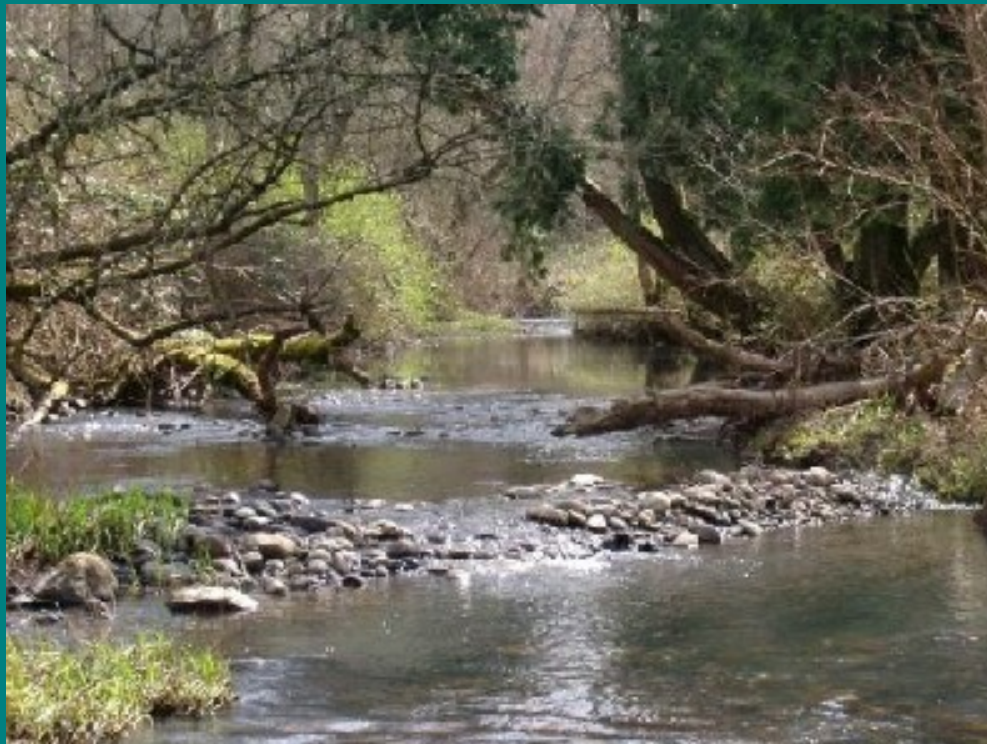


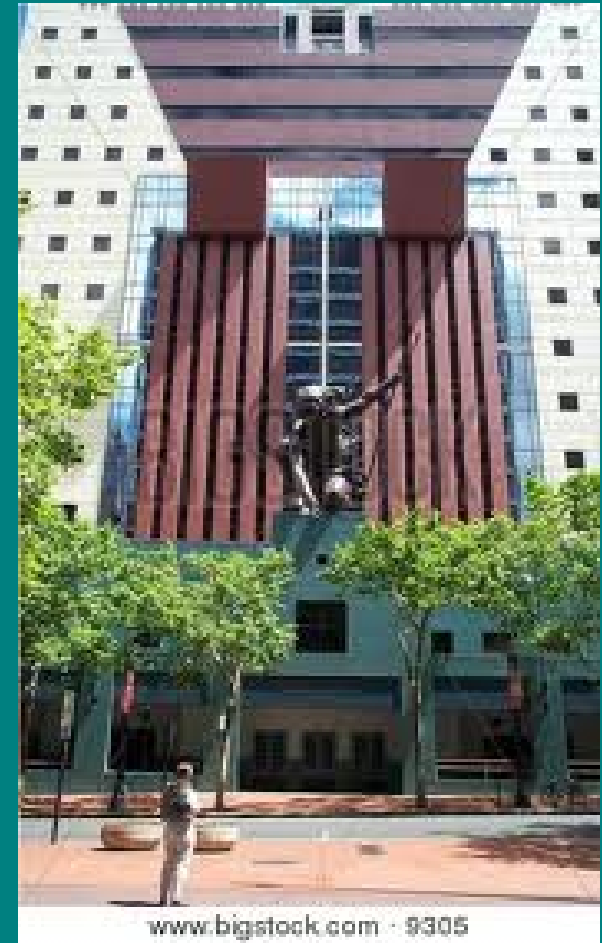
Johnson Creek Floodplain Restoration: *Reducing Risks & Improving Habitat*

