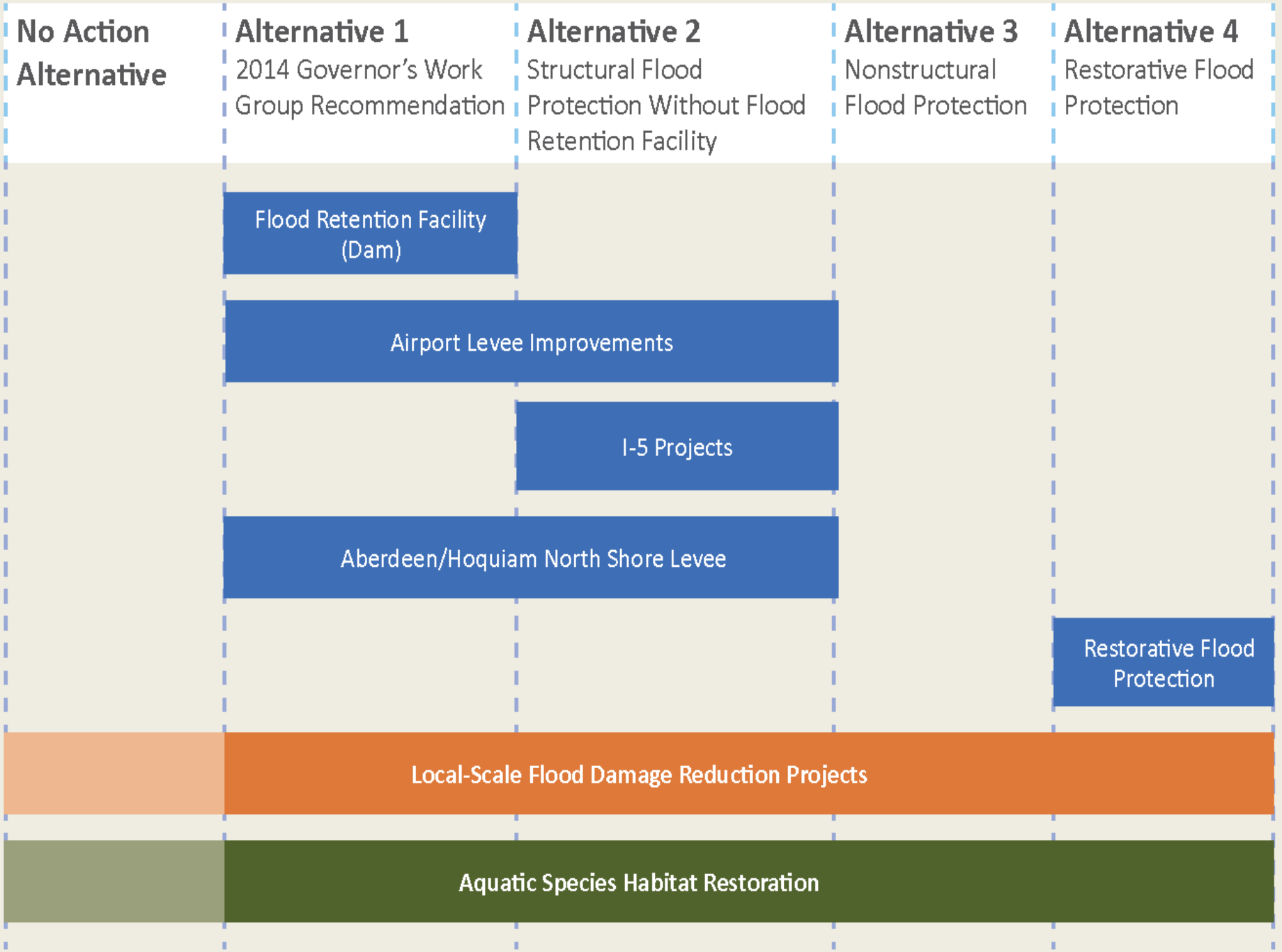
Chehalis Basin Strategy

Challenges and Opportunities


No Action Alternative
Alternative 1
2014 Governor's Work Group Recommendation
Alternative 2
Structural Flood Protection Without Flood Retention Facility
Alternative 3
Nonstructural Flood Protection
Alternative 4
Restorative Flood Protection
Flood Retention Facility (Dam)
Airport Levee Improvements
I-5 Projects
Aberdeen/Hoquiam North Shore Levee
Restorative Flood Protection
Local-Scale Flood Damage Reduction Projects
Aquatic Species Habitat Restoration

