Thomas Wetlands East, East Minnehaha Neighborhood

2024-2029

STORMWATER CAPITAL PLAN

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This document represents the efforts and cooperation of Clark County staff and the Clark County Council. Thank you to all who participated in the development of this plan.

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TABLE OF CONTENTS

TABLE OF FIGURES

Introduction

Stormwater Management Program

The Public Works Clean Water Division administers the Clark County Stormwater Management Program to protect surface water and groundwater resources from polluted stormwater runoff, and to coordinate compliance with state and federal Clean Water regulations. Primary responsibilities of the stormwater management program include: planning and building stormwater control facilities; removing pollutant sources; water quality monitoring of receiving waters; public education and outreach; development and enforcement of water quality regulations; coordination with other municipalities, and; maintenance of the county's stormwater system.

As the county's population continues to increase, Clark County is committed to responsible stormwater management to keep our waterways clean for people, fish and wildlife.

Unfortunately, past drainage and stormwater management practices and regulations have proven inadequate to prevent stormwater runoff impacts to streams, wetlands and groundwater. Thousands of developed acres in Clark County currently contribute to problems in streams, lakes and rivers.

Stormwater Impacts and Solutions

Impacts of stormwater runoff on waterways are well-documented and widespread. In Clark County, runoff contributes to impaired stream health, diminished fish populations, and degraded habitat conditions. These impacts have been described in the *Clark County Stream Health Report*, the *Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan* and the Washington Department of Ecology's statewide list of impaired water bodies.

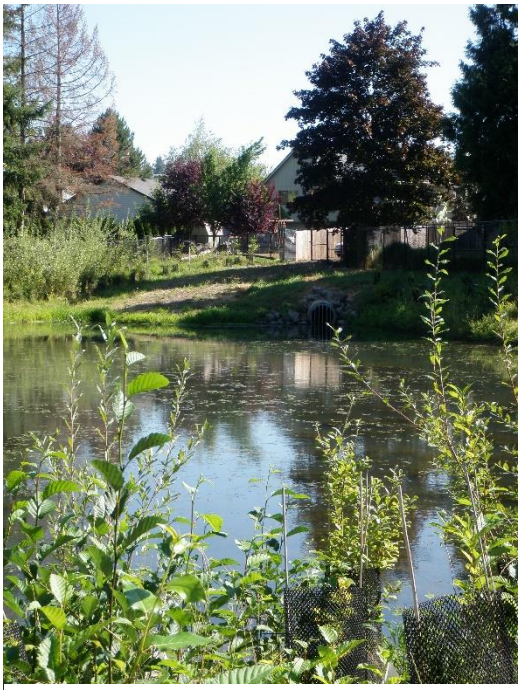


Figure 1. Encore Stormwater Facility

Stormwater runoff impacts water bodies in two critical ways: water quality and water quantity. Stormwater runoff from roads, fields, rooftops, parking lots and yards carries with it a variety of pollutants deposited by everyday activities. Fertilizers, oil, grease, heavy metals, pesticides, industrial chemicals, soil and animal wastes all can make their way to water bodies in stormwater runoff. These pollutants degrade stream water quality, posing risks to both human health and stream life.

Hard surfaces and cleared areas increase the amount and speed of stormwater runoff flowing into streams. This results in streams with too much flow during storms and too little flow during non-storm periods. Left unchecked, this situation leads to increased erosion during storms, decreased habitat quality, reduced groundwater recharge, impacted stream life and poor overall water quality.

Projects in the Stormwater Capital Plan help protect waterways in many ways. Examples include keeping existing stormwater facilities in good repair, updating or building new stormwater control facilities to remove pollutants or slow down runoff, planting trees, preserving intact forested/streamside habitats, increasing infiltration to groundwater and rehabilitating wetlands.

What is in the Stormwater Capital Plan?

This document includes:

- Regulatory requirements summary
- Local framework for stormwater capital planning
- Description of project types and strategies for implementation
- Description of the process used to develop the capital plan
- Six-year plan funding matrix
- Map and index of projects included in the plan
- Detail sheets for projects included in the plan

Regulatory Requirements Summary

Clark County selects projects for the Stormwater Capital Plan based on environmental factors, and the ability to meet regulatory requirements stemming from federal and state laws. The Clean Water Act National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit program and Washington state water pollution laws provide regulatory objectives. The Washington State Growth Management Act addresses capital facilities.

NPDES Permit – S5.C.7. Structural Stormwater Controls

The NPDES Permit requires the county to have a program to construct structural stormwater controls to prevent or reduce impacts to waters of the state caused by discharges from the municipal separate storm sewer system (MS4). Under the permit, projects include flow control facilities, water quality treatment facilities, sediment traps, retrofits of existing facilities, repairs costing more than $25,000, property acquisition to provide water quality or flow control benefits, and street sweeping. Other means of reducing impacts include riparian habitat acquisition and restoration of forest in upland areas or in riparian buffers.

NPDES Permit – S5.C.10. Maintenance and Operations

The NPDES Permit requires the county to inspect and maintain public stormwater facilities equivalent to state standards. Catch basin maintenance, typical facility maintenance, and capital maintenance costing less than $25,000 must be completed within specified timeframes of six months to two years. The permit does not set time limits for capital maintenance costing over $25,000; however, these projects are to be included in capital planning exercises and scheduled for maintenance through the Structural Stormwater Controls program.

Chapter 173-218 WAC – Underground Injection Control (UIC) Program

Pursuant to Chapter 90.48 RCW and Chapter 173-218 WAC, the state's requirements for stormwater infiltration wells may drive capital improvements if the county finds systems that pose a threat to groundwater quality.

Chapter 36.70A RCW - Growth Management Act

The Growth Management Act, or GMA, establishes many of the requirements for the Capital Facilities and Utilities Element in the Clark County Comprehensive Growth Management Plan 2015-2035. The Comprehensive Plan addresses stormwater infrastructure for new development through county regulations that apply state standards for water quality requirements and standard engineering practice for drainage conveyance design.

The Stormwater Capital Plan does not provide capacity for new development; rather, it facilitates improvements to the existing stormwater system to enhance water quality performance as required by the Permit.

Stormwater Capital Planning Local Framework

Policies and Goals

County policies for stormwater capital planning include:

- Meet the Phase I Municipal Stormwater Permit requirements through stormwater capital planning and capital construction.

County goals for stormwater capital projects include:

- Protect and enhance streams and wetlands in Clark County through planning and constructing modifications to the stormwater infrastructure.
- Minimize the degradation of receiving waters caused by stormwater runoff in urban areas.
- Maximize public benefits of county-owned land by providing multiple uses such as recreation and by leveraging funding from multiple sources.

Guiding principles

In support of county policies and goals, the capital planning process strives to:

- Prioritize projects with the greatest potential to support multiple county programs and goals, including local and regional fish recovery, habitat enhancement and pollution prevention.
- Ensure a reliable scientific and engineering basis for projects.
- Ensure each project in the plan is needed, feasible and cost-effective.
- Focus limited resources on cost beneficial solutions to the most pressing concerns.
- Incorporate environmental benefits into needed infrastructure repair projects.
- Maintain a list of potential projects to take advantage of funding opportunities.

Project Types

Asset Management

Capital Repair >$25,000

Description

Capital repair projects are stormwater facility repair projects costing more than $25,000. Repairs of this kind are required under the county's Permit; however, due to the higher costs associated with capital repair work compared to routine maintenance, the Permit does not set a time limit for completing capital repair projects. Typical repair activities include replacing pipes and flow-control structures, addressing drainage problems, large-scale sediment or vegetation removal, and replacing retaining walls or access roads.

Figure 2. Bioswale

Strategy

Repairing and maintaining existing infrastructure is a county priority. Routine inspection of county stormwater facilities identifies repair needs. Given regulatory requirements and funding constraints, Clark County intends to address as many of the existing list of capital repair projects as feasible in each 6-year plan.

Retrofit and New Facility Construction Projects

Retrofit and new facility construction projects address gaps in existing treatment and/or flow control infrastructure. These projects may focus on upgrading the performance of existing treatment or flow control facilities, or adding new treatment and flow control practices to the existing drainage infrastructure. A retrofit or new facility improves on the original design performance of a system, whereas a repair restores a degraded system to its designed level of performance.

Water Quality

Description

Water quality projects include a variety of modifications to stormwater infrastructure to add or enhance water-quality treatment. Examples include installation of cartridge filter systems, conversion of swales to bioretention facilities or wet ponds, and other improvements to stormwater facilities or conveyance systems

Figure 3. Roadside bioretention

Strategy
Water quality projects typically address the Permit-required Structural Stormwater Controls program and consequently represent a significant investment. Water quality projects are located primarily in older urban areas with little or no water quality treatment. These areas contribute disproportionately to water quality degradation in streams such as Salmon Creek. The focus is on areas with no treatment followed by those with outdated treatment facilities, particularly higher traffic areas where pollutant loads are greater.

Hydrology Improvement

Description
Hydrology improvement projects address problems resulting from too much stormwater runoff. These may include new facilities, wetland restoration, retrofits to provide additional detention or retention within existing facilities and low impact development practices aimed at reducing the volume of runoff and enhancing groundwater recharge.

Figure 4. Wetland detention

Strategy
Hydrology improvement projects may be used to meet Structural Stormwater Control requirements and often address significant stormwater runoff impacts.

These projects are typically focused on adding controls to stormwater treatment ponds. Streams in urbanizing areas are still in the process of adjusting to development and increased runoff, and may benefit from additional flow control. Projects in fully urbanized areas are limited because streams have already been damaged and adjusted to the increased flows.

Figure 5. Manhole

Underground Injection Control (UIC) Compliance

Description
UIC wells are large manholes and buried trenches designed to infiltrate runoff. Projects to retrofit UIC wells improve stormwater infiltration systems that are a demonstrated threat to groundwater quality. Improvements typically include the addition of upstream treatment devices, replacement of deeper wells with shallower wells to avoid groundwater, or the replacement of failing infiltration wells with alternative stormwater retention or detention facilities.

