



# Agriculture Resilience Plan

Snohomish Forum Meeting

February 6, 2020

*“The Agriculture Resilience Plan is an effort to help all of us farmers weather the changes that are coming in the future. It’s a way for farmers to raise their voices together and create change to benefit agriculture.”*

*- Libby Reed*



# Sustainable Lands Strategy





Changes Are Coming - Strengthening the resilience of the local farming community in Snohomish County



Watch later



Share

# CHANGES ARE COMING

Strengthening the resilience of the local farming community in Snohomish County

<https://snohomishcd.org/ag-resilience>



# Steering Committee

- Brian Bookey, Cherry Lane Farms
- Libby Reed, Orange Star Farms
- Jeff Ellingsen, SCD Board and farmer
- Nick Pate, Raising Cane Ranch
- Dan Bartelheimer, Sno Valley Farm
- Jeremy Visser, dairy farmer
- Darren Carleton, Carleton Farms
- Spencer Fuentes, Hazel Blue Acres
- Andrew Albert, Andrew's Hay



#### RESILIENCE

*Climate change in this region has brought early floods and late floods, drought and most recently, the highest spring rainfall in recorded history. As farmers, we take note of these and other changes in the natural world because it's part of our job. Our livelihoods are born of these natural processes (growing plants, raising livestock) and they are constantly in flux in small and large ways.*

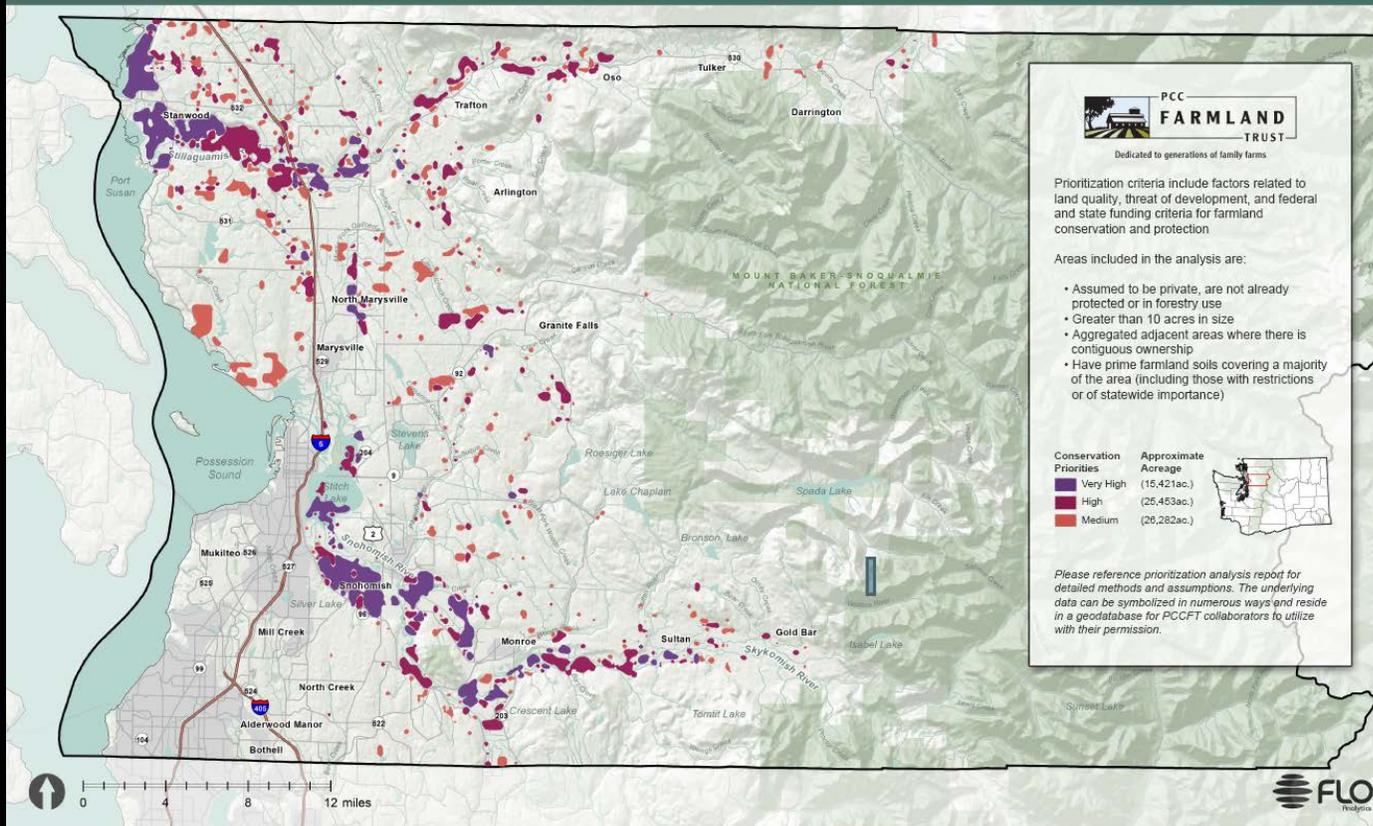
*It is humbling to work amidst the call and response of nature.*

Libby Reed, Orange Star Farm

# Outreach

- Quarterly Steering Committee meetings
- Photovoice
- Numerous presentations
- 8 community meetings
- Over 75 farmers provided input

## Snohomish County Farmland Conservation Priorities

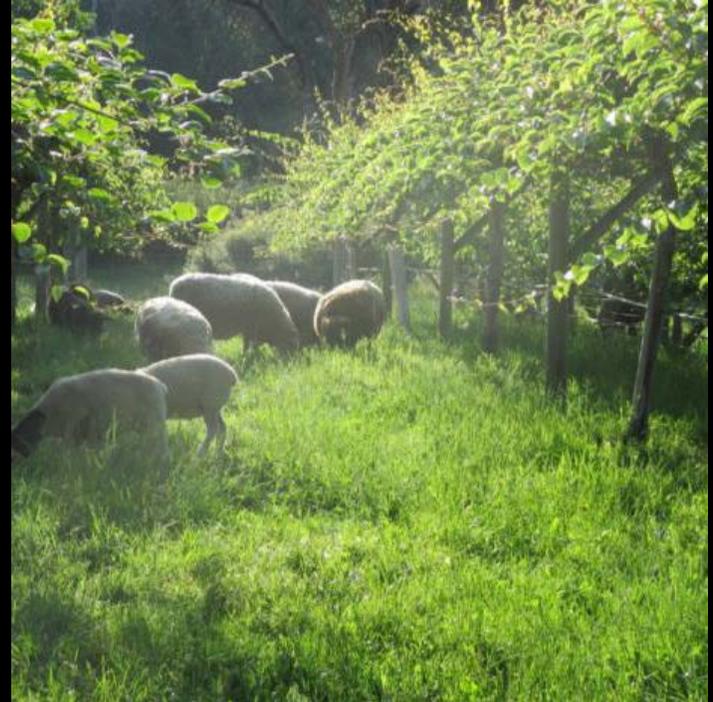


# Farmland Conservation

15,000 acre 10 year goal

# On-farm Resilience Practices

- Waterbreaks
- Agroforestry
- Silvopasture
- Biochar
- Conservation Agriculture
- Regenerative Agriculture
- Integrated Pest Management
- Managed Grazing
- Rainwater Harvesting





