

**WHATCOM COUNTY
PUBLIC WORKS DEPARTMENT**

ELIZABETH KOSA
Director



NATURAL RESOURCES

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MEMORANDUM

TO: The Honorable Satpal Singh Sidhu, Whatcom County Executive, and
Honorable Members of the Whatcom County Council

THROUGH: Elizabeth Kosa, Director

FROM: Gary S. Stoyka, Natural Resources Program Manager

DATE: September 10, 2024

RE: September 17, 2024 Council Water Work Session

Please refer to the proposed agenda below for the next Water Work Session. Additional supporting documents may be distributed at or before the meeting.

AGENDA

Date:	Tuesday, September 17, 2024		
Time:	10:30 a.m. to 12:30 p.m.		
Place:	Hybrid Meeting: In Person: Civic Center Garden Level Conference Room (322 N. Commercial St., Street Level) Virtual: For instructions on how to watch or participate in this meeting, please visit us at www.whatcomcounty.us/joinvirtualcouncil or contact the Council Office at 360.778.5010. View meeting schedules, agendas, minutes, videos, and archives at www.whatcom.legistar.com .		
Time	Topic	Council Action Requested	Background Information Attached
10:30 AM – 10:45 AM	Water Issues Update	Informational	None
10:45 AM – 10:50 AM	Portage Bay Shellfish Growing Area Upgrade	Informational	None
10:50 AM – 11:20 AM	2025-2030 Water Resources Improvement Program	Informational	2025-2030 Water Resources Improvement Program
11:20 AM – 11:30 AM	WRIA 1 Planning Unit update	Informational	None
11:30 AM – 12:30 PM	Lummi Island Ferry	Discussion	None

If you have questions, please feel free to call me at (360) 778-6218.

cc:

Cathy Halka
Kristi Felbinger
Jill Nixon
Jennifer Schneider
Bennett Knox

Erika Douglas
John Thompson
Paula Harris
Kraig Olason
Chris Elder

Cathy Craver
Doug Ranney
Melissa Donnelly
Roland Middleton
Erin Page

Josh Fleischmann
Mark Personius
Kayla Schott-Bresler
Sue Sullivan
Julie Anderson

Aly Pennucci
Brandy Reed

PROPOSED BY: _____

INTRODUCED: 9/10/24

RESOLUTION NO. _____

(A Resolution of the Whatcom County Flood Control Zone District
Board of Supervisors)

**WHATCOM COUNTY FLOOD CONTROL ZONE DISTRICT
SIX-YEAR WATER RESOURCES IMPROVEMENT PROGRAM
FOR THE YEARS 2025 THROUGH 2030**

WHEREAS, pursuant to RCW 86.15.110, flood control or storm water control improvements may be extended, enlarged, acquired, or constructed by a flood control zone pursuant to a resolution adopted by its Board of Supervisors; and

WHEREAS, Whatcom County Public Works Department on behalf of the Whatcom County Flood Control Zone District has prepared a Six-Year Water Resources Improvement Program for adoption; and

WHEREAS, pursuant to RCW 86.15.120, the Supervisors shall hold a public hearing prior to adopting the resolution; and

WHEREAS, the Six-Year Water Resources Improvement Program attached hereto as Exhibit "A" has been reviewed and determined to be consistent with Whatcom County's comprehensive plan and is consistent with the following plans:

- Lower Nooksack River Comprehensive Flood Hazard Management Plan, October 1999
- Jones Creek Debris Flow Study, March 2004
- WRIA 1 Salmon Recovery Plan, October 2005
- Birch Bay Comprehensive Stormwater Plan, July 2006
- Lake Whatcom Comprehensive Stormwater Plan, March 2008
- Lake Samish Basin Comprehensive Stormwater Plan, July 2012
- Birch Bay Central North Sub-Watershed Master Plan, December 2013
- Birch Bay Central South Sub-Watershed Master Plan, January 2015
- Nooksack River System-Wide Improvement Framework, June 2016

- Birch Point, Terrell Creek Urban Area, and Point Whitehorn Sub-watershed Master Plan, November 2016
- Lake Whatcom Comprehensive Plan: Stormwater Capital Program Update, September 2017
- Lake Whatcom East Geneva Sub-watershed Master Plan, January 2021
- Birch Point Sub-watershed Drainage Study Report, September 2023; and
- Lake Whatcom Management Program 2025-2029 Work Plan, in preparation.

WHEREAS, pursuant to RCW 86.15.110, the preliminary engineering studies for constructed improvements are on file with the Whatcom County Public Works Department; and

WHEREAS, pursuant to RCW 86.15.110, the estimated cost of the acquisition or construction of the improvement, together with supporting data, is included in the Six-Year Water Resources Improvement Program; and

WHEREAS, the improvements will benefit one or more flood control zones, subzones and the county as a whole;

NOW, THEREFORE, BE IT RESOLVED by the Whatcom County Flood Control Zone District Board of Supervisors as follows:

That the Whatcom County Flood Control Zone District Six-Year Water Resources Improvement Program for the years 2025 through 2030, which is attached hereto as Exhibit "A", is hereby adopted.

APPROVED this ____ day of _____, 2024.

ATTEST:

Flood Control Zone District Board of
Supervisors
WHATCOM COUNTY, WASHINGTON

Cathy Halka, Clerk of the Council

Barry Buchanan, Chair

APPROVED AS TO FORM:

Is/Christopher Quinn by J Smiley 8-28-24
Christopher Quinn, Chief Deputy Prosecuting Attorney – Civil Division

Item No.	Project Description	Database ID No.	BES	Previous Expenditures		2025		2026		2027		2028		2029		2030		Total
				Amount	Source	Phase	Amount	Source	Phase	Amount	Source	Phase	Amount	Source	Phase	Amount	Source	
LAKE WHATCOM STORMWATER																		
1	SWP #SWLW24-01 Eagleridge Stormwater Improvements: Install a water quality system to treat stormwater from the Eagleridge development.	20-007	61.4	\$ 150,000	REET/LWSU	PE	\$ 175,000	LWSU	PE			PE			PE			\$ 825,000
						RW			RW			RW			RW			
						CN	\$ 500,000	LWSU	CN			CN			CN			
						CN			CN			CN			CN			
2	SWP #SWLW23-06 Austin Court Stormwater Improvements: Install water quality system on the discharge from Austin Court.	20-008	58.8	\$ 70,000	REET/LWSU	PE	\$ 217,375	LWSU	PE			PE			PE			\$ 737,375
						RW			RW			RW			RW			
						CN			CN	\$ 450,000	LWSU	CN			CN			
						CN			CN			CN			CN			
3	SWP #SWLW23-05 Cedar Hills Culvert Replacement: Replacement of culvert damaged during the 2021 flooding event with FEMA funding contribution.	23-001	44.2	\$ 145,000	FEMA/REET/LWSU	PE	\$ 30,000	FEMA	PE			PE			PE			\$ 380,000
						PE			PE			PE			PE			
						RW			RW			RW			RW			
						CN	\$ 180,000	FEMA	CN			CN			CN			
						CN	\$ 25,000	REET	CN			CN			CN			
4	Strawberry Point/Lake Whatcom Blvd Stormwater Improvements: System upgrades to improve water quality including vaults, biofiltration swales, and channel restoration	17-001	62.2			PE	\$ 30,000	LWSU	PE	\$ 300,000	REET	PE	\$ 50,000	LWSU	PE			\$ 1,170,000
						RW			RW	\$ 35,000	LWSU	RW			RW			
						CN			CN			CN	\$ 455,000	REET	CN			
						CN			CN	\$ 300,000	LWSU	CN			CN			
5	Geneva Street & Lake Louise Road Culvert Replacement: Replace culverts along Geneva Street and Lake Louise Road to improve water quality and conveyance	20-010	58.8			PE			PE	\$ 70,000	REET	PE			PE			\$ 270,000
						RW			RW			RW			RW			
						CN			CN			CN	\$ 200,000	LWSU	CN			
6	Lake Whatcom Boulevard Media Filter Drain (EG-1): Install media filter drain or other water quality system along west side of Lake Whatcom Blvd to improve water quality.	22-006	58.8			PE			PE	\$ 180,000	LWSU	PE			PE			\$ 835,000
						RW			RW	\$ 25,000	REET	RW			RW			
						CN			CN			CN	\$ 630,000	REET	CN			
7	Sudden Valley Stormwater Improvements No. 2: Construct drainage system upgrades and retrofits in the Sudden Valley area of the Lake Whatcom watershed.	22-007	49.0			PE			PE	\$ 10,000	LWSU	PE	\$ 200,000	LWSU	PE	\$ 60,000	REET	\$ 1,260,000
						RW			RW			RW	\$ 10,000	REET	RW			
						CN			CN			CN			CN	\$ 500,000	REET	
						CN			CN			CN			CN	\$ 480,000	LWSU	
8	Lake Whatcom Boulevard Water Quality Vault (EG-4): Install a water quality system to remove phosphorus and other pollutants from residential runoff prior to entering Lake Whatcom.	22-008	57.1			PE			PE			PE	\$ 200,000	REET	PE	\$ 40,000	LWSU	\$ 650,000
						RW			RW			RW	\$ 25,000	LWSU	RW			
						CN			CN			CN			CN	\$ 385,000	LWSU	
9	Viewhaven Lane Water Quality & Conveyance Improvements: Install water quality systems and improve conveyance near Viewhaven Lane.	20-009	58.8			PE			PE			PE			PE	\$ 215,000	LWSU	\$ 215,000
						RW			RW			RW			RW			
						CN			CN			CN			CN			
						CN			CN			CN			CN			
BIRCH BAY WATERSHED & AQUATIC RESOURCES MNGT. DIST. (BBWARM)																		
10	SWP #SWBB23-02 Charel Terrace Stormwater Outfall Repair: Marine outfall stabilization to protect a bluff slope (emergency repair 2022) and permanent stabilization (2023)	20-011	29.8	\$ 280,000	BBWARM / FEMA	PE	\$ 55,000	BBWARM	PE			PE			PE			\$ 797,000
						PE	\$ 52,000	FEMA	PE			PE			PE			
						RW	\$ 10,000	BBWARM	RW			RW			RW			
						CN	\$ 400,000	FEMA	CN			CN			CN			
11	SWP #SWBB23-04 Semiahmoo Drive South & Outfall Improvements (BP-2, BP-5): Upsize culverts and re-establish roadside ditch on east side of Semiahmoo Drive.	18-009 18-010	50.3	\$ 395,000	BBWARM	PE	\$ 50,000	BBWARM	PE			PE			PE			\$ 1,380,000
						PE			PE			PE			PE			
						RW			RW			RW			RW			
						CN	\$ 935,000	BBWARM	CN			CN			CN			
12	SWP #SWBB23-06 Lora Lane Drainage & Tide Gate Modifications (TC1-2): Replace tide gate structure and repair embankment; install Type 2 CB and culvert under Birch Bay Dr	18-008	42.5	\$ 140,000	BBWARM	PE	\$ 200,000	BBWARM	PE			PE			PE			\$ 1,710,000
						RW			RW			RW			RW			
						CN	\$ 570,000	BBWARM	CN			CN			CN			
						CN	\$ 200,000	REET	CN			CN			CN			
						CN	\$ 600,000	ROAD FUNDS	CN			CN			CN			
13	SWP #SWBB23-05 Normar Place Stormwater Improvements (BP-1): Upsize pipes, replace CBs and install energy dissipater at pipe outfall on Normar Place	19-004	52.0	\$ 160,000	BBWARM	PE	\$ 256,000	BBWARM	PE			PE			PE			\$ 1,336,000
						PE			PE			PE			PE			
						RW	\$ 40,000	BBWARM	CN			RW			RW			
						CN			CN	\$ 680,000	BBWARM	CN			CN			
						CN			CN	\$ 200,000	REET	CN			CN			
14	SWP #SWBB23-07 Birch Point Road Stormwater & Outfall Improvements (BP-3, BP-6): Upsize culverts and replace outfall to the beach to reduce bluff erosion	21-001	33.3			PE	\$ 300,000	BBWARM	PE			PE			PE			\$ 970,000
						RW	\$ 20,000	BBWARM	RW			RW			RW			
						CN			CN			CN			CN			
						CN			CN			CN	\$ 450,000	BBWARM	CN			
						CN			CN			CN	\$ 200,000	REET	CN			
15	SWP #SWBB23-08 Richmond Park Stormwater Improvements (SH-2): Address drainage concerns in Richmond Park by re-routing stormwater down Shintaffer Road to a Birch Bay outfall	22-010	42.5			PE			PE	\$ 660,000	BBWARM	PE	\$ 140,000	BBWARM	PE			\$ 2,600,000
						RW			RW	\$ 40,000	BBWARM	RW			RW			
						CN			CN			CN			CN			
						CN			CN			CN	\$ 1,560,000	BBWARM	CN			
						CN			CN			CN	\$ 200,000	REET	CN			
16	Roger's Slough Drainage Improvements: Re-grade ditches, install new culverts, and replace existing pipe with concrete box culvert under Birch Point Road into Roger's Slough	23-002	70.2			PE			PE	\$ 750,000	BBWARM	PE			PE	\$ 150,000	BBWARM	\$ 2,850,000
						RW			RW			RW			RW			
						CN			CN			CN			CN	\$ 1,750,000	BBWARM	
						CN			CN			CN			CN	\$ 200,000	REET	
17	Birch Bay Village Drainage Improvements: Upsize existing culverts and install new pipe and catch basins in Birch Bay Village to reduce flooding	23-003	52.9			PE			PE			PE	\$ 350,000	BBWARM	PE	\$ 50,000	BBWARM	\$ 1,310,000
						RW			RW			RW			RW			
						CN			CN			CN			CN	\$ 710,000	BBWARM	
						CN			CN			CN			CN	\$ 200,000	REET	
18	Bay Ridge Estates Drainage Improvements: Upsize and install new culverts and CBs on Birch Point Road and Selder Road to reduce flooding	23-004	46.1			PE			PE			PE	\$ 220,000	BBWARM	PE			\$ 220,000
						RW			RW			RW			RW			
						CN			CN			CN			CN			
						CN			CN			CN			CN			
19	Wooldridge Ave and Sunset Drive Stormwater Improvements (TC-2): Improve drainage system to reduce local flooding and incorporate water quality treatment.	13-007	52.2			PE			PE			PE			PE	\$ 180,000	BBWARM	\$ 180,000
						CN			CN			CN			CN			
						CN			CN			CN			CN			
						CN			CN			CN			CN			