Flood Damage Reduction

- Flood damage reduction
  - Large-scale
  - Local-scale

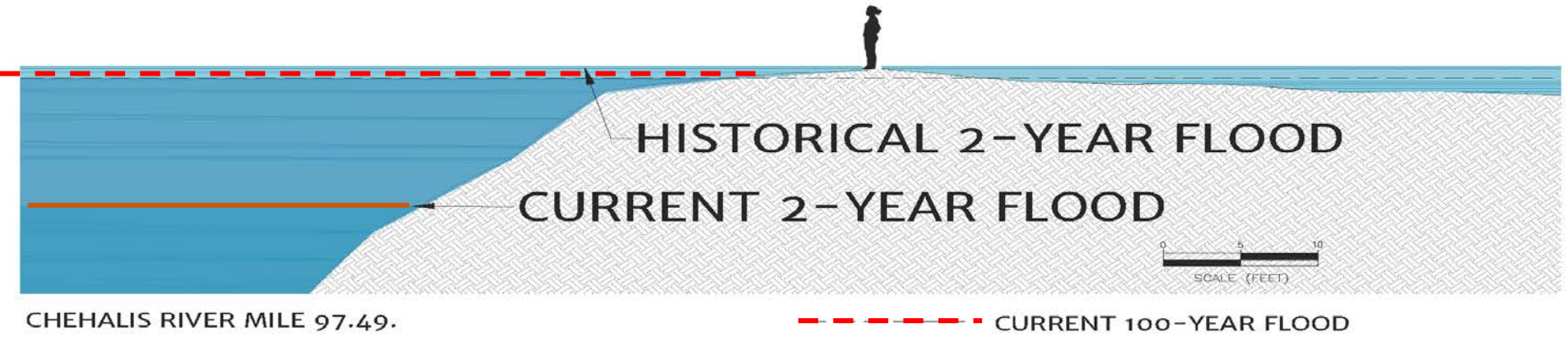
Large-scale Actions

- I-5 projects
- Levees

Restorative Flood Protection Goal

- Re-establish the natural flood buffering capacity of a healthy watershed.