Strategy
Under requirements in Chapter 90.48 RCW, Clark County has identified and registered nearly 2000 UIC wells with the Washington State Department of Ecology and assessed each one's risk for polluting groundwater. The county's obligation to retrofit failing or high-threat facilities began in 2015. Some UIC

well projects may also satisfy municipal stormwater permit requirements for the Structural Stormwater Controls program if they overflow to the storm system or remove runoff discharging to streams.

Stream Stabilization, Habitat Improvement and Fish Barrier Removal

Description
Stream stabilization and habitat improvement projects typically include channel enhancements, bank stabilization, floodplain reconnections or culvert/fish barrier removal.

Strategy
Stabilization and habitat projects are often very cost-effective methods to improve stream habitat and function where past impacts have been significant. Their presence is limited in the capital plan because these projects typically do not qualify as Structural Stormwater Controls under the Permit. However, habitat projects may be competitive as grant submittals and may also satisfy permit requirements to implement watershed-scale stormwater plans.

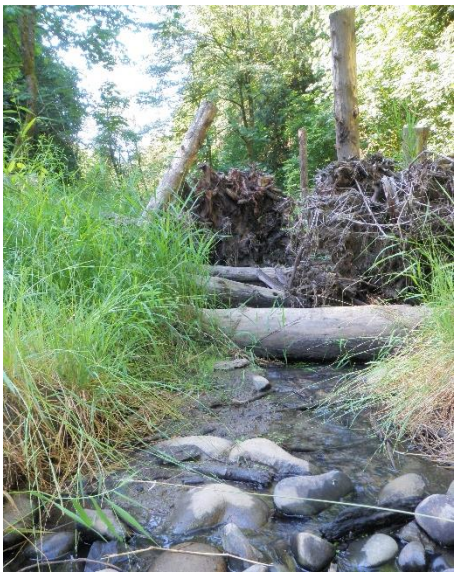


Figure 6. Stabilized stream channel

Reforestation

Description
Reforestation projects enhance county properties with native vegetation. Intact and rehabilitated forested areas provide stormwater benefits because water evaporates from foliage, soaks into the ground or is taken up by vegetation. These projects maximize the ecological and stormwater benefits of the properties, supporting numerous local and regional environmental goals.

Strategy
Reforestation projects provide stormwater benefits that qualify for the Structural Stormwater Controls program and may be included in stormwater capital plans. Reforestation focuses on properties owned by the Clean Water Division, Parks Division and Legacy Lands Program, while promoting partnerships with Clark Public Utilities and the Lower Columbia Fish Recovery Board.

Figure 7. Tree planting

Property Acquisition for Stormwater Benefit

Description

Clark County purchases properties with existing high-quality habitat along streams, in wetlands or in forested upland areas. Preservation of these areas provides significant long-term watershed benefits, including stormwater control. Property may also be acquired to accommodate needed stormwater improvement projects. Property acquisition may be costly and is dependent on the availability of willing sellers; however, preventing stormwater problems before they occur is among the most cost-efficient means of managing impacts. With limited public land available for construction of stormwater facilities, strategic property acquisition may become increasingly important.

Figure 8. Conservation property

Strategy

Property acquisitions for habitat preservation are typically prioritized and pursued through the county's Legacy Lands Program. Current anticipated acquisitions are subject to future updates of the Conservation Areas Acquisition Plan. When appropriate, Clark County seeks to leverage stormwater program and Conservation Futures funds together.

Property acquisitions utilizing solely Clean Water funding typically secure property for future construction of stormwater facilities and are often addressed on a case-by-case basis as opportunities or needs arise.

Acquisitions of intact riparian or forest habitat qualify immediately as Structural Stormwater Controls under the Permit. Land acquisitions for stormwater facility construction do not qualify until a stormwater facility is constructed on the property.

Ongoing Programs

Ongoing Programs allocate funding to specific programmatic efforts that support Structural Stormwater Control requirements on an ongoing basis. Ongoing programs are not capital projects, and funding allocations for these efforts are not included in the Stormwater Capital Program matrix. These programs are described briefly below and include:

- Reforestation Planning
- Sub-basin Retrofit Studies
- Street Sweeping

Reforestation planning

Description

Reforestation planning is an ongoing activity focused on identifying and prioritizing opportunities to enhance native vegetation on county properties. Planning efforts consider local water quality conditions, basin priorities, and Ecology Water Cleanup Plans to identify candidate projects.

Strategy

The reforestation program has an initial target to plant or enhance 30 acres of county-owned property between 2019 and 2024.

Sub-basin retrofit studies

Description

Sub-basin retrofit studies follow previous stormwater planning efforts (Stormwater Needs Assessments) by identifying an array of projects that help meet stormwater and environmental goals in focused areas. This activity supports capital planning requirements under the current stormwater Permit.

Strategy

The program utilizes existing assessment information along with focused field work and desktop analyses to help identify cost-effective projects. Projects are evaluated and prioritized for inclusion in the Stormwater Capital Plan.

Street Sweeping

Description

Certain levels of street sweeping qualify as Structural Stormwater Controls under the Permit because they have a similar function as treatment facilities to remove solids from runoff. Clark County allocates considerable funding to annual street sweeping.

Strategy

Street sweeping is a cost-effective method to remove pollutants from road surfaces and is especially important in high traffic areas where there is little to no treatment. Clean Water funding supports year-round sweeping of arterial roadways to address these higher pollutant areas.

Plan Development

Capital planning is the process of identifying and implementing cost-effective projects that are aligned with the county's goals and reflect a consistent set of strategies and processes.

The approach to developing the 2024-2029 Stormwater Capital Plan included four components:

1. Priority-setting
2. Project identification
3. Project verification
4. Programming projects for construction

The product is a matrix listing planned projects and the anticipated schedule for funding and constructing them over the six-year capital plan timeline.

Priority-setting

The capital program considers projects within the entire unincorporated urban area and rural Clark County, but focuses on urban and urbanizing areas where stormwater impacts are greatest.

General priorities for 2024-2029 are listed and described below.

- Required capital repair projects (>25K).
- Water quality treatment in the lower Salmon Creek watershed.
- Reforestation of county lands and natural areas acquisition for stormwater benefit.

Required capital repair projects (>25K)

Good business practice dictates that repair of existing infrastructure should be a county priority. Proper function of existing facilities is critical to the county's ongoing stormwater management obligations. The Permit recognizes the need to maintain existing facilities and requires timely repair under the maintenance requirements, but also allows scheduling for expensive repairs under the Structural Stormwater Controls requirement.

Clark County has an effective routine maintenance program that minimizes the occurrence of large-scale repairs. However, there is a small backlog of facilities that do not perform up to design expectations and require continued attention.

Required UIC projects

Clark County owns approximately 2,000 drywells registered with the state. These drywells were evaluated in 2013 to identify wells representing a high threat to groundwater quality. Forty wells met the criteria for high threat and must be addressed under UIC regulations. Thirty-three wells will have been addressed by the end of 2023; the remaining wells are prioritized as funding and opportunities allow.

Water quality retrofits: Suds Creek, Cougar Creek, Tenny Creek, 114th Street Tributary

Approximately 14 square miles within the unincorporated portions of the Urban Growth Area lack stormwater treatment. These areas were built below current stormwater standards and represent a significant gap in stormwater infrastructure.

The watersheds of many small creeks in these urban areas are heavily developed. Damage to creek channels from lack of stormwater flow control began long ago and is ongoing. Retrofitting these areas for flow control and/or hydrologic improvement is both prohibitively expensive and of limited value since the creeks are in the process of stabilizing under the current hydrology. Adding water quality treatment and/or infiltrating water to recharge groundwater are priorities, however, since these creeks are tributary to important salmon-bearing streams, recreational resources and waters on Ecology's 303(d) list of polluted waterbodies.

Water quality retrofits in the 2024-2029 plan focus on Cougar Creek, Suds Creek, Tenny Creek, and 114th Street tributary in the Salmon Creek watershed. These areas have been the focus of sub-basin retrofit studies from 2018- 2022 to identify high priority projects.

Project Identification

Stormwater capital projects typically originate from systematic capital planning efforts, routine stormwater facility inspections, observations by maintenance crews, or evaluation of underground injection control wells.

Clean Water completed significant county-wide project identification and screening efforts between 2006 and 2011 under the Stormwater Needs Assessment Program, or SNAP. The program identified many potential project opportunities, which formed the basis for much of the stormwater capital plan through 2018. During that time, most priority opportunities identified through the SNAP have either been constructed or were found to be infeasible. The remaining potentially viable projects from the SNAP effort are being re-evaluated in light of updated priorities during sub-basin retrofit studies.

Sub-basin retrofit studies follow up on earlier stream assessments, refining county efforts to plan and build stormwater controls that meet permit requirements and reduce pollutant discharges to receiving waters. The process for sub-basin retrofit studies was developed in 2018 and first applied to Cougar and Suds Creeks in the Salmon Creek watershed. Retrofit studies were completed in two additional basins (Tenny Creek and the 114th Street Tributary) in 2022. Retrofit studies were not conducted in 2023 due to limited staff resources, but are anticipated to resume in 2024.

Studies identify an array of projects that will improve stream conditions, applying consistent objectives and specific project types tailored to the goals for each sub-basin. The process incorporates information from multiple county capital efforts and is intended to promote collaboration between county programs.

The studies apply a series of tools to identify projects including: a series of project area maps depicting existing conditions and needs, long-plots of high traffic roadway corridors, stormwater outfall verification, review of underutilized lands and county-owned lands, headwater wetland project assessment, right-of-way retrofitting assessment, and channel/floodplain restoration project assessment.

Results are managed in a series of project maps and spreadsheets, and highly rated projects are promoted to the Capital Planning Database for possible inclusion in the Stormwater Capital Plan.

A Project Identification Worksheet is first compiled, identifying purpose and level of need (scored 1 through 5) for each identified project and performing a preliminary high-level verification. The result is a list of all identified projects shown in three categories: viable; needs more information, or; rejected.

Project Verification

Viable projects from the identification spreadsheet are run through a more detailed verification process in a second spreadsheet called the Project Verification Worksheet.

The primary verification checks are based on detailed Technical Information Report maps generated for each project. These maps inform project verification with current information and also identify whether additional field visits are necessary to perform verification. The result is a list of projects shown in three categories: verified; additional field information needed, or; rejected.

Verified projects with a need level of 1, 2, or 3 are carried over into the database for consideration in the 6-year plan.

