The background of the slide is a high-angle aerial photograph of a rural area. It shows a mix of green fields, some water bodies, and clusters of buildings. In the far distance, a range of mountains is visible under a clear sky.

Floodplains by Design: catalyzing floodplain management for people and nature.

Kris Johnson, PhD
The Nature Conservancy

National Academies Roundtable on Science and Technology for Sustainability
December 11, 2014



Risk Reduction & Resilience





Natural infrastructure



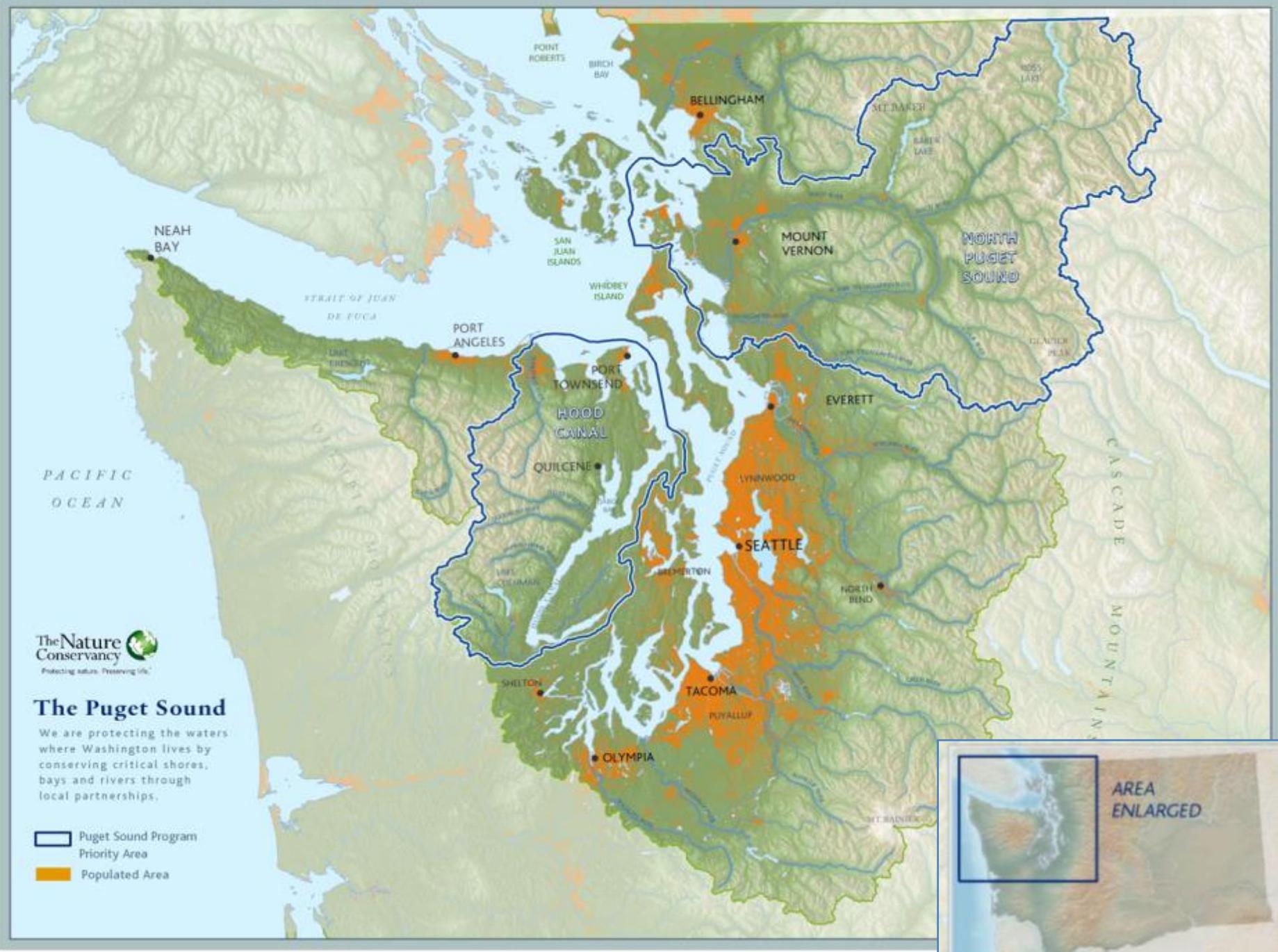
“...the local people, they don't really want to see a whole lot of fake stuff around. They have all grown up with water lapping in their yards, you know. A natural solution is going to be a better choice...”



