

# Lincoln City Source Water Protection Grants

October 2023



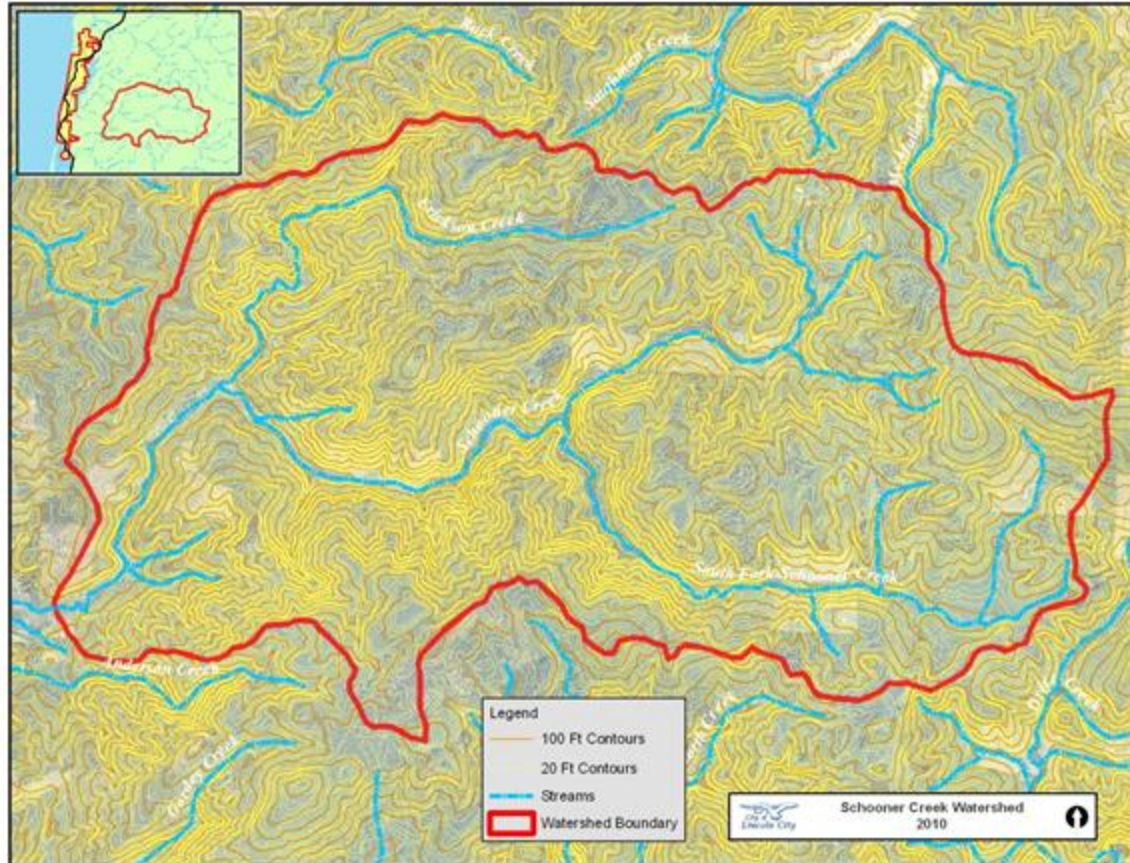
