Northwest **Power** and **Conservation** Council

July 5, 2017

MEMORANDUM

TO: **Council members**

FROM: **Kendall Farley**

SUBJECT: **Clark County Public Utility District (PUD) Stream Team on Restoring Salmon Creek Watershed**

BACKGROUND:

Presenter: Jeff Wittler, Environmental Services Manager, Clark PUD
Ashley King, Clark PUD Stream Team Program Coordinator

Summary: Clark County PUD Stream Team is a volunteer based stream restoration program that is working in Clark County to address the problems facing Salmon Creek watershed. Since the start of the program in 1992, they've planted more than 850,000 native trees and plants to restore approximately 120 acres of land along 12 miles of stream length. They've also installed 10 miles of livestock exclusion fencing and two miles of bank stabilization in addition to removing invasive plants and cleaning up trash from Salmon Creek. With the help and cooperation of landowners, the Stream Team projects have improved water quality in Salmon Creek with the hope of seeing native fish return.

Background: The Clark PUD Stream Team has more than 1,000 members who have logged over 3,500 volunteer hours each year. Members include utility employees, AmeriCorps members, scout groups, college students, youth

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groups and dedicated individuals. They also offer a steward program involving a seven week course with continual educational workshops for volunteers interested in increasing their knowledge of geology, hydrology, riparian and wetland habitat, wildlife issues, water quality and stream restoration and bioengineering.

Bringing Salmon Back to Salmon Creek

Clark Public Utilities' Watershed Enhancement Program

July 11, 2017

Clark Public Utilities

Watershed Enhancement Program

Origins of program:

- Water rights / MOU
- Power diversification
- Corporate citizenship
- Community/customer centered

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Goals & Objectives

- Improve water quality impairments impacting salmonids and other aquatic species
- Improve floodplain function / water quantity
- Improve water quantity
- Engage our customers / public

Watershed Enhancement Program

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What we do:

- Riparian revegetation
- Invasive non-native plant removal
- Bank stabilization
- Large wood debris installation
- Off channel creation
- Native Plant Nursery
- Outreach – Education
- Outreach – Volunteers

