Johnson Creek Geologic and Geomorphic History

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Two Goals:

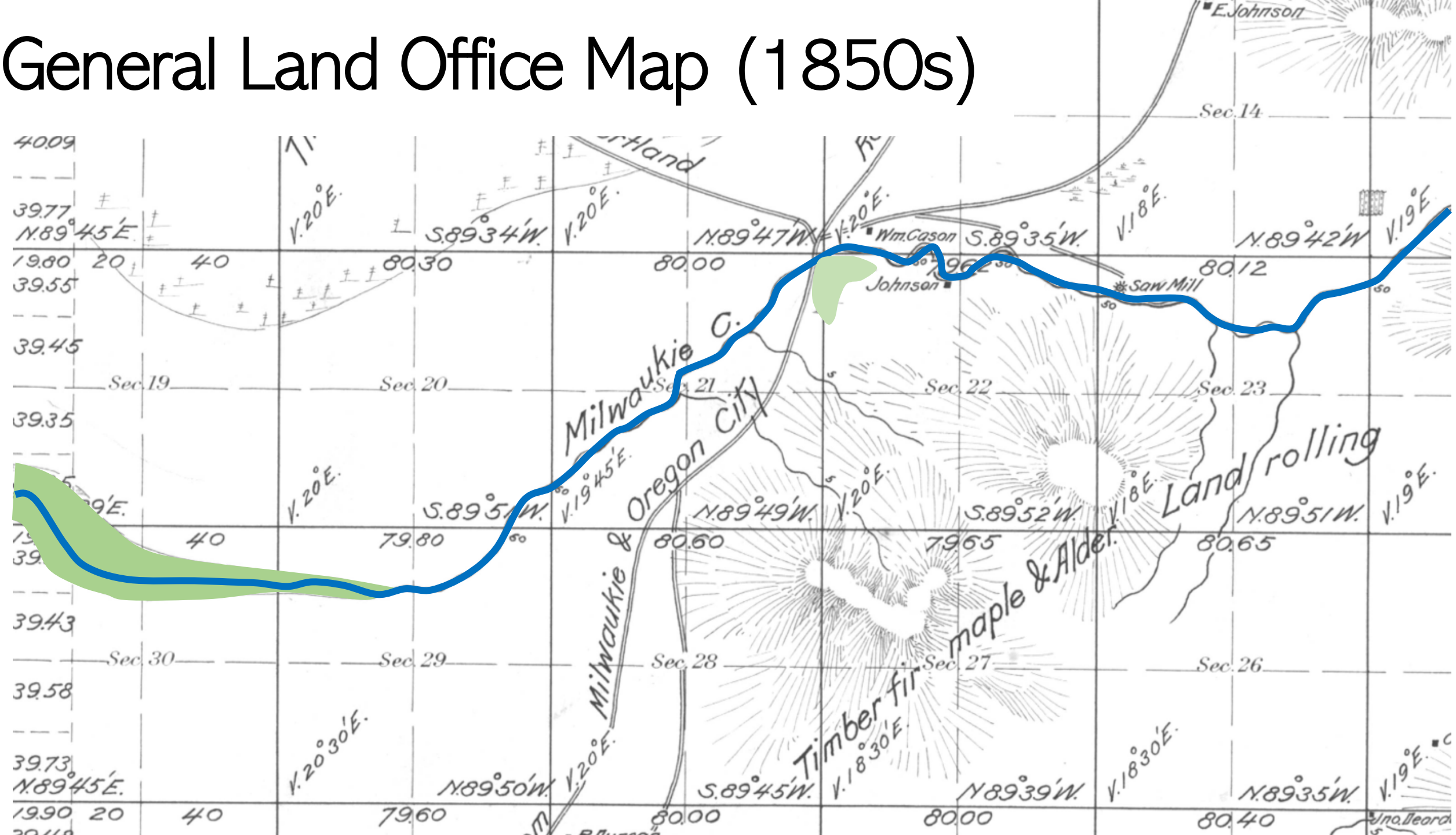
Understand Johnson Creek as a natural system