Eagleridge Stormwater Improvements Database ID No. 20-007

Construction Funding Year(s): 2025

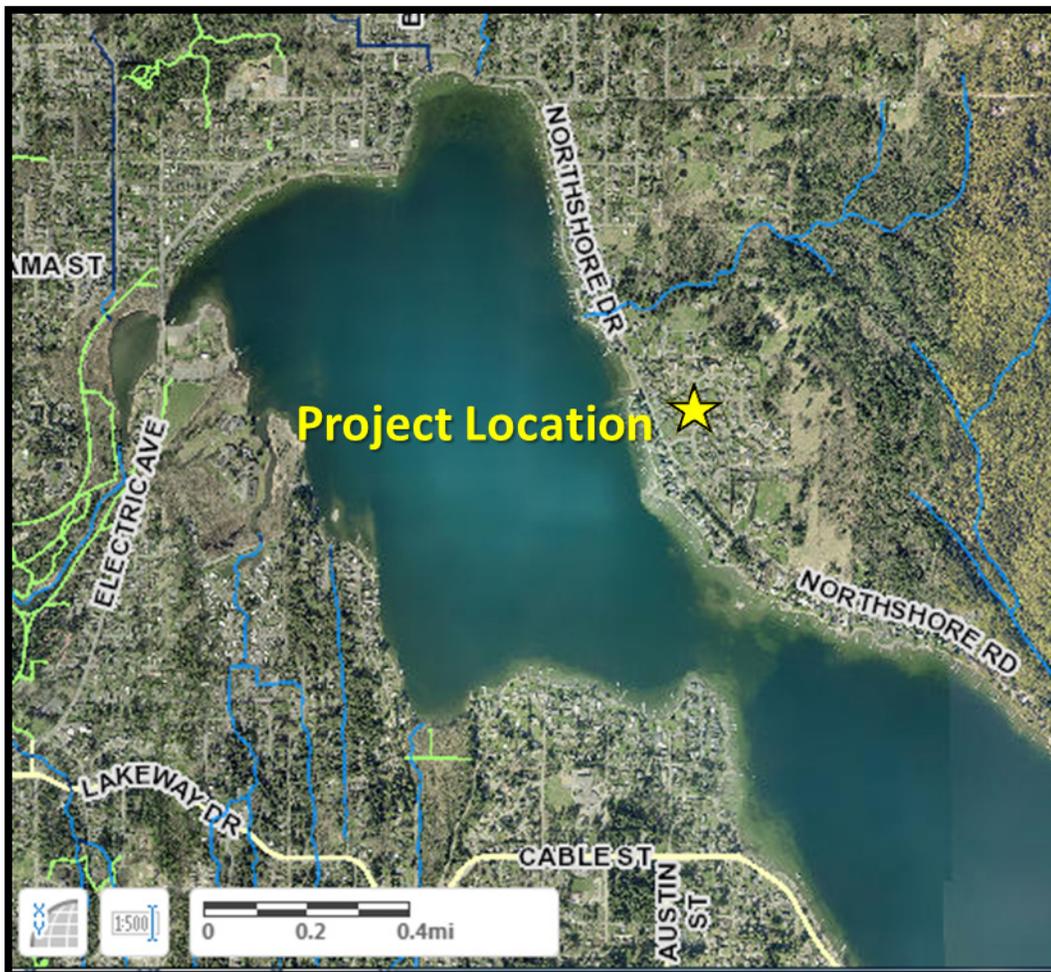
Project Narrative:

This project includes the installation of a water quality treatment facility associated with the Eagleridge neighborhood in the Lake Whatcom watershed. The Eagleridge development is approximately 34 acres and runoff from this development will be routed through a water quality facility to help remove sediments and phosphorus before entering Lake Whatcom.

Project Status:

Design work has been initiated in 2024 and construction scheduled to take place in 2025.

Total Estimated Project Cost: \$825,000



Austin Court Stormwater Improvements Database ID No. 20-008

Construction Funding Year(s): 2026

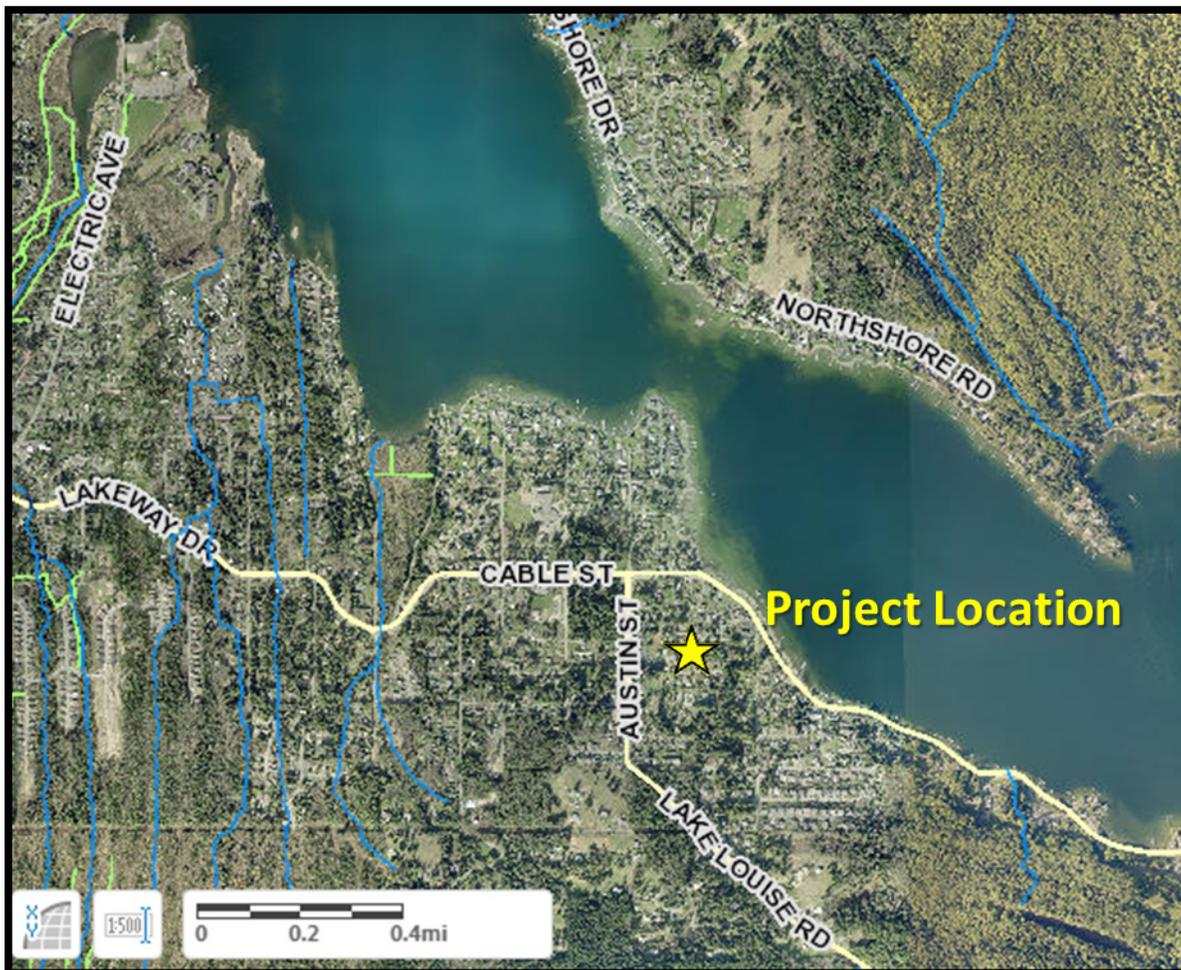
Project Narrative:

This project includes the installation of a large filter vault to improve water quality in the existing Austin Court stormwater system. The tributary area is approximately three acres and the water quality system will remove sediments and phosphorus prior to entering Lake Whatcom.

Project Status:

Design contract is anticipated to be executed Summer 2024 and construction scheduled to take place in 2026.

