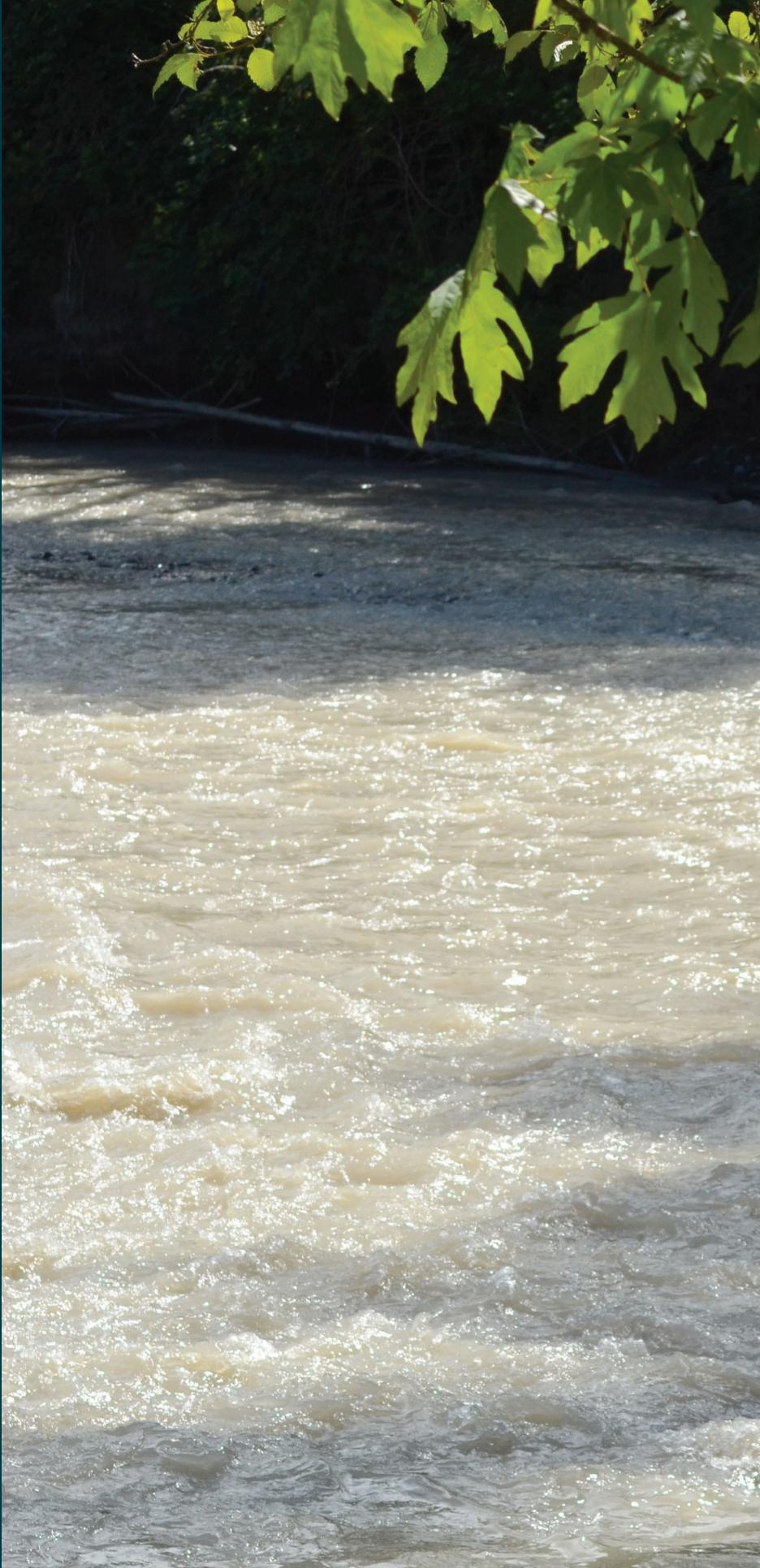


Surface Water Improvement Program (SWIP)

2021-2025



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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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 ranges from \$125.31 to \$158.53 per parcel. In 2021, \$4.87 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 2021, 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.

