focus of this SMAP due the large amount of historical development on Fry Creek that has reduced its quality for fish habit and flood control. There are also a few significant projects that are already in different stages of development and construction in this drainage area.

Permit Requirements

The Phase II Municipal Stormwater Permit identifies the requirements in section S5.C.1.d.iii.

Stormwater Management Action Plan (SMAP). No later than March 31,2023, Permittees shall develop a SMAP for at least one high priority catchment area that identifies all of the following:

- (a) A description of the stormwater facility retrofits needed for the area, including the BMP types and preferred locations
- (b) Land Management/development strategies and /or actions identified for the water quality management

(c) Targeted, enhanced, or customized implementation of stormwater management actions related to permit sections with S5, including.

- a. IDDE field screening
- b. Prioritization of Source Control Inspections,
- c. O&M inspection or enhanced maintenance, or
- d. Public Education and Outreach behavior change programs,

Identified actions shall support other specially identified stormwater management strategies and actions for the basin overall, or for the catchment area in particular

(d) If applicable, identification of changes needed to local long-range plans, to address SMAP priorities.

(e) A proposed implementation schedule and budget sources for:

- a. Short term actions (i.e., actions to be accomplished within six years), and
- b. Long term actions (i.e., actions to be accomplished within seven to 20 years).

(f) A process and schedule to provide future assessment and feedback to improve the planning process and implementation of procedures or projects.

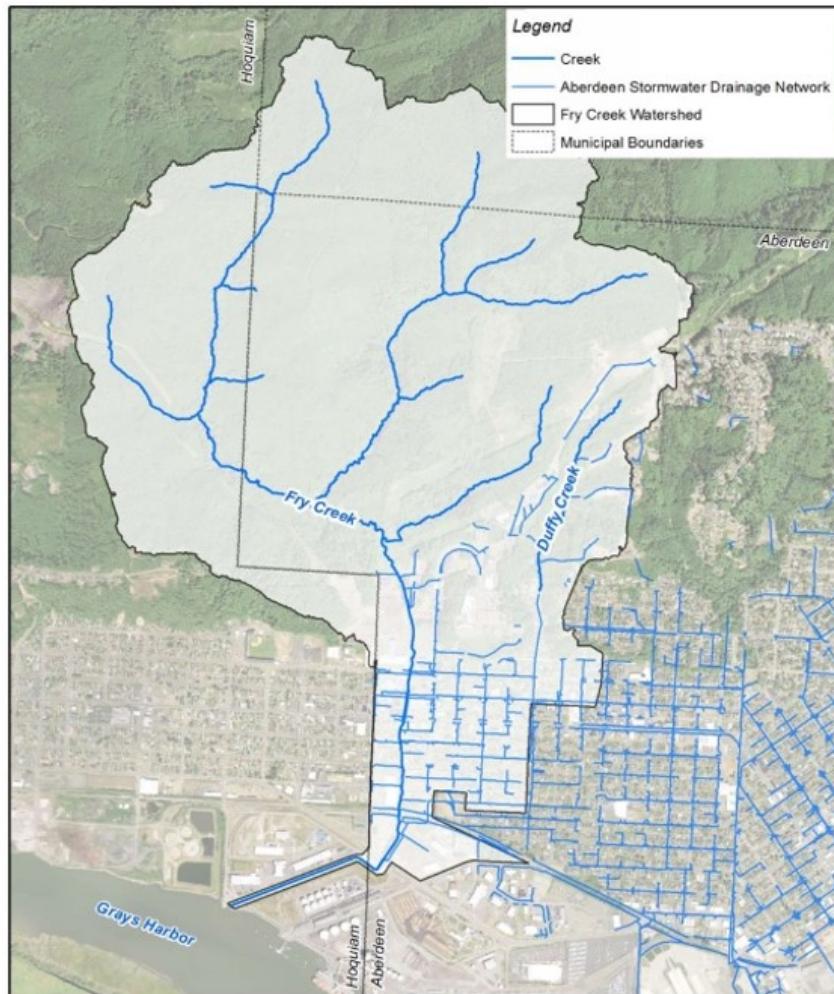


Figure 1 Fry Creek Basin

Fry Creek Stormwater Plans

There are 2 existing capital projects currently underway for stormwater improvements in the Fry Creek Catchment area. The Fry Creek Pump Station Replacement project and the Fry Creek Restoration project are the first two projects that directly affect the Fry Creek drainage basin. An overarching project that will benefit the Fry Creek area as well as most of Aberdeen north of the Chehalis River is the North Shore Levee project.

