Coastal Hazards Resilience Network

2026 Annual Meeting

Welcome & Logistics

Starting with Gratitude…

Thank You - 2026 Steering Committee

Ali Burgos (Cascadia CoPes Hub)
Ruby DiCarlo (NOAA CRRC Fellow, WA ECY)
Erika Douglas (WA DFW)
Sydney Fishman (WSG)
Nadia Hare (NOAA CRRC Fellow, WA ECY)
Brittany Poirson (WA DNR)
Deb Rudnick (EcoAdapt)
Hannah Tennent (Hoh Indian Tribe)
Aubrey Tingler (NOAA /Tellus)
Natalie Weiss (City of Olympia)

Thank You - Sponsors

Shoreline Stabilizers ($1000+)

Center for Coastal Climate Resilience
UC SANTA CRUZ

Port of Seattle®

Slough Sentinels ($500+)

HALEY ALDRICH

Parametrix

ESA

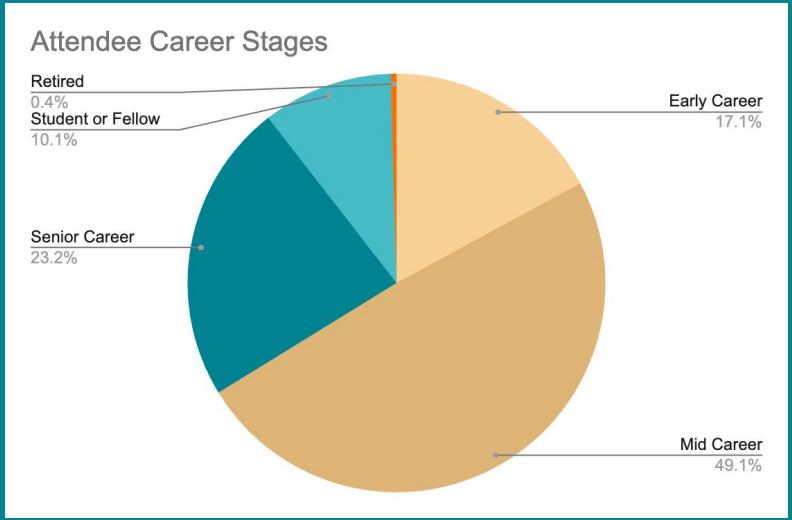
FACET

moffatt & nichol
Creative People, Practical Solutions.®

Thank You

Speakers, Facilitators & Volunteers

Thank You - Attendees



Overview of Attendees

Registered attendees are from the following organizations/groups:

Academia/Research
Cascadia CoPes Hub
CRESCENT
Oregon State University
UCSC Center for Coastal Climate Resilience
University of Washington
UW Center for Disaster Resilient Communities
UW Climate Impacts Group
UW Department of Urban Design Planning
UW Evans School
UW Puget Sound Institute
UW WA Sea Grant
Washington State University
WSU Extension
Western Washington University

Tribal Government/Tribal Organization
Chinook Indian Nation
Hoh Indian Tribe
Lummi Nation
Makah Tribe
Nooksack Indian Tribe
Northwest Indian Fisheries Commission
Port Gamble S'Klallam Tribe
Quinault Indian Nation
Shoalwater Bay Indian Tribe
Squaxin Island Tribe
Swinomish Indian Tribal Community

County/Regional Government
King County
King County Dept Natural Resources and Parks
Kitsap County Dept Emergency Management
Pierce County
Pierce County Office of Resilience & Climate Action
Pierce County Planning and Public Works
Puget Sound Climate Preparedness Collaborative
Snohomish County
Jefferson County South County Task Force
Cowlitz-Wahkiakum Council of Governments
Wahkiakum MRC
Pacific Conservation District
Thurston Conservation District

City Government
City of Bainbridge Island
City of Bremerton
Town of Cathlamet
City of Des Moines
City of Olympia
City of Tacoma
City of Tukwila
City of Seattle
Seattle Public Utilities
Seattle Dept. Transportation

Nonprofit
Bonneville Environmental Foundation
Columbia Land Trust
Duwamish River Community Coalition
EcoAdapt
North Olympic Development Council
Northwest Straits Foundation
Pacific Education Institute
Surfrider Foundation
Urban Ocean Lab
Wash Away No More

Federal Agency/Government
FEMA
NOAA Office for Coastal Management
U.S. Geological Survey
Office of Congressman Adam Smith

Port
Port of Bellingham
Port of Port Townsend
Port of Seattle

Private/Consultants
AECOM
BERK
Cascadia Consulting Group
CDM Smith
EcoAssets Environmental
ERG
Environmental Science Associates
Facet
Federal Funds Grant Writing Assistance Program
Hagerty Consulting
Haley & Aldrich, Inc
Hazen and Sawyer
HDR, Inc
Herrera Environmental Consultants
KPFF
Landau Associates
MAKERS Architecture and Urban Design
Mithun
Moffat & Nichol
Natural Systems Design
Parametrix
SBGH-Partners
Shannon & Wilson
Stantec
Walker Macy
W.F. Baird & Associates Ltd.

State Agency/Gov
Pacific States Marine Fisheries Commission
Padilla Bay NERR
Puget Sound Partnership
WA Emergency Management Division
WA Employee Services Division
WA Dept Ecology
WA Dept Fish and Wildlife
WA Dept Natural Resources
WA Dept of Transportation
WA State Parks
WA Office of Insurance Commissioner

Welcome & Logistics

Now some logistics…

- Bathrooms →
- Food/drinks

- Agenda/slides QR code →

tinyurl.com/CHRN2026Materials

- Spaces to use
- Wifi - “Thurston County Guest” (no password)
- **Code of Conduct**

CHRN Annual Meeting Overview

Meeting Mission Statement

Empowering practitioners and communities to connect on common coastal resilience challenges to collaboratively advance knowledge, partnerships, and solutions.

Meeting Goals

1. *Leveraging the Network* - Participants will strengthen existing relationships and build new connections with CHRN members to enhance collaboration on coastal resilience projects.

2. *Knowledge-Sharing* - Participants will deepen their understanding of the "state of the coast" and how to apply those skills, lessons, and resources in their practice.

3. *Advancing Efforts* - Participants will work together to align ongoing efforts, identify and break down implementation hurdles, and address challenges to advancing coordinated coastal resilience actions statewide.

Session 1: Welcome/State of the Coast

Reflections on Coastal Resilience in WA

Session 1: Welcome

Speakers:

- Jonathon Loos (Floodplains By Design)
- Guillaume Mauger (UW Climate Impacts Group)

DEPARTMENT OF ECOLOGY
State of Washington

Integrated Flood Resilience from Inland to Coast:

Building a statewide vision and strategy

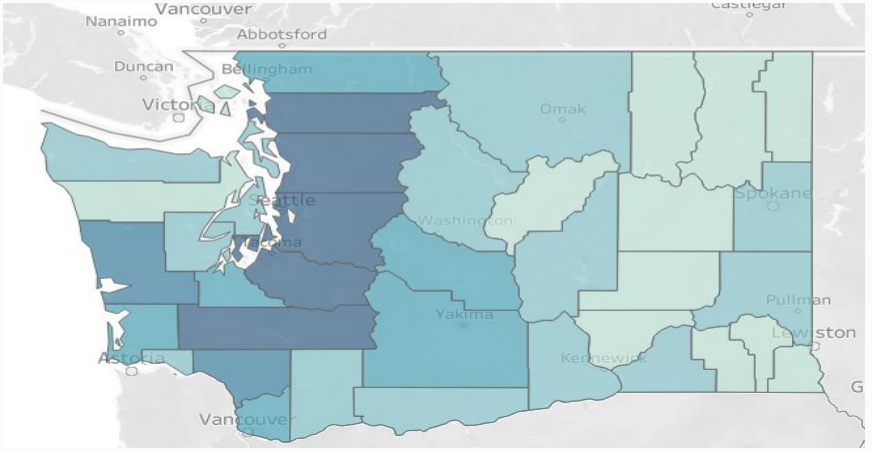
CHRN Annual Meeting

FbD Partnership, Jonathon Loos,

May 19, 2026

Washington Flood Hazards: Crisis + Opportunity

- Most frequent and costly natural hazard
  - 80% chance 10+ floods will occur each year statewide
- 28 federally declared flood disasters since 1980
  - Increasing frequency and severity
- Strong development pressures on floodplains.
  - Shifting federal roles…
- But, state resilience investments are beginning to payoff.



Darker blue indicates greater flood risk score (WA SEHMP). Flood hazards driven by geography; coastal storm surge, rainstorms, snowmelt, channel migration, stormwater – you name it, we got it!

Floodplains by Design

· REDUCING RISK, RESTORING RIVERS ·

DEPARTMENT OF ECOLOGY
State of Washington

An ambitious public-private partnership working to reduce flood risk, improve working lands, and restore habitat across WA watersheds.

Capital grant program led by WA Dept. of Ecology

Network of local gov’ts, tribes, NGOs, practitioners

Driver of transformational change in watershed management

Built upon trust, collaboration, and numerous forms of knowledge

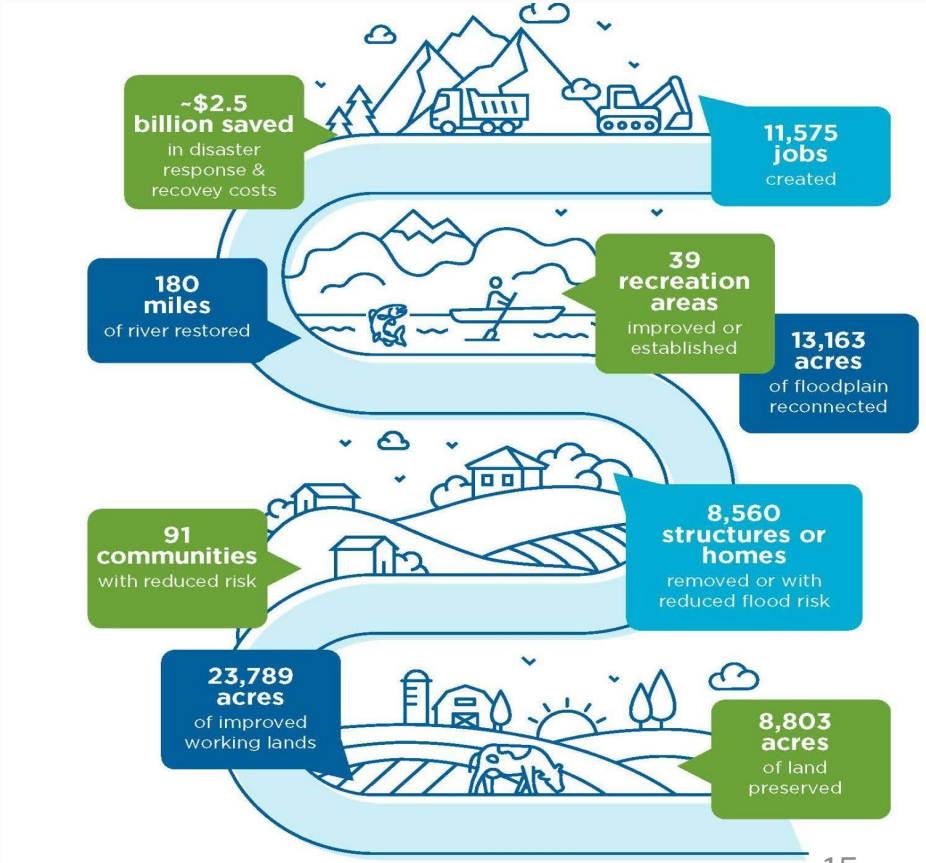
FbD Partnership Model

State Agency (Department of Ecology)	NGO Team
Administers grant programs	Advocates for funding and brings in complementary resources
Provides technical expertise	Creates opportunities for candid communications
Manages internal policy improvements	Polls expert local implementers to understand what is/is not working
Offers government to government consultation to Tribes	Holds a Tribal liaison to inform practice and policy
Provides regulatory oversight	Identifies needed efficiency and efficacy improvements

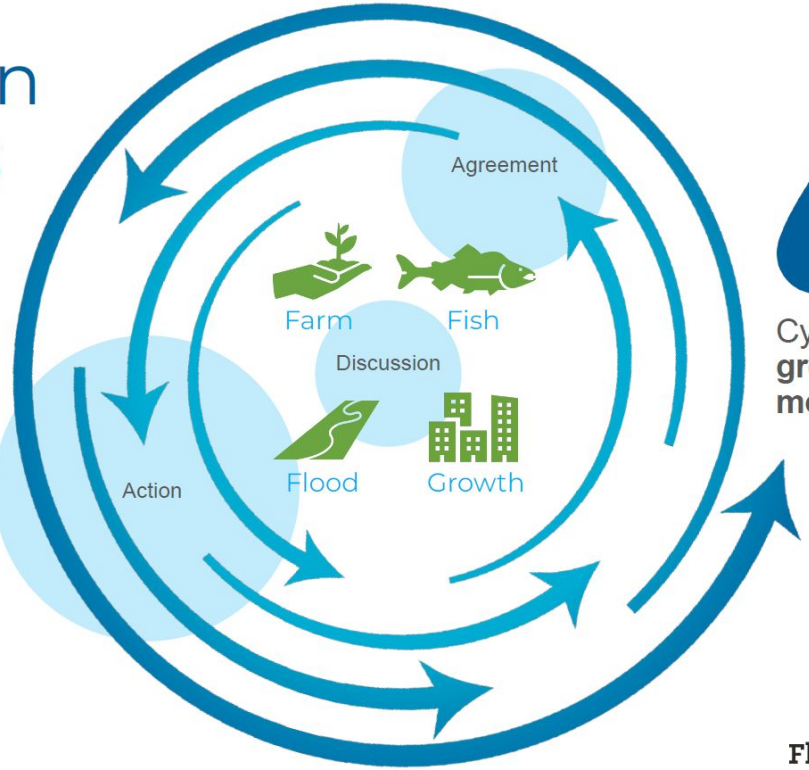
FbD Investments & Impact since 2013, $359M

Network forums :

- Funding and Policy Action Group
- Lunch & Learns
- Acquisition Workgroup
- Permitting Coordination Group



Floodplain Networks



Cycle builds momentum

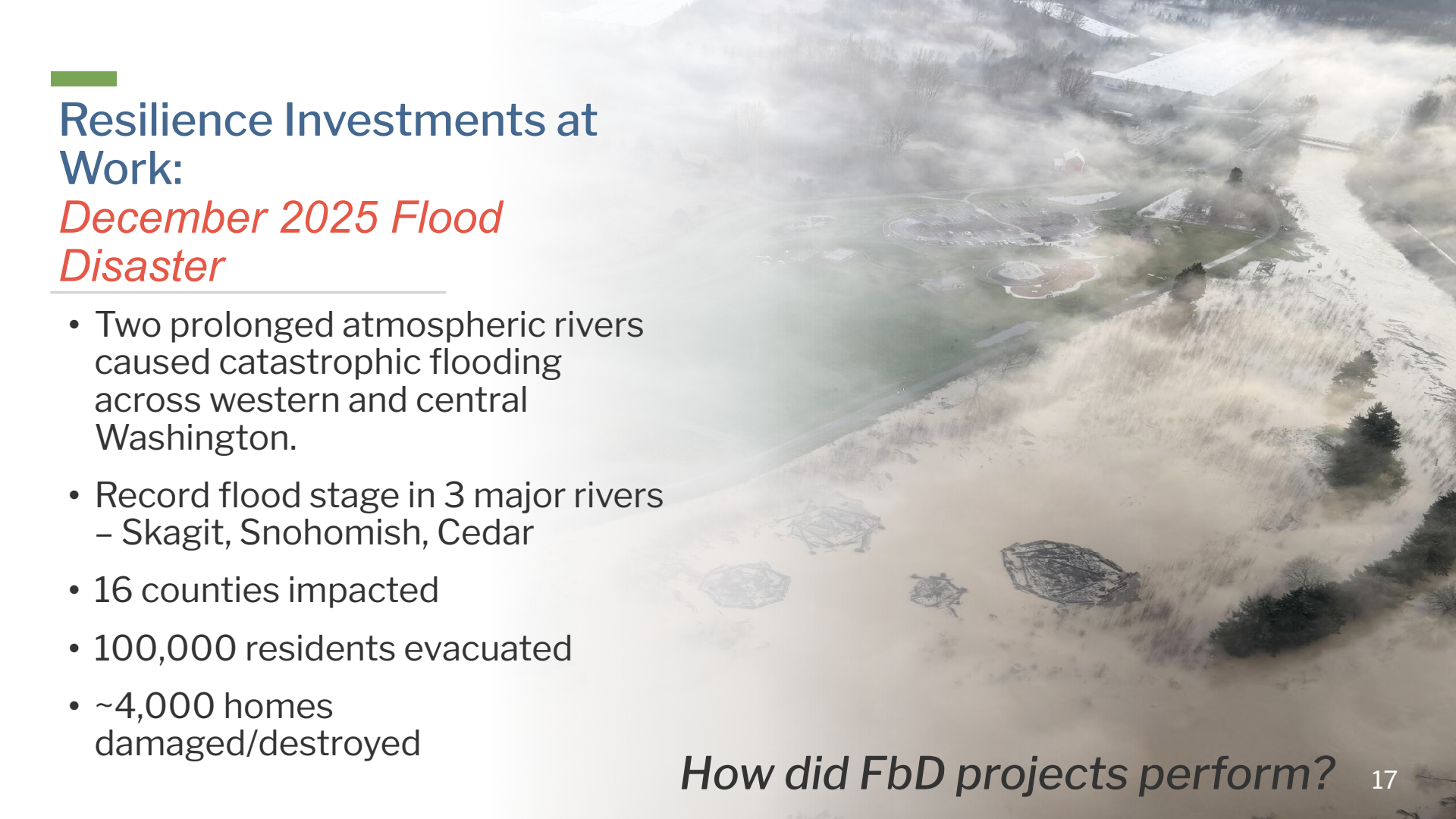
Cycle generates **greater benefits** for **more interests**

Floodplains by Design

· REDUCING RISK, RESTORING RIVERS ·

Resilience Investments at Work:
December 2025 Flood Disaster

- Two prolonged atmospheric rivers caused catastrophic flooding across western and central Washington.
- Record flood stage in 3 major rivers – Skagit, Snohomish, Cedar
- 16 counties impacted
- 100,000 residents evacuated
- ~4,000 homes damaged/destroyed



How did FbD projects perform?

Floodplains by Design
· REDUCING RISK, RESTORING RIVERS ·

FLOODPLAINS FOR THE FUTURE
PUYALLUP, WHITE & CARBON RIVERS

Pierce County

Clear Creek Acquisition and Reconnection

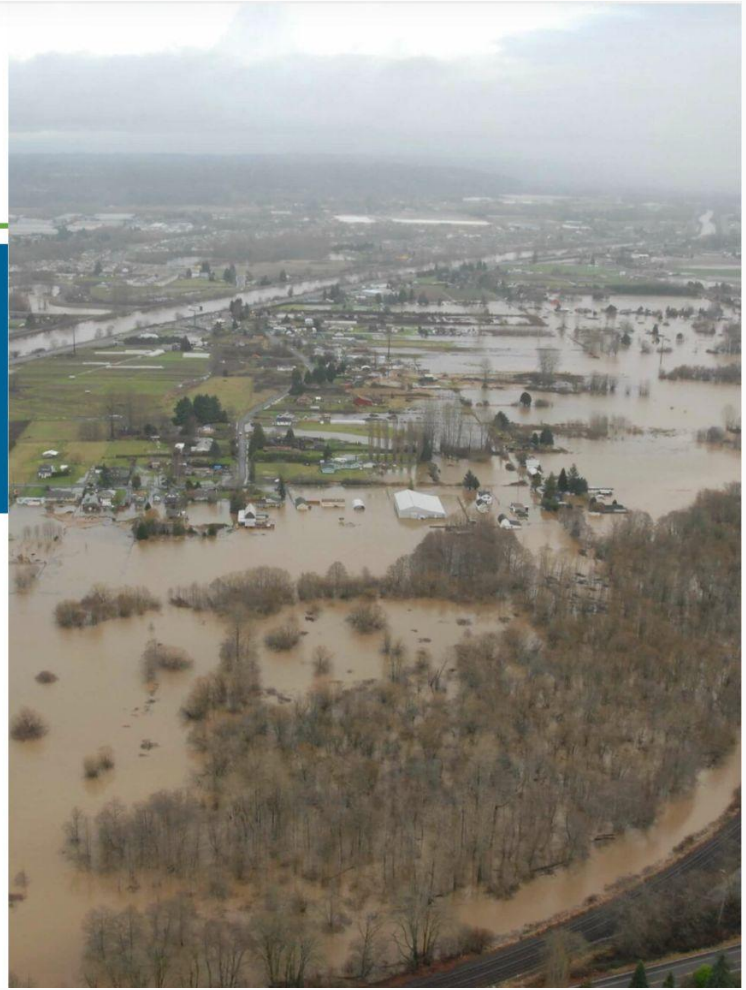
Voluntary acquisitions moved 60+ properties out of harm's way

+

Emergency managers responded more effectively fewer need for rescues

+

Improved water quality, reduced garbage/debris



Floodplains by Design
· REDUCING RISK, RESTORING RIVERS ·

Snohomish County
Washington

NOAA

South Slough Acquisitions

(FbD 19-21)

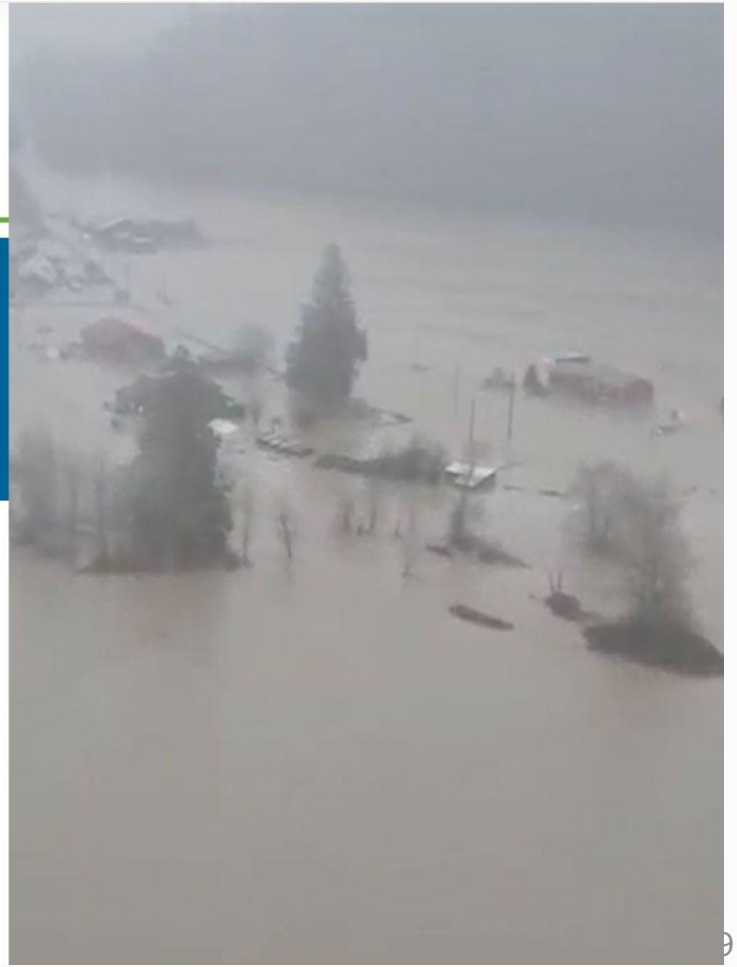
Three tenants out of harm's way

+

Fewer needs for rescues

+

Improved water quality, reduced debris



Floodplains by Design
· REDUCING RISK, RESTORING RIVERS ·

WHATCOM COUNTY
WASHINGTON

NOAA

FEMA

Lower Canyon Creek Fish and Flood Project

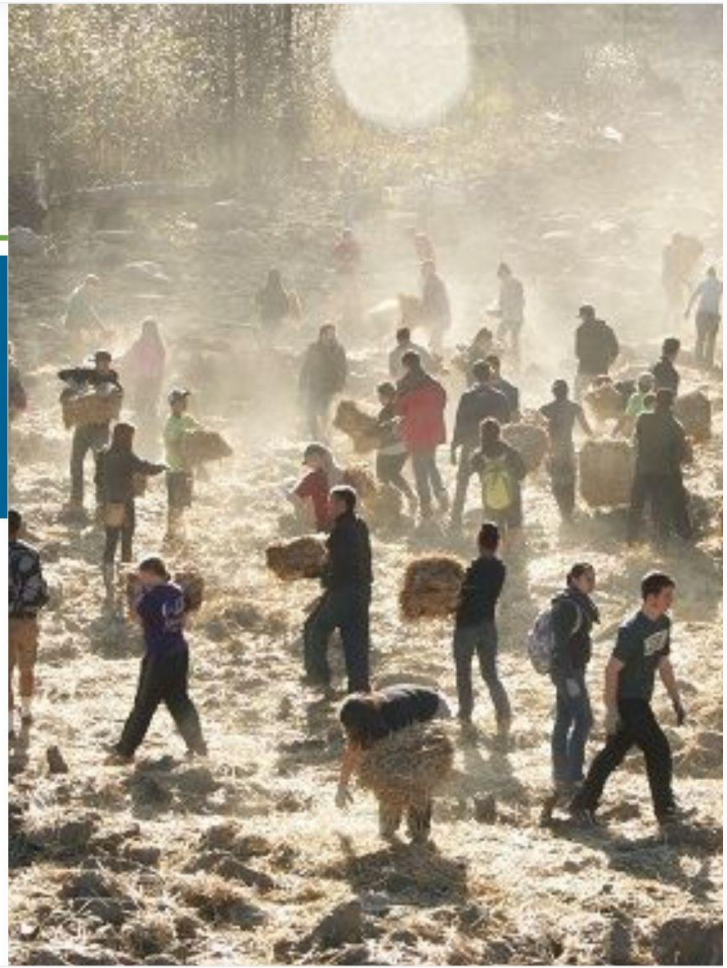
Voluntary acquisitions moved 29+ properties out of harm's way

+

Emergency managers responded more effectively fewer need for rescues

+

Improved water quality, reduced garbage/debris



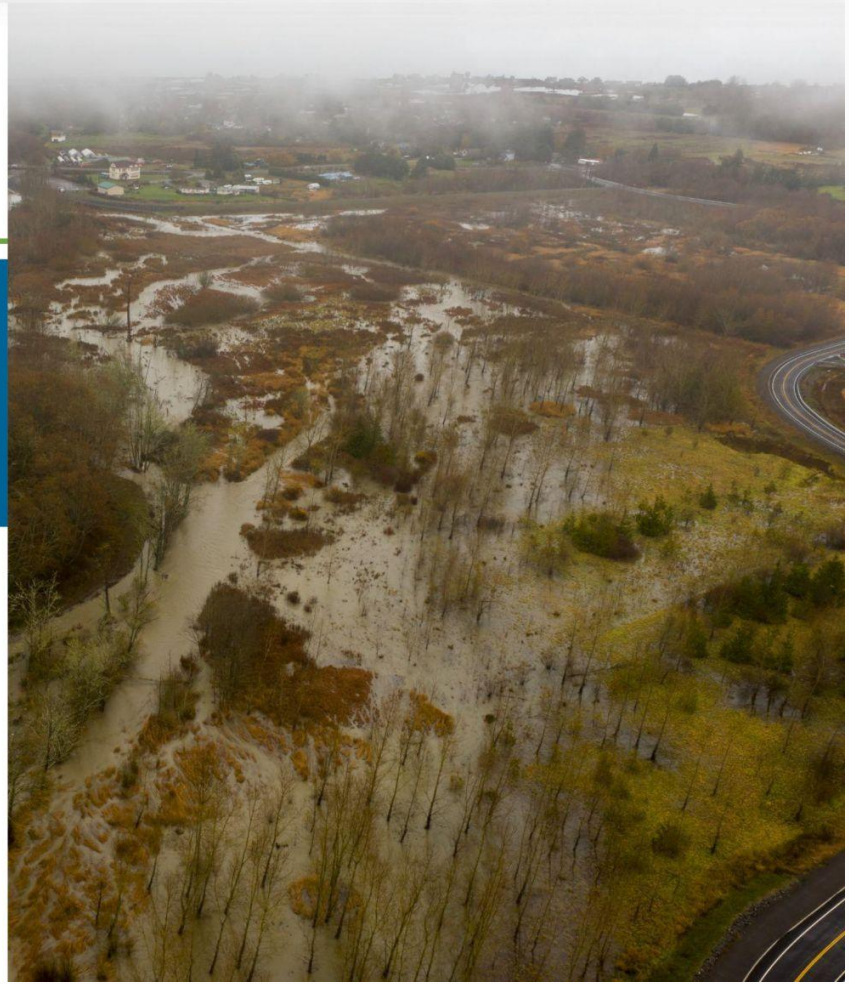
Floodplains by Design
· REDUCING RISK, RESTORING RIVERS ·

Lower Dungeness River Floodplain Restoration Project

People and infrastructure removed and relocated

+

Room for the river reduces harm, protects listed species



Integrated Floodplain Management Network Observations

INVESTMENTS WORK!