Programming

Programming is the process of applying regulatory requirements and available funding to the list of potential projects to develop a six-year project funding matrix that can meet permit requirements and program goals.

Six-Year Project Funding Matrix

Capital projects are placed in the six-year plan matrix based on regulatory requirements, programmatic goals, project prioritization, and available funding.

Funding

This capital plan includes 29 projects totaling approximately $13.6 million over six years.

The Clean Water Fund, competitive grant programs and the Conservation Futures Fund may all contribute to meeting permit requirements under the stormwater capital program.

Clean Water Fund

The county established the Clean Water Fund in the year 2000 to implement requirements of its Permit. Current rates for a standard tax lot are $47.00 per year and yield approximately $7.5 million annually to support county-wide stormwater management. The Clean Water Division's five core areas of effort include:

- Operations and maintenance of the stormwater system
- Permit compliance and enforcement
- Stream and stormwater assessment and monitoring
- Education and outreach
- Stormwater capital planning and projects

Grant Funding
Grants are competitive, and available sources are subject to fluctuation from year to year. When available, grant funds are routinely pursued.

The most common grant sources for stormwater capital projects have been Ecology's Stormwater Financial Assistance Program (SFAP) and Centennial Clean Water Program (Centennial). Common sources for Legacy Lands program purchases have been grants managed by the State Recreation and Conservation Office, including Washington Wildlife and Recreation Program (WWRP) and Salmon Recovery Funding Board (SRFB).

The 2024-2029 plan includes two projects that have been awarded a combined total of $650,000 in grant funding.

Clean Water submitted one application in October 2023 under Ecology's Centennial program for $500,000 in construction funding and up to $3,000,000 in loans toward an upcoming project.

Clean Water anticipates submitting additional proposals requesting approximately $4 million in construction funding for 7 projects between 2024 and 2027.

Conservation Futures Fund
Clark County instituted the Conservation Futures Fund in 1985. The primary revenue source for the fund is the conservation futures property tax levy, a county-wide levy that cannot exceed $0.0625 per $1,000 valuation. The levy typically generates $2.3 to $2.4 million annually.

The Legacy Lands Program manages the fund with the goal of bringing together the people, groups and community support to establish, restore and maintain an interconnected system of natural areas and open spaces within the region. The program coordinates various projects, partners and funding sources to protect and improve lands highly valued for habitat, scenic corridors, low-impact recreation or other qualities that enhance the local environment, including stormwater benefits.

Six-Year Project Funding Matrix

2024-2029 Stormwater Capital Plan
Project Funding Matrix

CLEAN WATER DIVISION

PRJ /Storm ID	Project Name	Type	Source of Estimate	Phase	Estimated Spent to Date (August 2023)	2024 CWF	2024 Grant	2025 CWF	2025 Grant	2026 CWF	2026 Grant	2027 CWF	2027 Grant	2028 CWF	2028 Grant	2029 CWF	2029 Grant	2030 CWF	2030 Grant	2024-2029 total	Estimated Project Total
PRJ0001003 CP-161	**Schriber Reforestation**	reforestation	complete/plant establishment	PE	40,000															0	40,000
				ROW																0	0
				CN	225,000	6,000														6,000	231,000
				Total	**265,000**	**6,000**		**0**		**0**		**0**		**0**		**0**				**6,000**	**271,000**
PRJ0000602 CP-191	**NE Hwy 99 WQ (68th to 78th)**	water quality	EPD/RevEx	PE	94,000															0	94,000
				ROW	3,000															0	3,000
				CN	620,000	10,000														10,000	630,000
				Total	**717,000**	**10,000**		**0**		**0**		**0**		**0**		**0**				**10,000**	**727,000**
PRJ0002594 CP-206	**Wilding Park SWF Swale Repair**	repair	final design	PE	7,000	4,000														4,000	11,000
				ROW																0	0
				CN		90,000														90,000	90,000
				Total	**7,000**	**94,000**		**0**		**0**		**0**		**0**		**0**				**94,000**	**101,000**
PRJ0002593 CP-207	**Merritt's Hideaway SWF Repair**	repair	field estimate	PE																0	0
				ROW																0	0
				CN		50,000														50,000	50,000
				Total	**0**	**50,000**		**0**		**0**		**0**		**0**		**0**				**50,000**	**50,000**
PRJ0002592 CP-217	**Salmon Creek Greenway @ Cougar Cr. Reforestation**	reforestation	prelim design	PE	15,000	5,000														5,000	20,000
				ROW																0	0
				CN		127,000														127,000	127,000
				Total	**15,000**	**132,000**		**0**		**0**		**0**		**0**		**0**				**132,000**	**147,000**
PRJ0002595 CP-188	**Mayer's Terrace SWF Repair**	repair	final design	PE	5,000	2,000														2,000	7,000
				ROW																0	0
				CN		50,000														50,000	50,000
				Total	**5,000**	**52,000**		**0**		**0**		**0**		**0**		**0**				**52,000**	**57,000**
PRJ0002519 CP-209	**Lindemann Easement/ Cold Creek Ct Repair**	repair	final design	PE	10,000	5,000														5,000	15,000
				ROW																0	0
				CN		140,000														140,000	140,000
				Total	**10,000**	**145,000**		**0**		**0**		**0**		**0**		**0**				**145,000**	**155,000**
PRJ0002522 CP-221	**Philbrook Farms Tract D Repair**	repair	field estimate	PE	55,000	26,704														26,704	81,704
				ROW																0	0
				CN		200,000														200,000	200,000
				Total	**55,000**	**226,704**		**0**		**0**		**0**		**0**		**0**				**226,704**	**281,704**
PRJ0002518 CP-200	**NE 78th St at NE13th and 16th Ave WQ**	water quality	50% design	PE	45,000	75,000														75,000	120,000
				ROW																0	0
				CN		700,000														700,000	700,000
				Total	**45,000**	**775,000**		**0**		**0**		**0**		**0**		**0**				**775,000**	**820,000**
PRJ0000601 OS-80	**Heritage Farm Wetland Restoration**	hydrology and water quality	EPD/RevEx	PE	366,000		85,000	83,191												168,191	534,191
				ROW	2,000	12,790		1,000												13,790	15,790
				CN	2,000	1,500		3,695,791												3,697,291	3,699,291
				Total	**370,000**	**99,290**		**3,779,982**		**0**		**0**		**0**		**0**				**3,879,272**	**4,249,272**
PRJ0002591 CP-218	**Swan Ponds SWF Repair Planning**	repair	na	PE		30,000														30,000	30,000
				ROW																0	0
				CN																0	0
				Total	**0**	**30,000**		**0**		**0**		**0**		**0**		**0**				**30,000**	**30,000**
PRJ0002520 CP-212	**Hwy 99 (99th to 104th St) WQ**	water quality	prelim design	PE	10,000	50,000		10,000												60,000	70,000
				ROW																0	0
				CN				240,000												240,000	240,000
				Total	**10,000**	**50,000**		**250,000**		**0**		**0**		**0**		**0**				**300,000**	**310,000**

2024-2029 Stormwater Capital Plan
Project Funding Matrix

CLEAN WATER DIVISION

PRJ /Storm ID	Project Name	Type	Source of Estimate	Phase	Estimated Spent to Date (August 2023)	2024 CWF	2024 Grant	2025 CWF	2025 Grant	2026 CWF	2026 Grant	2027 CWF	2027 Grant	2028 CWF	2028 Grant	2029 CWF	2029 Grant	2030 CWF	2030 Grant	2024-2029 total	Estimated Project Total
CP-203	**Cougar Creek 3 Enhancement**	stabilization/ habitat	60% design	PE	116,820	70,000		10,000		10,000										90,000	206,820
				ROW																0	0
				CN			proposal					300,000	500,000							800,000	800,000
				Total	**116,820**	**70,000**		**10,000**		**10,000**		**800,000**		**0**		**0**				**890,000**	**1,006,820**
PRJ0000599 CP-195	**NE Hazel Dell Ave (78th to Cougar Cr) WQ**	water quality	prelim design	PE	2,603	4,500	25,500	11,250	63,750	30,000		2,250	12,750							150,000	152,603
				ROW																0	0
				CN					proposal			97,500	552,500							650,000	650,000
				Total	**2,603**	**30,000**		**75,000**		**30,000**		**665,000**		**0**		**0**				**800,000**	**802,603**
PRJ0002521 CP-213	**Hwy 99 (99th St to Hazel Dell Plaza) WQ**	water quality	prelim design	PE	2,000	118,000		50,000		3,000	17,000									188,000	190,000
				ROW																0	0
				CN			proposal			86,250	488,750									575,000	575,000
				Total	**2,000**	**118,000**		**50,000**		**595,000**		**0**		**0**		**0**				**763,000**	**765,000**
PRJ0002517 CP-193	**Hwy 99 (78th to 86th St) WQ**	water quality	prelim design	PE	2,000	58,000		15,000		1,350	7,650									82,000	84,000
				ROW																0	0
				CN			proposal			92,700	525,300									618,000	618,000
				Total	**2,000**	**58,000**		**15,000**		**627,000**		**0**		**0**		**0**				**700,000**	**702,000**
CP-222	**Reforestation (*Gordy Jolma Natural Area)**	reforestation	field estimate	PE		10,000		10,000												20,000	20,000
				ROW																0	0
				CN				130,000												130,000	130,000
				Total	**0**	**10,000**		**140,000**		**0**		**0**		**0**		**0**				**150,000**	**150,000**
CP-201	**NE 99th Street catch basin WQ**	water quality	field estimate	PE		30,000		15,000												45,000	45,000
				ROW																0	0
				CN				173,000												173,000	173,000
				Total	**0**	**30,000**		**188,000**		**0**		**0**		**0**		**0**				**218,000**	**218,000**
CP-190	**NW 99th St (NW 11th Ave to Cougar Cr) WQ**	water quality	field estimate	PE		40,000		20,000												60,000	60,000
				ROW																0	0
				CN				236,000												236,000	236,000
				Total	**0**	**40,000**		**256,000**		**0**		**0**		**0**		**0**				**296,000**	**296,000**
CP-214	**NE 99th St (I-5 to E of Hwy 99) WQ**	water quality	field estimate	PE		50,000		50,000		25,000		1,500	8,500							135,000	135,000
				ROW																0	0
				CN					proposal			60,750	344,250							405,000	405,000
				Total	**0**	**50,000**		**50,000**		**25,000**		**415,000**		**0**		**0**				**540,000**	**540,000**
CP-105	**NE Hazel Dell Ave ROW WQ**	water quality	prelim design	PE						10,000				35,000		10,000				55,000	55,000
				ROW																0	0
				CN												400,000				400,000	400,000
				Total	**0**	**0**		**0**		**10,000**		**0**		**35,000**		**410,000**				**455,000**	**455,000**
CP-219	**Natural Areas Acquisition (*Three Creeks Greenway)**	acquisition	na	PE																0	0
				ROW				200,000												200,000	200,000
				CN																0	0
				Total	**0**	**0**		**200,000**		**0**		**0**		**0**		**0**				**200,000**	**200,000**
CP-216	**OneWater Pilot planning**	water quality	na	PE				75,000												75,000	75,000
				ROW																0	0
				CN																0	0
				Total	**0**	**0**		**75,000**		**0**		**0**		**0**		**0**				**75,000**	**75,000**
CP-199	**NE 78th St/ Heritage Farms ROW WQ**	water quality	field estimate	PE								40,000		15,000						55,000	55,000
				ROW																0	0
				CN												225,000				225,000	225,000
				Total	**0**	**0**		**0**		**0**		**40,000**		**15,000**		**225,000**				**280,000**	**280,000**