The Chehalis Watershed has Lost Much of its Natural Flood Storage



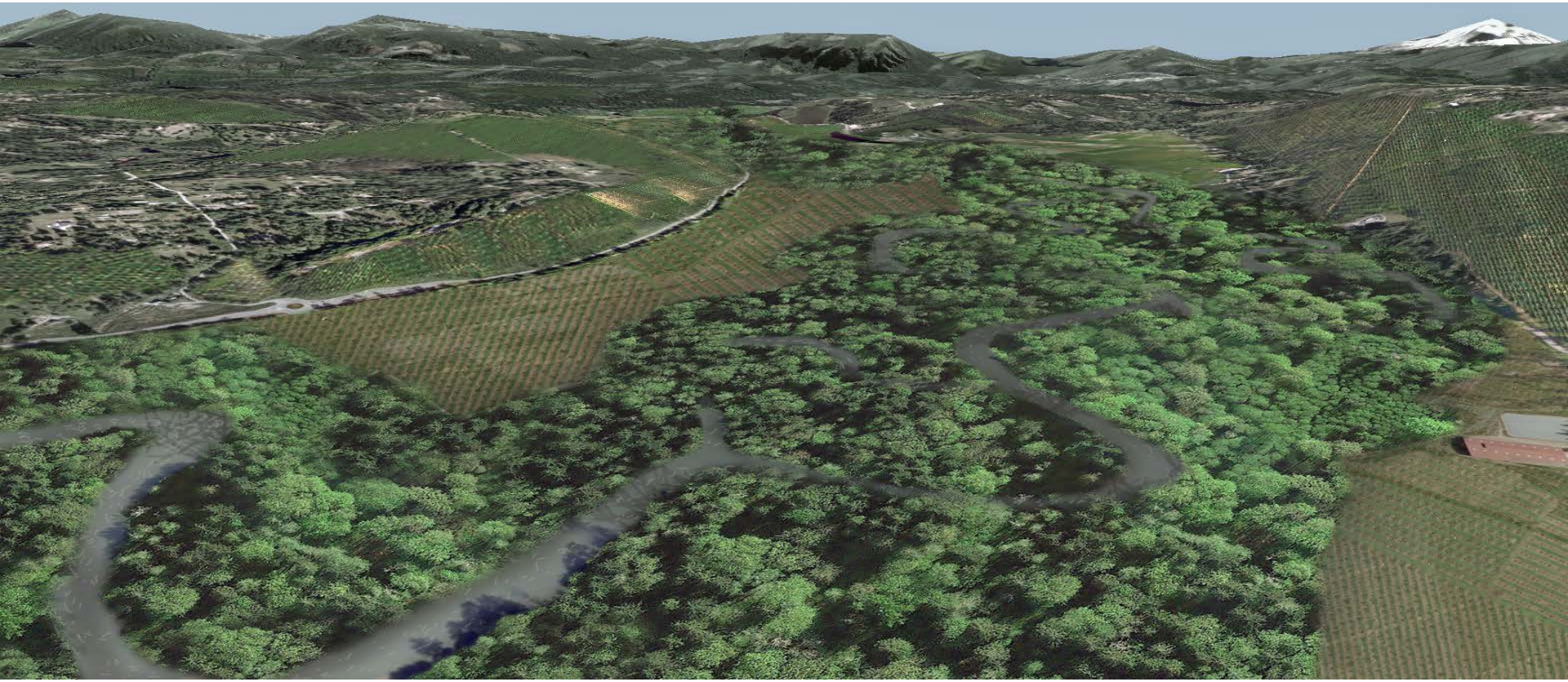
CHEHALIS RIVER MILE 97.49.

CURRENT 100-YEAR FLOOD

67.00 To bottom land of Chehalis river, this bottom
Is subject to inundation from 3 to 5 feet in depth
In the winter season

Conceptual Image of Typical Floodplain

Conceptual Image Restorative Alternative



Restorative Flood Protection Alternative Treatment Areas

Flood Level Reductions near Centralia/Chehalis

LOCATION	RIVER MILE CROSS SECTION (RM)	100-YEAR FLOOD		
		EXISTING CONDITIONS WSE (FEET)	RESTORATIVE ALTERNATIVE WSE (FEET)	CHANGE IN WSE (FEET)
Labree Road (Newaukum)	RM 4.11	206.4	207.3	0.9
Newaukum Confluence	RM 75.2	185.2	184.1	-1.1
Along Airport Levee	RM 71.49	180.5	180.1	-0.4
Grand Mound	RM 59.09	147.5	147.4	-0.1

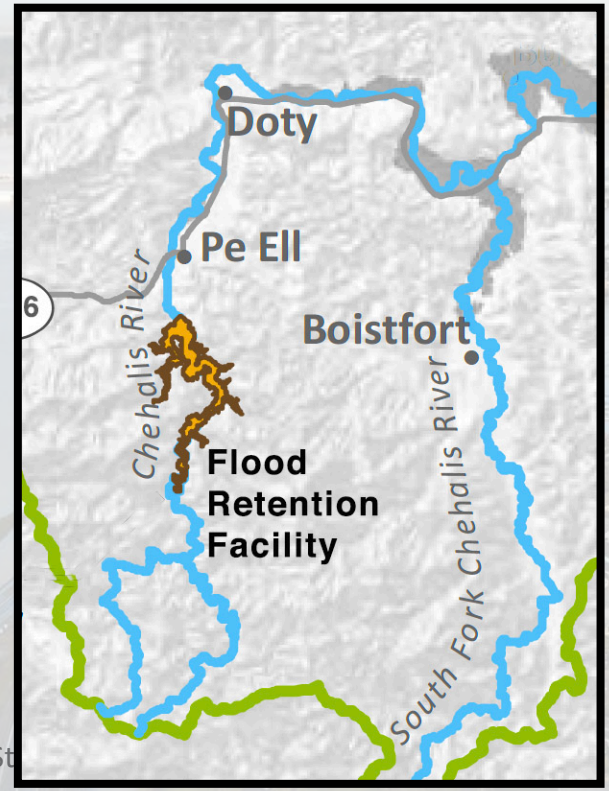
Notes:
WSE = water surface elevation
Vertical datum = NAVD88