Sheila Reddy, 2014

Demonstration Sites





The Puget Sound

We are protecting the waters where Washington lives by conserving critical shores, bays and rivers through local partnerships.

Puget Sound Program
Priority Area

Populated Area



December 17, 2012

Kevin Morse



Floodplains by Design

- *Reduce flood risks* to farms, communities, and businesses
- Dramatically *accelerate salmon habitat recovery*
- *Support agriculture, recreation, clean water*, and other floodplain uses and services

PROJECT ADVISORY TEAM

Federal Emergency Management Agency

King County

Master Builders

National Oceanic and Atmospheric Administration

Pierce County

Skokomish Tribe

Snohomish County

Snohomish County Sustainable Lands Strategy

Tulalip Tribes

United States Army Corps of Engineers

United States Environmental Protection Agency

United States Geological Survey

Washington Military Department Emergency

Management Division

Washington State Dairy Federation

Washington Department of Fish and Wildlife

PROJECT PROPONENTS

City of Orting

City of Stanwood

Clallam Conservation District

Jamestown S'klallam Tribe

King County

Mason County Conservation District

North Olympic Lead Entity for Salmon

Pierce County

Skokomish Tribe

Snohomish Conservation District

Snohomish County Dike District 7

Snohomish County Surface Water Management

Stillaguamish Tribe

Washington Department of Fish and Wildlife

Whatcom County Flood Control Zone

District



Creating Systemic Change

- Align agency programs and *coordinate investment*
- Grow the *funding for multi-objective management*
- Catalyze integrated *local decision-making*
- Science and *decision support* for planning and prioritization