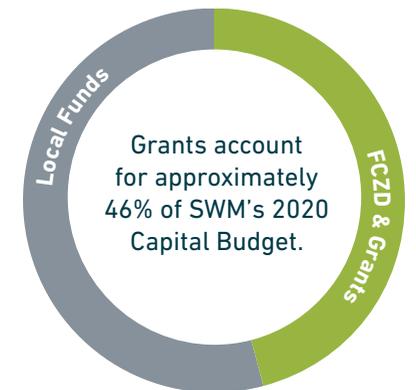
State and Federal Grants

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.

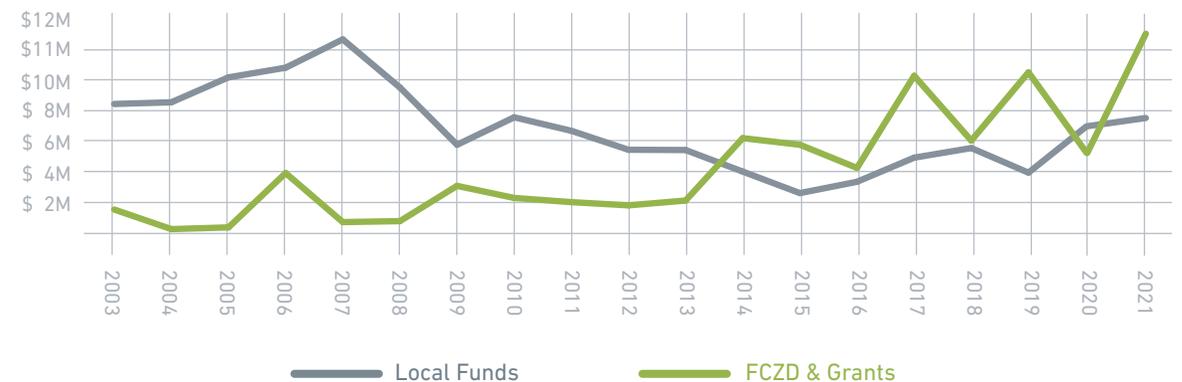
Leveraging Internal Resources through Grants and Partnerships

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

In 2020, SWM received over \$5 million in grant funding. Grants account for over 46 percent of SWM's Capital Budget compared to nearly \$7 million of local funds.



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 2021

	Project Number	Council District
Clear Creek Acquisition & Floodplain Reconnection	1416	5
Alward Road Acquisition & Setback Levee	1701	1
FEMA FMA Flood Acquisition on Clarks Creek	1419	5
FEMA Clear Creek Wheel Inn Mobile Home Park Acquisition	1427	5

Design in 2021

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
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
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
Schoolhouse Creek Culvert Replacement at Mouth	D440	6
Schoolhouse Creek Culvert Replacement 108 th St Al	D443	6
Little Minter Creek Culvert at 97 th St.	TBD	7
Little Minter Creek Culvert at 144 th St. NW	TBD	7
Huge Creek Culvert at 144 th St NW	TBD	7

Construction in 2021

Clear Creek Habitat Restoration	D228	5
Huge Creek Culvert Replacement at 160 th St. NW	D441	7
Orville Road Revetment Phase 2C	1425	3
Diru Creek Bank Stabilization at 72 nd St. E.	D812	5
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

2020 Accomplishments



Woodland Creek Pond construction

Woodland Creek Pond at 104th St. E

The largest project constructed by SWM in 2019-2020 is the Woodland Creek Stormwater Treatment Pond. This facility was designed to improve water quality within Woodland Creek, a tributary to Clark's Creek, and helps address Pierce County's obligation to improve water quality in Clark's Creek. The project was largely funded by a grant from the Department of Ecology.