The Fry Creek Pump Station Replacement project is in the construction phase and has been funded by the Department of Commerce, Grays Harbor County Distressed County Sales and Use Tax Grant, Capital Budget Appropriation, and the Recreation and Conservation Office. This project will replace an undersized pump station and fish barrier with pumping capacity to meet the basins needs and allow for fish passage.

Fry Creek Restoration project is in the right of way acquisition phase and is funded by the Recreation and Conservation Office. This project will restore riparian areas around the creek and daylight sections that have been culverted over for development. The Fry Creek Restoration project aims to restore the creek to a more natural state so the creek can adequately convey heavy rain events and reduce street flooding. Design elements will also include pedestrian improvements to encourage walking and enjoyment of the restored area.

The North Shore Levee project will create a physical barrier to help prevent flood waters from entering the City of Aberdeen. The levee was originally planned to run from Willard St in the east of Aberdeen to Myrtle St in the west, where it was planned to connect with Hoquiam's proposed levee. After a more detailed evaluation, the Aberdeen portion of the North Shore Levee is planned to traverse from Willard Street in the east to approximately the intersection of S Division Street and W Heron Street, utilizing high ground between the Aberdeen and Hoquiam portions of the levee to complete the system.

Multiple pump station upgrades and improvements are planned in addition to constructing the levee specifically to address interior drainage needs relating to discharging surface runoff during the events of rain, wind and high tides that contribute to flooding events damaging public and private property.

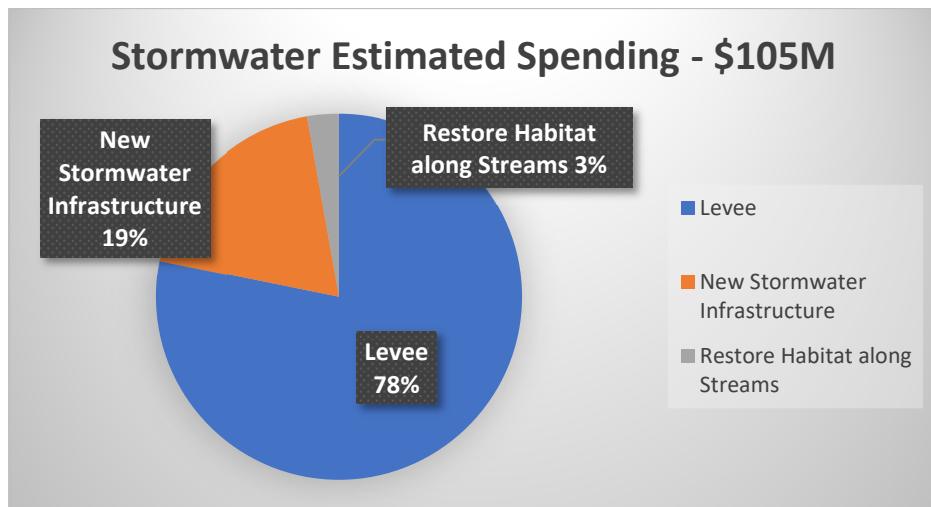


Figure 2 - Spending Committed

City of Aberdeen's Required Stormwater Management Action Plan (SMAP) Summary

The City of Aberdeen has created this table to meet the requirements of S5.C.1.d of the Phase I permit. The current identified projects have been in development for several years and are in different stages of implementation.