Making room for the river reduces destruction. Levee setbacks and floodplain reconnection mitigate flood damage – projects held up well under high flows, with no major channel blowouts reported.

BETTER RESPONSE

Where previous investment improved flood modeling and mapping, there was better emergency response. Flood modeling was used in real time to inform road closures, deployment of responders, and National Guard operations.

AVERTED LOSSES

Property acquisitions and buyout reduced risk to life and property. Areas with long-standing buyouts averted rescues, evacuations, structural damages, public and private losses

LESS HARM

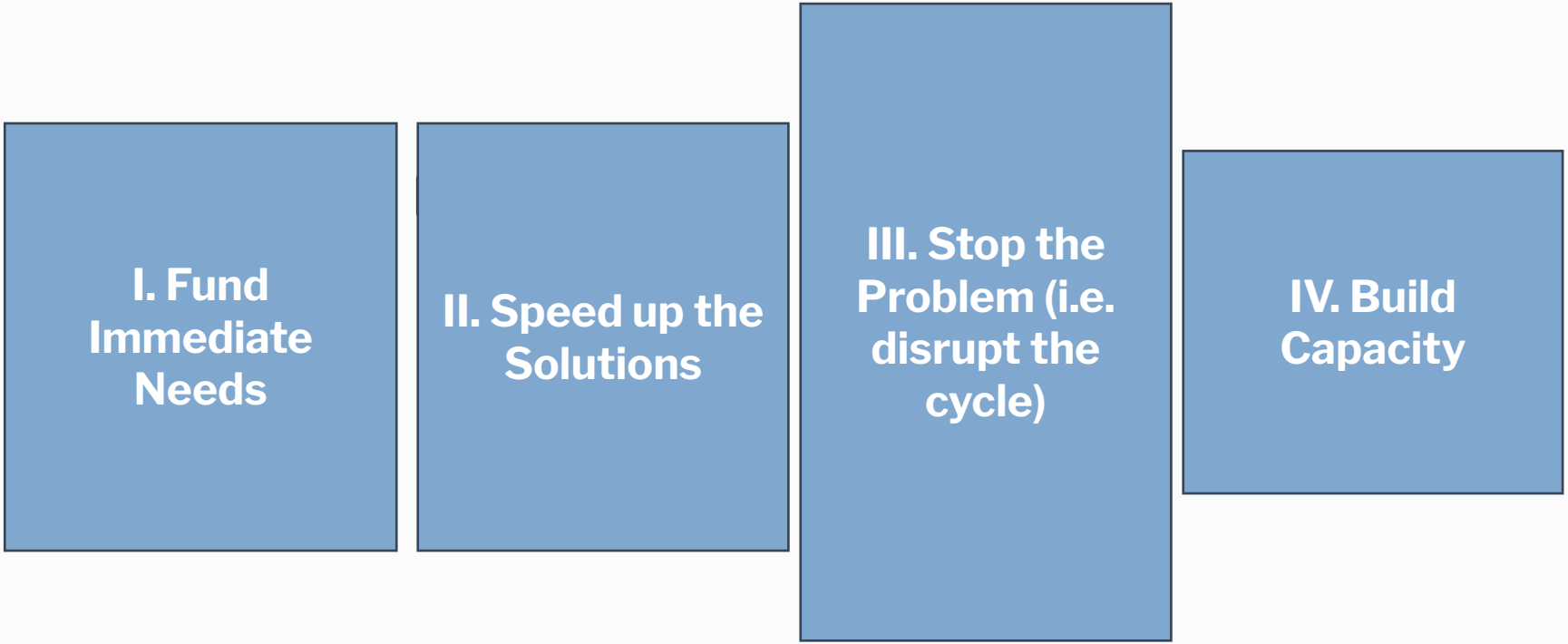
Communities with prior preparedness investments reported earlier warnings, longer evacuation lead times for shelter setup compared to previous flood events. These improvements contributed to fewer emergency rescues and reduced strain on local response capacity.

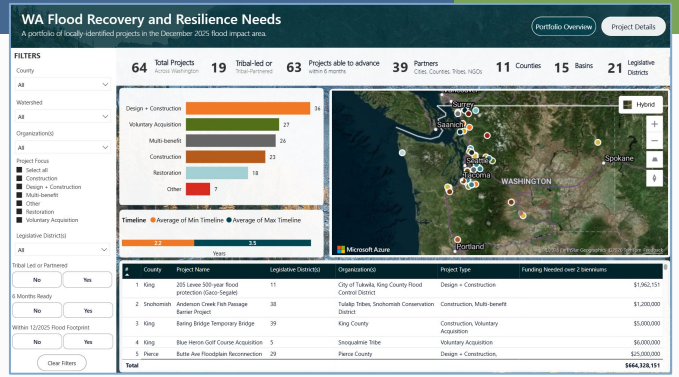
Floodplains by Design

What we're learning

- 2025 flood disaster crystallized immediate needs and systemic challenges
- Integrated floodplain management (IFM) investments are paying off, but much more is needed.
  - Unfunded need is large
  - Scale/pace of investment must increase
  - Project permitting reforms are needed
  - Development and housing pressures high
  - Hazard maps outdated
  - Acquisitions are working, but too few, too slowly
  - Flood disclosure laws perpetuate loss
  - Under-capacity at all levels of government

A Vision for Flood Resilience





https://floodplainsbydesign.org/communities-in-action/impact-2/

FUND IMMEDIATE, VETTED NEEDS

Success Stories

- Share a project that prevented flood damage or saved money
- Before/after comparisons that illustrate real outcomes
- Community impact stories from the ground

Visions for Scale

- Needs in the context of climate change
- What is the State's strategy given the known scale of unmet need?
- Investment opportunities: what could $X unlock?
- Models from other states worth importing
- How to increase funding

SPEED SOLUTIONS

Permitting Efficiencies

- Streamlining for public-benefit restoration projects
- CLOMR/LOMR improvements and FEMA map updates
- Electronic portal scoping (e.g., Virginia's PEEP model)

Hazard Mapping & Tech

- Realities of current mapping
- Improved flood and Channel Migration Zone mapping
- State LOMR capacity

STOP THE PROBLEM

Land Use: Planning

- How to keep people out of high risk area
  model ordinances, Zoning, ADUs, Low In
  housing, BFEs and Freeboard, Reconcili
  different mapping, enforcement]

Disclosure Information Access

- Comprehensive pre-contract flood disclosure (like NJ, NY)
- Public communications
- Realtor, local government and development perspective

Managed Retreat & Buyouts

- Voluntary buyout programs: lessons / needs
- Elevations and flood-proofing pathways
- Equity-centered approaches for mobile home residents, renters

Recovery & Mitigation Cycles

- Breaking the rebuild-flood-rebuild loop
- Post-disaster policy windows and how to use them
- December 2025 floods: what worked, what didn't

BUILD CAPACITY

Knowledge & Resources

- Understanding the Washington policy landscape and how to make meaningful change *[Home rule, private property rights]*
- What can we learn from other state or jurisdictional abilities to limit development in high risk areas

Relational Infrastructure

- Cross sector relationships
- Building durable coalitions across political lines

Permitting Workgroup + Risk mapping solutions

Acquisition Workgroup

WASHINGTON COASTAL HAZARDS RESILIENCE NETWORK

FUNDING AND POLICY ACTION GROUP

Network resources under development…

Looking downstream: Aligning with CHRN expertise and resources

- Opportunity to further unlock existing capacity within agencies and networks
  - Relational infrastructure (e.g. CHRN, FbD, state institutions) is strong and growing.
  - Knowledge and expertise runs deep.
  - Despite federal retreat, local and state toolbox is robust.
- What ‘unlocks’ are needed to advance a collective vision for resilience?

Thank you!

Jonathon Loos
Washington Dept. of Ecology
Floodplain Policy Lead
Jonathon.Loos@ecy.wa.gov

Kas Guillozet
Senior Director, Watersheds
kguillozet@b-e-f.org

Austin Bernales
Communications Coordinator
abernales@b-e-f.org

Upcoming events:

FPAG Summit, June 25

Flow and Flourish, Nov 5+6

Bonus slides

Ecology Floodplain Management Team Who we are:

DEPARTMENT OF ECOLOGY
State of Washington

Mary Huff
Unit Supervisor

Jerry Franklin
RiskMAP Coord.

Jonathon Loos
Policy Lead

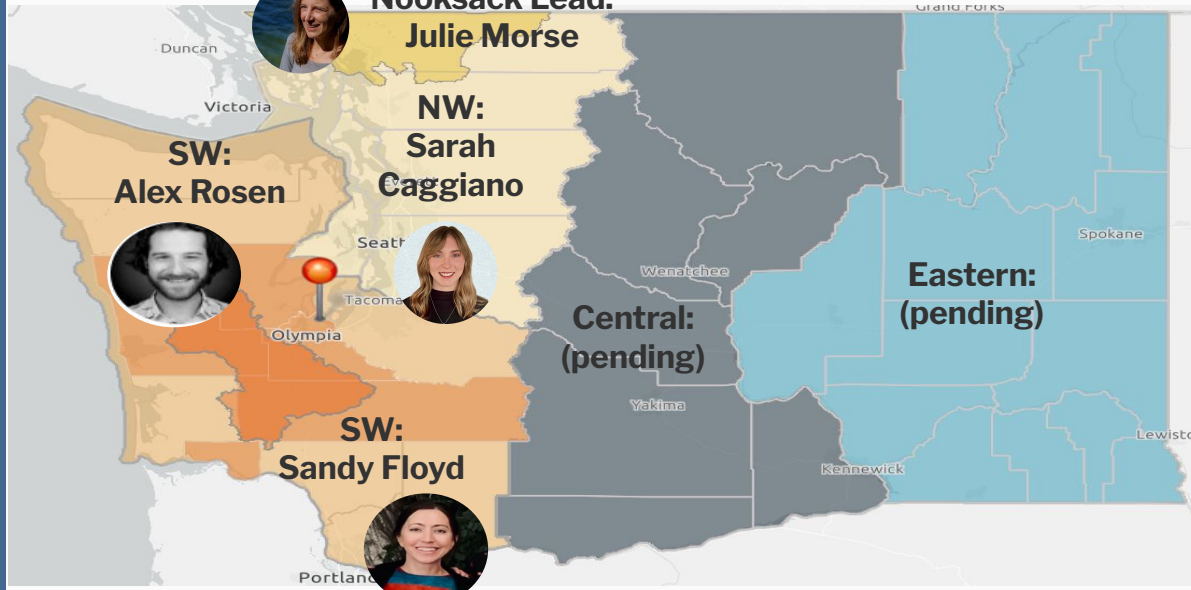
Amelia Petersen
Planner

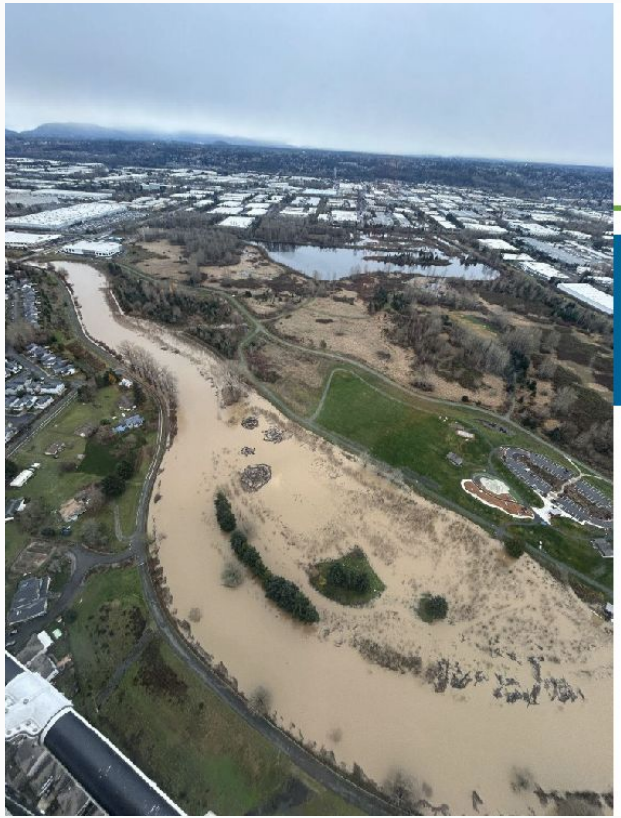
Kayla Eicholtz
FCAAP Planner

Lynn Schmidt
Engineer

Amanda Richardson
NFIP Coord.

Nooksack Lead: Julie Morse





Floodplains by Design

KENT

KING COUNTY FLOOD CONTROL DISTRICT

Lower Russell Levee Setback (FbD 2015-2017)

Slower velocities, reduced damage

+

Side channel refugia during high flows

+

Improved levee safety and protection of commercial development

Washington State Recreation and Conservation Office | King County | City of Seattle | King County Flood Control District

Riverbend Mobile Home Park Acquisition

Voluntary acquisitions relocated 10+ residents out of harm's way

+

Emergency managers responded more effectively fewer need for rescues

+

Improved water quality, reduced garbage/debris

Washington's Floodplain Management System

- Integrating flood hazards, ecosystems, salmon recovery, food systems, and Tribes
- Primary regulatory frameworks; federal, state, local
- Unique dimensions –
  - Home rule state
  - BiOp
  - Geography
  - Flood history

Session 1: Welcome

Speaker:

- Guillaume Mauger (UW Climate Impacts Group)

Session 2: Perspectives on SLR

Sea Level Rise Planning in WA

Climate Change Adaptation in 2026

Guillaume Mauger

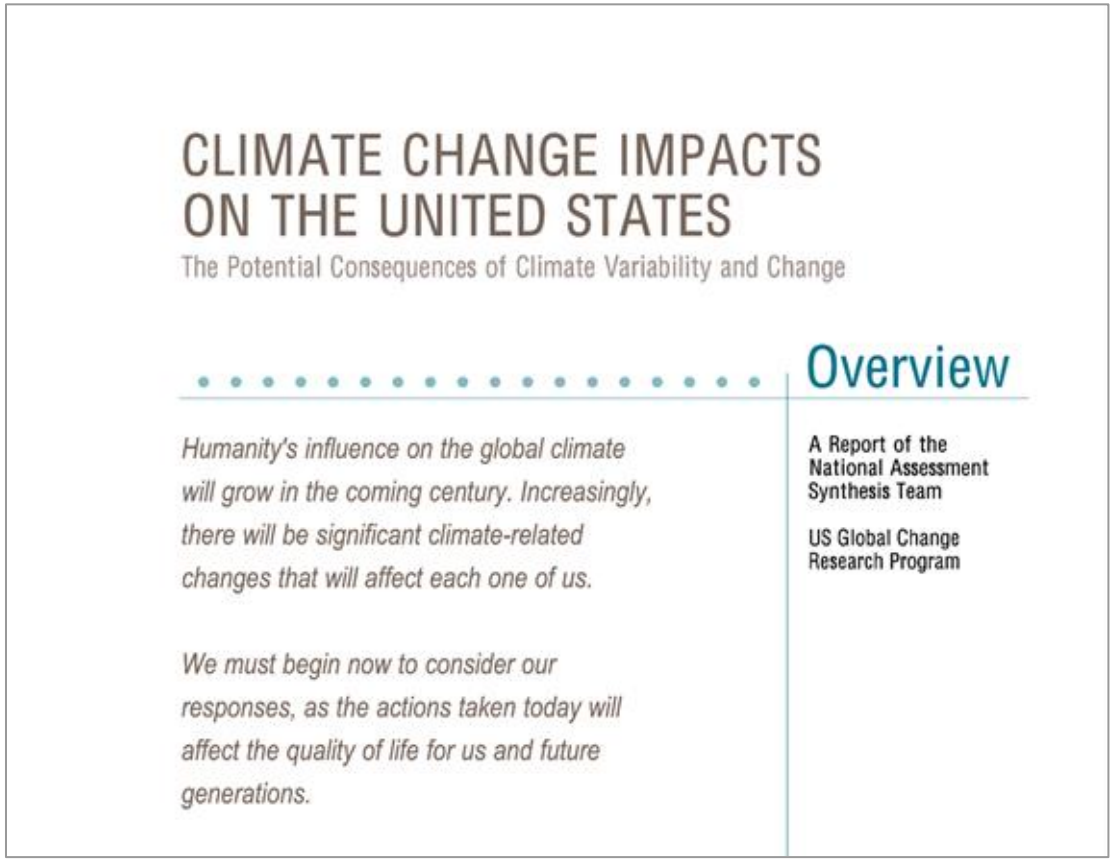
Image: KUOW
Source: Gillett et al. 2022

WASCO

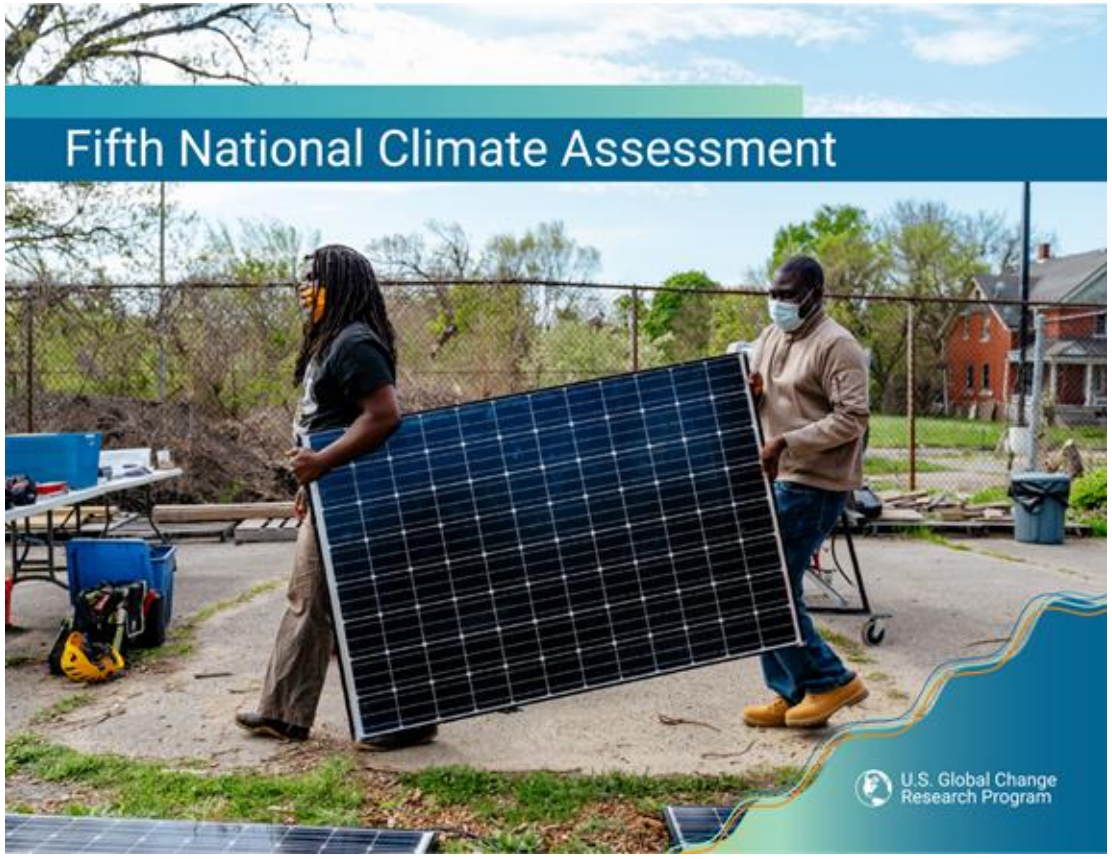
EARTHLAB
UNIVERSITY of WASHINGTON

CLIMATE IMPACTS GROUP

the field of climate adaptation has broadened

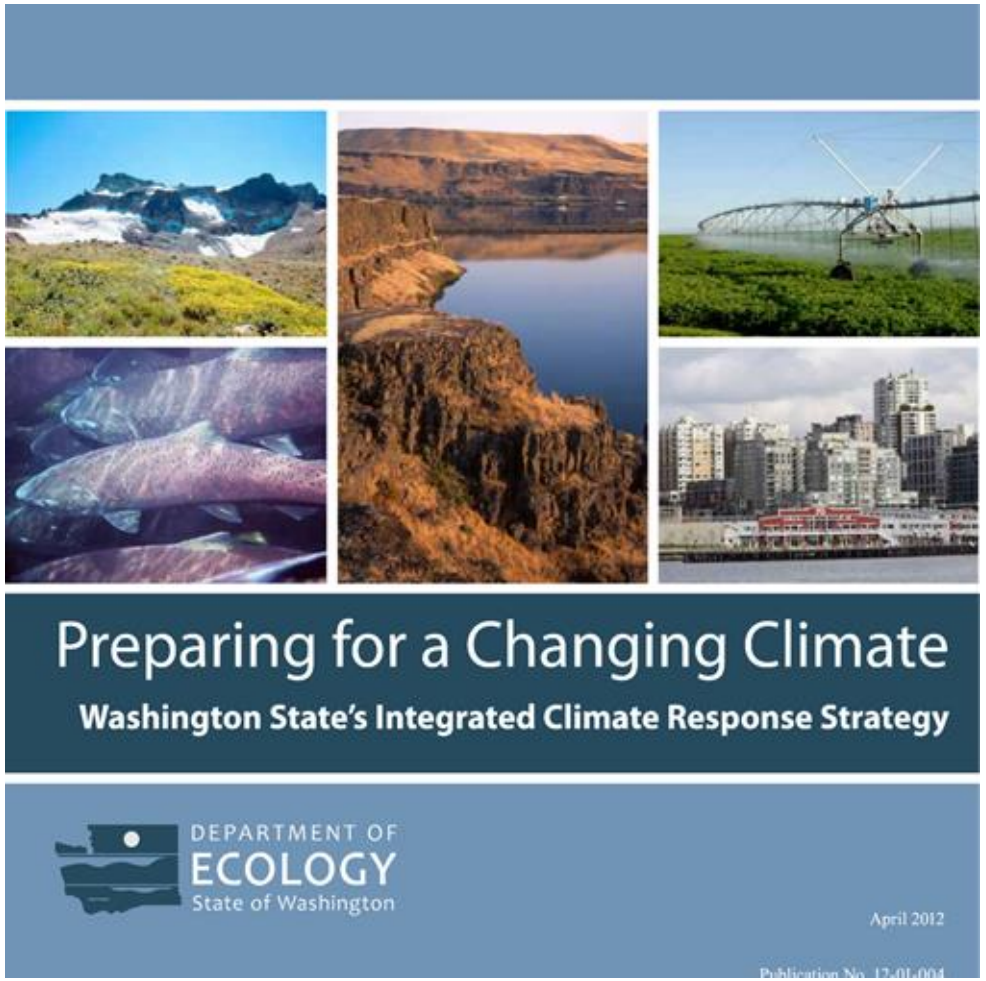


2000



2023

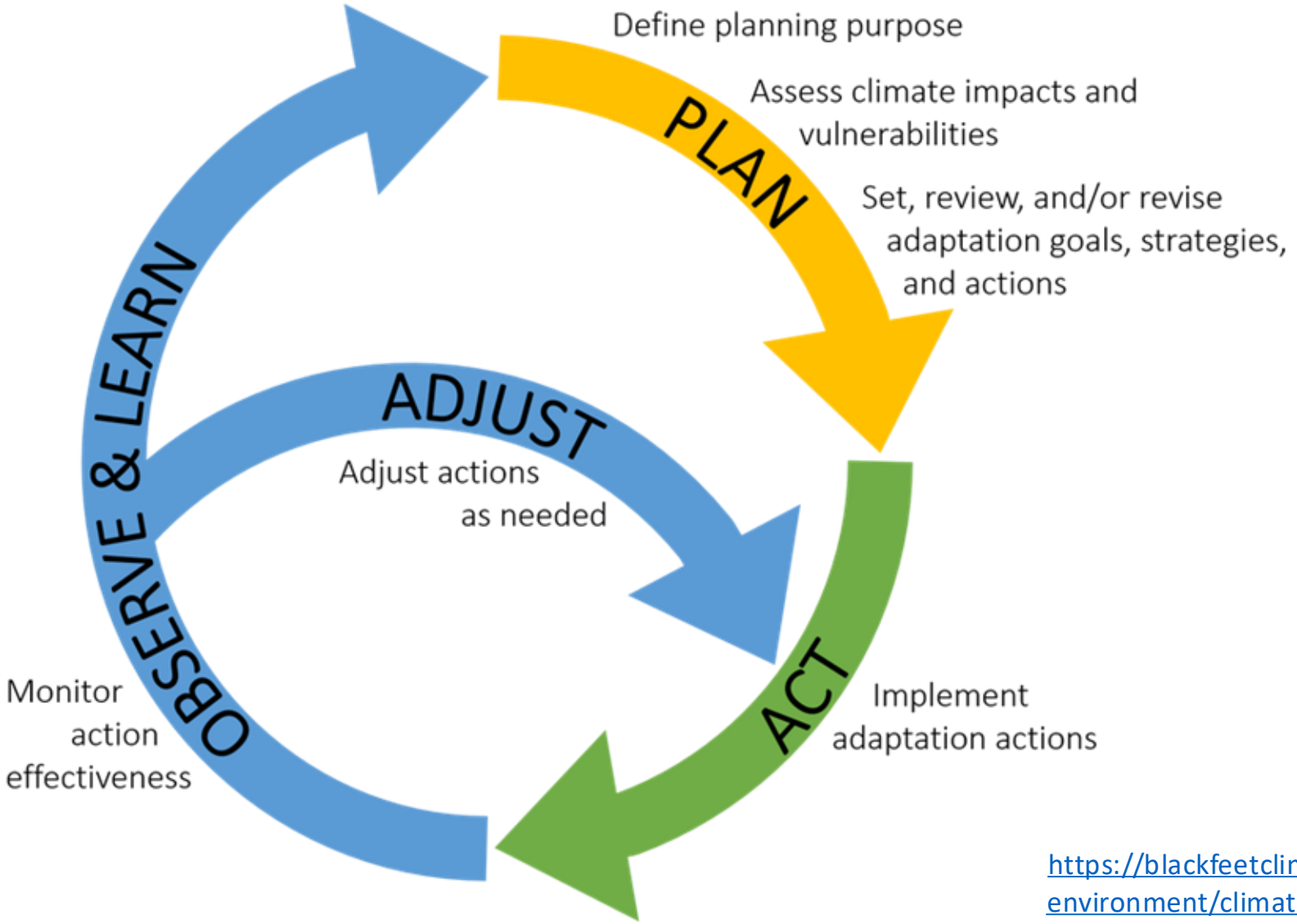
the field of climate adaptation has broadened



2012

2024

Adaptation is an Iterative Process



https://blackfeetclimatechange.com/our-environment/climate-change-adaptation-plan/ *[accessed 29 Apr 2019]*

Climate Resilience Building Blocks

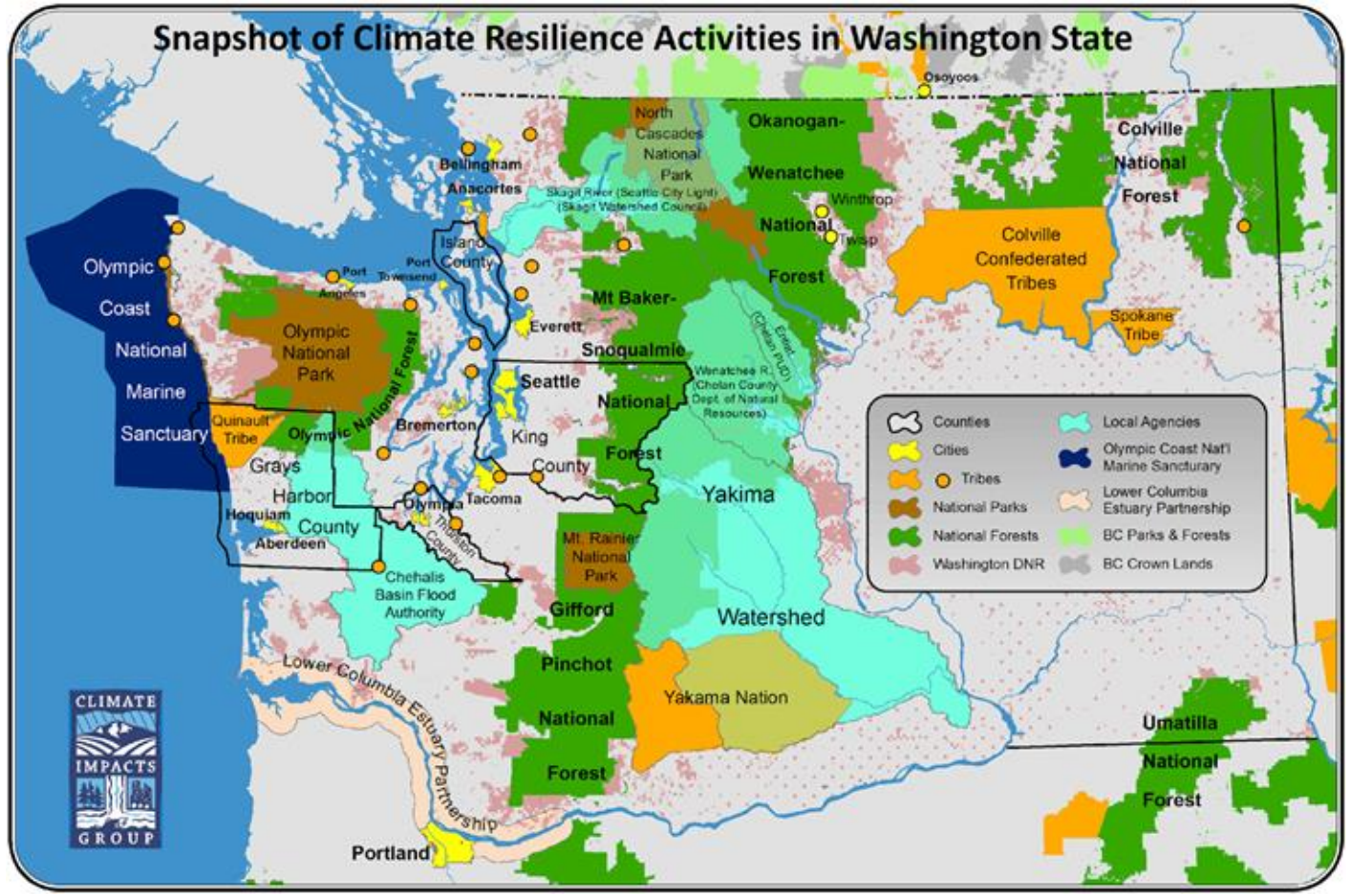
AUTHORITY: Relevant individuals are empowered to act. They have the necessary legal or institutional power; relevant policies, procedures and permissions exist.