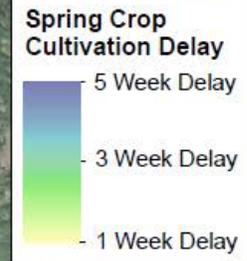
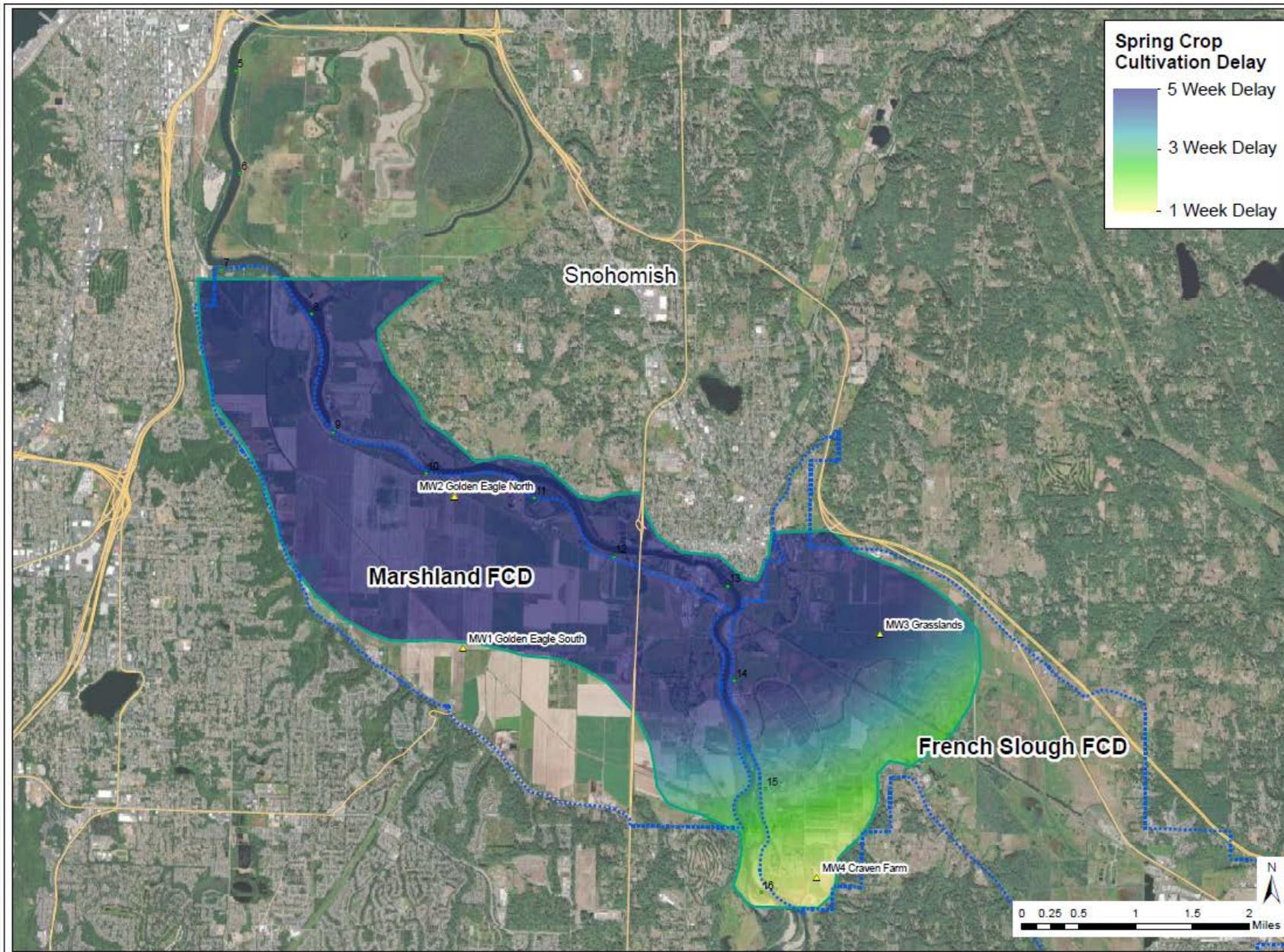
# Impacts Assessment

What are the biggest environmental challenges for our agricultural community, and how are they expected to change in the future?



# Groundwater analysis

Cardno



**SLR Delay to Spring Crop Cultivation**  
 Year 2100 RCP 8.5 (High Emissions)  
 Prepared For:  
 Snohomish Conservation District  
 Snohomish County, WA

- Legend**
- River Mile
  - Cardno Well Top
  - State Highway
  - Analysis Extent
  - Flood Control District (FCD)

Prepared By Cardno  
 August 2018

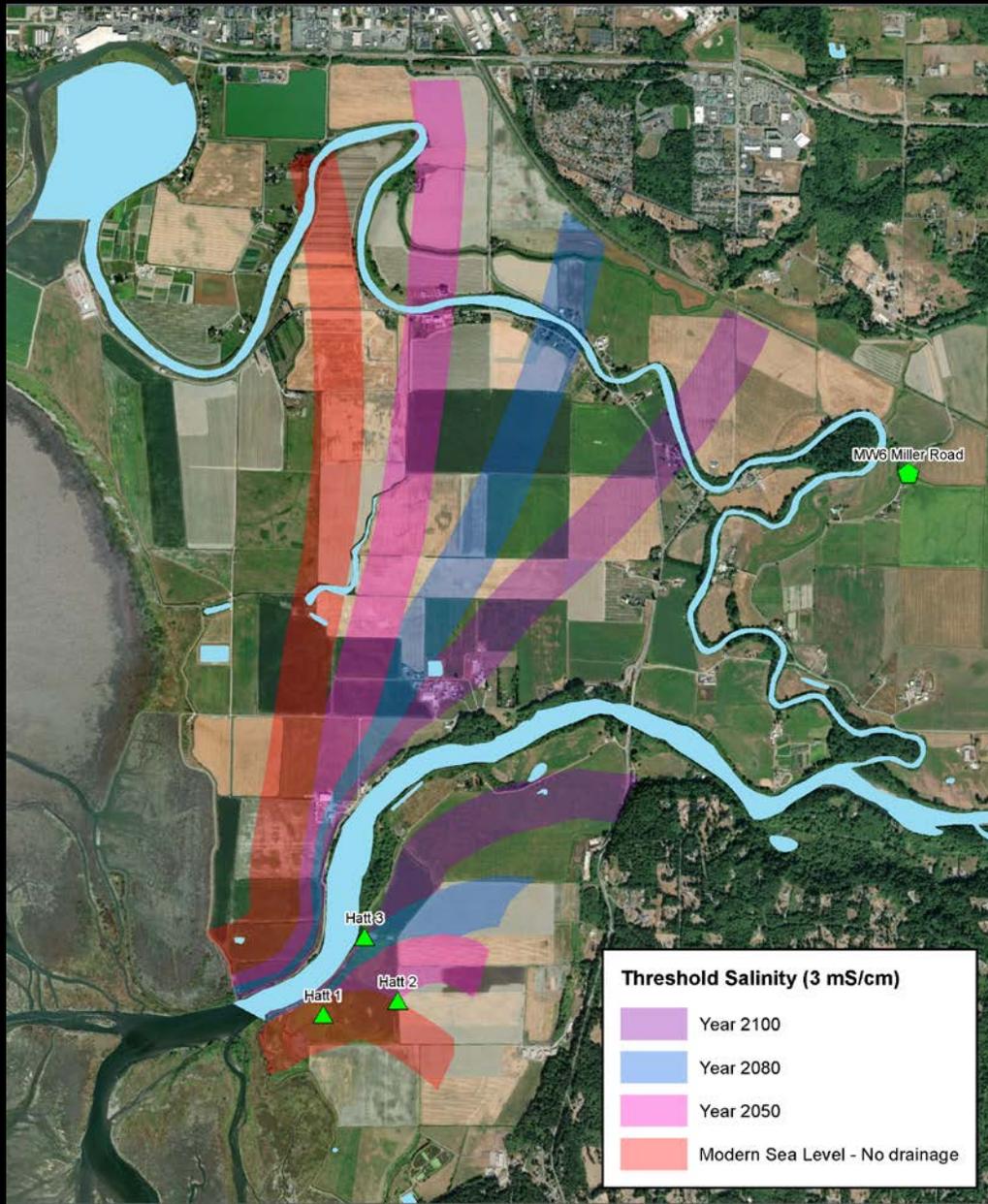


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 Seattle, WA 98104 (206) 269-0104  
 www.cardno.com

NAD83 WA State Plane, North

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, OpenStreetMap contributors, and the GIS User Community  
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<https://maps.coastalresilience.org/washington/>



**Threshold Salinity (3 mS/cm)**

- Year 2100
- Year 2080
- Year 2050
- Modern Sea Level - No drainage

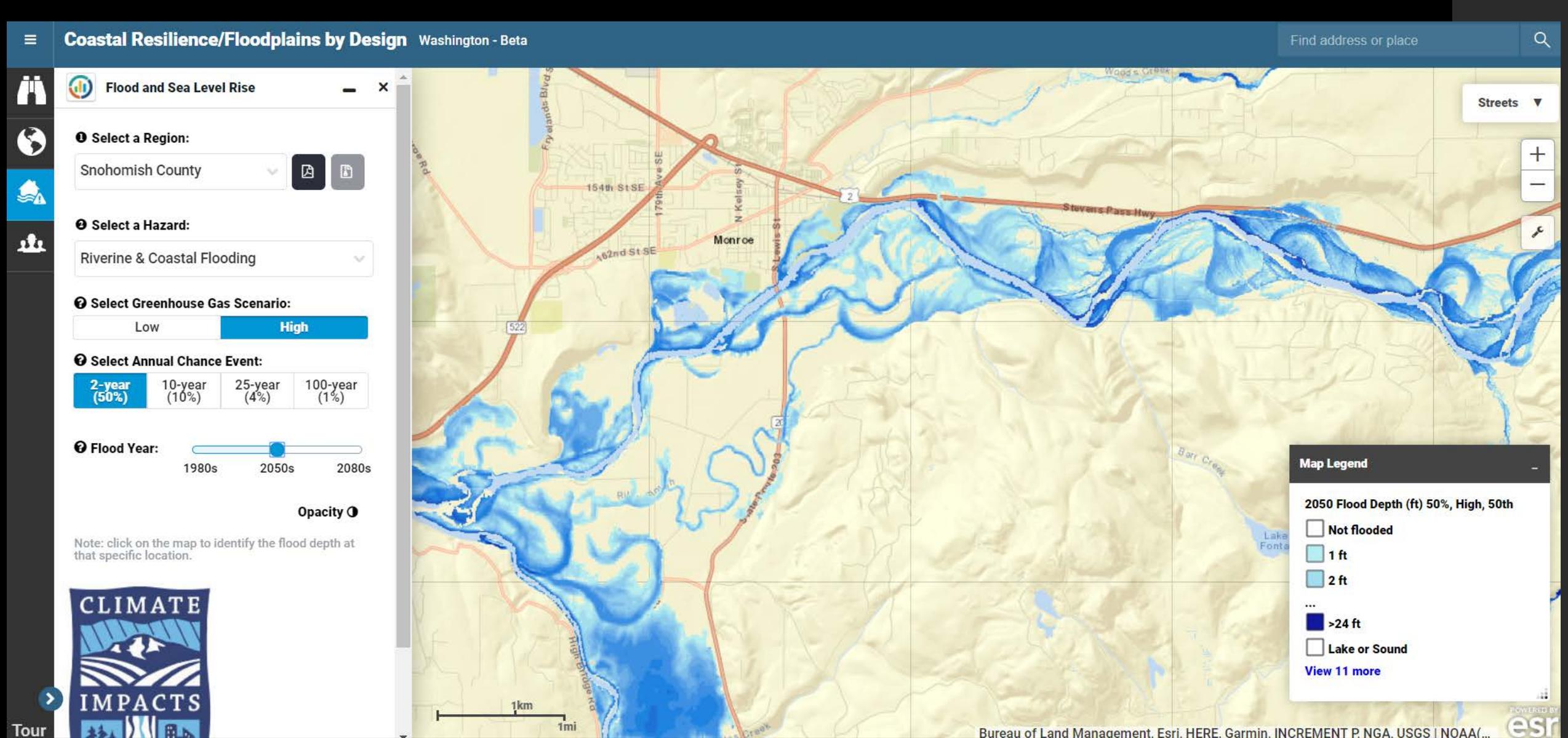
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**Late Spring/Early Summer  
Landward Moving 3 mS/cm Threshold  
Sea Level Rise Impacts to Groundwater**