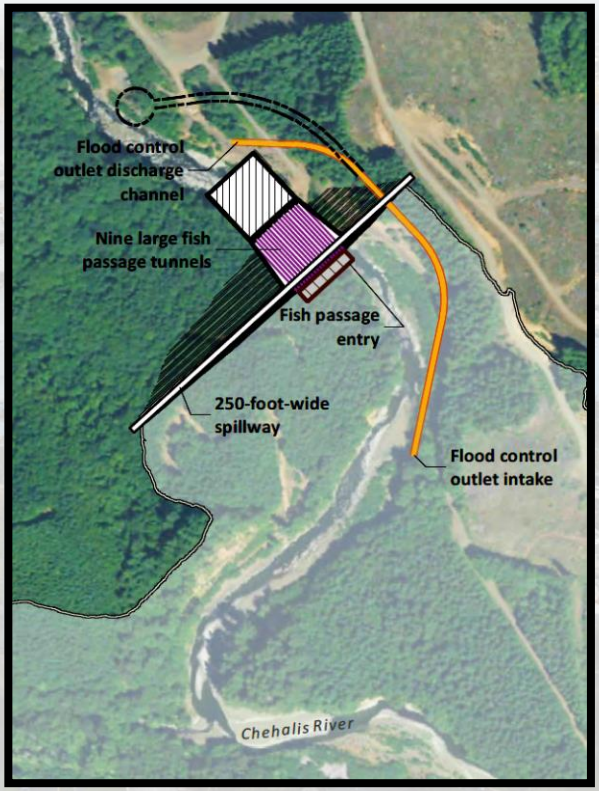
Differences from Other Flood Alternatives

- Low maintenance costs
- Resilience and adaptation to change
- Habitat benefits
- Assistance to landowners already impacted by flooding and erosion
- Non-traditional approach
- Relocation of landowners in treatment areas provided flood protection into perpetuity and eliminates chronic flood costs
- Large scale carbon sequestration benefits
- Benefits water supply, groundwater recharge