2024-2029 Stormwater Capital Plan
Project Funding Matrix

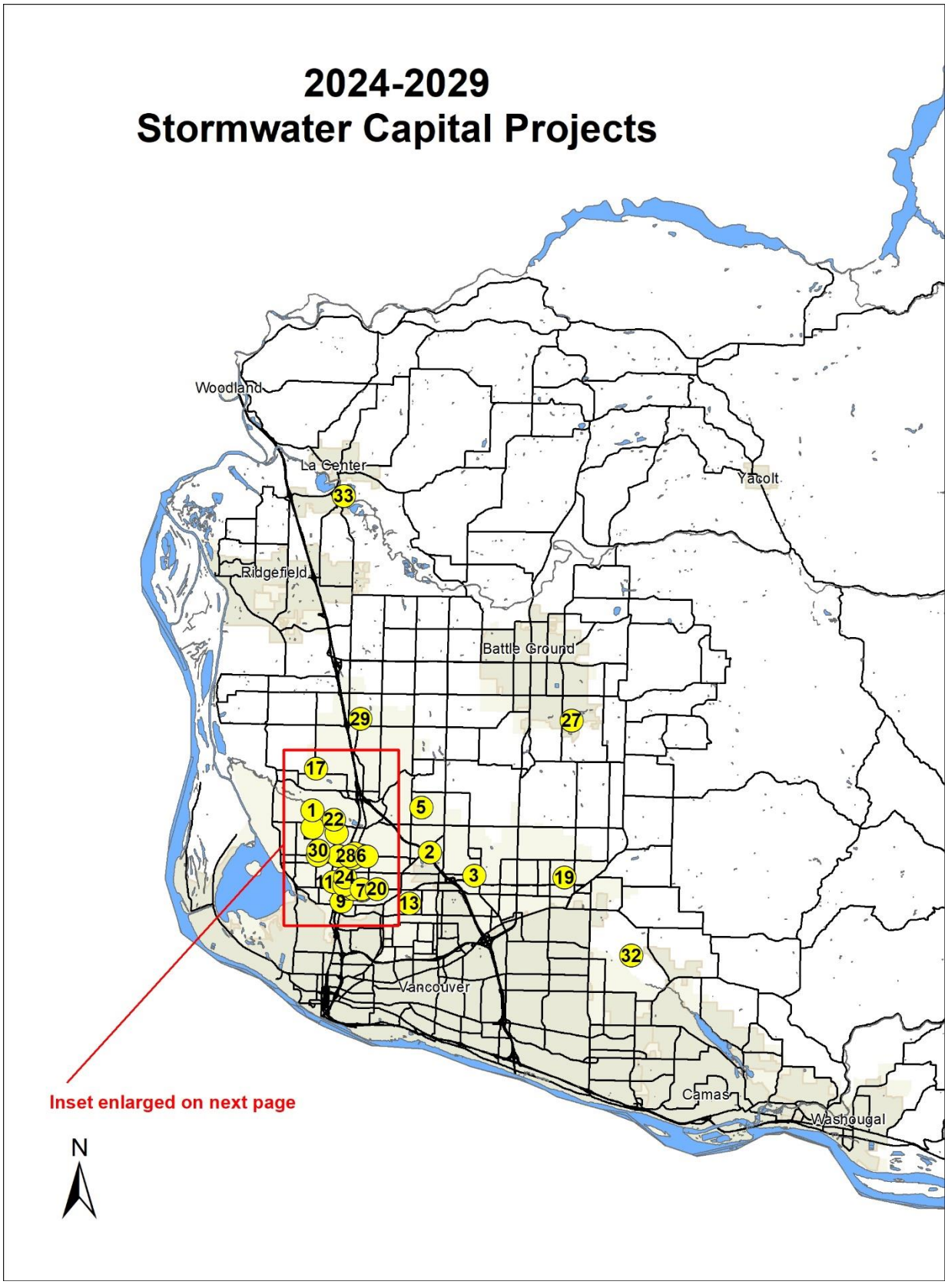
CLEAN WATER DIVISION

PRJ /Storm ID	Project Name	Type	Source of Estimate	Phase	Estimated Spent to Date (August 2023)	2024 CWF	2024 Grant	2025 CWF	2025 Grant	2026 CWF	2026 Grant	2027 CWF	2027 Grant	2028 CWF	2028 Grant	2029 CWF	2029 Grant	2030 CWF	2030 Grant	2024-2029 total	Estimated Project Total
OS-145	Whipple Creek Near NW 11th Ave Habitat Improvement	stabilization/ habitat	field estimate	PE				30,000		10,000		10,000								50,000	50,000
				ROW																0	0
				CN										225,000						225,000	225,000
				Total	**0**	**0**		**30,000**		**10,000**		**10,000**		**225,000**		**0**				**275,000**	**275,000**
CP-204	I-SUDS1 (lower Suds Creek restoration)	stabilization/ habitat	prelim design	PE				60,000		50,000		20,000		10,000						140,000	140,000
				ROW																0	0
				CN							proposal			340,000	500,000					840,000	840,000
				Total	**0**	**0**		**60,000**		**50,000**		**20,000**		**850,000**		**0**				**980,000**	**980,000**
CP-215	NE 99th St (NE 25th Ave to Tenny Creek) WQ	water quality	field estimate	PE				60,000		45,000		20,000		1,500	8,500					135,000	135,000
				ROW																0	0
				CN							proposal			60,750	344,250					405,000	405,000
				Total	**0**	**0**		**60,000**		**45,000**		**20,000**		**415,000**		**0**				**540,000**	**540,000**
CP-198	NE 78th St East of Bingo Hall WQ	water quality	field estimate	PE										20,000		30,000		5,000		50,000	55,000
				ROW												250,000				250,000	250,000
				CN														320,000		0	320,000
				Total	**0**	**0**		**0**		**0**		**0**		**20,000**		**280,000**		**325,000**		**300,000**	**625,000**
CP-220	Natural Areas Acquisition (*Lacamas Subarea Lower)	acquisition	na	PE																0	0
				ROW								400,000								400,000	400,000
				CN																0	0
				Total	**0**	**0**		**0**		**0**		**400,000**		**0**		**0**				**400,000**	**400,000**

Revenue Source		CWF	Grant	CWF	Grant	CWF	Grant	CWF	Grant	CWF	Grant	CWF	Grant	CWF	Grant	6 Year SW CIP Total
Annual Totals By Funding		1,965,494	110,500	5,175,232	63,750	363,300	1,038,700	952,000	1,418,000	707,250	852,750	915,000		325,000		
Annual Totals By Phase	**PE**	688,704		563,191		209,000		115,000		90,000		40,000		5,000		**$13,561,976**
	ROW	12,790		201,000		0		400,000		0		250,000		0		
	CN	1,374,500		4,474,791		1,193,000		1,855,000		1,470,000		625,000		320,000		
Annual Totals		2,075,994		5,238,982		1,402,000		2,370,000		1,560,000		915,000		325,000		

Project Index and Maps

2024-2029 Stormwater Capital Plan Project Index			
Map ID	**Project ID**	**Project Name**	**Subwatershed**
33	CP-161	Schriber Reforestation	East Fork Lewis (r.m. 03.19)
9	CP-191	NE Hwy 99 WQ Retrofit (68th to 78th)	Cougar Creek
2	CP-206	Wilding Park SWF Swale Repair	Salmon Creek (r.m. 03.83)
3	CP-207	Merritt's Hideaway SWF Repair	Curtin Creek
1	CP-217	Salmon Creek Greenway @ Cougar Cr Reforestation	Salmon Creek (r.m. 03.83)
19	CP-188	Mayer's Terrace SWF Repair	Upper Burnt Bridge Creek
13	CP-209	Lindemann Easement/Cold Creek Ct SWF Repair	Lower Burnt Bridge Creek
5	CP-221	Philbrook Farms Tract D Repair	Salmon Creek (r.m. 03.83)
15 16	CP-194 CP-200	NE 78th St at NE 13th and 16th Ave WQ	Cougar Creek
7	OS-80	Heritage Farm Wetland Restoration	Cougar Creek
6	CP-218	Swan Ponds SWF Repair Planning	Tenny Creek
10	CP-212	Hwy 99 (99th St to 104th St) WQ	Tenny Creek
12	CP-203	Cougar Creek 3 Enhancement	Cougar Creek
11	CP-195	NE Hazel Dell Ave (78th to Cougar Creek) WQ	Cougar Creek
14	CP-213	Hwy 99 (99th St to Hazel Dell Plaza) WQ	Tenny Creek
23 24	CP-193 CP-197	Hwy 99 (78th to 86th St) WQ	Cougar Creek
27	CP-222	Reforestation (*Gordy Jolma Natural Area)	Salmon Creek (r.m. 14.66)
25	CP-201	NE 99th St Catch Basin WQ	Cougar Creek
26	CP-190	NW 99th St (NW 11th Ave to Cougar Creek) WQ	Cougar Creek
28	CP-214	NE 99th St (I-5 to E of Hwy 99) WQ	Tenny Creek
21	CP-105	NE Hazel Dell Ave ROW WQ	Salmon Creek (r.m. 03.83)
29	CP-219	Natural Areas Acquisition (*Three Creeks)	Whipple Creek (upper)
30	CP-216	OneWater Pilot Project	Cougar Creek
18	CP-199	NE 78th St/Heritage Farms ROW WQ	Cougar Creek
17	OS-145	Whipple Creek Near NW 11th Ave Habitat	Whipple Creek (upper)
22	CP-204	I-SUDS1 Lower Suds Creek restoration	Salmon Creek (r.m. 03.83)
31	CP-215	NE 99th St (NE 25th Ave to Tenny Creek) WQ	Tenny Creek
20	CP-198	NE 78th St East of Bingo Hall WQ	Cougar Creek
32	CP-220	Natural Areas Acquisition (*Lacamas Subarea Lower)	Lower Lacamas Creek


