



Surface Water Improvement Program (SWIP)

2020-2025



Introduction

Pierce County Ordinance No. 2006-115s directed the Surface Water Management (SWM) Utility to produce an annual six-year **Surface Water Improvement Program (SWIP)** to inform the County Council, their staff, other departments, and the public about the scope, cost, funding and status of surface water improvement projects.

SWM Mission

We deliver excellent services that reduce flood damage, and protect and improve water quality and natural resources for the benefit of our communities.

Goals

- Protect people and infrastructure by reducing flooding impacts
- Protect people and the environment by reducing impacts of water pollution
- Execute sound financial management
- Promote broader understanding of the functions and values of Pierce County's water resources and services provided by SWM
- Foster highly-effective employees and teams

SWM Overview

The Pierce County Council created the SWM Utility in 1988 and it was tasked with reducing polluted runoff flowing into streams, rivers, lakes and Puget Sound, and reducing flood damage to people and property in unincorporated Pierce County. SWM is funded by a dedicated utility service charge paid by unincorporated property owners. Annually, the service charge generates about \$22.2 million. SWM also pursues state and federal grants to fund capital projects, improve water quality and salmon habitat. To learn more, visit: piercecountywa.org/1827/Our-Projects

Selecting projects for the SWIP

The nine Pierce County basin plans and the Pierce County Rivers Flood Hazard Management Plan (RFHMP) are the foundation of capital improvement projects and programs to protect people, infrastructure and the environment. The projects in these plans were ranked for flood risk reduction, water quality, habitat and other factors. Limited funding and mandatory obligations drive capital project priorities. Additional information is in the Regulatory Obligations section.

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piercecountywa.gov/swm

Capital Project Funding

Local Funds

SWM Utility Service Charge (SWM Fees)

SWM Utility Service Charges are collected annually from property owners. The current single-family residence rate is \$127.32 per parcel. In 2020, \$4.76 million of the SWM service charges will be directed toward capital projects.

Real Estate Excise Tax (REET)

REET is tax collected when real estate is sold. A portion of REET collected by the County is directed to SWM capital projects. In 2020, the projected REET revenue is over \$2 million.

Unsecured Funds

Unsecured funding is forecasted revenue for the years beyond the approved 2020-2021 capital budget.

FCZD & Grants

Pierce County Flood Control Zone District (FCZD)

FCZD is a special purpose district created by the County Council in 2012 to address flood management needs in the County. SWM competes with other jurisdictions for FCZD funding and is considered a grant source.

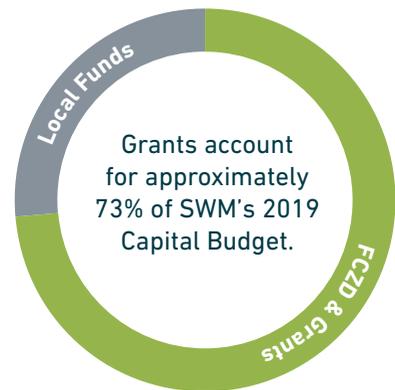
State and Federal Grants

External funds consist of grants and partnerships from state, local and federal agencies and jurisdictions, such as; the Washington State Department of Ecology and Recreation and Conservation Office, the Federal Emergency Management Agency and the National Oceanic and Atmospheric Administration.

Leveraging Internal Resources through Grants and Partnerships

SWM constructs capital projects by leveraging local funds with external funding sources.

In 2019, SWM received over \$10 million in grant funding. Grants account for over 73 percent of SWM's Capital Budget compared to nearly \$4 million of local funds. SWM was able to leverage local funds by 274 percent. A local funding leveraging ratio of 274 percent. This is a 3:1 multiplier of grant dollars stemming from local funds. This ratio is often increased when the grant funds are leveraged for additional grants from various agencies.



Revenue Sources



Regulatory Obligations

Surface Water Management (SWM) constructs capital projects to meet current and projected local, state and federal legal and regulatory obligations. Obligations include the National Pollutant Discharge Elimination System (NPDES) permit, Clean Water Act (CWA) requirements, the federal Endangered Species Act (ESA), Culvert Replacement Program, Hirst Decision Planning, and floodplain management obligations through the National Flood Insurance Program (NFIP) and Pierce County Code.

In addition to regulatory obligation, Surface Water Management strives to meet the priorities of the County Executive and to maximize the return on investment of the SWM rate payers by implementing projects which meet multiple benefits. Project priorities and benefits are described below. Icons identifying project's benefit and strategic objectives are found on page 5.

Clean Water Act (CWA) Obligations

SWM is obligated to implement a capital project retrofit program to reduce the pollution impacts of its municipal separate stormwater system. SWM constructs new, or retrofits existing, stormwater facilities to comply with the county's NPDES permit. These facilities needing retrofitting were developed without adequate stormwater treatment and flow controls. The permit sets a minimum level of effort for the County. The permit incorporates TMDL improvement plan projects as a requirement. The Clarks Creek Total Maximum Daily Load (TMDL) and Clover Creek Straight to Implementation Plan (SIP), an alternative TMDL, require capital projects to reduce water pollutants and flow off impervious surfaces.

Endangered Species Act (ESA) Obligations

SWM is developing a Habitat Conservation Plan (HCP) to analyze and mitigate impacts to species and habitats resulting from the County's levee maintenance and operations program. An HCP is a required part of an Incidental Take Permit issued under the Endangered Species Act (ESA), for projects that have the potential to affect species and habitats that are protected under the ESA. The County is working in consultation with the National Marine Fisheries Service (NMFS) and the US Fish and Wildlife Service (USFWS).

Hirst Decision Planning

Engrossed Substitute Bill (ESSB) 6091 was passed in response to a Washington

Supreme Court decision (Hirst) that limited many landowners' ability to get a building permit for new homes that use a permit-exempt groundwater well. The legislation directs local stakeholders to develop detailed plans to account for and offset water use from domestic, permit-exempt wells expected over the next 20 years. Legislature has allocated \$300 million over 15 years for implementing the projects identified in these watershed plans.

Floodplain Management Obligations (FM)

Participation in the National Flood Insurance Program allows Pierce County to receive disaster assistance funding and participate in the Community Rating System (CRS) program. To be eligible Pierce County must take certain actions to reduce flood risks. Pierce County must pass and enforce floodplain management regulations found under Pierce County Code, Titles 11 and 18E. Planning for the projects and programs to address flood risk are found in the adopted Pierce County Rivers Flood Hazard Management Program (RFHMP).