Total Estimated Project Cost: \$737,375



Strawberry Point/ Lake Whatcom Blvd Stormwater Improvements Database ID No. 17-001

Construction Funding Year(s): 2027

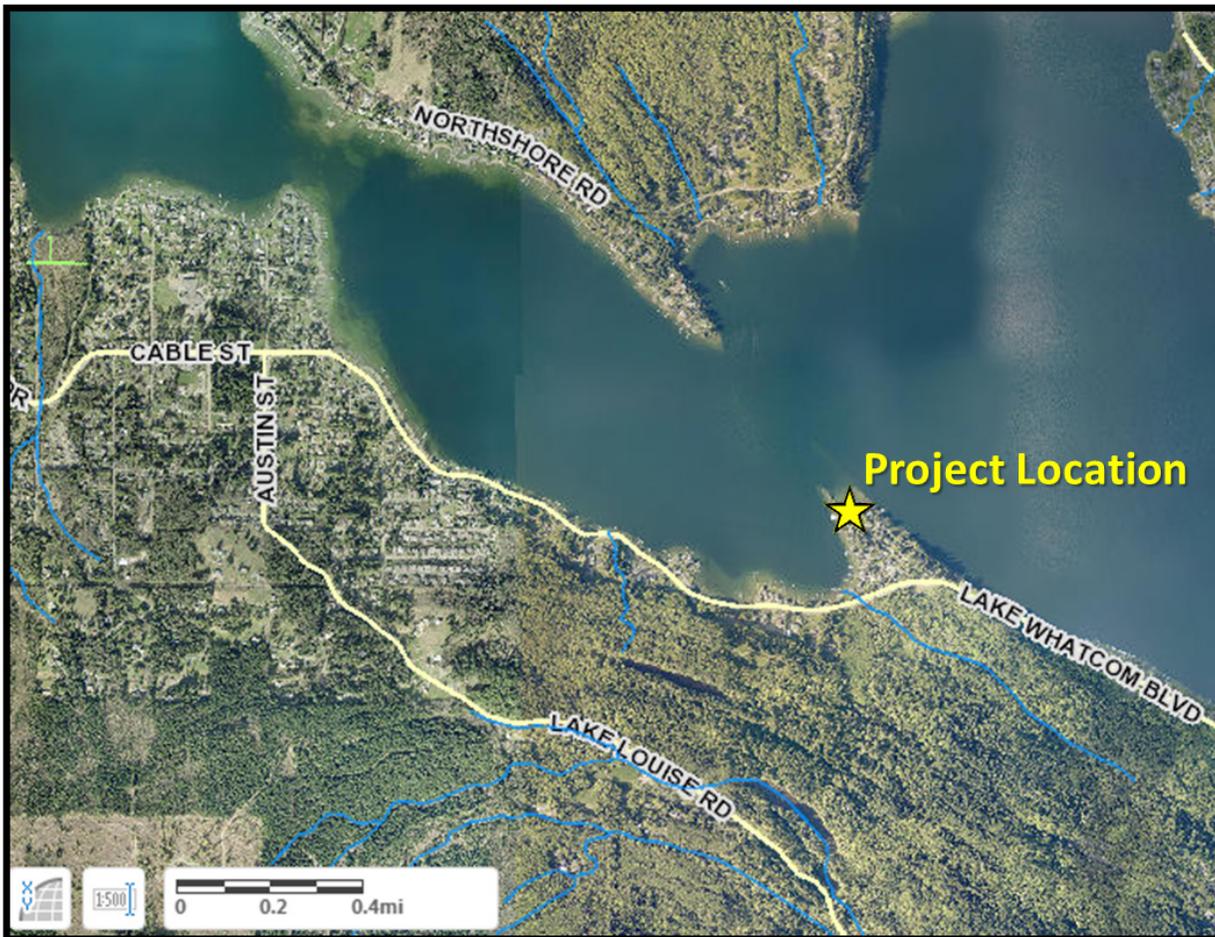
Project Narrative:

This project will involve the installation of a water quality facility to treat approximately three acres of residential area. Project elements may include: bio-infiltration swales, filter vaults, media filter drains, and rain gardens in order to improve water quality.

Project Status:

Design is anticipated in 2025-2026 and construction scheduled to take place in 2027.

Total Estimated Project Cost: \$1,170,000



Geneva Street & Lake Louise Road Culvert Replacement Database ID No. 20-010

Construction Funding Year(s): 2028

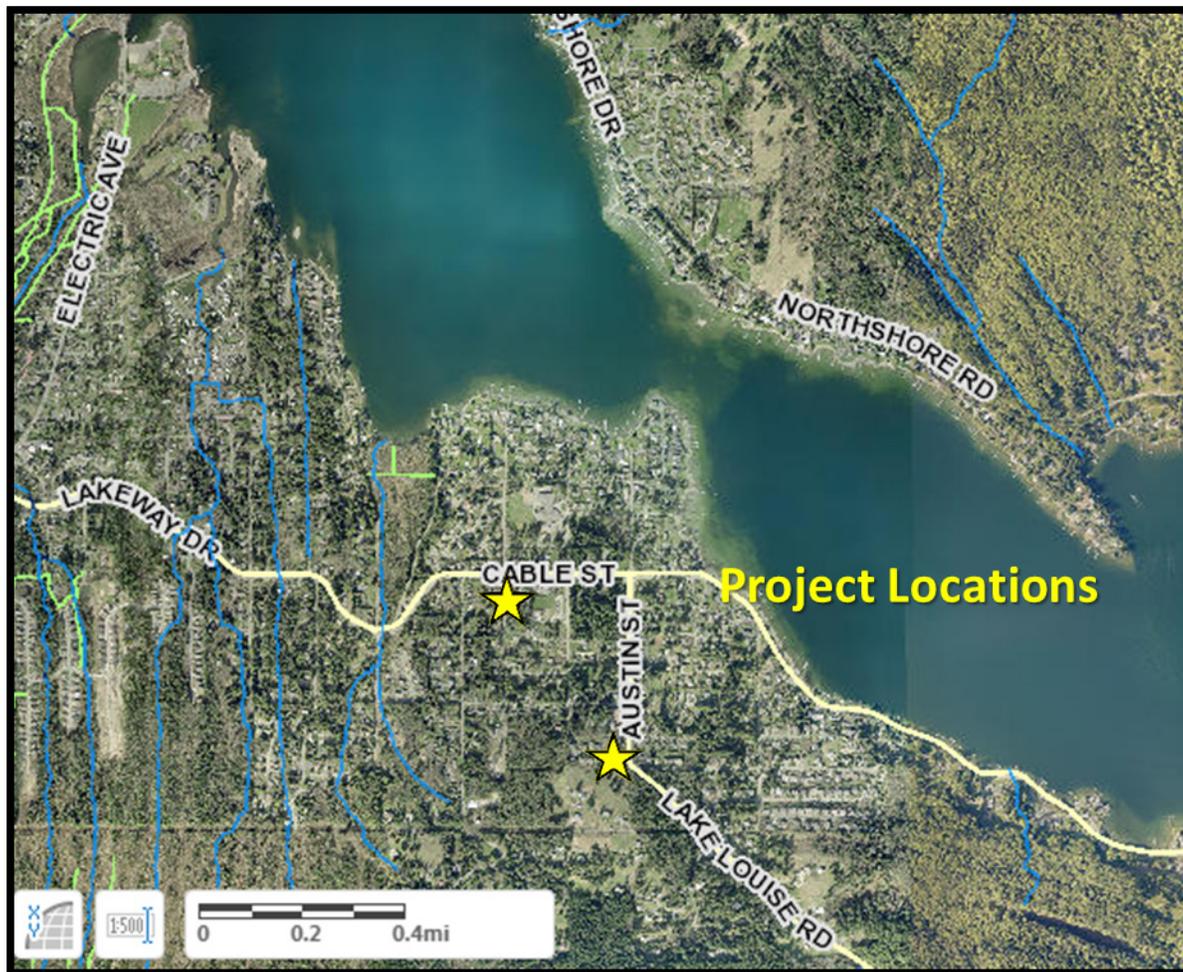
Project Narrative:

Project will improve conveyance of roadside ditches and culverts along Geneva Street and Lake Louise Road. This will improve water quality. The project will replace approximately 200 linear feet of undersized or damaged culverts.

Project Status:

Design is anticipated in 2027 and construction scheduled to take place in 2028.

Total Estimated Project Cost: \$270,000



Lake Whatcom Boulevard Media Filter Drain (EG-1) Database ID No. 22-006

Construction Funding Year(s): 2029

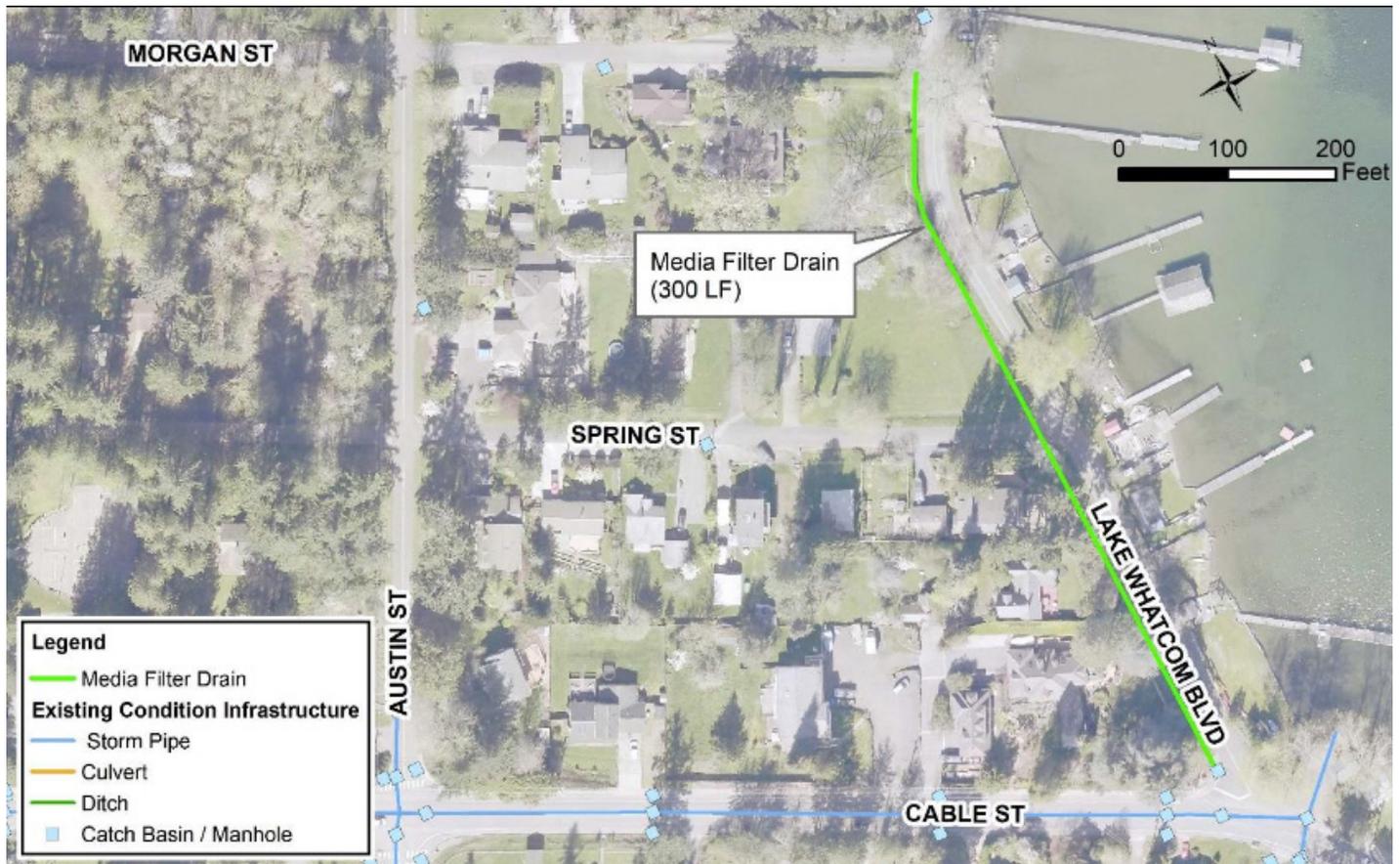
Project Narrative:

The project would install Media Filter Drain (MFD), or other appropriate water quality system, along approximately 300 linear feet of roadway on the west side of Lake Whatcom Blvd. Stormwater runoff from approximately 8.5 acres on the west side of Lake Whatcom Blvd. is collected in a shallow roadside ditch, this project would treat this water prior to discharging to Lake Whatcom.

Project Status:

Design is anticipated to begin in 2027 and construction scheduled to take place in 2029.

Total Estimated Project Cost: \$835,000



Sudden Valley Stormwater Improvements No. 2

Database ID No. 22-007

Construction Funding Year(s): 2030

Project Narrative:

A project, to be determined, will be constructed within the Sudden Valley area as the second water quality improvement project focused on removing sediment and treating phosphorus in a continued collaboration with the Sudden Valley community. The project will include drainage system upgrades and retrofits to the existing stormwater infrastructure. Details will be forthcoming as Whatcom County works with representatives of the Sudden Valley Community Association.

Project Status:

Design is anticipated in 2028-2029 and construction scheduled to take place in 2030.