Decision Support Tool

FLOODPLAINS BY DESIGN

PUGET SOUND, WASHINGTON

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TOUR

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Partners

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Regional Layers

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Streets ▾

Floodplain Explorer

Flood Level Rise

Integrated Community Planning

Switch To Map 2

Split View

Save & Share

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Floodplains by Design

• REDUCING RISK, RESTORING RIVERS •

Decision Support for Coordinated Investment

FLOODPLAINS BY DESIGN PUGET SOUND, WASHINGTON

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Lake Fuford

Floodplain Explorer

Click For Floodplain Explorer Instructions

Viewing 6 of 535 segments

200 Acres (Minimum Area)

Current Ecological Function

① Store and Route Floodwaters

① Supply Sediment and Wood

① Retain and Transform Water Pollutants

① Support Floodplain Forest Ecosystems

① Salmon Habitat

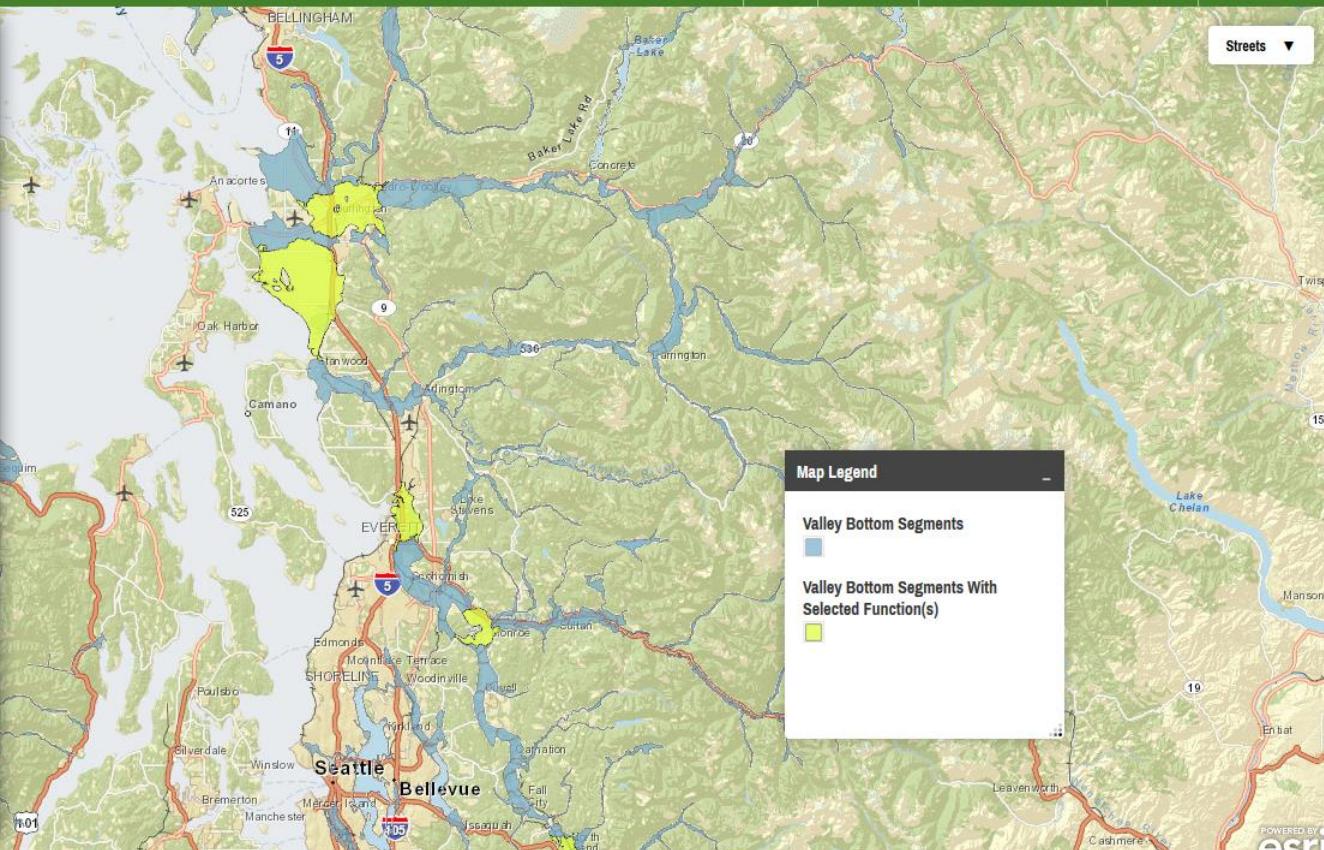
Potential Ecological Function

① Restore Connectivity

① Restore Condition

Flood Hazards

① Building Losses
>\$0 \$250 \$500



Map Legend

Valley Bottom Segments

Valley Bottom Segments With Selected Function(s)

