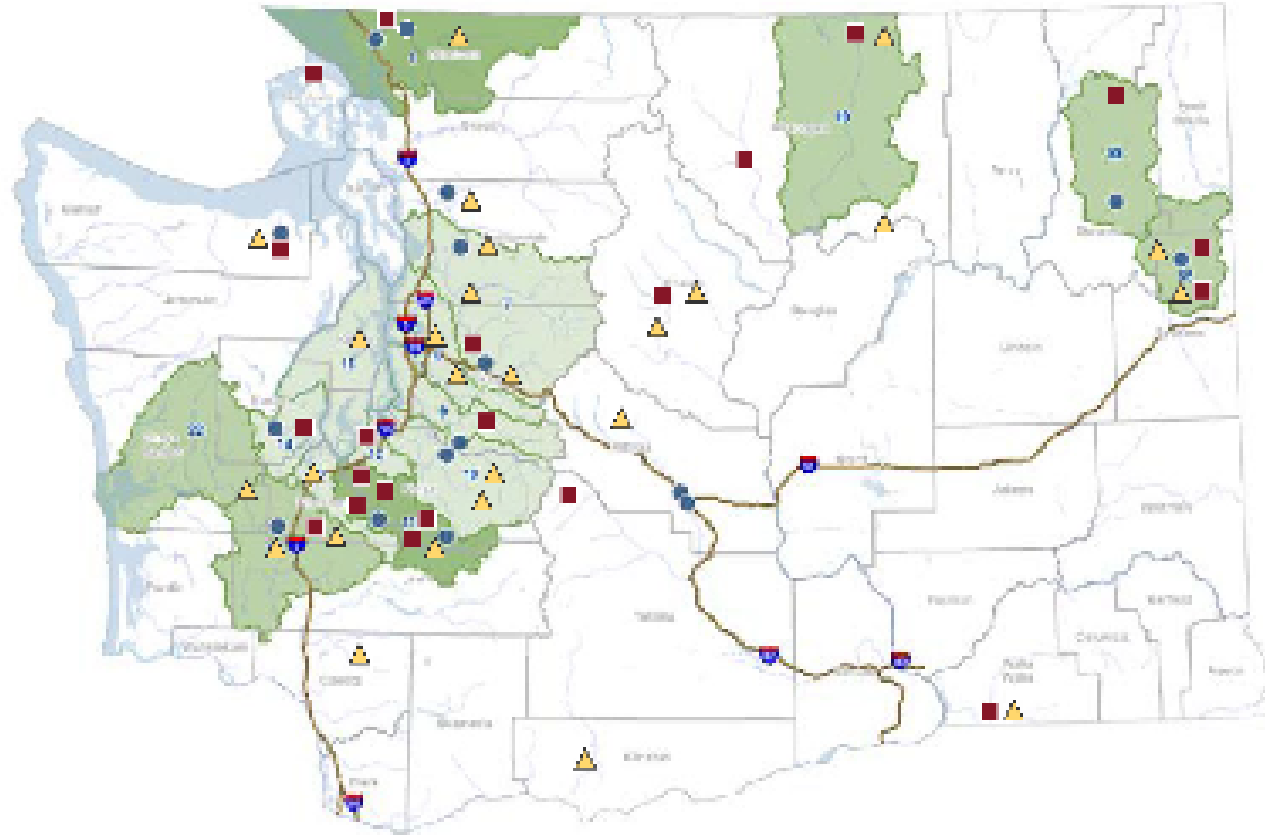




Ecology's Streamflow Restoration Grant Program



Watersheds prioritized for funding under chapter 90.94 RCW

■ RCW 90.94.020

■ RCW 90.94.010

● 2019 Grant Projects

■ 2020 Grant Projects

▲ 2022 Grant Projects

■ 168 total applications received

■ 63 total projects funded

■ \$77 million obligated



- \$40M available to implement streamflow projects
- Competitive, state-wide
- Incentive to implement in identified local watershed plans
- Demonstrate coordination
- Show evidence for benefits, supporting data/reports

South Fork Nooksack Natural Storage Restoration Phase I

- Joint application presented as a priority project of the WRIA 1 Watershed Management Board
- Implements recommendations of the integrated funding strategy
- Implementing partners for application:
 - Whatcom County (fiscal agent)
 - Nooksack Tribe