Culvert Replacement Program (CRP)

The US Supreme Court ruled that Washington State is responsible for replacing culverts that are barriers to fish passage. While the ruling is at the State level, Pierce County Planning and Public Works Surface Water Management, the Office of the County Engineer and Maintenance and Operations are coordinating to work with the local tribes to assess and reprioritize existing fish passage barrier projects within Pierce County.

Surface Water Improvement Program by Phase

Acquisition in 2020

	Project Number	Council District
Clear Creek Acquisition & Floodplain Reconnection	1416	5
FEMA Clear Creek Wheel Inn Mobile Home Park Acquisition	1416	5
Alward Road Acquisition & Setback Levee	1701	1

Design in 2020

Clear Creek Flood Gate	D227	5
Swan Creek Streambank Stabilization at 64 th St. E.	D460	5
Rody Creek Improvements SW of Pioneer Way	D191	5
Rody Creek Channel Stabilization at 80 th St. E.	D190	5
Diru Creek Bank Stabilization at 72 nd St. E.	D812	5
White River Butte Pit Setback	1424	2
Horsehaven Creek Culvert at 150 th Ave. E.	D230	1
Horsehaven Creek Culvert at 188 th St. E.	D231	1
Purdy Creek Culvert Replacement at 160 th St. NW	D199	7
Centers & Corridors Facility	D232	1,2,3,5,6
Carbon River Floodplain Reconnection Right Bank	1711	1
Carbon River Levee Setback Left Bank	1702	1
Jones Setback Levee	1385	1
Middle Puyallup 128 th Comprehensive Study	1421	1,2
Neadham Road Floodplain Reconnection	1708	2
Orville Road Revetment at Kapowsin Creek	1418	3
Puyallup Ford Setback Levee–Capital Maintenance	1422	1
Fennel Creek Restoration Phase 3	1710	2
Parkview Point-Retrofit	D236	7
Clover Creek Water Quality Retrofit #1	D235	3

Construction in 2020

Clear Creek Habitat Restoration	D228	5
FEMA Flood Mitigation Assistance Clarks Creek	1419	2
Woodland Creek Stormwater Treatment System	D411	2
Huge Creek Culvert Replacement at 160 th St. NW	D441	7
South Prairie Creek Floodplain & Off-Channel Restoration	D225	1
Brookdale Road & N. Fork Clover Creek Retrofit	D442	5
Orville Road Revetment Phase 2C	1425	3
Upper Nisqually Channel Migration Protection	1411	3

Primary Benefit

SWM designs capital projects to meet as many primary benefits as possible. Multi-benefit-projects meet more regulatory objectives, making them more likely to receive grant funding than single-benefit projects.



Agriculture



Water Quality



Flood Risk



Habitat

Executive's Strategic Objectives

In addition to state and federal obligations, SWM's capital program identifies with several of the Pierce County Executive's Strategic Objectives. SWM's capital projects featured in the SWIP meet one or more of the Executive's Strategic Objectives.



Safer
Communities



Healthier
Environment



Improve Mobility
& Infrastructure

2018 Accomplishments



Integration with Maintenance Operations

The county's Capital Improvement Program worked in closer coordination with the Maintenance and Operations section in 2019. Some projects originally assigned for Maintenance were, in fact, needed a long-term solution due to the extent of damage. While the Capital Improvement Program staff would develop a project to address the issue, Maintenance and Operations would continue to keep the project site functioning. This collaboration would allow both groups to meet their objectives. The White River at 3.85 and the Parkview Point projects are examples of this coordination.