Permit Element	Compliance action - Stormwater Management Action Planning	Permit due date	Permit Required Actions	Budget
S5.C.1.d.iii	Develop a SMAP for at least one high priority catchment area	3/31/2023	Included in 3/31/2023 SMAP	Included in City of Aberdeen's 2022 budget
S5.C.1.d.iii (a)	Description of the stormwater facility retrofits needed for the area including the BMP types and preferred locations.	3/31/2023	Included in 3/31/2023 SMAP	
S5.C.1.d.iii (b)	Land management/development strategies and/or action identified for water quality management	3/31/2023	Current strategy is focused on the Fry Creek Restoration Project that included land acquisition in order to improve stream buffers and daylight culverted sections of the stream.	Included in Fry Creek Restoration project listed below
S5.C.1.d.iii (c)	Targeted enhanced, or customized implementation of stormwater management actions related to permits section within S5, including: Identified actions shall support other specifically identified stormwater management strategies and action for the basin overall, or for the catchment area in particular.			
	IDDE Field Screening	Ongoing	IDDE Field Screening will give priority to the Fry Creek basin in the event of resource limitations.	Funded through Stormwater Utility charge
	Prioritization of Source Control Inspections	Ongoing	Businesses in the catchment area will be prioritized for source control inspection.	Funded through Stormwater Utility charge
	O&M Inspections or Enhanced Maintenance	Ongoing	Inspections and maintenance will give priority to the Fry Creek basin in the event of resource limitations.	Funded through Stormwater Utility charge
	Public Education and Outreach Behavior Change	Ongoing	As part of the Source Control Inspections, businesses will be offered information on the Dumpster Lid Campaign.	Funded through Stormwater Utility charge
S5.C.1.d.iii (d)	If applicable, identification of changes needed to local long-range plans to address SMAP priorities.	Ongoing	Changes are not required to address SMAP priorities.	
S5.C.1.d.iii (e)	A proposed implementation schedule and budget source for:			
	Short-term action (i.e. actions to be accomplished within 6 years)	Potential completion by 2030	* Construct new fish passable Storm Pump Station on Fry Creek * Restore a section of Fry Creek	\$18 million - secured \$2 million
	Long-term action (i.e. actions to be accomplished within 7 to 20 years)	Potential completion by 2044	* Construct new levee to limit impacts of flooding * Assess Cherry St for storm system restrictions	\$80 million - Partially Secured Undetermined
S5.C.1.d.iii (f)	A process and schedule to provide future assessment and feedback to improve the planning process and implementation of procedures or projects.		Feedback from the community will be welcomed at any time. Reviews intended to update the plan if needed will occur every 2 years starting in December 2025.	

Table 1 - Permit Elements

Stormwater Facility Retrofits

As the city have developed and changed over time, the Fry Creek channel, which runs along the boundary between Hoquiam and Aberdeen from Cherry Street south to Pacific Avenue, has been constricted. Today, the creek is a narrow channel passing through many culverts and under roadway crossings. The Fry Creek Restoration project aims to restore the creek to a more natural state so the creek can manage heavy rain events and reduce street flooding. Design elements will also include pedestrian improvements to encourage walking and enjoyment of the restored area.

Restoration project elements include:

- Daylighting the creek by removing the underground culverts and street crossings at Aberdeen Avenue.
- Building a pedestrian bridge at Aberdeen Avenue.
- Replacing the existing culvert at Pacific Avenue with a larger culvert that will reduce flooding and provide for better fish passage.
- Building a pedestrian walkway connecting Pacific and Aberdeen avenues
- Enhancing the bank of Fry Creek with native plantings.



Fry Creek at Aberdeen Avenue: current condition.



Fry Creek: illustrated future condition including larger culvert, larger floodplain, and public access.

The Cities of Aberdeen and Hoquiam are working in partnership to design and build the North Shore Levee to provide flood protection for low-lying parts of the cities between the Wishkah and Hoquiam Rivers north of the Chehalis River and Grays Harbor Estuary. The project will provide coastal flood protection to as many areas as is feasible, improve the storm drainage systems in Aberdeen and Hoquiam so that they more effectively collect and convey runoff from intense storm events, and significantly reduce the economic burden on the community caused by flooding. The FIRM mapping revisions associated with the Levee will remove approximately 3,100 properties between the Wishkah and Hoquiam Rivers from the SFHA and place them into a Zone X, eliminating Federal flood insurance requirements on mortgages.

The Fry Creek pump station project is designed to work with the North Shore Levee and will replace the existing pump station with a larger pump station to alleviate flooding issues in the area and improve conditions for the wildlife. Once operational, the pump station will control the flow of Fry Creek through Aberdeen during heavy rain and high tides by closing two tide gates and pumping water over the tide gate structure and out to Grays Harbor.