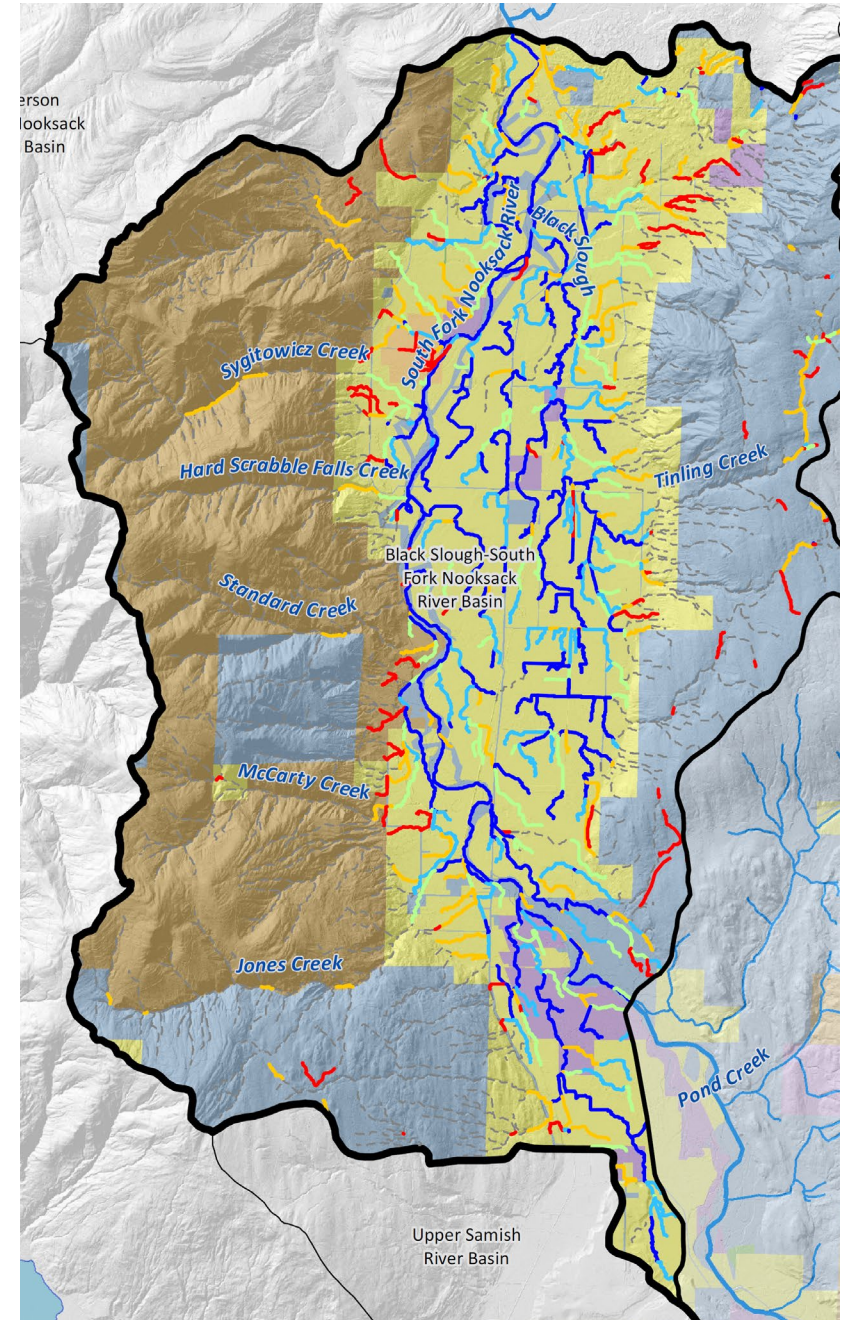


Project Overview

- Task 1: Administration (Ecology requirement; auto-generated)
- Task 2: Black Slough Natural Storage on County-owned properties
- Task 3: Acme Floodplain Natural Storage on County-owned properties
- Task 4: Natural Storage Feasibility Assessment