Understand past restoration projects in a system context

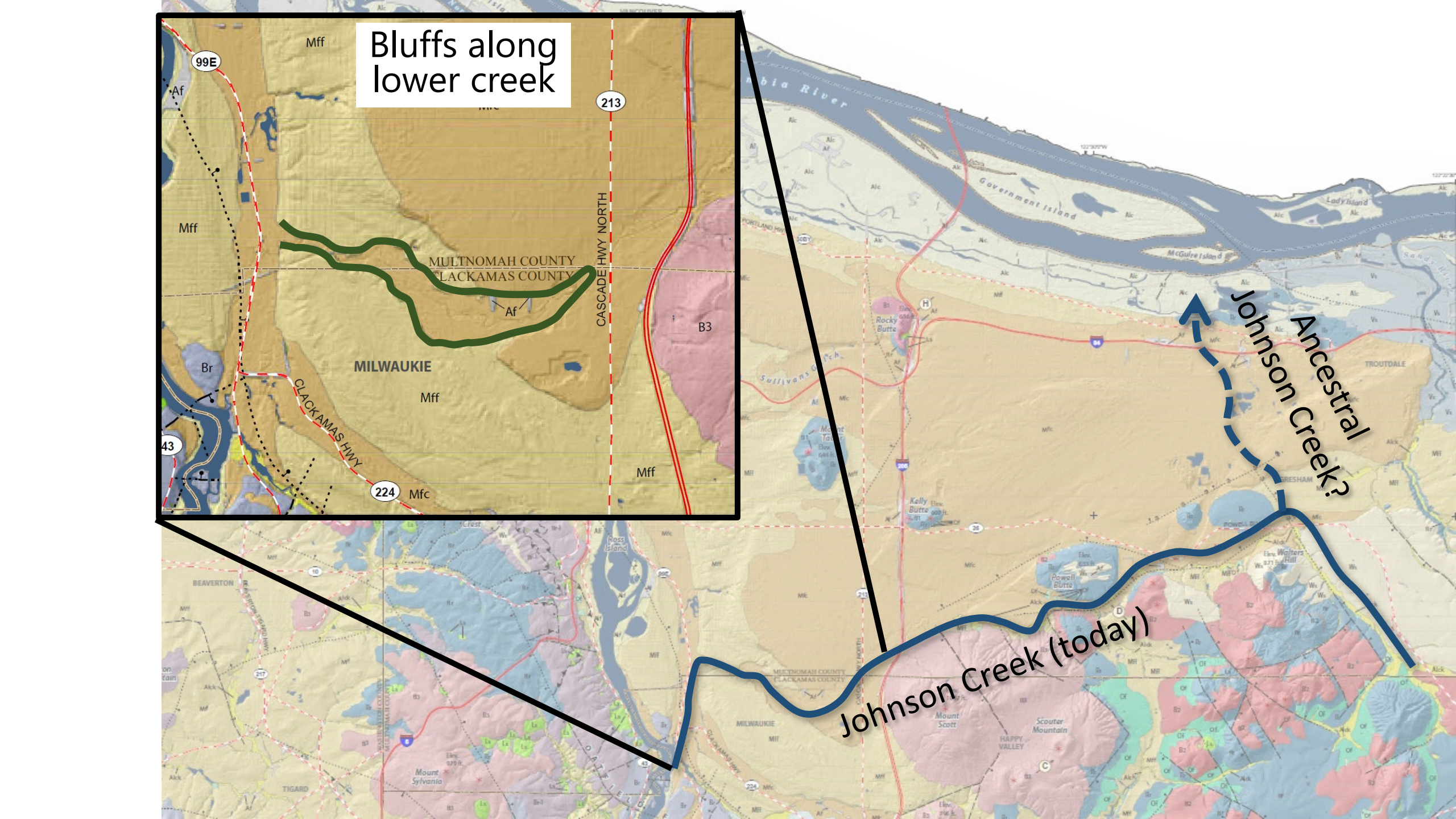
WPA flood control (1930s) erases the creek's natural legacy

How dynamic was Johnson Creek?