Clear Creek Strategic Plan open house

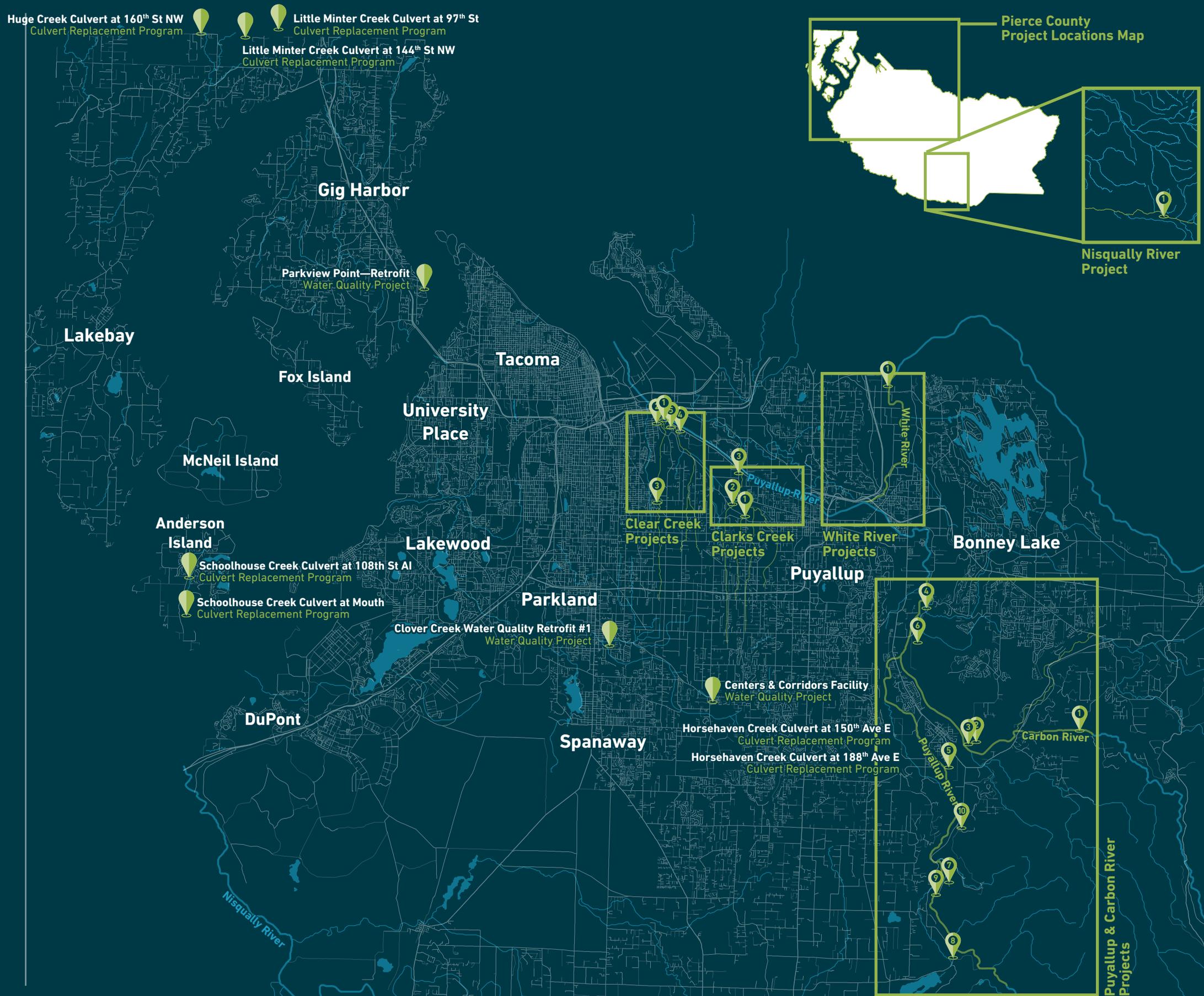


Lower White River Butte Pit Setback project site

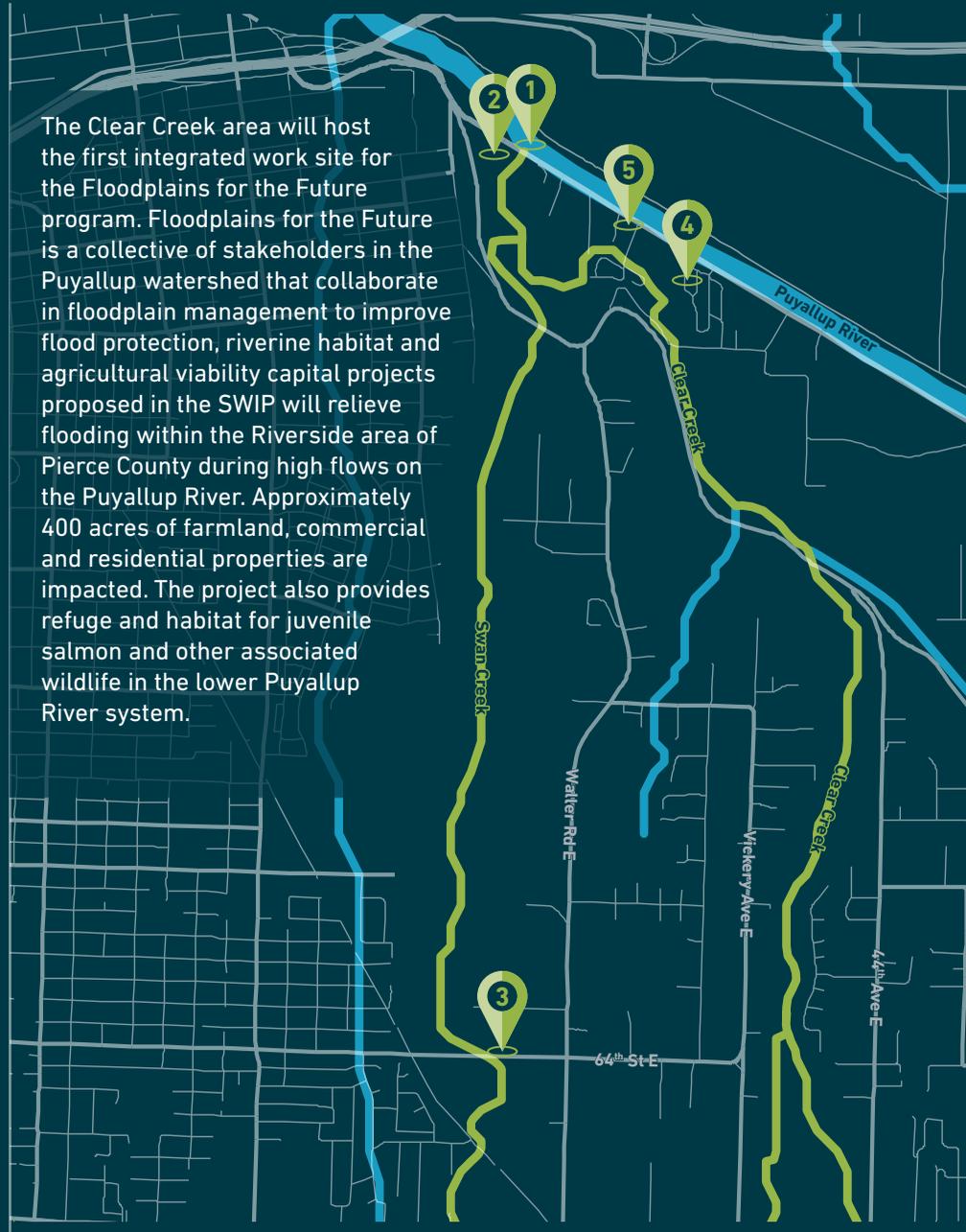
Coordination with Regional Partners

The White River has been an area of intense study and partnership. Pierce County's Capital Improvement Program has coordinated with King County and the Cities of Sumner and Pacific. Pierce County's Butte Pit Setback Levee project