Maggie Skenderian
Johnson Creek Restoration Program
Bureau of Environmental Services
City of Portland, Oregon



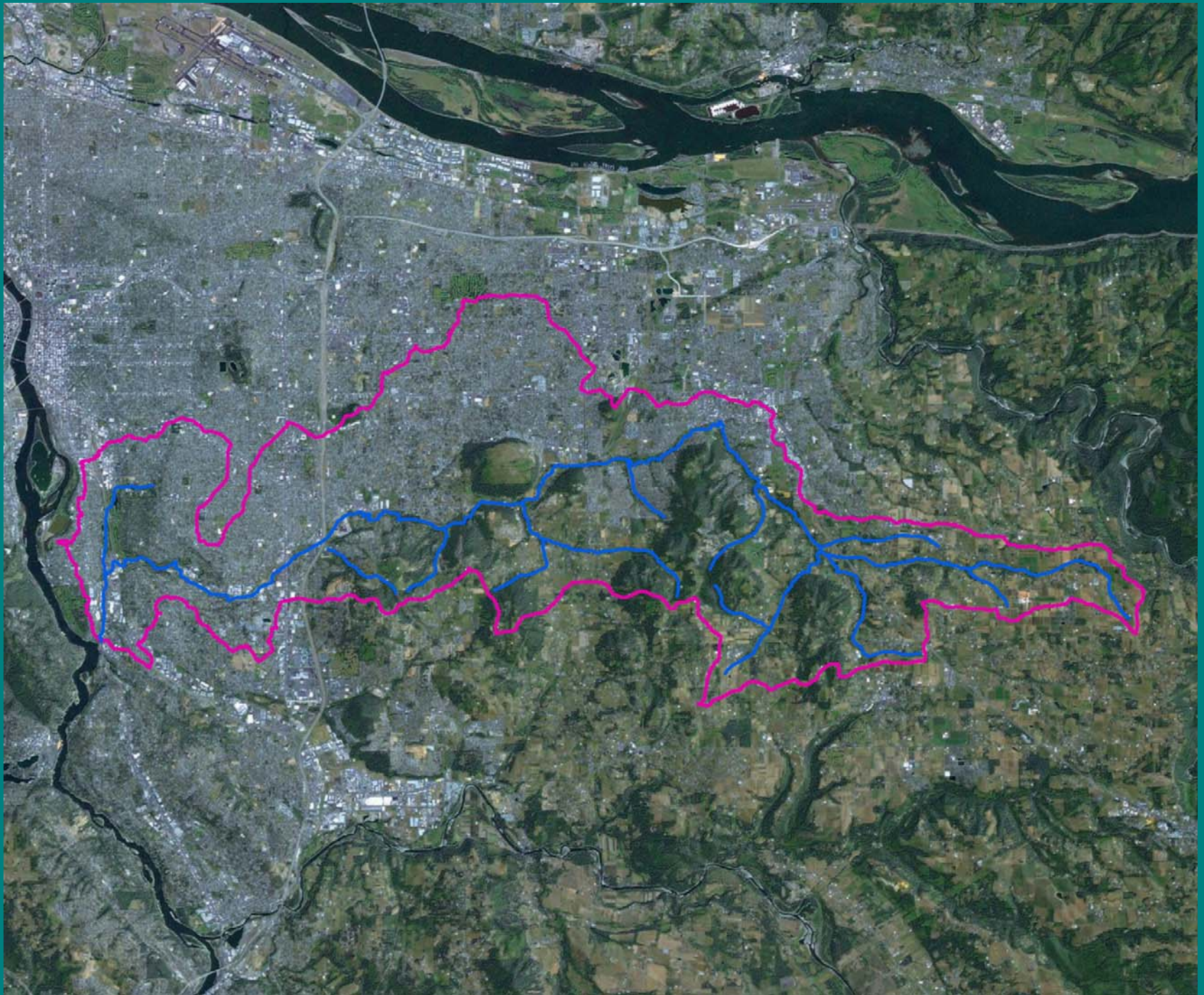
Portland Bureau of Environmental Services (BES)

