

Bateman Island Causeway Conceptual Design

Mid-Columbia Fisheries Enhancement Group • Benton Conservation District
Gray and Osborne • Northwest Hydraulic Consultants

With support from the Yakima Basin Integrated Plan, the Salmon Recovery Funding Board, and the volunteer efforts of a Technical Advisory Group and Stakeholder Committee.

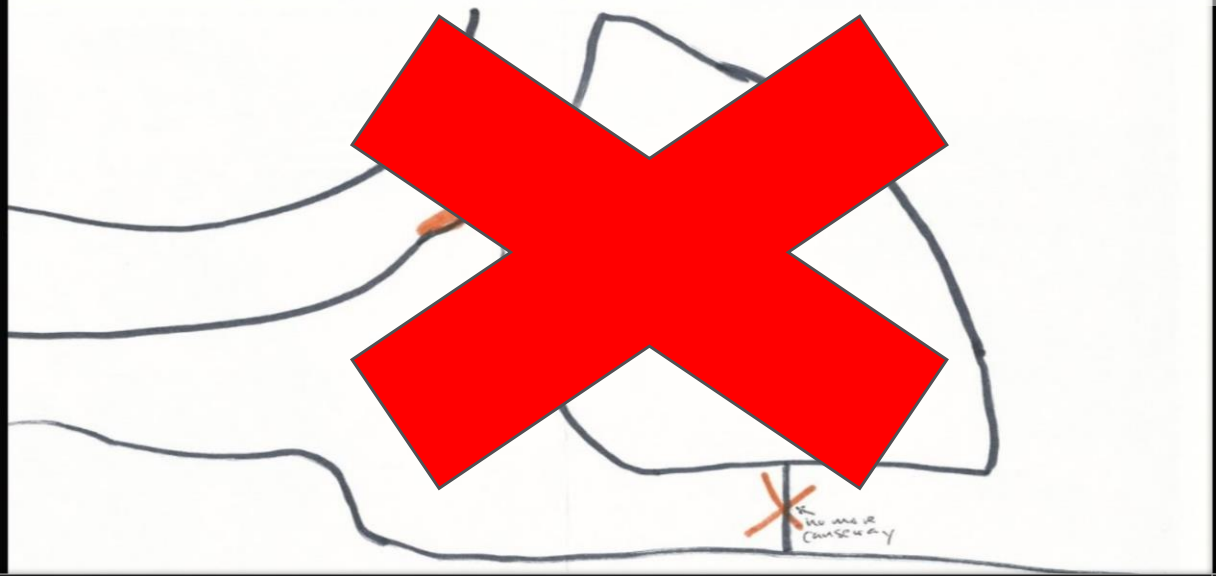


Yakima River

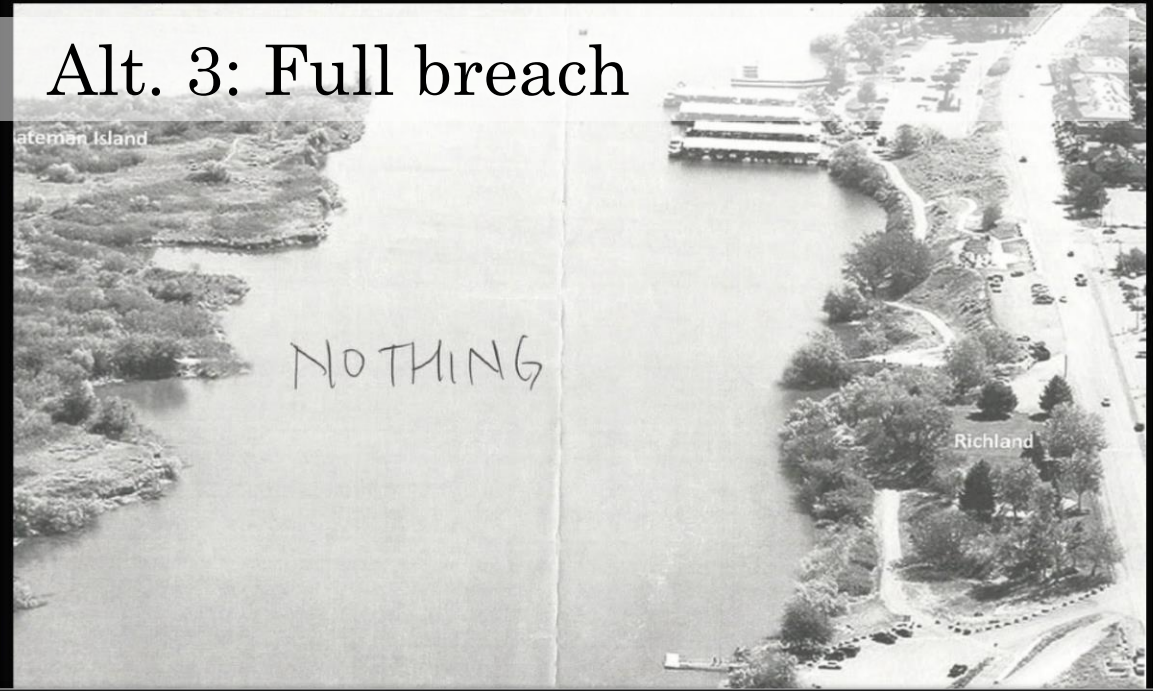
Columbia River



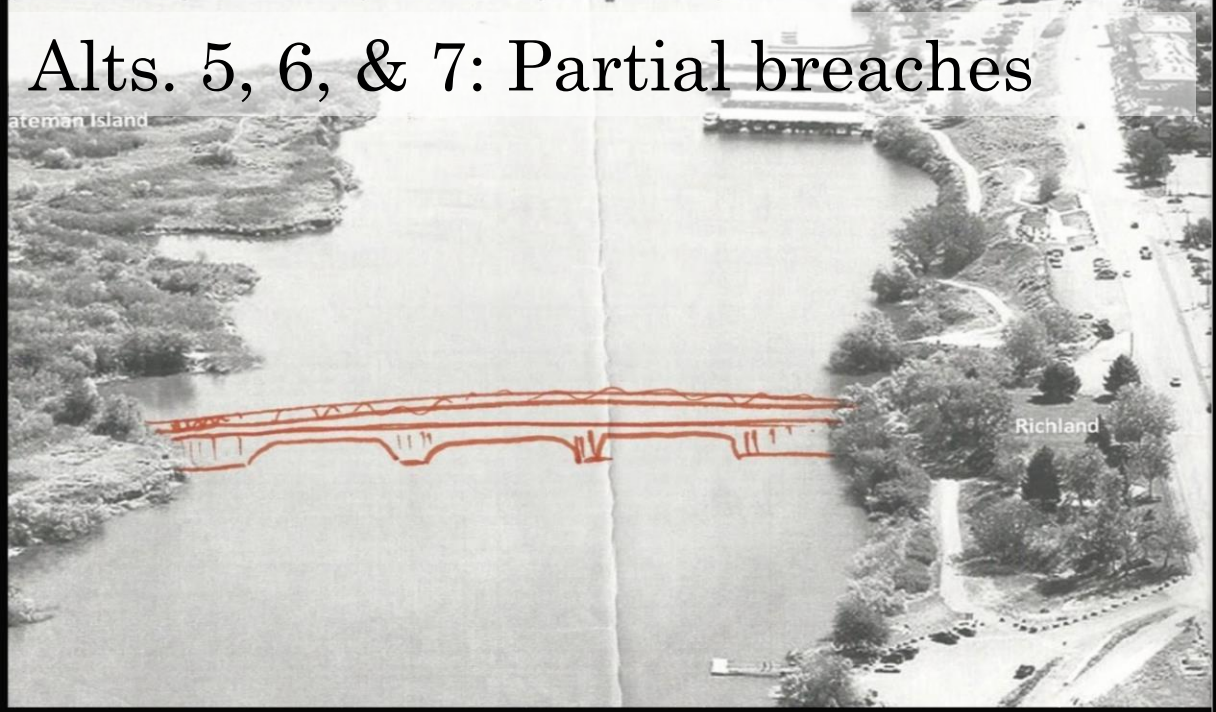
Alt. 2: Disconnect thalweg



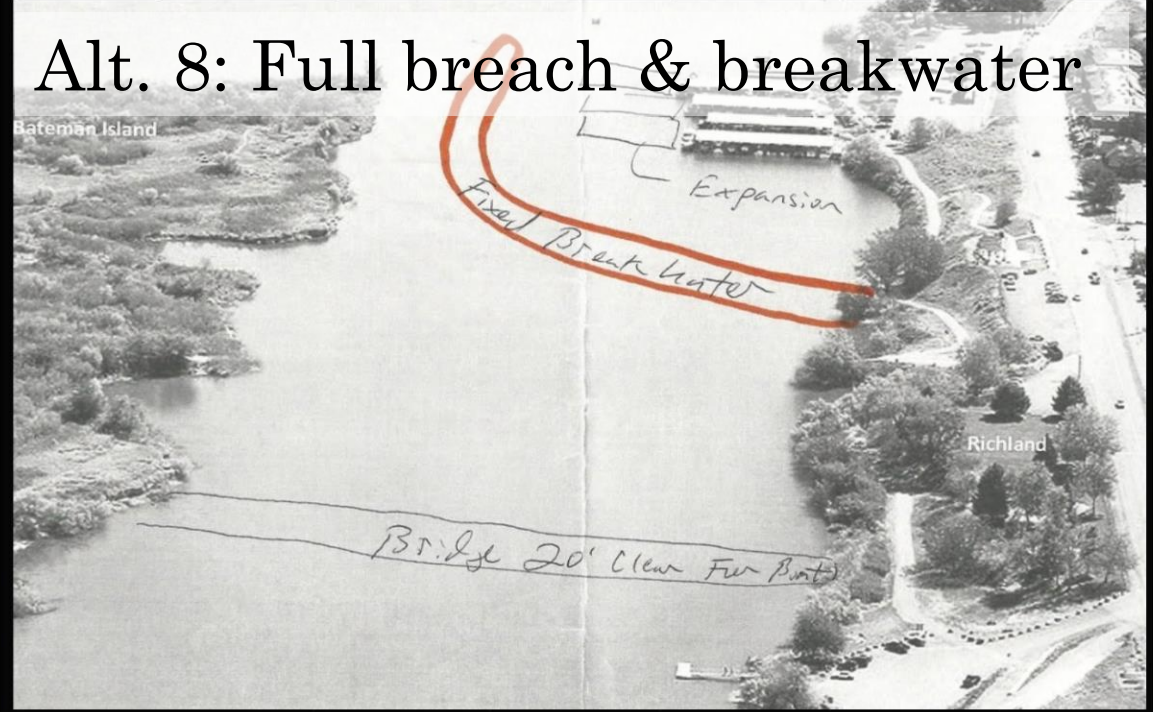