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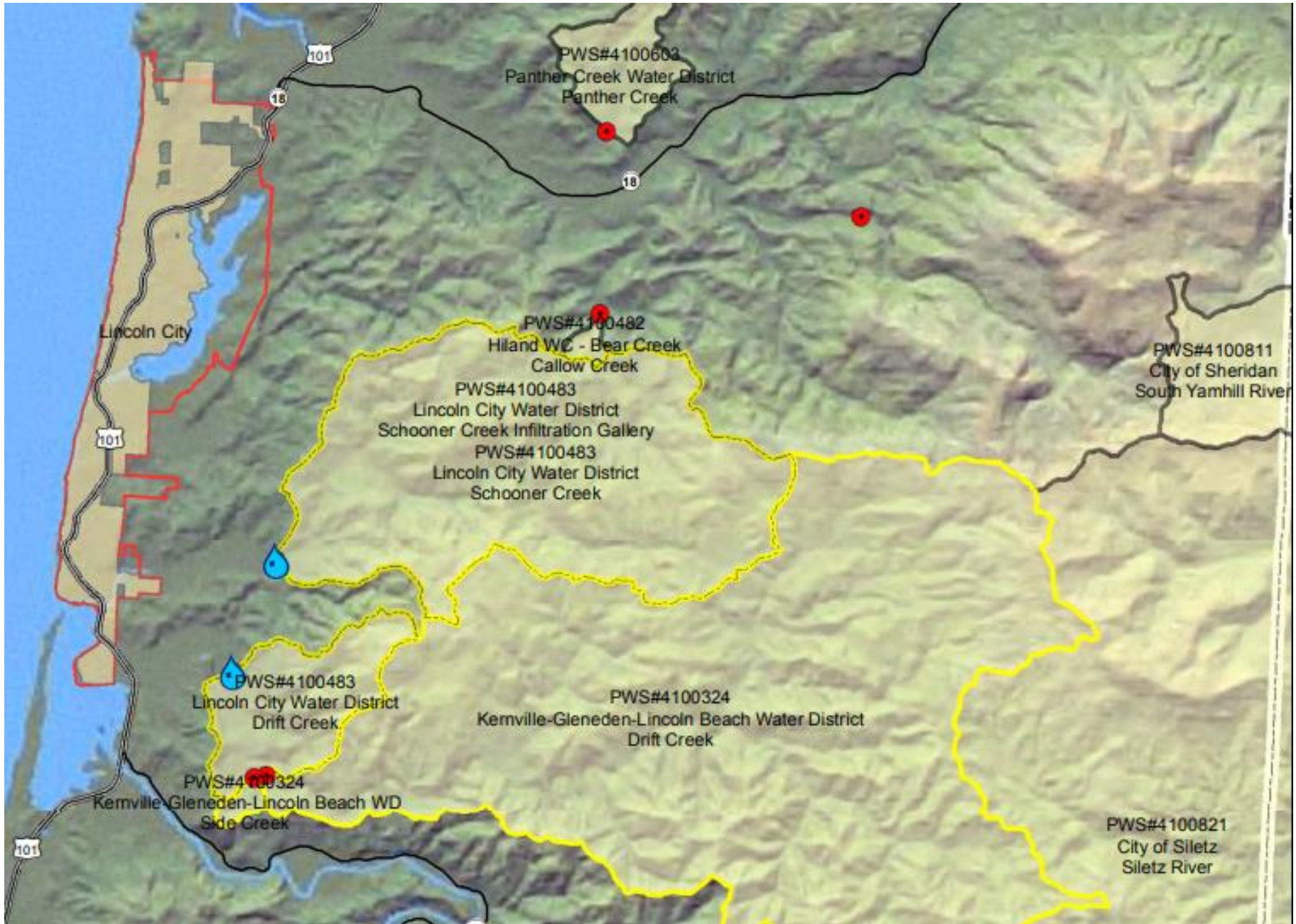
# OUTLINE