- About 600 Employees
- Wastewater Collection and Treatment
- Stormwater management
- Watershed Restoration
- 6 Major Work Groups
 - Four Watershed Sections; Johnson Creek, Tryon & Fanno Creeks, Columbia Slough, Willamette River

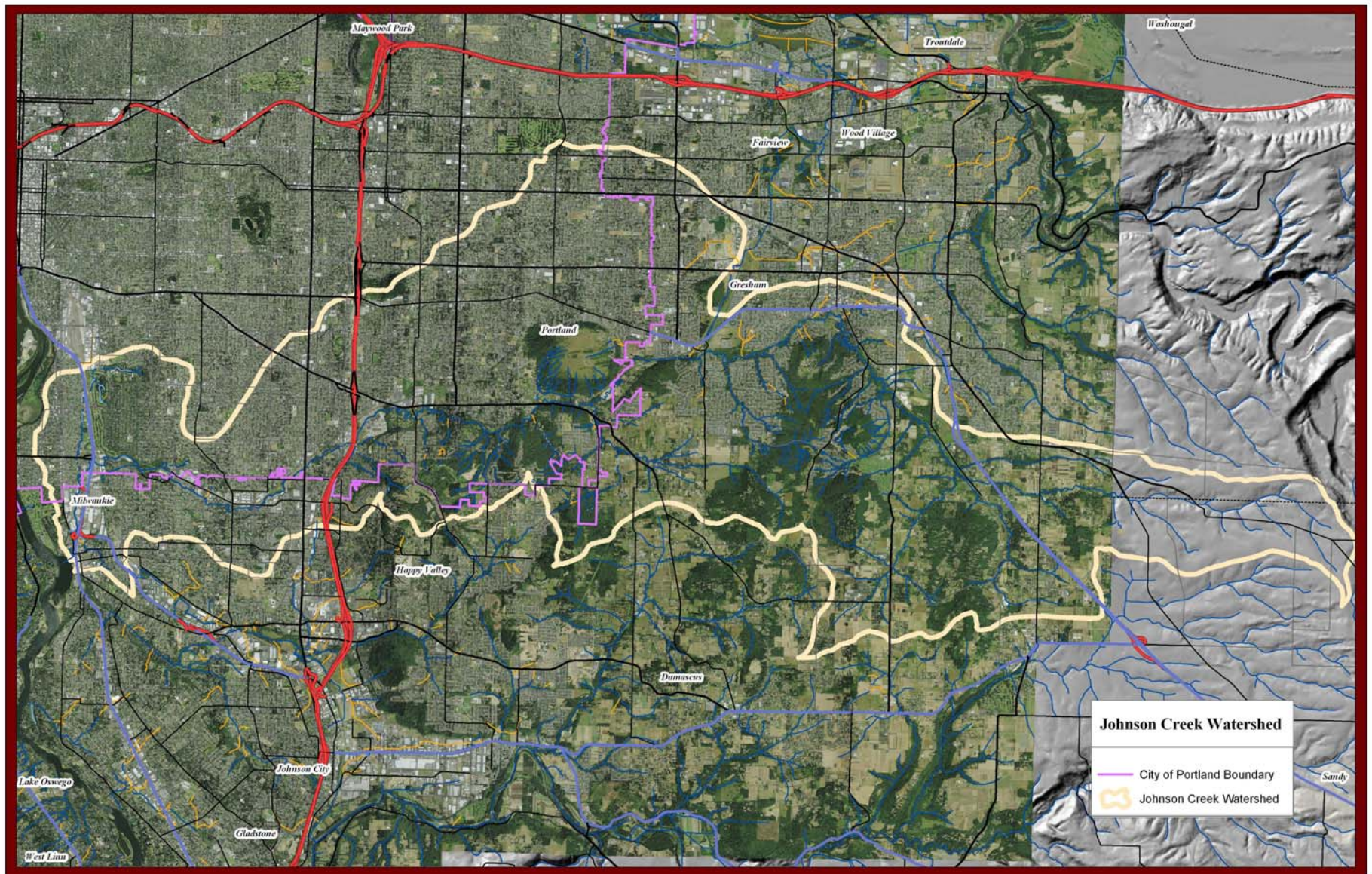


Today's Topics

- Johnson Creek Restoration Plan (2001)
- Goals, benefits, approach
 - Completed Projects
 - Ecosystem Services
- Trade offs & Challenges