Alt. 3: Full breach



Alts. 5, 6, & 7: Partial breaches

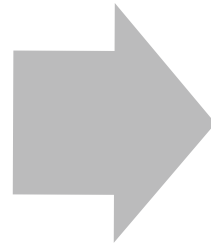


Alt. 8: Full breach & breakwater



Comparing between alternatives

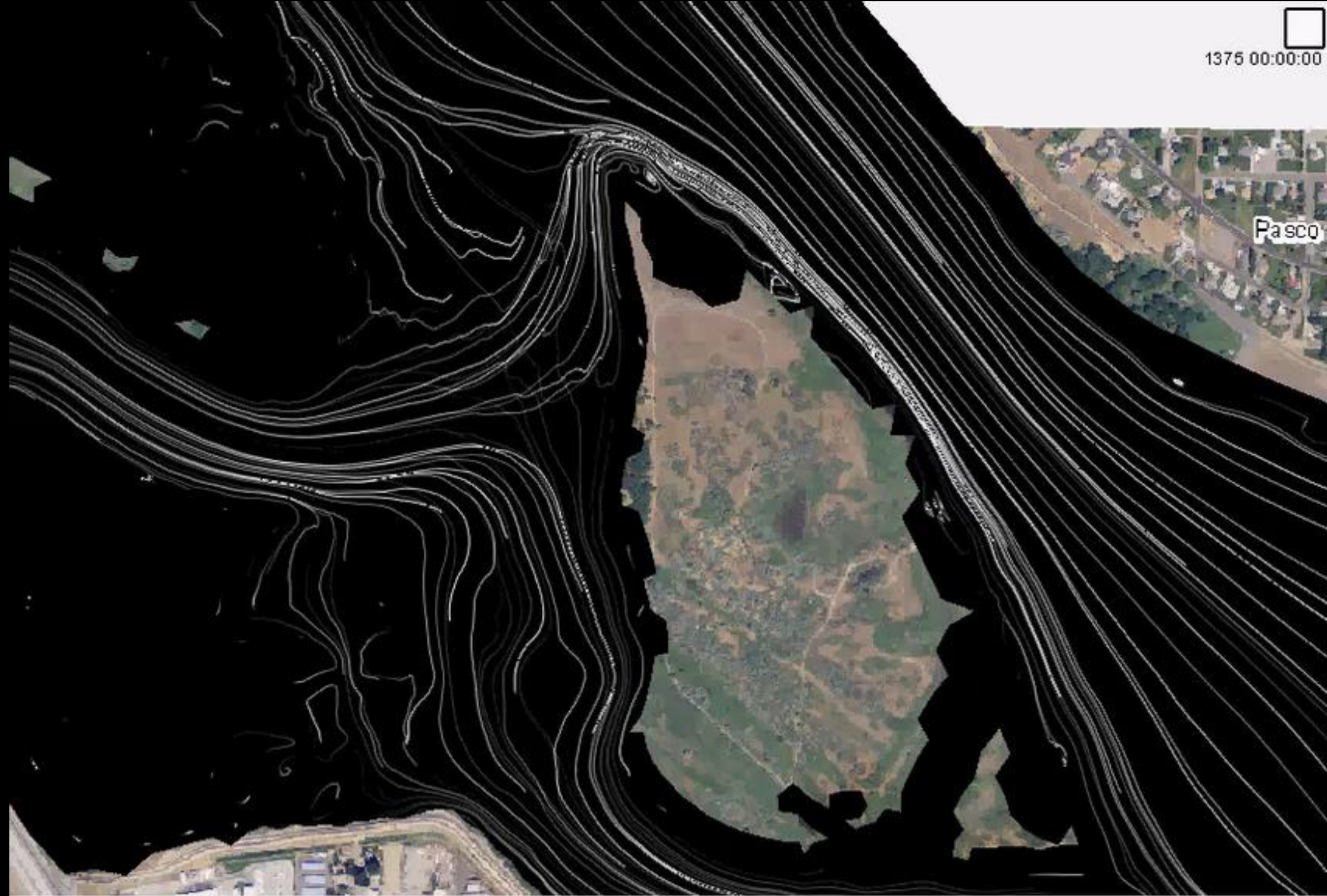
Changes in flow,
water temperature,
and sediment
transport