Total Estimated Project Cost: \$1,260,000



Lake Whatcom Boulevard Water Quality Vault (EG-4) Database ID No. 22-008

Construction Funding Year(s): 2030

Project Narrative:

This project includes the installation of a filter vault to improve water quality in the existing Lake Whatcom Blvd stormwater system. The water quality system will remove sediments and phosphorus from approximately 3 acres of residential runoff prior to entering Lake Whatcom.

Project Status:

Design is anticipated in 2028-2029 and construction scheduled to take place in 2030.

Total Estimated Project Cost: \$650,000



Viewhaven Lane Water Quality & Conveyance Improvements

Database ID No. 20-009

Construction Funding Year(s): 2031

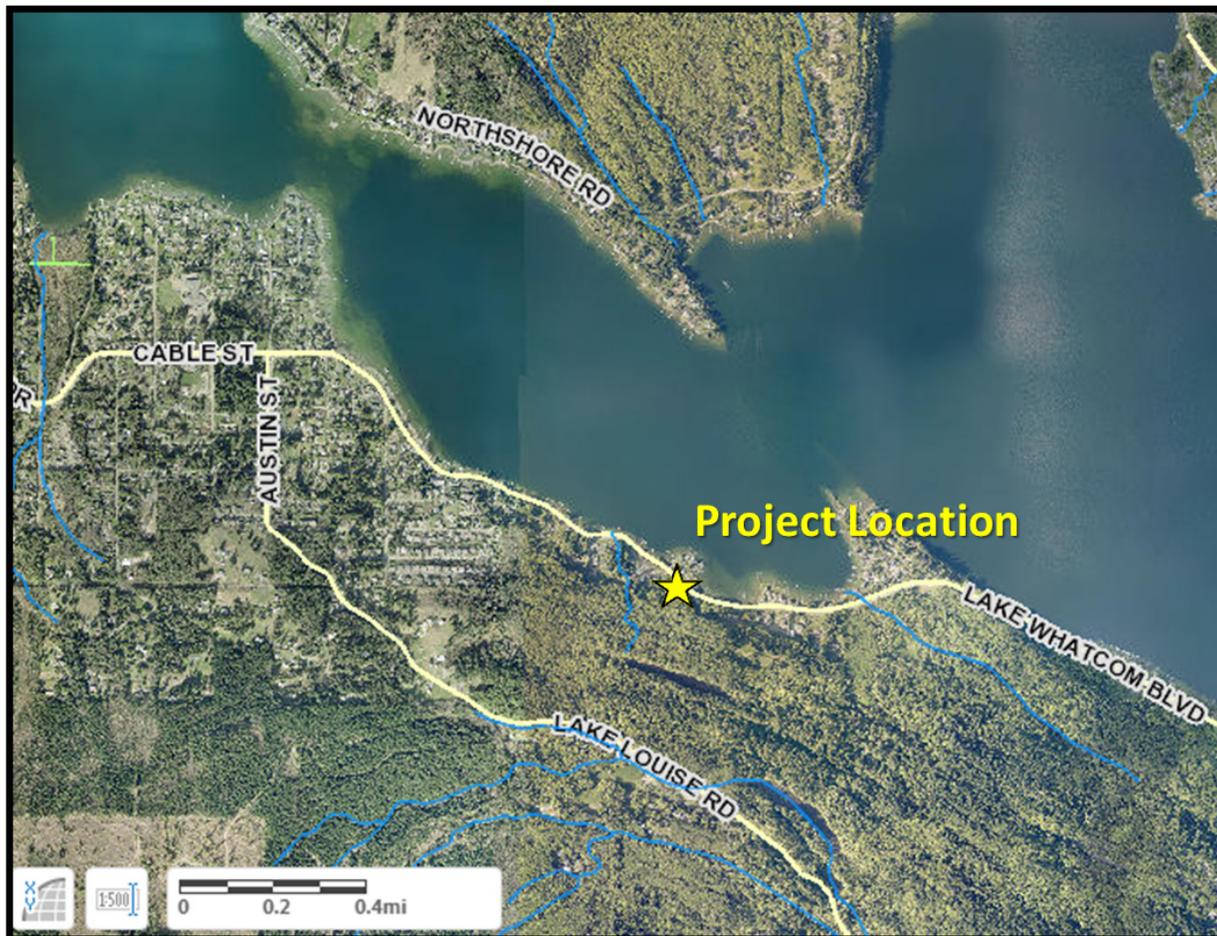
Project Narrative:

This project will improve conveyance and water quality near Viewhaven Lane and Lake Whatcom Blvd intersection. Project will include approximately 100 linear feet of conveyance improvements by replacing two undersized culverts and regrading a ditch. The project will also install approximately 135 linear feet of water quality facility. Project elements may include: bioinfiltration swales, filter vaults, media filter drains, and rain gardens.

Project Status:

Design is anticipated in 2029-2030 and construction scheduled to take place in 2031.

Total Estimated Project Cost: \$475,000



Charel Terrace Stormwater Outfall Repair Database ID No. 20-011

Construction Funding Year(s): 2025

Project Narrative:

The December 20, 2018 “Solstice Eve” windstorm caused damage to the stormwater outfall on Birch Point installed as part of the Charel Terrace project in 2011. In March 2019 a “Major Disaster Declaration” that covered Whatcom County for the December storm was granted. In December 2019, the Consolidated Resource Center approved the Washington State Emergency Management Division’s \$110,887 request for Architectural & Engineering Services to assess the site and develop conceptual design options. An RFP was advertised by Whatcom County in March 2020 and Herrera Environmental Consultants completed a preliminary study that assessed the outfall stabilization approaches to maintain a functional outfall. From this study, a temporary repair was constructed in fall 2022 to secure the catch basin to the bluff and reposition the outfall tee. The permanent repair will be constructed in the summer of 2025.

Project Status:

Design occurring in 2021-2024 and construction is scheduled to take place in 2025.

Total Estimated Project Cost: \$797,000



Semiahmo Drive South & Outfall Improvements (BP-2, BP-5)
Database ID No. 18-009 & 18-010

Construction Funding Year(s): 2025

Project Narrative:

This project will improve the stormwater conveyance system at the south end of Semiahmo Drive by upsizing the cross culvert to reduce flooding and increase traffic safety, and reconstruct the outfall conveyance system to the Strait of Georgia damaged during the November 2021 extreme rainfall event.

Project Status:

Design and permitting was initiated in 2021 and will continue into 2025. Construction is scheduled for 2025.

Total Estimated Project Cost: \$1,380,000



Lora Lane Drainage & Tide Gate Modifications (TC1-2)

Database ID No. 18-008

Construction Funding Year(s): 2025

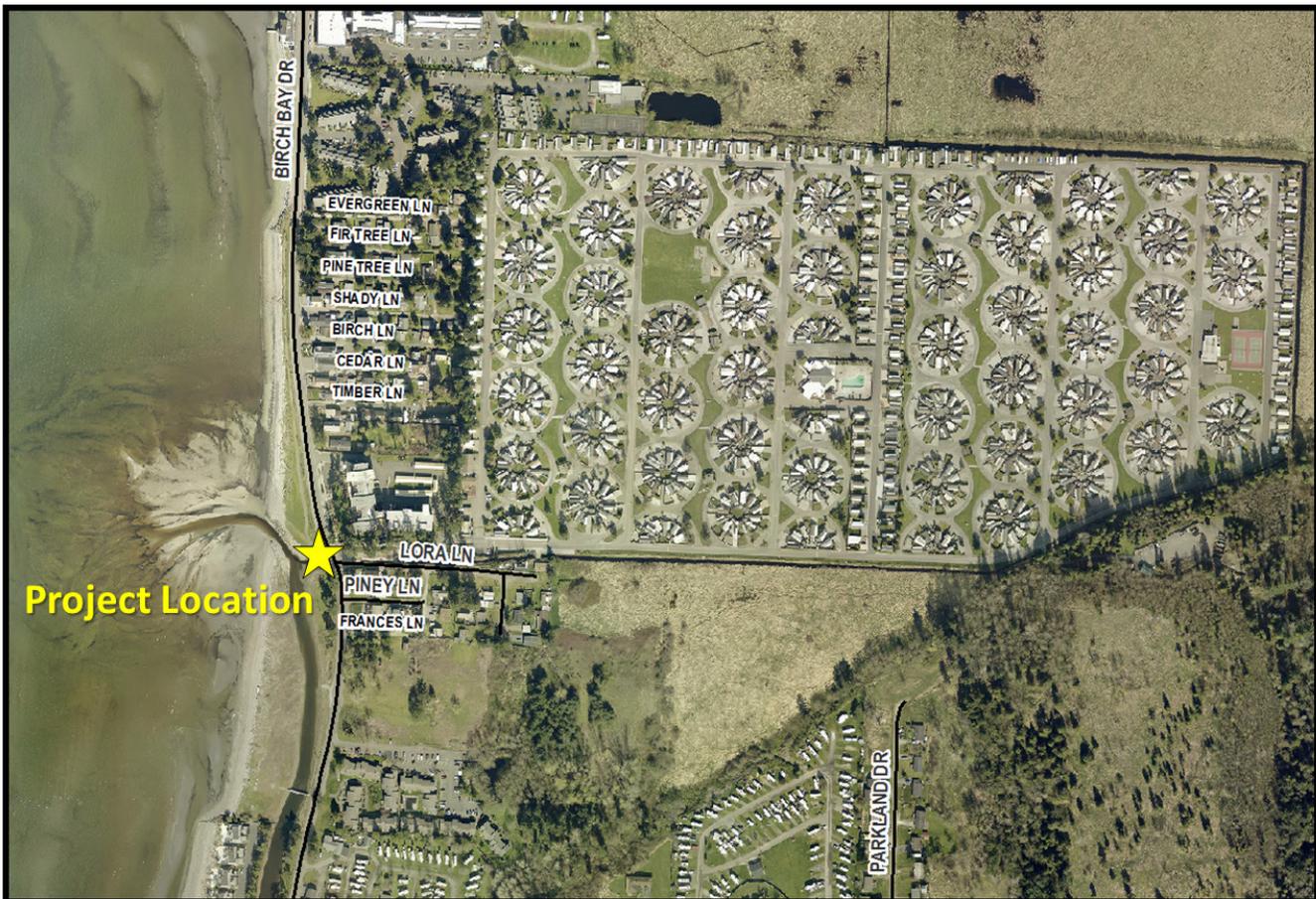
Project Narrative:

The purpose of this project is to replace the existing 48" corrugated metal culvert under Birch Bay Drive with an 8-ft wide fish passable box culvert, replace the existing tide gate on the waterward side of Birch Bay Drive with a new side hinge tide gate, and install shoreline armoring at the outfall area. This project will be a collaboration with the Design and Construction Division of Whatcom County Public Works and the Leisure Park Community.

Project Status:

Preliminary engineering design occurred in 2021. Permanent repair design will begin 2024 and construction is anticipated for 2025.

Total Estimated Project Cost: \$1,710,000



Normar Place Stormwater Improvements (BP-1)
Database ID No. 19-004

Construction Funding Year(s): 2026

Project Narrative:

This project involves upsizing pipes, replacing catch basins and installing an outfall pipe over the bluff with an energy dissipater at Normar Place to reduce roadway flooding, scour and sediment transport.

Project Status:

Design is anticipated in 2024-2025 and construction in 2026.

Total Estimated Project Cost: \$1,336,000



Birch Point Road Stormwater & Outfall Improvements (BP-3 & BP-6) Database ID No. 21-001

Construction Funding Year(s): 2027

Project Narrative:

A corrugated metal outfall pipe over a steep bluff on Birch Point collapsed due to erosional undermining. The driveway culverts, ditches and upstream storm drain system leading to the outfall are undersized and cause flooding and erosion during storm events. This project will involve upsizing culverts, reestablishing ditches and replacing and anchoring the outfall pipe and construction of pipe-end energy dissipater.

Project Status:

Design will be completed in 2025-26. Construction is scheduled to take place in 2027.