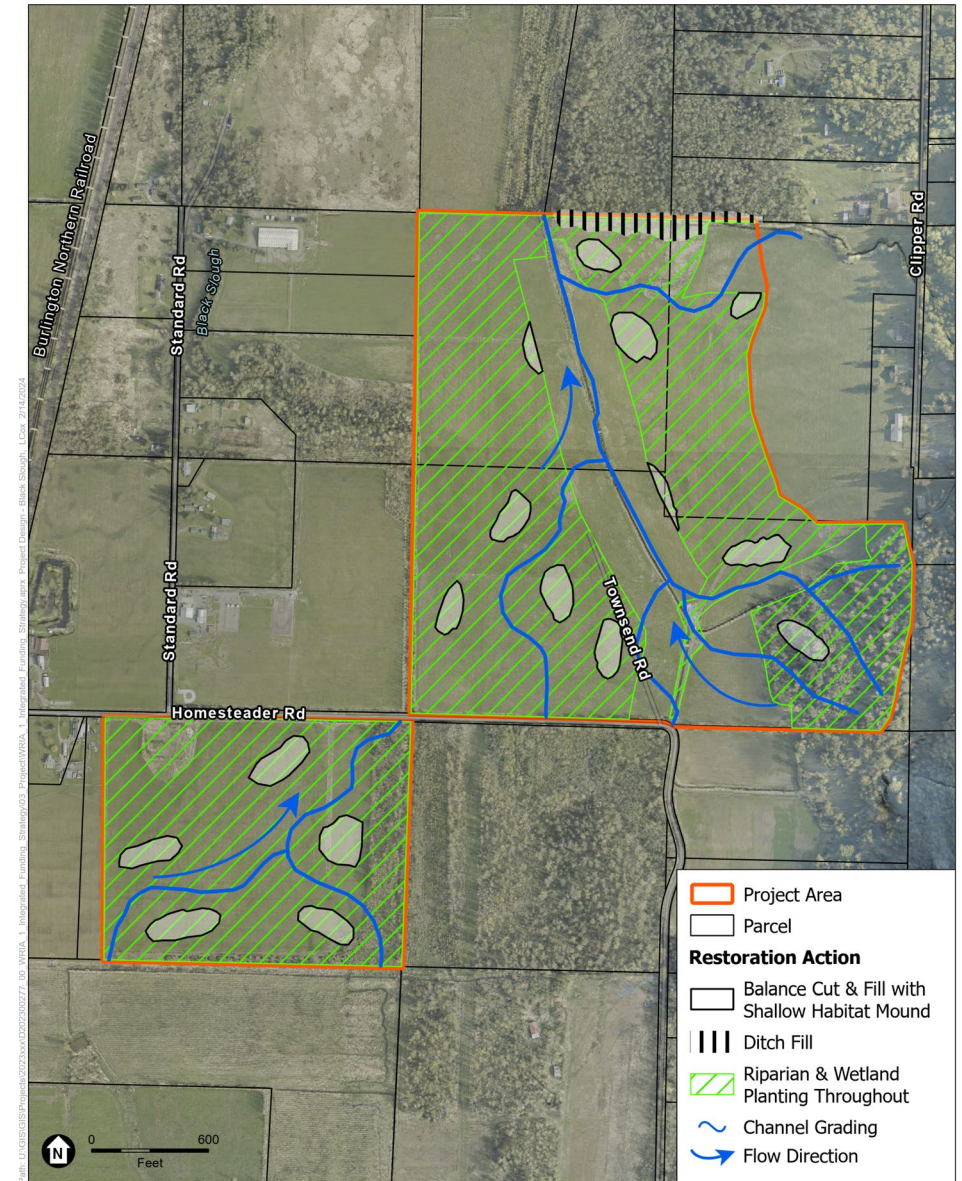
Cost estimate ~ \$2,700,000.00

Estimated Streamflow Benefit – 43.8 acre-feet



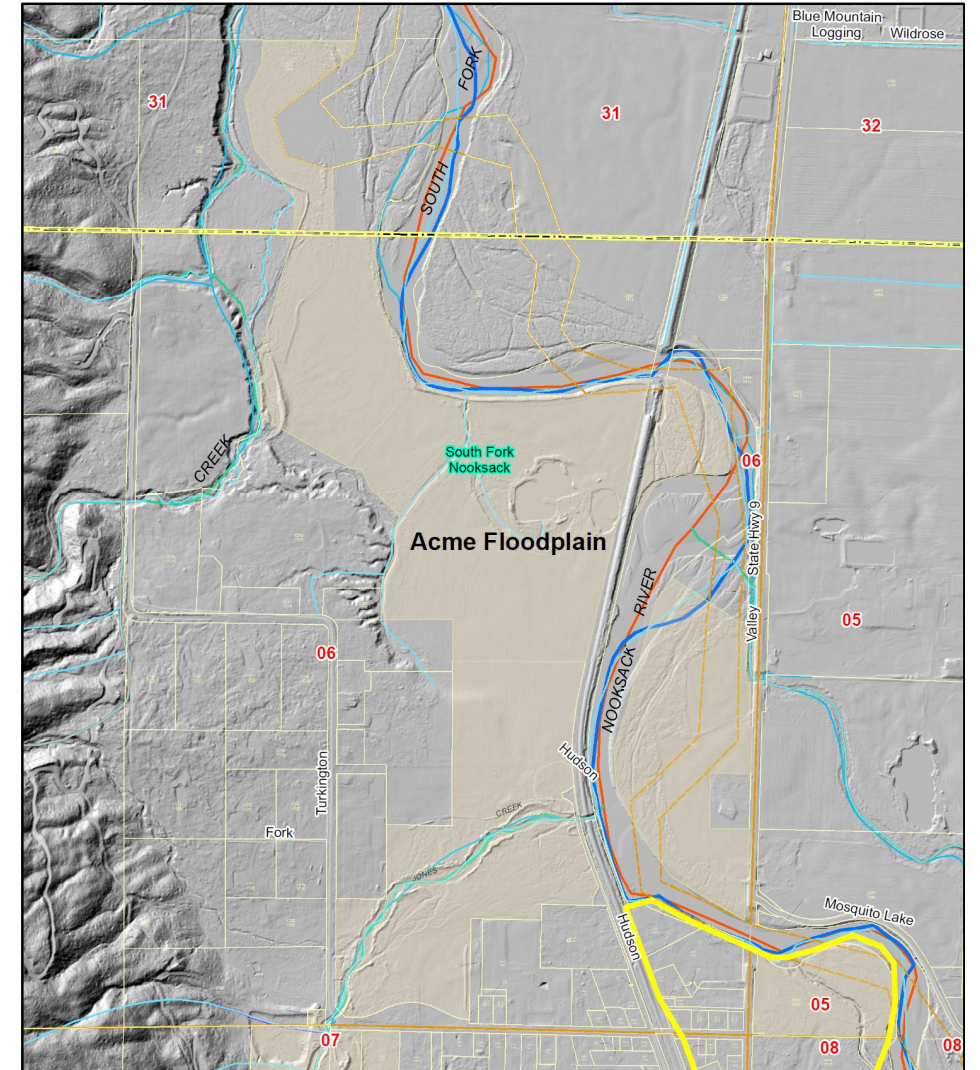
Task 2: Black Slough Natural Storage: Design and Construction

- County-owned property = 166 acres
- Design and implement restoration treatments focused on **de-leveling** and **wetland restoration** for natural storage
- Coordinated with fish passage project



Task 3: Acme Floodplain Natural Storage: Design and Construction

- County-owned property = 124 acres
- Design and implement restoration treatments focused **floodplain storage**, install **Beaver Dam Analogs (BDAs)**, enhance existing features for natural storage
- Coordinated with Fish Camp Restoration Project



Task 4: South Fork Feasibility Assessment

- Focus assessment on Whatcom Land Trust and other private land in the study area
- Analyze restoration options, develop screening criteria, conduct outreach with landowners



Application Priorities and Benefits

- Project is in a priority watershed
- Identified in rule-making document/project list
- No project component is required by statute, rules, ordinance or court order
- Design and construction on County-owned properties
- Part of a larger strategy for the sub-basin