KNOWLEDGE: Salient, credible and legitimate information exists and is readily available for regional actors and influencers.

MOTIVATION: Relevant individuals are interested and driven to support or undertake action towards climate resilience.

CAPACITY: Actors possess resources (money, time, people) and skills necessary for accessing, interpreting and applying climate information.

Source: Heidi Roop



DEPARTMENT OF ECOLOGY State of Washington

WASHINGTON STATE DEPARTMENT OF Natural Resources

Washington State Department of Health

WSDOT

Washington Department of FISH and WILDLIFE

ATTORNEY GENERAL OF WASHINGTON

WA OIC

THE SEAL OF THE STATE OF WASHINGTON 1889

P.U.D. CHELAN COUNTY

NATIONAL PARK SERVICE

FOREST SERVICE USDA

CITY OF ANACORTES

US ARMY CORPS OF ENGINEERS

King County

FEMA

SOUNDTRANSIT

FTA

City of Seattle

NOAA

U.S. FISH & WILDLIFE SERVICE

Snohomish County

NATIONAL MARINE SANCTUARIES

City of OLYMPIA

PugetSoundPartnership
our sound, our community, our chance

NATIONAL WILDLIFE FEDERATION

The Nature Conservancy

THE CONFEDERATED TRIBES OF THE COLVILLE RESERVATION 1872

THE STRONG PEOPLE JAMESTOWN S'KLALLAM TRIBE

CONFEDERATED TRIBES AND BANDS OF THE YAKAMA NATION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PORT OF BELLINGHAM Washington State

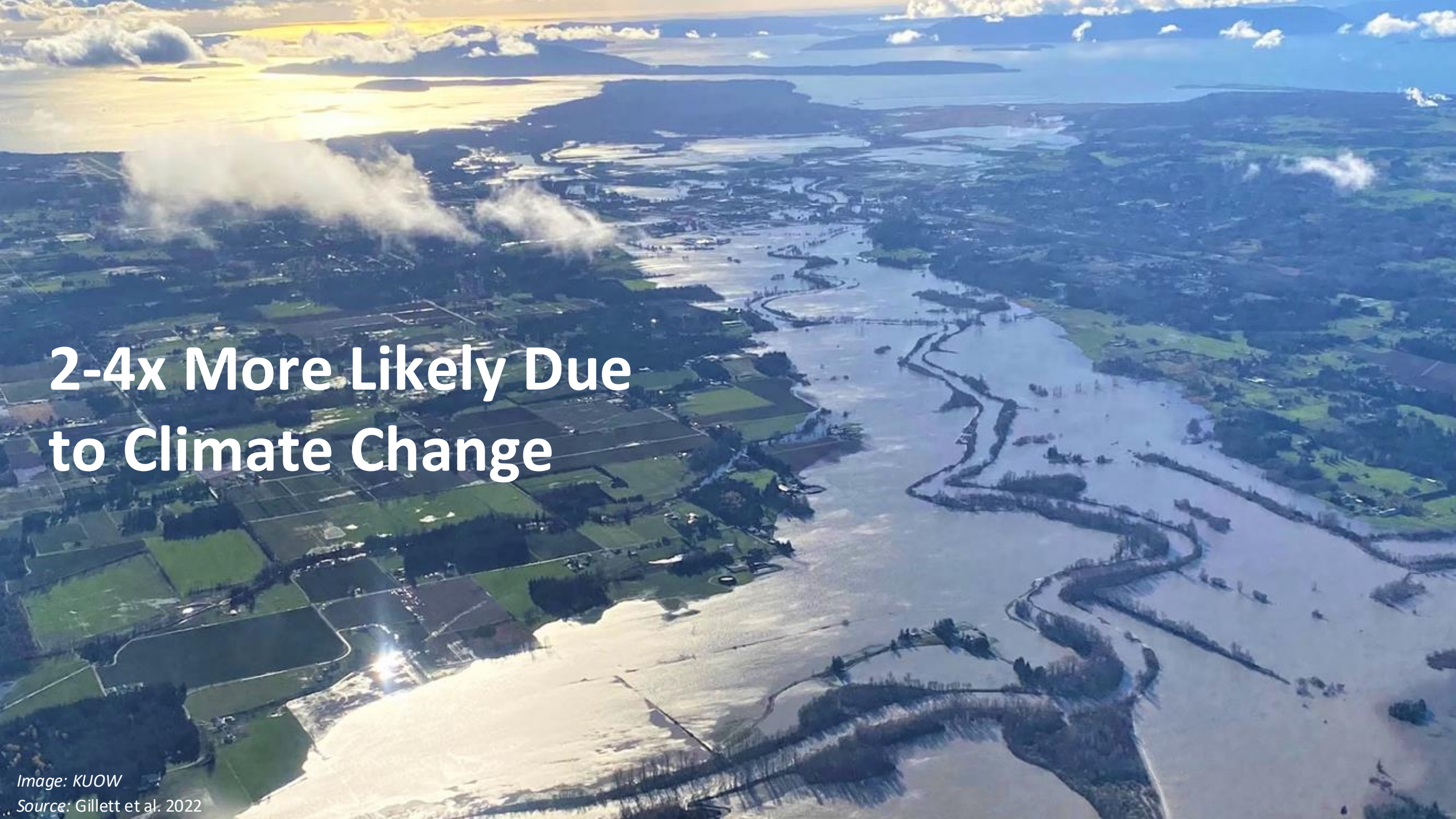
Swinomish Indian Tribal Community

QUINAULT INDIAN NATION

“Green Skills” not “Green Jobs”

Competencies described as important to the practice of ‘actionable science’

Goolsby et al. 2023; https://link.springer.com/article/10.1007/s00267-023-01863-4



2-4x More Likely Due to Climate Change

Image: KUOW

Source: Gillett et al. 2022

https://climate.uw.edu
gmauger@uw.edu
206.685.0317

Image Credit: Kendra Kaiser

Session 2: State of the Coast - SLR Planning in WA

Facilitator: Olivia Zimmerman

Panelists:

- Charlotte Dohrn (WA Dept Ecology)
- Candace Penn, Erica Marbet (Squaxin Island Tribe)
- Andrea MacLennan (Herrera), Katy Saunders (MAKERS)

Credit: Geoff Stone, MyCoast

DEPARTMENT OF ECOLOGY
State of Washington

Shoreline Management Act rulemaking:
Sea level rise planning during periodic reviews

Coastal Hazards Resilience Network Meeting | May 19, 2026

Charlotte Dohrn, Climate Resilience Planner

FUNDED BY WASHINGTON'S CLIMATE COMMITMENT ACT

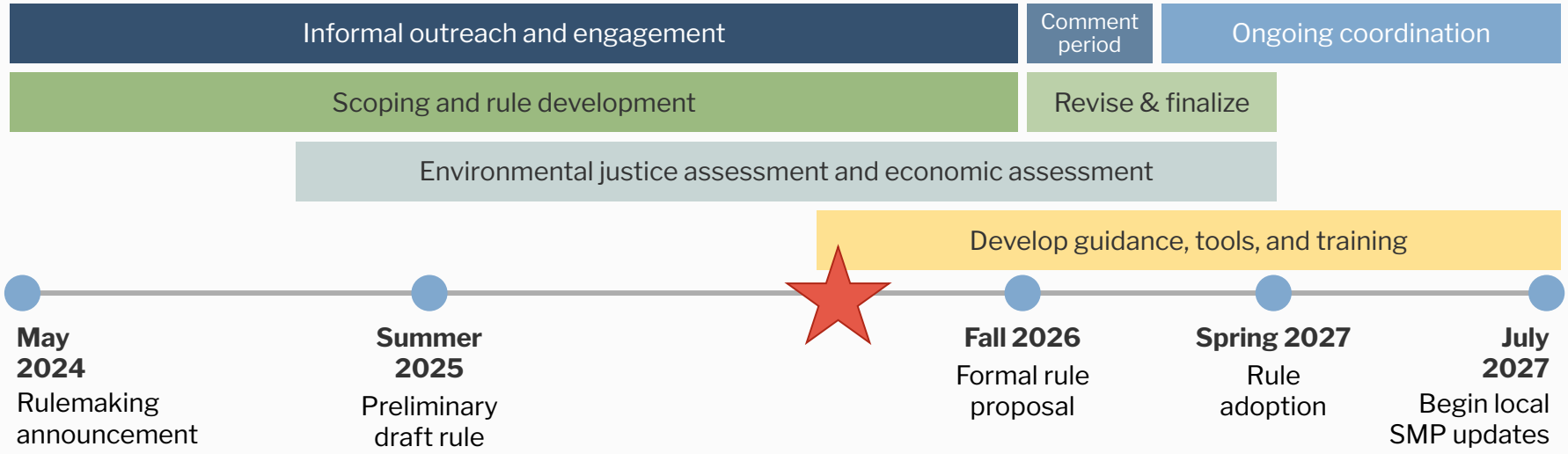
Shoreline Management Act (SMA)
Chapter 90.58 RCW

Protect environment & public health

Promote public access

Plan for shoreline uses

SMA Rulemaking Timeline



Supporting the next SMP periodic review

- Guidance
- Tools
- Training
- Planning grants

Upcoming periodic review schedule for coastal counties & cities

- 2027-2029
- 2028-2030
- 2030-2032

Thank you!

https://bit.ly/SMARulemaking

SMArulemaking@ecy.wa.gov

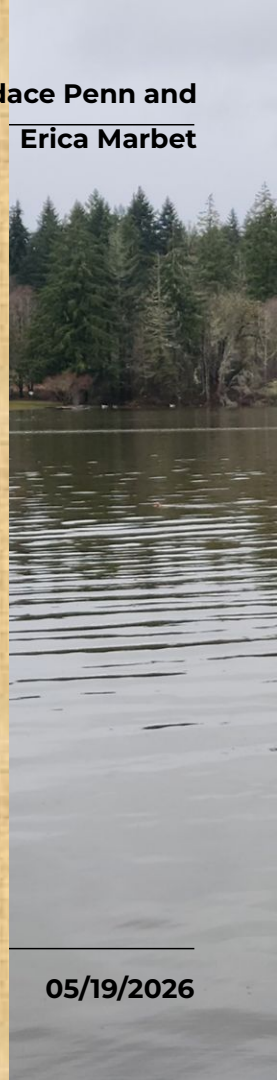
Charlotte Dohrn, Climate Resilience Planner,
Charlotte.Dohrn@ecy.wa.gov

DEPARTMENT OF ECOLOGY
State of Washington

PRESENTED BY: The Squaxin Island Tribe Natural Resources Department

Presenters: Candace Penn and Erica Marbet

Where the Creek Meets the Tide



05/19/2026

Overview

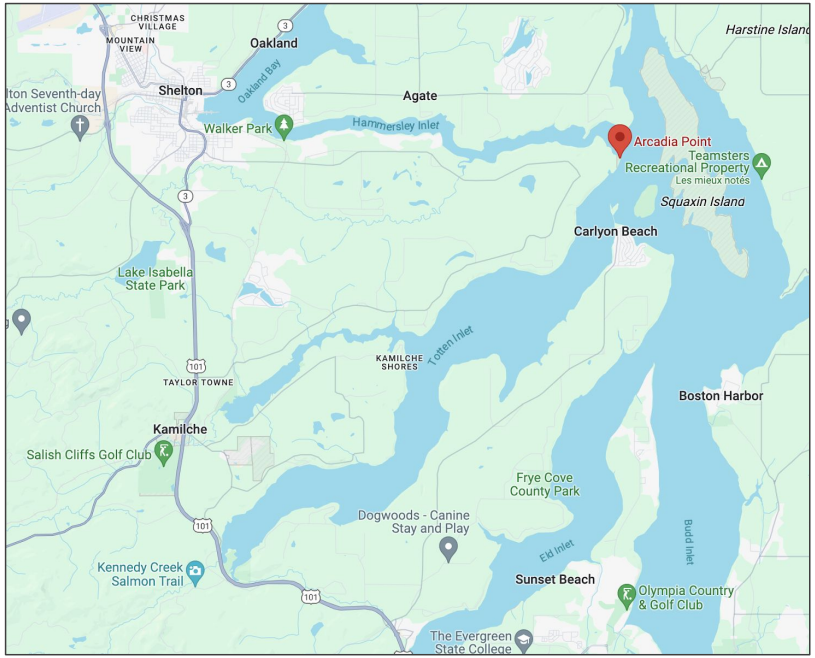


Connections

Coastal Flooding: Approach

- Tidal predictions from Arcadia
- Non-tidal residuals (‘surge’) from Seattle
- Shift Seattle time series by 1 hour, then add to predictions at Arcadia
- Analyze reconstructed time series for extreme events
- SLR:

Probabilities:	99%	50%	1%
2050	0.3 ft	0.8 ft	1.4 ft
2100	0.8 ft	2.3 ft	5.0 ft



Sea Level Rise Projections

Slim chance it will happen by the year 2100.

"50/50" it's going to happen by the year 2100.

Slim chance it will happen by the year 2050

"50/50" it's going to happen by the year 2050.
Darn sure it's going to happen by the year 2100.

Darn sure it's going to happen by the year 2050.

Current Conditions

5.0 ft

2.3 ft

1.4 ft

0.8 ft

0.3 ft

For things that you want to last 100 years or more.

Current decision makers won't live past this phase, but their kids and grandkids will.

Port Blakely lower picnic shelter

Ground level is ~16.5 ft above MLLW

Timeframe		Rise (ft)	Status	Days per year of inundation
	Today	0	Current Conditions	14.9
	99% 2050	0.3	Darn sure it's going to happen by the year 2050.	27.4
99% 2100	50% 2050	0.8	"50/50" it's going to happen by the year 2050. Darn sure it's going to happen by the year 2100.	69
	1% 2050	1.4	Slim chance it will happen by the year 2050	147
	50% 2100	2.3	"50/50" it's going to happen by the year 2100.	273
	1% 2100	5	Slim chance it will happen by the year 2100.	365

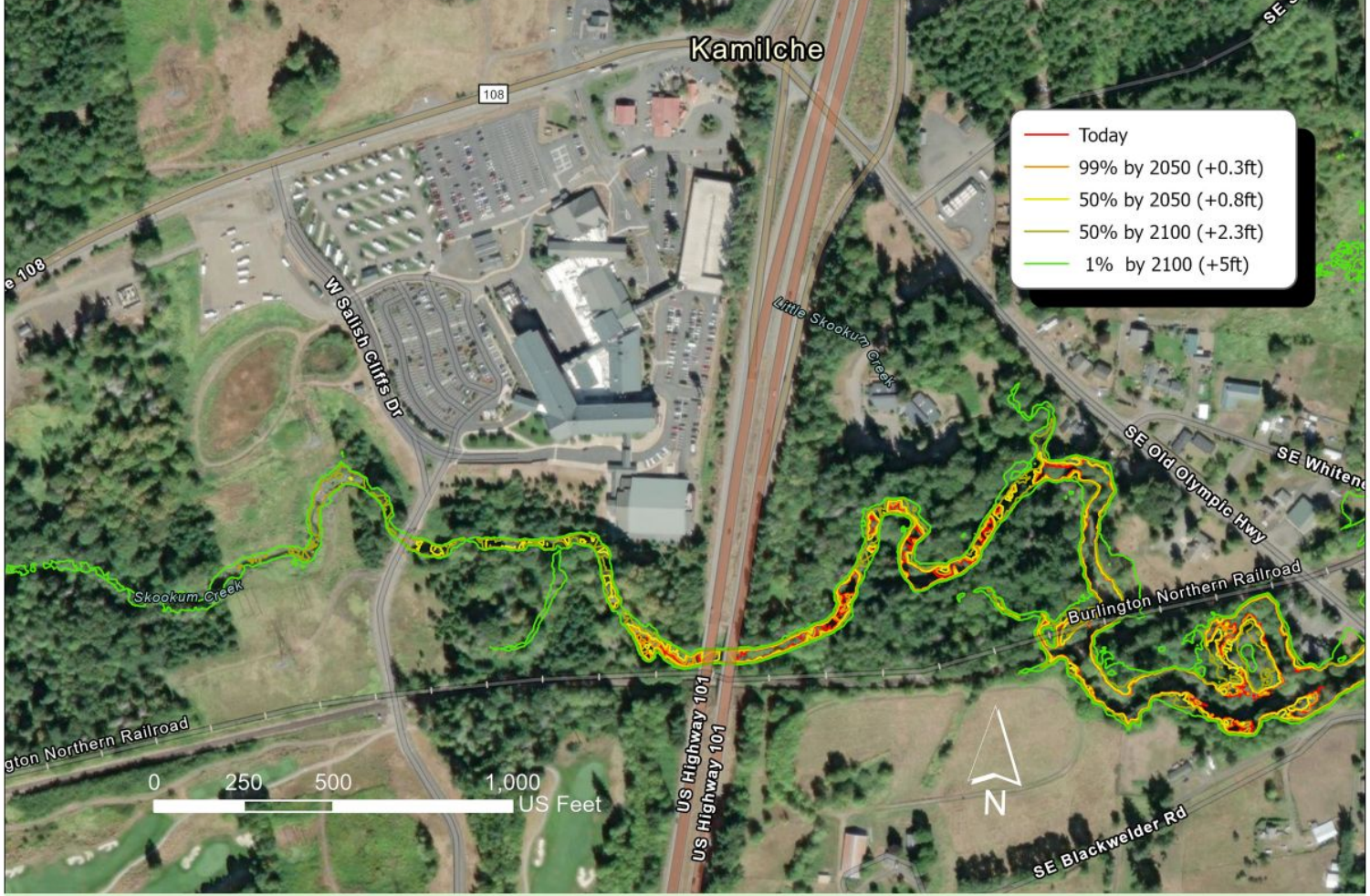
"Zero on the staff gauge" = 15.3 ft above MLLW

Skookum Creek Streamflow Monitoring Station at Highway 101

Timeframe		Rise (ft)	Status	Days per year of inundation
	Today	0	Current Conditions	121
	99% 2050	0.3	Darn sure it's going to happen by the year 2050.	164
99% 2100	50% 2050	0.8	"50/50" it's going to happen by the year 2050. Darn sure it's going to happen by the year 2100.	238
	1% 2050	1.4	Slim chance it will happen by the year 2050	307
	50% 2100	2.3	"50/50" it's going to happen by the year 2100.	355
	1% 2100	5	Slim chance it will happen by the year 2100.	365

Empirical Note-

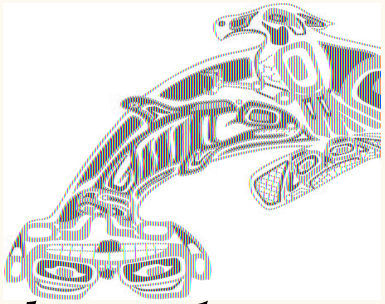
We have not yet observed the tide to reach this point, even though this sea level modeling says it does. We have only observed the tide just below the confluence of Skookum and Little Creek.



Elevation of the 2-year return interval high tide (17.35 feet above Mean Lower Water)

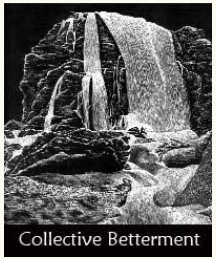
Image generated by Greg Stewart


Where the Tide
Meets the Creek
SCAN TO VIEW THE STORYMAP



Thank you!

NORTHWEST
Climate Adaptation
Science Center



MASON
CONSERVATION DISTRICT

Future Shorelines: Integrated Coastal and Riverine Planning for Rising Waters

Coastal Hazards Resilience Network
2026 Annual Meeting
May 23, 2026

DEPARTMENT OF ECOLOGY State of Washington
WHATCOM COUNTY WASHINGTON
HERRERA Science + Planning + Design
MAKERS architecture • planning • urban design
CASCADIA CONSULTING GROUP
nhc

Why this matters: rising waters + shifting shorelines

- Coastal +riverine flooding can interact (compound flooding)
- Erosion is accelerating shoreline change
- Impacts touch housing, infrastructure, and ecosystems → equity and governance questions

Future Shorelines Project

- Countywide, multi-jurisdiction effort (County, Tribes, agencies, partners)
- Assessed future flooding & erosion vulnerability across coastal and riverine areas
- Translated science into pilot adaptation plan, tools, and policy recommendations

Future Shorelines Project

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- Assessed future flooding & erosion vulnerability across coastal and riverine areas
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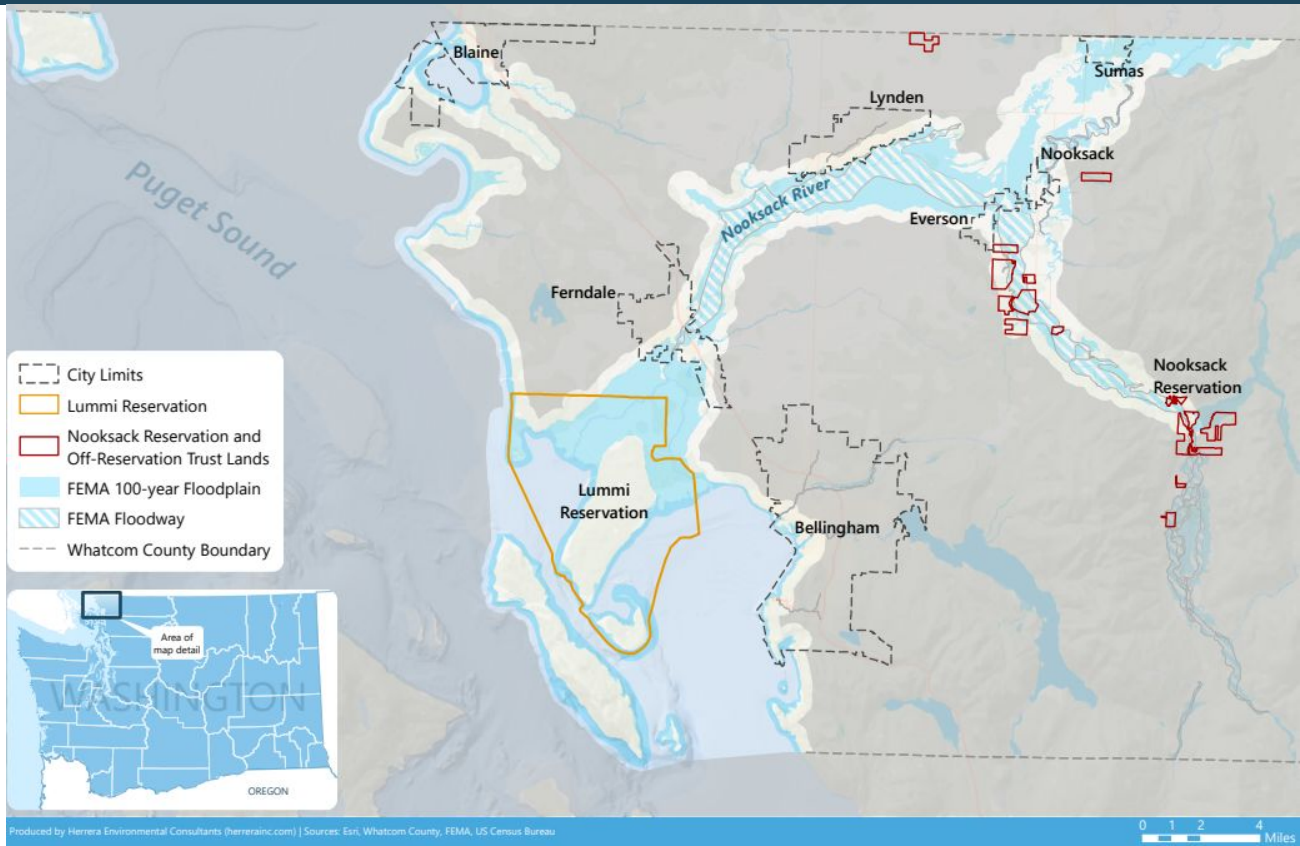
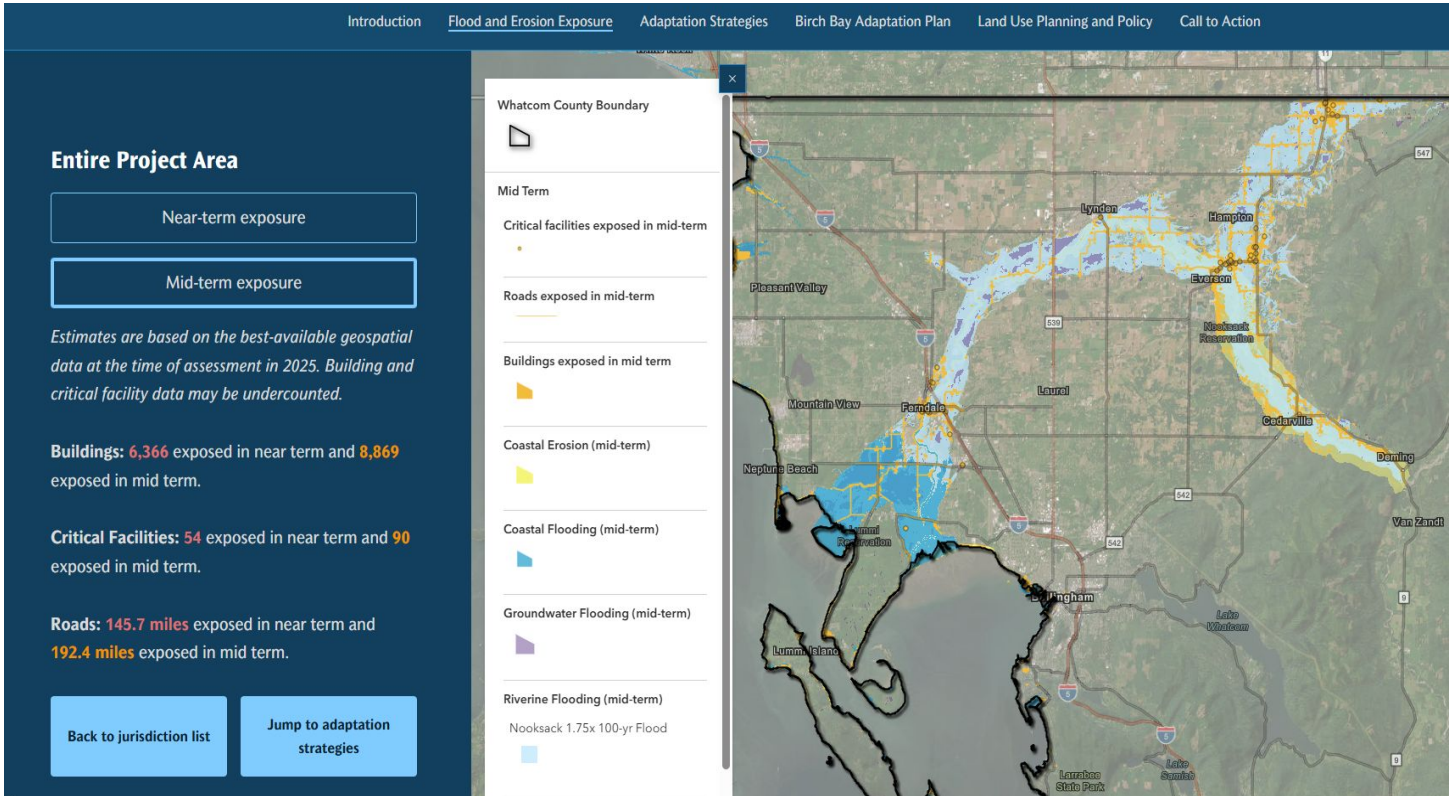