Impact on passage,
predation, cultural
resources, and
recreational and
commercial uses

1375 00:00:00

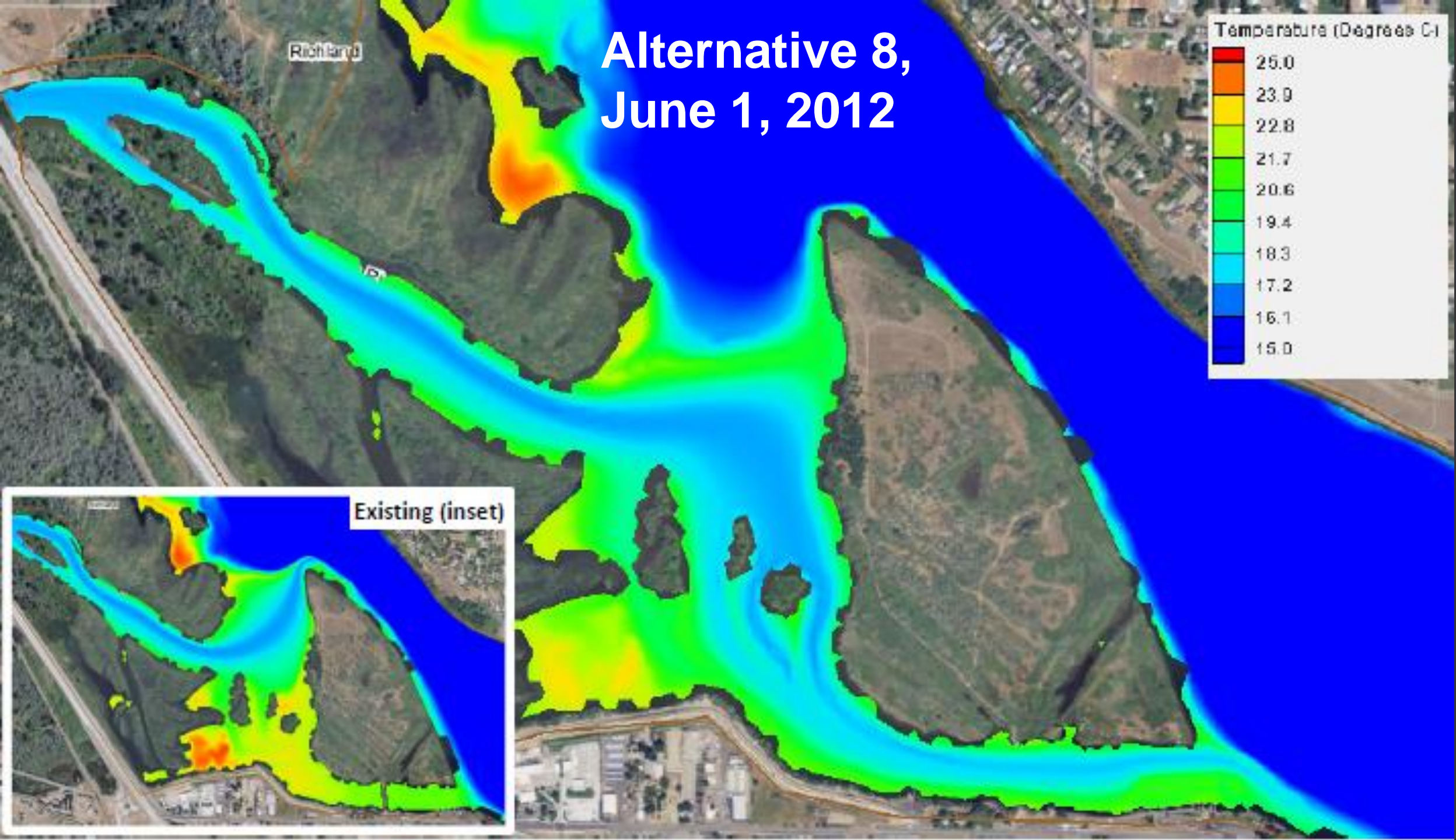
Pasco





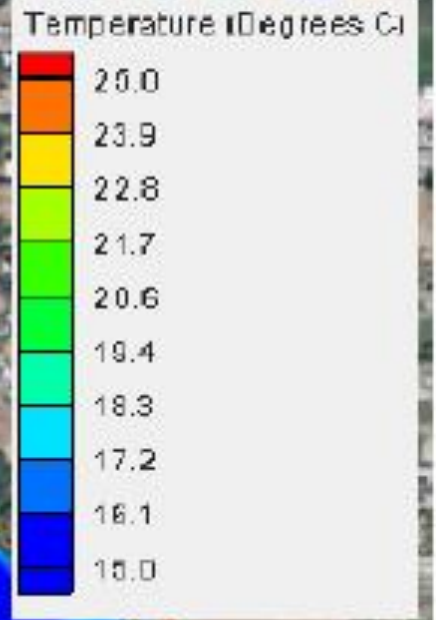