2024-2029
Stormwater Capital Projects
Woodland
La Center
Yacolt
Ridgefield
Battle Ground
Vancouver
Camas
Washougal
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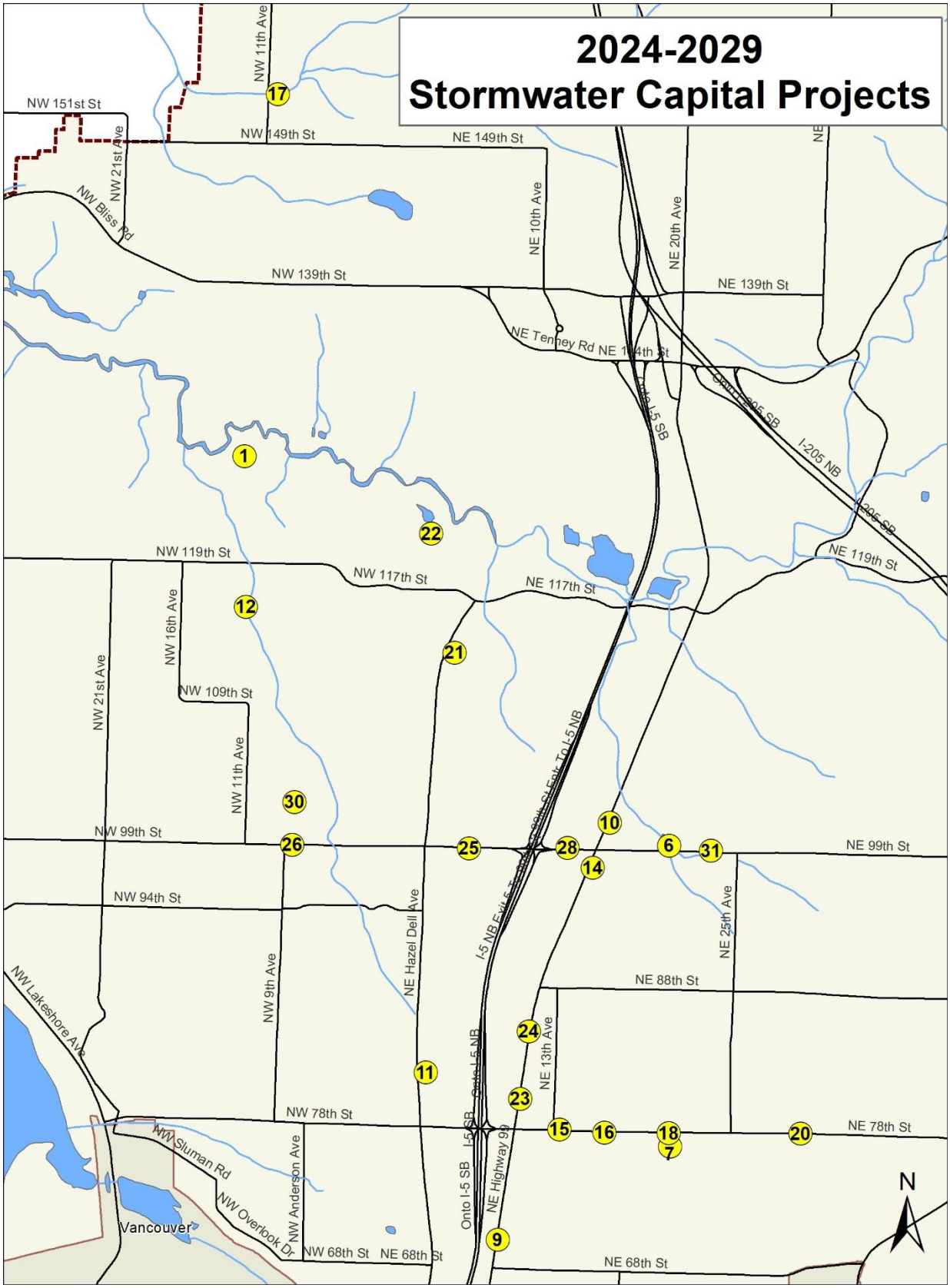
2024-2029
Stormwater Capital Projects
NW 151st St
NW 149th St
NE 149th St
NW 11th Ave
NW 21st Ave
NW Bliss Rd
NE 10th Ave
NE 20th Ave
NW 139th St
NE 139th St
NE Tenney Rd
NE 134th St
Onto I-5 SB
Onto I-205 SB
I-205 NB
I-205 SB
NW 119th St
NW 117th St
NE 117th St
NE 119th St
NW 16th Ave
NW 109th St
NW 21st Ave
NW 11th Ave
I-5 NB Exit To 99th St Exit To I-5 NB
NW 99th St
NE 99th St
NW 94th St
NE Hazel Dell Ave
NW 9th Ave
NE 25th Ave
NE 88th St
NW Lakeshore Ave
NE 13th Ave
Onto I-5 NB
NW 78th St
NE 78th St
NW Sluman Rd
NW Overlook Dr
NW Anderson Ave
Vancouver
NW 68th St
NE 68th St
Onto I-5 SB
NE Highway 99
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Project Detail Sheets

STORMWATER CAPITAL PLAN

Schriber Reforestation

Vicinity Map

Project Summary

Site ID: CP-161

Project: PRJ0001003

Project Manager: Christian

Subwatershed: East Fork Lewis (r.m. 03.19)

Location: East Fork Lewis River near NE Timmen Rd

Description: This project will restore approximately 13 acres of riparian buffer located on Clark County-owned property along a 3500-foot reach along the south bank of the East Fork Lewis River.

Basis: The project site is prioritized by the Lower Columbia Fish Recovery Board's EFLR Habitat Conservation Plan and Ecology's East Fork Lewis River Water Cleanup Plan as having significant shade deficit contributing to increased water temperatures. 75% of project funding is provided by an Ecology Centennial Clean Water Program grant.

Site Photo

Schedule and Estimated Cost

Project Status:	Complete/establish
Planned Construction Year:	2022
Engineering/Permitting:	$40,000
Property Acquisition:	$0
Construction:	$231,000
ESTIMATED TOTAL:	**$271,000**

STORMWATER CAPITAL PLAN

NE Hwy 99 (68th St to 78th St) WQ

Vicinity Map

Project Summary

Site ID: CP-191

Project: PRJ0000602

Project Manager: Fakler

Subwatershed: Cougar Creek

Location: Hwy 99 between 68th and 78th Street

Description: The project will retrofit existing catch basins and/or curb inlets along both sides of Highway 99 between NE 68th Street and NE 78th Street by installing storm filter cartridges to provide water quality treatment before the runoff is discharged to Cougar Creek.

Basis: Cougar Creek has well-documented water quality degradation, and as a tributary to Salmon Creek is subject to multiple TMDLs. Cougar Creek lags behind observed water quality improvements in the larger Salmon Creek watershed. The project treats stormwater from nearly 2/3 mile of high-traffic roadway on Highway 99 that is currently discharged directly to Cougar Creek with no water quality treatment.

Site Photo

Schedule and Estimated Cost

Project Status:	Complete/closeout
Planned Construction Year:	2023
Engineering/Permitting:	$97,000
Property Acquisition:	$0
Construction:	$630,000
ESTIMATED TOTAL:	**$727,000**

STORMWATER CAPITAL PLAN

Wilding Park SWF Swale Repair

Vicinity Map

Site Photo

Project Summary

Site ID: CP-206

Subwatershed: Salmon Creek (r.m. 03.83)

Project: PRJ0002594

Location: NE Saint Johns Rd & NE Wilding Rd

Project Manager: TBD

Description: This project replaces treatment function from four un-maintainable bioswales located in a wetland by installing treatment cartridges in upstream manholes and inlet structures.

Basis: This project addresses required maintenance under the municipal stormwater permit.

Schedule and Estimated Cost

Project Status:	Design
Planned Construction Year:	2024
Engineering/Permitting:	$11,000
Property Acquisition:	$0
Construction:	$90,000
ESTIMATED TOTAL:	**$101,000**

STORMWATER CAPITAL PLAN

Merritt's Hideaway SWF Repair

Vicinity Map

Project Summary

Site ID: CP-207

Subwatershed: Curtin Creek

Project: PRJ0002593

Location: NE 88th Street & NE 91st Avenue

Project Manager: TBD

Description: This project installs infiltration BMPs within an underutilized stormwater facility at CC Estates to reduce system surcharge and street flooding caused by a nearby undersized stormwater infiltration facility at Merritt's Hideaway.

Basis: This project addresses required maintenance under the municipal stormwater permit.