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Riparian Restoration

- Create resilient riparian and floodplain plant communities
- 89 – 93% survival

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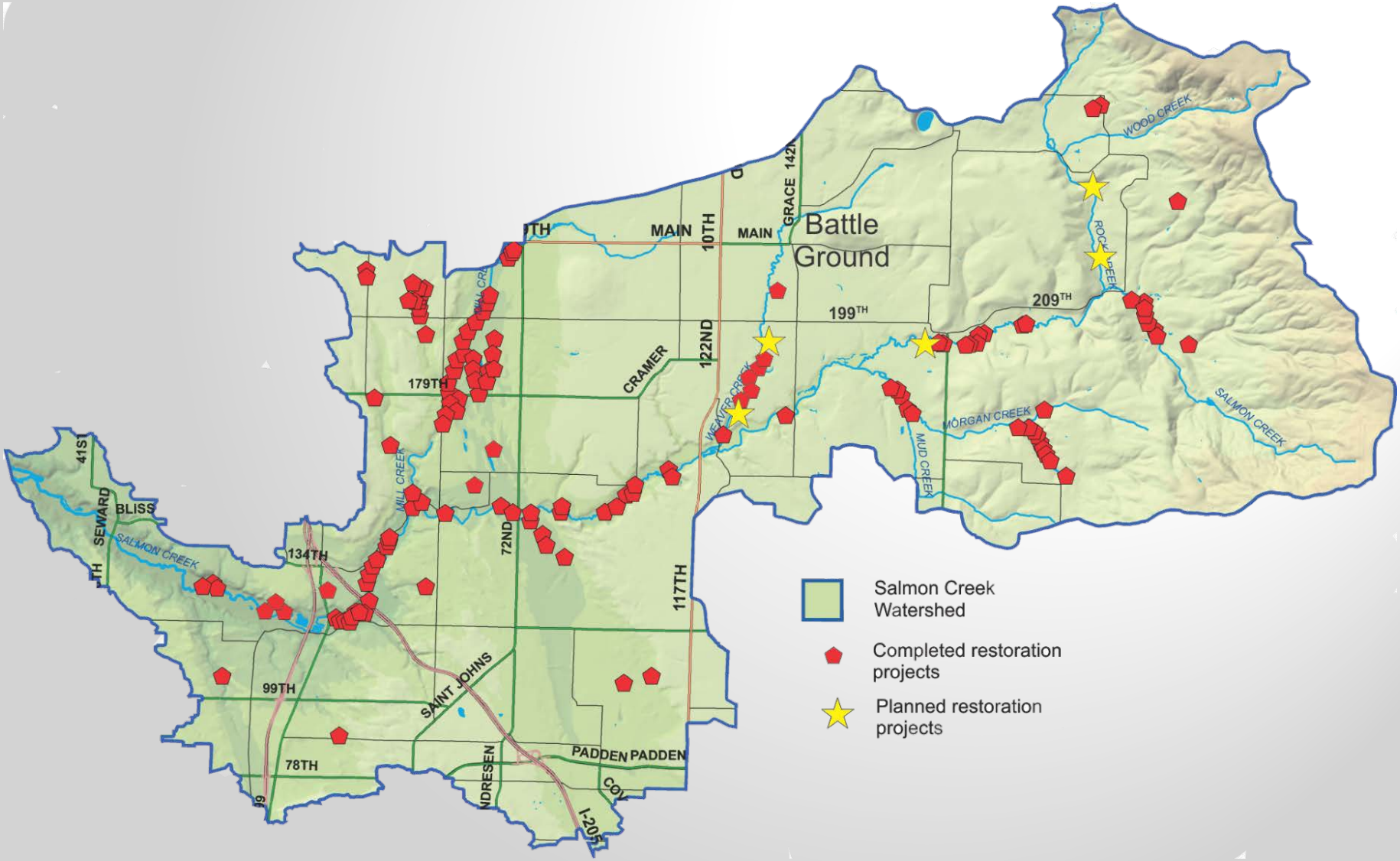
Large Woody Material

- Over 1,500 pieces installed

Salmon Creek Watershed Enhancement Program

"Bringing Salmon Back To Salmon Creek"



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Community Engagement

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Accomplishments

910,000	trees planted since 1993
40-50,000	trees planted each year
480	acres restored
6,400	feet of streambank stabilized
200+	landowners assisted
14	miles of stream restored
8	miles of livestock fencing
140	feet of buffer created (average)
1,500	pieces of large woody debris
1,000's	of volunteers engaged
45,000+	volunteer hours contributed

Watershed Enhancement Program

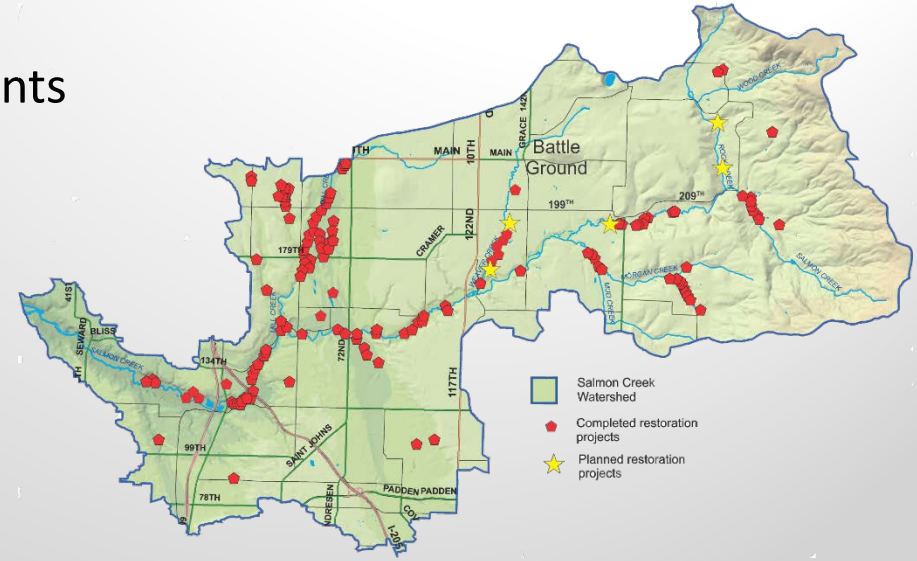
Clark Public Utilities

Program Structure

- Create resilient riparian and floodplain plant communities
- Create in-stream habitat
- Improve floodplain function
- Improve water quality impairments impacting salmonids and other aquatic species
- Engage the public