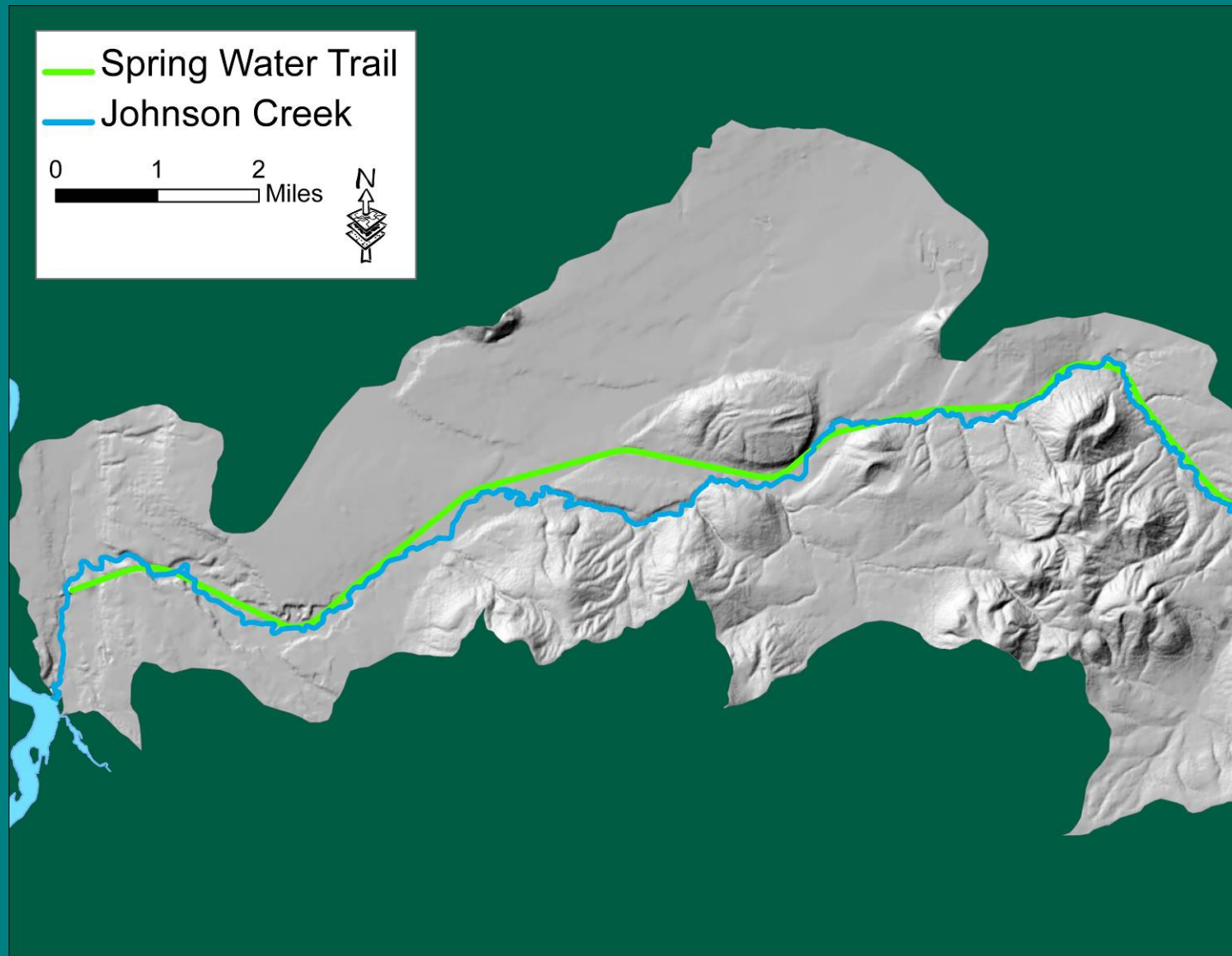


Johnson Creek Watershed





Historic Impacts to Johnson Creek Hydrology



Historic Train on the Springwater Division Line Established in 1903



WPA Channelizing and Rock Lining Johnson Creek 1930s