Site Photo

Schedule and Estimated Cost

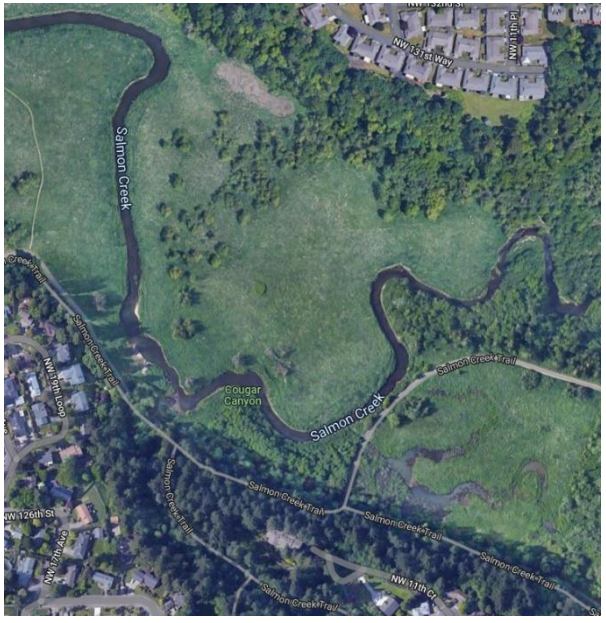
Project Status:	Design
Planned Construction Year:	2024
Engineering/Permitting:	$0
Property Acquisition:	$0
Construction:	$50,000
ESTIMATED TOTAL:	**$50,000**

STORMWATER CAPITAL PLAN

Salmon Creek Greenway @ Cougar Cr. Reforestation

Vicinity Map

Site Photo



Project Summary

Site ID: CP-217

Project: PRJ0002592

Project Manager: TBD

Subwatershed: Salmon Creek (r.m. 3.83)

Location: Confluence of Cougar Creek and Salmon Creek

Description: This project will reforest approximately 6 acres of county property owned by Legacy Lands within the Salmon Creek Greenway.

Basis: This project addresses long-term improvements in habitat, stream temperature, and beneficial use attainment in the lower Salmon Creek watershed and optimizes habitat value on County lands.

Schedule and Estimated Cost

Project Status:	Design
Planned Construction Year:	2024
Engineering/Permitting:	$20,000
Property Acquisition:	$0
Construction:	$127,000
ESTIMATED TOTAL:	**$147,000**

STORMWATER CAPITAL PLAN

Mayer's Terrace SWF Repair

Vicinity Map

Site Photo

Project Summary

Site ID: CP-188

Project: PRJ0002595

Project Manager: Schnabel

Subwatershed: Upper Burnt Bridge Creek

Location: NE 145th Street and NE 87th Avenue

Description: This project replaces a missing bioswale with catch basin treatment cartridges

Basis: This project addresses required repairs under the municipal stormwater permit

Schedule and Estimated Cost

Project Status:	Design
Planned Construction Year:	2024
Engineering/Permitting:	$7,000
Property Acquisition:	$0
Construction:	$50,000
ESTIMATED TOTAL:	**$57,000**

STORMWATER CAPITAL PLAN

Lindeman Storm Easement/Cold Cr. Ct. SWF Repair

Vicinity Map

Project Summary

Site ID: CP-209

Subwatershed: Lower Burnt Bridge Creek

Project: PRJ0002519

Location: NE 68th Street at NE 53rd Avenue

Project Manager: Schnabel

Description: This project regrades the existing Lindeman Storm Easement to reduce ongoing backwater, and replaces underperforming treatment in the easement by installing stormwater treatment cartridges upstream of the facility. The project will also revisit a previously tabled repair of nearby Cold Creek Court stormwater facility to tie into the Lindemann easement system and reduce nearby street flooding.

Basis: This project addresses required maintenance under the municipal stormwater permit.

Site Photo

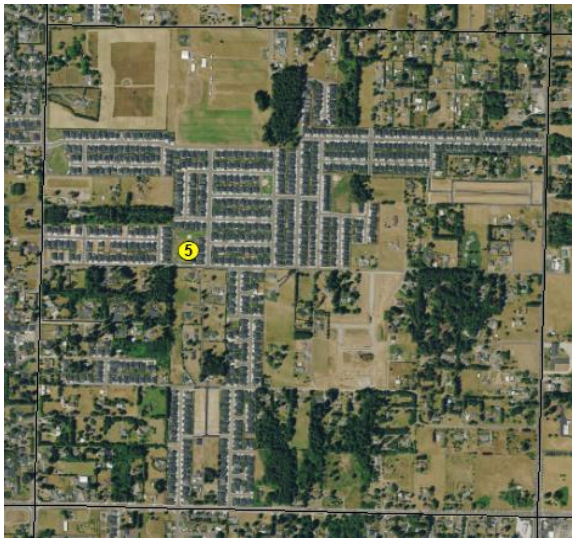
Schedule and Estimated Cost

Project Status:	Design
Planned Construction Year:	2024
Engineering/Permitting:	$15,000
Property Acquisition:	$0
Construction:	$145,000
ESTIMATED TOTAL:	**$155,000**

STORMWATER CAPITAL PLAN

Philbrook Farms Tract D SWF Repair

Vicinity Map



Project Summary

Site ID: CP-221

Project: PRJ0002522

Project Manager: TBD

Subwatershed: Salmon Creek (r.m. 03.83)

Location: NE 129th Street and 45th Avenue

Description: The project will repair a stormwater infiltration facility on a county-owned stormwater tract that also serves as recreational space for Philbrook Farms residents.

Basis: The existing stormwater facility that consists of a series of stormwater detention and infiltration chambers, is under-performing. The result is the playground that sits on top of these underground detention chambers is subject to frequent flooding throughout the winter and spring months.

Site Photo

Schedule and Estimated Cost

Project Status:	Planning
Planning Start Year:	2022
Planning:	$81,700
Property Acquisition:	n/a
Construction:	$200,000
ESTIMATED TOTAL:	**$281,700**

STORMWATER CAPITAL PLAN

NE 78th Street at NE 13th & 16th Ave WQ

Vicinity Map

Site Photo

Project Summary

Site ID: CP-200

Project: PRJ0002518

Project Manager: Sawyer

Subwatershed: Cougar Creek

Location: NE 78th Street at 13th & 16th Avenue

Description: This project will retrofit catch basins/curb inlets around NE 78th Street intersections at NE 13th and 16th Ave by installing storm filter cartridges to provide water quality treatment before the runoff is discharged to Cougar Creek. The project will also look for the opportunity to install a filter vault within the ROW along NE 13th Street in lieu of individual filter catch basins as an alternative.

Basis: Cougar Creek has well-documented water quality degradation, and as a tributary to Salmon Creek is subject to multiple TMDLs. Cougar Creek lags behind observed water quality improvements in the large Salmon Creek watershed. The project treats highly polluted stormwater from NE 78th Street intersections at and NE 13th and 16th Avenue that is currently discharged directly to headwater of Cougar Creek with no water quality treatment.

Schedule and Estimated Cost

Project Status:	Design
Planned Construction Year:	2024
Engineering/Permitting:	$120,000
Property Acquisition:	$0
Construction:	$700,000
ESTIMATED TOTAL:	**$820,000**

STORMWATER CAPITAL PLAN

Heritage Farm Wetland Restoration

Vicinity Map

Site Photo

Project Summary

Site ID: OS-80

Subwatershed: Cougar Creek

Project: PRJ0000601

Location: NE 78th Street, east of HWY 99

Project Manager: Patibandla

Description: This project will excavate a shallow floodplain bench and provide wetland and riparian restoration along a channelized headwater reach of Cougar Creek on the County's Heritage Farm property.

Basis: This project implements a portion of the Heritage Farm master plan and addresses a priority of enhancing and restoring headwater wetlands within the Cougar Creek drainage.

Schedule and Estimated Cost

Project Status:	Design
Planned Construction Year:	2025
Engineering/Permitting:	$534,200
Property Acquisition:	$0
Construction:	$3,699,300
ESTIMATED TOTAL:	**$4,249,300**

STORMWATER CAPITAL PLAN

Swan Pond SWF Repair Planning

Vicinity Map

Project Summary

Site ID: CP-218

Project: PRJ0002591

Project Manager: TBD

Subwatershed: Salmon Creek (r.m. 03.83)

Location: Tenny Creek to the north of NE 99th Street

Description: The project will start planning process of potential repair of Swan Pond, which is an inline detention facility constructed along the main channel of Tenny Creek just to the downstream side of NE 99th Street.

Basis: The existing stormwater facility has experienced several issues such as excessive siltation among others that has significantly impacted its functional benefits. Tenny Creek flows into Salmon Creek, flushing roadway pollutants into a salmon-bearing stream identified as a moderate regional recovery priority. Salmon Creek is also subject to multiple TMDLs; the improved water quality treatment and flow control from this project directly supports TMDL goals in the watershed.

Site Photo

Schedule and Estimated Cost

Project Status:	Planning
Planning Start Year:	2024
Planning:	$30,000
Property Acquisition:	n/a
Construction:	n/a
ESTIMATED TOTAL:	**$30,000**

STORMWATER CAPITAL PLAN

NE Hwy 99 (99th St to 104th St) WQ

Vicinity Map

Project Summary

Site ID: CP-212

Project: PRJ0002520

Project Manager: Morin

Subwatershed: Salmon Creek (r.m. 03.83)

Location: Hwy 99 between 99th St and 104th St

Description: The project will retrofit existing catch basins and/or curb inlets along both sides of Highway 99 between NE 99th Street and Tenny Creek by installing media filter cartridges to provide water quality treatment before the runoff is discharged to Tenny Creek.

Basis: Highway 99 in the vicinity of Tenny Creek has no existing stormwater treatment infrastructure and discharges untreated stormwater from a high traffic corridor directly to the stream. Tenny Creek flows into Salmon Creek less than a mile downstream from Highway 99, flushing roadway pollutants into a salmon-bearing stream identified as a moderate regional recovery priority. Salmon Creek is also subject to multiple TMDLs; the increased water quality treatment from this project directly supports TMDL goals in the watershed.