- Overview of the Schooner Creek Watershed
- 2016 Source Water Assessment Plan Findings
- Grants Received
- 2018-present Accomplishments
- Lessons and next steps

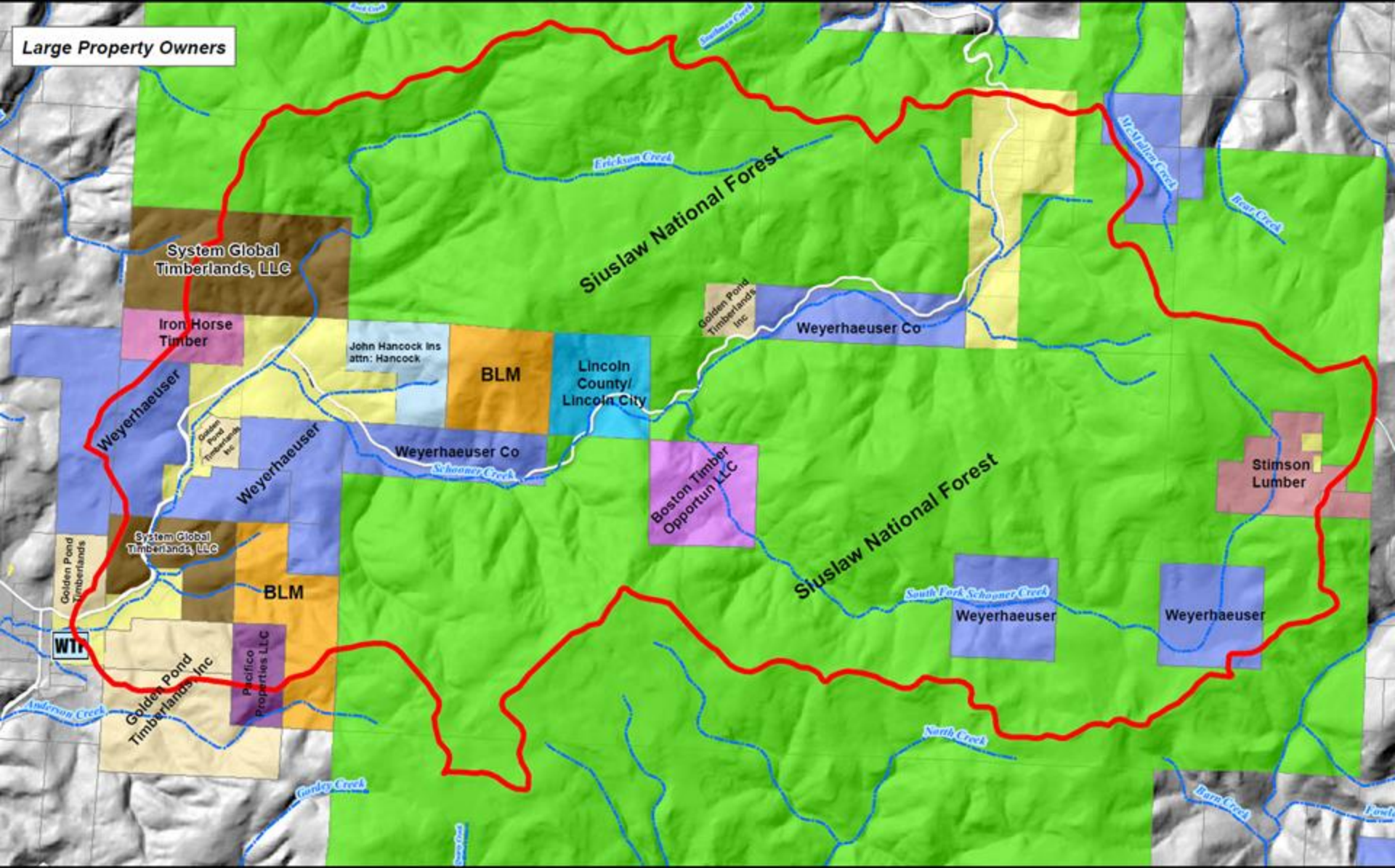
# Schooner Creek Watershed

- Approx. 9,650 acres
  - 6,850 acres managed by The Siuslaw National Forest
  - 2,800 acres of private industrial timber lands
- Lincoln City Water District serves 7,800
- Population from 10,000 residents to 40,000 during peak season