Total Estimated Project Cost: \$970,000



Richmond Park Stormwater Improvements (SH-2)
Database ID No. 22-010

Construction Funding Year(s): 2028

Project Narrative:

This project will address drainage concerns in Richmond Park by re-routing the large volume of water that currently moves through the development down Shintaffer Road to an outfall in Birch Bay. It would involve replacing 1,640 feet of ditch/culvert on Shintaffer Road with 36" diameter HDPE pipe, installing 13 Type 2 catch basins and building a new outfall into Birch Bay.

Project Status:

Design will occur in 2026-2027 and construction is scheduled to take place in 2028.

Total Estimated Project Cost: \$2,600,000



Roger's Slough Drainage Improvements Database ID No. 23-002

Construction Funding Year(s): 2029

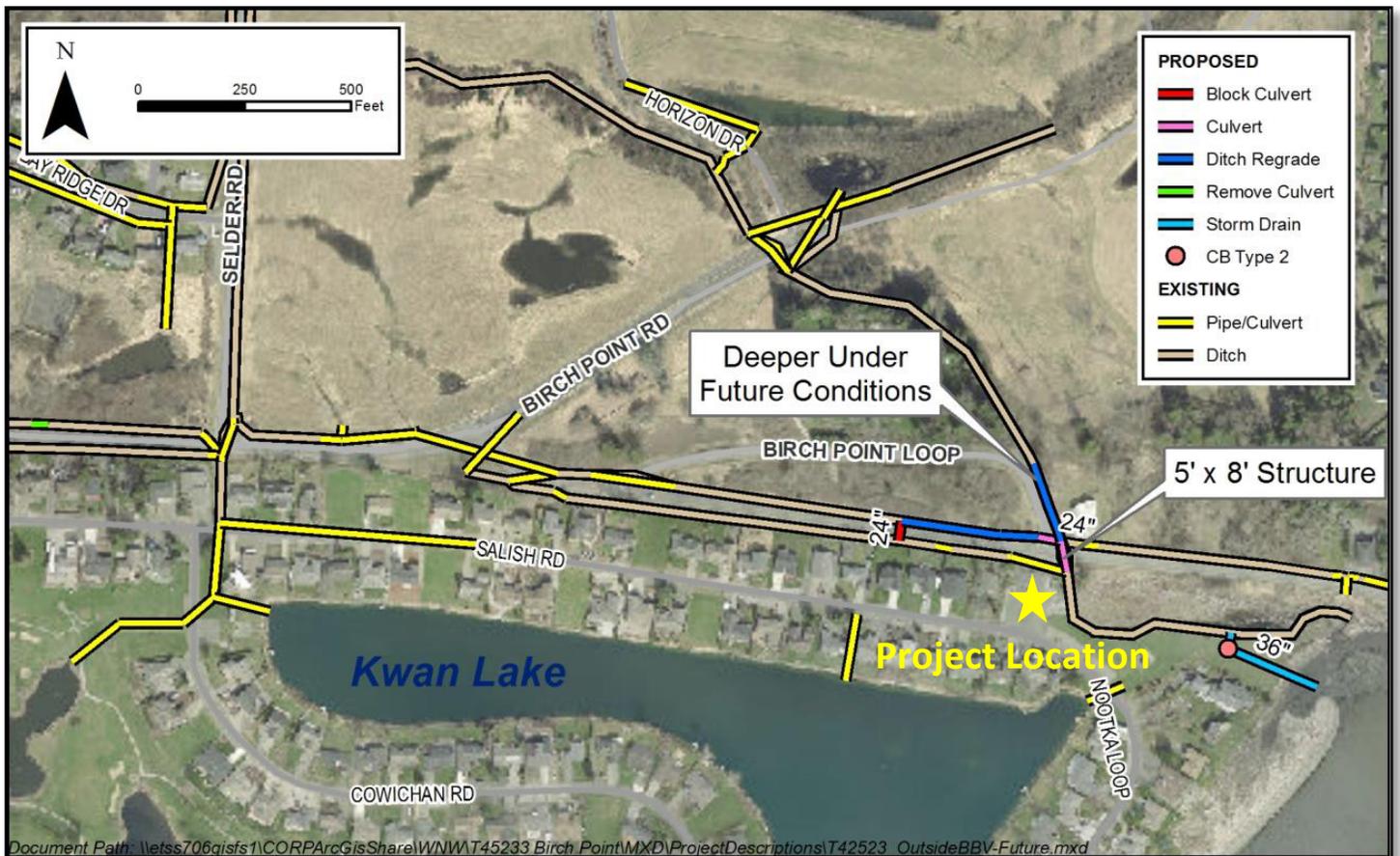
Project Narrative:

This project will address drainage and flooding issues in Birch Bay Village, Birch Bay Drive and Birch Point Loop Road. It will involve replacing twin 30" diameter culverts that direct water under Birch Bay Drive into Roger's Slough with a fish-passable concrete box culvert, installing 285 feet of pipe, regrading 500 feet of ditch, and installing a new Type 2 catch basin and overflow pipe near the mouth of Roger's Slough.

Project Status:

Design will occur in 2027-2028 and construction is scheduled to take place in 2029.

Total Estimated Project Cost: \$2,850,000



Birch Bay Village Drainage Improvements Database ID No. 23-003

Construction Funding Year(s): 2030

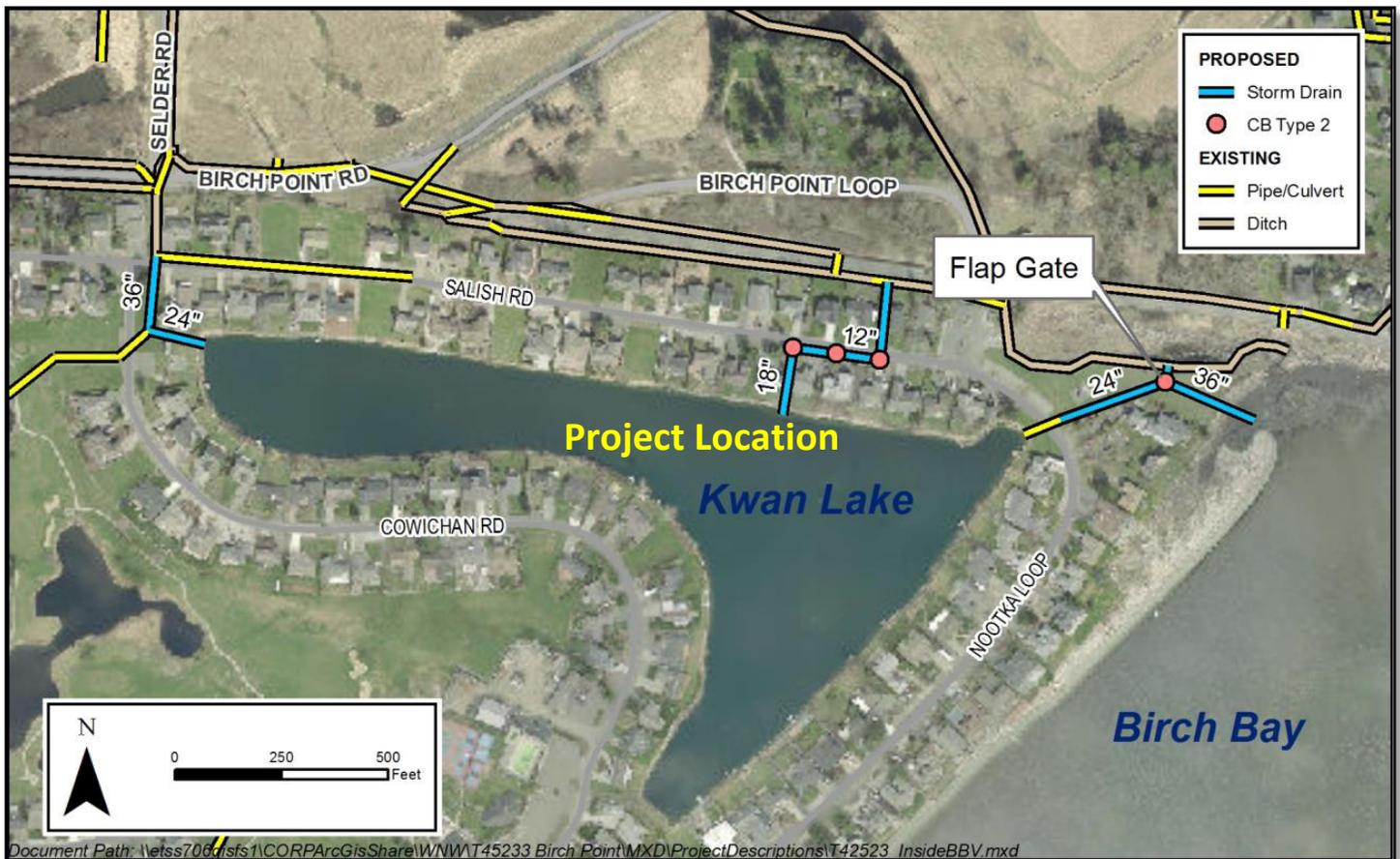
Project Narrative:

This project will address drainage and flooding issues in Birch Bay Village in the vicinity of Salish Road and Kwan Lake. It will involve installing or replacing 1,400 lineal feet of pipe, installing four new catch basins along Nootka Loop and Salish Road and installing a new 36" diameter flap gate near Nootka Loop to reduce tidal backwatering.

Project Status:

Design will occur in 2028-2029 and construction is scheduled to take place in 2030.

Total Estimated Project Cost: \$1,310,000



Bay Ridge Estates Drainage Improvements Database ID No. 23-004

Construction Funding Year(s): 2031

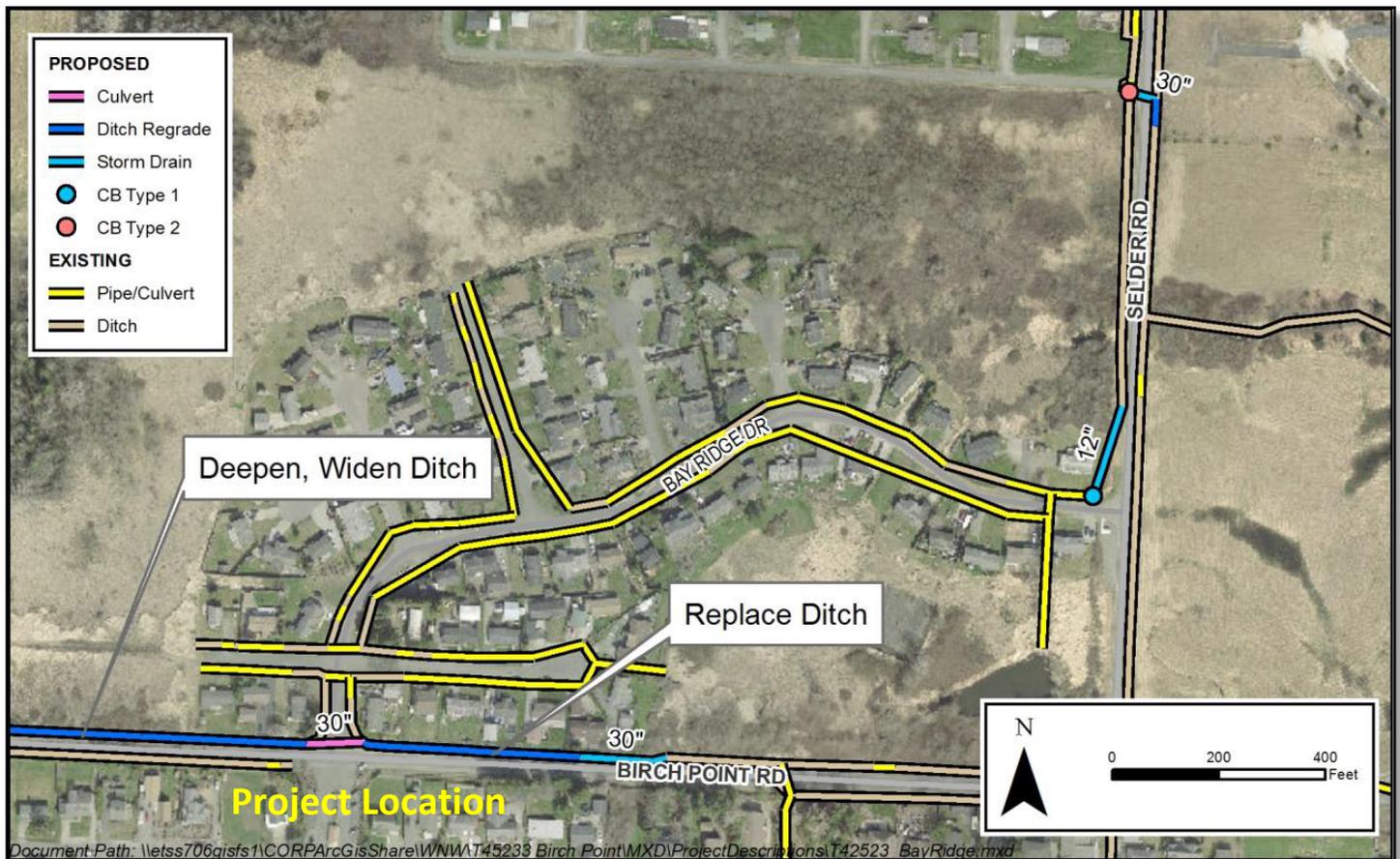
Project Narrative:

This project will address drainage and flooding issues in Bay Ridge Estates and along Selder Road. It will involve installing or replacing 500 lineal feet of pipe, regrading 1,000-feet of ditch, and installing two new catch basins on Selder Road and Birch Point Road.