Site Photo

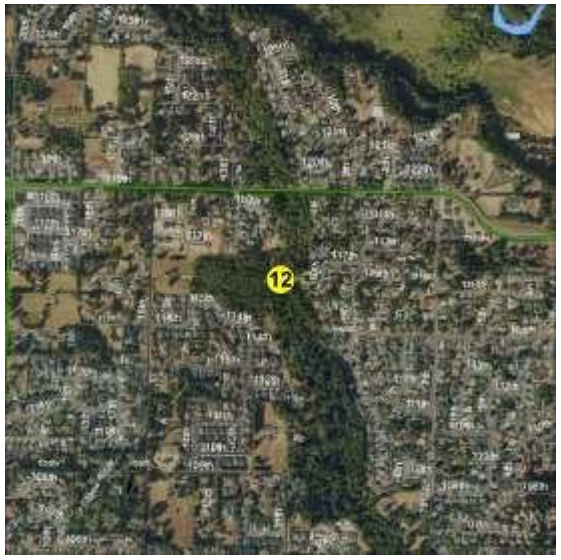
Schedule and Estimated Cost

Project Status:	Design
Planned Construction Year:	2025
Engineering/Permitting:	$70,000
Property Acquisition:	$0
Construction:	$240,000
ESTIMATED TOTAL:	**$310,000**

STORMWATER CAPITAL PLAN

Cougar Creek 3 Enhancement

Vicinity Map



Site Photo

Project Summary

Site ID: CP-203

Subwatershed: Cougar Creek

Project: TBD

Location: Cougar Creek south of 119th Street

Project Manager: TBD

Description: This project reconnects the incised Cougar Creek channel to its floodplain using valley spanning wood structures, protects existing waste water infrastructure, reduces and mitigates bank erosion, and increases wetland and riparian habitat. The project is primarily on county-owned property. Construction access is expected to remain as an extension of the existing trail system in the Cougar Creek greenway.

Basis: Cougar Creek is a tributary to Salmon Creek, an anadromous fish-bearing stream with ongoing TMDLs and fish recovery efforts. The existing Cougar Creek channel is confined, straightened and disconnected from its floodplain. Waste water infrastructure is at risk, and gully erosion is impacting slope stability in this highly developed area. The project is a rare opportunity to combine stormwater, wastewater, and parks objectives into a single, cooperative project effort. Clean Water, Parks, and Clark Regional Wastewater District are actively coordinating project development.

Schedule and Estimated Cost

Project Status:	Design
Planned Construction Year:	2027
Engineering/Permitting:	$206,820
Property Acquisition:	$0
Construction:	$800,000
ESTIMATED TOTAL:	**$1,006,820**

STORMWATER CAPITAL PLAN

NE Hazel Dell Ave (78th St to Cougar Cr) WQ

Vicinity Map

Site Photo

Project Summary

Site ID: CP-195

Subwatershed: Cougar Creek

Project: PRJ0000599

Location: NE Hazel Dell Avenue from 78th St to Cougar Creek

Project Manager: TBD

Description: This project will retrofit existing catch basins or curb inlets along both sides of NE Hazel Dell Avenue between NE 78th Street and Cougar Creek crossing by installing storm filter cartridges to provide water quality treatment before the runoff is discharged to Cougar Creek.

Basis: Cougar Creek has well-documented water quality degradation, and as a tributary to Salmon Creek is subject to multiple TMDLs. Cougar Creek lags behind observed water quality improvements in the large Salmon Creek watershed. The project treats stormwater from approximately 1/3 mile of high-traffic roadway on NE Hazel Dell Avenue that is currently discharged directly to Cougar Creek with no water quality treatment.

Schedule and Estimated Cost

Project Status:	Design
Planned Construction Year:	2027
Engineering/Permitting:	$152,603
Property Acquisition:	$0
Construction:	$650,000
ESTIMATED TOTAL:	**$802,603**

STORMWATER CAPITAL PLAN

NE Hwy 99 (99th St to Hazel Dell Plaza) WQ

Vicinity Map

Project Summary

Site ID: CP-213

Project: PRJ0002521

Project Manager: Morin

Subwatershed: Salmon Creek (r.m. 03.83)

Location: Hwy 99 between 99th St and Hazel Dell Plaza

Description: The project will retrofit existing catch basins and/or curb inlets along both sides of Highway 99 between NE 99th Street and Hazel Dell Plaza by installing media filter cartridges to provide water quality treatment before the runoff is discharged to Tenny Creek.

Basis: Highway 99 within Tenny Creek basin has no existing stormwater treatment infrastructures and discharges untreated stormwater from a high traffic corridor directly to the stream. Tenny Creek flows into Salmon Creek less than a mile downstream from Highway 99, flushing roadway pollutants into a salmon-bearing stream identified as a moderate regional recovery priority. Salmon Creek is also subject to multiple TMDLs; the increased water quality treatment from this project directly supports TMDL goals in the watershed.

Site Photo

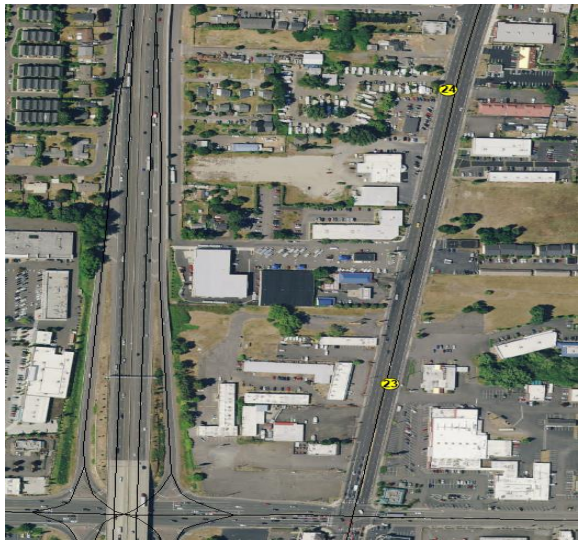
Schedule and Estimated Cost

Project Status:	Design
Planned Construction Year:	2026
Engineering/Permitting:	$190,000
Property Acquisition:	$0
Construction:	$575,000
ESTIMATED TOTAL:	**$765,000**

STORMWATER CAPITAL PLAN

NE Hwy 99 (78th St to 86th St) WQ

Vicinity Map



Project Summary

Site ID: CP-193

Project: PRJ0002517

Project Manager: Morin

Subwatershed: Cougar Creek

Location: Highway 99 between 78th & 86th St

Description: This project will retrofit existing catch basins and/or curb inlets along both sides of NE Highway 99 between NE 78th St and 86th St by installing storm filter cartridges to provide water quality treatment before the runoff is discharged to Cougar Creek.

Basis: Cougar Creek has well-documented water quality degradation, and as a tributary to Salmon Creek is subject to multiple TMDLs. Cougar Creek lags behind observed water quality improvements in the large Salmon Creek watershed. The project treats stormwater from nearly ½ mile of high-traffic roadway on Highway 99 that is currently discharged directly to Cougar Creek with no water quality treatment.

Site Photo

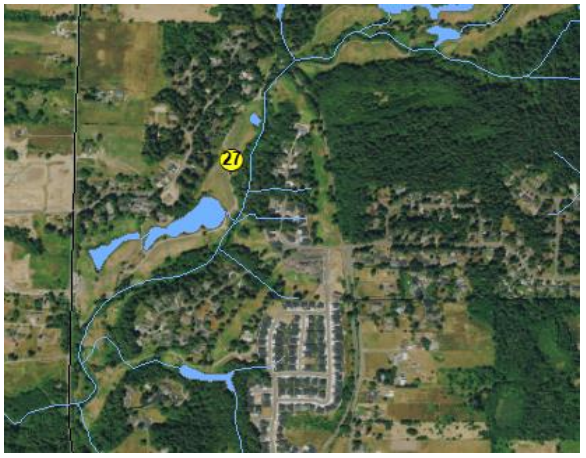
Schedule and Estimated Cost

Project Status:	Design
Planned Construction Year:	2026
Engineering/Permitting:	$84,000
Property Acquisition:	$0
Construction:	$618,000
ESTIMATED TOTAL:	**$702,000**

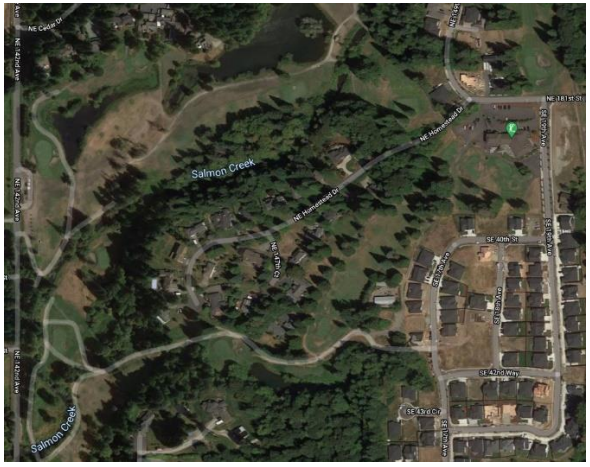
STORMWATER CAPITAL PLAN

Reforestation (*Gordy Jolma Natural Area)

Vicinity Map



Site Photo



Project Summary

Site ID: CP-222

Project: TBD

Project Manager: TBD

Subwatershed: Salmon Creek (r.m. 14.66)

Location: Vicinity of SE 19th Avenue and NE 181st Street in Battleground

Description: This project will install native vegetation on a small portion of the Legacy Lands property acquired through the purchase of 118 acres at the Cedars Golf Course. Planting location and extent will be developed through discussion with Parks/Legacy Lands to align with overall plans for the property.

If necessary, a substitute off-site location will be determined for this project.

Basis: The golf course is adjacent to large Legacy Lands holdings at the confluence of Salmon Creek and Morgan Creek and includes areas of intact habitat as well as areas that may be suitable for improvement projects.

Schedule and Estimated Cost

Project Status:	Planning
Planned Construction Year:	2025
Engineering/Permitting:	$0
Property Acquisition:	$0
Construction:	$150,000
ESTIMATED TOTAL:	**$150,000**

STORMWATER CAPITAL PLAN

NE 99th Street Catch Basin WQ

Vicinity Map

Site Photo

Project Summary

Site ID: CP-201

Project: TBD

Project Manager: TBD

Subwatershed: Salmon Creek (r.m. 03.83)

Location: NE 99th Street west of I-5

Description: This project will retrofit existing catch basins along both sides of NE 99th Street west of Interstate I-5 by installing storm filter cartridges to provide water quality treatment before the runoff is discharged to Suds Creek.

Basis: Suds Creek is a tributary to Salmon Creek that is subject to multiple TMDLs. The project treats nearly a quarter mile of high traffic area on NE 99th Street that is currently discharged directly to Suds Creek with no water quality treatment.