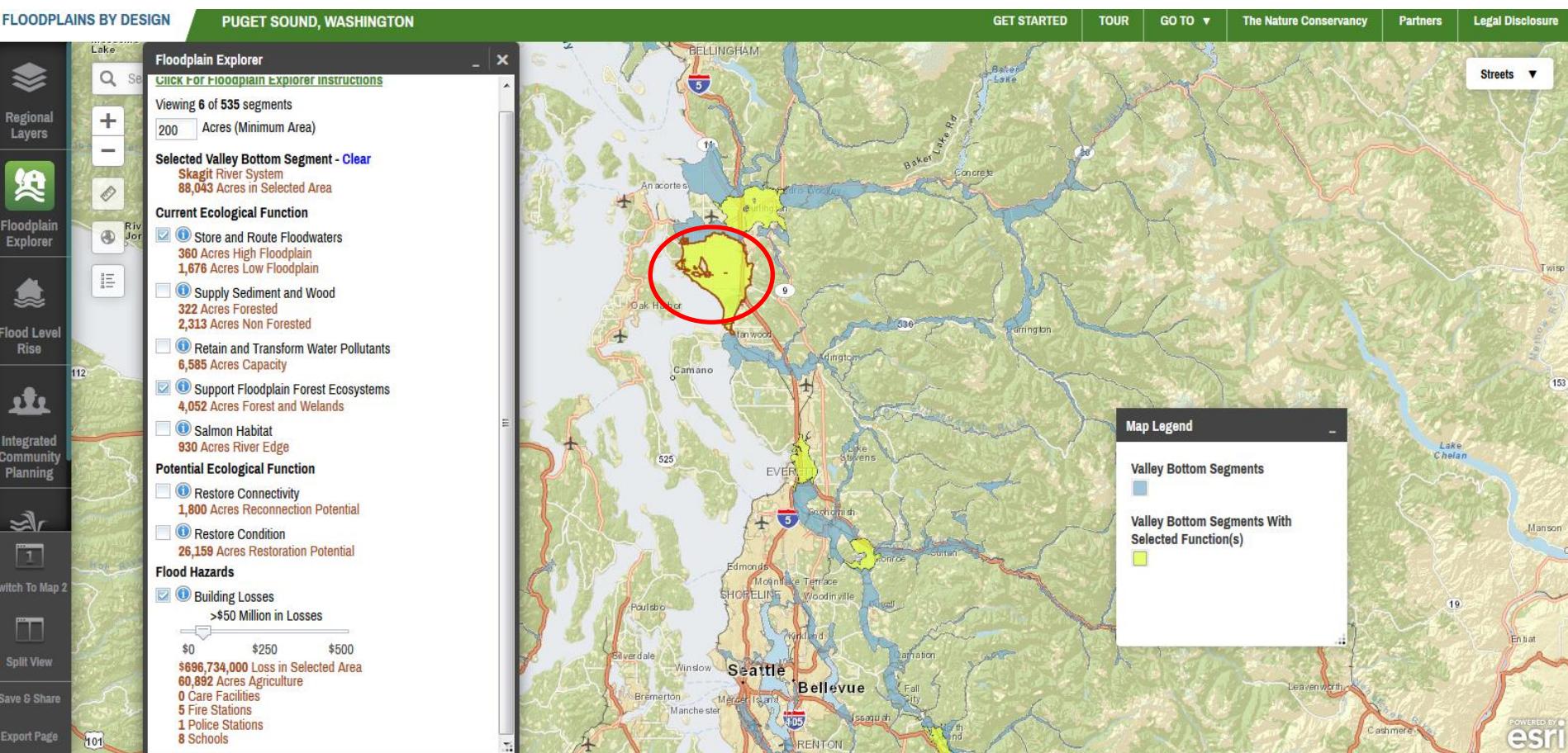
POWERED BY esri



Floodplains by Design

• REDUCING RISK, RESTORING RIVERS •

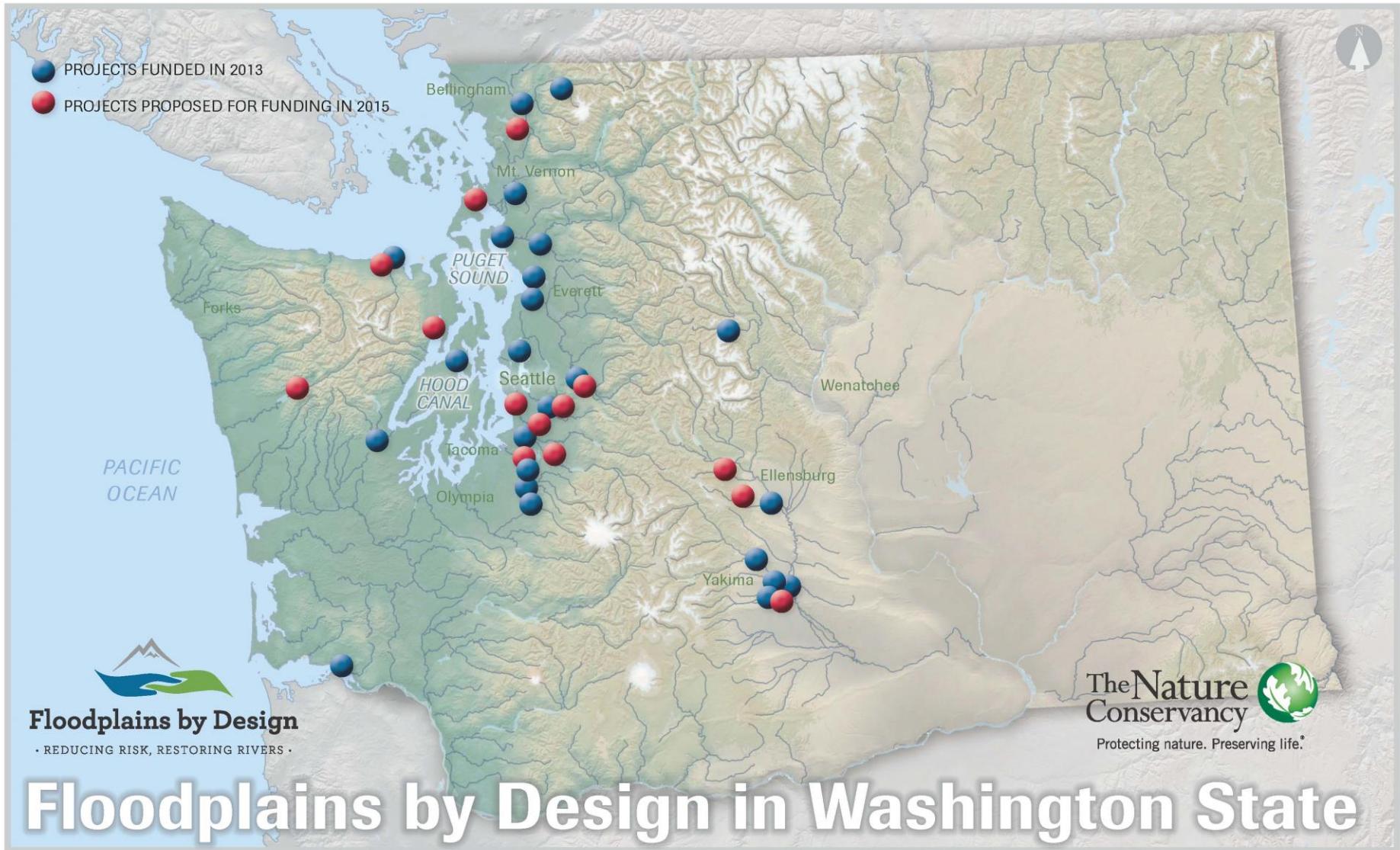
Decision Support for Coordinated Investment



Floodplains by Design

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Decision Support for Coordinated Investment



The Floodplains by Design partnership is harnessing the collective strength of agencies, nonprofits and local communities to restore salmon populations, reduce flood hazards, increase agricultural viability, improve water quality and enhance outdoor recreation.