0 1,500 3,000 Feet

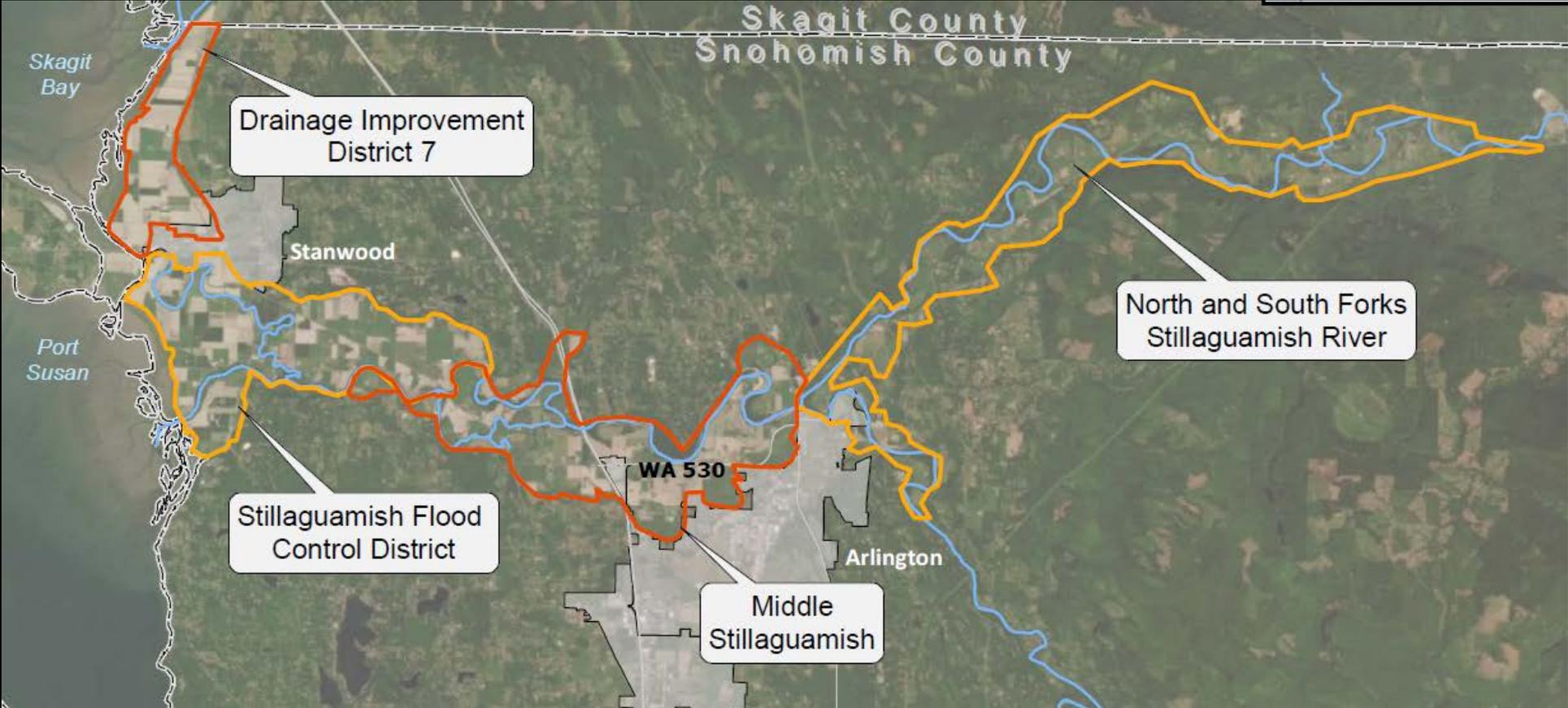




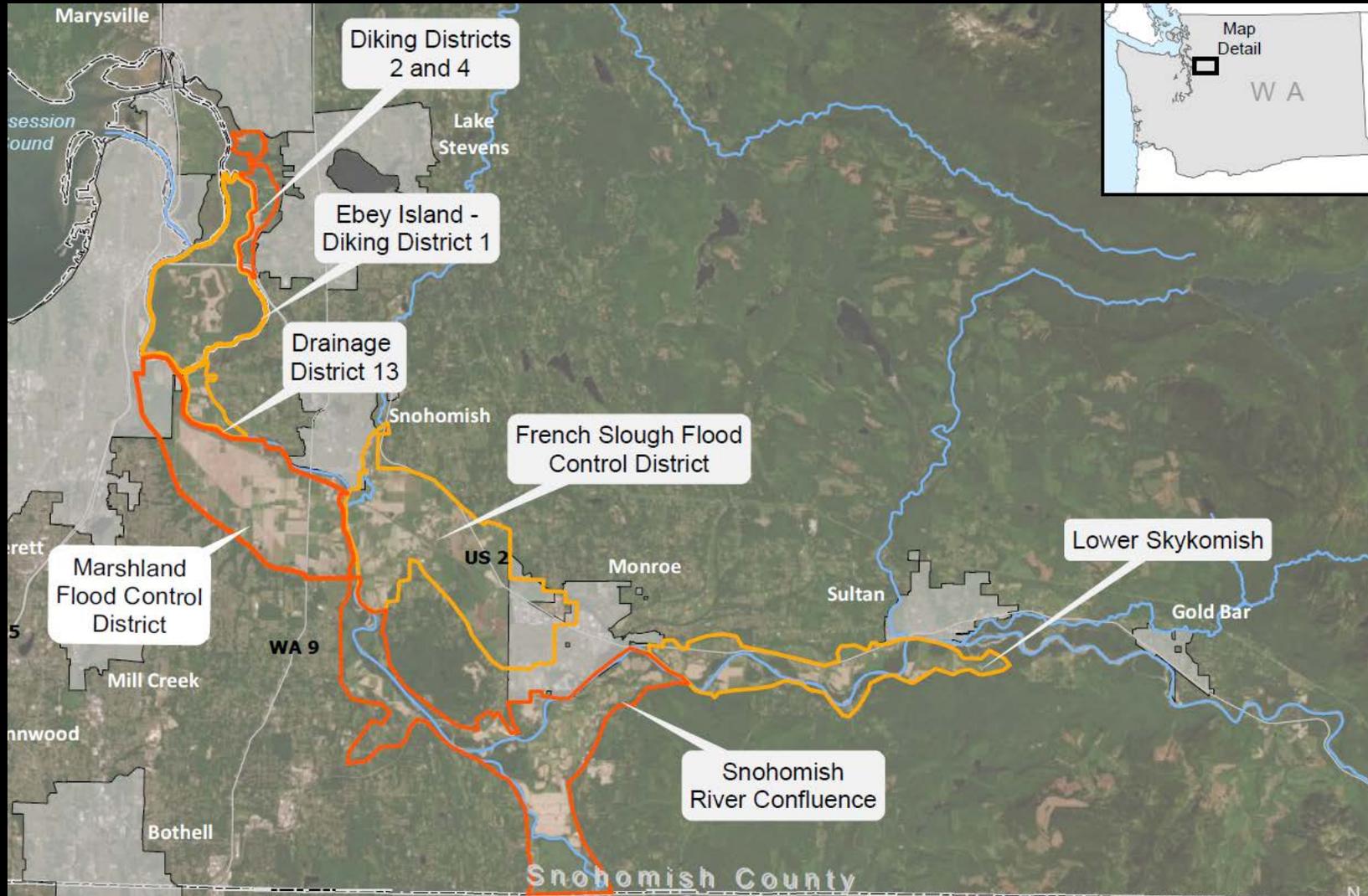
<https://maps.coastalresilience.org/washington/>