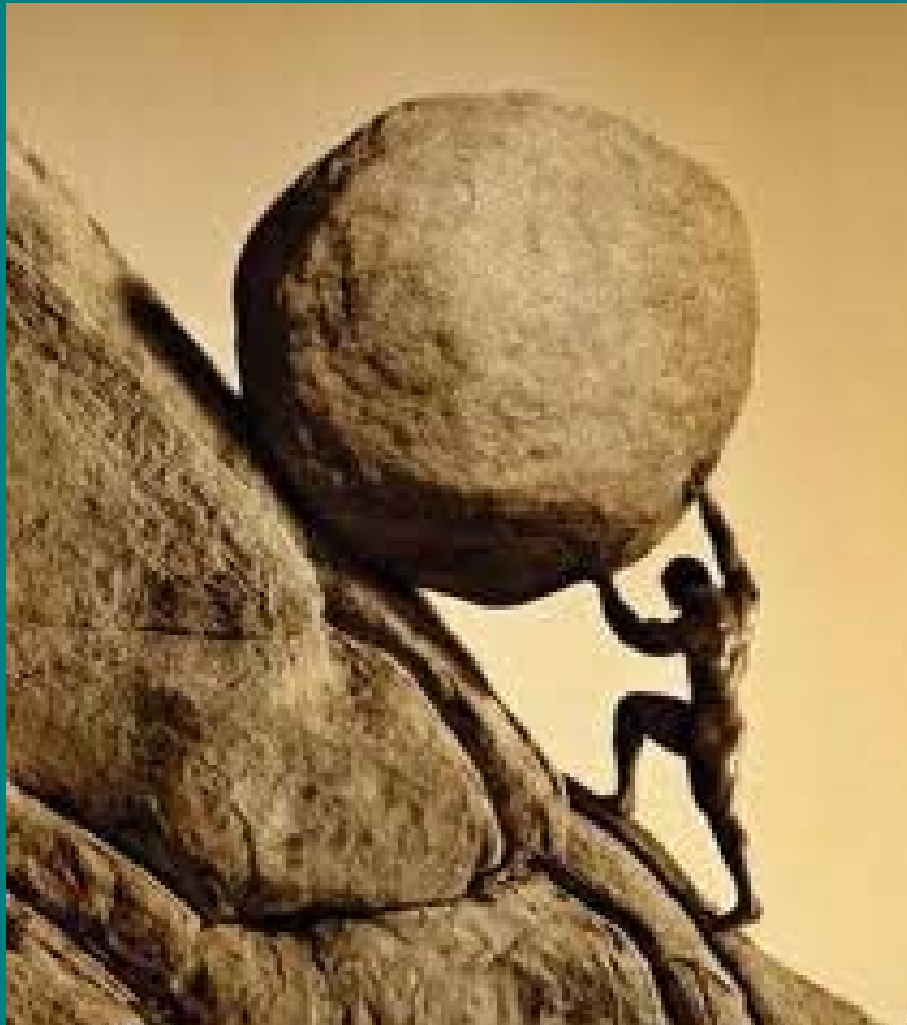


Other Challenges

- Threatened species
(Chinook, Coho, Steelhead, Cutthroat)
- Water quality
 - Bacteria (E.coli)
 - Temperature
 - Toxins



Why Restore Johnson Creek?



Watershed Potential