DECEMBER 3, 2014

Map: The Nature Conservancy.
Erica Simek Sloniker

Decision Support for Local Planning

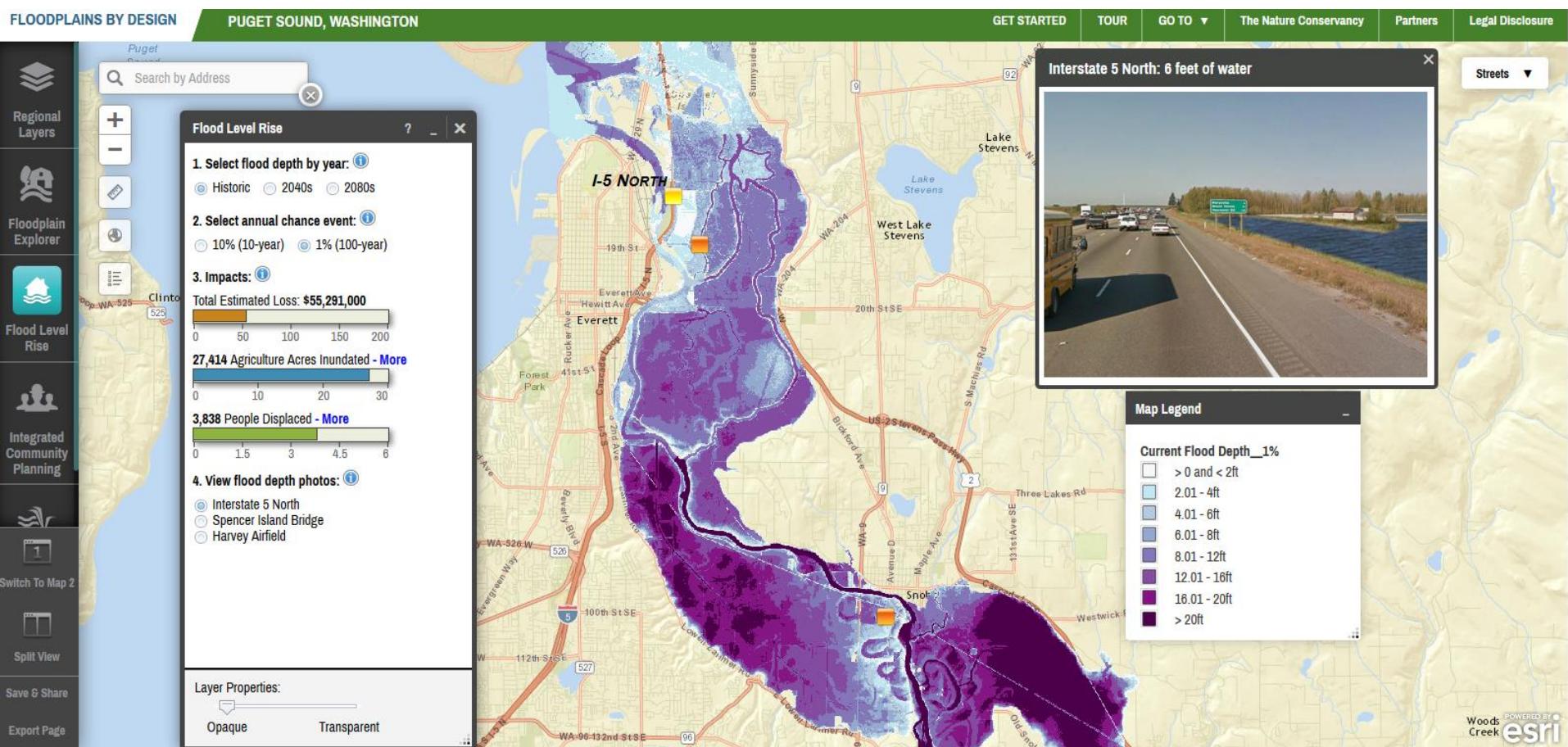


Sustainable Lands Strategy: “Net gain for farms and fish”

SLS Executive Committee:

- *Stillaguamish & Tulalip Tribes*
- *Snohomish Conservation District*
- *State: PSP, DOE, WDFW, Conservation Com.*
- *Feds: NOAA, USDA/NRCS*
- *Snohomish County*
- *Agriculture Advisory Board*
- *Futurewise, Pilchuk Audubon, TNC and other Environmental NGO's*