UW Climate Impacts Group and Fathom

# Reach Summaries

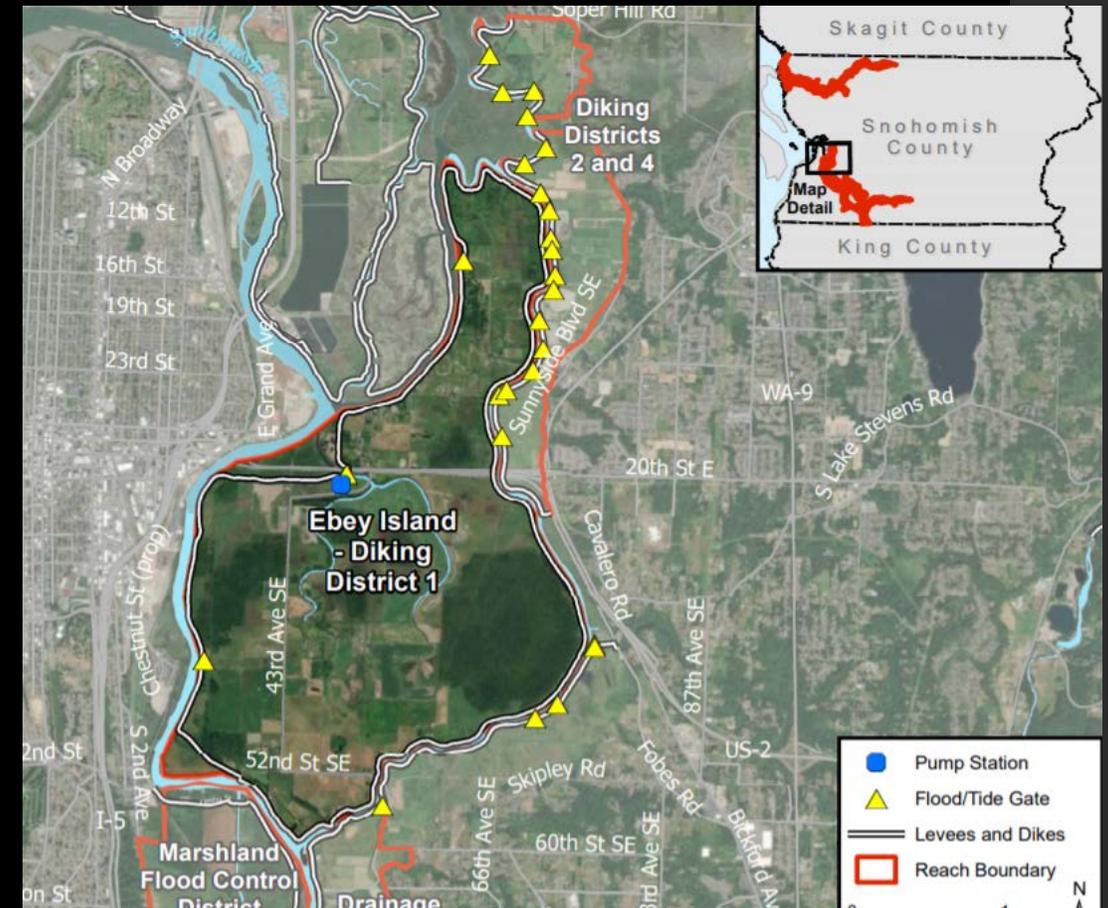


# Reach Summaries

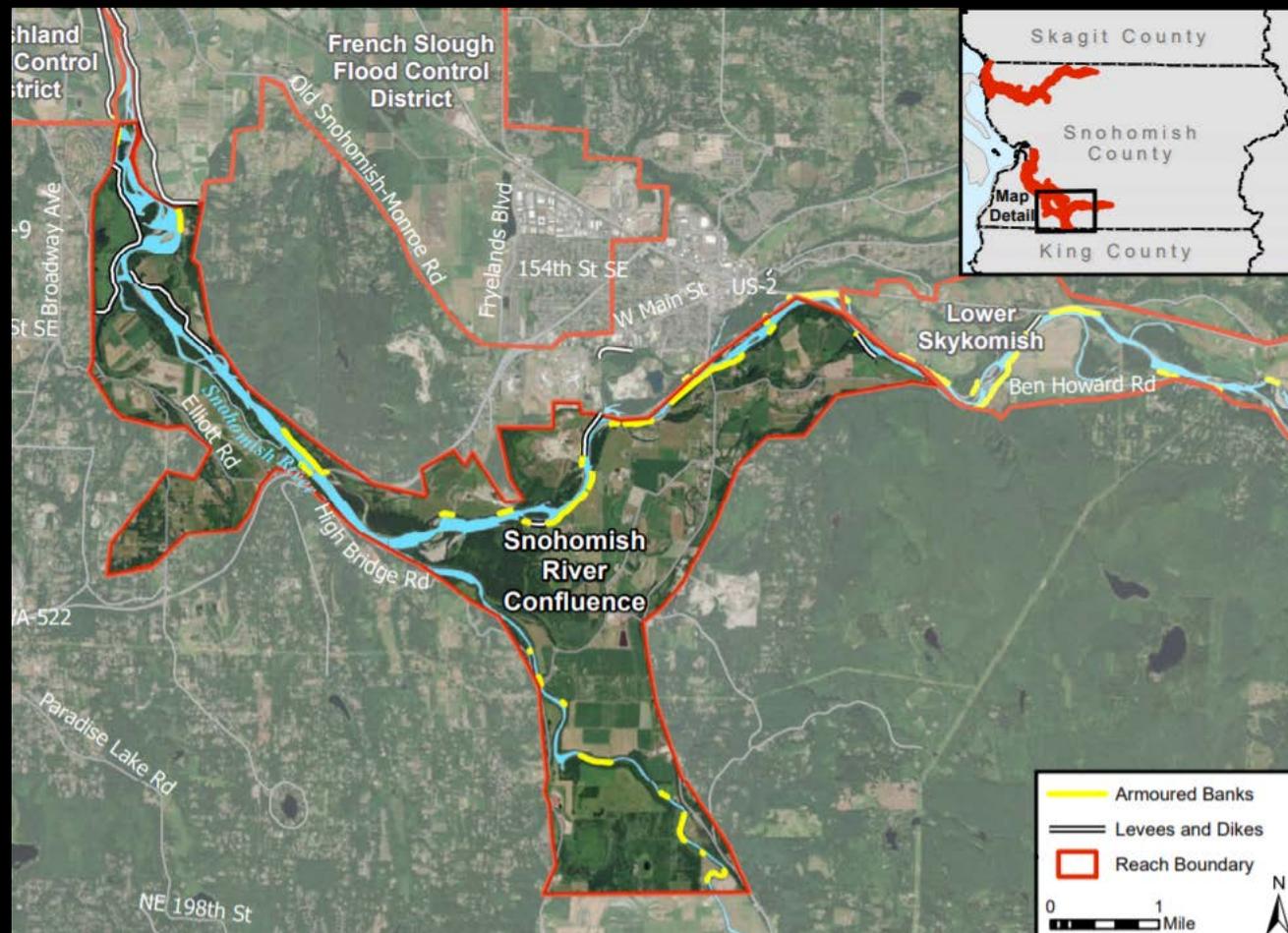


# Diking District 1 – Ebey Island

- Tier I Needs
  - Drainage infrastructure repair
  - Levee improvements
  - Additional groundwater data analyzed
  - Protect levee from Hwy 2 trestle
- Tier II Needs
  - Financial assistance for ditch and waterway cleaning



# Middle Snohomish – Tualco Valley and vicinity



## • Tier I Needs

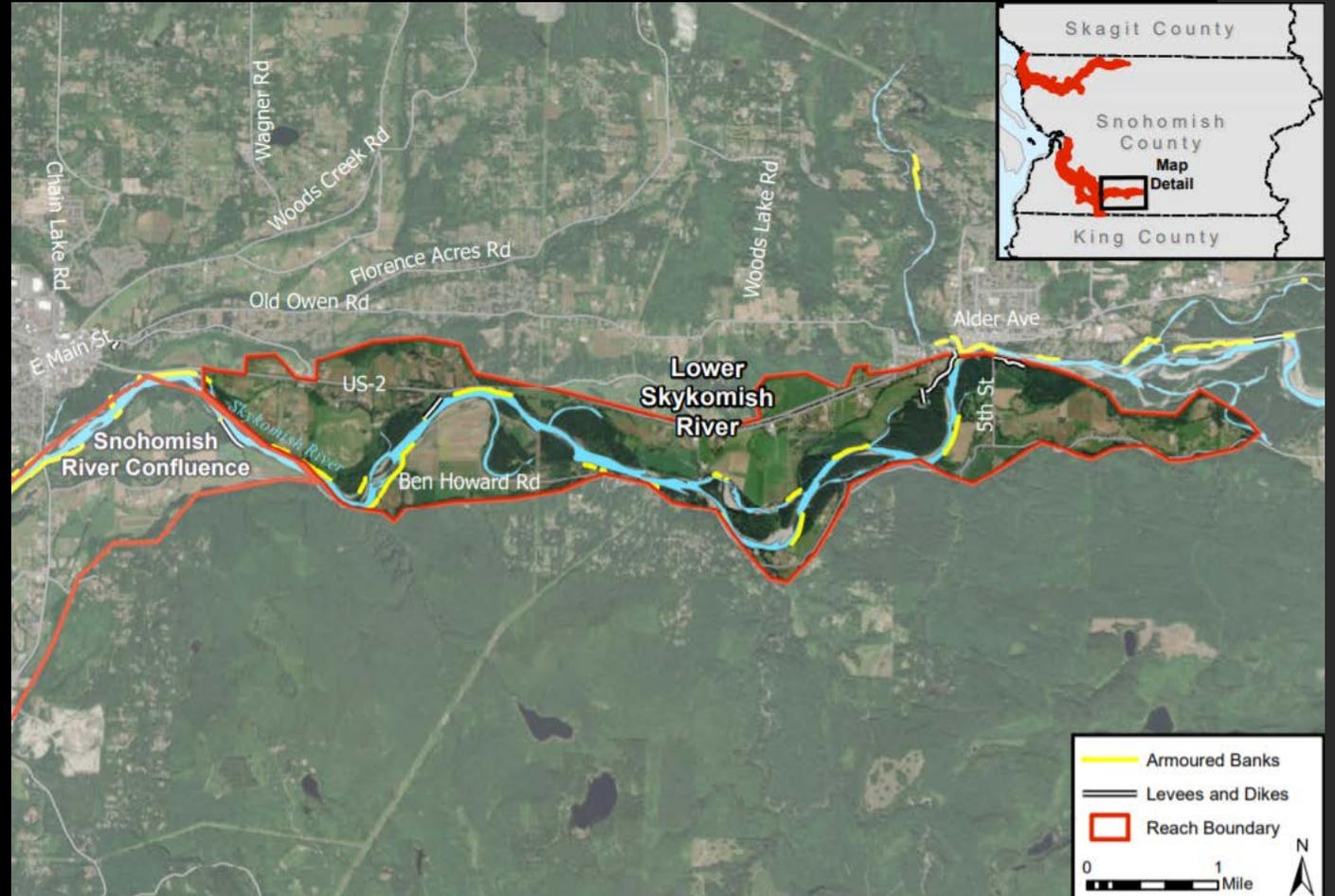
- Access to water for irrigation
- Financial assistance for drainage system maintenance
- Drainage infrastructure improvements
- Funding for drought resilience BMPs