Approach: climate vulnerability assessment

- Assets & hazards identified (flooding: coastal, riverine, groundwater; erosion: coastal, riverine)
- Exposure, sensitivity, and vulnerability assessed



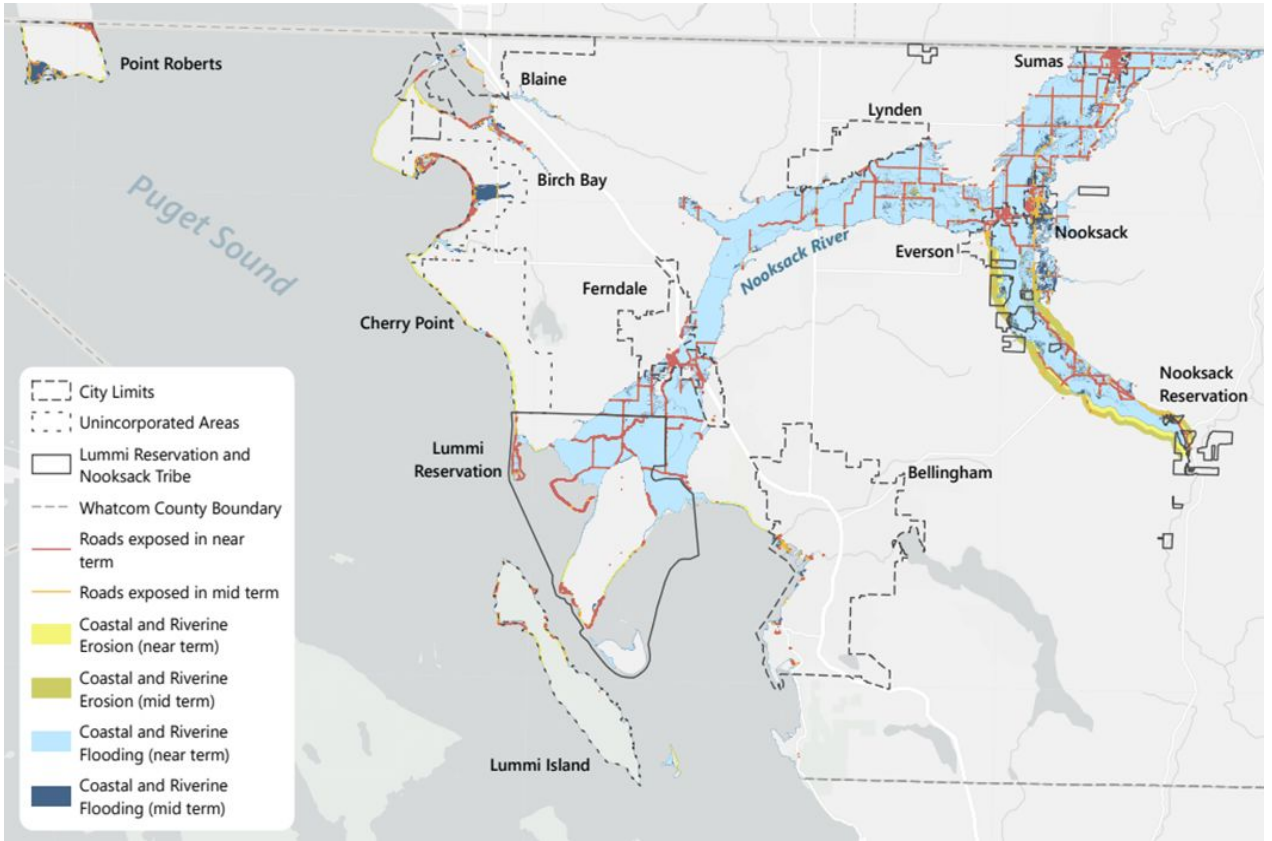
Approach: hazards

IDENTIFY PRIMARY **HAZARDS** THAT COULD INJURE PEOPLE OR DAMAGE ASSETS

Coastal flooding and sea level rise scenarios.					
Scenario	Climate Hazards				
	Coastal flooding	Coastal erosion	Groundwater flooding	Riverine flooding	Riverbank erosion
Source	*USGS and UW-CIG*	*USGS*	*USGS*	*UW-CIG*	*FLIP project*
Near-term scenario	Coastal flooding with 0.8 feet of sea level rise + 20-year coastal storm	Bluff recession with 0.8 feet of sea level rise by 2040	Emergent groundwater flooding with 0.8 feet of sea level rise	Riverine flooding with 1.2x the current 100-year flood, and in the Nooksack River delta assuming 0.8 feet of sea level rise + a king tide event	Erosion forecasted using the Historic Migration Zone (long-term, measured 1933 – 2016) plus High Risk Erosion Hazard Area (25 year)
Mid-term scenario	Coastal flooding with 3.3 feet of sea level rise + 20-year coastal storm	Bluff recession with 3.3 feet of sea level rise by 2080	Emergent groundwater flooding with 3.3 feet of sea level rise	Riverine flooding with 1.75x the current 100-year Nooksack flood and 1.5x for tributaries, and in the Nooksack River delta assuming 3.3 feet of sea level rise + a king tide event	Erosion forecasted using the Historic Migration Zone (long-term, measured 1933 – 2016) plus Medium Risk Erosion Hazard Area (50 year)

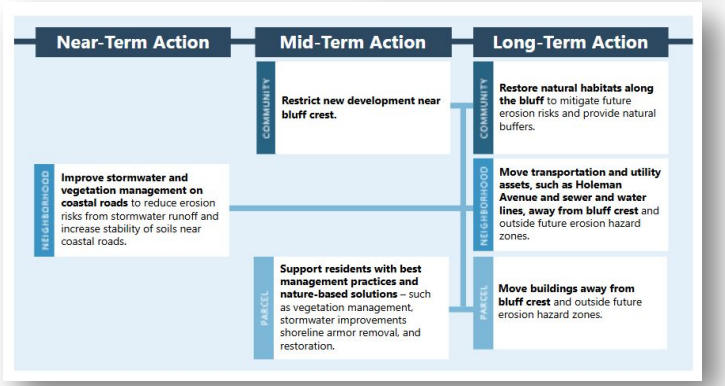
What we learned

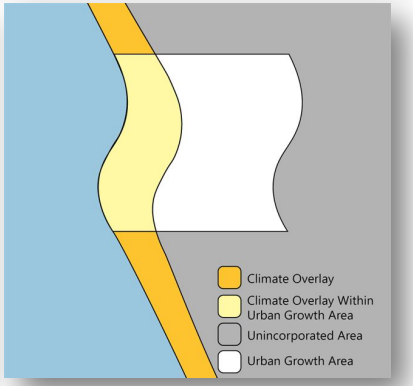
- Future floodplain expands; more roads, facilities, and buildings become exposed
- Risk increases are uneven—often concentrated in rural areas and vulnerable communities
- Multi-hazard overlap helps prioritize where early action matters most



Pilot adaptation plan

- Used findings to co-develop adaptation objectives and pathways
- Balanced strategies: protect, accommodate, avoid, relocate with tradeoffs
- Focus on implementation reality: land use, code updates, planning beyond emergency response





Thank you

Andrea MacLennan
Herrera
Senior Coastal Geomorphologist
amaclennan@herrerainc.com

Katy Saunders
MAKERS
Senior Associate – Landscape Architect
KatyS@makersarch.com

Birch Bay Climate Overlay Strategies

4. **Define appropriate restrictions for new development** within the Coastal Climate Overlay.

5. In the Birch Bay UGA, **update zoning in areas outside the Coastal Climate Overlay** to provide more opportunities for development.

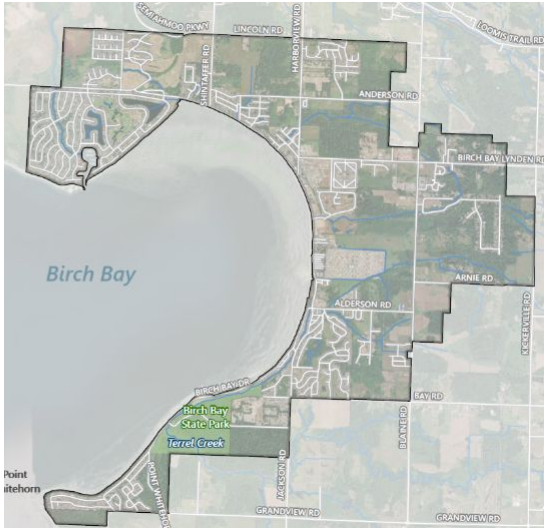
6. **Expand program guidelines for the Purchase of Development Rights through the Conservation Easement Program.**

7. Implement applicable recommendations to **implement a Coastal Transfer of Development Rights (TDR) program.**

8. Conduct **education and outreach** in Birch Bay.

9. **Monitor insurance trends** to identify impacts to Birch Bay property owners.

10. **Increase programmatic support and capital investments** to reduce risk and promote relocation of private and public infrastructure to areas outside the Climate Overlay.



Session 3: CHRN World Cafe

Shape the Future Vision/Mission/Goals of CHRN and check out our new resources!

Session 3: CHRN World Cafe - Shape the Future of CHRN

Purpose:

As CHRN experiences tremendous recent growth, we want to make sure our services and mission continues to support the Network and the communities that each of us serve

If you are new to CHRN:

This activity will help orient you to CHRN resources and help us learn how to connect with you in the future

If you are NOT new to CHRN:

This activity will help showcase the updates we have made in the last year and help us learn how we can best continue to support your work in the future

Session 3: CHRN World Cafe - Shape the Future of CHRN

What is CHRN?

CHRN is a Network of Coastal Resilience Practitioners with the mission of strengthening the resilience of Washington's coastal communities through collaboration, education, and knowledge exchange.

CHRN was launched in 2013 and it has evolved through the years in response to the needs of the coastal resilience practitioner community.

Session 3: CHRN World Cafe - Shape the Future of CHRN

Just over the last year, CHRN:

- Hosted 3 in-person events and 3 virtual Lunch & Learn events–to help increase knowledge sharing across the Network.
  - *Our 2025 Annual Meeting had record attendance (>150 participants)*
- Launched a new Buddy Program to directly connect members of the network.
  - *>100 people connected this year*
- Provided direct technical assistance to support members' work.
- Made a concerted effort to improve communication on coastal opportunities.
  - *Formally launched The Drift, a weekly digest sent to our email listserv highlighting funding opportunities, events, trainings, and helpful resources.*
- Updated our website
  - *Increased usability, new resources*
  - *a new searchable Member Directory*
  - *Updated Resource Library - thank you, Nadia!*

Session 3: CHRN World Cafe - Shape the Future of CHRN

Instructions

1. Visit any of the 7 stations in the EXPO Center, add sticky notes to the provided posters with your ideas.
2. Use Stickers to show your support for other people's ideas.
3. Some stations have additional interactive components, like forms to fill out, etc.

Facilitators will be available at each station to help provide directions/instructions.

You do not need to visit all 7 stations! Pick 1-2 that you are interested in.


Parking Lot
Patio
Exit
Exit
Exit
Exit
Station 7
Room A
Room B
Station 2
Station 3
Hallway
Station 6
Station 4
Station 1
Station 5
Exit
Door
Exit
Exit
Alcove
Exit
Lobby

Session 3: CHRN World Cafe - Shape the Future of CHRN

Instructions

Spend the next 45 minutes visiting different CHRN Stations:

1. Brainstorm CHRN's role in WA coastal resilience work moving forward - let us know what you want/need
2. Explore our Case Study Mapper - do you have a project that can be added?
3. Check out our Resource Library - let us know what's missing
4. Add yourself to our Member Directory and get a headshot taken if you need
5. Brainstorm funding mechanisms for long-term sustainability of CHRN
6. Brainstorm/offer other CHRN activities throughout the year (field trips, regional conversations, Lunch & Learns)
7. Meet CHRN Coordinators and learn about CHRN

Break for lunch at 12:00 PM - *pick up lunch in the lobby where you checked in this morning, meet back in Heritage Hall after lunch (1:00 PM)*

Session 4: CHRN Connections

Pop-up Time to Chat with People in the Room

Thank You - Sponsors

Shoreline Stabilizers ($1000+)

Center for Coastal Climate Resilience
UC SANTA CRUZ

Port of Seattle®

Slough Sentinels ($500+)

HALEY ALDRICH

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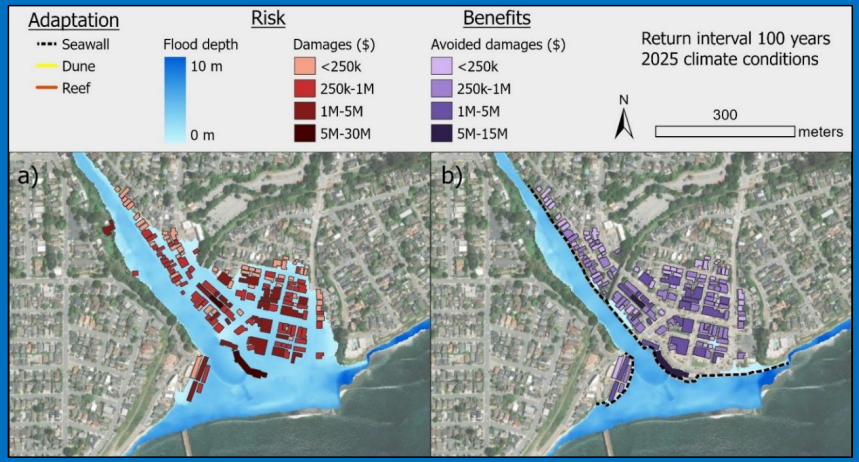
moffatt & nichol
Creative People, Practical Solutions.®

Center for Coastal Climate Resilience
UC SANTA CRUZ

- Assess coastal risks
- Rigorously value benefits of nature & Nature-based Solutions
- Identify incentives to invest in solutions to reduce risk + enhance environment



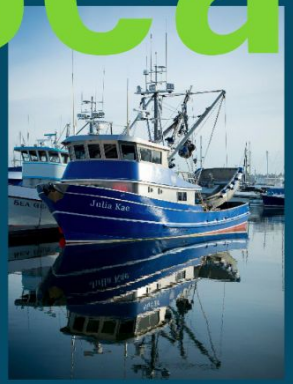
Web: *climateresilience.ucsc.edu*
LinkedIn: *@ucscclimateresilience*
YouTube: *@ClimateResilience*
Email: *pbarnard1.ucsc.edu*

Port of Seattle

SEA International Airport

International Cruise

Maritime Cargo, Container, And Bulk



Fishing, Boating, And Real Estate

Ecosystem Restoration

Workforce Development and Training

Port of Seattle


Port Priorities, Our Commitment:
Economic Opportunity and Quality of Life through Trade, Travel, Commerce, and Job Creation – centering Equity, Accountability, and Environmental Responsibility.
Port of Seattle




Parametrix

Coastal Resiliency Experience

Working waterfront and port resiliency planning and design	Coastal transportation corridor vulnerability and adaptation strategies	Hybrid gray–green infrastructure and nature-based solutions	Sea level rise, storm surge, and flood risk modeling
Stormwater and watershed integration for coastal systems	Permitting and multi-agency coordination (federal, state, Tribal, local)	Implementation-focused: from planning to design and construction support	Experience across the Pacific Northwest and beyond

FACET

Facet is a multidisciplinary firm of planners, environmental scientists, engineers, landscape architects, GIS specialists, and permitting professionals supporting public agencies throughout Washington State.

We take pride our partnership with communities across the state, helping them respond to changing shorelines, strengthen resilience strategies, and take action for the future.

DAWN SPILSBURY
GIS Analyst / Ecologist

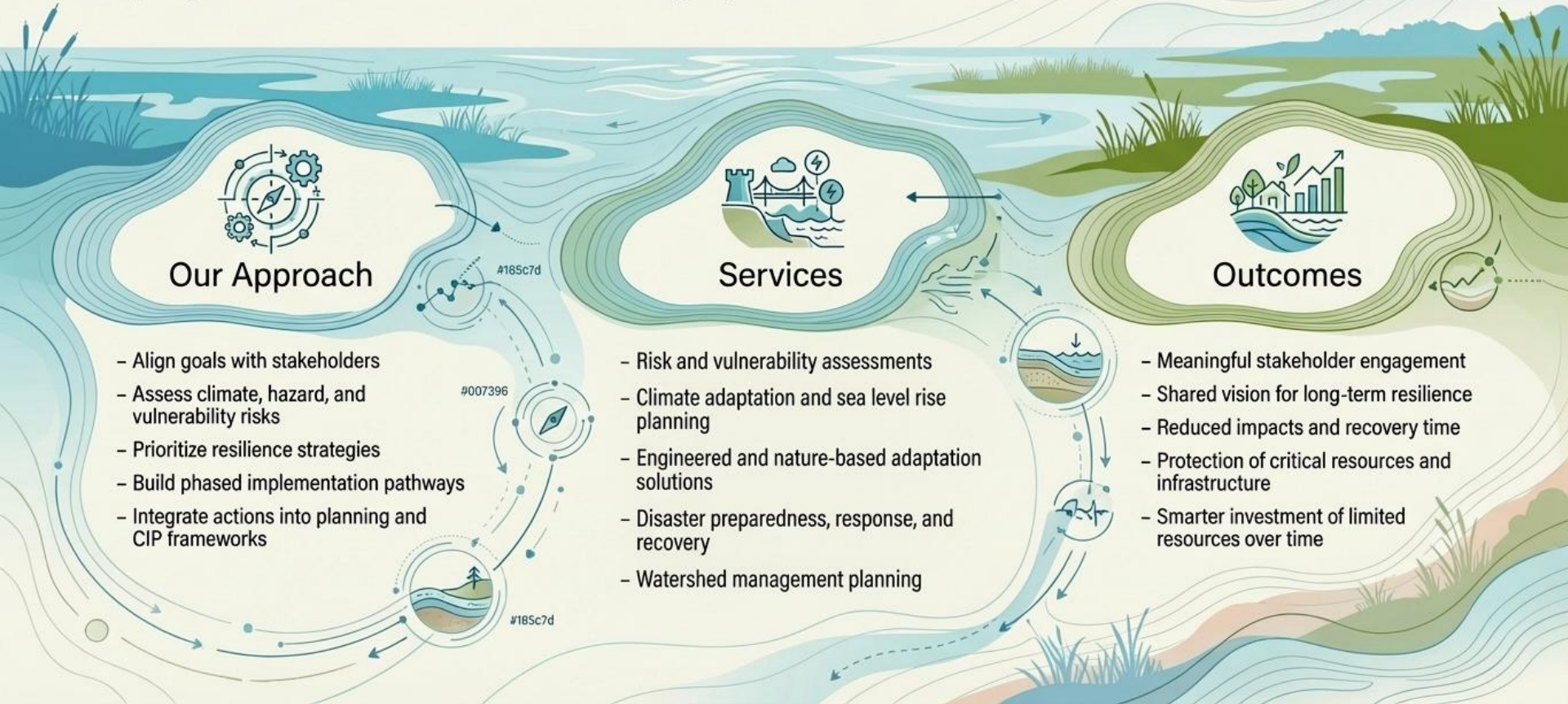
ALEXANDRA PLUMB
Senior Planner

Our work includes:

- Shoreline Master Program updates
- Climate resiliency and adaptation planning
- Coastal and flood hazard analysis
- Cumulative impact assessments
- Restoration and habitat planning
- Community engagement and communication tools
- Regulatory guidance and implementation strategies
- Supporting resilient communities, shorelines, and working waterfronts.

Coastal Resilience Services

Helping communities and infrastructure prepare for climate and coastal hazards



Our Approach

- Align goals with stakeholders
- Assess climate, hazard, and vulnerability risks
- Prioritize resilience strategies
- Build phased implementation pathways
- Integrate actions into planning and CIP frameworks

Services

- Risk and vulnerability assessments
- Climate adaptation and sea level rise planning
- Engineered and nature-based adaptation solutions
- Disaster preparedness, response, and recovery
- Watershed management planning

Outcomes

- Meaningful stakeholder engagement
- Shared vision for long-term resilience
- Reduced impacts and recovery time
- Protection of critical resources and infrastructure
- Smarter investment of limited resources over time

TECHNICAL EXPERTISE

Sea Level Rise & Coastal Adaptation

THE ESA DIFFERENCE

Integrated Expertise
Science, engineering, planning, & regulatory strategy in one team

Nature-Based Innovations
Designing resilient, sustainable, and equitable coastal systems

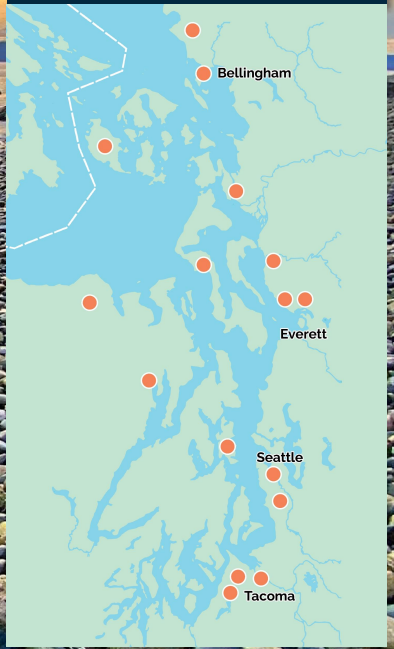
25+ Years of Coastal Resilience Leadership
From concept to construction & long-term monitoring

Collaborative Approach
Partnering with communities, Tribes, and agencies to prioritize feasible, future-ready pathways

OUR SERVICES

- Sea Level Rise Vulnerability
- Flood Risk Management
- Shoreline Erosion Analysis
- Coastal Hazard Mapping
- Habitat Evolution Modeling
- Ecosystem-Based Adaptation

COASTAL RESILIENCE PROJECT EXPERIENCE



Announcement:

New PNW chapter created for the American Shore and Beach Preservation Association (ASBPA)


moffatt & nichol

Session 4: CHRN Connections

Instructions

Spend the next 20 minutes connecting with the Network:

1. Stay in this room, or head to a quieter location
2. Chat with other attendees
3. Optional: Meet up with your CHRN Buddy
4. Optional: 15-min group stretch led by Ali Burgos (meet at the Gazebo)
5. Optional: take a walk around the fairgrounds

Session 5: Lightning Talks

Highlighted Coastal Resilience Projects

COHORT: An interagency team to address coastal hazards and coastal resilience across disciplines

FUNDED BY WASHINGTON'S CLIMATE COMMITMENT ACT

DEPARTMENT OF ECOLOGY
State of Washington

Sea Grant WASHINGTON

WASHINGTON STATE UNIVERSITY EXTENSION

EMERGENCY MANAGEMENT DIVISION WASHINGTON

COHORT

The Coastal Hazards Organizational Resilience Team (COHORT) was developed in response to coastal communities' request for the state to help address the growing severity of natural hazards, which include flooding, erosion, sea level rise, landslides, and a Cascadia earthquake and tsunami event.

COHORT Mission

COHORT works collaboratively with communities and Tribes on the identification, co-creation, and implementation of resilience projects, planning efforts, and other capacity building activities.

Holistic Mitigation Engagement

Community's Priorities

- Stakeholders Engagement
- Community Workshops

Direct Technical Assistance

- Connect community with resources and information
- Training and Outreach
- Capacity Building

Planning Assistance

- Hazards Mitigation Plans
- Shoreline Master Programs
- Sea Level Rise Planning

Co-Creation of Projects

- Enhance Regional Partnerships
- Grant Support

COHORT Support

Targeted Project Support:

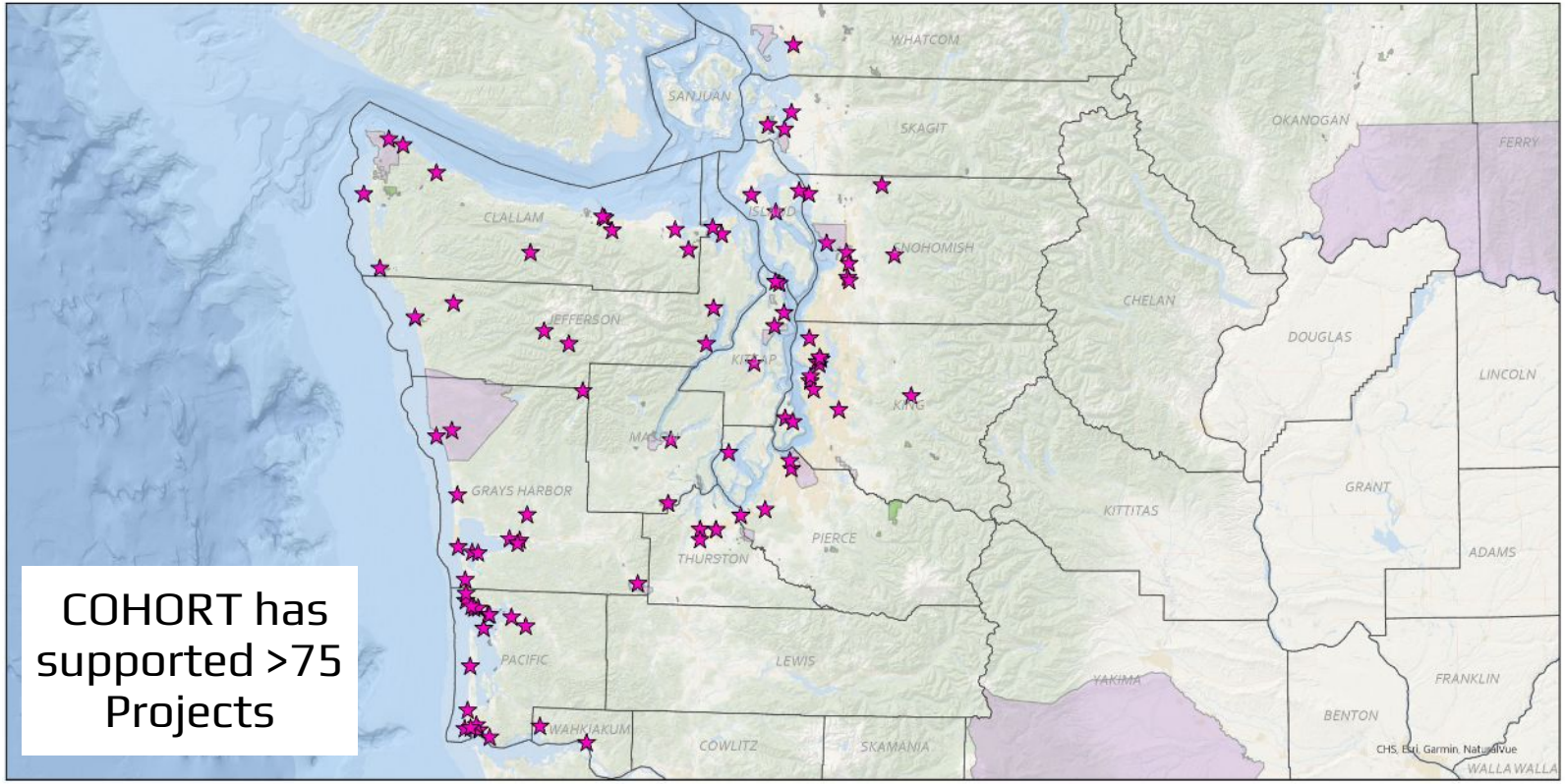
- Hands-on collaboration, technical analysis, document development, frequent meetings

Advisory Support:

- Provide guidance, review documents, infrequent meetings

Peer Network Involvement:

- Resource sharing, peer learning opportunities


WHATCOM
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KITTITAS
GRANT
PIERCE
THURSTON
ADAMS
PACIFIC
LEWIS
YAKIMA
FRANKLIN
BENTON
WAHKIAKUM
COWLITZ
SKAMANIA
WALLA WALLA
CHS, Esri, Garmin, Nat...alvue
COHORT has supported >75 Projects
COHORT Engagement
County Borders
Off-Reservation Trust Lands
Reservation
N
0 25 50 100 Miles
0 50 100 200 Km
DEPARTMENT OF ECOLOGY State of Washington
EMERGENCY MANAGEMENT DIVISION EM WASHINGTON
Sea Grant WASHINGTON
WASHINGTON STATE UNIVERSITY EXTENSION

Session 5: Lightning Talks

Speakers:

Dawn Spilsbury (Facet)

Alexandra Johnson and Paulina Lopez (Duwamish River Community Coalition)