**Large Property Owners**



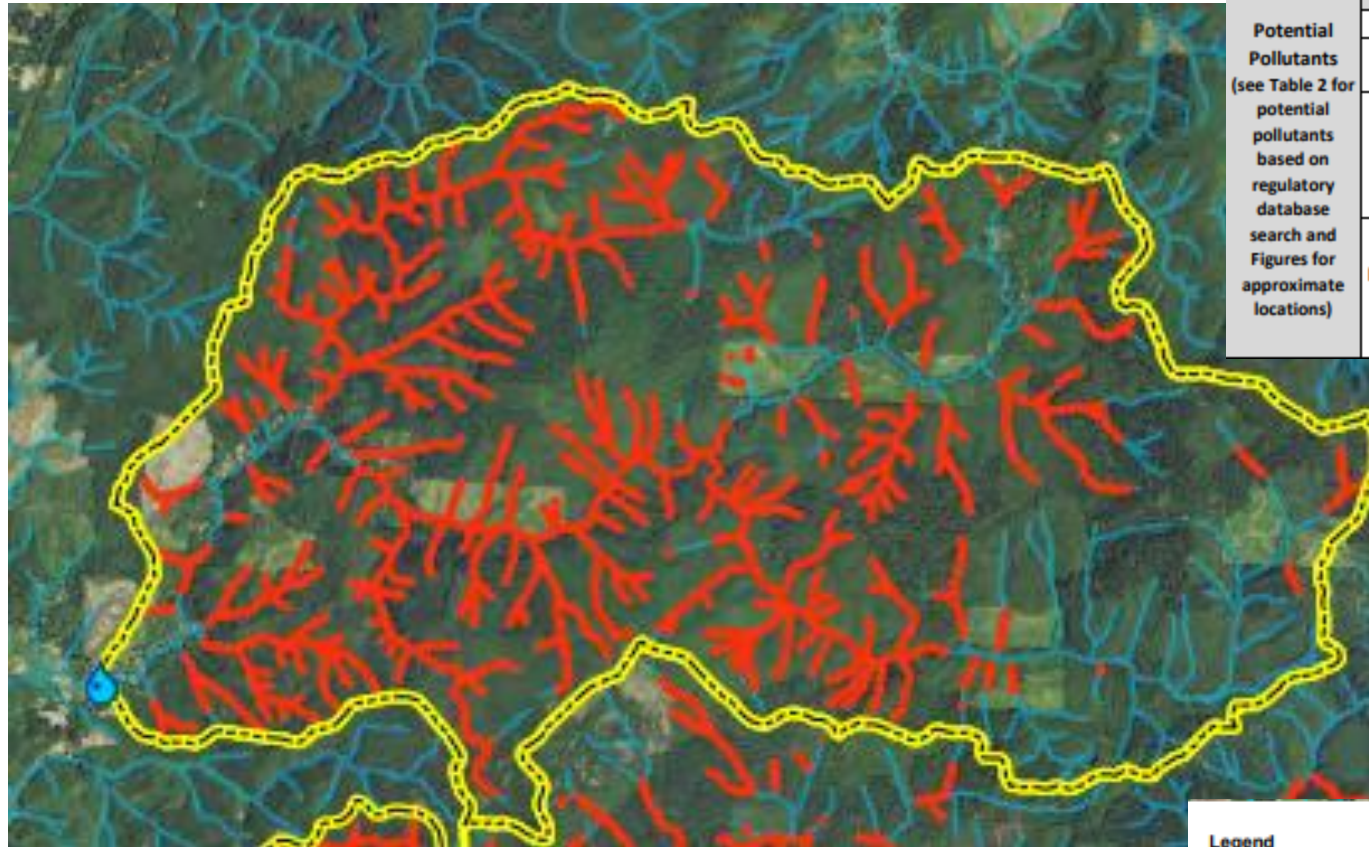
**Schooner Creek Water Source  
Property Ownership  
2022**








- |                            |                             |                                     |                             |                               |  |                       |
|----------------------------|-----------------------------|-------------------------------------|-----------------------------|-------------------------------|--|-----------------------|
| PRIVATE OWNERSHIP          | GOLDEN POND TIMBERLANDS INC | JOHN HANCOCK LIFE INSUR CO          | NEXTOEN INC                 | STIMSON LUMBER COMPANY        | THOMPSON TREE FARM INC                             | WEYERHAEUSER COMPANY  |
| BOSTON TIMBER OPPORTUN LLC | HANCOCK TIMBERLAND XI INC   | LINCOLN COUNTY                      | PACIFICO PROPERTIES LLC     | SYSTEM GLOBAL TIMBERLANDS LLC | UNITED STATES OF AMERICA BUREAU OF LAND MANAGEMENT | Watershed Above Plant |
| CITY OF LINCOLN CITY       | IRON HORSE TIMBER LLC       | LINCOLN COUNTY/CITY OF LINCOLN CITY | SCHOONER CREEK HOLDINGS LLC | TAFT MELSOOTT DELAKE          | UNITED STATES OF AMERICA SIUSLAW NATIONAL FOREST   | Streams               |

# Schooner Creek Watershed Erosion Potential (from Source Water Assessment)

Potential Pollutants (see Table 2 for potential pollutants based on regulatory database search and Figures for approximate locations)	Stream Miles in Erodible Soils	66.64
	High Soil Erosion Potential Percent <sup>(4)</sup>	71%
	Shallow Landslide Potential	see note
	Landslide Deposits <sup>(5)</sup> (DOGAMI - SLIDO 3.2)	small areas throughout watershed - see note



## Legend

-  Lincoln City Water District surface water intake
-  Lincoln City Water District Drinking Water Source Area
-  Upstream Drinking Water Source Area (see note)
-  Streams (NHD) with high erosion potential
-  Stream (NHD)