Program Accomplishments

900,000	trees planted since 1993
40-50,000	trees planted each year
480	acres restored
6,400	feet of streambank stabilized
100+	landowners assisted
14	miles of stream restored
8	miles of livestock fencing
150	feet of buffer created (average)
1,000's	of volunteers engaged
45,000+	volunteer hours contributed



Environmental Resources

What we do?

Why we do it?

How we benefit?

Watershed Enhancement Program

Why we do it:

- Good stewards
- Community/customer centered
- Ecology / Water rights
- Power diversification / BPA

Environmental Resources

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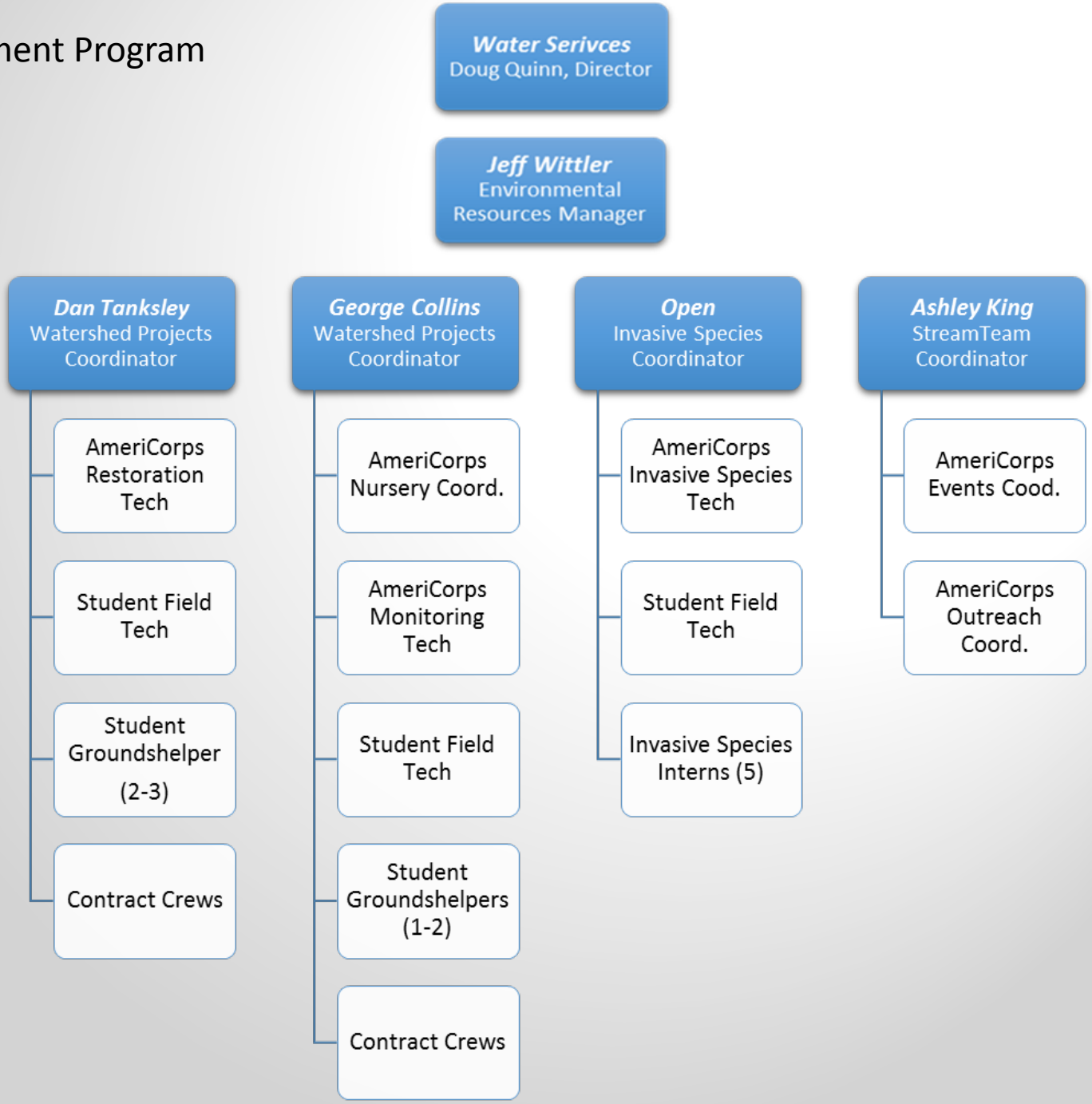
What we do