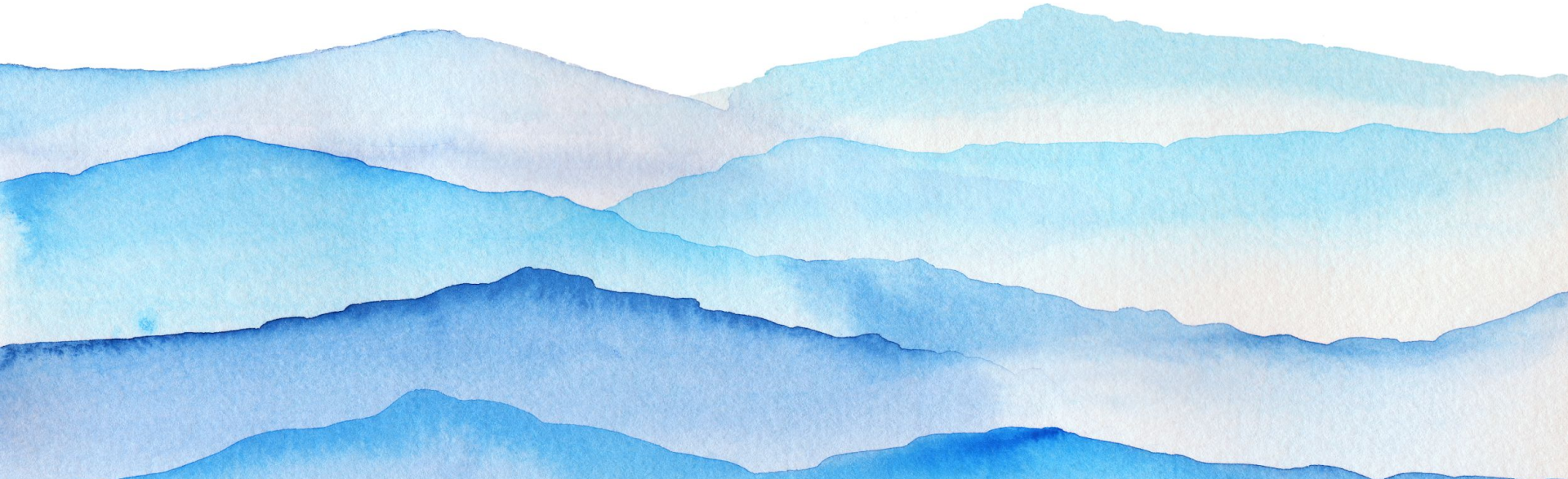
Kristin Lynett (City of Tacoma) and Sandra Girgis (Mithun)

Andrew Schwartz (South County Task Force) and Angela Glore (North Olympic Development Council)

Beyond Pacific County's Sea Level Rise Risk Assessment

Coastal Hazard Resiliency Network (CHRN) – May 19, 2026

FACET



PHASE 1

Sea Level Rise Vulnerability & Risk Assessment

PHASE 1

The “How”

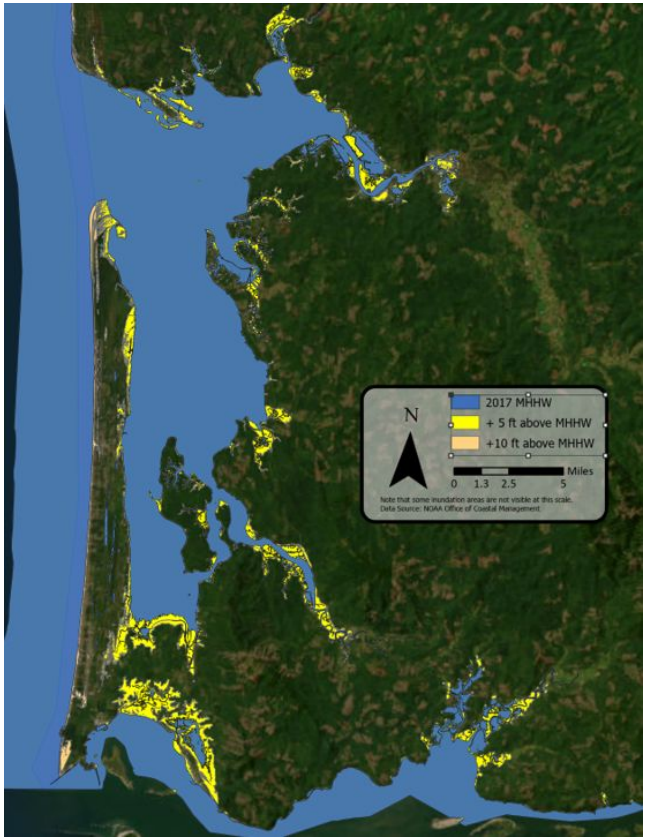
- Chose probability levels and storm frequencies
- Mapped projected SLR increases
  - Bay versus Coast
- Consulted advisory committee and community
- Coordinated with other work – Pacific CD
  - Different mapping projections

PHASE 1

Outcomes

Type of Critical Facility	Vulnerability Rank
Airports	High
Coastal On-Site Septic Systems	High (Potentially)
Coastal Residences	High
County Buildings	Moderate
Cranberry Bogs (if tide gate fails)	Moderate
Fire Stations	Low (except in Raymond)
Group A Water Systems	High (Potentially)
Hospitals	Low
Libraries	Low
Police Stations	Low (except in Raymond)
Ports	High
PUD Stations and Structures	High (Potentially)
Roads	High
Sewer Districts/Water Treatment Plants	Moderate
Schools	Moderate
Shellfish/Seafood Industrial Facilities	High

Community: “But our flooding isn’t on the map!”



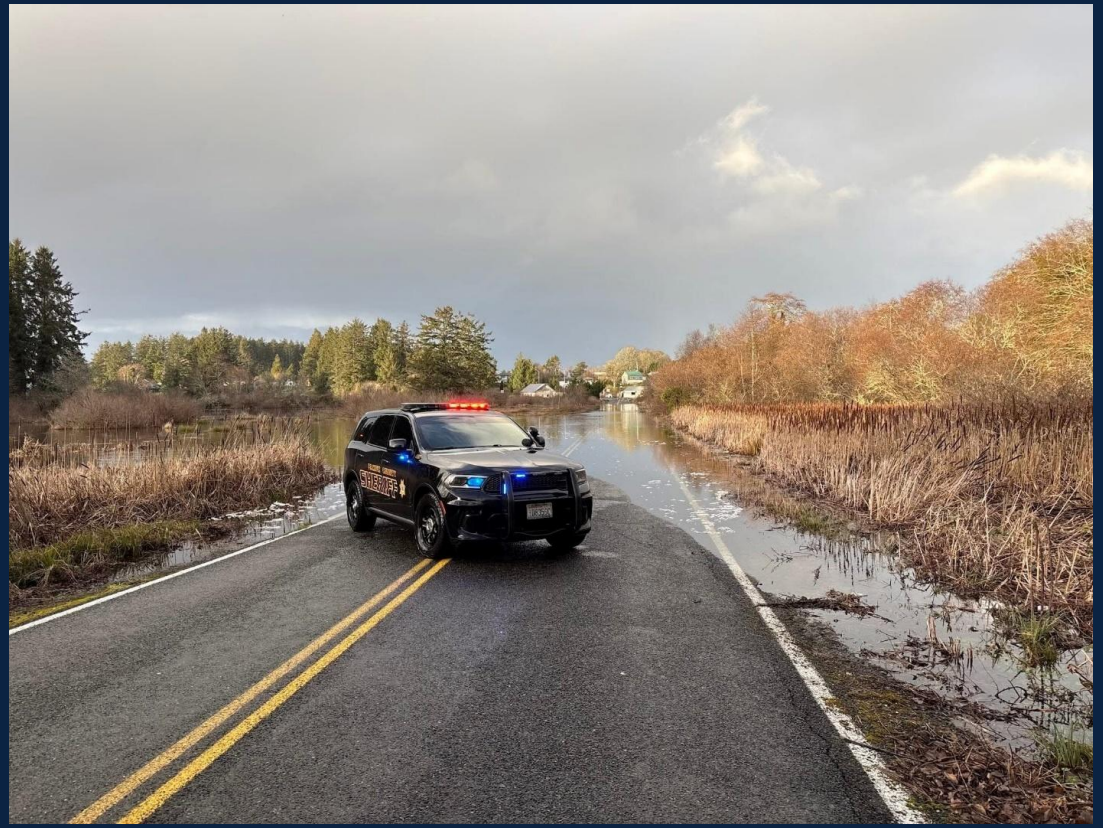
PHASE 2

Coastal Flooding

CITY OF ILWACO

PACIFIC COUNTY

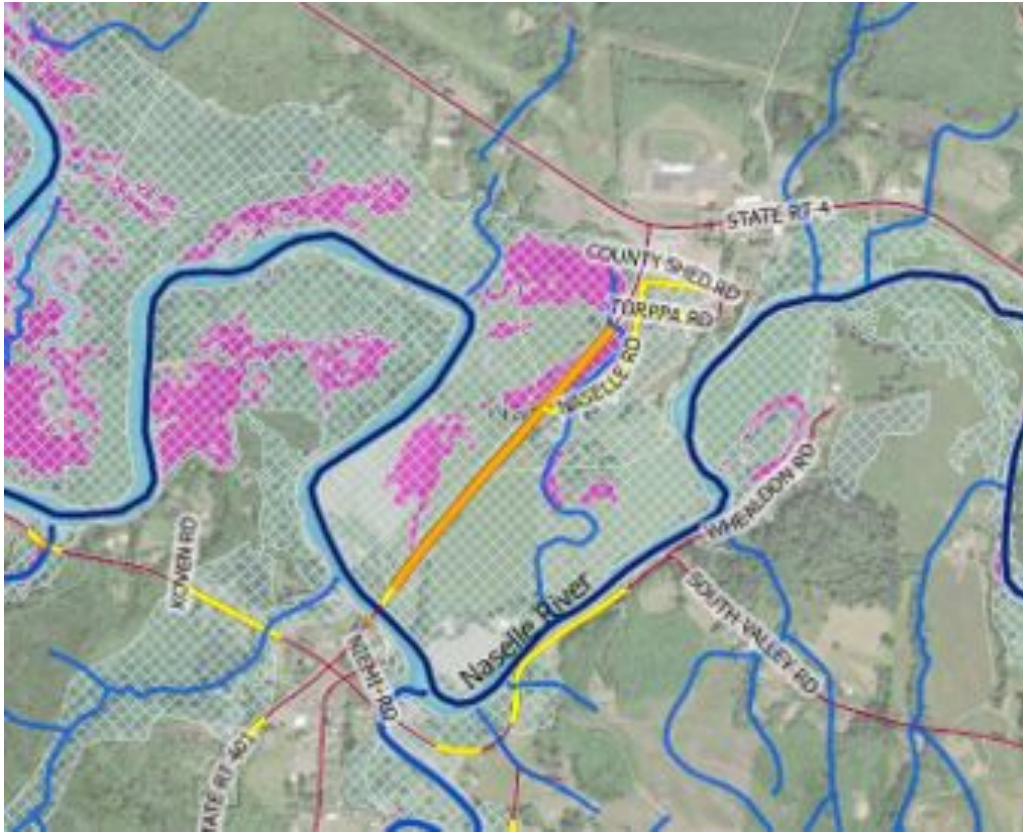
- Tokeland
- Long Beach
- Naselle
- Chinook



PHASE 2

The “How”

- Mapped different types of flooding
- Assessed asset vulnerabilities
  - Critical facilities
  - Stormwater
  - Drinking water
  - Roads
  - Drainage infrastructure
  - Septic systems/Sewer infrastructure
- Discussed saltwater intrusion
- Reviewed CIP/TIP for priorities
- Consulted with combined technical committee
- Shared through community outreach



PHASE 2

Pacific County Outcomes

- Mapped areas at high risk of flooding
  - Riverine
  - Coastal
  - Compound
  - Stormwater
  - Groundwater

Focus Area	Flooding	Exposure	Potential Impact
Long Beach Peninsula (North)	Coastal	High	Moderate
	Stormwater	High	Moderate to High[1]
	Groundwater	Moderate	Moderate
Naselle River Near Naselle	Riverine	High	Moderate to High[2]
	Compound	High	Moderate to High[2]
Tokeland/North Cove	Coastal	High	High[3]
	Riverine	Moderate	Moderate
	Stormwater	High	Moderate to High[3]
	Groundwater	Moderate	Low to Moderate
Chinook	Coastal	High	Moderate to High[4]
	Riverine	Moderate	Moderate
	Stormwater	High	Moderate to High[4]
	Groundwater	Moderate	Moderate

PHASE 2

Ilwaco Outcomes

- Mapped areas at high risk of flooding
  - Riverine
  - Coastal
  - Compound
  - Stormwater
  - Groundwater

Focus Area	Flooding	Exposure	Potential Impact
Ilwaco City Center	Coastal	High	Moderate
	Stormwater	High	Moderate to High[1]
Vandalia Neighborhood	Riverine	High	Moderate to High[2]
	Compound	High	Moderate to High[2]

PHASE 2

Recommendations

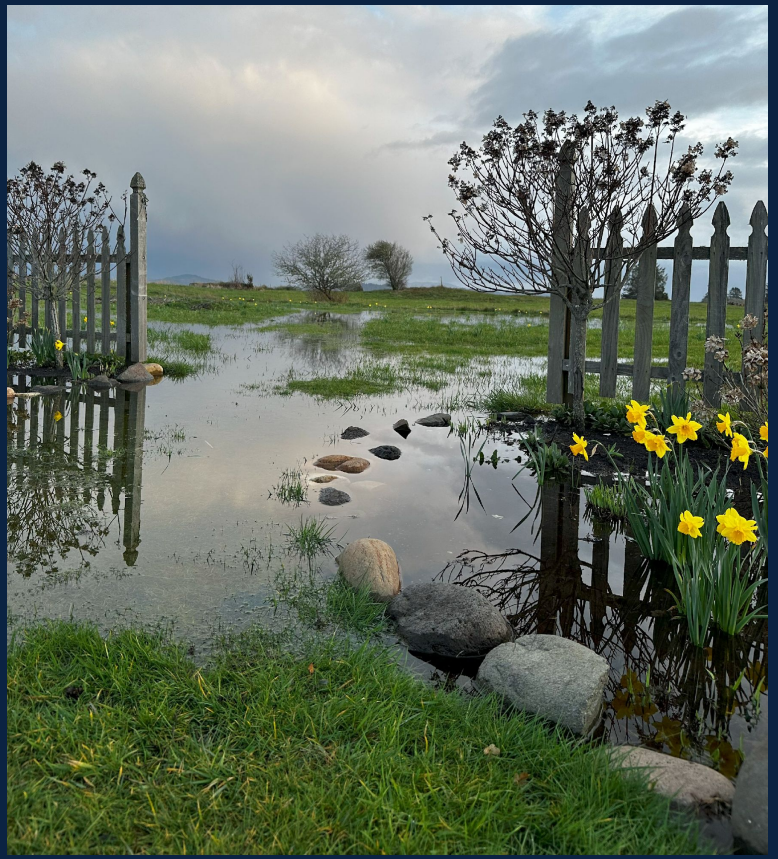
- General strategies rather than prescriptions
- Road signs in flood prone areas, prioritize for resiliency
- Increase Base Flood Elevation, incorp wet floodproofing
- ID areas that may require pumps and catch basins, start planning
- Maintain levees, tide gates, culverts and relationships with Districts
- Prestaging emergency equipment, educate community
- **Incorporate projections in stormwater designs**
- **Develop master plans for certain areas – Tokeland, Vandalia, etc.**
- And more….

Implementation Projects

ILWACO STORMWATER

TOKELAND COMMUNITY RESILIENCY PLAN

SEAVIEW CULVERTS



City of Ilwaco Green Stormwater Infrastructure

In progress, with Pacific Conservation District

Work with City and partners to develop probable projects

Design components:

- Urban Tree Canopy
- Infrastructure (30%)

Community education

Tokeland Community Resiliency Plan

Conceptual

Work with Tribe and community to develop possible resiliency strategies

Assess and prioritize strategies and actions. Designs or plans developed

Define path to completion. Don’t just leave as a plan on a shelf

Seaview Culvert Inventory

In Progress

Complete culvert and stormwater inventory

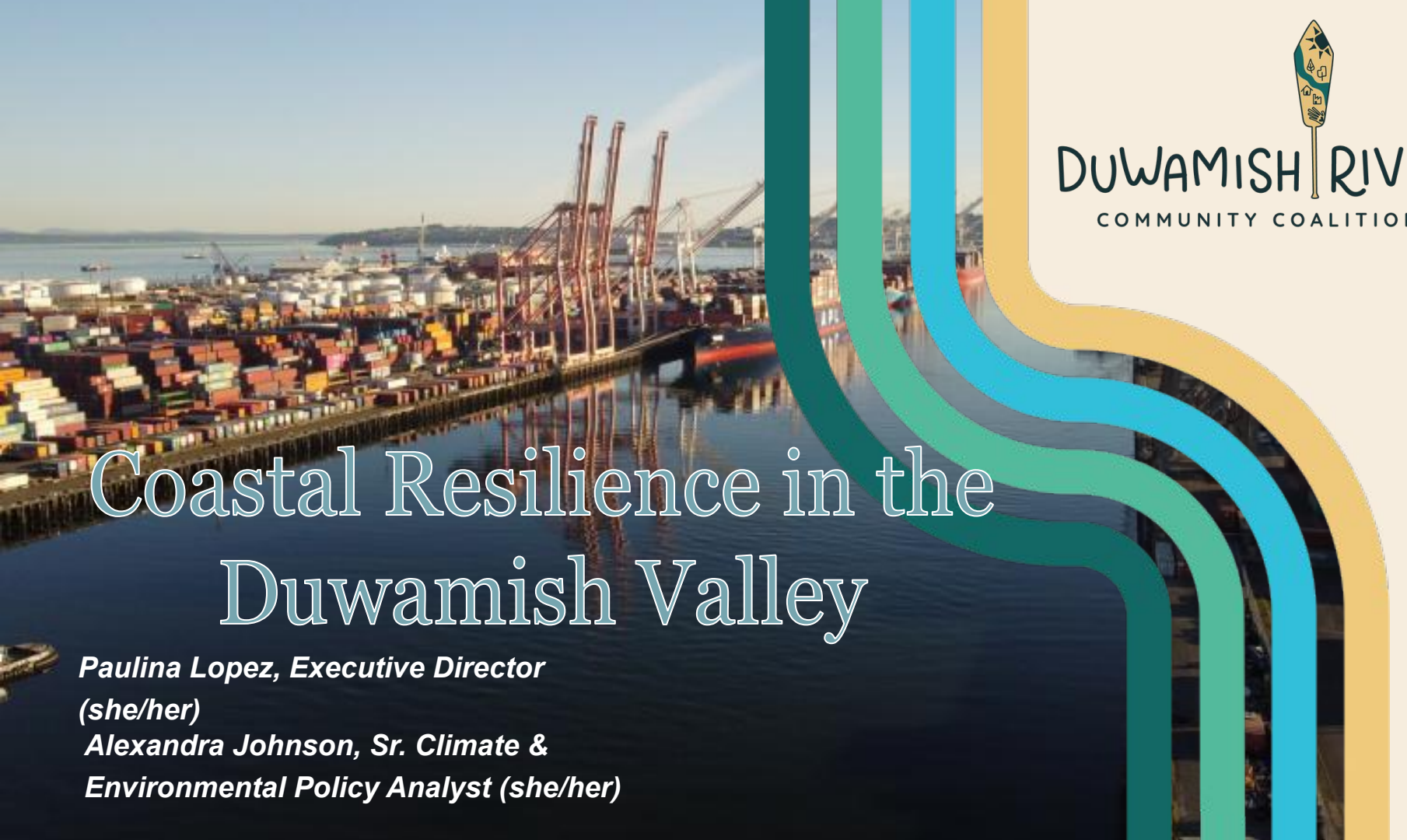
ID potential areas of improvement

Incorporate into CIP, design plans and funding opportunities

SUCTIONS PICKERS HARVESTING CRANBERRIES

Thank you!

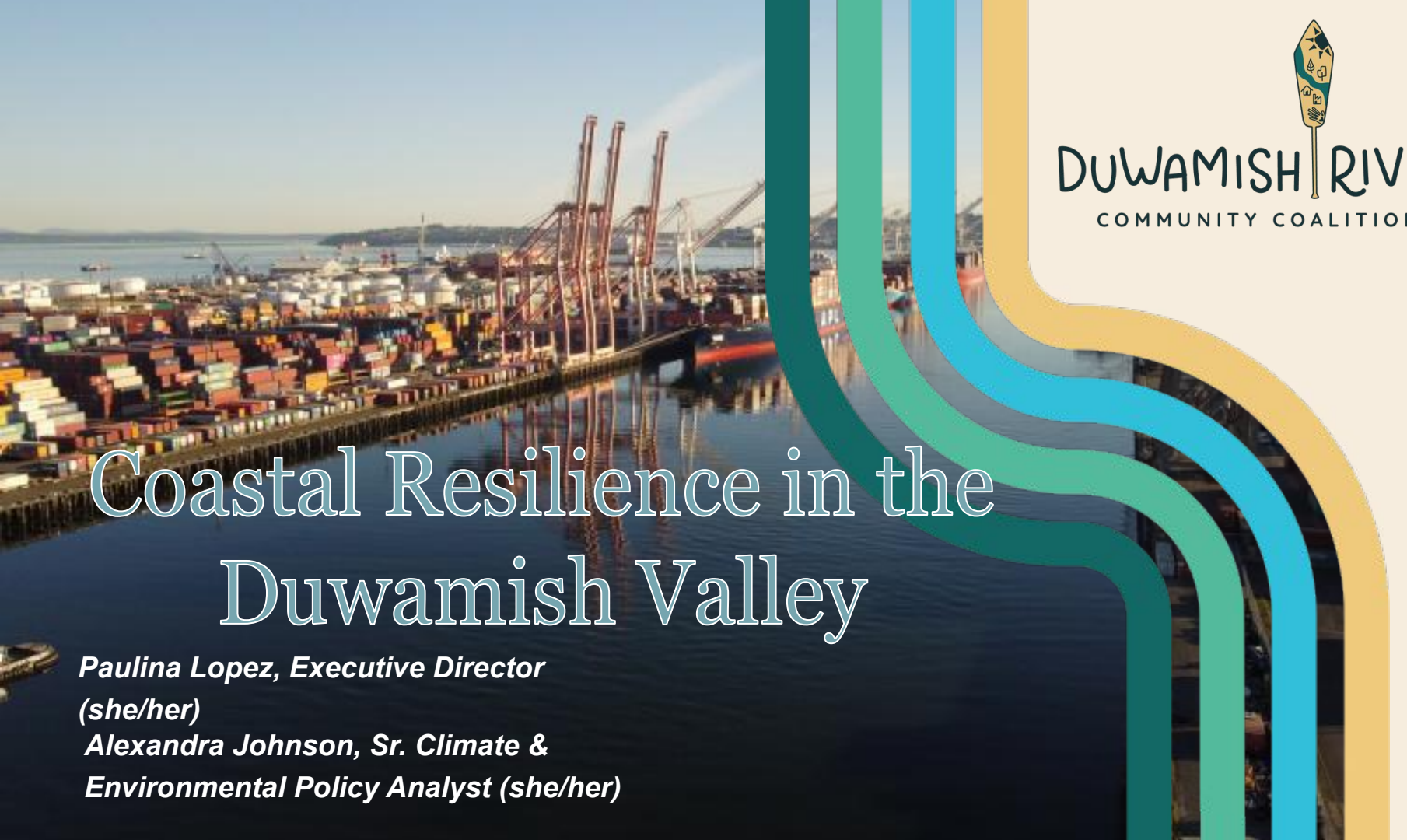
FACET



DUWAMISH RIVER
COMMUNITY COALITION

Coastal Resilience in the Duwamish Valley

Paulina Lopez, Executive Director (she/her)
Alexandra Johnson, Sr. Climate & Environmental Policy Analyst (she/her)



DUWAMISH RIVER
COMMUNITY COALITION

Coastal Resilience in the Duwamish Valley

Paulina Lopez, Executive Director (she/her)
Alexandra Johnson, Sr. Climate & Environmental Policy Analyst (she/her)


COAST SALISH PLACE NAMES
VILLAGE SITES
A. Place where something is grown or sprouts
B. Slough for testing thickness of a canoe hull
C. Threading or inserting something
D. Brush spread on water
E. Prairies
F. A place to turn around or to cross over
G. Herring house
H. Water at the head of the bay
I. Place where one wades
J. Confluence of waters
K. Confluence of waters
WATER-RELATED PLACES
1. Elderberry house
2. Face
3. Crooked
4. Place of rock
5. Bitter lake
6. A place to go to calm down
7. Saltwater
8. Place where people are sent
9. Place for red paint
10. Place of dripping water
11. Channel watercourse
12. Green lake
13. Large, having lots of water
14. Place to spirit journey
15. Place of frogs
16. Outlet
17. Place where one whips the water
18. To lift a canoe
19. Fathoms
20. Hang or throw over
21. Small lake
22. Water for land otter
23. A trail descends into the water
24. Where it emerges by bubbling
25. Yellowish, greenish rushes on the point of land
26. Trout
27. Place of a supernatural monster "horned snake"
28. A marsh with channels where canoes could be pushed through
29. Place of spearing
30. Draining creek over flat lands
31. Frame for drying fish
32. Capsized
33. Little bends at the end
34. Untie the house
35. Lake
36. Ducklings (something which emits a squeak or peep)
37. Marshes
Place names are stories: proof of presence, archives of meaning, evidence of ancestry, and a reference for treaties and other legal connections to territory. The place names on this map, written in the Lushootseed language of the Coast Salish people, are drawn from elders who worked with ethnographers in the early twentieth century, from the work of linguists and scholars such as the late Vi Hilbert, and the work of Southern Lushootseed consultants (Nancy Jo Bob) and (Tami Hohn).
NORTH
0 1 miles
Selected Village Sites
Water-related Places
Other Villages
Other Named Places
Upland Forests
Floodplain Forests
Prairies
Freshwater Wetlands and Bogs
Saltwater Wetlands
Tideflats
Rivers and Creeks
Trout, whitefish, salmon, waterfowl
Lakes and Puget Sound
Modern Shoreline
Vital ecosystems ensure the health of our landscape and provide the structures that are key to the sustainability of critical habitats for fish, wildlife, vegetation, and ourselves. Coast Salish people harvested over 300 plants and animals from a diversity of carefully tended habitats. These species continue to be integral to the Coast Salish culture today.
This map is an interpretive photorealistic and hand-painted rendering of the Seattle area in the mid-19th century, just prior to non-Native settlement, based on mapping done by the Puget Sound River History Project. Continue to explore Seattle's landscapes through the tours presented on the reverse side of this map.
SEATTLE: DISCOVER AND EXPLORE PAST LANDSCAPES
THE
WATERLINES
PROJECT
BURKE MUSEUM
Waterlines is a project of the Burke Museum. Please visit us to learn more about Seattle's past landscapes:
burkemuseum.org/waterlines
ART AND DESIGN BY:
MICHAEL A. LEWIS & JORDAN WEST MONEZ
4 CULTURE
Seattle Public Utilities
Quaternary Research Center
CENTER FOR AMERICAN INDIAN & INDIGENOUS STUDIES
UNIVERSITY of WASHINGTON
Bill Holm Center for the Study of Northwest Native Art
BURKE MUSEUM
UNIVERSITY of WASHINGTON
College of Built Environments | College of the Environment
School of Public Health
SIMPSON CENTER for the HUMANITIES
SUPERFUND RESEARCH PROGRAM
UW Medicine
UW SCHOOL OF MEDICINE
CENTER FOR HEALTH EQUITY, DIVERSITY, AND INCLUSION
Seattle Office of Sustainability & Environment
King County
Protecting Our Waters


1892
PEACEFUL HOME OF
THE DUWAMISH TRIBE
Kikisoblu (Princess Angeline) - Daughter of Chief Seattle
2001
ONE OF THE NATION'S MOST
TOXIC RIVERS