- Quantifiable benefits estimated/updated in recent Water Storage Assessment



WRIA 1 Project No.	Funding Status	Name	Offset (afy)									
			Coastal North (CN)	Coastal South (CS)	Coastal West (CW)	Lk Whatcom (LW)	Lower Nooksack (LN)	Middle Fork (MF)	North Fork (NF)	South Fork (SF)	Sumas (SU)	Total
1	Funded	Dairy Waste Processing/Treatment								13.4		13.4
2		Bertrand Augmentation					170.7					170.7
8		MAR - North Fork site							200			200
19	Partially Funded	Skookum Creek Restoration								1,449		1,449
19NG		Wetland Restoration, Enhancement/Creation								2		2
21		Stewart Mountain/SF Nooksack Conservation				2,413.3*	2,413.3*			2,413.3*		7,240*
23	Funded	Middle Fork Porter Creek Phase 4 Project						11.2				11.2
24	Partially Funded	Birch Bay/Blaine Deep Wells	440				440					880
26		Lower Nooksack SW to GW Conversion Projects					158					158
28		Storage Projects including Gravel Pits					365					365
44	Funded	PUD No. 1: Vista Road Project	194									194
45		PUD No. 1: Lake Terrell/ Coastal Drainages	185		139							324
46NG modified	Partially Funded	WRIA 1 Conservation Program	UNK	UNK	UNK	UNK	UNK	UNK	UNK	UNK	UNK	UNK
Total			819	0	139	0	1,134	11	200	1,464	0	3,767
Offset Needed (afy)			111	43	56	25	101	2	21	4	27	390
Difference			708	-43	83	-25	1,033	9	179	1,460	-27	3,377