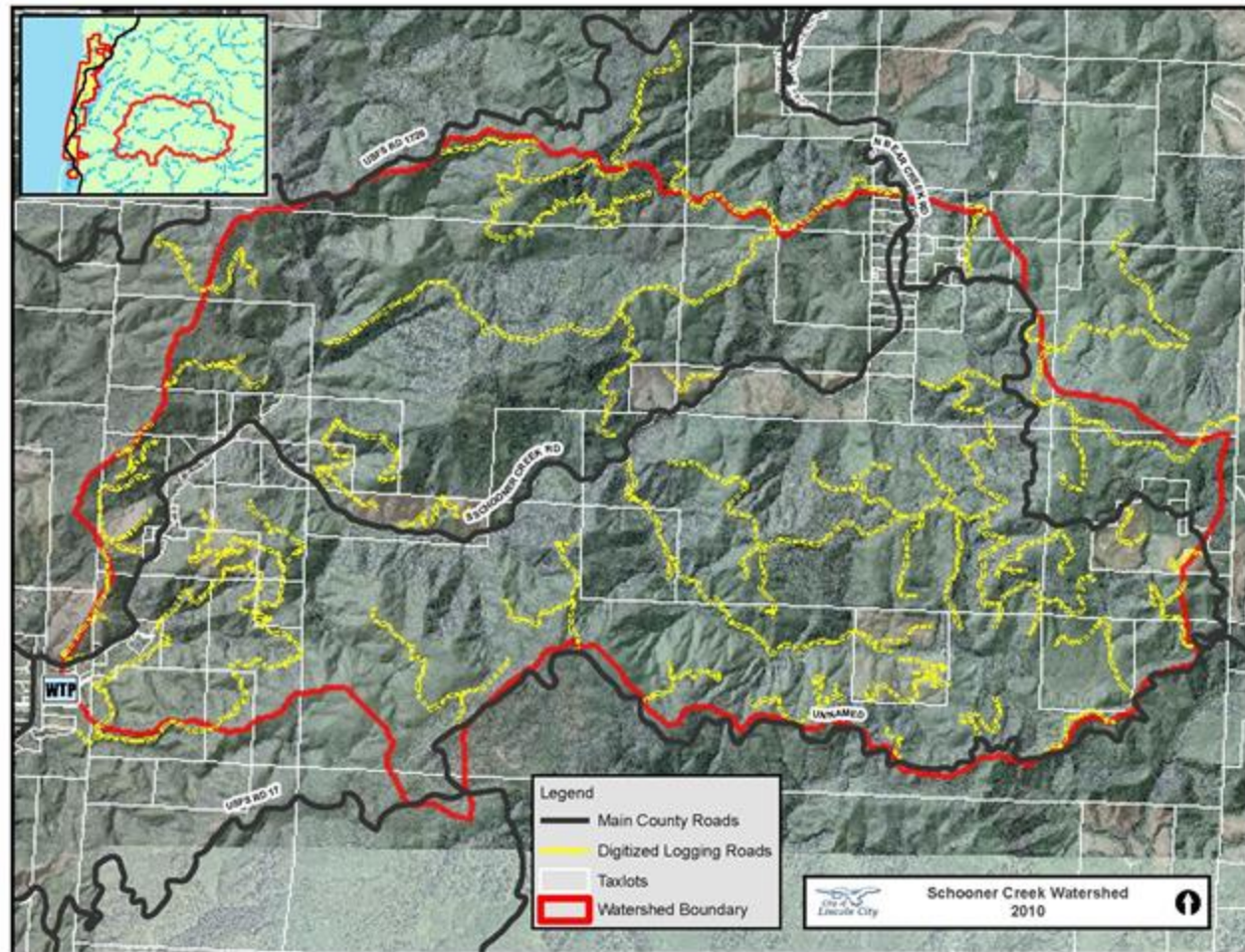
# Source Water Assessment

- Updated report completed in 2016 by DEQ/ OHA
- Identified potential contaminant sources
  - clear cuts
  - road density
  - stream crossings
  - slide areas



# Schooner Creek Watershed Roads

- Roughly 10 miles of County Roads
- Numerous miles of logging roads





# Grants Received

**2016: Updated Source Water Assessment report (DEQ/OHA)**

**2017: Schooner Creek Sediment Reduction Project/ Plan**

OHA Source Protection Fund (SPF) - \$30,000

Drinking Water Providers Partnership (DWPP) - \$19,989

**2018/19: Schooner Creek Sediment Reduction Phase II**

OHA Source Protection Fund (SPF) - \$30,000

Drinking Water Providers Partnership (DWPP)- \$20,000

Siuslaw Collaborative Watershed Restoration Program- \$50,000

**2020/ 21: Schooner Creek Sediment Reduction Phase III**

OHA Source Protection Fund (SPF) - \$30,000

Drinking Water Providers Partnership - \$50,000

**2022: Drinking Water Protection Plan**

OHA Source Protection Fund (SPF) - \$35,300

# Grant Writing Aspects

- Grant Applications -
  - Salmon-Drift Creek Watershed Council prepared grant applications from 2016-2020, Lincoln City since hired GSI for grant writing.
- Categorical Exclusions
- Leveraging Funds
  - Risk Assessments
  - Schooner Creek Sediment Reduction Phases 1-3

A photograph of a forest landscape. In the foreground, there is a field of tall grasses and various green plants, including several purple flowers. A winding road is visible in the middle ground, curving through a dense forest of tall evergreen trees. The background is filled with more trees, creating a lush green environment. The overall scene is a natural, outdoor setting.