- Watershed Enhancement Program
- Watershed planning
- Assist with implementation of mitigation
- Provide assistance to other utility departments

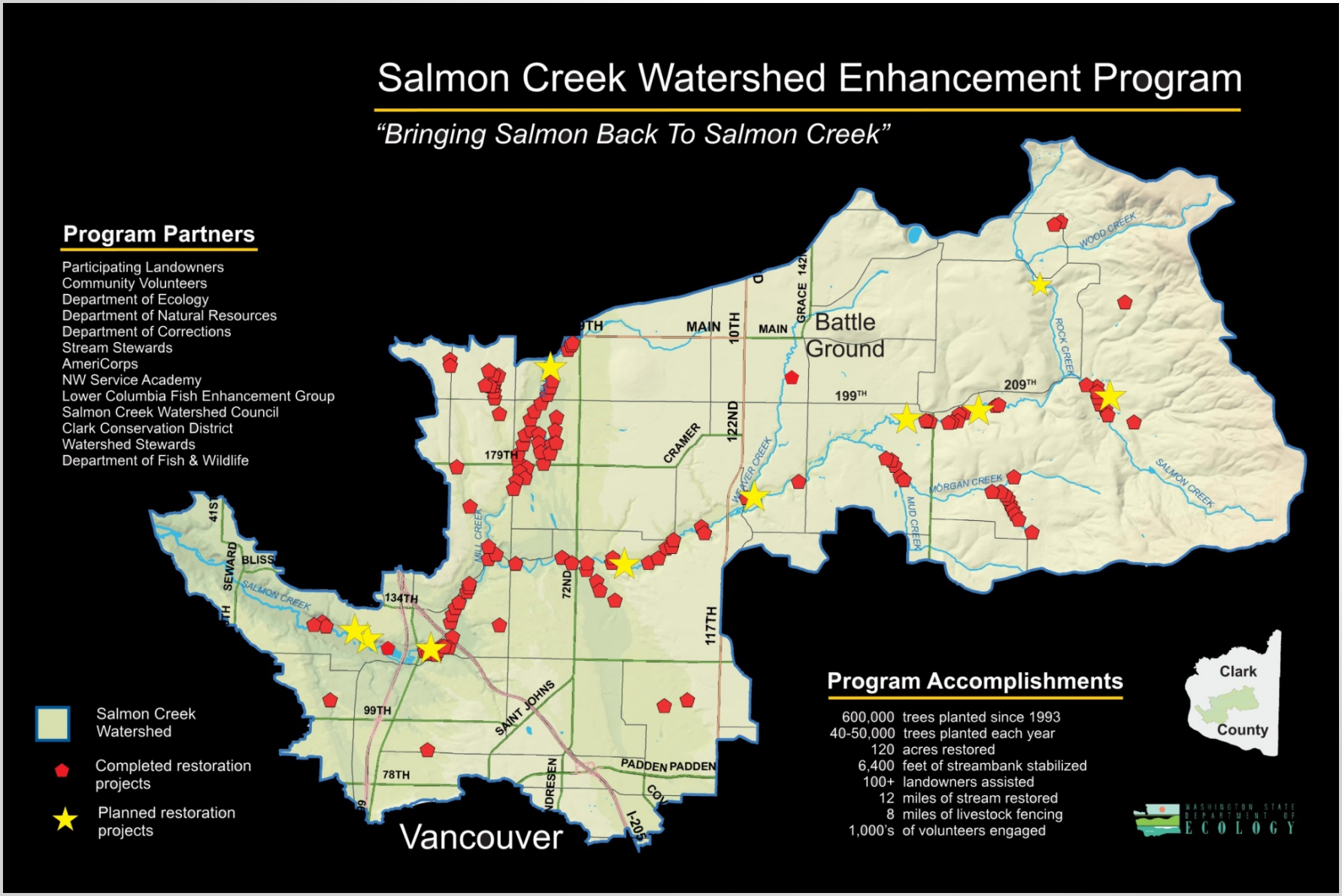
Projects

Watershed Enhancement Program

Staff	5
AmeriCorps	6
Students/Interns	4-8
Contract Crews	10-40



Watershed Enhancement Program



Watershed Enhancement Program

Projects

Types of stream / habitat restoration

- Riparian Restoration

Types of stream / habitat restoration