Project Status:

Design will occur in 2029-2030 and construction is scheduled to take place in 2031.

Total Estimated Project Cost: \$770,000



Wooldridge Avenue & Sunset Drive Stormwater Improvements (TC-2) Database ID No. 13-007

Construction Funding Year(s): 2032

Project Narrative:

This project will improve the conveyance system along Wooldridge Avenue, Jackson Road and Sunset Drive by upsizing pipes, installing or replacing catch basins and culverts, reestablishing roadside ditches, and installing a water quality filter vault and treatment swale.

Project Status:

Design is anticipated in 2030-2031 and construction is scheduled to take place in 2032.

Total Estimated Project Cost: 1,220,000



Truck Road Bank Stabilization Database ID No. 20-003

Construction Funding Year(s): 2022 and 2024

Project Narrative:

The project is located along Truck Road about 0.3 miles easterly from Mt. Baker Highway (SR 542). During high-water events of the 2017/2018 winter, the North Fork Nooksack River eroded the unprotected bank of Truck Road to within 13 feet of the roadway surface. This prompted an emergency project to construct a passive riprap revetment underneath a section of the roadway to provide immediate protection. Flooding during 2020 eroded the remaining bank exposing the recently constructed riprap revetment and destabilizing a portion of the north bound lane. Jersey barriers were placed by county crews to block off this lane to traffic. Additional erosion sustained the November 2021 floods, threatened the road downstream of the previous damage area. The FCZD undertook an emergency project to address the immediate threat to truck road. In 2024, additional work provided environmental mitigation for that action and to repair and realign the damaged section of road.

Project Status:

The FCZD has completed the emergency repair and is currently designing and permitting the associated Phase 2 project that will provide environmental mitigation and road repair. Construction of the Phase 2 project is anticipated to occur in 2024, with planting and restoration scheduled for 2025. The FCZD anticipates that FEMA and the State will fund 95% of the project through the Public Disaster Assistance program

Total Estimated Cost:	\$2,945,000
Expenditures to Date:	\$2,888,000



Devries Levee Improvements Database ID No. 19-001

Construction Funding Year(s): 2025

Project Narrative:

This project involves widening the levee crest and backsloping the levee to meet the US Army Corps of Engineers's levee geometry standards for levees in the Public Law (PL) 84-99 Levee Rehabilitation Program (SWIF project).

Project Status:

The Diking District is proposing to utilize the excess fill generated from the Cougar Creek project to complete the backsloping work.

Total Estimated Cost: \$10,000

Expenditures to Date: \$0



Cougar Creek Early Action / Neevel Levee Bank Stabilization Database ID No. 16-008

Construction Funding Year(s): 2025

Project Narrative:

The Neevel Levee provides varying levels of protection to a significant amount of agricultural land. Approximately 250 feet of the levee running along Cougar Creek is over-steepened and experiencing sloughing of the riverward face. A stabilization project incorporating large woody debris at the toe and reducing the slope of the riverward face is proposed in the System-wide Improvement Framework (SWIF) to resolve the deficiency identified by the US Army Corps of Engineers and keep the levee eligible for repair under the Public Law (PL) 84-99 Program. An early action project developed through the Floodplain Integrated Planning (FLIP) process includes replacement of the Cougar Creek flood gate and installation of large woody debris in the channel downstream.

Project Status:

Design of the project has been finalized. Construction is anticipated for 2025 with funding through NRCS's EQIP program, and Floodplains by Design (FbD).

Total Estimated Cost: \$2,711,000

Expenditures to Date: \$383,000



**Acme Woody Revetment Repair
Database ID No. 23-005**

Construction Funding Year(s): 2025

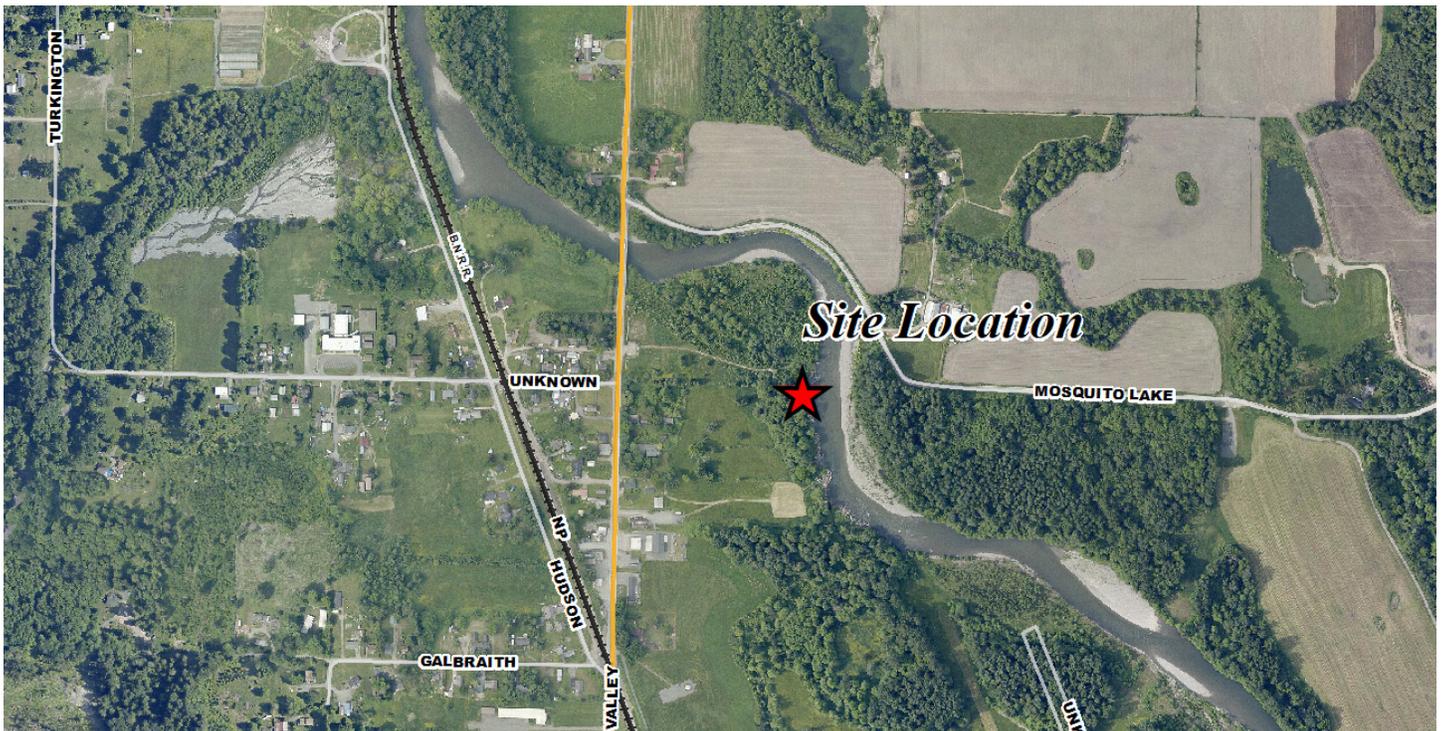
Project Narrative:

The project site is an approximately 1/4-mile long section of eroding bank located along the left bank of the South Fork Nooksack River in the unincorporated community of Acme in Whatcom County. In 2009 and 2010 the Flood Control Zone District constructed multiple log jams and woody revetments to discourage lateral erosion and stabilize the lower reach of Landingstrip Creek for the purpose of enhancing critical habitat for ESA listed species and providing flood protection to the Acme community and the SR 9 bridge. Flooding in November 2021 damaged the lower portion of the project, destabilized the wood structures, and eroded the streambank. The proposed project will repair the woody revetment along the new stream alignment.

Project Status:

Design is anticipated to start in 2024 and construction is anticipated in the Summer of 2025 with funding through FEMA and FCZD.

Total Estimated Cost:	\$1,146,000
Expenditures to Date:	\$65,650



**Bertrand Creek Levee Stabilization
Database ID No. 16-005**

Construction Funding Year(s): 2025

Project Narrative:

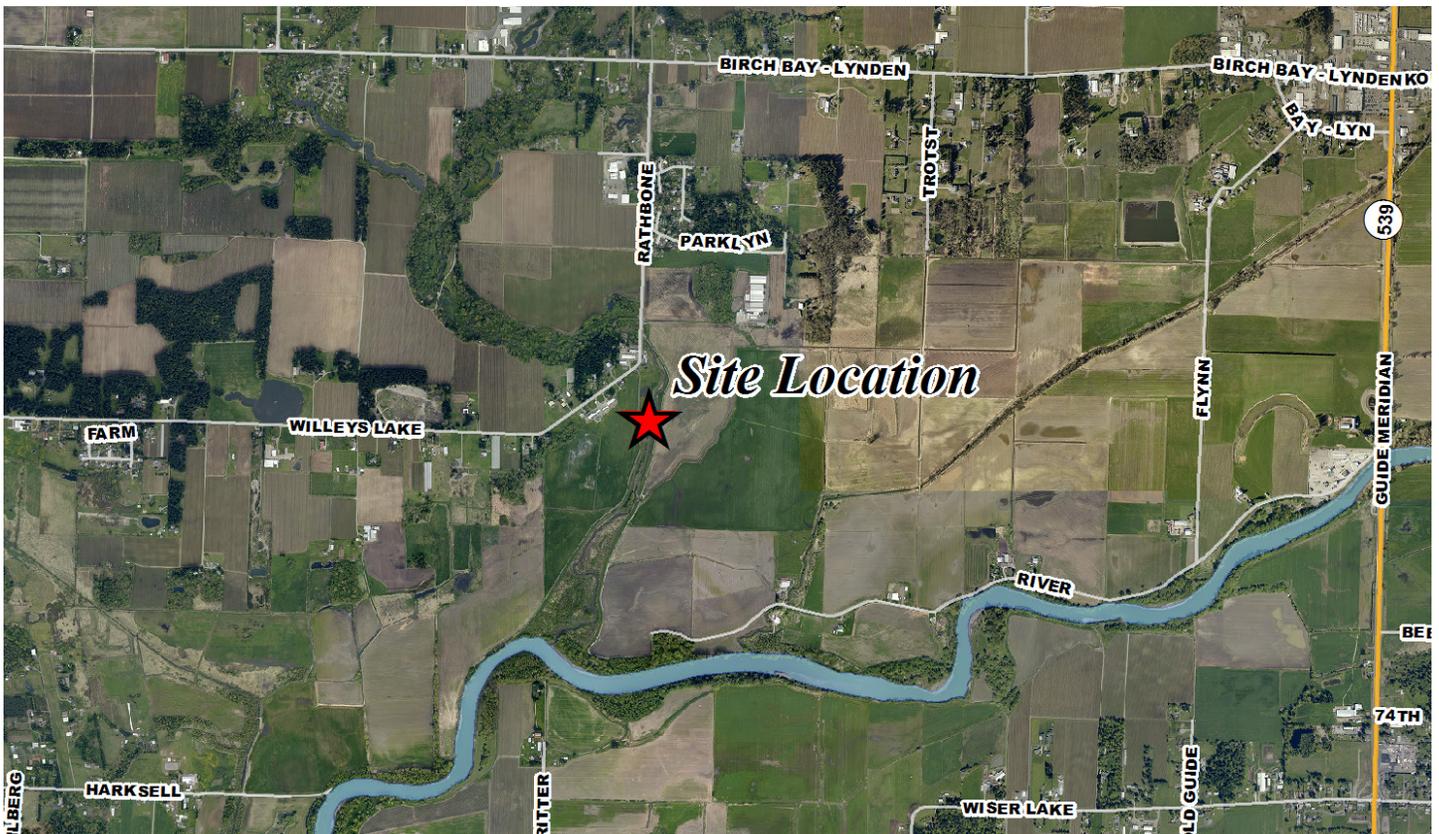
The Bertrand Creek right and left bank Levees are designed to overtop during larger floods, but provide protection to agricultural land during the growing season. The left bank levee has a 250 foot long section where erosion is threatening the levee prism. The levee will have to be repaired to remain eligible for rehabilitation through the US Army Corps of Engineers Public Law (PL) 84-99 Levee Rehabilitation Program.