## • Tier II Needs

- Flood risk training for new landowners
- Improve flood warning system
- Research into on-farm drainage infrastructure improvements
- Reduce upland runoff

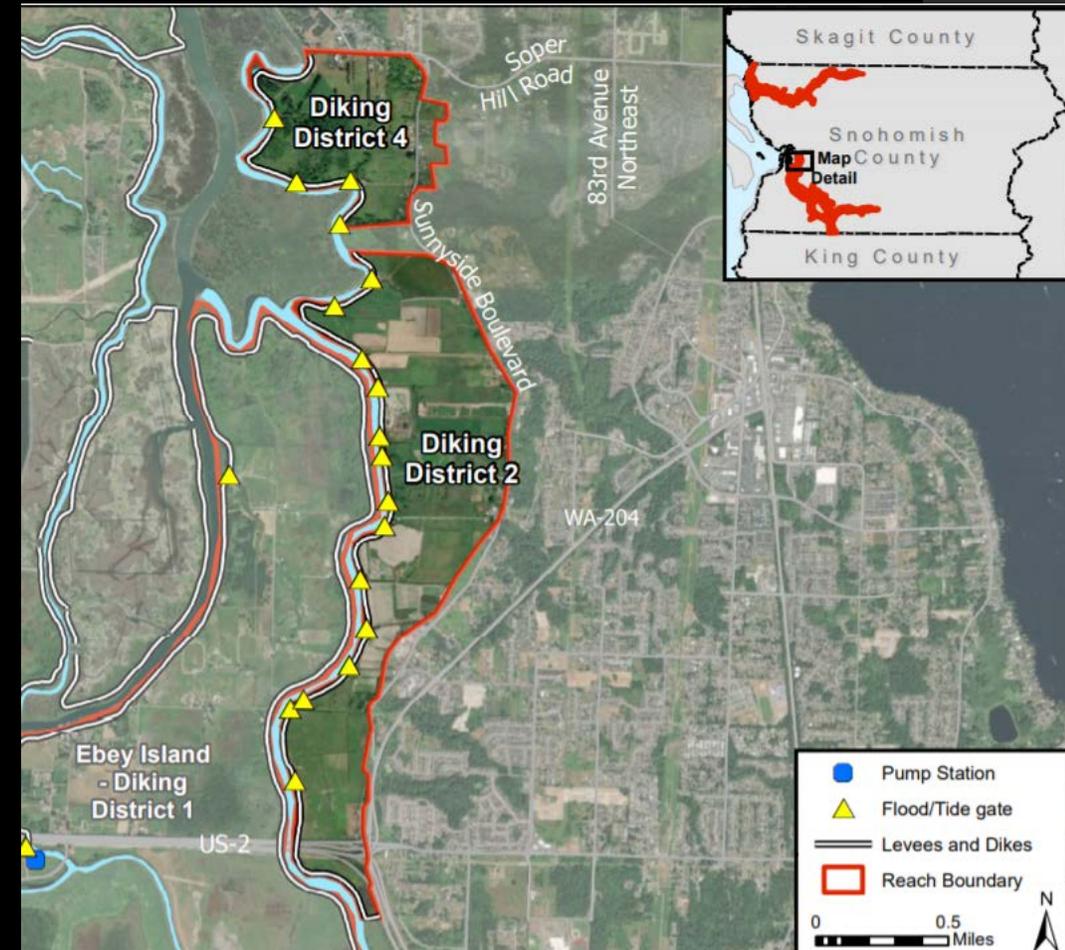
# Lower Skykomish River

- Tier I Needs
  - Protect farmland from riverbank erosion

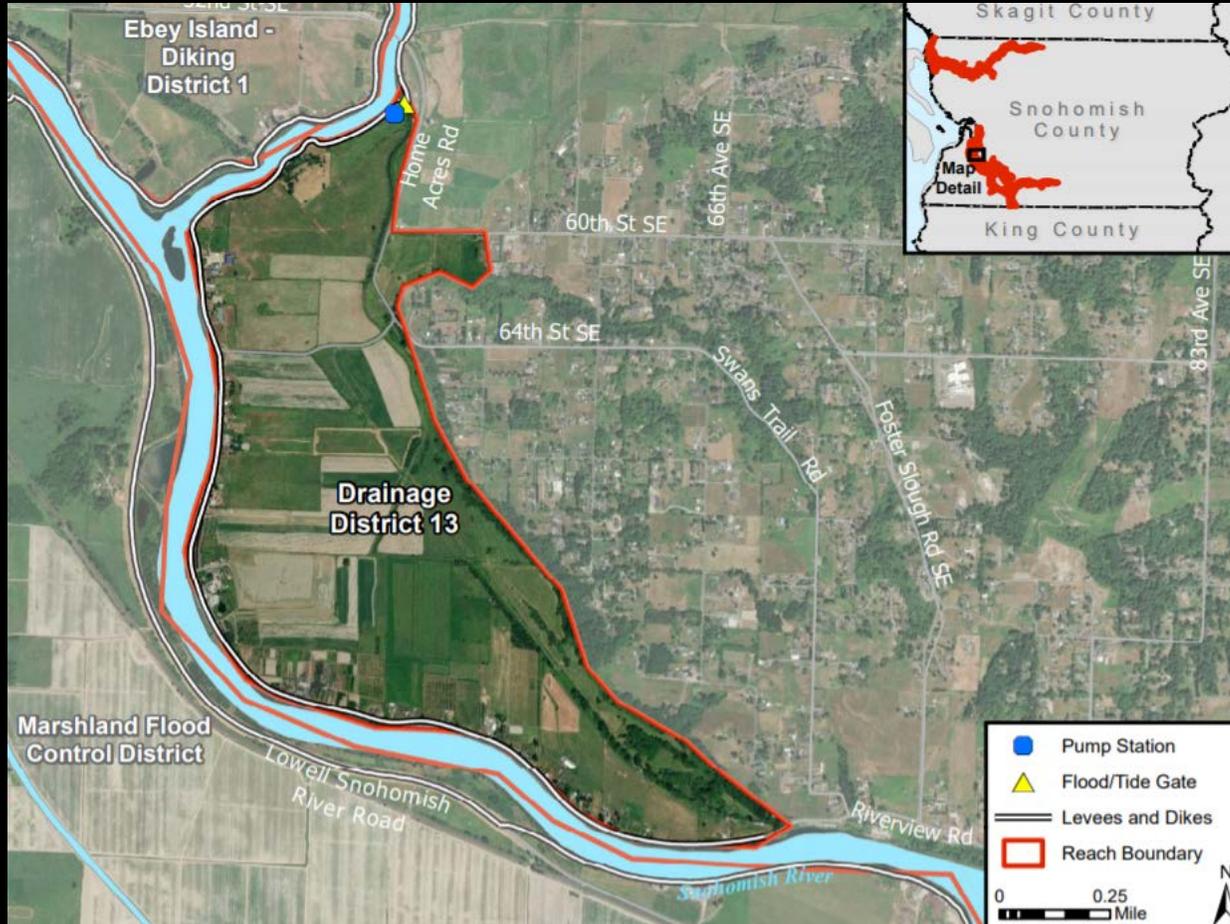


# Diking Districts 2 and 4

- Tier I Needs
  - Financial assistance for ditch and waterway cleaning
  - Drainage infrastructure improvements
  - Conserve existing farmland
  - Funding for drought resilience BMPs
- Tier II Needs
  - Access to water for irrigation
  - Reduce upland runoff
  - Assistance with beaver management