- In-stream Restoration
  - Large woody debris
  - Bank stabilization
  - Sediment augmentation

Need for stream

- **Water quality**
  - Temperature
  - Fecal coliform
  - Turbidity
  - Dissolved oxygen
- **Water quantity**
  - Improved hydrology

Benefits of Restoration / Enhancement

- Improved water quality
  - Temperature control
  - Decreased pollutants

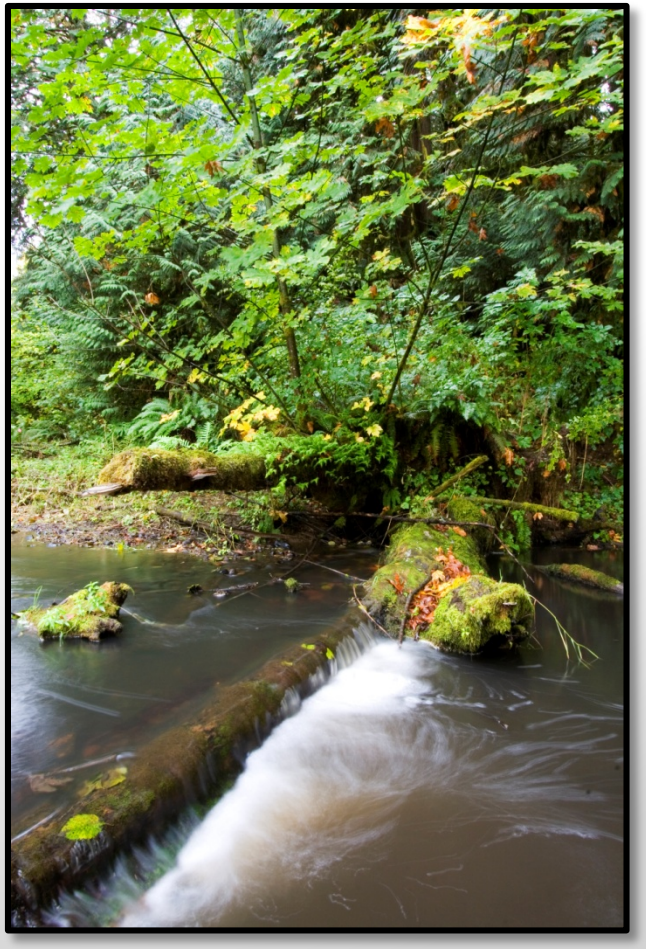
- Improved water quantity
- Improved hydrology