Clear Creek Strategic Plan open house

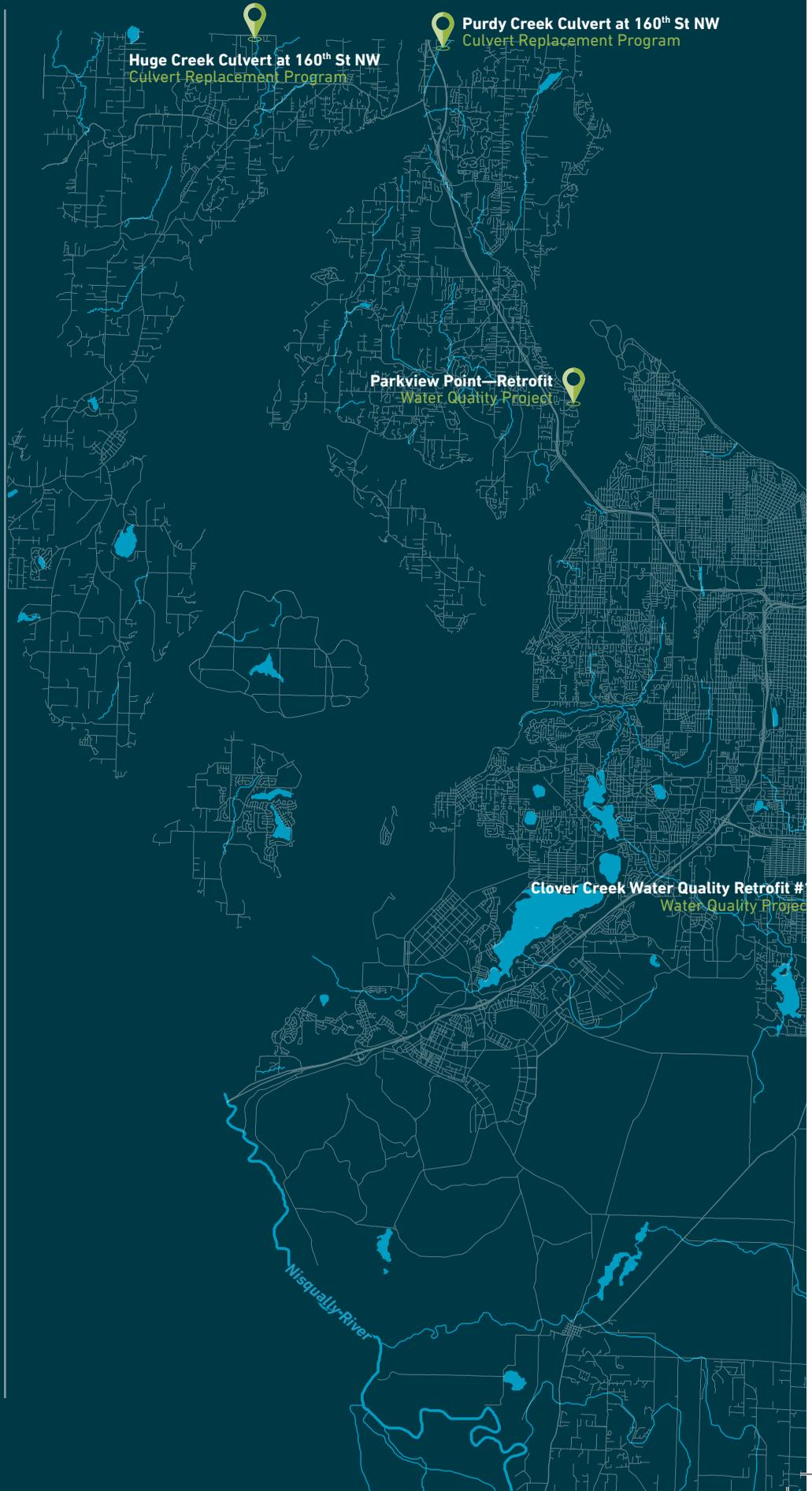


Lower White River Butte Pit Setback project site

Coordination with Regional Partners

The White River has been an area of intense study and partnership. Pierce County's Capital Improvement Program has worked with King County and the Cities of Sumner and Pacific. As a result, Pierce County is removing or modifying two significant projects from the 2020 SWIP. The City of Sumner has indicated it will lead the Pacific Point Bar project. Pierce County will continue in a supporting role. The White River at 3.85 project is now a future Sumner capital project. It may be several years until Sumner is able to do this work. The interim focus is on risk reduction work.