Whatcom Climate Vulnerability Assessment Shoreline Management Solutions

Ecology Shorelands Shoreline Planning
Competitive Grant

Task 1 – Project Administration

Task 2 – Complete Coastal Vulnerability
Assessment

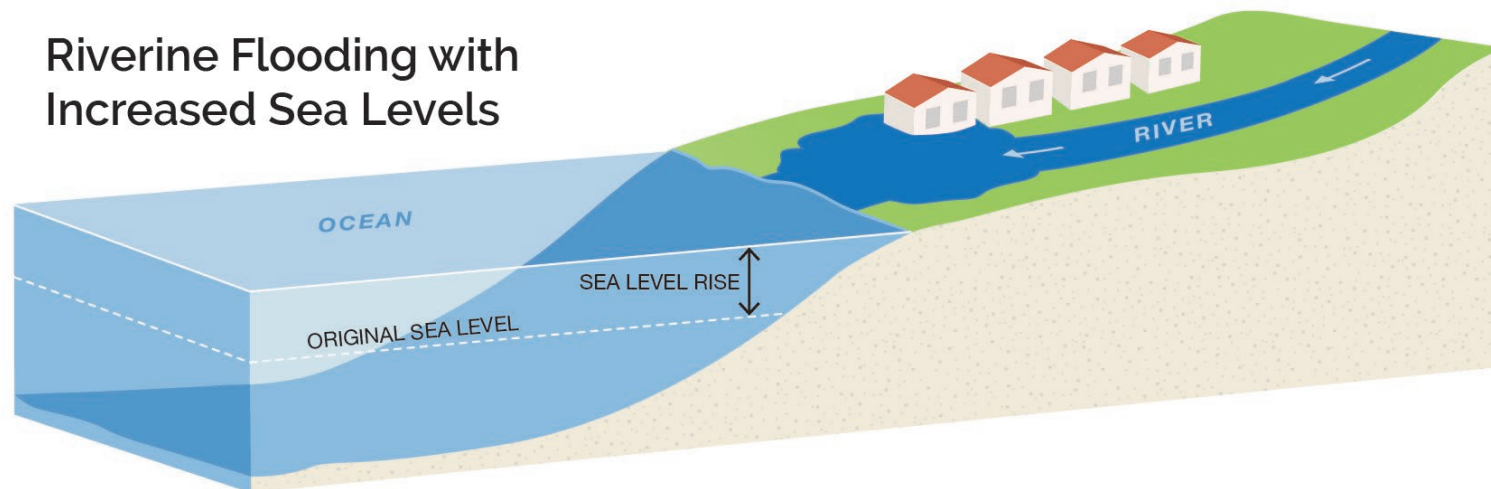
Task 3 – Complete Nooksack River Vulnerability
Assessment

Task 4 – Develop adaptation plan for frontline
communities

Task 5 – Analyze the SMP, Comprehensive Plan,
and Land Use Codes for Consistency with the
Selected Risk Level & Recommend Amendments
to Achieve Consistency