- 40% of the Watershed is in Portland
- Salmon Habitat
- Open Space
- Ecosystem Services



Restoration: Then



Johnson Creek 1934





1964



1996



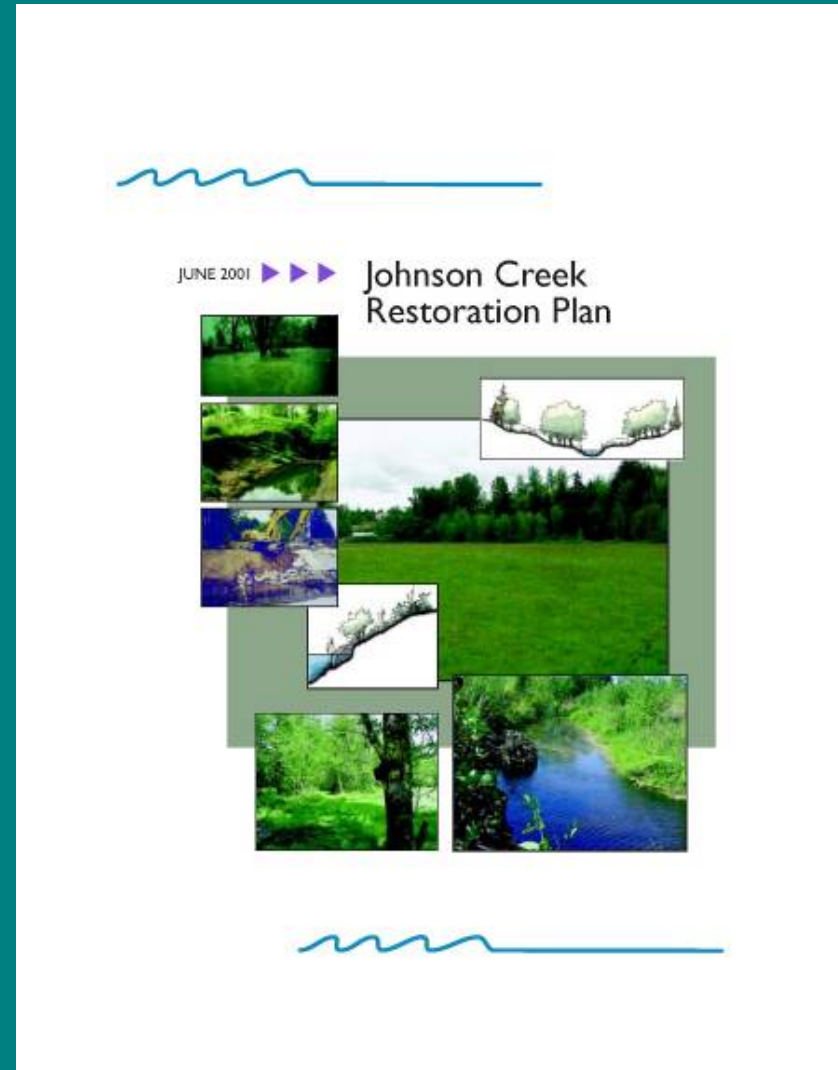
2009



2009

Johnson Creek Restoration Plan (2001)