Project Locations





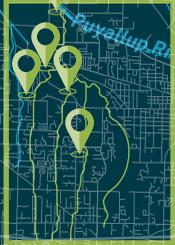
Nisqually River Project



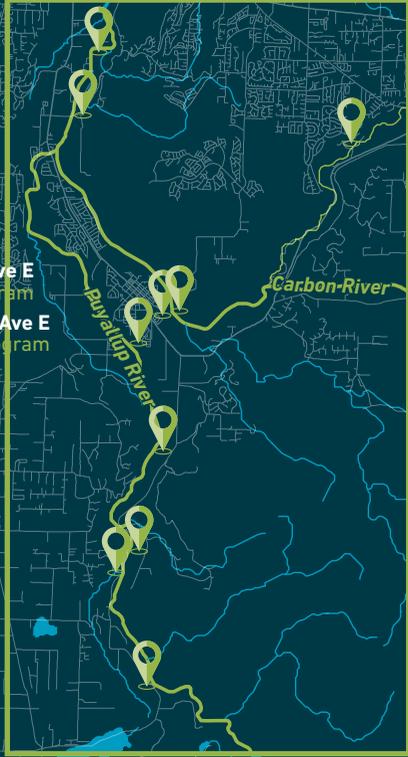
Clear Creek Projects



White River Projects



Clarks Creek Projects



Puyallup & Carbon River Projects

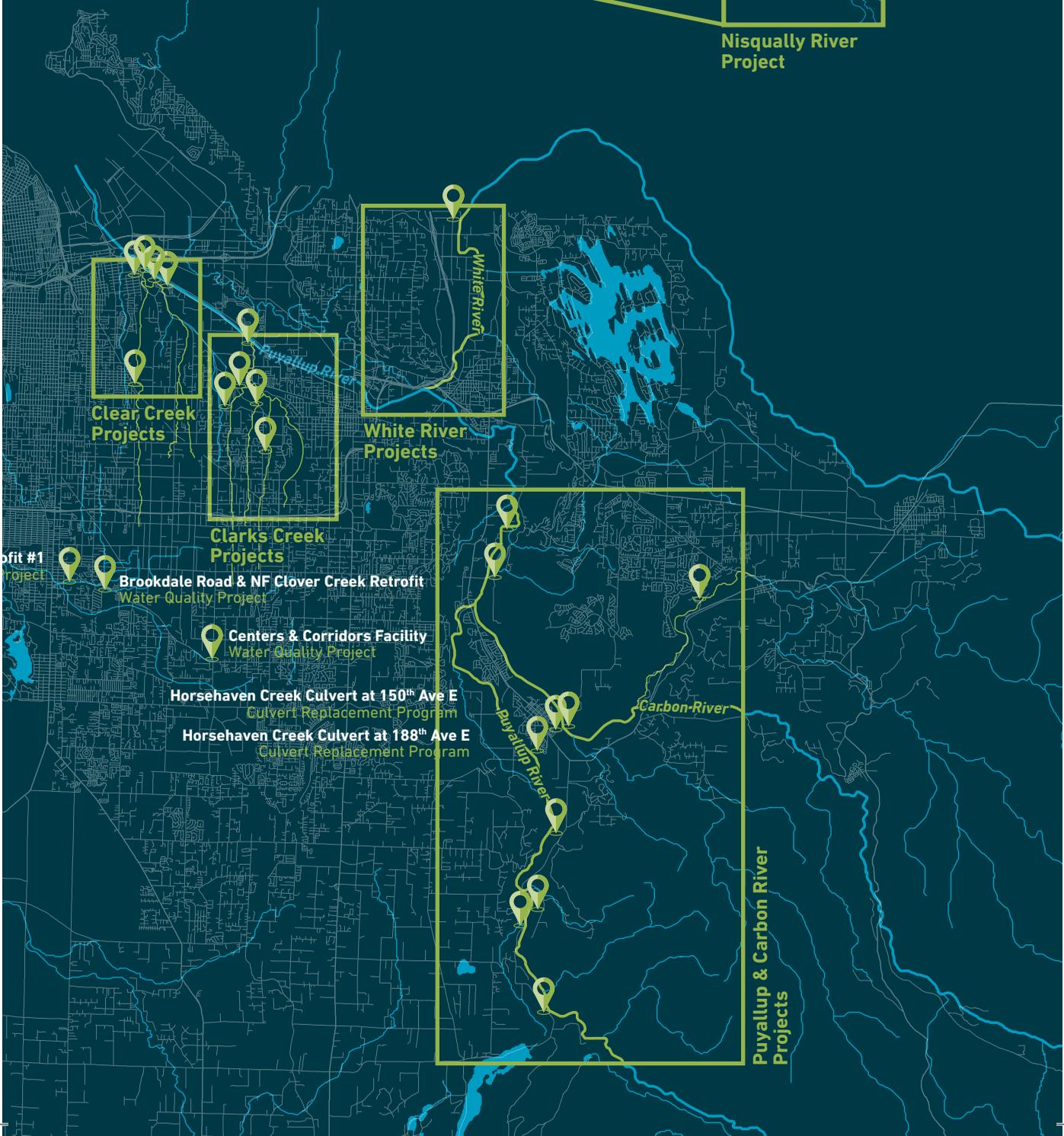
Profit #1 project

Brookdale Road & NF Clover Creek Retrofit Water Quality Project

Centers & Corridors Facility Water Quality Project

Horsehaven Creek Culvert at 150th Ave E Culvert Replacement Program

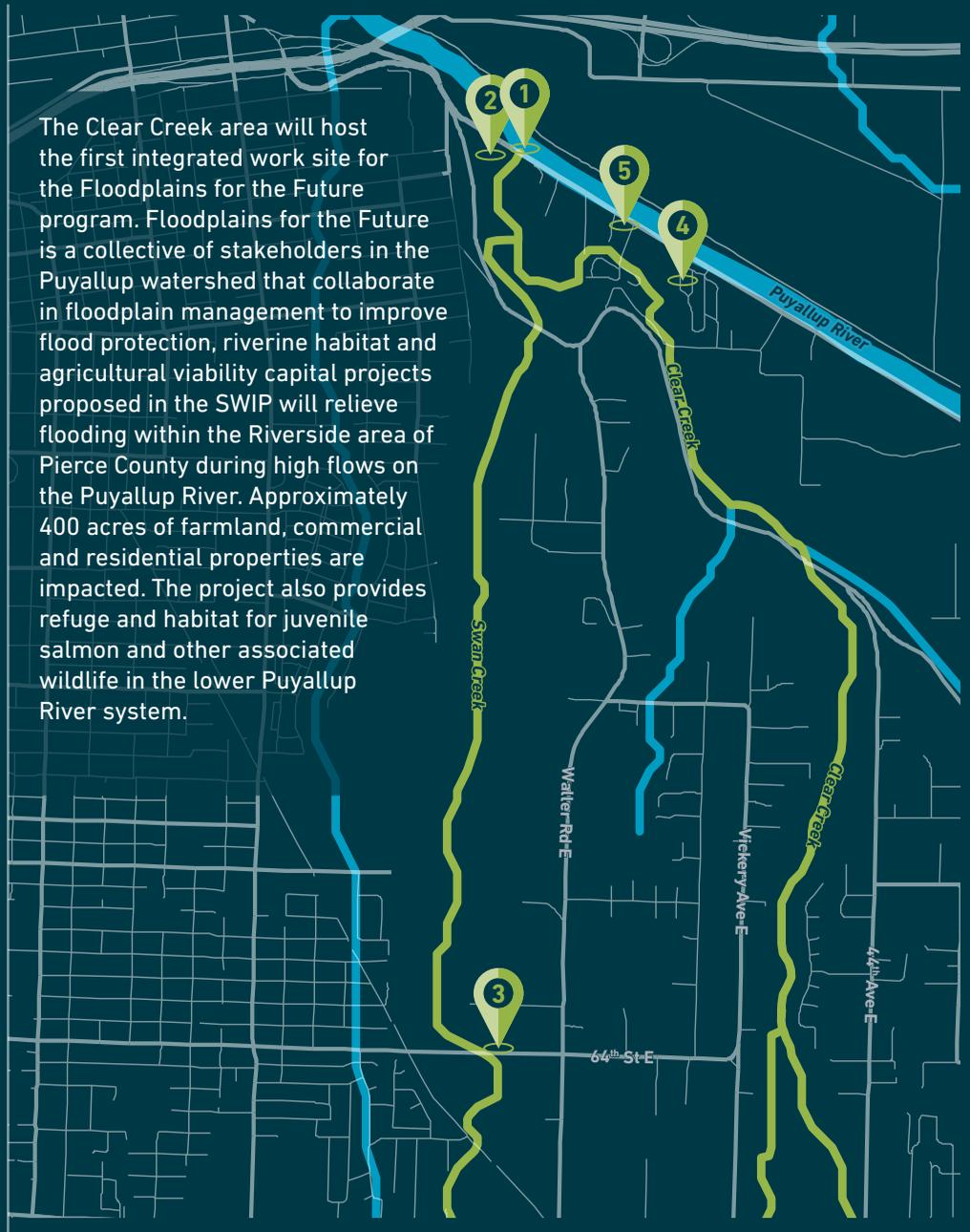
Horsehaven Creek Culvert at 188th Ave E Culvert Replacement Program





Clear Creek Projects

The Clear Creek area will host the first integrated work site for the Floodplains for the Future program. Floodplains for the Future is a collective of stakeholders in the Puyallup watershed that collaborate in floodplain management to improve flood protection, riverine habitat and agricultural viability capital projects proposed in the SWIP will relieve flooding within the Riverside area of Pierce County during high flows on the Puyallup River. Approximately 400 acres of farmland, commercial and residential properties are impacted. The project also provides refuge and habitat for juvenile salmon and other associated wildlife in the lower Puyallup River system.



1 Clear Creek Flood Gate



Replace the existing flood gate at the mouth of Clear Creek with a fish passable gate and more reliable mechanical gate. Project funded by Natural Resource Damage Assessment funds.

Current Phase
Design

Location
Clear Creek mouth

Council District
5

Obligation
Clean Water Act



2 Clear Creek Habitat Restoration

Design and implement restoration actions to restore channel form and wetland function to sections of Clear Creek on County-owned properties. Project funded by Natural Resource Damage Assessment funds.

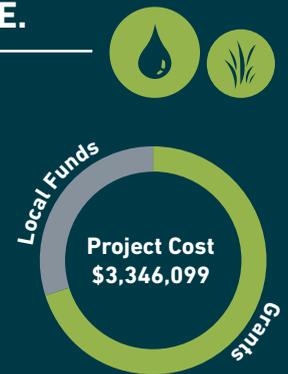
Current Phase Construction	Location Near Clear Creek mouth
Council District 5	Obligation Clean Water Act



3 Swan Creek Streambank Stabilization at 64th St. E.

Stabilize the creek channel and possibly resolve a fish passage blockage. Closely coordinating with the Puyallup Tribe of Indians.

Current Phase Design	Location 67 th Ave E between 104 th St E & Pipeline Rd E
Council District 5	Obligation Clean Water Act



4 Clear Creek Acquisition and Floodplain Reconnection

Buying out flood prone homes. Floodplains By Design is a primary source of funding for this project.