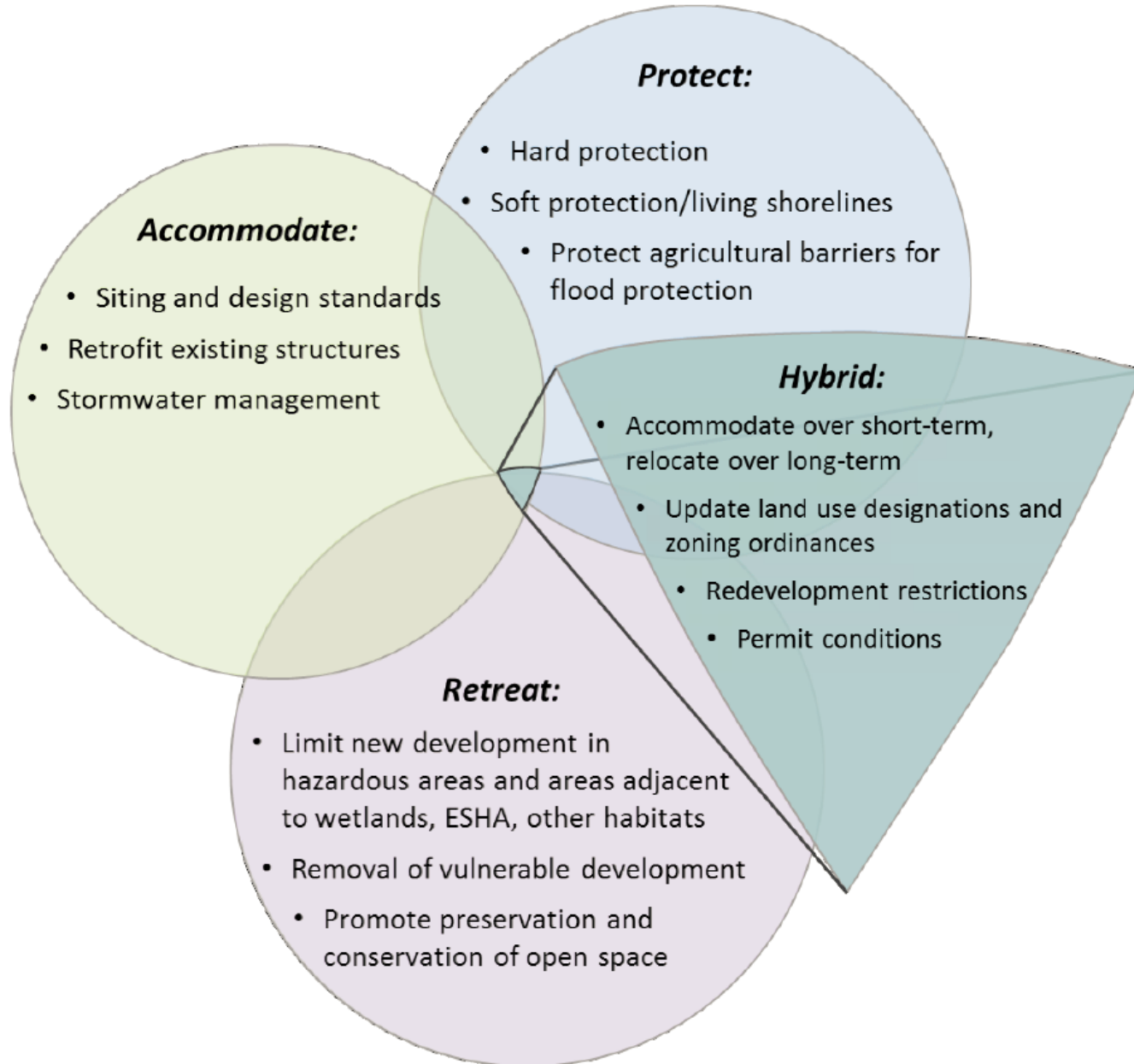
Hazards: Compound Flooding = Coastal + Riverine Flooding



					King Tides (Coastal)			20-25-Year Coastal and Riverine Storm		100-Year Coastal Storm		Erosion		
					Present Day	Short-Term	Mid-Term	Short-Term	Mid-Term	Present Day	Long-Term	2040	2080	2100
Asset	Unit (Count, Miles, or Acres)	Total Analyzed	Data Extent	Data Notes	Current Sea Level	0.8 ft of SLR	3.3 ft of SLR	0.8ft of SLR	3.3 ft of SLR	Current Sea Level	6.6 ft of SLR	11 ft of Erosion	35 ft of Erosion	47 ft of Erosion
Parcels and Structures														
Parcels	Acres	519275.9	County	Total parcel acres as provided by Whatcom County. Includes waterbodies such as Lake Whatcom.	5,093	6,677	9,701	11,551	13,013	7,705	12,795	74	265	368
Buildings	Count	92214	County		133	487	2,238	1,508	2,814	1,977	2,836	94	189	273
Schools	Count	125	Western county		0	0	0	0	0	0	0	0	0	0
Libraries	Count	2	Bellingham	Estadon associated with Birch	0	0	0	0	0	0	0	0	0	0
Transportation														
Roads	Miles	2137.6	County		4.1	10.8	47.2	45.6	71.1	30.6	77.3	0.0	0.4	1.2
Railroads	Miles	99.85	Western county		0.4	0.6	1.1	2.4	3.8	1.6	11.3	0.0	0.1	0.3
Airport	Count	4	Sandy Point		0	0	0	0	1	0	1	0	0	0
Marina	Count	1	Western county		0	0	0	1	1	1	1	0	0	0
Bus Station	Count	2	Bellingham	Long distance buses (i.e. Greyhound)	0	0	0	0	1	0	1	0	0	0