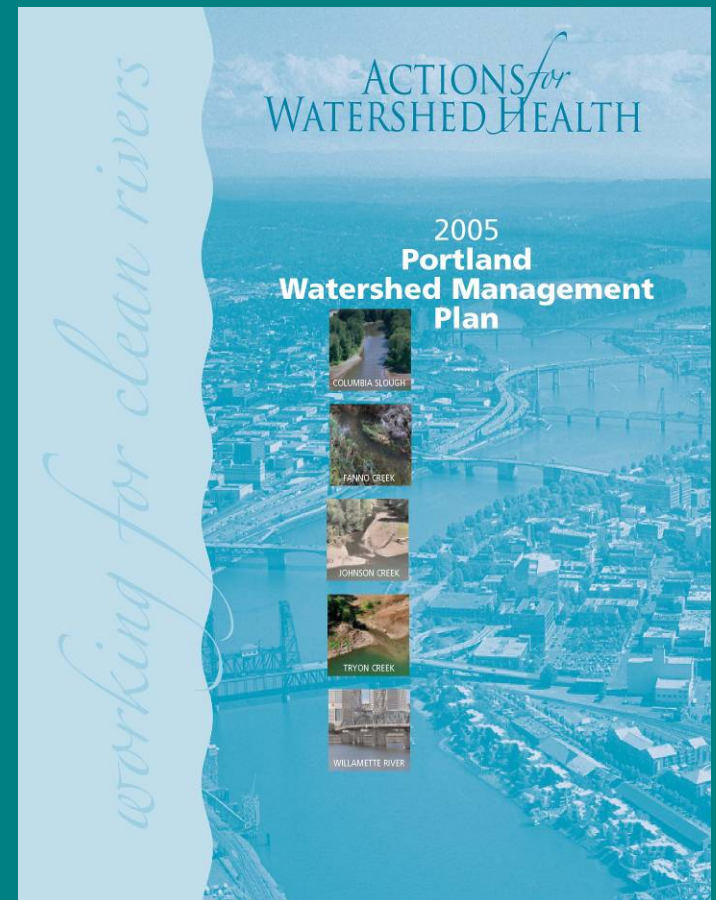
- 3 Comprehensive Goals:
 - Mitigate nuisance floods (~10-yr event)
 - Improve water quality
 - Increase habitat
- Establishes concept design for projects in 58 reaches of the 26-mile stream system
- Long-term, incremental



Portland Watershed Management Plan (2005)

Watershed Health Goals

- Hydrology
- Physical Habitat
- Water Quality
- Biological Communities



Restoration: Now



Willing Seller Program

- Initiated in 1996 – after major flood events
- Over 280 acres of floodprone property within four target areas acquired to date
- Over \$20 Million in BES funding, \$27 Million total