Current Phase Acquisition	Location Clear Creek between Pioneer & River Rd.
Council District 5	Obligation Floodplains Management Act



5 Clear Creek Wheel Inn Mobile Home Park Acquisition

Acquire a small mobile home park within the larger 1416 project area. FEMA Hazard Mitigation Grant Program (HMGP) funded.

Current Phase Acquisition	Location River Rd SR 167 near 31st Ave E
Council District 5	Obligation Floodplains Management Act





Clarks Creek Projects



These projects are obligated by the County's Clarks Creek Restoration Plan (2019), in response to a state mandated Total Maximum Daily Load (TMDL) placed on Clarks Creek for sediment and dissolved oxygen. In combination with other partnership efforts in the Clarks Creek area, these projects are designed to improve water quality, benefit salmonids, and protect the creek by treating stormwater flow and reducing sediment.

1 Diru Creek Bank Stabilization at 72nd

Stabilize the creek banks for approximately 1,100 feet to reduce erosion and down-stream sedimentation. Project is part of the County's response to the Clark's Creek TMDL.

Current Phase
Design

Council District
5

Location
Upstream of 72nd St. E.

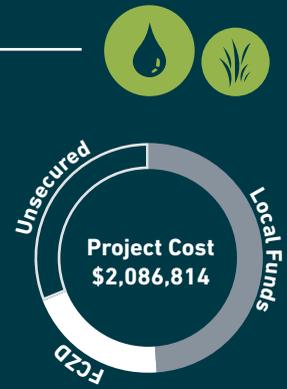
Obligation
Clean Water Act



2 Rody Creek Improvements SW of Pioneer Way

Lower the sediment transport rate to significantly reducing sediment deposition frequency and volume. Project is part of the County's response to the Clark's Creek TMDL.

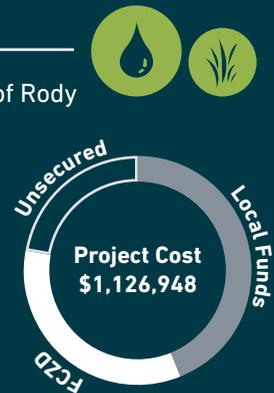
Current Phase Design	Location 64th St. E & Pioneer Way E
Council District 5	Obligation Clean Water Act



3 Rody Creek Channel Stabilization at 80th St. E.

Channel stabilization to reduce mass erosion occurring in ravine portion of Rody Creek. Project is part of the County's response to the Clark's Creek TMDL.

Current Phase Design	Location Rody Creek at 80th St. E.
Council District 5	Obligation Clean Water Act



4 Woodland Creek Stormwater Treatment System

Stormwater treatment pond to treat a large contributing area that first enters Woodland Creek and then empties into Clarks Creek. Project is part of the County's response to the Clarks Creek TMDL.

Current Phase Construction	Location Woodland Creek at 104th St. E. & Woodland Ave. E.
Council District 2	Obligation Clean Water Act



5 FEMA Flood Mitigation Assistance Clarks Creek

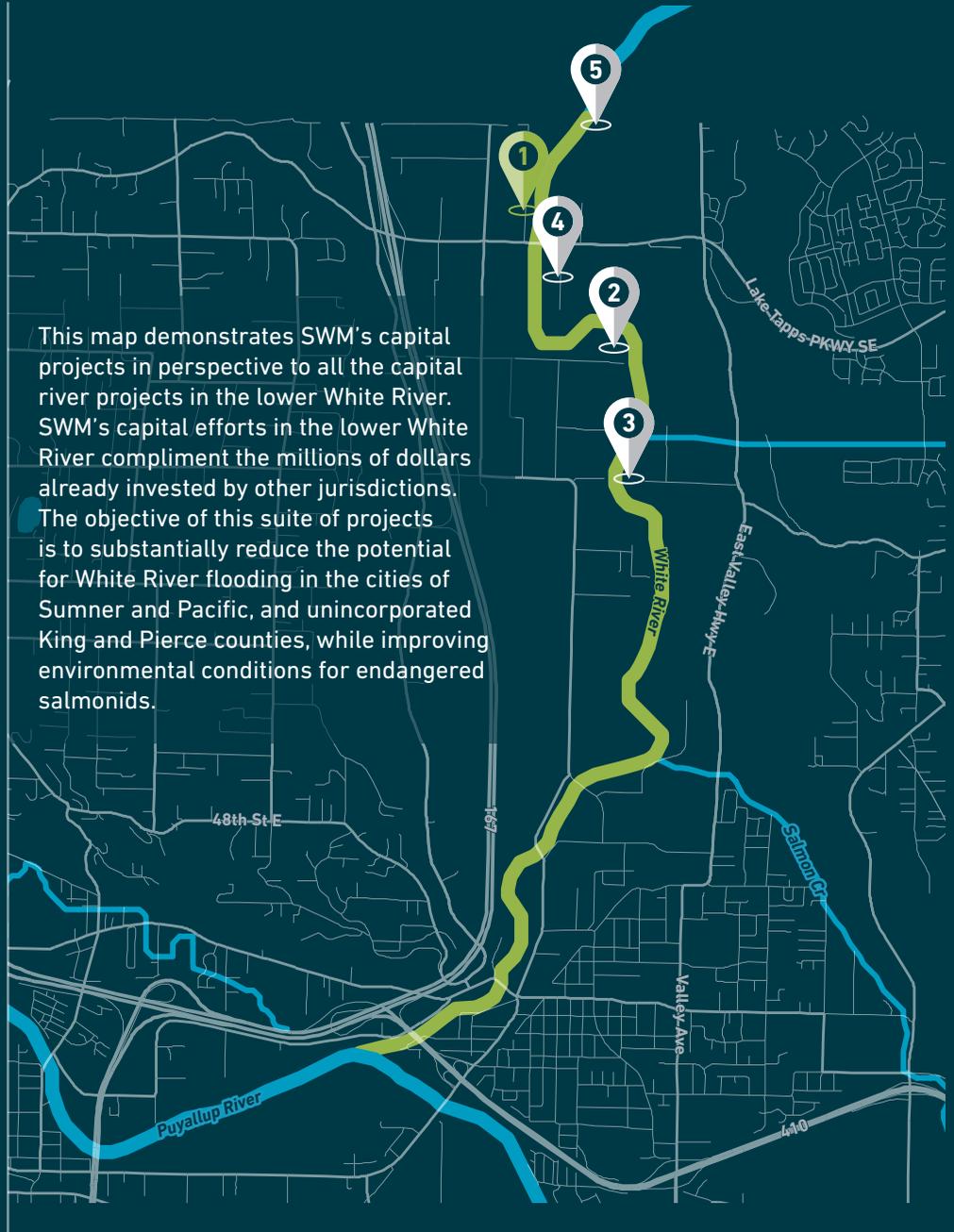
Relocation of a flood prone repetitive loss property in the Clarks Creek area.