Types of Adaptation Strategies



Existing Adaptation Strategies

- Whatcom County Climate Action Plan
- Lummi Nation Climate Change Mitigation and Adaptation Plan 2016-2026
- Nooksack Indian Tribe Climate Adaptation Plan for Key Species and Habitats
- Addressing SLR in SMPs
- Lessons Learned from Local Governments Incorporating SLR in SMPs
- Sustainable Remediation: Climate Change Resiliency and Green Remediation

PROTECT | ENGINEERED



• Protect – Hard Defensive Structures

- Beach retention structures (such as groins or breakwaters)
- Shoreline protection devices

PROTECT | NATURAL



• Protect – Soft Shore Techniques

- Beach nourishment
- Habitat restoration
- Coastal bluff erosion best management practices
- Large wood management

ACCOMMODATE



- Accommodate – Adapting in Place
 - Elevating or waterproofing structures and infrastructure
 - Elevating property grades



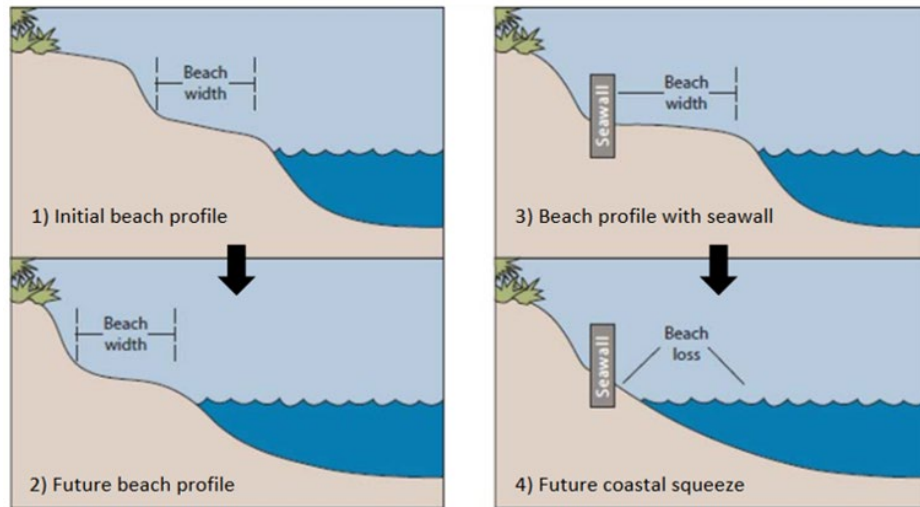
Retreat –

- **Limiting development** in coastal hazard areas (e.g., update floodplain maps to replace 100-year with 500-year floodplain, zoning overlays, setback and buffer requirements, require sea level rise real estate disclosures).
- **Transferring, purchasing, and/or extinguishing development rights** (e.g., buyouts, conservation easements, defeasible estates, zoning/land use code changes).
- Working with and support landowners to **remove or relocate structures** located in current or future hazard zones.

Example Adaptation Strategies

Non-Structural Measures

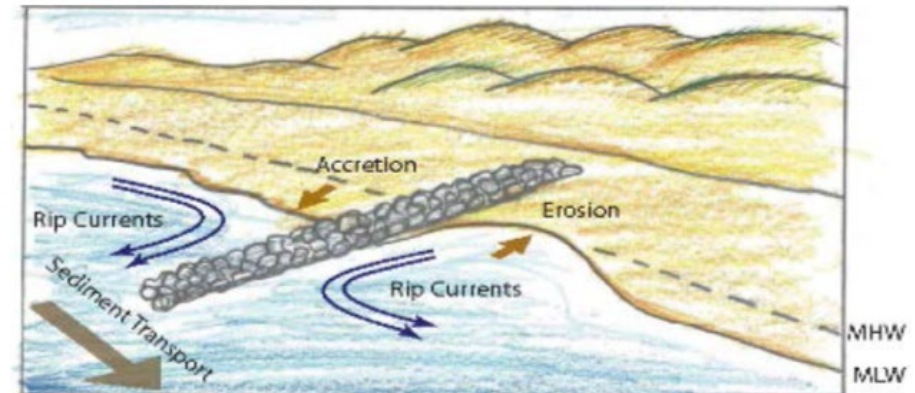
1. Beach Nourishment
2. Habitat Restoration
3. **Coastal Bluff Erosion Best Management Practices (BMP)**
4. Managed Retreat