Benefits of Restoration / Enhancement

- Improved fish habitat
- Improved biodiversity

Benefits of Restoration / Enhancement

- Enhanced aesthetics
- Erosion control
- Improved wildlife habitat

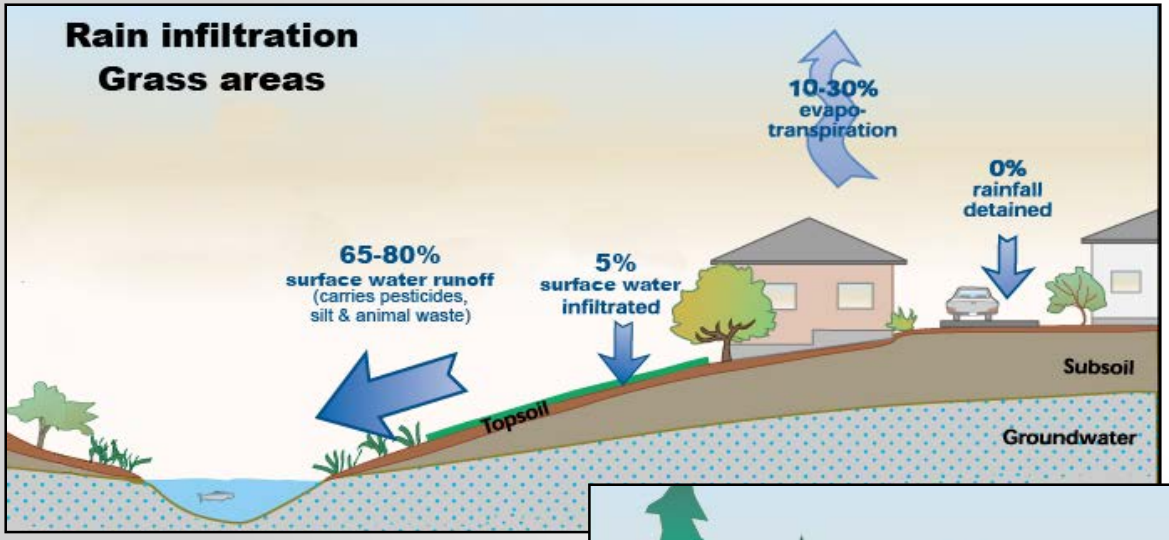


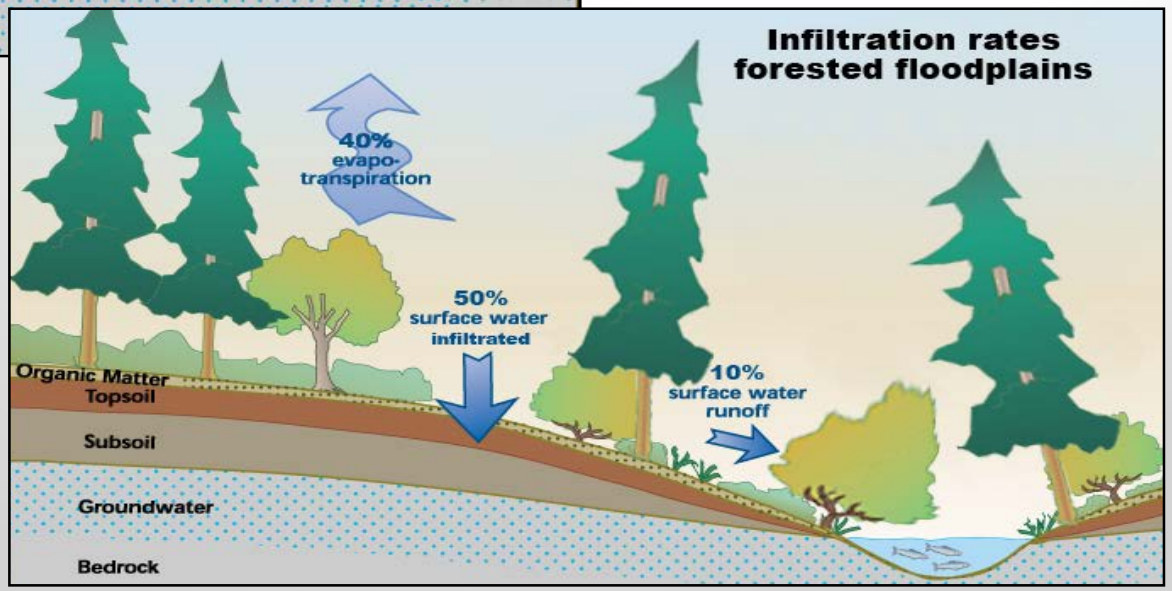
Types of stream / habitat restoration

- Off channel habitat
  - Thermal & high flow refugia

Types of stream / habitat restoration

- Floodplain connectivity

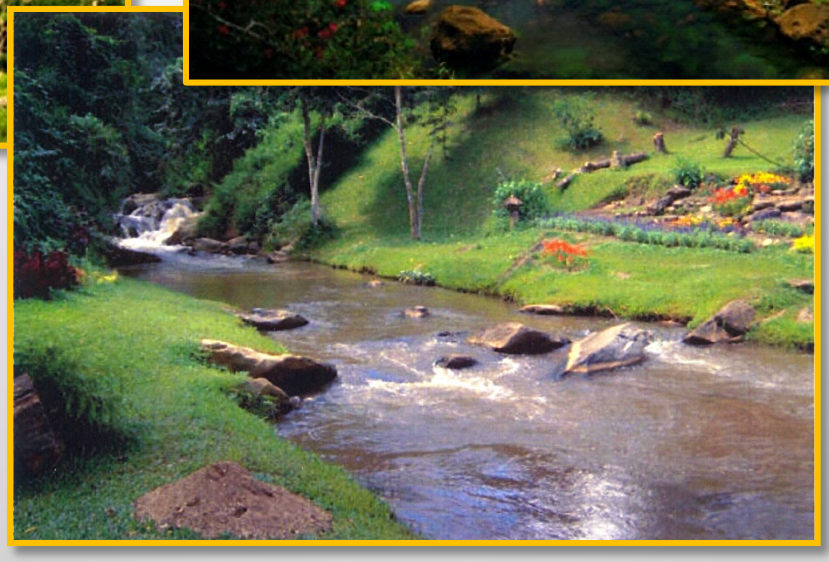




Types of stream / habitat restoration

- Floodplain connectivity
  - Increase summer flows
  - Enhance channel migration zone

The Restoration Process



- Root causes of disturbances