Pump Station elements include:

- Increasing pumping capacity by more than four times the current pump station capacity.
- Installing new mechanical tide gates to help control water flow and remove a physical barrier when flood protection is not required.
- Installing a fish screening system to protect aquatic species from the mechanical process of moving water over the tide structure.

Pump Station benefits include:

- Reducing flooding during heavy rainfall events by controlling the flow of Fry Creek through Aberdeen and Hoquiam.
- Improving salmon habitats.

Land Management/Development Strategies

The City of Aberdeen's Comprehensive Plan addresses land use that will impact stormwater. The relevant policies are listed below:

Policy LU-18 Resiliency Planning. Continue to implement existing plans that address flooding issues and develop new plans to further prepare the city of natural disasters and climate change impacts, including earthquakes, tsunamis, wildfires, and sea level rise.

Policy LU-20 Flood parks. Explore opportunities for using parks to mitigate urban flooding dissipate wave energy, and help reduce flooding impacts (e.g. Finch Playfield flood control park, a storm-surge/tsunami mitigation park along the waterfront, etc.)

Policy LU-22 Managed Retreat. Initiate and proactively manage a long-term retreat strategy for Aberdeen communities that are critically vulnerable to sea level rise, tsunami events, and other natural hazards. Consider and carefully balance social equity and economic development needs along with climate and community resilience.

Policy LU-28 Protect Critical Areas. Continue to protect ecologically sensitive and hazardous areas, including their functions and values, by following the City's Critical Areas Ordinance.

Policy LU-29 Protect Shorelines. Continue to steward shoreline areas by following the City of Aberdeen's Shoreline Master Program.

Policy LU-31 Steward urban open spaces. Preserve and enhance the city's network of urban habitat corridors and open spaces.

Policy LU-33 Invest in restoration and ecosystem health. Work to implement restoration and other ecosystem health plans through a mix of investments, partnerships, and management.

Policy LU-34 Improve ecosystem functions. Seek opportunities to acquire, restore/enhance, and maintain environmentally sensitive sites to support natural stormwater and ecosystem functions.

Policy LU-35 Green corridors. Use the Centers and Corridors and Green Corridors Map as conceptual guides for connecting and integrating opens spaces.

Policy CF-8 Protect natural areas. Protect and steward open spaces that provide green infrastructure – trees, natural stormwater drainage and retention, and natural areas – to minimize flooding and landslide risks and reduce urban heat island effects.

Policy CF-9 Optimize. Select location for new parks and open spaces both to optimize environmental outcomes and to improve equity by distributing benefits in accordance with need.

Policy CF-10 Stewardship. Protect and steward environmentally critical areas within the city.

Policy CF-11 Low Impact. Promote green stormwater infrastructure and low impact development, such as natural areas and landscaped natural drainage facilities to manage stormwater.

Stormwater Management Activities

IDDE field screenings

The City of Aberdeen currently field screens 100% of the City's permitted discharge locations annually, which is significantly higher than the 12% required by the City's Permit. Further investigation is completed based on illicit discharge reports from citizens or illicit discharges identified by staff. In the event that there are staffing constraints, the Fry Creek Basin will take priority for field screening.

Prioritization of Source Control

This will be the first year that the City of Aberdeen will be required to inspect local businesses in an effort to help them stay in compliance with the NPDES permit. These inspections will be guided by the Stormwater Maintenance Manual for Western Washington (SWMMWW). The City of Aberdeen has setup a system to prioritize the inspection based on the type of business's potential for discharge. One of the factor's will be whether it is located within the Fry Creek Basin.

One area in particular with City owned and operated flow control and water quality treatment is in the Highlands area on the northern edge of the City limits in the Fry Creek Basin. The property was

developed with utilities and infrastructure with the intention to sell the lots for home building. The developer installed flow control vaults to collect stormwater to prevent erosion on the steep hillsides that surround the development. These structures were handed over to the City to maintain once development activities were completed. These structures are inspected and maintained annually.

Education and Outreach

With the introduction of the business source control inspection, the City of Aberdeen will have an opportunity to provide some education and outreach to local businesses. During this permit cycle we participated in a regional outreach trial to help businesses encourage their employees to close dumpster lids. This is a seemingly simple task that has the benefits of reducing rodent infestations, birds scattering debris, and rain-soaked trash from leaching into the local waterways. Despite the trial efforts, staff still regularly observed the waste receptacle lids open. Sometimes it is complacency and other times there are obstacles that make it difficult to close the lids. We will offer posters and stickers as reminders to increase education opportunities and suggest best practices to overcome the obstacles discovered during the trial.