Project Status:

The project has been designed by the FCZD. Construction is anticipated in the Summer of 2025.

Total Estimated Cost: \$213,000

Expenditures to Date: \$21,500



Upper Hampton Levee Improvements Database ID No. 16-006

Construction Funding Year(s): 2026

Project Narrative:

Several deficiencies were identified by the US Army Corps of Engineers on the Upper Hampton Levee. Improvements to the levee geometry are proposed in two locations and improvement to address seepage is proposed at a third location.

Project Status:

A conceptual design has been developed as part of the System-wide Improvement Framework (SWIF) planning process. Detailed design has not been initiated yet. However, we were able to complete a portion of the levee backsloping work at one site using excess material generated at the 2021 Abbott and Lynden Levee Improvement projects.

Total Estimated Cost: \$61,000

Expenditures to Date: \$6,000



Abbott Levee Protection and Improvement Project Database ID No. 16-007

Construction Funding Years: 2021 and 2028

Project Narrative:

The project is located along Abbott Road about 1.7 miles east of Hannegan Road. Erosion along the Nooksack River removed a section of riprap that previously protected the land adjacent to the Abbott Levee and Abbott Road. Phase 1 of this project addressed the ongoing erosion in this location. The FCZD is also investigating possible road and levee setback options to improve the upstream tie-in of the levee and address a deficiency identified by the US Army Corps of Engineers to maintain the levee's eligibility in the PL 84-99 Levee Rehabilitation Program. This work will be implemented as a second phase of the project.

Project Status:

Construction of Phase 1 was completed during Summer or 2021. The FZCD is working with the project consultant on Phase 2. Phase 2 will include a reach assessment to provide the technical basis for developing alternatives for upstream improvements. The FZCD will utilize this reach scale analysis to develop a capital project for Phase 2. Phase 2 construction is anticipated in 2027.

Total Estimated Cost: \$3,020,000

Expenditures to Date: \$1,099,000



Dahlberg Wetland Mitigation Site Database ID No. 20-004

Construction Funding Year(s): 2027 - 2028

Project Narrative:

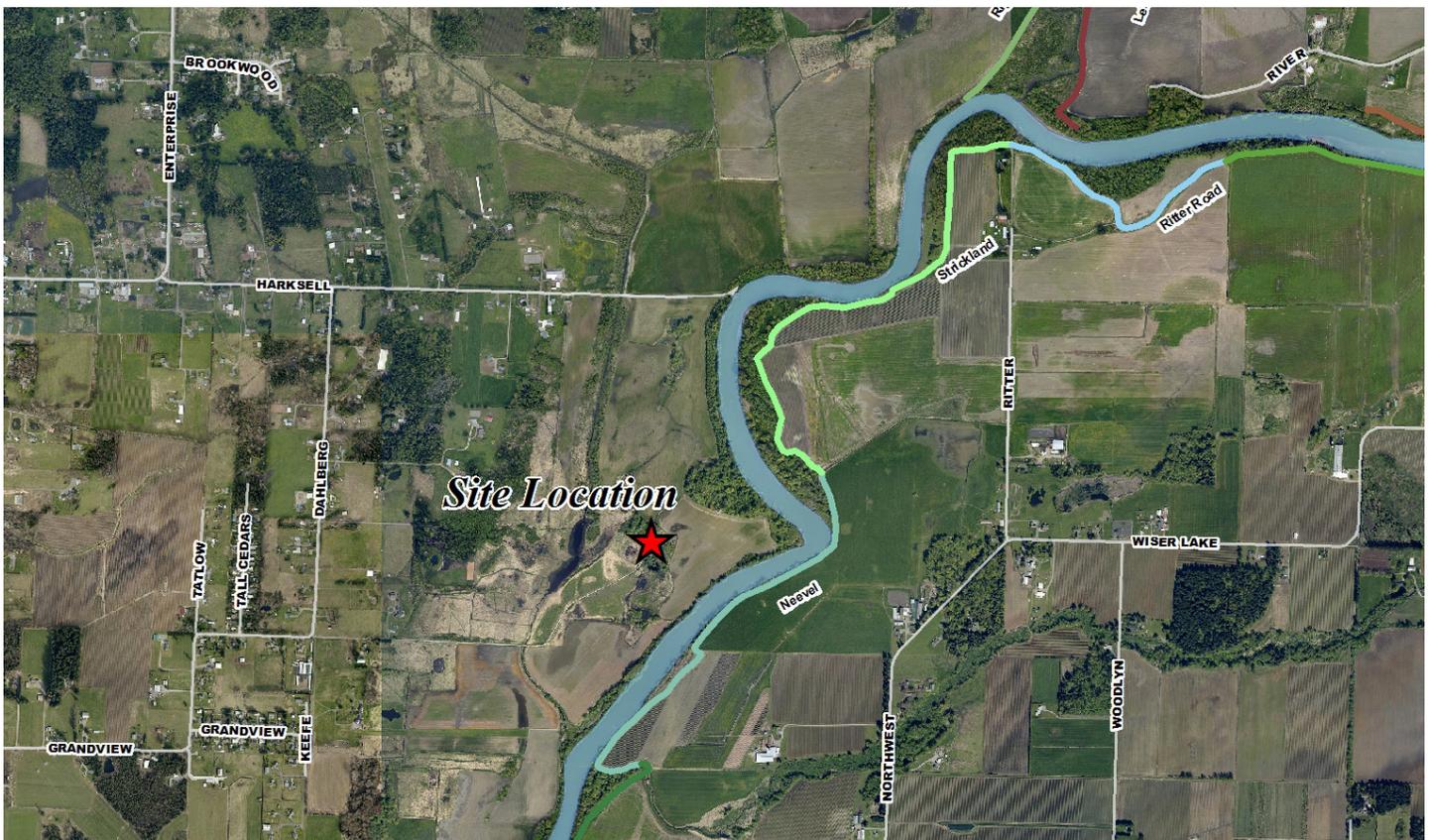
The FCZD purchased a property northeast of Ferndale as a mitigation site for future projects having wetland or riparian impacts. The property contained a dilapidated farm house.

Project Status:

FCZD purchased the subject property and demolished the farm house in Fall of 2020. The FCZD has installed a groundwater monitoring network on the site to support developing a long-term restoration plan for the site.

Total Estimated Cost: \$2,800,000

Expenditures to Date: \$882,000



Hudson Road Bridge No. 132 Repair Database ID No. 22-001

Construction Funding Year(s): 2024 and 2028

Project Narrative:

The project is located near the dead end of Hudson Rd in Acme, WA. The FCZD purchased the property at the end of this road as a part of the Jones Creek Debris Flow Risk Reduction Project. The approaches to the bridge that serves the property were damaged during the November 2021 flood events. The flood damaged was repaired in 2024 to restore access. However, as a part of the Hydraulic Project Approval permit, the Department of Fish and Wildlife has required that the crossing be replaced with a new bridge that is consistent with WDFW Water Crossing Design Guidelines within five years. In 2025 the FCZD will commence an bridge replacement alternatives analysis that will evaluate the challenges associated with Jones Creek debris flow hazards and neighboring habitat restoration efforts.

Project Status:

FCZD completed the design, permitting, and construction of the temporary repair in 2024. The FCZD has provided FEMA with the damages and cost estimate to perform the temporary repair, and will continue to coordinate the full bridge replacement. An alternatives analysis for the bridge replacement and fish-passage study will start in 2025. The construction for the bridge replacement is expected in 2028. The FCZD anticipates that FEMA and the State will fund 95% of the project through the Public Disaster Assistance program.

Total Estimated Cost:	\$5,993,000
Expenditures to Date:	\$52,500



Glacier-Gallup Creeks Alluvial Fan Restoration Database ID No. 18-006

Construction Funding Year(s): 2023, 2029 and 2030

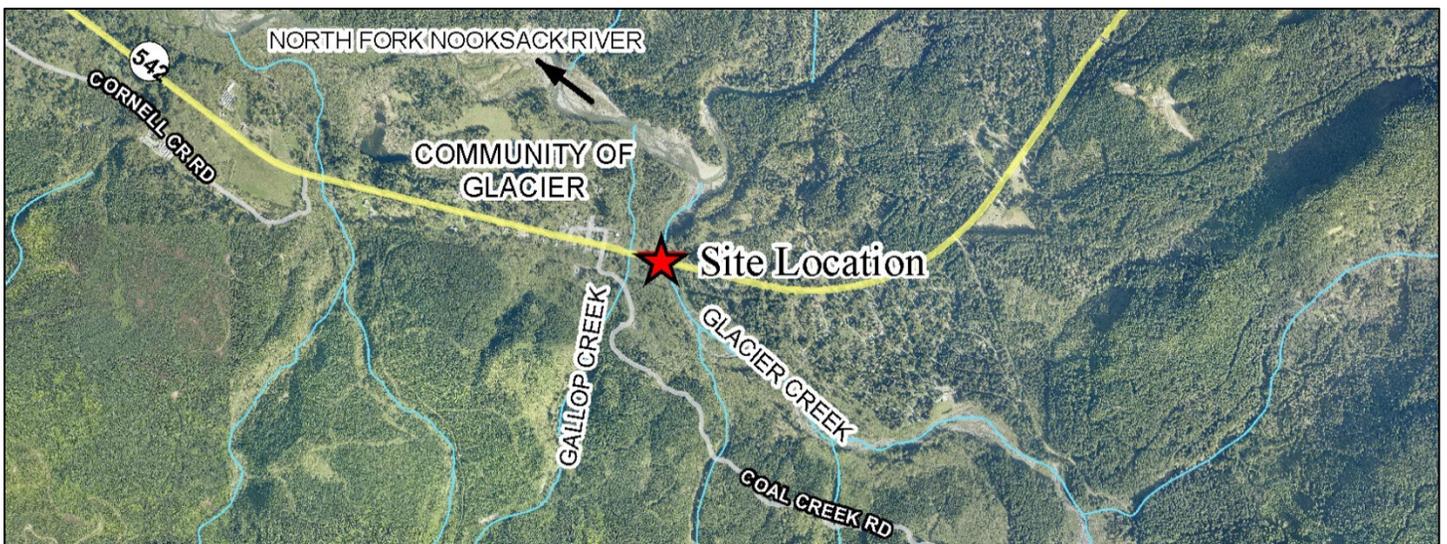
Project Narrative:

The Glacier Creek Levee on the left (west) bank of the creek was constructed in the 1960s to prevent overflows into Gallup Creek and damage to State Route (SR) 542. Since construction, the levee has been subject to ongoing damage. Constriction of the Glacier-Gallup channel migration zone (CMZ) has exacerbated aggradation upstream of SR 542 and severely degraded fish habitat. WSDOT replaced the Gallup Creek bridge in 2010 and is working to construct a new bridge over Glacier Creek and the alluvial fan between the two creeks. The FCZD is developing a project in coordination with WSDOT and is evaluating the feasibility of full or partial removal of levees blocking natural channel migration on the Glacier and Gallup Creeks alluvial fan and construction of a setback levee on Gallup Creek to protect the Community of Glacier.