will be designed to closely integrate with other flood control efforts being constructed by these regional partners

Project Locations



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 67th Ave E between 104th 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

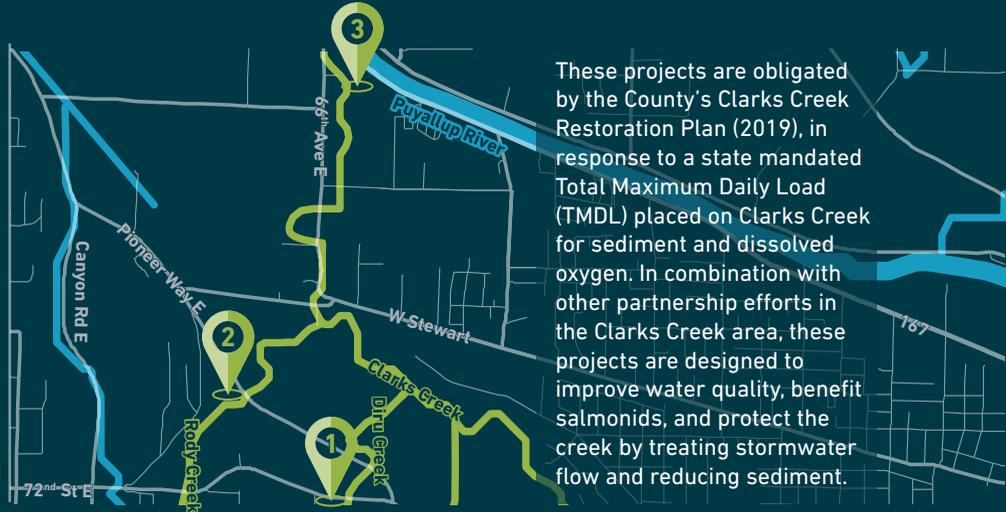


Acquire a small mobile home park within the larger 1416 project area. FEMA Hazard Mitigation Grant Program (HMGP) funded.