Current Phase Design	Location Clarks Creek
Council District 2	Obligation Floodplains Management Act





White River Projects



This map demonstrates SWM's capital projects in perspective to all the capital river projects in the lower White River. SWM's capital efforts in the lower White River compliment the millions of dollars already invested by other jurisdictions. The objective of this suite of projects is to substantially reduce the potential for White River flooding in the cities of Sumner and Pacific, and unincorporated King and Pierce counties, while improving environmental conditions for endangered salmonids.

1 White River Butte Pit Setback

Construct a setback levee to increase Level of Service and reconnect floodplain. Project requires close coordination with King County, and the Cities of Sumner and Pacific.

Current Phase
Design

Council District
2

Location
County Line Rd SE
& Stewart Rd SE

Obligation
Floodplains
Management Act



White River Partner Projects

2 Sumner Point Bar

Levee setback to connect 25 acres of floodplain. Project will acquire properties and create a setback levee along 16th Street. Setback Levee will provide greater protection to properties south of 16th street and create valuable salmon habitat.

Current Phase	Estimated Project Cost	Project Contact
Preliminary Engineering	\$10,625,650	Doug Beagle—City of Sumner

3 White River Left Bank Setback 2.5–4.2

Levee setback to connect 164 acres of floodplain. Excavation of floodplain wetland and slough habitats will help activate floodplain more frequently providing both valuable salmon habitat and additional floodplain storage, reducing flood heights.

Includes 24th St point bar levee setback to reconnect 9.2 floodplain acres on the lower White River from RM 3.2-3.6; proposed (land acquisition complete, design complete, final design in 2019)

Current Phase	Estimated Project Cost	Project Contact
Preliminary Design, Design	\$29,783,896	Doug Beagle—City of Sumner

4 White River Left Bank Setback 4.4–4.8

Levee setback to connect 20 acres of floodplain. Project will acquire properties and create a setback levee along 140th Avenue. Setback Levee will provide greater protection to properties East of 140th and create valuable salmon habitat.

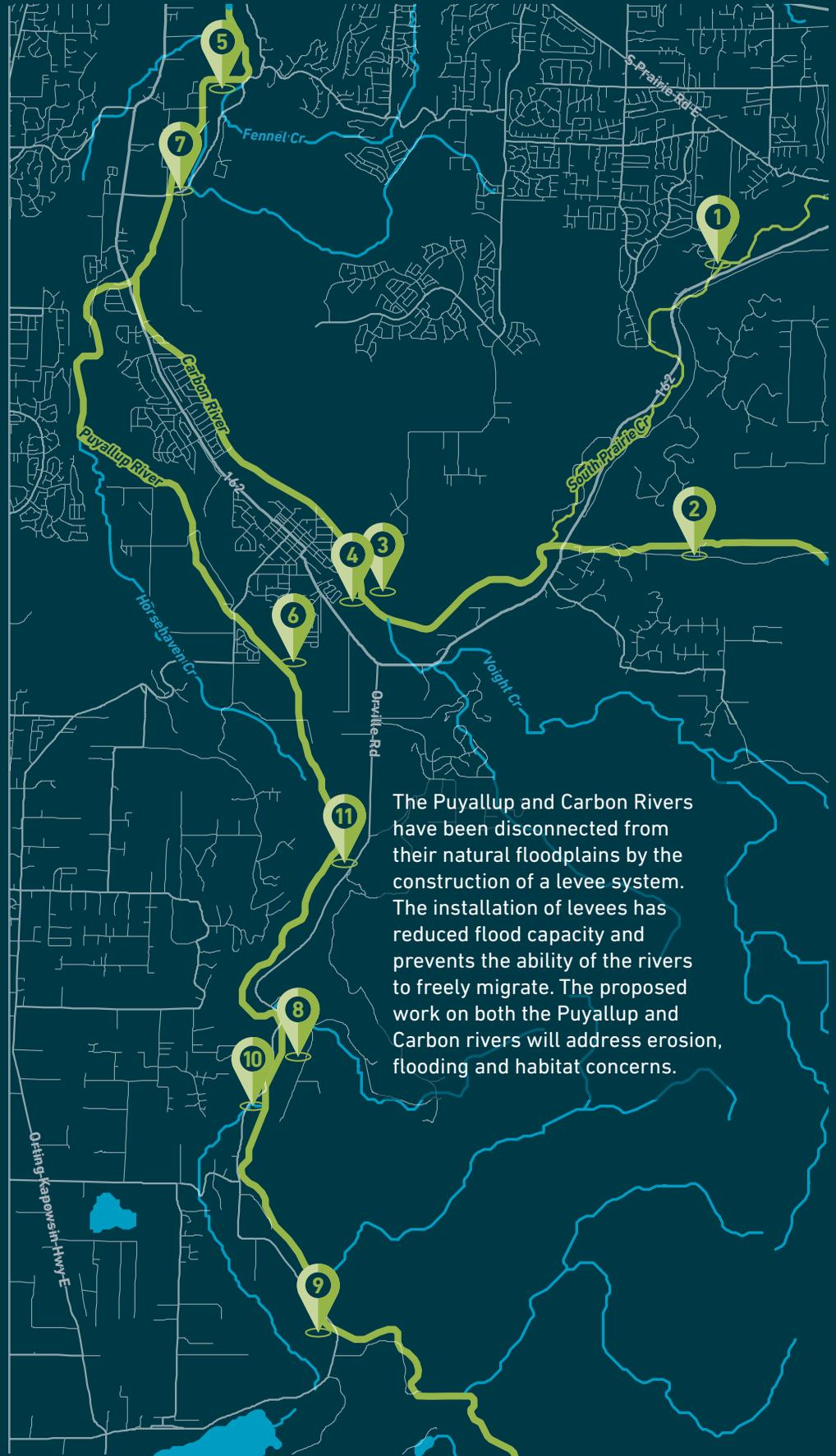
Current Phase	Estimated Project Cost	Project Contact
Acquisition, Preliminary Design, Design	\$10,677,024	Doug Beagle—City of Sumner

5 White River County Line Setback

The goal of the Countyline Levee Setback Project is to address this loss in channel capacity and reduce flood elevations in the City of Pacific by removing 4,500 linear feet of existing levee and reconnecting the river with 121 acres of off-channel aquatic habitat. The river has been isolated from its historical floodplain at countyline for nearly a century. A new setback levee, 6,000 feet in length, has been built.