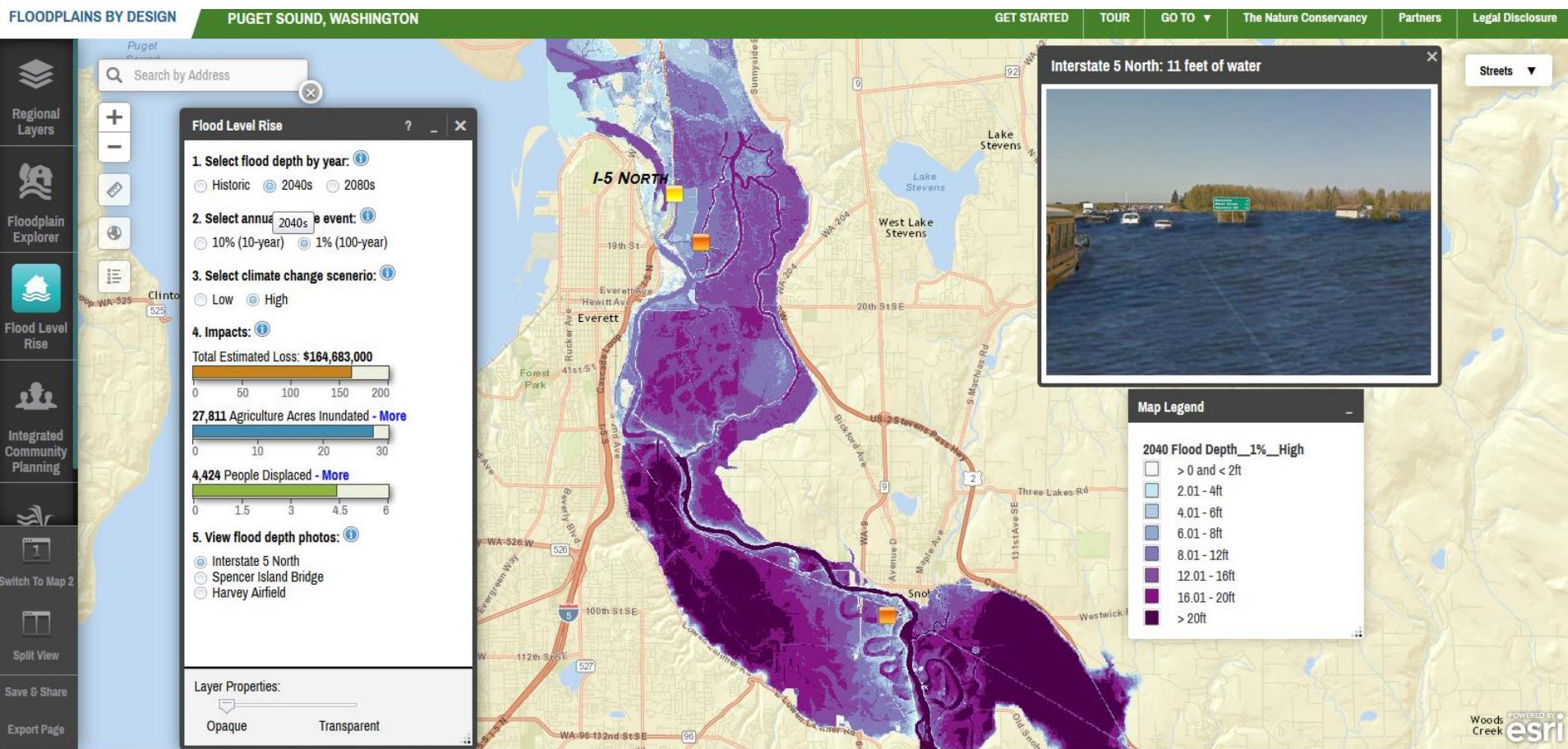
Decision Support for Local Planning



Floodplains by Design

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Decision Support for Local Planning