Project Status:

A feasibility study and alternatives analysis for evaluating levee removal and setback alternatives was initiated in late 2018. Preliminary design of the preferred alternative will be initiated once the preferred alternative is selected. Construction of an interim project to address levee damage was completed in 2023. Construction of the levee removal and setback is anticipated will be coordinated with Glacier Creek bridge replacement. Construction is anticipated in 2029 and 2030.

Total Estimated Project Cost:	\$15,000,000
Expenditures to Date:	\$1,375,000



Ferndale Levee Improvement Project Database ID No. 07-104

Construction Funding Year(s): 2027 - 2030

Project Narrative:

Two levee segments, one sponsored by the City of Ferndale and one by the FCZD and Diking District #1 in the US Army Corps of Engineer's Public Law (PL) 84-99 Levee Rehabilitation Program, provide protection to the three treatment facilities along Ferndale Road. The US Army Corps of Engineers has identified several deficiencies along these two levee segments, including a gap in which super sacks filled with sand have been placed. The 1999 Comprehensive Flood Hazard Management Plan recommended improving these levees to provide 100-year protection to the City and the treatment facilities. The System-wide Improvement Framework (SWIF) also includes this project to address the identified levee deficiencies.

Project Status:

This project is currently in the design phase. A preferred alternative for the levee and road alignment has been selected. A 60 percent design level plan of the proposed levee configuration is anticipated at the end of 2024, a 90 percent design level plan is anticipated in 2025, and final design for each phase will be in 2026 and 2027. Grant funding through the State's Floodplain's by Design program has been secured to complete the design. Construction is anticipated to be phased with construction beginning in 2027 and lasting through 2030.

Total Estimated Construction Cost: \$20,203,000

Expenditures to Date: \$1,008,000



**South Fork Nooksack Fish Camp (Ts'eq) Integrated Project
Database ID No. 24-001**

Construction Funding Year(s): 2025 - 2027

Project Narrative:

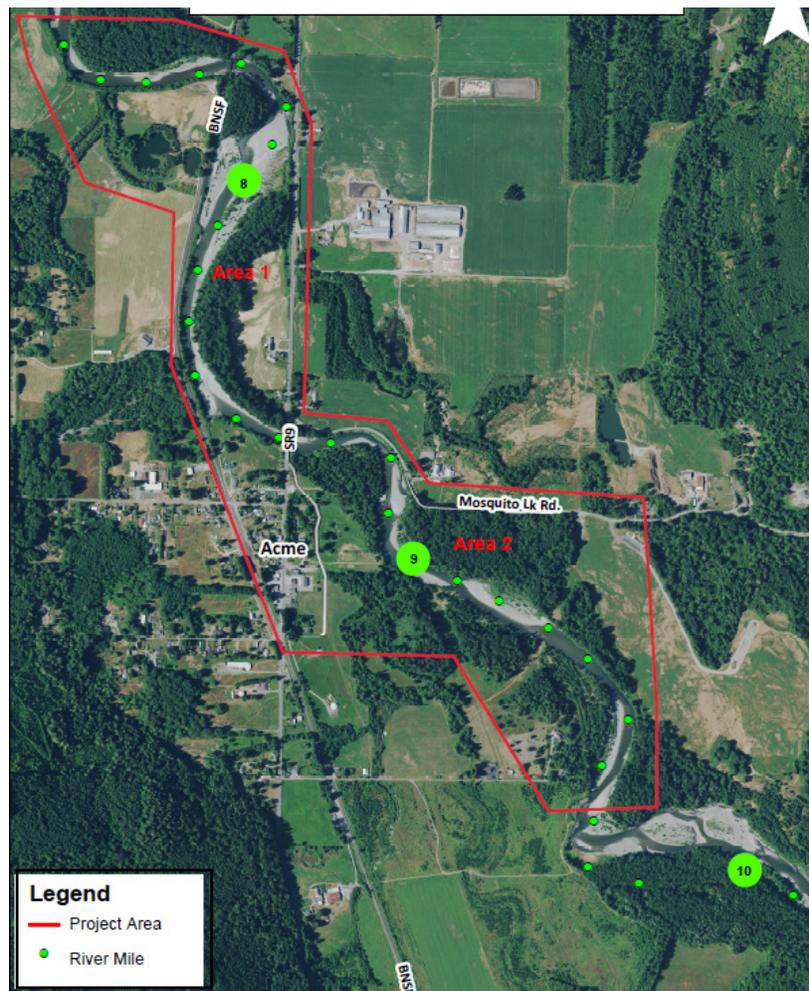
The South Fork Nooksack River Fish Camp (Ts'eq) Integrated Flood and Fish Project (Fish Camp Project) is a collaboration of the Nooksack Indian Tribe Natural Resources Department (Tribe) and the FCZD to develop broadly-supported, multi-beneficial solutions to reduce flood risk to the Acme community and restore habitat for ESA-listed early-timed Chinook salmon and other salmonid species. The Fish Camp Project Area is located in the lower South Fork Nooksack River valley downstream and upstream of the town of Acme between river mile (RM) 7.3 and RM 9.7, respectively. The Project Area includes the SFNR mainstem channel and floodplain habitats and extends from the end of Rothenbuhler Rd. in the south to just downstream of the BNSF railway bridge in the north. The State Route (SR) 9 bridge crosses over the SFNR near RM 8.6 and conveniently separates the project area into upstream (Phase 2) and downstream (Phase 1) sections.

Project Status:

Design and log Procurement in 2025, Phase 1 Construction in 2026, Phase 2 Construction (incl Berms) in 2027

Total Estimated Cost: \$3,340,000

Expenditures to Date: \$11,000



Floodplain Acquisition Database ID No. 07-002

Acquisition Funding Year(s): 2017- TBD

Project Narrative:

Reach-scale projects to reconfigure flood infrastructure are being evaluated through the integrated planning processes that started with the System-wide Improvement Framework (SWIF) and has transitioned into the Floodplain Integrated Planning (FLIP) process. The goal of this work is to reduce flood risk and expenditures and restore habitat and the processes that form it.

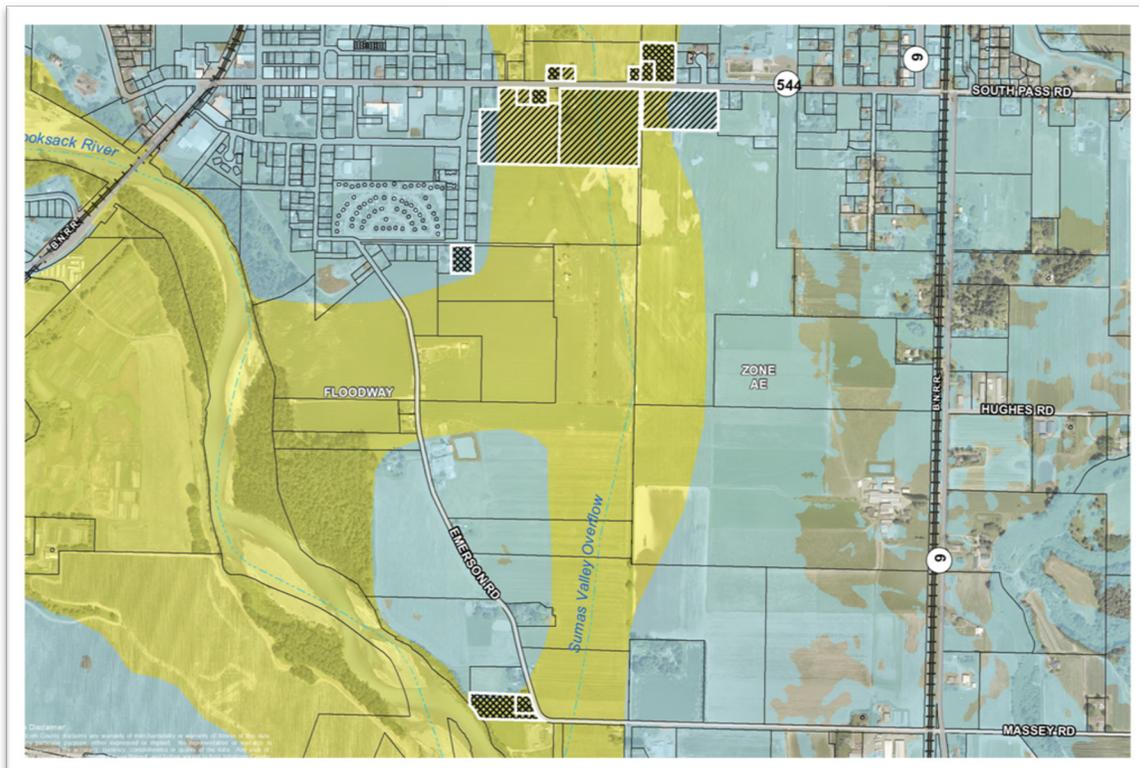
Voluntary acquisition of lands is proposed to enable future levee reconfigurations to reduce flood risk and future levee repairs, while improving habitat.

Project Status:

Acquisition of 12 properties and demolition of associated structures occurred in 2024 and additional acquisitions and demolitions are anticipated in 2025. Acquisitions are targeted in areas that sustained significant damage in 2021, in areas mapped as FEMA floodways and areas that will enable future flood hazard reduction projects

Total Estimated Cost: N/A

Expenditures to Date: N/A



Marietta Acquisition Database ID No. 07-002

Construction Funding Year(s): 2001 - Present

Project Narrative:

Acquisition of residential properties in the frequently-flooded repetitive flood loss area of Marietta, removal of existing structures and restoration of properties with native vegetation.

Project Status:

Property acquisition began in 2001 and is ongoing. As properties are acquired, structures are removed and native vegetation is planted. All acquisitions are voluntary and the project is ongoing as current property owners decide to sell their properties. Total project cost will need to include funding for cleanup of up to four former gas stations, though the exact nature of the work is still undefined.

Total Estimated Project Cost: N/A

Expenditures to Date: N/A



High Creek Sediment Trap Database ID No. 22-005

Construction Funding Year(s): Annually

Project Narrative:

High Creek flooding damaged nearby homes and closed Mount Baker Highway in the mid-1990's. A legal settlement resulting from that event directs Whatcom County to prepare a creek management plan. Sediment management in the watershed including the 3400 feet of County owned right of way east of Kendall Creek is an important plan element along with fish habitat mitigation. State permits for future maintenance dredging are dependent on consistency with the final management plan. A management plan was developed and recommended the construction of two sediment traps, one sited upstream of Mount Baker Highway to trap coarser material and one by the confluence with Kendall Creek to trap finer material. The sediment traps were constructed in 2018. The project provides for the annual clean out of those sediment traps.

Project Status:

The 2025 clean out is anticipated to be complete in September 2025 for a cost of \$100,000. Total Estimated Cost is for annual estimated cleanout costs funded by the FCZD.

Total Estimated Cost: approximately \$120,000 annually

Expenditures to Date: --



Emergency/New Projects
Database ID No. 08-003

Construction Funding Year(s): 2025 - 2030

Project Narrative:

This item provides funding to address unanticipated projects resulting from new damage to flood control facilities.

Project Status:

Design and construction to occur as necessary.

Total Estimated Project Cost: \$425,000/year

Expenditures to Date:

Due to the nature of this item, no map exists. Board of Supervisors review and prioritization will be sought at the appropriate time.