Current Phase	Estimated Project Cost	Project Contact
Completed 2017	\$10,625,650	Jeanne Stypula—King County

Puyallup & Carbon River Projects



The Puyallup and Carbon Rivers have been disconnected from their natural floodplains by the construction of a levee system. The installation of levees has reduced flood capacity and prevents the ability of the rivers to freely migrate. The proposed work on both the Puyallup and Carbon rivers will address erosion, flooding and habitat concerns.

1 South Prairie Creek Floodplain Restoration

Reconnect over a half mile of side channel habitat along a half mile of mainstem South Prairie Creek. Project is a partnership with the South Puget Sound Salmon Enhancement Group, the Puyallup Tribe of Indians and the Pierce Conservation District.

Current Phase Construction
Location RM 4.0–4.5 near Spring Site Rd E

Council District 1
Obligation Endangered Species Act



2 Alward Road Acquisition & Setback Levee

Continue to acquire homes in a neighborhood with repetitive flood losses. Possible future setback levee location. Starting formal alternatives analysis.

Current Phase Acquisition
Location Left bank Carbon River SE of the City of Orting

Council District 1
Obligation Floodplains Management Act



3 Carbon River Floodplain Reconnection Right Bank

Project will place Engineered Log Jams (ELJ) to move river flow into disconnected floodplain on opposite bank.

Current Phase Design
Location Right bank of Carbon River on the Orting side, near Bridge St.

Council District 1
Obligation Floodplains Management Act



4 Carbon River Levee Setback Left Bank

Setback levee to increase flood protection in Orting

Current Phase Design
Location Left bank of Carbon River on the Orting side, near Bridge Street.

Council District 1
Obligation Floodplains Management Act



5 Fennel Creek Restoration Phase 3

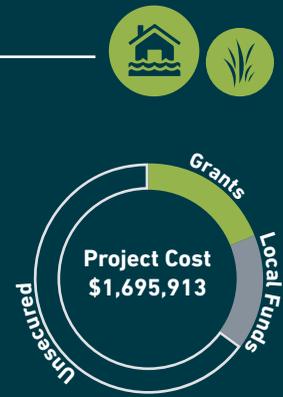
Habitat restoration along Fennel Creek. In partnership with Forterra, the Muckleshoot Tribe and the Puyallup Tribe of Indians.

Current Phase
Design

Location
Right bank of the Puyallup River between Puyallup RM 15.2 & 16

Council District
2

Obligation
Floodplains Management Act



6 Jones Setback Levee

US Army Corps of Engineers project to replace an existing levee with new setback. Continuing Authorities Program (CAP) 205 Flood Control funded project. The Corps of Engineers will take the lead in design and construction.

Current Phase
Design

Location
Right bank of the Puyallup River south of the City of Orting

Council District
1

Obligation
Floodplains Management Act



7 Middle Puyallup 128th Comprehensive Study

Coordinated analysis for four planned setback levee projects in close proximity. Will include detailed alternatives analysis and prioritization of the future levee projects.

Current Phase
Design

Location
128th St E. crossing of the Puyallup River, McMillan

Council District
1, 2

Obligation
Floodplains Management Act



8 Neadham Road Floodplain Reconnection

Acquisition of homes and reconnecting floodplain of the Puyallup River.

Current Phase
Design

Location
Neadham Road parallels the Puyallup River south of Orting.

Council District
1

Obligation
Floodplains Management Act



9 Orville Road Revetment Phase 2C

Project to protect Orville Road from channel migration by the Puyallup River. Funded by the Floodplains by Design grant and Flood Control Zone District funds.

Current Phase
Construction

Location
RM 27.6 to RM 27.8 left bank

Council District
3

Obligation
Floodplains Management Act



10 Orville Road Revetment at Kapowsin Creek

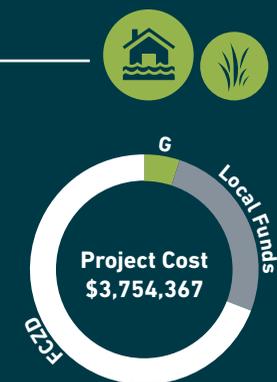
Setback levee on the Upper Puyallup River to protect Orville Road.

Current Phase
Design

Location
Setback levee on the upper Puyallup River, near RM 26.3 to protect Orville Rd.

Council District
3

Obligation
Floodplains Management Act



11 Puyallup Ford Setback Levee—Capital Maintenance

Improve the existing setback levee to reduce flood risk. This is a capital maintenance project to extend the useful life of this facility and reduce maintenance frequency.

Current Phase
Design

Location
Upper Puyallup river along Orville Rd between RM 23.4 and 24.6 right bank.

Council District
1

Obligation
Floodplains Management Act





Pierce County PPW Surface Water Management, the Office of the County Engineer and Maintenance and Operations are coordinating with the local tribes to assess and prioritize existing fish passage barrier projects. Starting in 2019, a detailed survey is being conducted of all existing fish passage barriers in Pierce County. Projects identified as top priorities for local tribes are included within the capital plans of SWM and the OCE beginning in 2020.

Culvert Replacement Program



“As the salmon disappear, so do our tribal cultures and treaty rights. We are at a crossroads, and we are running out of time.”

Billy Frank Jr. (1931-2014)

Horsehaven Creek Culvert at 150th Ave. E.

Relieve local flooding and provide fish passage. Existing twin 36-inch culverts are a partial fish passage barrier for chum, coho and cutthroat trout.

Current Phase Design	Location 150 th Ave. E. north of 183 rd St. Ct. E.
Council District 1	Obligation Clean Water Act



Horsehaven Creek Culvert at 188th St. E.

Relieve local flooding and provide fish passage. Localized flooding occurs even during small storm events. Existing twin 36-inch culverts under 188th are a partial fish passage barrier to chum, coho and cutthroat trout.

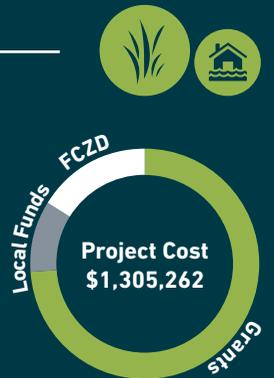
Current Phase Design	Location 188th St E west of Orting-Kapowsin Hwy
Council District 1	Obligation Clean Water Act



Purdy Creek Culvert at 160th St. NW

Relieve local flooding and provide fish passage. This project is a partnership with Kitsap County, which provided \$5,000 in funding for design 2019-2024.