SOURCE: California Coastal Commission, 2018

Structural Measures

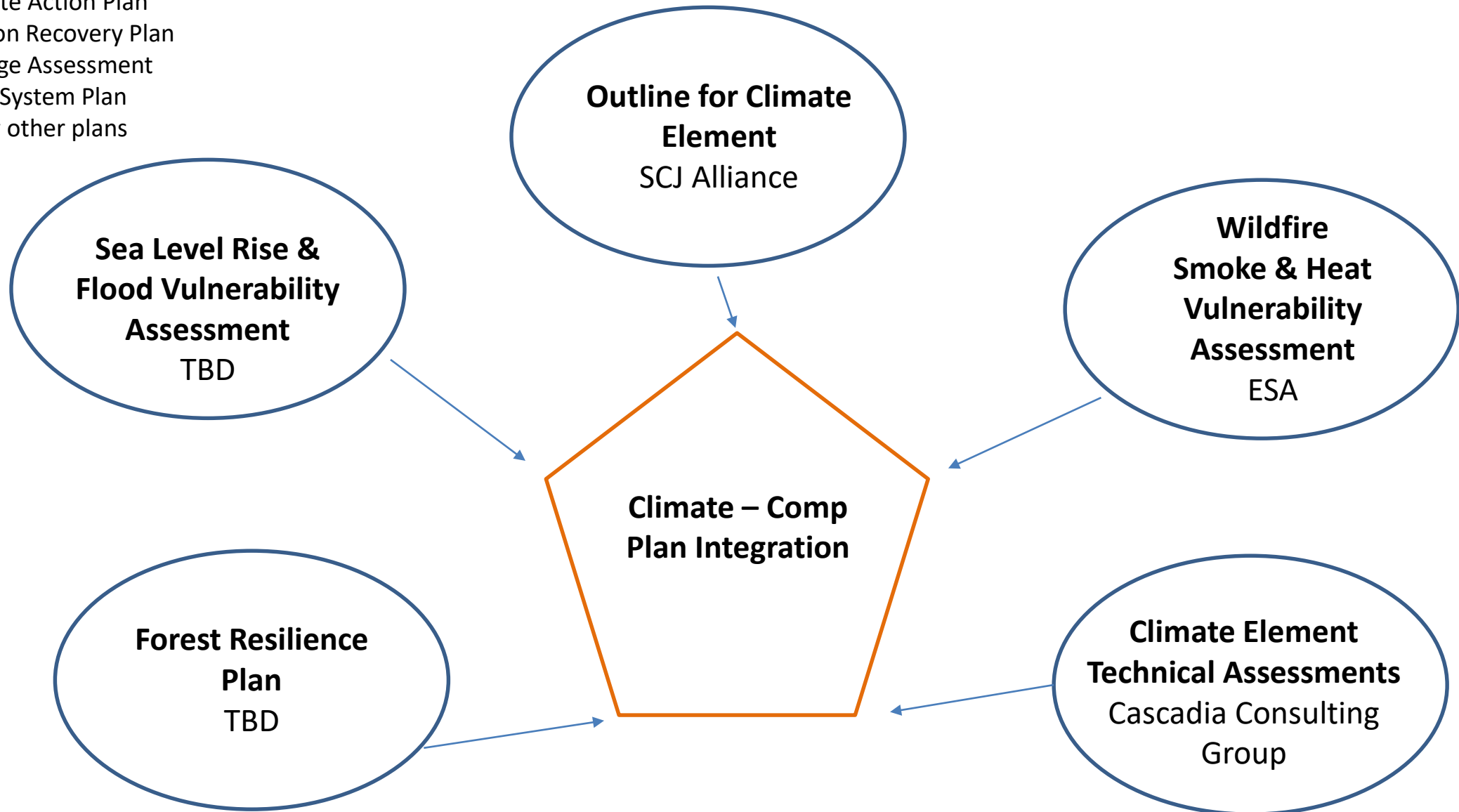
1. Beach Retention Structures: Groins or Breakwaters
2. Shoreline Protection Devices
3. Elevating or Waterproofing Structures and Infrastructure
4. Elevating Property Grades



SOURCE: ESA

Comprehensive Plan Update – Climate Element

- Climate Action Plan
- Salmon Recovery Plan
- Storage Assessment
- Food System Plan
- Many other plans



Comprehensive Plan Update – Climate Element -

- Task 1: Environmental Justice & Health Disparities Report
- Task 2: Greenhouse Gas Emissions Inventory Report
- Task 3: Local Emissions Trends and Projections Report
- Task 4: Natural Hazards Mitigation Plan Audit
- Task 5: Climate Hazard and Impact Assessment Report

Timeline: April 2024 thru June 2025



Questions?