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
Construction

Location
Upstream of 72nd St. E.

Council District
5

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 FEMA Flood Mitigation Assistance Clarks Creek



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

Current Phase
Design

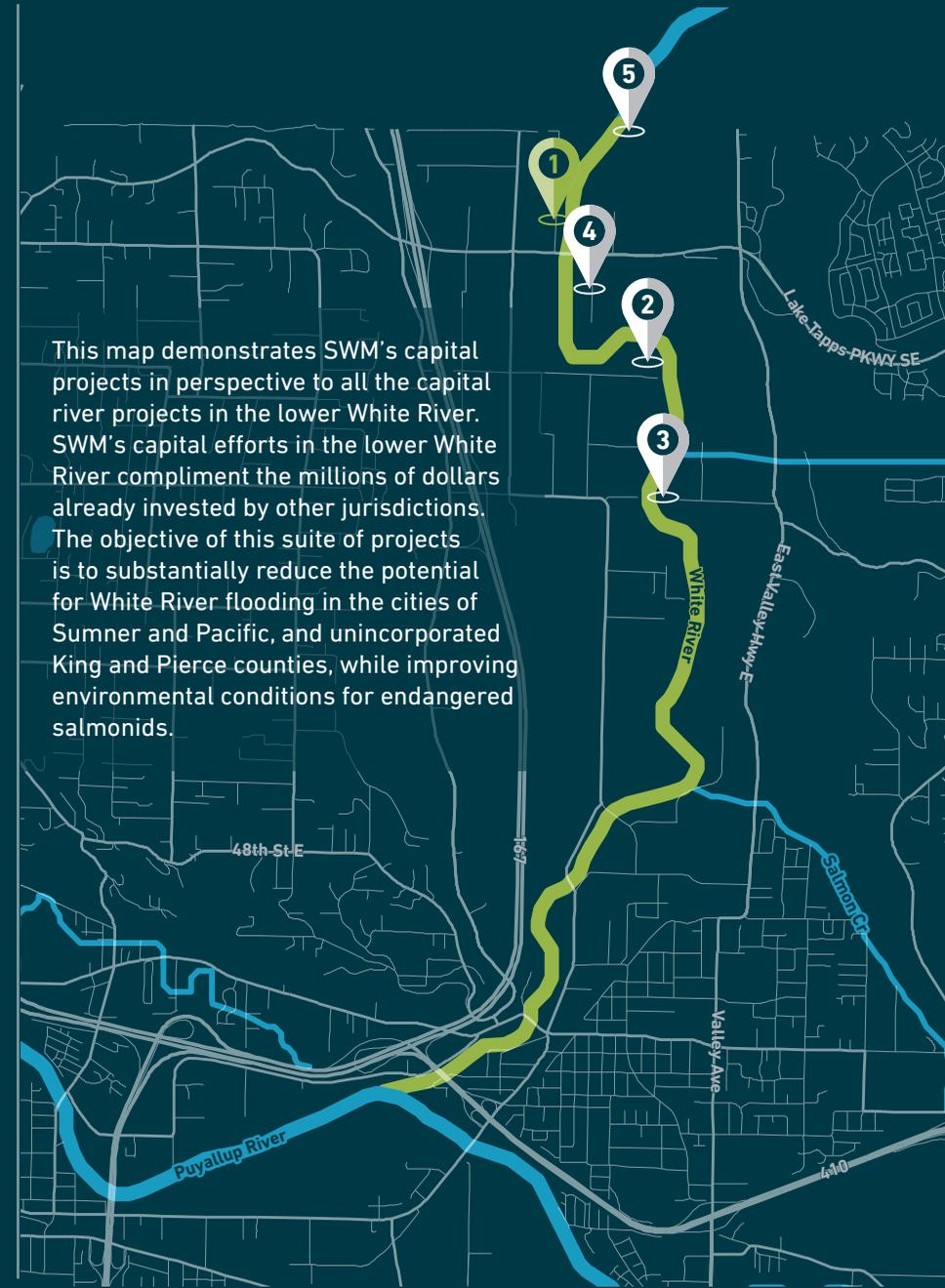
Location
Clarks Creek

Council District
5

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

Location
County Line Rd SE & Stewart Rd SE

Council District
2

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

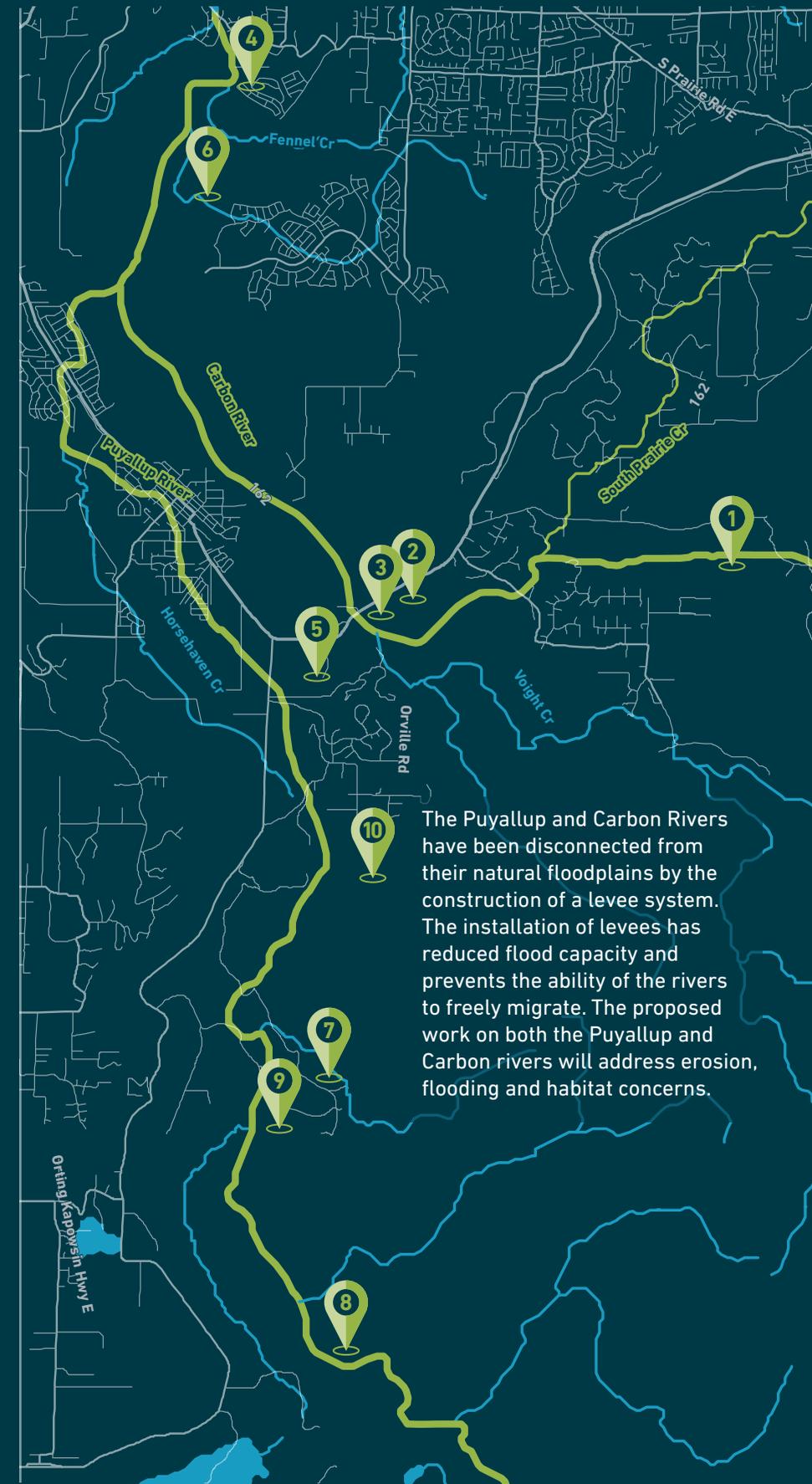
5 White River County Line Setback

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



1 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 Aquisition	Location Left bank Carbon River SE of the City of Orting
Council District 1	Obligation Floodplains Management Act



2 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



3 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



4 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



5 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



6 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 128 th St E. crossing of the Puyallup River, McMillan
Council District 1, 2	Obligation Floodplains Management Act