General Land Office Map (1850s)



Missoula Flood History holds a key


Bluffs along lower creek
Mff
99E
Af
213
Mff
MULTNOMAH COUNTY
CLACKAMAS COUNTY
Af
CASCADE HWY NORTH
B3
Br
MILWAUKIE
Mff
CLACKAMAS HWY
43
224
Mfc
Mff
Ancestral Johnson Creek?
Johnson Creek (today)

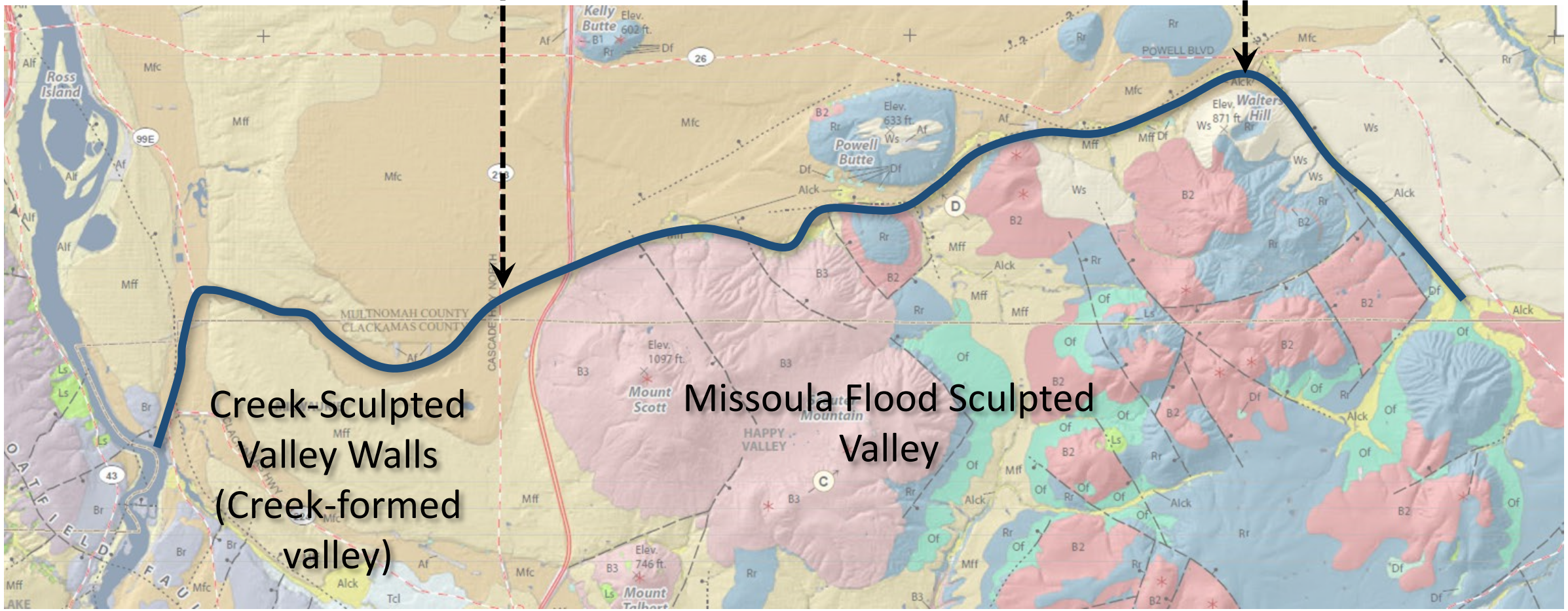
"Lower"
Young Creek
Lower 5 miles

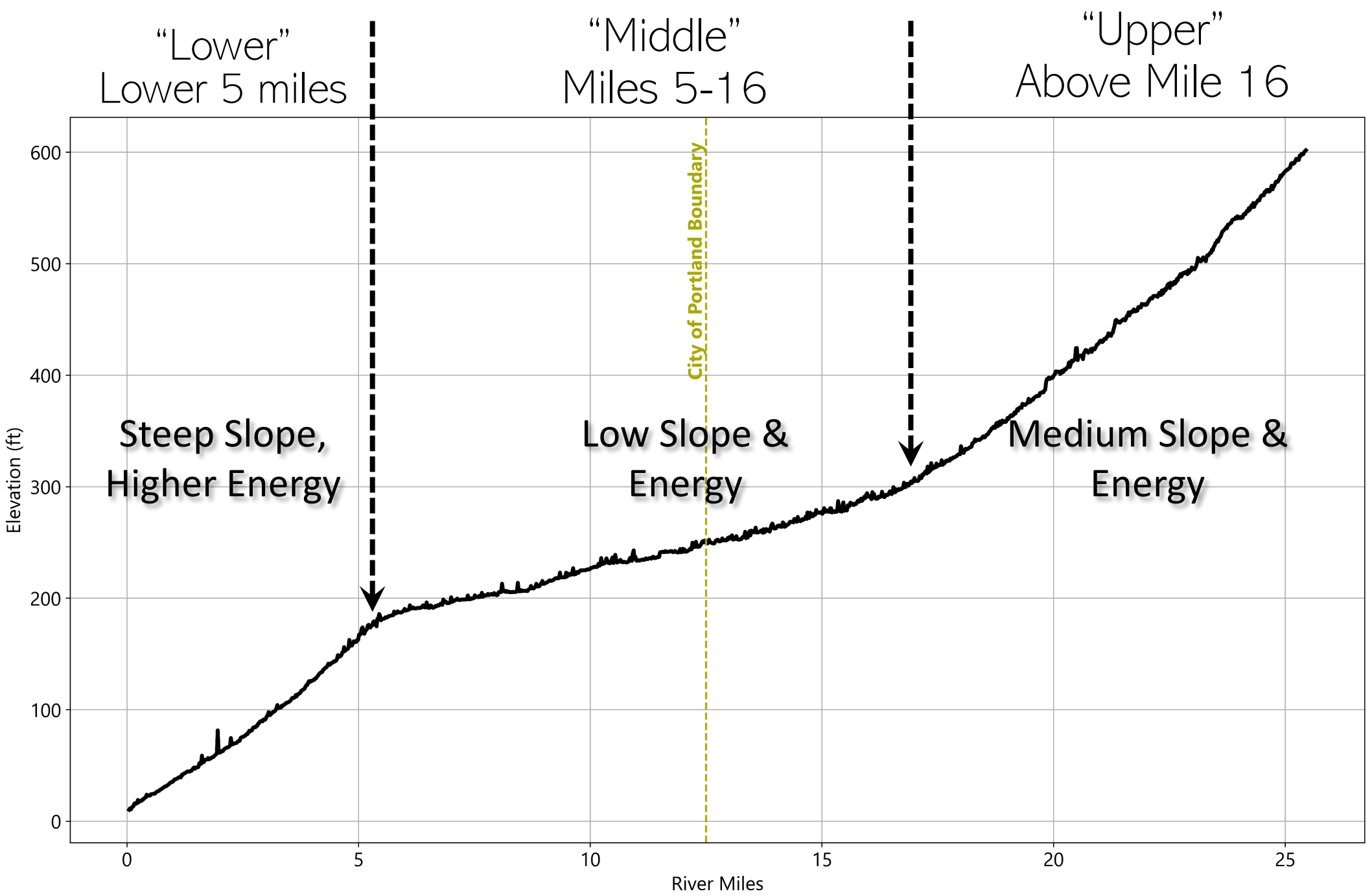
82nd Ave

"Middle"
Middle-Aged Creek
Miles 5-16

Downtown Gresham

"Upper"
Old Creek