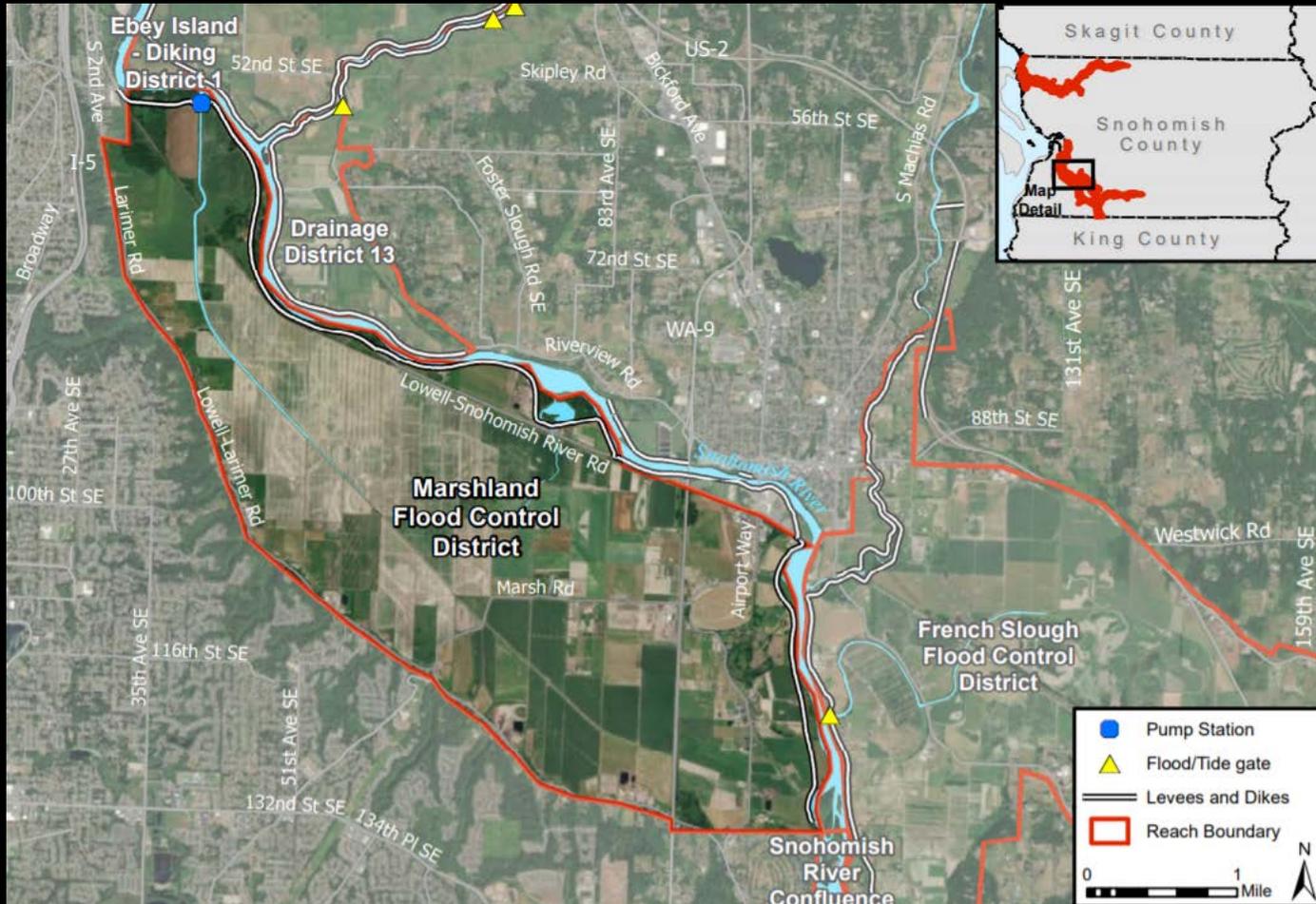


# Drainage District 13



- Tier I Needs
  - Drainage infrastructure improvements
  - Financial assistance for drainage system maintenance
  - Reduce upland runoff
  - Permitting assistance
  - Funding for drought resilience BMPs
- Tier II Needs
  - Conserve existing farmland
  - Manage impact of nutria on levee integrity

# Marshland Flood Control District



## • Tier I Needs

- Access to water for irrigation
- Reduce upland runoff
- Reduce subsidence
- Funding for drought resilience BMPs

## • Tier II Needs

- Financial assistance for drainage maintenance
- Flood risk training for new landowners
- Improve flood warning system
- Conserve existing farmland

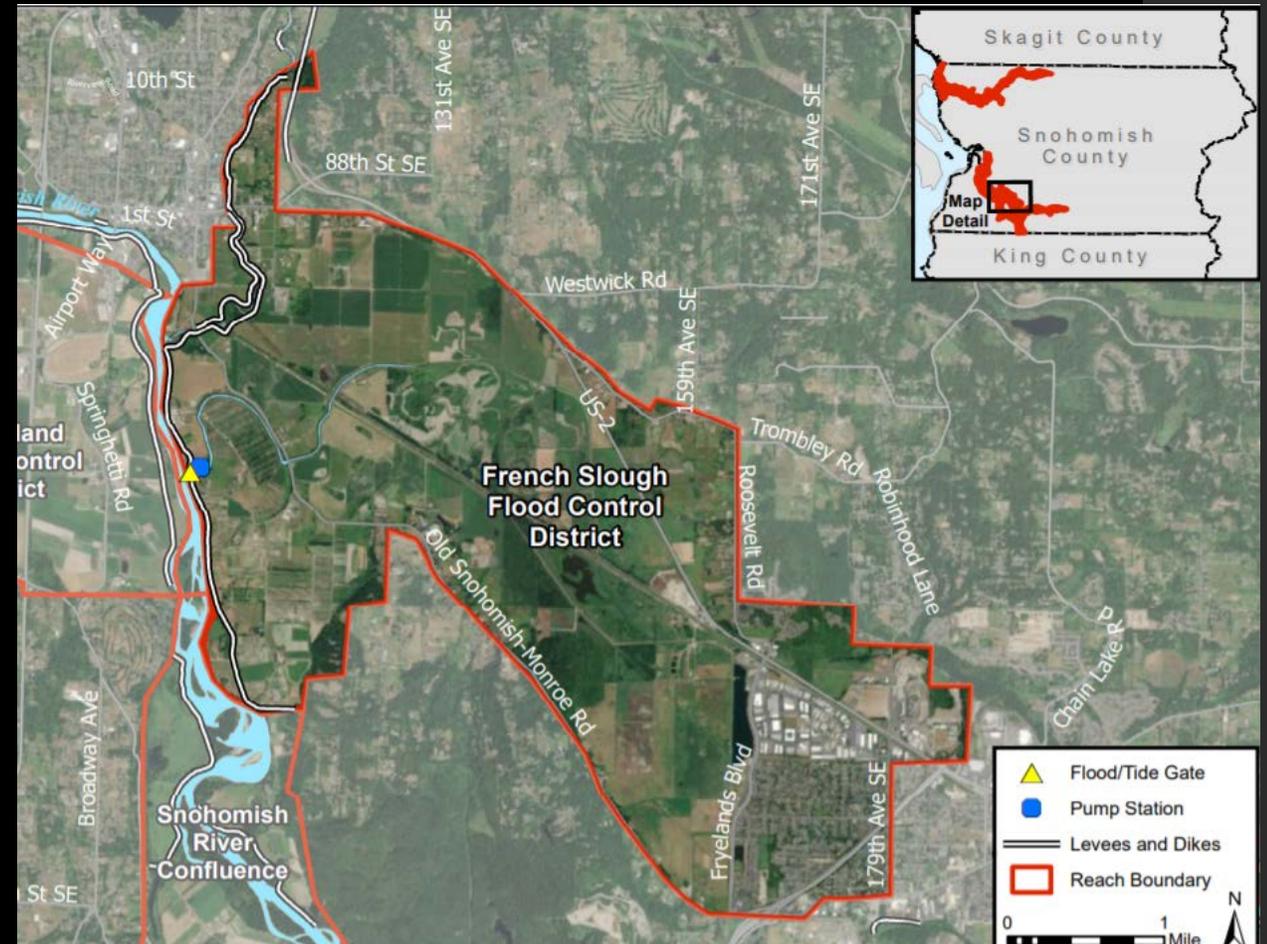
# French Slough Flood Control District

- Tier I Needs

- Financial assistance for drainage system maintenance
- Funding for larger levee and infrastructure projects
- Access to irrigation water
- Flood risk training for new landowners
- Improve flood warning system
- Reduce subsidence
- Funding for drought resilience BMPs

- Tier II Needs

- Conserve existing farmland
- Reduce upland runoff
- Research into on-farm drainage infrastructure improvements
- Assistance with permitting for drainage maintenance