Implementation Schedule

Fry Creek Pump Station

The Fry Creek Pump Station project is underway with the start of the construction beginning on September 12, 2022 with a projected completion date of March 2024. This project is fully funded and construction is estimated to cost approximately \$19 million.

Fry Creek Restoration

The Fry Creek Restoration project is currently in the Right of Way acquisition phase. The City is in ongoing discussions with two landowners to release the required property to the City. It is estimated that these negotiations will take until the end of 2023 to complete. Once the Right of Way acquisition is complete, we will be able to begin the final design phase and then contract the construction of the project. Due to rapid inflation, the estimated cost of the project is expected to increase from the initial estimate of \$2.23 million. The City of Aberdeen is currently working to revise this estimate in order to secure adequate funding. The project is estimated to be completed in 2027.

North Shore Levee

The North Shore Levee project is in the final design phase with 80% of the funding secured for the total project as currently planned. The total estimated project cost is approximately \$101 million, which includes preliminary design, final design, right of way acquisition, and construction. The City of Aberdeen is currently considering minor revisions to the alignment along with other design decisions and anticipates initiating outreach to landowner's, partners, and stake holders to better inform them of the project details in the Spring of 2023. The City is also anticipating initiating NEPA activities including additional outreach in the late Summer or Fall of 2023. Construction is currently planned to begin in late 2025 or early 2026.

Future Assessment Process and Schedule

The SMAP document will be reviewed and updated annually to reflect current project status. This review will occur by December 31 of each year. This will also be an opportunity to reevaluate basin goals and to document new projects that could potentially be developed for the area.

Acronyms

AKART	All Known, Available Reasonable methods of Treatment
AADT	Average Annual Daily traffic
BMP	Best management practice
CBIMP	Catch Basin Inspection and Maintenance Program
CBP3	Community-Based Public-Private Partnership
CESCL	Certified Erosion and Sediment Control Lead
CIP	Capital Improvement project
CSO	Combined Sewer Overflow
CSP	Conveyance Screening Program
CWHH	Clean Water Healthy Habitats
CWP	Clean Water Plan
DES	Department of Executive services
DNRP	Department of Natural Resources and Parks
DOC	Department of Commerce
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
ESI	Equity and Social Justice
GPS	Geographic Positioning System
GIS	Geographic information System
HOA	Homeowners Association
HSPF	Hydrologic Simulation Program – Fortran
HU	Hydrologic Unit
HUC	Hydrologic Unit Code

IC	Illicit connection
IC/IDDE	Illicit Connection / Illicit Discharge Detection and Elimination
ID	illicit discharges
AMC	Aberdeen Municipal Code
LID	Low Impact Development
MEP	Maximum Extent Practicable
MS4	Municipal separate storm sewer system
MWBE	Minority and Women Owned Business Enterprises
NCEES	National Council of Examiner for Engineering and Surveying
NHD	National Hydrography Dataset
NPDES	National Pollutant Discharge Elimination System
O&M	Operation & Maintenance
PAH	Polycyclic Aromatic Hydrocarbons
Parks	Parks and Recreation Department
PBDE	Polybrominated Diphenyl Ethers
PCB	Polychlorinated Biphenyl
Permit	NPDES Phase II Municipal Stormwater Permit
PGIS	Pollution Generation Impervious Surface
SAM	Stormwater Action Monitoring
SIMPLA	Site Management Plan
SMAP	Stormwater Management Action Plan
SPPM	Stormwater Pollution Prevention Manual
SWMMWW	Stormwater Maintenance Manual for Western Washington
SWMP	Stormwater Management Program
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
Transit	Grays Harbor Transit
UGA	Urban Growth Area
USGS	United States Geological Survey

WBD	Watershed Boundary Delineation
WQ	Water Quality
WQBE	Water Quality Benefits Evaluation
WAC	Washington Administrative Code
WRIA	Water Resource Inventory Area
WTD	Wastewater Treatment Division