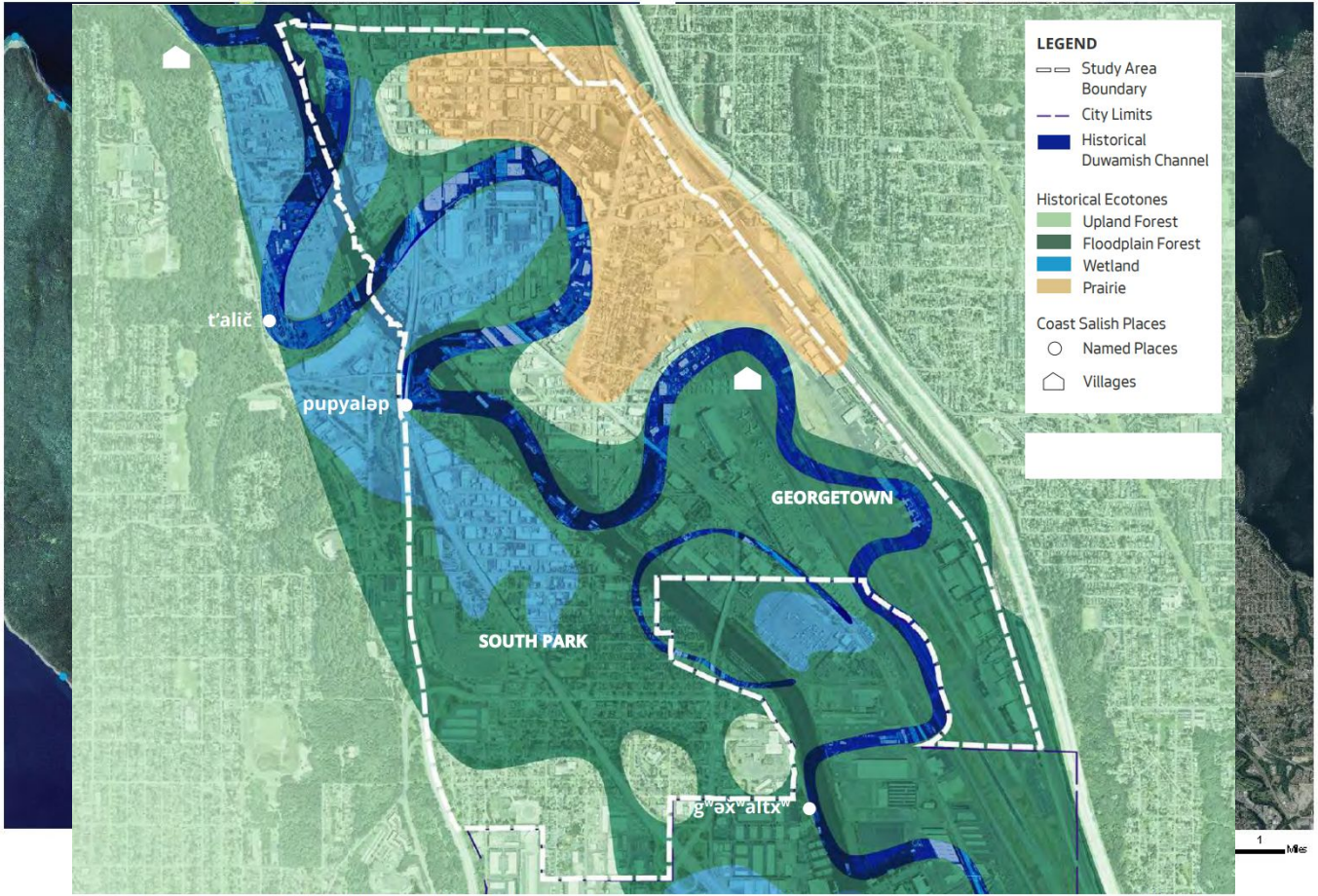
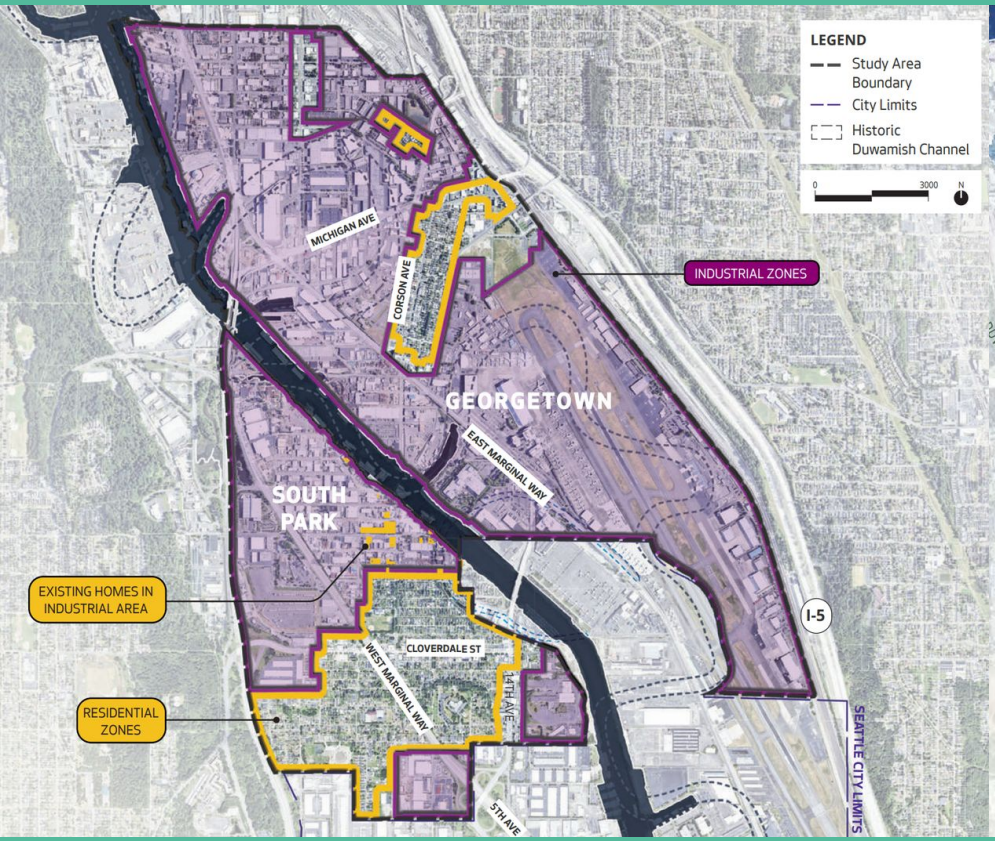
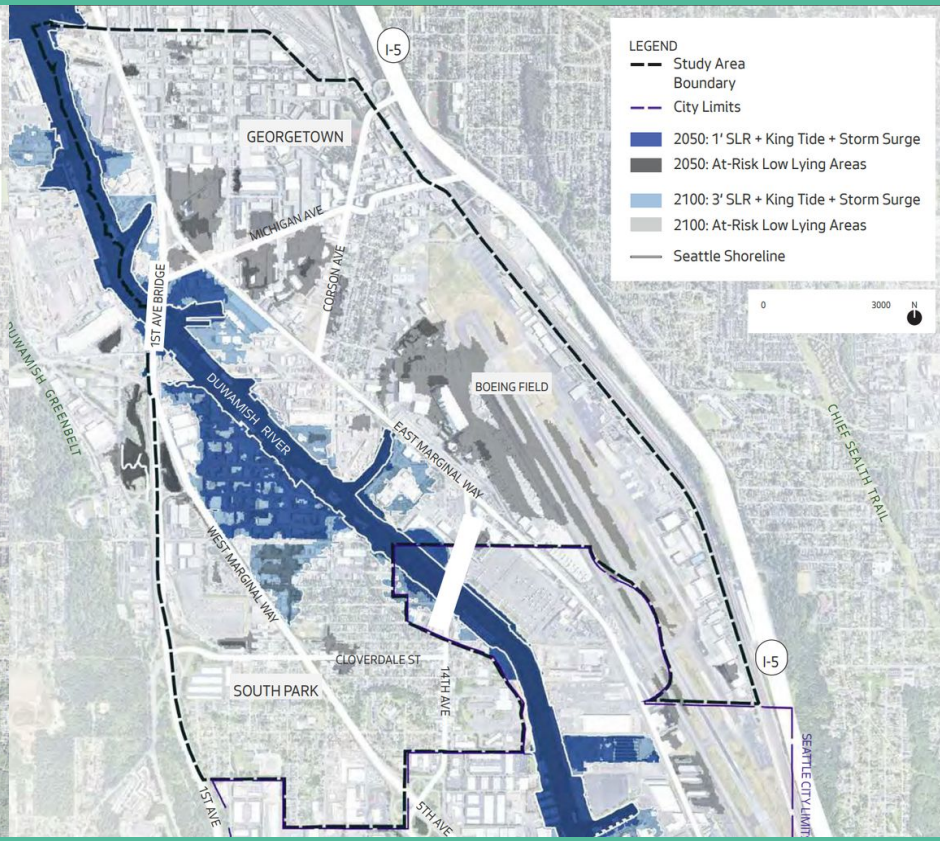


Figure 2. Study area for this report overlaid with the historical channel of the Duwamish River, historical ecotones from the ~1800s, and place-names of Coast Salish places (adapted from the Burke Museum Waterlines Project)


LEGEND
Study Area Boundary
City Limits
Historic Duwamish Channel
0
3000
N
INDUSTRIAL ZONES
EXISTING HOMES IN INDUSTRIAL AREA
RESIDENTIAL ZONES
MICHIGAN AVE
CORSON AVE
GEORGETOWN
EAST MARGINAL WAY
SOUTH PARK
CLOVERDALE ST
WEST MARGINAL WAY
14TH AVE
5TH AVE
I-5
SEATTLE CITY LIMITS


LEGEND
Study Area Boundary
City Limits
2050: 1' SLR + King Tide + Storm Surge
2050: At-Risk Low Lying Areas
2100: 3' SLR + King Tide + Storm Surge
2100: At-Risk Low Lying Areas
Seattle Shoreline
0
3000
N
I-5
GEORGETOWN
MICHIGAN AVE
CORSON AVE
1ST AVE BRIDGE
DUWAMISH GREENBELT
DUWAMISH RIVER
BOEING FIELD
EAST MARGINAL WAY
CHIEF SEALTH TRAIL
WEST MARGINAL WAY
CLOVERDALE ST
SOUTH PARK
14TH AVE
1ST AVE
5TH AVE
SEATTLE CITY LIMITS

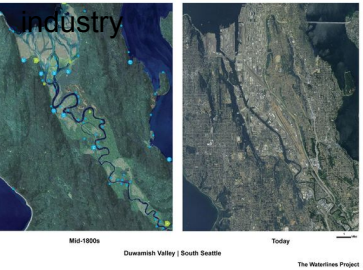
Sources

Root Cause of Flooding - Historic Floodplain (~1850s) & Current Land Use

Duwamish Valley Environmental Movement

1920s

Duwamish River straightened, and the Duwamish Valley zoned, for industry



1958

King County voters approve diverting polluting sewage from Lake Wash to the Duwamish River

1961

South Park house wives protest the open burning of garbage at the South Park dump, staging a City Hall sit-in until burning was ceased

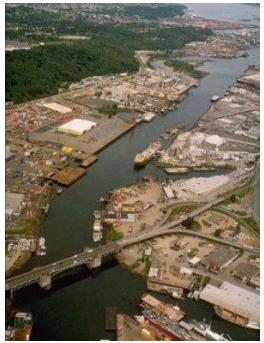
1970


The Seattle Times

Shots fired, 60 arrested in Indian-fishing showdown

A mass arrest of sixty Native fishermen on the Puyallup River led to a judge ruling in favor of tribal treaty rights (known as the Boldt Decision)

2001



Declaration of the Duwamish River as a Superfund site, thus creating DRCC

2013

A call to define EJ communities leads to a focus on the health impacts of pollution in the Duwamish Valley and new EPA standards for health in the DV; **the DRCC Clean Air Program is born**

The Clean Air Program creates a partnership with over 40 orgs who meet frequently to address DV clean air goals

The Duwamish Valley Affordable Housing Coalition is created to fight the displacement of neighbors, preserve affordable homes

The Duwamish Valley Youth Corps is established, empowering youth through conservation

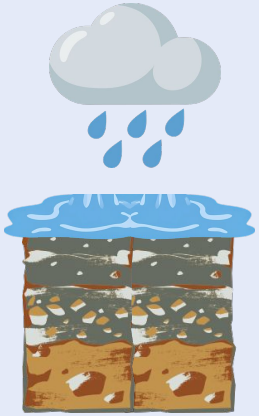
DRCC submits public comment and helps write legislation to improve state health laws

Policy Advocacy Team meets to address clean air and environmental justice through policy

Climate Justice program is born, focusing on other forms of pollution, community health, and Superfund advocacy

After South Park flooding event in 2022, DRCC rallied behind neighbors to demand the City/County address concerns and plan for the next event

Today

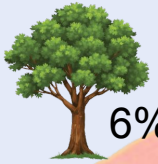


Largest impermeable surface area in King County

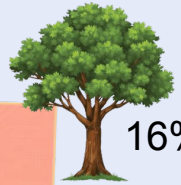
+13°F

Upper Reach

Middle Reach



6%



16%

Lower Reach

+8°F

Harbor Island

Elliott Bay

KEY

= Legal Agreement

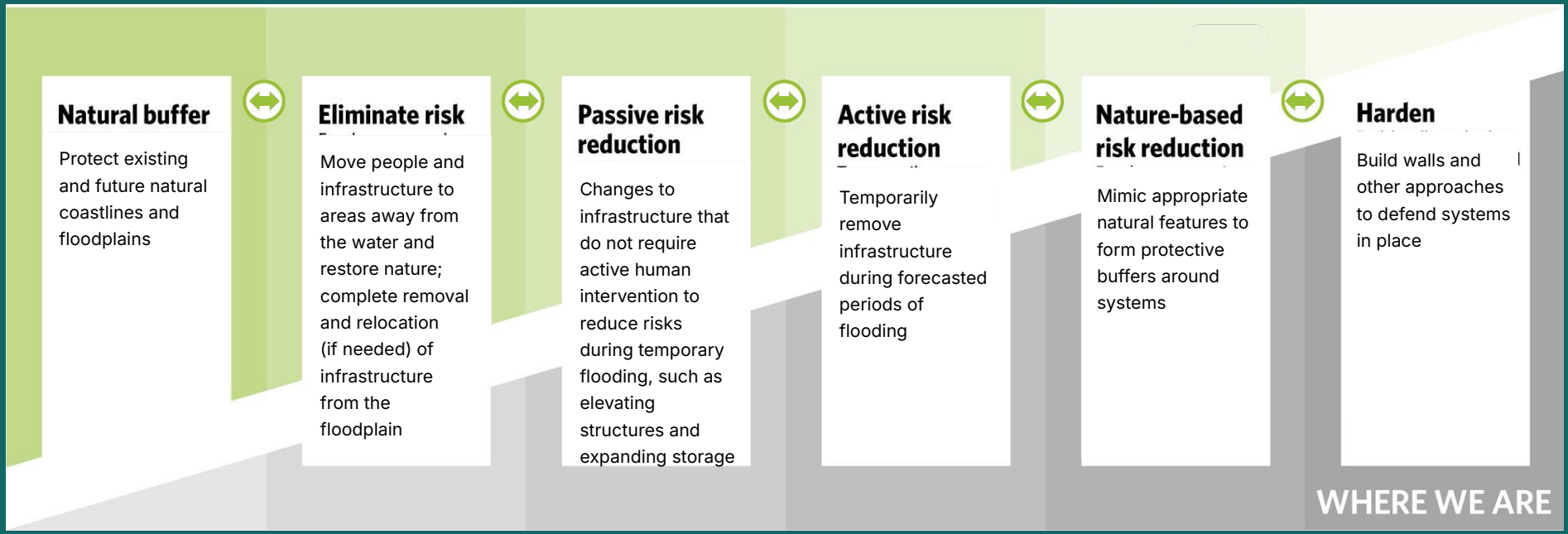
= Feasibility Study

<1%

100-year FEMA floodplain


CAUTION
CAUTION
CAUTION

Range of Flood Adaptation Strategies*



Non-Structural

Blue/Green Infrastructure

Grey Infrastructure

*Adapted from Peck et al., 2022


Temporary Flood Barrier
We are using large concrete blocks, jersey barriers and/or sandbags to reduce Duwamish River flooding during high tides.
Please leave barriers & sandbags in place.
Need sandbags?
Pick up for free at 731 S. Sullivan St. or call (206) 310-3557/(206) 584-3465 for possible delivery.
Experiencing an emergency?
Call 911
Urgent flooding or sewer backup?
Call SPU's 24/7 Operations Response Center at (206) 386-1800.
seattle.gov/south-park-flooding
Seattle Public Utilities


OUR MISSION

Land Rematriation

The Heron's Nest is a 3.56-acre land care project and community hub in the West Duwamish Greenbelt. This pilot project preserves critical habitat from development while creating a space where people can come together to share, learn, and grow. The success of Heron's Nest establishes a replicable model of community-led land care and sustainable development rooted in Indigenous knowledge and practice.

The land features an urban farm and forest, a greenhouse, and an outdoor classroom. Shared Spaces Foundation is in the process of rematriating Heron's Nest to the **Duwamish Tribe**, who will take on full ownership and management.

This is more than land preservation — it's about creating sustainable community resources and supporting Indigenous land sovereignty.

People's Park

What does it looks like when all of this comes together?

"[The Park's opening] will celebrate the victories of the community partnerships that have formed the backbone of this project for the past two decades and the innovations in conservation science that this site represents."

A Few Examples of “Nature-Based Risk Reduction” Options

Vegetated Levees

May Address:

Sea-level rise

Living Shorelines

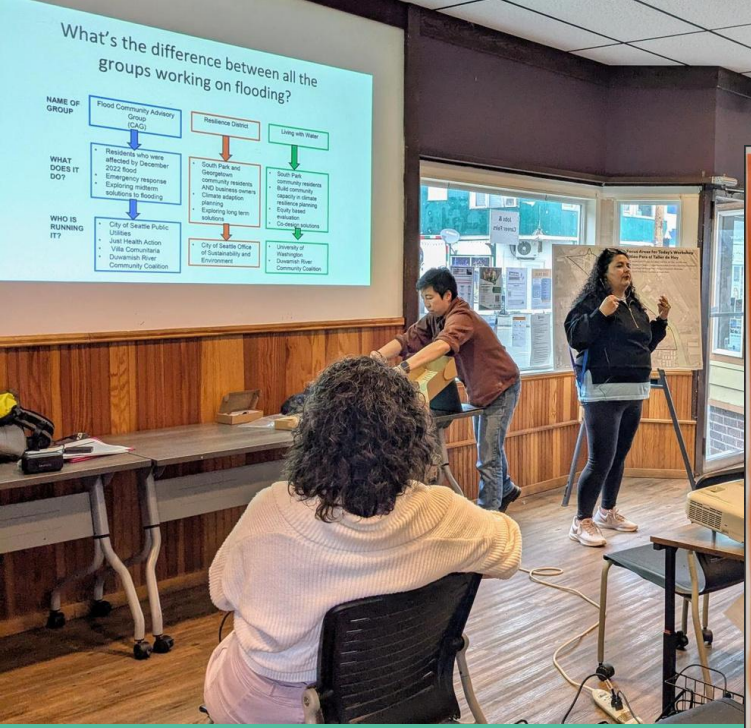
May Address:

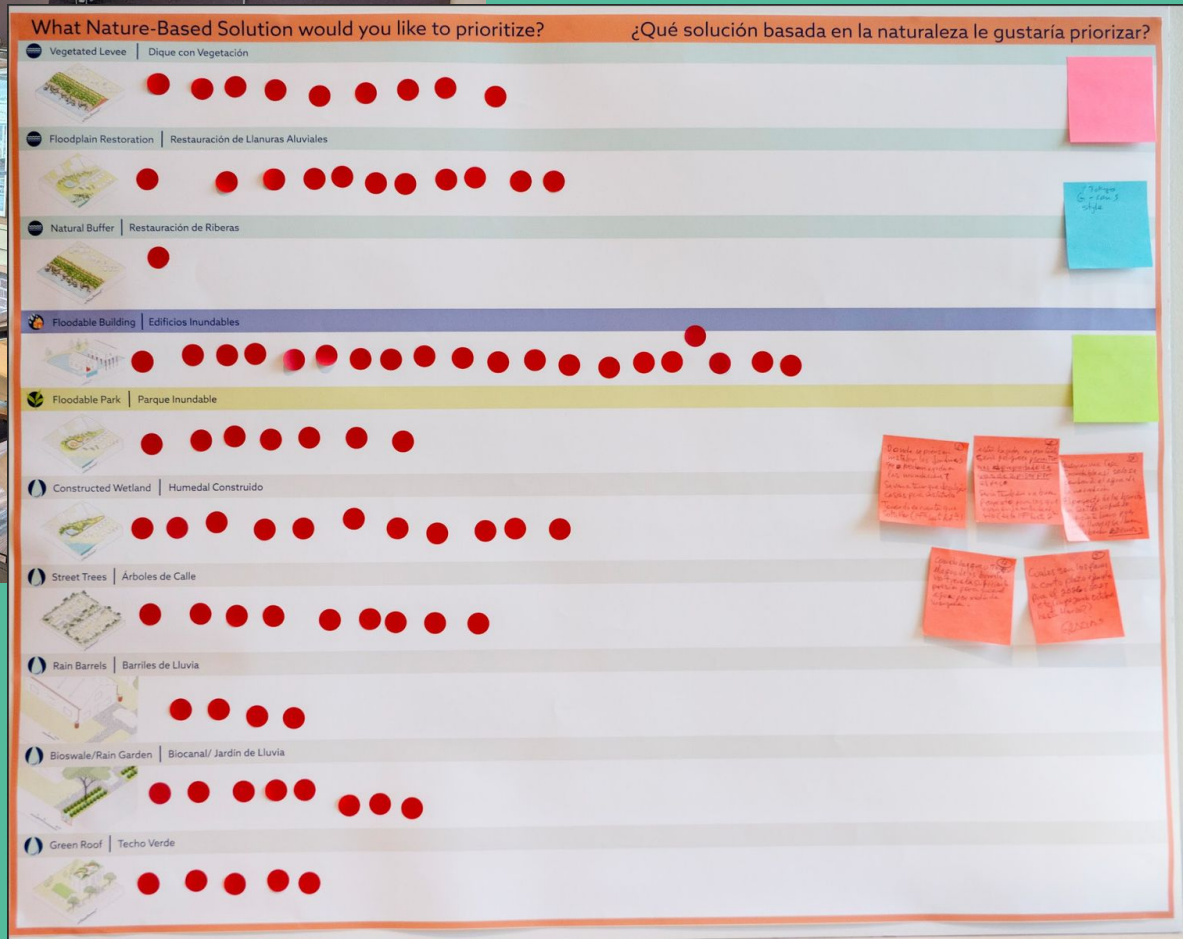
All causes of flooding

Bioswales/Rain Gardens

May Address:

Stormwater


What's the difference between all the groups working on flooding?
NAME OF GROUP
WHAT DOES IT DO?
WHO IS RUNNING IT?
Flood Community Advisory Group (CAG)
Residents who were affected by December 2022 flood
Emergency response
Exploring midterm solutions to flooding
City of Seattle Public Utilities
Just Health Action
Villa Comunitaria
Duwamish River Community Coalition
Resilience District
South Park and Georgetown community residents AND business owners
Climate adaption planning
Exploring long term solutions
City of Seattle Office of Sustainability and Environment
Living with Water
South Park community residents
Build community capacity in climate resilience planning
Equity forced motivation
Co-design solutions
University of Washington
Duwamish River Community Coalition


What Nature-Based Solution would you like to prioritize?
¿Qué solución basada en la naturaleza le gustaría priorizar?
Vegetated Levee | Dique con Vegetación
Floodplain Restoration | Restauración de Llanuras Aluviales
Natural Buffer | Restauración de Riberas
Floodable Building | Edificios Inundables
Floodable Park | Parque Inundable
Constructed Wetland | Humedal Construido
Street Trees | Árboles de Calle
Rain Barrels | Barriles de Lluvia
Bioswale/Rain Garden | Biocanal/ Jardín de Lluvia
Green Roof | Techo Verde

NOTHING ABOUT US

WITHTOUT US

Questions?

www.drcc.org

www.realrentduwamish.org

Volunteer with us!

Share your voice at our events!

To achieve our goals, we need your voice, your involvement, and your ideas!

Email: alexandra@drcc.org

Phone: 206-293-8534

Building a Culture of Adaptation through the Commencement Bay Resilience & Restoration Master Plan—

Coastal Hazard Resiliency Network (CHRN) Lightning Talk

Kristin Lynett, City of Tacoma
Sandra Girgis, Mithun

May 19, 2026

City of Tacoma · MITHUN · moffatt & nichol · CASCADIA CONSULTING GROUP · GeoEngineers · ECOnorthwest · Parametrix · HERRERA · Reach Studio

Project Overview

A coordinated Bay-wide vision as well as recommendations to **guide phased restoration and climate resilience investments**

The Commencement Bay Resilience and Restoration Master Plan will encompass the **shoreline area from Point Defiance to the City of Tacoma's Urban Growth Area at Brown's Point/Dash Point** and will include the nearshore environment, deep water marine areas, shorelands, as well as rivers and streams of the State including the **Puyallup River, Hylebos Creek, and Wapato Creek.**

The Project will establish a Bay Wide Plan and **advance 4 priority projects.**

Commencement Bay Resilience & Restoration Plan

What is it doing?

Strategic Priorities

1. Build Adaptive Capacity and Collaboration

Build collaborative culture and partnerships to effectively coordinate resources, implement multi-benefit projects at multiple scales and grow community preparedness to meet shared priorities.

2. Promote Equitable Access to the Water for all Species

Promote physical, cultural, emotional and economic connection to the shoreline, rivers and floodplains by removing barriers to access for communities, salmon and nearshore estuarine habitats.

3. Support a Thriving, Environmentally Sustainable Working Waterfront

Advance the continuity, safety, and environmental sustainability of Tacoma's deep-water port and industrial businesses—reflecting the unique identity of the City's working waterfront.

4. Respect Tribal Sovereignty and Leadership

Honor Tribal sovereignty by integrating treaty-protected access, cultural landscapes, and Indigenous knowledge into all actions.

5. Restore and Enhance Healthy Bay Ecosystems

Prioritize regenerative nature-based approaches, and remediation that allow for habitat migration and measurably increase clean air, water and land for the wellbeing of people and wildlife.

6. Ensure Safe and Reliable Utilities, Buildings, Transit and Transportation Networks

Retrofit and design assets on the Bay—including utilities, buildings, transit and transportation networks—to adapt to sea level rise, reduce impacts from flooding and extreme weather, and maintain critical services that provide safety for all.

7. Align Land Use with Long-Term Resilience Goals

Align safe and strategic development with zoning, permitting, and investment decisions to reduce future risks, preserve beneficial natural functions, reduce pollution and integrate industrial, ecological, and community priorities.

8. Build Inclusive Practices into the Plan and Outcomes

Commit to diverse representation in planning and implementation and elevate community priorities that address underserved needs when allocating resources and defining projects, policies and adaptation pathways.