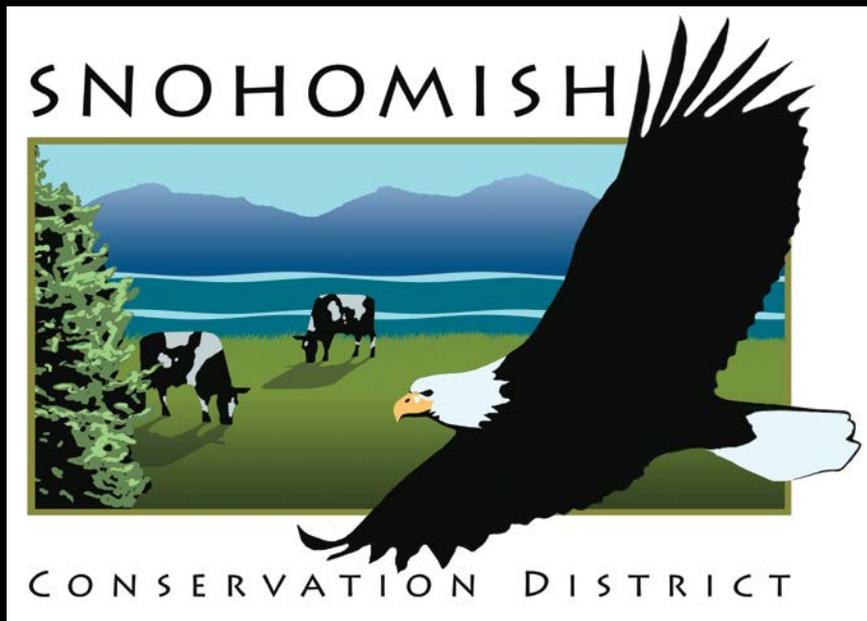
# County-wide priorities





## Next Steps

- Collaboration and partnership
- Sustainable Lands Strategy
- Project implementation and farmland protection
  
- PROJECT LIST



**Cindy Dittbrenner**  
**Natural Resources Program Manager**  
**Snohomish Conservation District**

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[snohomishcd.org/ag-resilience](http://snohomishcd.org/ag-resilience)

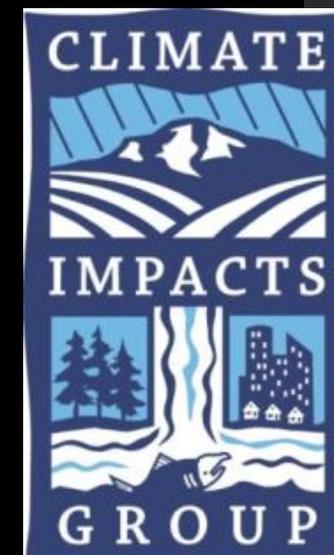


**FORT&ERRA**  
**FOR THE PEOPLE. FOR THE LAND. FOREVER.**



Funders:

- NOAA
- Stillaguamish Lead Entity
- Floodplains by Design
- ESRP Learning Program
- EPA National Estuary Program
- King CD



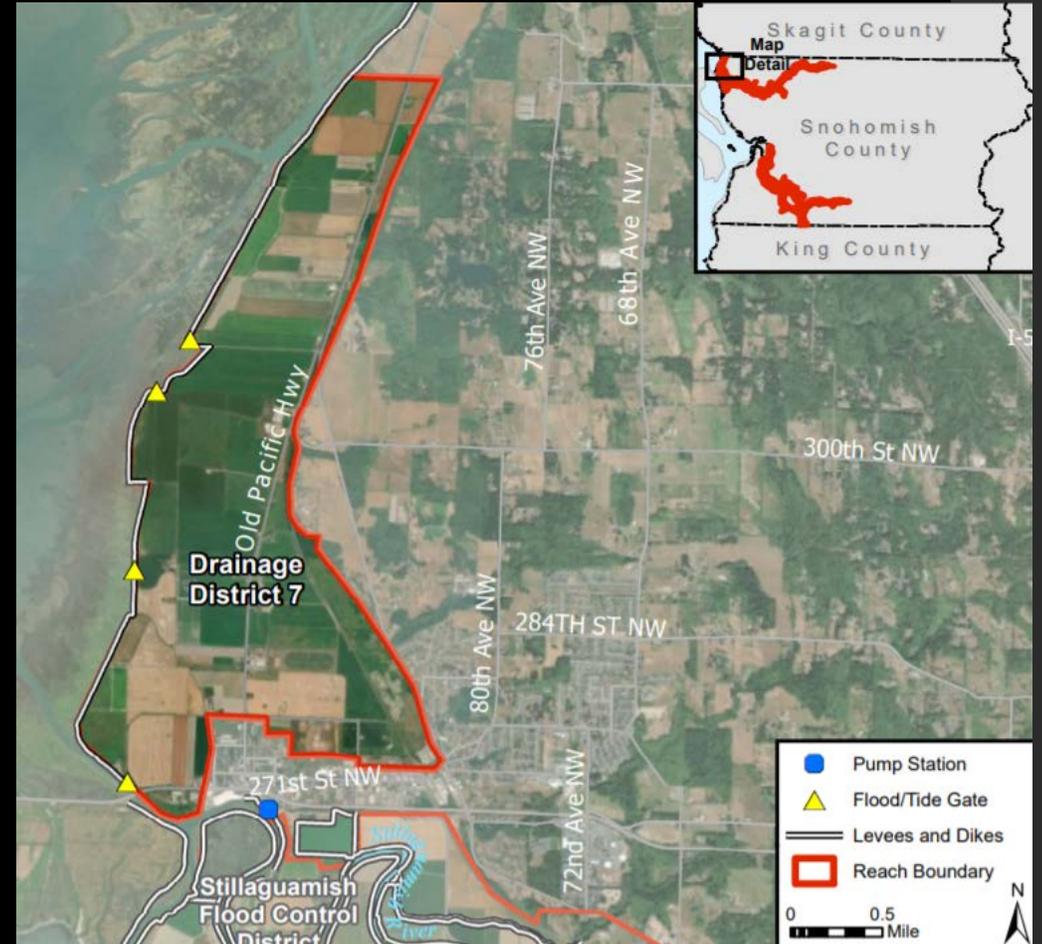
# Drainage District 7 – Skagit Flats

- Tier I Needs

- Access to water for irrigation
- Sea dike improvements
- Increase capacity of existing drainage infrastructure
- Funding for drought resilience BMPs

- Tier II Needs

- Financial assistance for ditch and waterway cleaning
- Additional groundwater well data collected and analyzed
- Reduce upland runoff
- Research new crop varieties