Floodplains by Design

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Woods Creek POWERED BY esri

Decision Support for Local Planning

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Floodplain Explorer

Flood Level Rise

Integrated Community Planning

Coastal Defense

Full Map

Save & Share

Search by Address

Streets ▾

180 m

Topographic ▾

Map Legend

2040 Flood Depth _1%_ High

- > 0 and < 2ft
- 2.01 - 4ft
- 4.01 - 6ft
- 6.01 - 8ft
- 8.01 - 12ft
- 12.01 - 16ft
- 16.01 - 20ft
- > 20ft

Map Legend

Too Wet To Farm

Repetitive Loss Parcels 2012

FishPassageBarrings

- Bridge
- Culvert
- Tide/Flood Gate
- Washout

Facilities

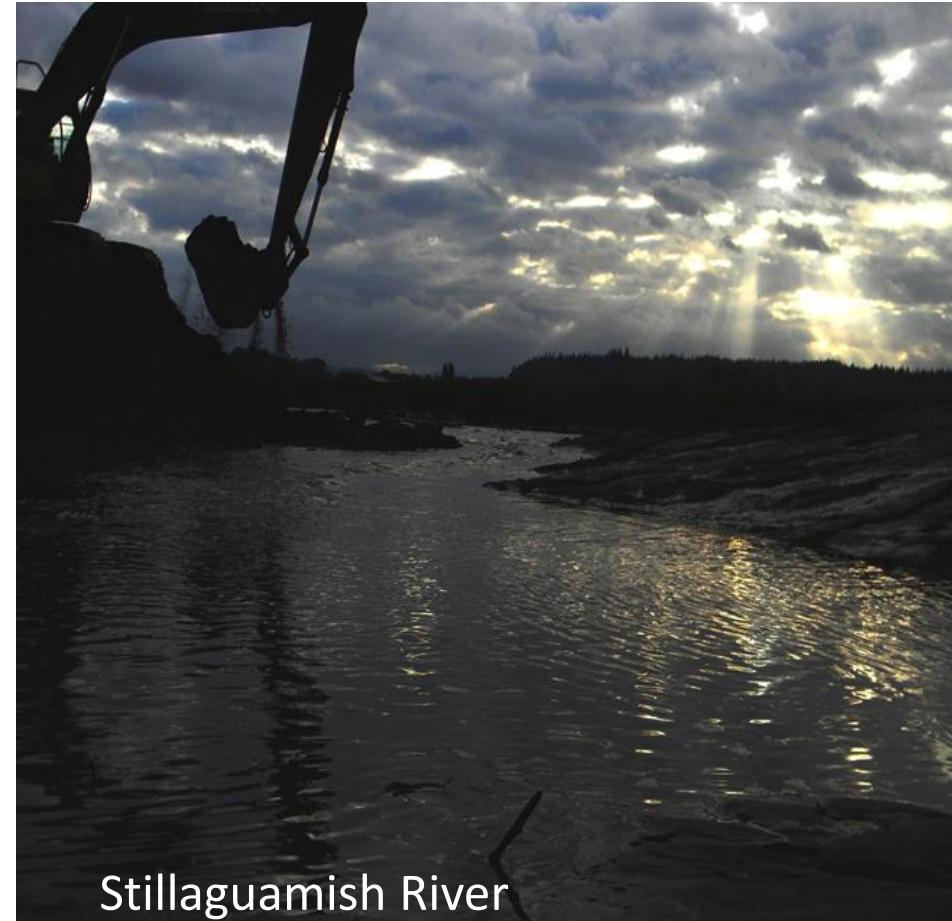
Unlink Maps

Print

Multi-benefit floodplain projects



Skagit River



Stillaguamish River



Floodplains by Design

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Questions?
kjohnson@tnc.org