The Restoration Process

- Initial assessment – is there in fact a problem
- Data Collection / detailed site assessment

- Identify limiting factors & water quality impairments limiting overall function

The Restoration Process

- Monitoring & maintenance
- Evaluation
- Modifications

The Restoration Process

- Implementation

Projects

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Watershed Enhancement Program

Clark Public Utilities

Projects

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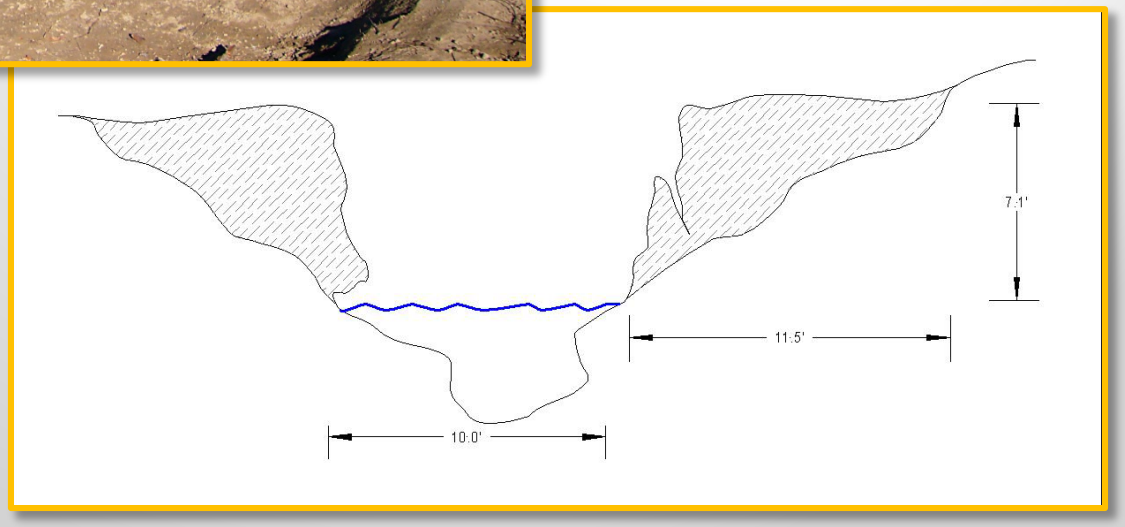

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Projects

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