Large-scale Actions

- Flood Retention Dam
- Flood Retention and Flow Augmentation



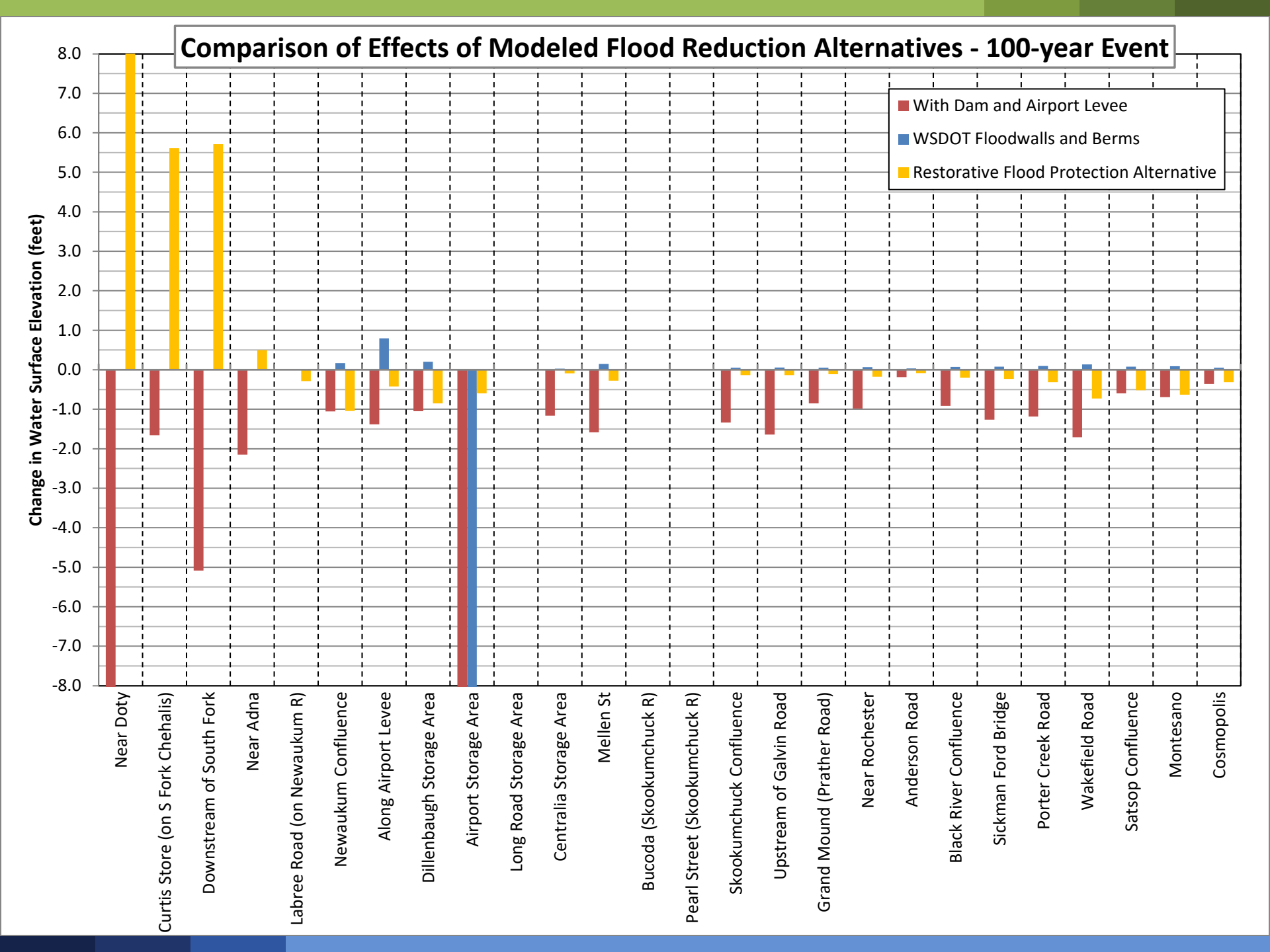


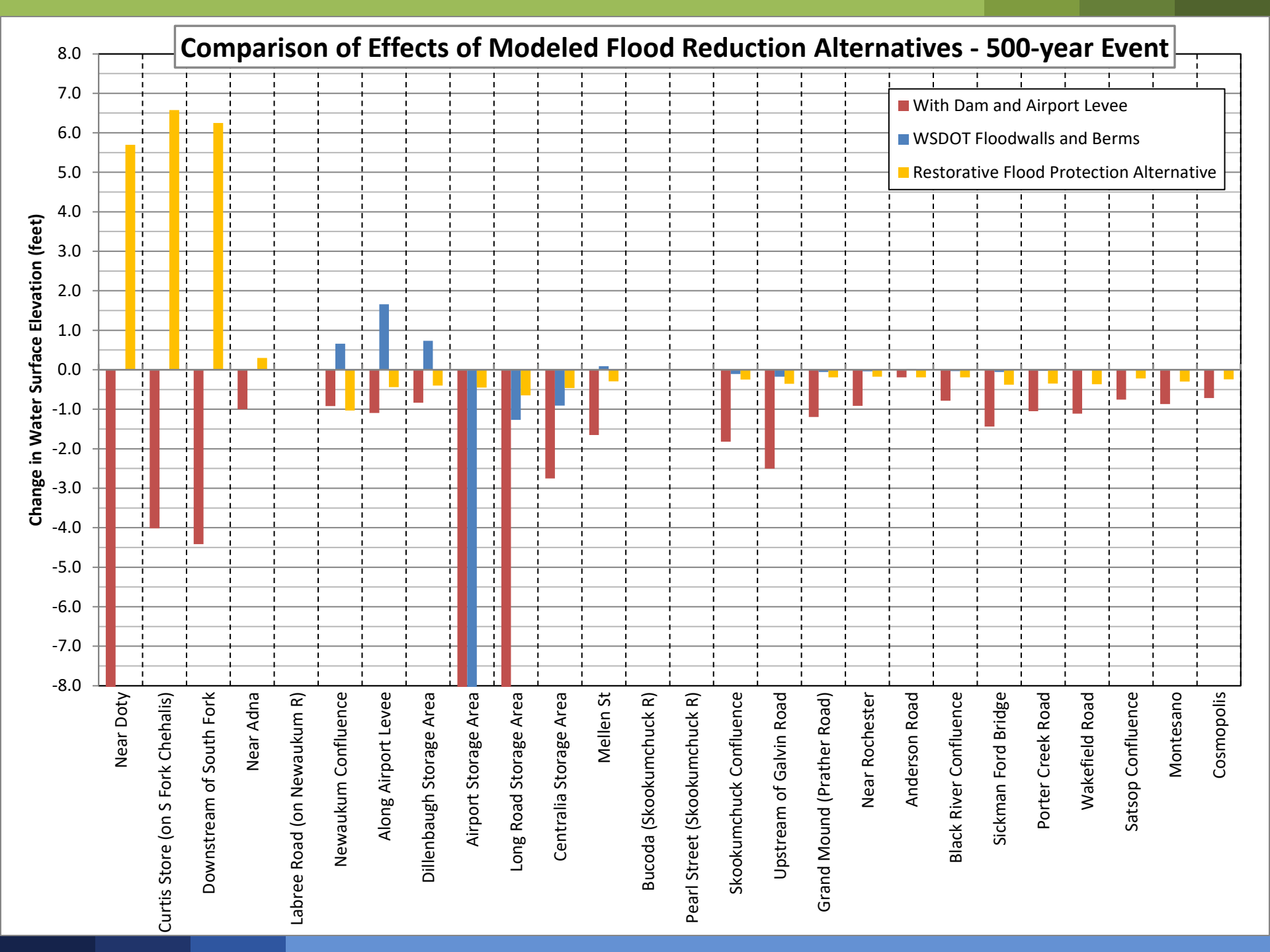
Flood Retention Design and Operations Objectives

- Reduce flood damages
- Maintain stream processes
- Maintain slope stability in reservoir
- Provide winter storage for summer flow augmentation and temperature moderation (FRFA)
- Design for debris in reservoir
- Maintain fish passage as much as possible

Environmental Impacts

- Loss of up to 10 percent of Spring Chinook and impacts to other species
- Potential loss of tribal cultural and historic resources
- Potential listing under Endangered Species Act
- Loss of instream and off-channel habitat in reservoir area
- Geomorphic impacts to Chehalis River downstream of reservoir
- Temperature impacts in Chehalis River downstream of reservoir (FRFA)
- Reduced fish passage for adults and juveniles


Comparison of Effects of Modeled Flood Reduction Alternatives - 100-year Event
Change in Water Surface Elevation (feet)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
-8.0
With Dam and Airport Levee
WSDOT Floodwalls and Berms
Restorative Flood Protection Alternative
Near Doty
Curtis Store (on S Fork Chehalis)
Downstream of South Fork
Near Adna
Labree Road (on Newaukum R)
Newaukum Confluence
Along Airport Levee
Dillenbaugh Storage Area
Airport Storage Area
Long Road Storage Area
Centralia Storage Area
Mellen St
Bucoda (Skookumchuck R)
Pearl Street (Skookumchuck R)
Skookumchuck Confluence
Upstream of Galvin Road
Grand Mound (Prather Road)
Near Rochester
Anderson Road
Black River Confluence
Sickman Ford Bridge
Porter Creek Road
Wakefield Road
Satsop Confluence
Montesano
Cosmopolis


Comparison of Effects of Modeled Flood Reduction Alternatives - 500-year Event
Change in Water Surface Elevation (feet)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
-8.0
With Dam and Airport Levee
WSDOT Floodwalls and Berms
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Wakefield Road
Satsop Confluence
Montesano
Cosmopolis

What's Coming Up?

- Draft PEIS released September 29
- Policy Workshop October 11
- Public Hearings October 18th and27th
- Governor Inslee and legislature will recommend what actions move forward at the end of the year
- Final EIS and decision released in spring 2017