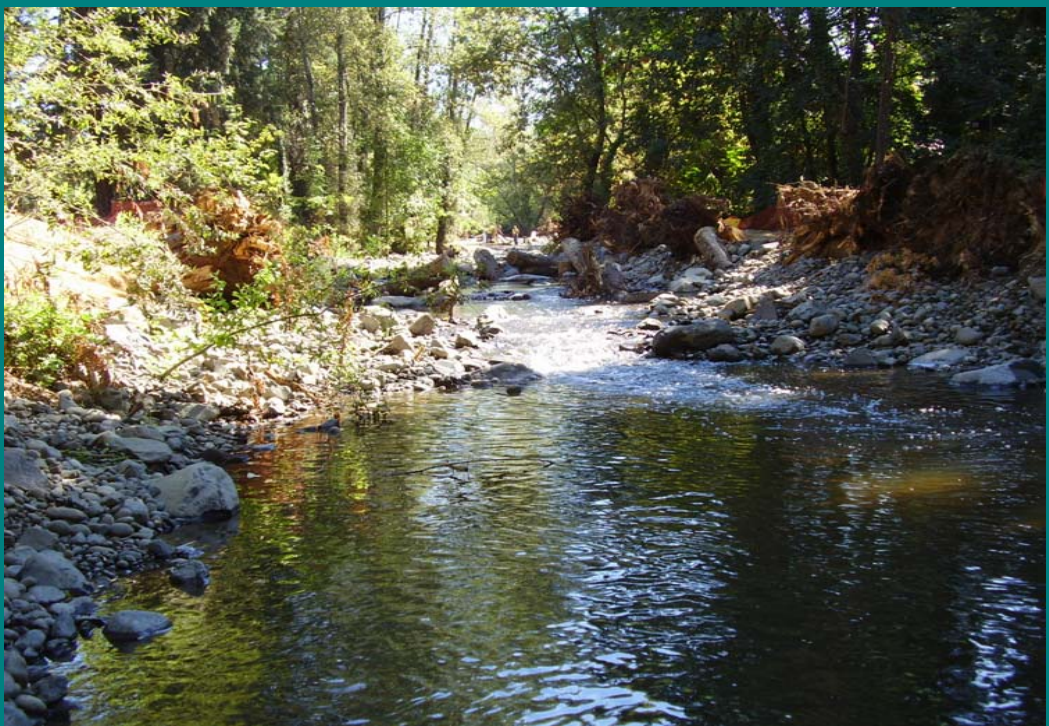
Tideman Johnson Park



Before



After



East Powell Butte Floodplain Restoration Schweitzer – 2007



East Lents Floodplain Restoration Project – 2011 & 2012

- \$2.7 million FEMA Pre-disaster mitigation grant
- Reduces the frequency of flooding on Foster Rd. from 1.5 years to ~ 6 years.



January 2009 Flood East Lents Area

1994, Pre Land Acquisition



2011, Post Phase I Restoration





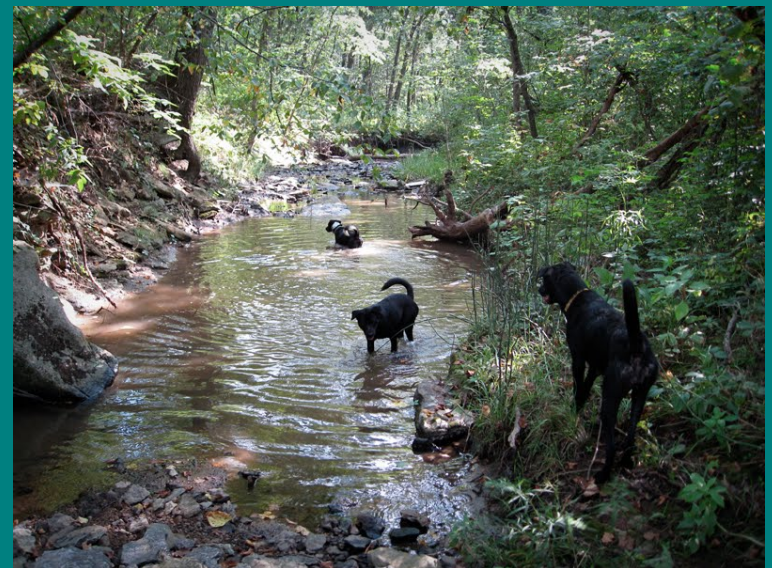
Lents Ecosystem Services Valuation (May, 2004)

- Avoided property damages to residences
- Avoided property damages to businesses
- Avoided traffic delays
- Avoided damage to utilities
- Water quality benefits
- Parks and open space benefits
- Fish and wildlife benefits
- Non-market, nonuse values of salmon
- Air quality values

Approximately \$30,000,000 in benefits over 100 years

Trade Offs & Challenges

- Urban realities
- An opportunistic approach requires patience
- Scarcity of funding to support a full suite of 'green infrastructure' including passive recreation and uplands protection
- O & M for Natural Resource Areas



Questions?



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