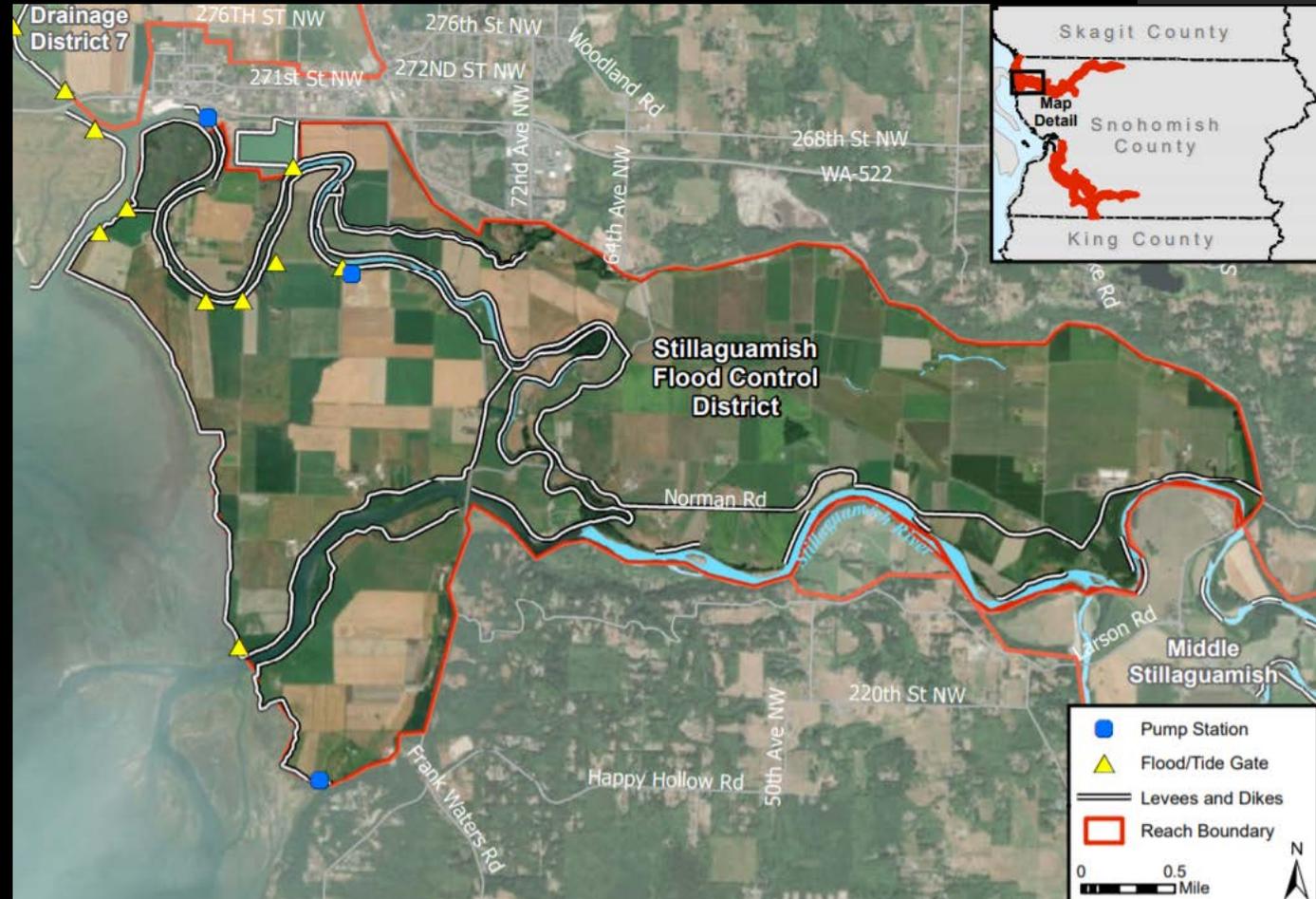
# Lower Stillaguamish River

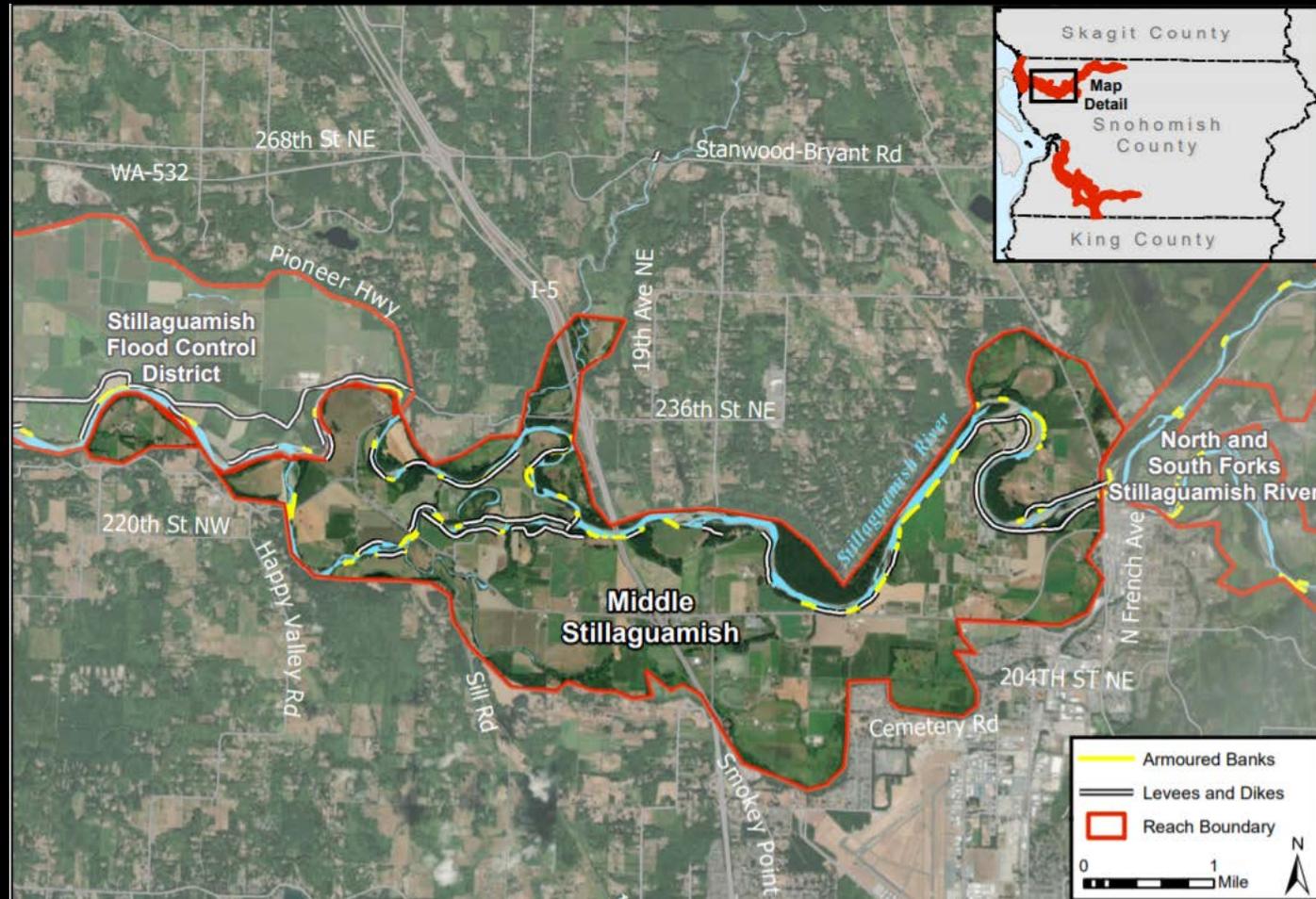
- Tier I Needs

- Access to water for irrigation
- Additional groundwater data collected
- Increase capacity of existing drainage infrastructure
- Reduction in flood damages
- Financial assistance for ditch and waterway cleaning
- Increased funding available for larger levee and drainage projects
- Research new crop varieties
- Funding for drought resilience BMPs

- Tier II Needs

- Protect existing farmland





# Middle Stillaguamish

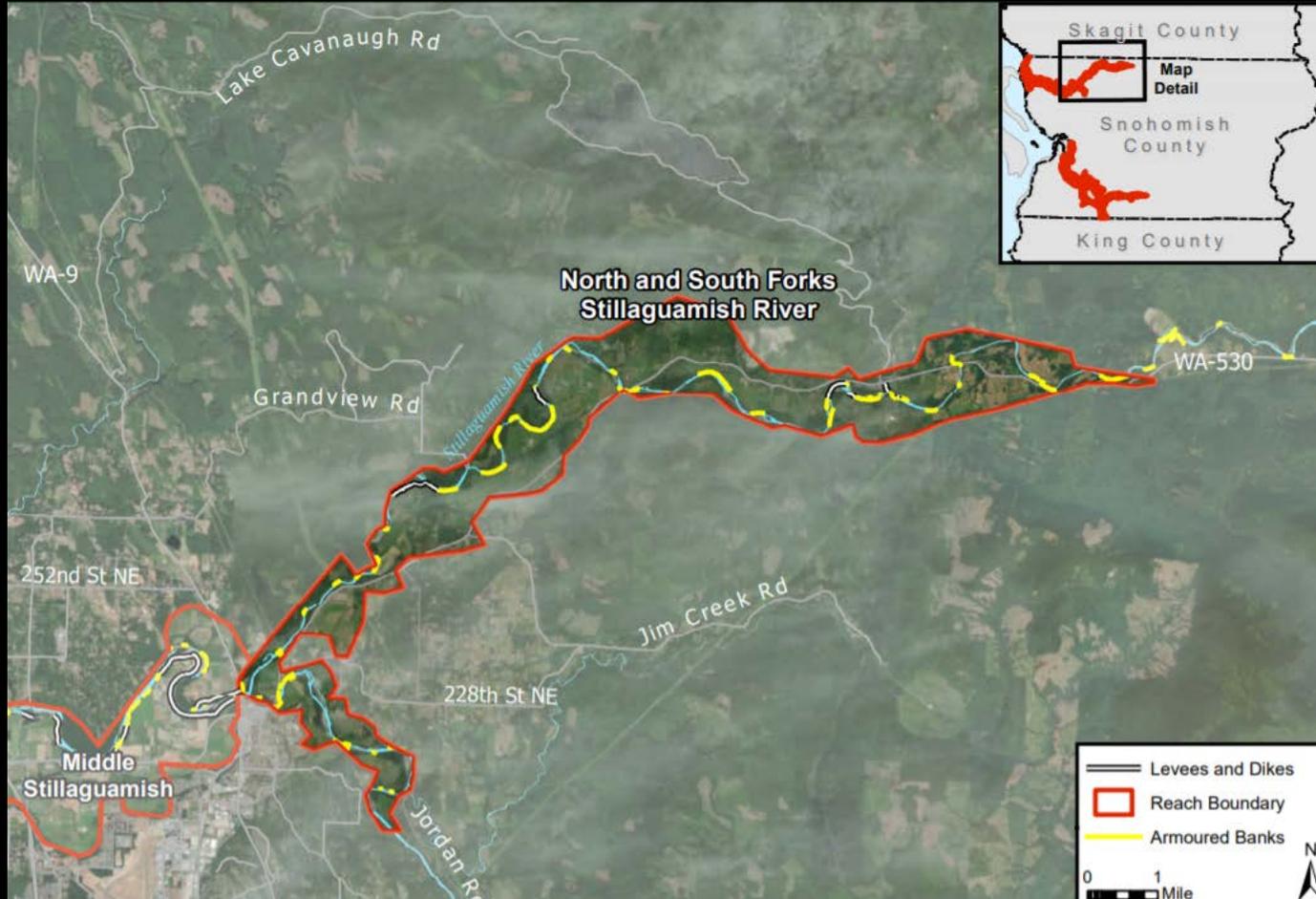
- Tier I Needs

- Access to water for irrigation
- Reduction in flood damages
- Conserve existing farmland
- Funding for drought resilience BMPs
- Improve flood warning

- Tier II Needs

- Financial assistance to repair shoreline armoring
- Financial assistance for ditch and waterway cleaning
- Drainage system maintenance
- Reduce upland runoff
- Farm pads

# N. and S. Forks Stillaguamish



- Tier I Needs

- Reduction of flood damages
- Protect from bank erosion
- Protect farmland from flood debris
- Access to irrigation water