07.20.2010 10:13





# Schooner Creek Sediment Reduction Project Findings

- Turnouts are rutted and generate mud and turbid water each winter
- Failing culverts
- Lack of energy dissipation



# Effects of Sediment at the Lincoln City Treatment Plant

- As sediment and other bed load material is carried downstream, it settles around the intake screens. Accumulated sediment will cover the screen area reducing its capacity. The velocity through the exposed portion of the screens increases creating an entrapment hazard for fish.
- The second issue is settling of sediment in the intake line between the screens and raw water pumps. This decreases the capacity of the pipe, which decreases the amount of water available for treatment.
- The next issue is the much higher chemical demand created by turbid water. The coagulation and disinfection demands can be four times the amount needed during normal conditions.

# Effects of Sediment at the Lincoln City Treatment Plant cont.

- Clarifiers and Filters remove finer particles. Heavy turbidity events quickly plug the basins, clarifiers and filters and require frequent cleaning. These events can decrease the operational run time between cleanings by 60%. It also increases the amount of water needed for cleaning from the norm of 72,000 gallons per day to 250,000 + gallons.
- During a “Normal Year” with 1 or 2 turbidity events the Treatment Plant generates approximately 60 cubic yards of settled solids. A year with multiple turbidity events can create 200 cubic yards or more of solids.



# Schooner Creek Sediment Reduction Project Findings – Soil Waste Storage Sites Needed

**Most** stream sediment entering the creek is from episodic debris torrents that occur due to steep road cut banks; maintenance actions generate truckloads of soil requiring stable, local storage. Otherwise the soil is often “sidecast”.



Sidecast soil from road maintenance

# Schooner Creek Sediment Reduction Project Accomplishments

The Plan was prepared  
by John Sanchez,  
Cutthroat Country  
Consulting LLC

Focused on the 4.6 mile  
stretch that runs  
adjacent to Schooner  
Creek upstream of  
Lincoln City's drinking  
water plant intake



# Schooner Creek Sediment Reduction Project Accomplishments...

- Replaced eight undersized/perched culverts
- Added three new culverts
- Added rock dissipators to four (4) culverts outlets
- Hauled 1,150 cubic yards of side slide soil to permanent storage
- Slope to drain and rocked four traffic turnouts
- 350 feet of ditch cleaning
- Rock hardened four turnouts
- Developed two soil storage areas
- City purchased 156 acres with 50+ age timber



# Schooner Creek Sediment Reduction Phase III Project



**Before:** Undersized culvert at mile post 6.69



**After:** New 3' culvert on left next to existing culvert with new rip-rap wind walls. Water discharged from culverts flows onto rock dissipator to slow flow and allow sediment in discharge water to settle before entering creek.

City  
purchased  
156 acres  
at RM 7





# Lessons

- Identified sources of sediment and began with highest priorities
- Hire good people 😊 like John Sanchez and Joe Acosta (retired forest engineer) who know the watershed
- Be flexible with contractors
- Continue to work with partners and be patient with recommendations made for others to change practices
- Continue to build relationships/partnership

# Next Steps

- Complete the 2024 Drinking Water Protection Plan
- Develop a Strategy for pursuing land acquisition and conservation easement opportunities
- Conduct Landowner Outreach
- Build Partnerships with Mid-Coast Watershed Council and Hebo Stewardship Group
- Continue to educate elected officials and citizens



# Partners

## Drinking Water Project Plan 2023-24

- Partners
  - GSI Water Solutions Inc. (prepared Letter of Interest and grant application for \$2,500)
  - Mid-Coast Watershed Council
  - Lincoln Soil and Water Conservation District
  - US Forest Service
  - Bureau of Land Management
  - Oregon Department of Environmental Quality
  - Oregon Water Resources
  - Oregon Department of Forestry
  - Oregon Department of Fish and Wildlife
  - Oregon Health Authority
  - Confederated Tribes of Siletz Indians
  - Lincoln County Commissioners
  - McKenzie River Trust
  - Manulife Investment Management Forest Management Inc.
  - Weyerhaeuser