Above Mile 16

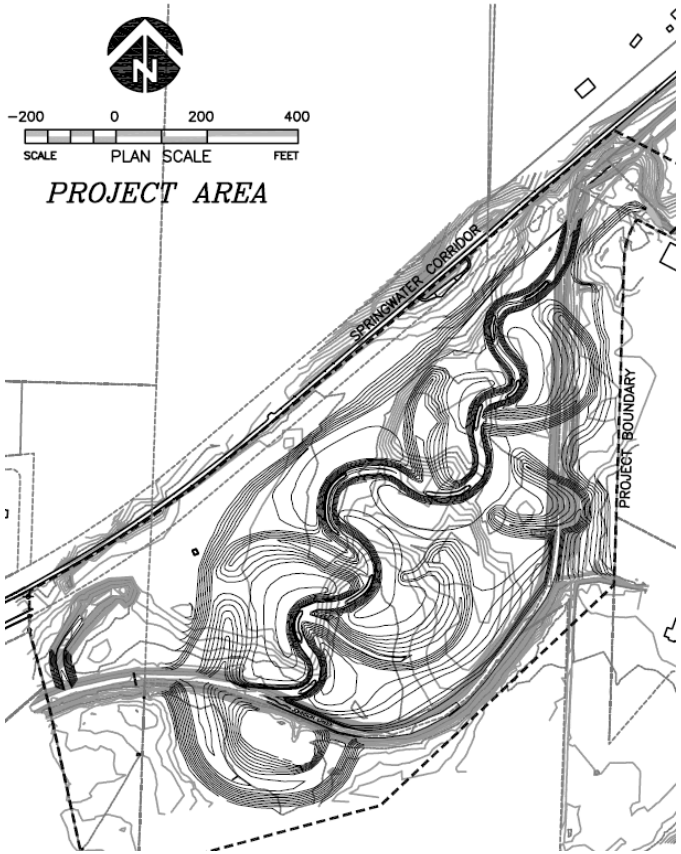



"Lower"
Lower 5 miles
"Middle"
Miles 5-16
"Upper"
Above Mile 16
City of Portland Boundary
Steep Slope,
Higher Energy
Low Slope &
Energy
Medium Slope &
Energy
Elevation (ft)
600
500
400
300
200
100
0
0
5
10
15
20
25
River Miles

Restoration Reaches Observed

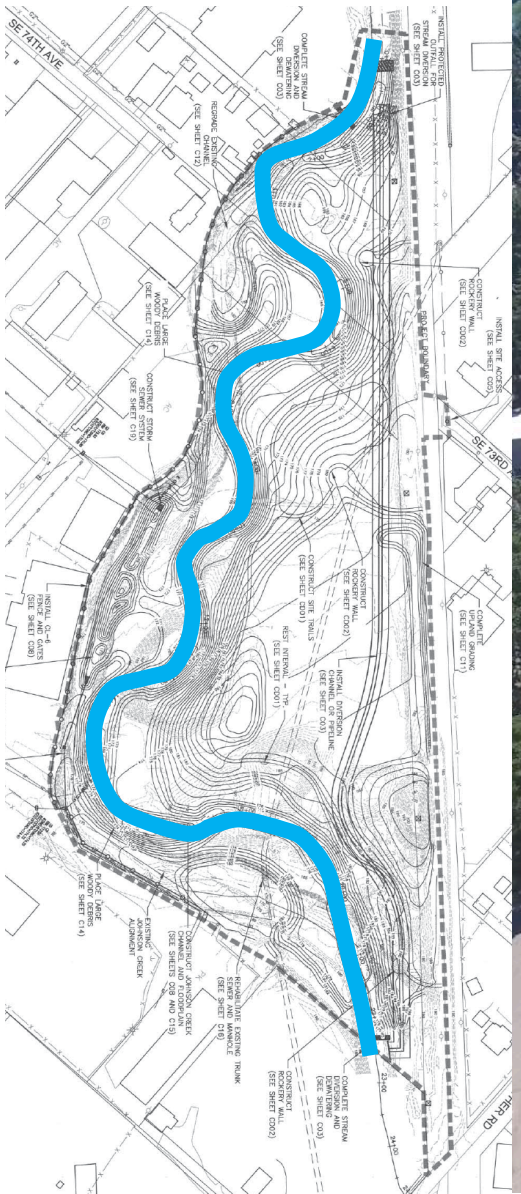
	Const. Date	Reach
Schweitzer Project	2007	Middle
Foster Floodplain	2012	Middle
Luther Road	2014 2019 repair	Lower

Schweitzer
Project Overview



Schweitzer Geomorphic Change

Luther Road



2015 (post-flood)

"Blow out" of constructed meander bends

Extensive gravel transport

Exposed sewer pipe

Luther Road (2021)

Key Points

Missoula Flood legacy created 3 distinct ages and environments along Johnson Creek

Evolution of restored project reaches reflects the geologic history and stream energy environments

Thank YOU!

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