7 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



8 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



9 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



10 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

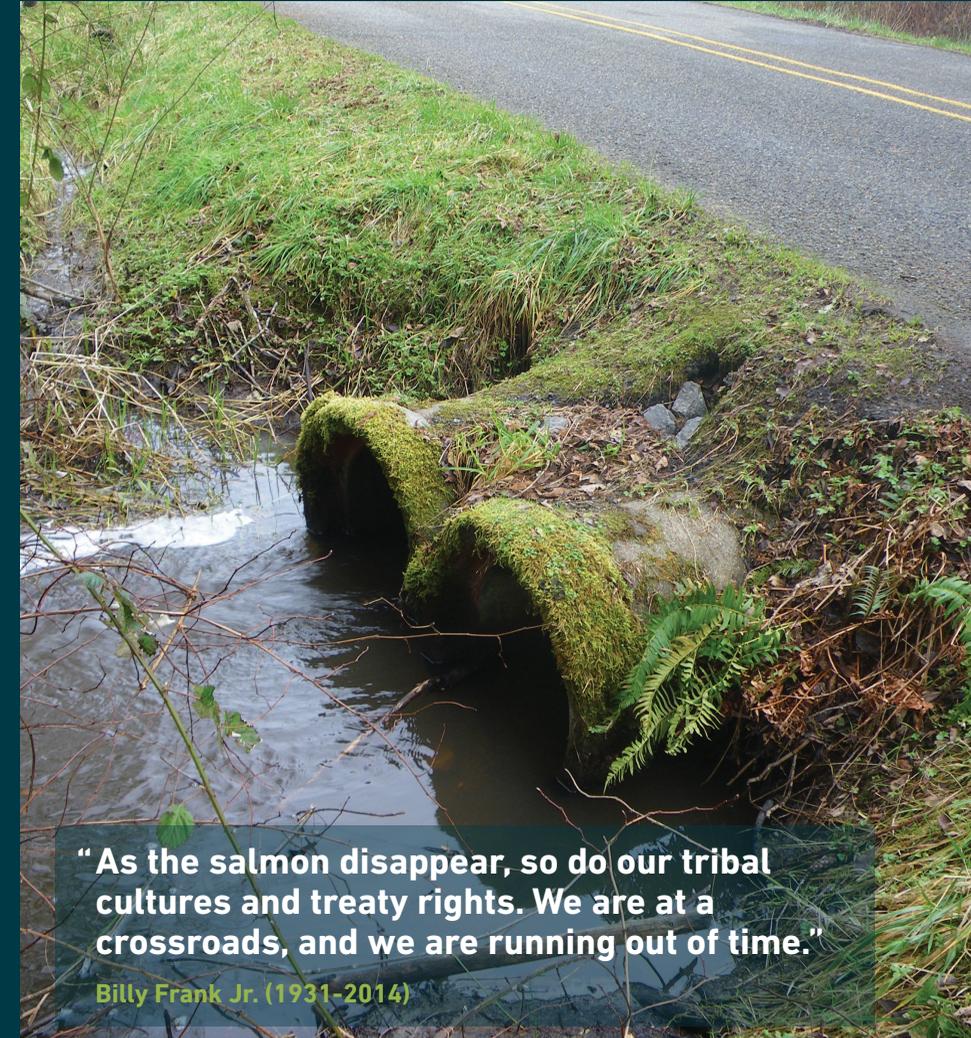
Location
Upper Puyallup river along Orville Rd between RM 23.4 and 24.6 right bank.

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.



“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)

Culvert Replacement Program

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
150th Ave. E. north of 183rd 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



Schoolhouse Creek Culvert Replacement at 108th St AI



Replace existing 36" culvert to provide access to 1.25 miles of upstream habitat

Current Phase
Design

Location
108th St. crossing of Schoolhouse Creek

Council District
6

Obligation
Fish Passage



Schoolhouse Creek Culvert Replacement at Mouth AI



Replace existing 48" culvert in the tidal zone with a bridge providing access to 2 miles of upstream habitat.