Schedule and Estimated Cost

Project Status:	Planning
Planned Construction Year:	2025
Engineering/Permitting:	$45,000
Property Acquisition:	$0
Construction:	$173,000
ESTIMATED TOTAL:	**$218,000**

STORMWATER CAPITAL PLAN

NW 99th Street (NW 11th Ave to Cougar Creek) WQ

Vicinity Map

Site Photo

Project Summary

Site ID: CP-190

Subwatershed: Cougar Creek

Project: TBD

Location: NW 99th Street west of Cougar Creek

Project Manager: TBD

Description: This project will retrofit existing catch basins/curb inlets along both sides of NW 99th Street between NW 11th Avenue and Cougar Creek crossing by installing storm filter cartridges to provide water quality treatment before the runoff is discharged to Cougar Creek.

Basis: Cougar Creek has well-documented water quality degradation, and as a tributary to Salmon Creek is subject to multiple TMDLs. Cougar Creek lags behind observed water quality improvements in the large Salmon Creek watershed. The project treats stormwater from nearly 1/3 mile of high-traffic roadway on NW 99th Street that is currently discharged directly to Cougar Creek with no water quality treatment.

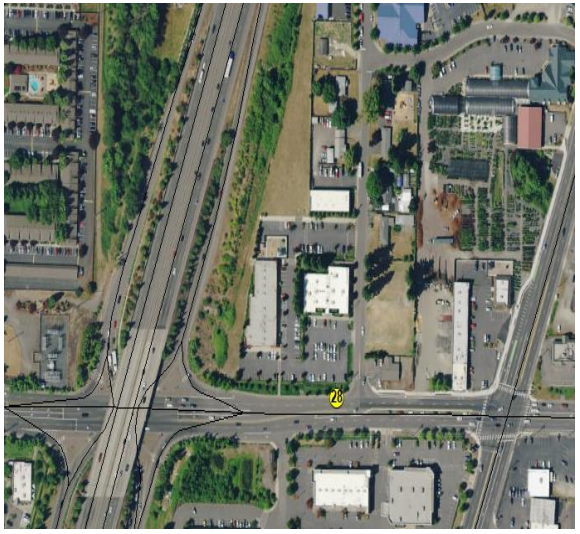
Schedule and Estimated Cost

Project Status:	Planning
Planned Construction Year:	2025
Engineering/Permitting:	$60,000
Property Acquisition:	$0
Construction:	$236,000
ESTIMATED TOTAL:	**$296,000**

STORMWATER CAPITAL PLAN

NE 99th Street (I-5 to E of HWY 99) WQ

Vicinity Map



Project Summary

Site ID: CP-214

Project: TBD

Project Manager: TBD

Subwatershed: Salmon Creek (r.m. 03.83)

Location: NE 99th St (I-5 to 300' E of HWY 99)

Description: The project will retrofit existing catch basins and/or curb inlets along both sides of NE 99th Street between Interstate 5 and approximately 300 feet to the east of Highway 99 by installing media filter cartridges to provide water quality treatment before the runoff is discharged to Tenny Creek.

Basis: NE 99th Street in the vicinity of Highway 99 has no existing stormwater treatment infrastructures and discharges untreated stormwater from a high traffic corridor directly to Tenny Creek. Tenny Creek flows into Salmon Creek less than a mile downstream from Highway 99, flushing roadway pollutants into a salmon-bearing stream identified as a moderate regional recovery priority. Salmon Creek is also subject to multiple TMDLs; the increased water quality treatment from this project directly supports TMDL goals in the watershed.

Site Photo

Schedule and Estimated Cost

Project Status:	Planning
Planned Construction Year:	2027
Engineering/Permitting:	$135,000
Property Acquisition:	$0
Construction:	$405,000
ESTIMATED TOTAL:	**$540,000**

STORMWATER CAPITAL PLAN

NE Hazel Dell Ave ROW WQ

Vicinity Map

Site Photo

Project Summary

Site ID: CP-105

Project: TBD

Project Manager: TBD

Subwatershed: Salmon Creek (r.m. 03.83)

Location: NE Hazel Dell Ave and NE 112th Cir

Description: Construct a wetpond or bioretention rain garden facility to capture runoff from a developed residential area on the westside of NE Hazel Dell Ave and a portion of the roadway (Hazel Dell Ave) to provide water quality treatment, and flow control before releasing to the existing conveyance system along Hazel Dell Avenue and eventually Suds Creek.

Basis: Suds Creek has well-documented water quality degradation, and as a tributary to Salmon Creek is subject to multiple TMDLs. The project treats stormwater from high-traffic roadway on NE Hazel Dell Avenue and is currently discharged directly to Suds Creek with no or minimal water quality treatment.

Schedule and Estimated Cost

Project Status:	Planning
Planned Construction Year:	2029
Engineering/Permitting:	$55,000
Property Acquisition:	$0
Construction:	$400,000
ESTIMATED TOTAL:	**$455,000**

STORMWATER CAPITAL PLAN

Natural Areas Acquisition (*Three Creeks Greenway)

Vicinity Map

Site Photo

Project Summary

Site ID: CP-219

Project: TBD

Project Manager: TBD

Subwatershed: Whipple Creek (Upper)

Location: NE 179th Street and 10th Avenue

Description: This project is a placeholder for potential contribution of Clean Water funds in the event Clark County moves to purchase property in the Three Creeks greenway area.

The potential purchase is included in the county's Natural Areas Acquisition Plan.

Basis: The property is located within the headwater area of Whipple Creek and includes areas of intact habitat as well as areas that may be suitable for improvement projects.

Schedule and Estimated Cost

Project Status:	Planning
Planned Construction Year:	2025
Engineering/Permitting:	$0
Property Acquisition:	$200,000
Construction:	$0
ESTIMATED TOTAL:	**$200,000**

STORMWATER CAPITAL PLAN

One Water Pilot Planning

Vicinity Map

Site Photo

Project Summary

Site ID: CP-216

Project: TBD

Project Manager: TBD

Subwatershed: Cougar Creek

Location: Columbia River High School

Description: This One Water project will explore retrofitting existing storage pipes in the fields of CRHS and installing pre-treatment, allowing stormwater to be used for field irrigation. One Water is an approach to water management, which envisions managing all water in an integrated, inclusive, and sustainable manner. One Water focuses on achieving multiple benefits using right-sized solutions and partnerships for progress.

Initial planning work in 2025 will include discussions with Vancouver School District to evaluate interest and opportunities, assessment of project feasibility, and development of initial concept plans.

Basis: As water resources become scarcer, partnerships need to form to use the resource most effectively and efficiently. One way to do this is to use stormwater for field irrigation purposes through a partnership with the school district. The project will put the stormwater to a beneficial use while decreasing CHRS water needs with water that is already there.

Schedule and Estimated Cost

Project Status:	Planning
Planned Planning Year:	2025
Engineering/Permitting:	n/a
Property Acquisition:	$0
Construction:	n/a
ESTIMATED TOTAL:	**$75,000**

STORMWATER CAPITAL PLAN

NE 78th St Heritage Farm ROW WQ

Vicinity Map

Site Photo

Project Summary

Site ID: CP-199

Project: TBD

Project Manager: TBD

Subwatershed: Cougar Creek

Location: NE 78th Street adjacent to Heritage Farm

Description: This project will install over 500 linear feet of infiltration trench and a pre-treatment system to divert highly polluted runoff from NE 78th Street that extends to the east from Heritage Farm main entrance.

Basis: Cougar Creek has well-documented water quality degradation, and as a tributary to Salmon Creek is subject to multiple TMDLs. Cougar Creek lags behind observed water quality improvements in the large Salmon Creek watershed. The project will infiltrate runoff following a pre-treatment from nearly 1/3 mile of high-traffic roadway on NE 78th Street that is currently going to an existing stormwater facility, which is struggling with degraded water quality treatment functionality.

Schedule and Estimated Cost

Project Status:	Planning
Planned Construction Year:	2029
Engineering/Permitting:	$55,000
Property Acquisition:	$0
Construction:	$225,000
ESTIMATED TOTAL:	**$280,000**

STORMWATER CAPITAL PLAN

Whipple Creek Near NW 11th Ave Habitat Improvement

Vicinity Map

Site Photo

Project Summary

Site ID: OS-145

Subwatershed: Whipple Creek (Upper)

Project: TBD

Location: NW 11th Avenue north of NW 149th Street

Project Manager: TBD

Description: This project excavates a floodplain bench to reconnect the channel to its floodplain, provides engineered bank stabilization to reduce erosion and sediment, and improves overall grade control in the middle reach of Whipple Creek.

Basis: This project provides floodplain reconnection, runoff storage and streambank stabilization in the Upper Whipple Creek subwatershed. The project is located on a parcel jointly purchased by the Parks and Clean Water divisions for park development and stormwater benefit.

Schedule and Estimated Cost

Project Status:	Planning
Planned Construction Year:	2028
Engineering/Permitting:	$50,000
Property Acquisition:	$0
Construction:	$225,000
ESTIMATED TOTAL:	**$275,000**

STORMWATER CAPITAL PLAN

I-SUDS1 (lower Suds Creek restoration)

Vicinity Map

Site Photo

Project Summary

Site ID: CP-204

Subwatershed: Salmon Creek (r.m. 03.83)

Project: TBD

Location: Suds Creek floodplain west of Klineline ball fields

Project Manager: TBD

Description: This project removes a culvert and berm to increase floodplain connectivity and fish passage between Suds Creek and Salmon Creek, improve water quality by reducing temperature and sediment, enhance channel complexity, and restore wetlands. The project is located on county-owned property.

Basis: Suds Creek channel has been straightened and degraded near the Salmon Creek floodplain. An existing culvert at the Suds Creek mouth is perched and blocks access for anadromous and resident fish to cold-water refuge areas. Salmon Creek is subject to a temperature TMDL and is an important stream for salmon recovery efforts. Reconnecting the floodplain will provide multiple watershed and stormwater benefits in this reach.

Schedule and Estimated Cost

Project Status:	TBD
Planned Construction Year:	2028
Engineering/Permitting:	$140,000
Property Acquisition:	$0
Construction:	$840,000
ESTIMATED TOTAL:	**$980,000**