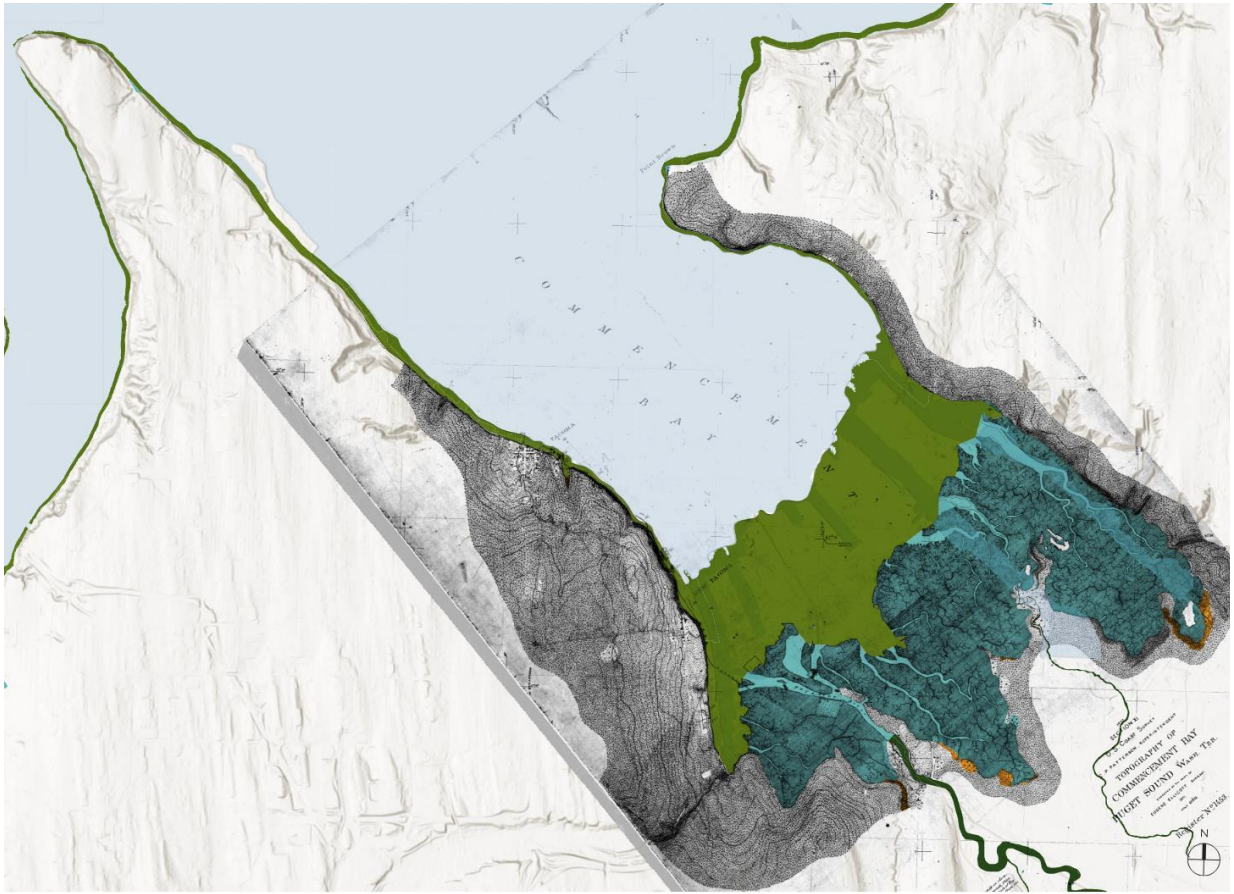
"An inclusive, connected Bay, where communities, culture, and nature thrive"

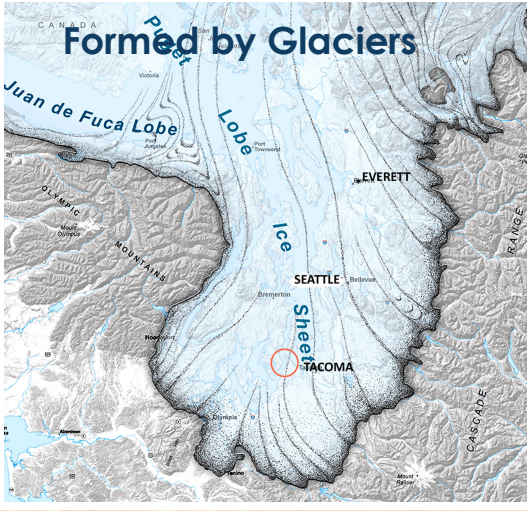
History of the Bay—

Historic Conditions

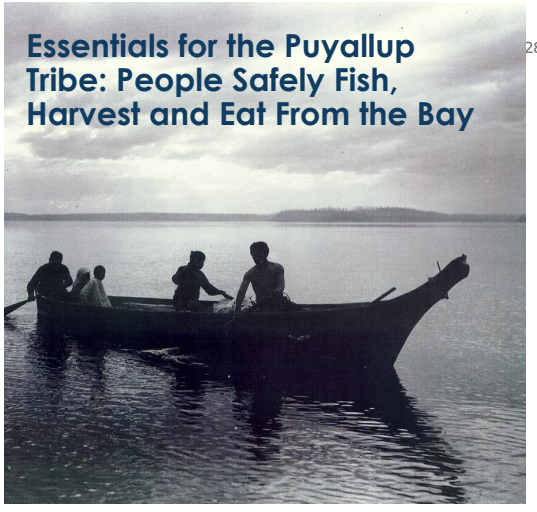
Historically, Commencement Bay contained an estimated 2,085 acres of **intertidal mudflats** and 3,894 acres of **emergent marsh habitat**.

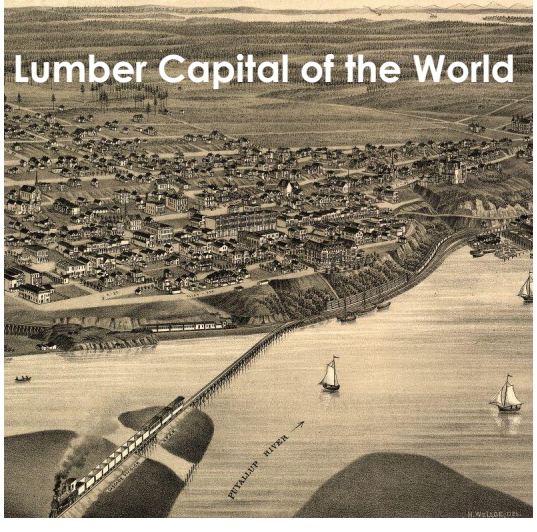
Prior to development, the shoreline of **Commencement Bay is presumed to have contained contiguous forested riparian habitat surrounding the bay**.

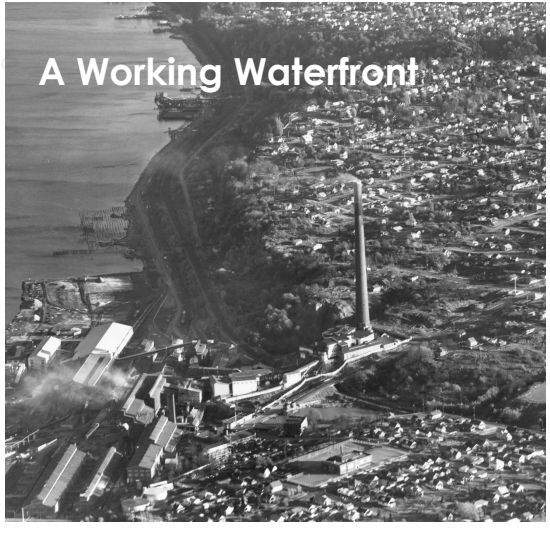



Formed by Glaciers
Puget Lobe
Juan de Fuca Lobe
Ice Sheet
EVERETT
SEATTLE
TACOMA
OLYMPIC MOUNTAINS
CASCADE RANGE


Still connected to glaciers


Essentials for the Puyallup Tribe: People Safely Fish, Harvest and Eat From the Bay


Lumber Capital of the World
PUYALLUP RIVER


A Working Waterfront


A fun Waterfront

Why is a Resilience and Restoration Plan Needed?

- **Flooding, erosion and habitat loss** is impacting economic development, safety, and environmental quality
- **Rising groundwater is making contaminants more mobile**
- Shoreline regulations need updating in response to increasing climate risks. **Department of Ecology is changing its Shoreline Master Program (SMP) requirements.**
- Prioritization is needed to determine where **improved nature-based systems** can provide the greatest ecological and health benefits, where **resilience investments** can have the greatest impact, and where **cleanup efforts** can most improve water quality.

Bay-wide Challenges and Opportunities—

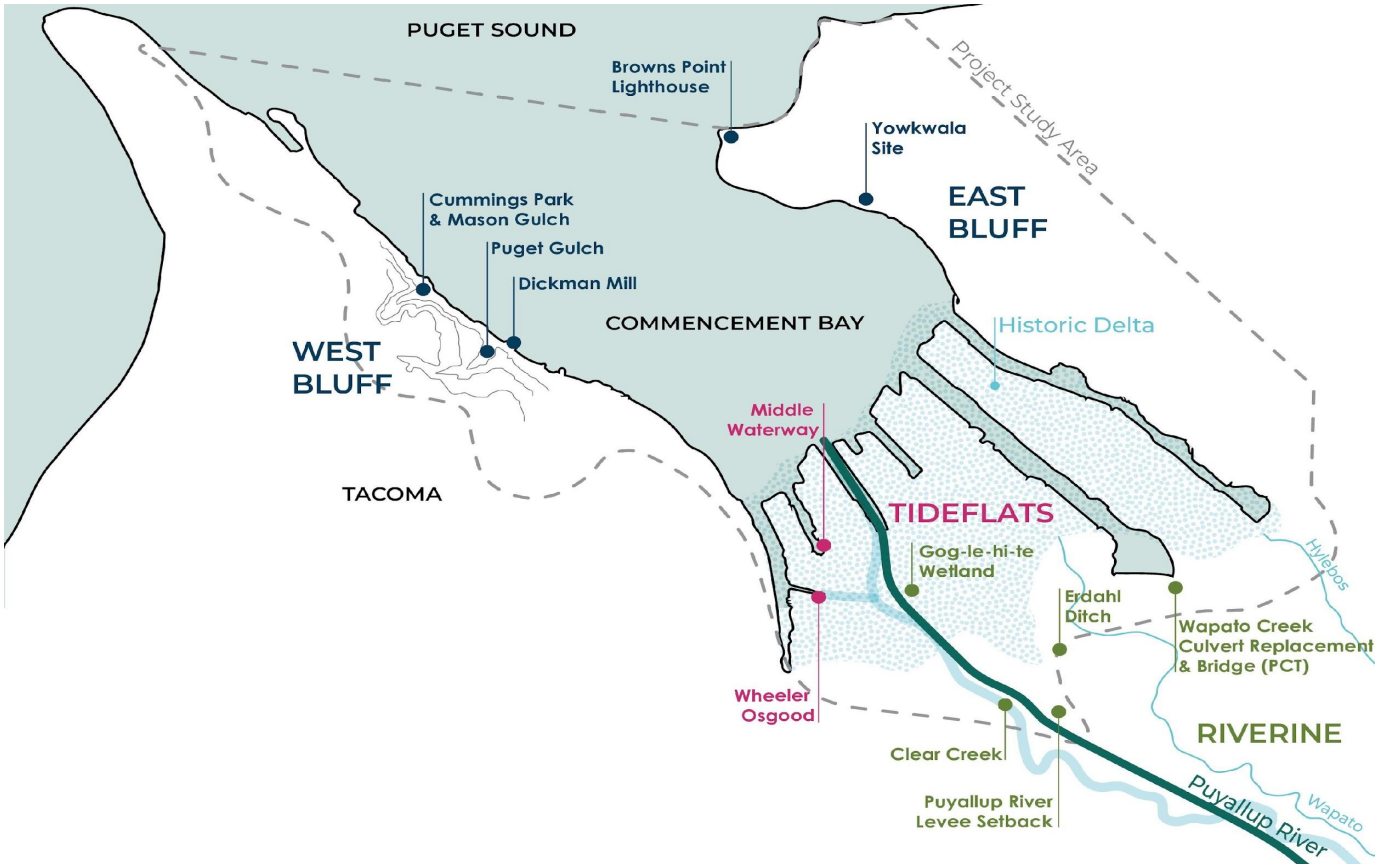
Habitat Typologies

Bluffs; East and West along Ruston Way and Marine View Drive

Tideflats within the Port of Tacoma. Historically **the Puyallup River estuary had multiple distributary channels and creeks including the Hylebos and Wapato that dynamically moved through an estuary**

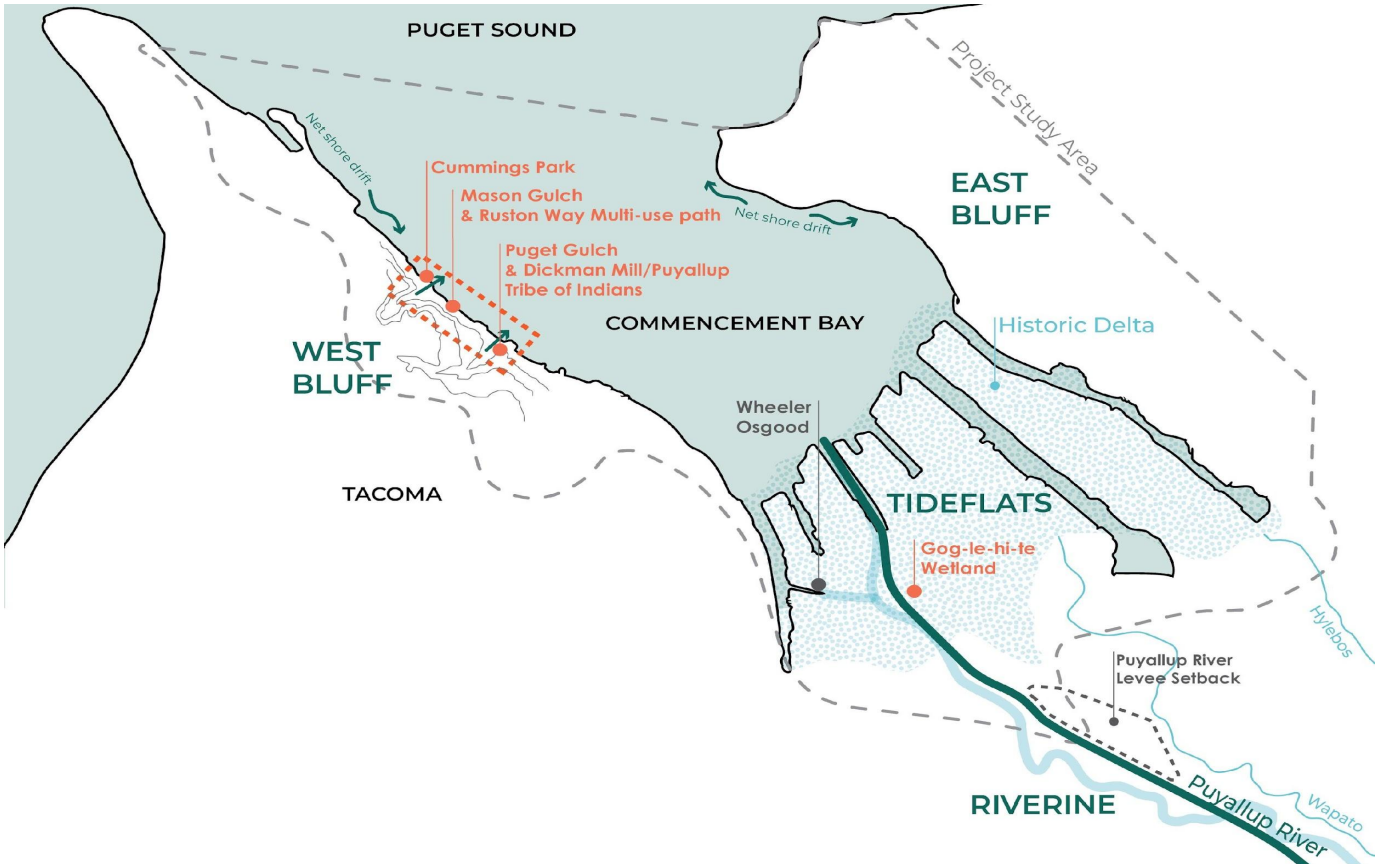
Riverine along the Puyallup River

The steering committee chose catalyst projects that demonstrate resilience and restoration in different Bay ecosystems. Each site is a visible example, but the lesson is Bay-wide.



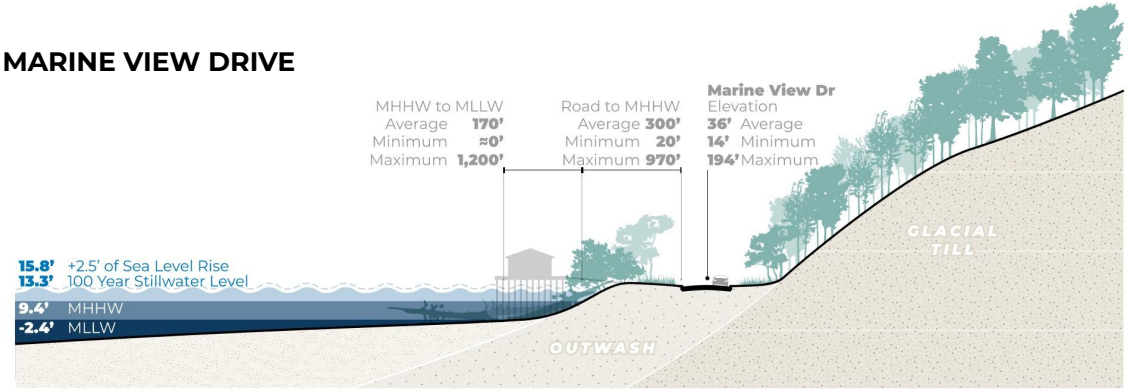
Catalytic Sites

The Steering Committee helped to refine a set of key project sites to consider for concept design and funding. We started with well over 40 sites, and refined them down to 12 sites, and selected 4 sites ultimately for concept design.

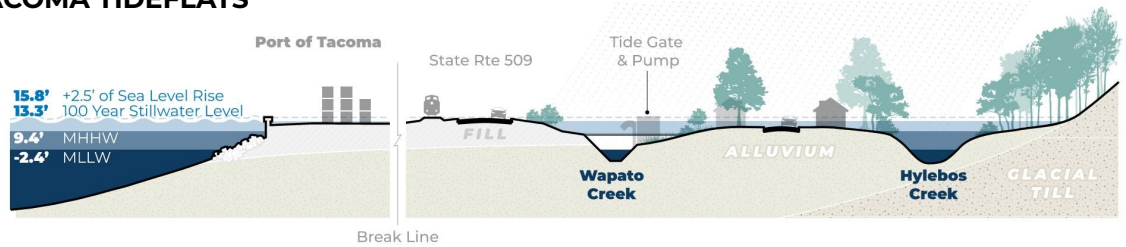


Section typologies Around the Bay

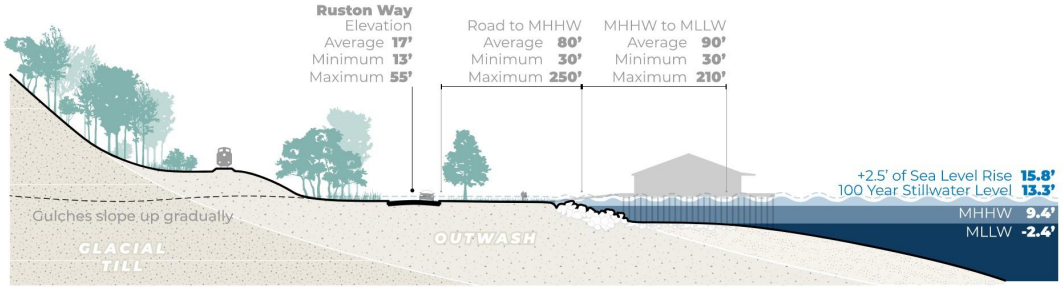
MARINE VIEW DRIVE



TACOMA TIDEFLATS

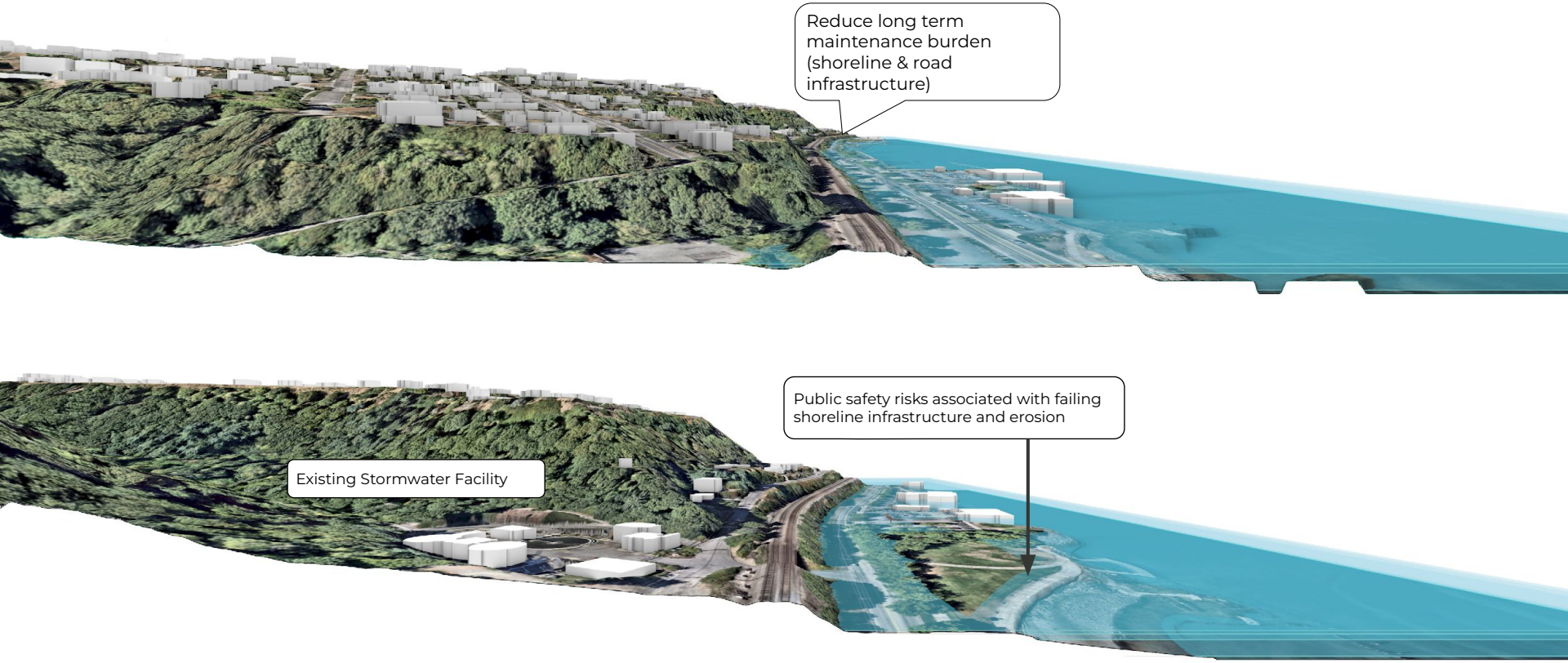


RUSTON WAY



Credit: Moffatt & Nichol

Challenges for Ruston Way

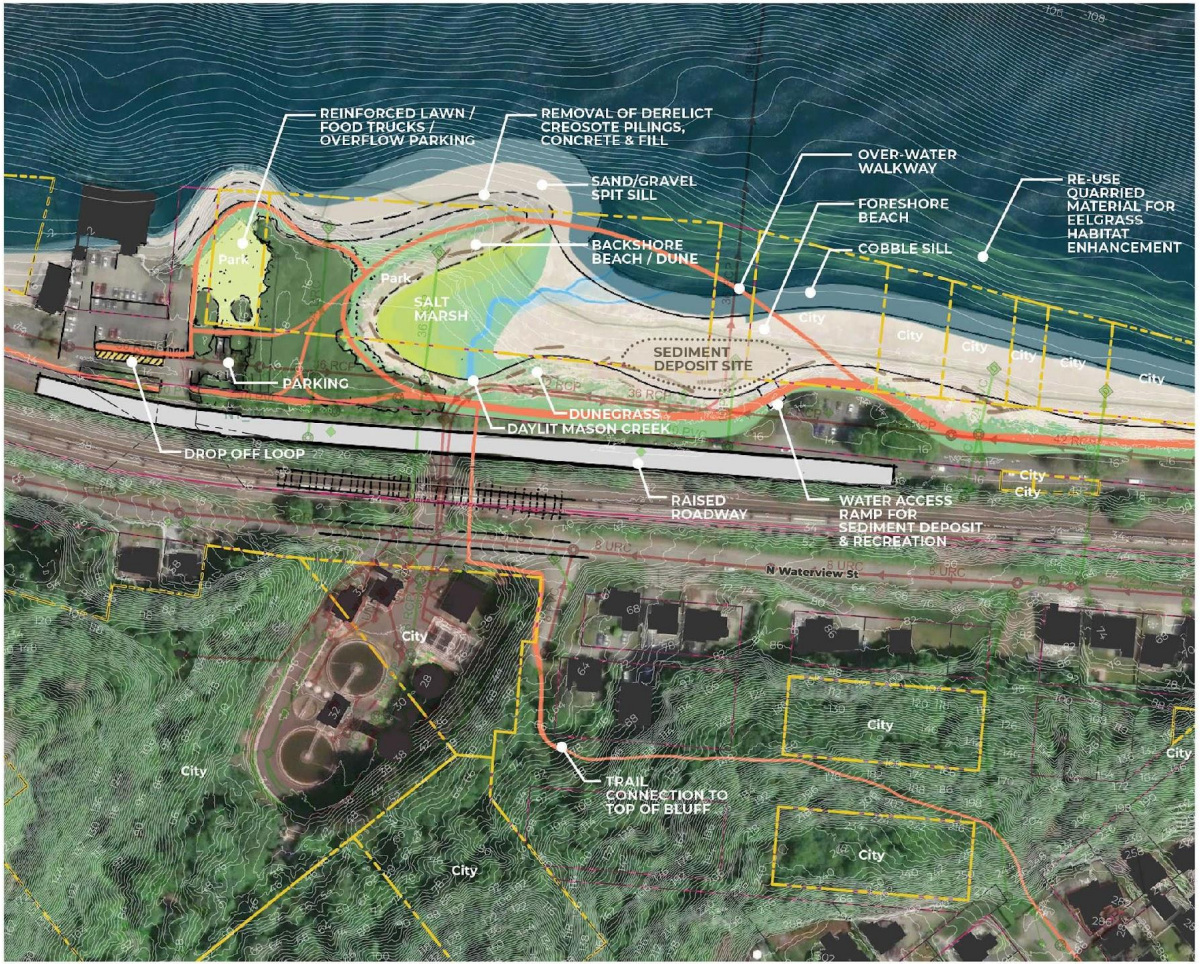


Cummings Park: Long-term (2100) Concept Sketch
Low Tide

Precedents:

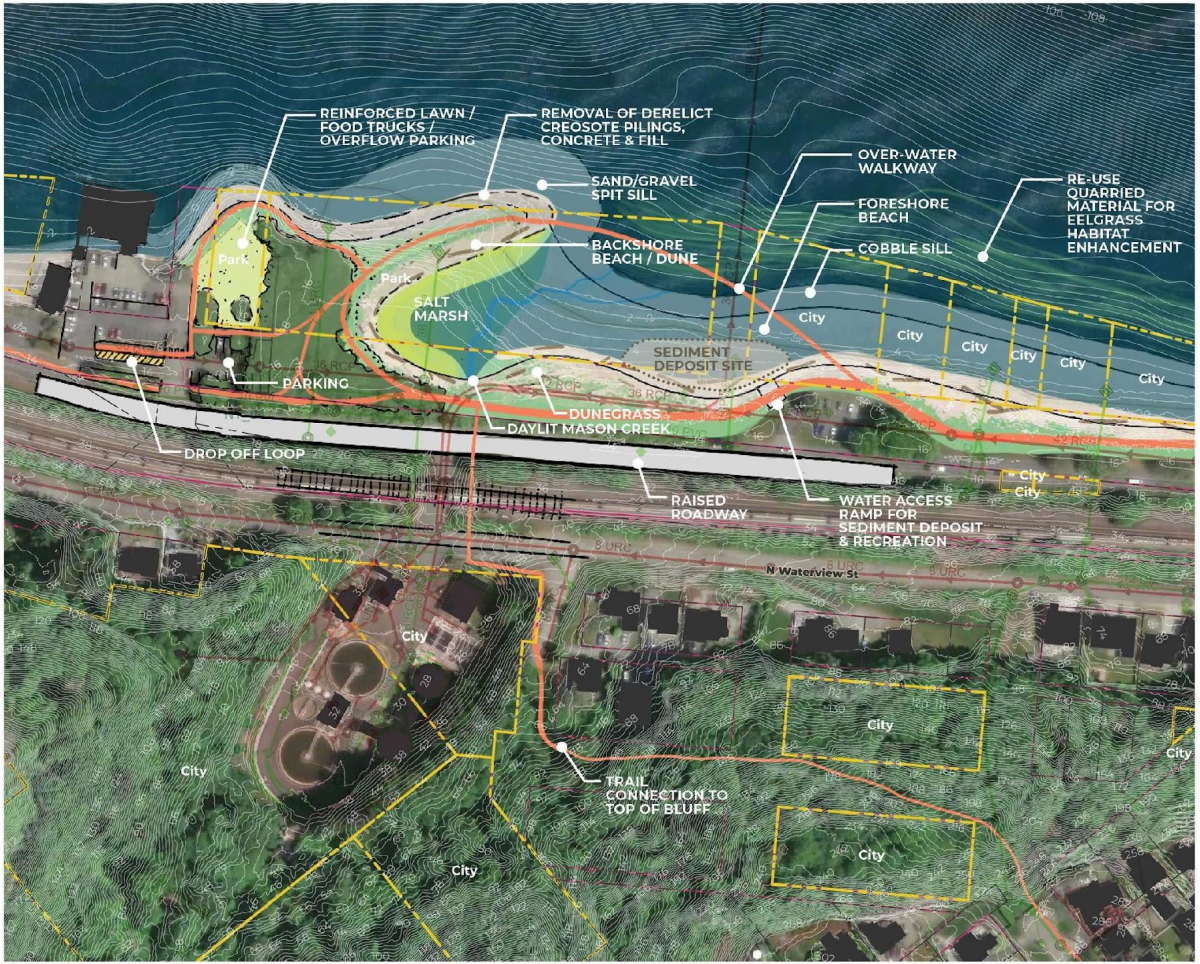
Overwater Walkway – Bend, OR

Potential for seasonal decking removal



Initial high level concept sketch to be refined with further study

Cummings Park: Long-term (2100) Concept Sketch
High Tide

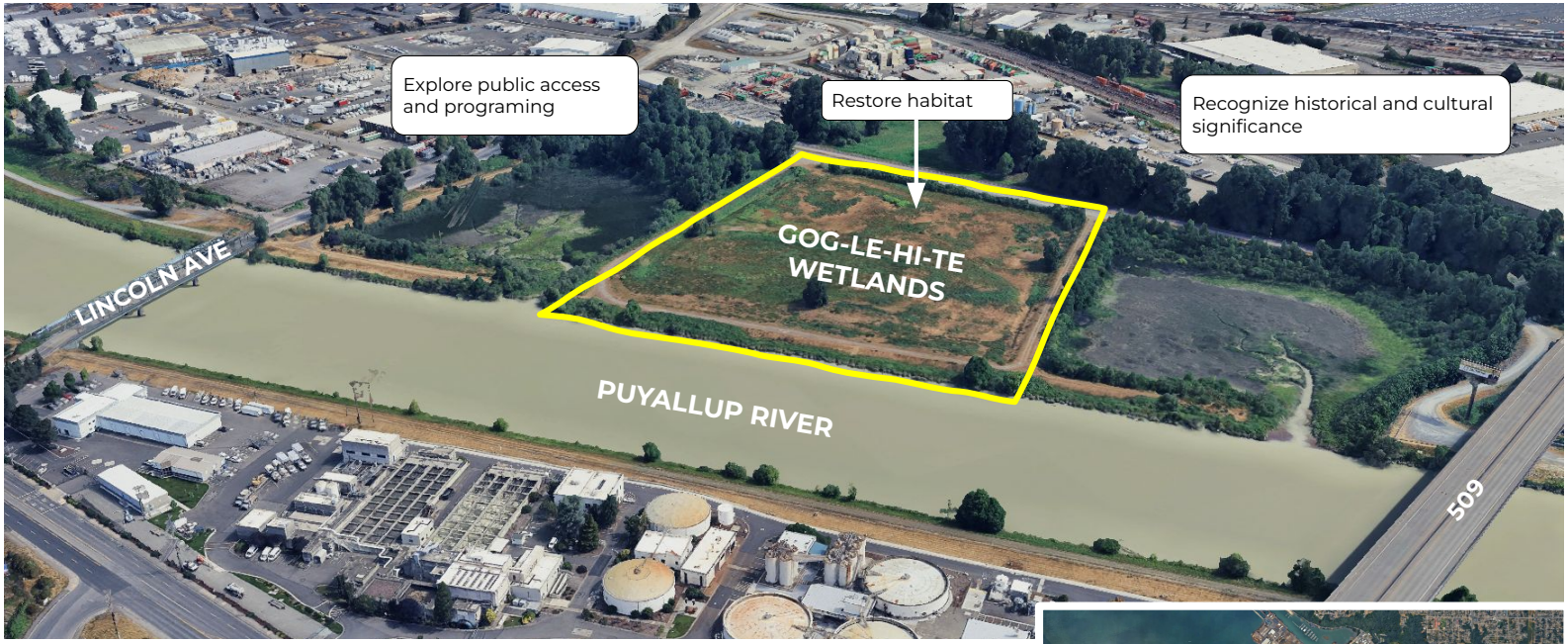


Initial high level concept sketch to be refined with further study

Challenges for the Tideflats

Recontamination & Mobilization Pathways (Why Problems Persist)

- **Stormwater runoff:** transports metals, hydrocarbons, and sediment from uplands into remediated waterways and nearshore zones.
- **Shoreline erosion and ship/wave energy:** can thin or undermine caps and re-suspend contaminated sediments.
- **Sea-level rise and stronger storms:** increase overtopping, flooding, and sediment movement, stressing remedy designs.
- **Groundwater seeps:** shallow groundwater can discharge along shorelines, delivering dissolved contaminants beneath surface controls.
- **Beach Nourishment:** continues to be an issue along the shore


Explore public access and programing
Restore habitat
Recognize historical and cultural significance
GOG-LE-HI-TE WETLANDS
LINCOLN AVE
PUYALLUP RIVER
509

Muted Marsh Behind a Living Levee

- A **muted marsh allows tidal exchange** through controlled openings, **which restores wetland habitat** while still protecting adjacent communities and infrastructure from flooding.