Current Phase
Design

Location
Schoolhouse Creek at Eckenstam-Johnson Road

Council District
6

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
160th St crossing of Huge Creek between Pierce & Kitsap Counties

Council District
7

Obligation
Fish Passage



Huge Creek Culvert Replacement at 144th St. NW



Replace existing culvert to provide access to upstream habitat

Current Phase
Design

Location
144th St. crossing of Little Huge Creek

Council District
7

Obligation
Fish Passage



Little Minter Creek Culvert Replacement at 97th St. NW



Replace existing 36" culvert to provide access to 0.5 miles of upstream habitat

Current Phase
Design

Location
97th St. crossing of Little Minter Creek

Council District
7

Obligation
Fish Passage



Little Minter Creek Culvert Replacement at 144th St. NW



Replace existing 36" culvert to provide access to 1 mile of upstream habitat

Current Phase
Design

Location
144th St. crossing of Little Minter Creek

Council District
7

Obligation
Fish Passage





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

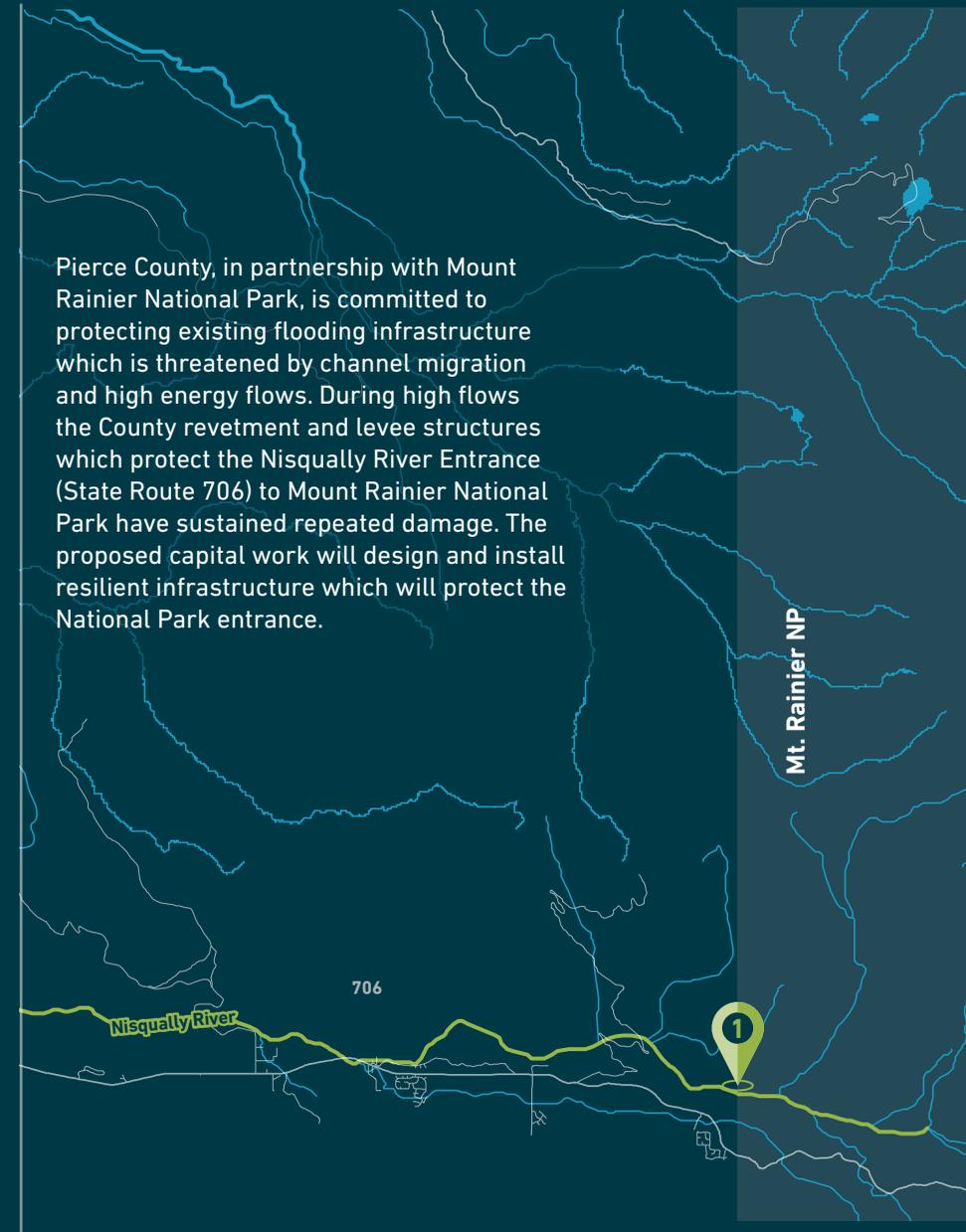
Location
TBD

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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