Current Phase Design	Location Purdy Creek at 160 th Street NW
Council District 7	Obligation Fish Passage



Huge Creek Culvert at 160th St. NW

Replace existing box culvert with new fish passable box culvert to provide fish passage to over 10 miles of habitat upstream. \$45,000 of total local funds is provided by Kitsap County. Received grant from SRFB for the 2019-2024 biennium.

Current Phase Construction	Location 160 th St crossing of Huge Creek between Pierce & Kitsap Counties
Council District 7	Obligation Fish Passage



Water Quality Projects



Brookdale Road & NF Clover Creek Retrofit

Retrofitting an older stormwater system that outfalls directly to Clover Creek without water quality treatment. This project received grant funding from DOE for the 2019-2021 biennium.

Current Phase
Construction

Location
South of Brookdale
& Golden Given Rd.

Council District
2

Obligation
Clean Water Act



Centers & Corridors Facility

Evaluate all existing regional stormwater facilities for potential improvements in advance of planned growth in service area. Anticipated to lead to at least one construction project enhancing current level of service.

Current Phase
Design

Location
Centers & Corridors
planning area.

Council District
1, 2, 3, 5, 6

Obligation
Clean Water Act



Parkview Point-Retrofit

Retrofit a failing stormwater control system. Project originated as a maintenance issue.

Current Phase
Design

Location
Off Reid Dr. near
Gig Harbor

Council District
7

Obligation
Floodplains
Management Act



Clover Creek Water Quality Retrofit #1

Improve the water quality of Clover Creek.

Current Phase
Design

Location
TBD

Council District
3, 5

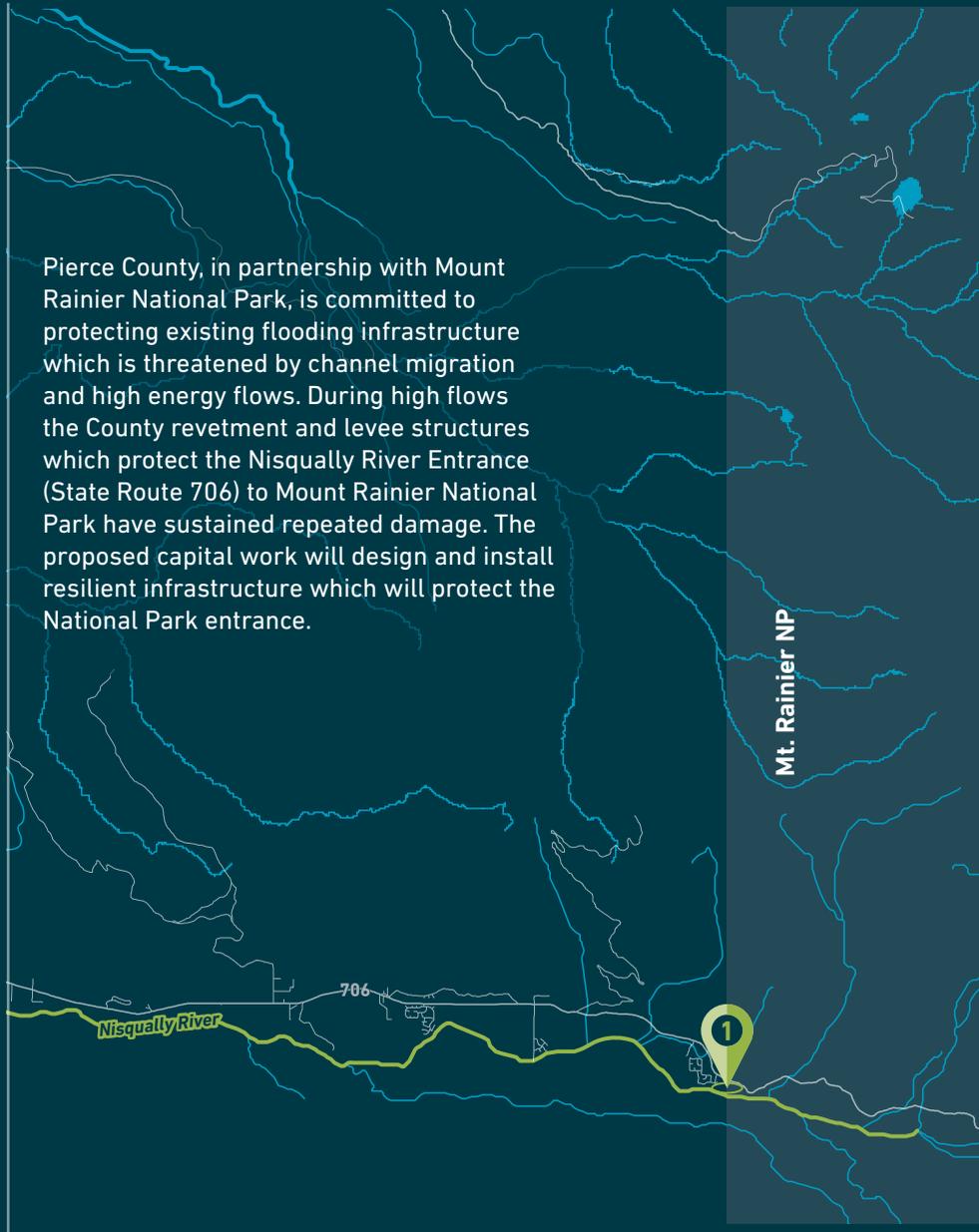
Obligation
Clean Water Act





Nisqually River Project

Pierce County, in partnership with Mount Rainier National Park, is committed to protecting existing flooding infrastructure which is threatened by channel migration and high energy flows. During high flows the County revetment and levee structures which protect the Nisqually River Entrance (State Route 706) to Mount Rainier National Park have sustained repeated damage. The proposed capital work will design and install resilient infrastructure which will protect the National Park entrance.



1 Upper Nisqually Channel Migration Protection

Construct 28 deflectors adjacent to a revetment and levee to deflect flows from SR 706 entrance to Mt. Rainier National Park.



Current Phase
Construction

Location
SR 706 entrance to
Mt. Rainier National Park

Council District
3

Obligation
Floodplains Management Act





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