- Projects like this are helpful precedents for the Commencement Bay Master Plan, because they demonstrate how **green infrastructure and shoreline restoration can work together at a landscape scale** to support both ecological recovery and community resilience.

Conception illustration of the proposed Living Levee at West County Wastewater frontage on Wildcat Marsh in North Richmond

Multiple Benefits

FLOOD RISK REDUCTION

HABITAT RESTORATION

SHORELINE STABILIZATION / ENHANCEMENT

RESTORE SEDIMENT PATHWAYS

RESTORE NATURAL SHORELINE PROCESSES

WATER QUALITY IMPROVEMENT

MOBILITY / LIFELINE PROTECTION

ENHANCED PUBLIC ACCESS

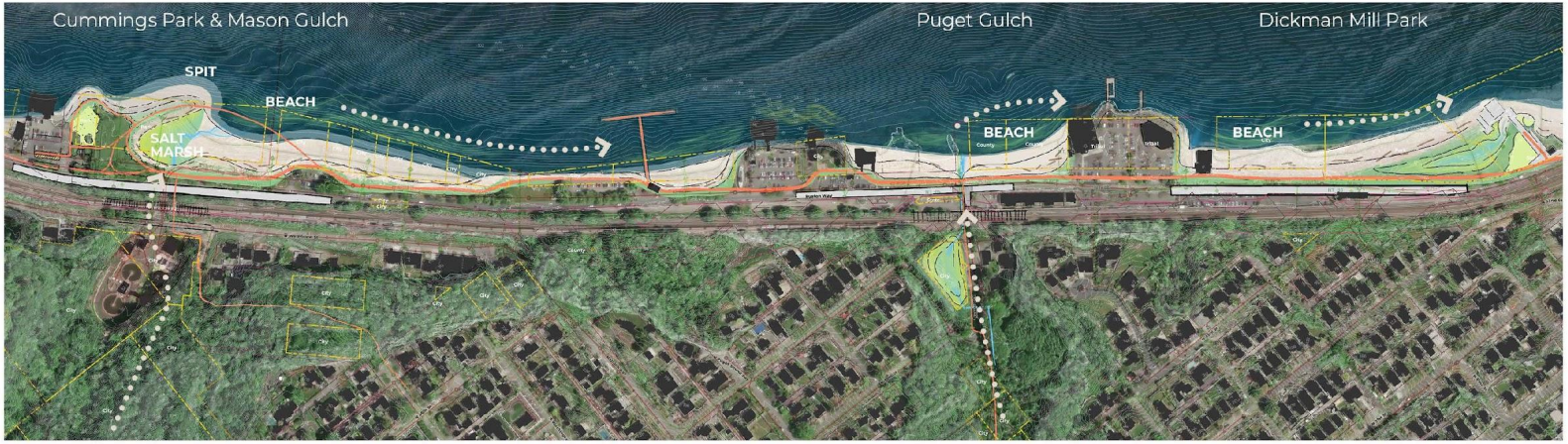
CULTURAL VALUE PRESERVATION

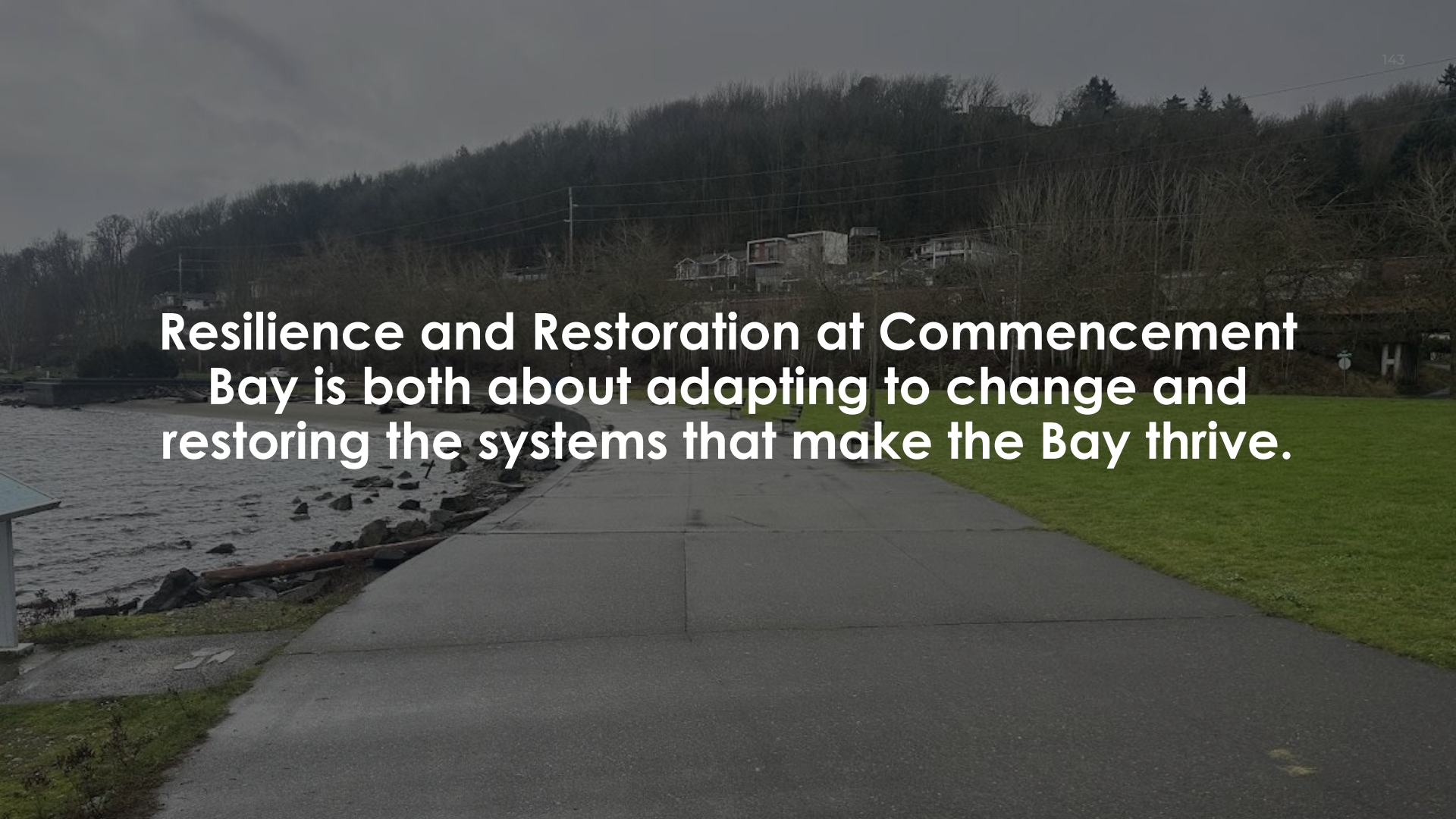
CLEANUP / REMEDIATION

Ruston Way – Existing

0' 200' 400'

Ruston Way – Long Term (2100) Vision for Restored Natural/Hybrid Processes

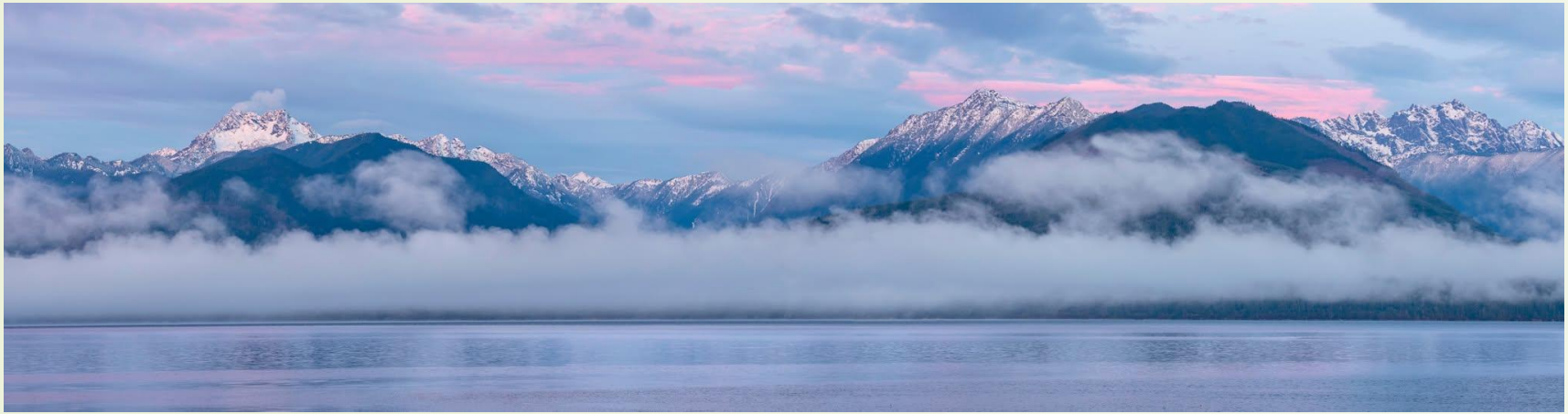




Resilience and Restoration at Commencement Bay is both about adapting to change and restoring the systems that make the Bay thrive.

Thank you

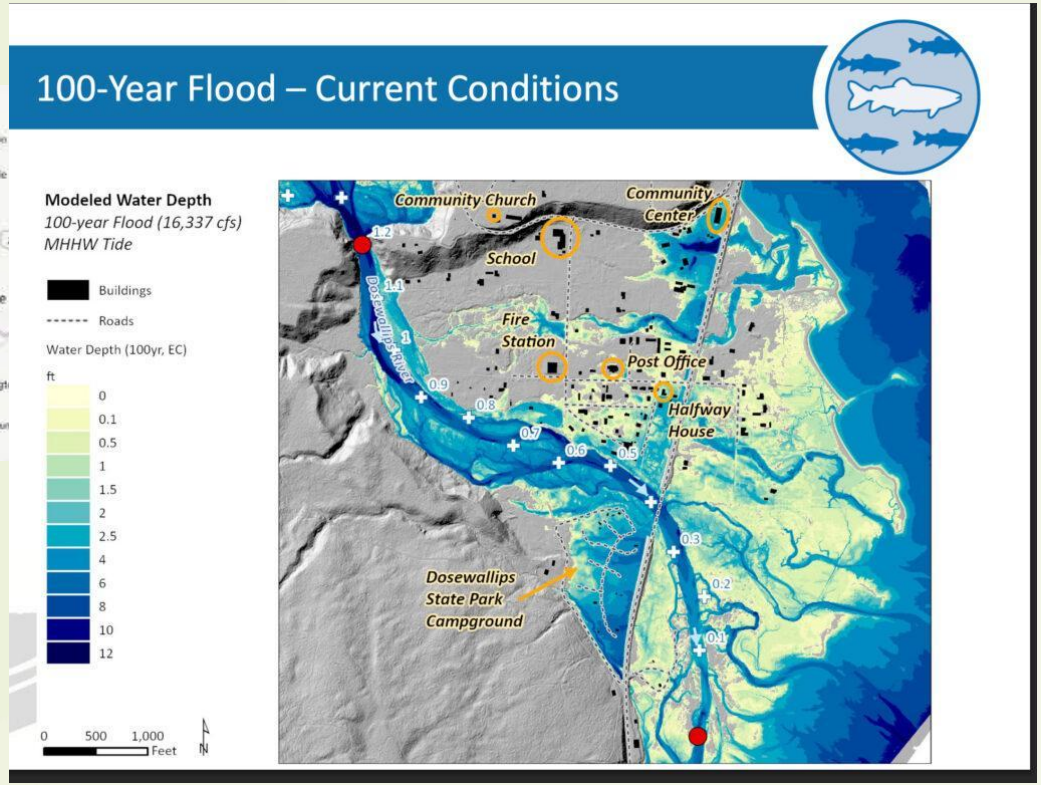
Community-Led Flood Resilience in Brinnon on the Hood Canal



Andrew Schwartz
South County Task Force & North Hood Canal Chamber of Commerce

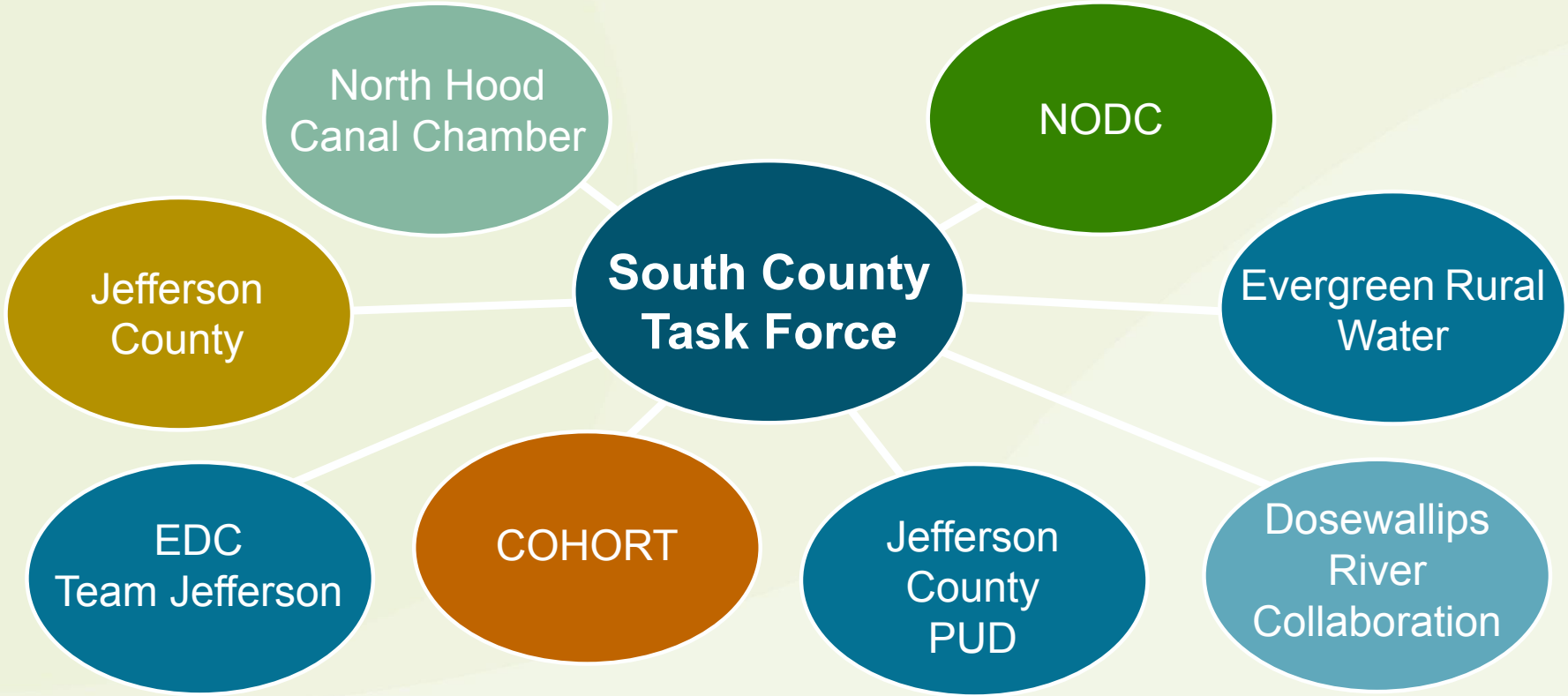
Angela Glore
North Olympic Development Council

Brinnon's Paradox: A LAMIRD in a Floodplain



LAMIRD = Local Area of More Intense Rural Development

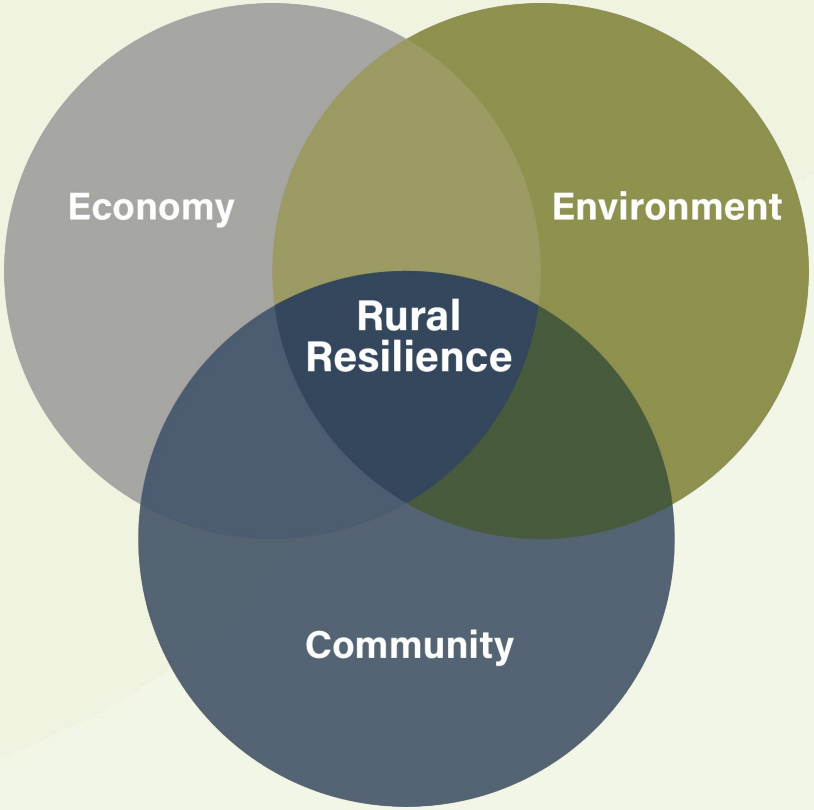
Many Partners, Light(er) Work



NODC's Role

NODC's mission as the Economic Development District for Clallam and Jefferson Counties is to empower the North Olympic Peninsula to pursue and invest in its own economic and environmental destiny.

NODC
NORTH OLYMPIC DEVELOPMENT COUNCIL



Want to know what's on the Horizon, have questions or want more information?

Please feel free to reach out to us:

Andrew Schwartz
South County Task Force
as2020@me.com / 603-305-8531

Angela Glore
North Olympic Development Council
angela@noprcd.org

Session 6: Coastal Resilience Fair

‘Ask an Expert’ Stations

Session 6: Coastal Resilience Fair

2 rounds, 45-minutes each

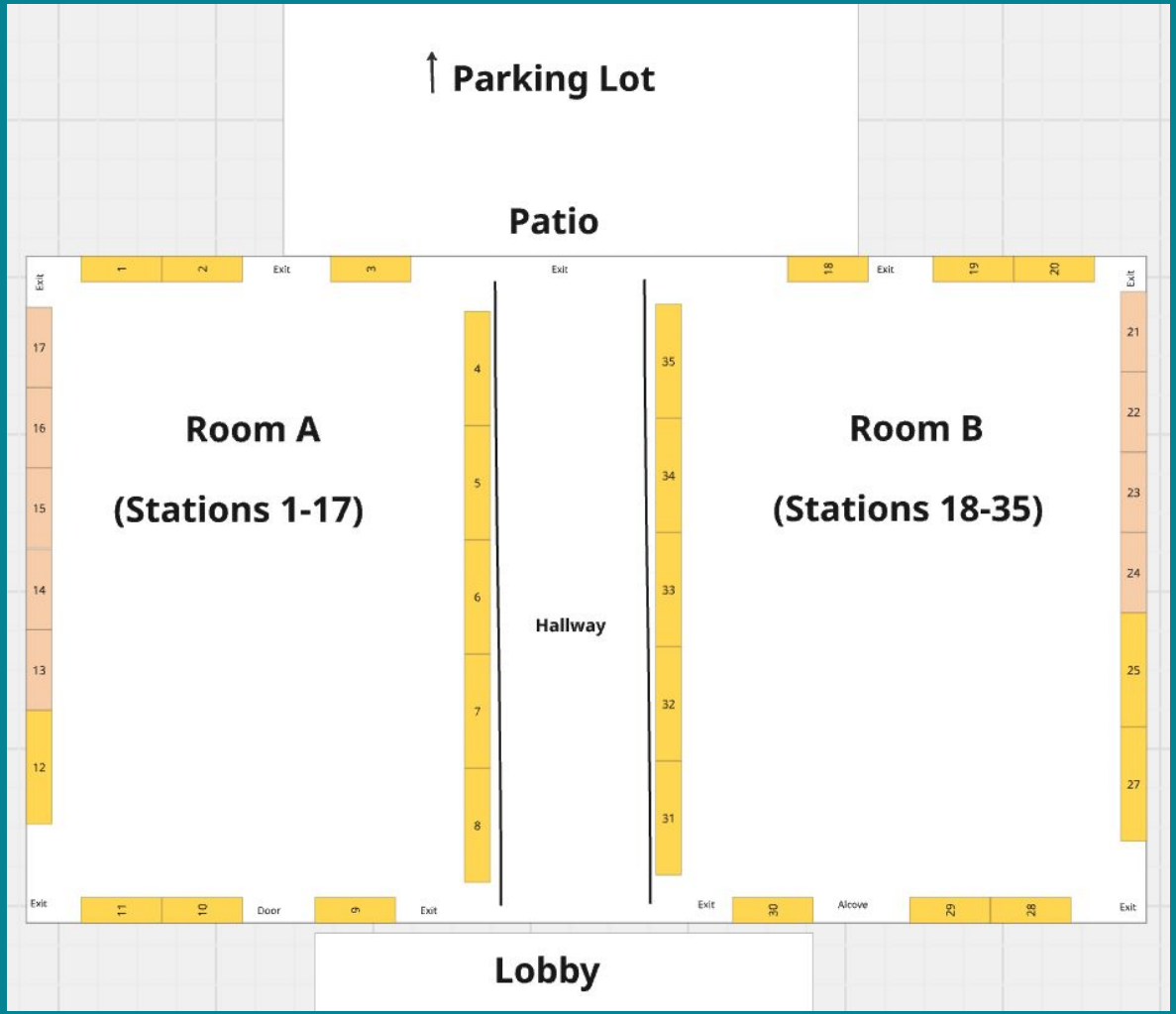
2 rooms, 6 topics, 35 stations

Attendees walk among the different stations and interact with the ‘experts’ to ask questions and learn

Odd station numbers will present in Round 1, even numbers will present in Round 2.

See list of experts in Agenda:

Stations will have signs


Parking Lot
Patio
Exit
1
2
Exit
3
Exit
18
Exit
19
20
Exit
17
16
15
14
13
12
Room A
(Stations 1-17)
4
5
6
7
8
Hallway
35
34
33
32
31
Room B
(Stations 18-35)
21
22
23
24
25
27
Exit
11
10
Door
9
Exit
Exit
30
Alcove
29
28
Exit
Lobby

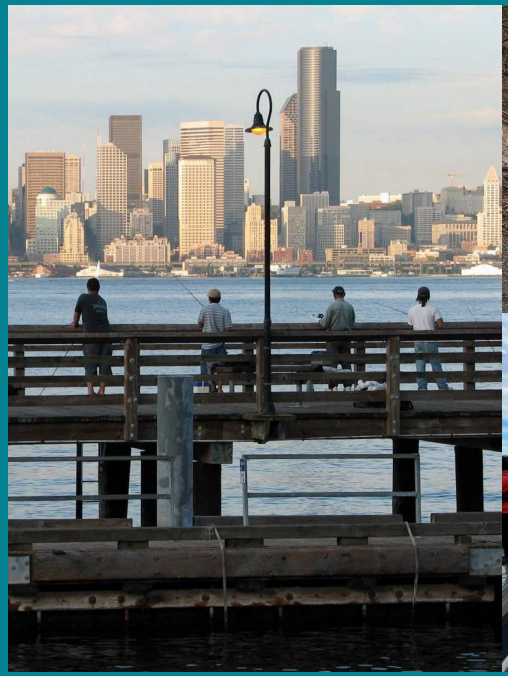
Session 7: Closing

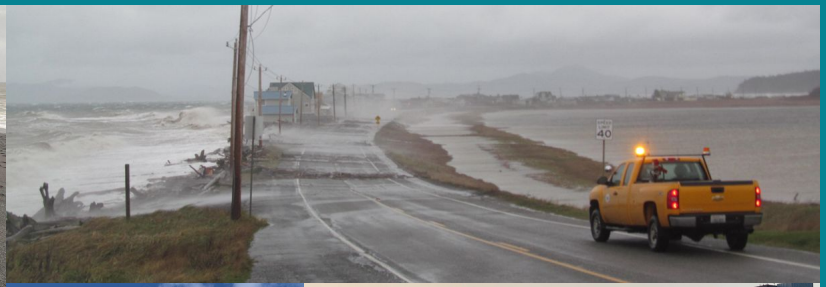
Farewell, but not goodbye

Session 7: Closing Remarks

Henry Bell

50th Year Anniversary of WA Coastal Zone Management Program






Please take our event survey!

The survey is linked in the Meeting Program and will be send out via email afterwards.

The survey helps shape next year’s Annual Meeting and other efforts throughout the year.

https://tinyurl.com/CHRN2026Survey

Adjourn

Please join us for Happy Hour at 23 Kitchens - 2440 Marvin Rd NE, Lacey, WA 98516 5-6:30pm