2012

Alternative 8, June 1, 2012

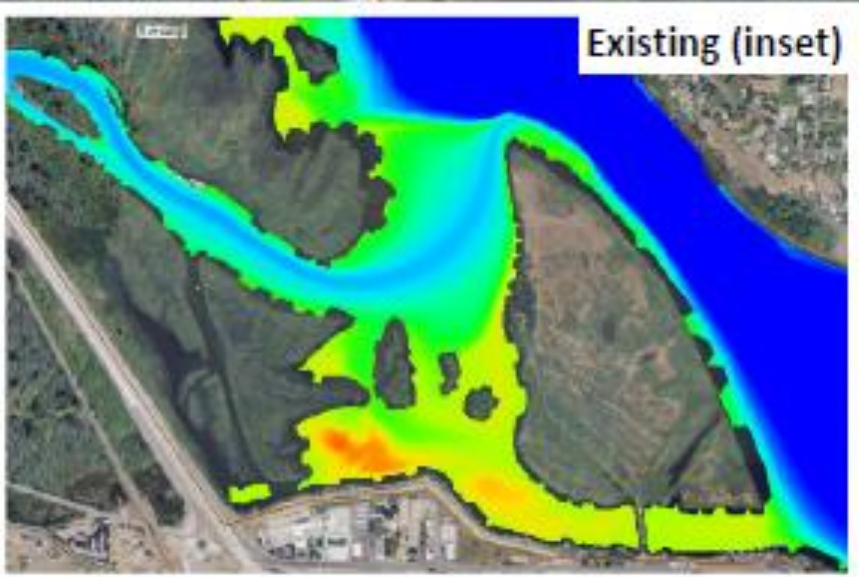


Alternative 8, June 3, 2012

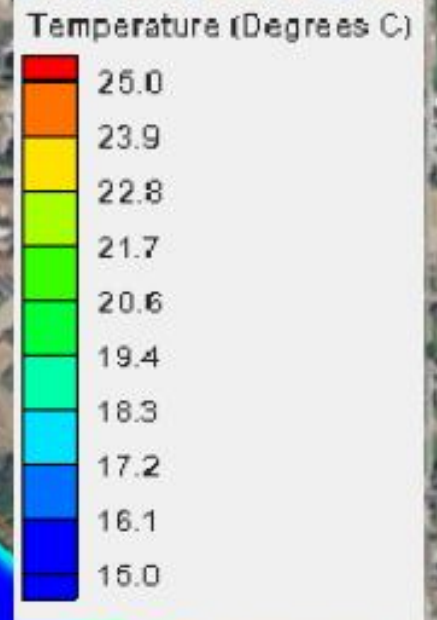
Richland



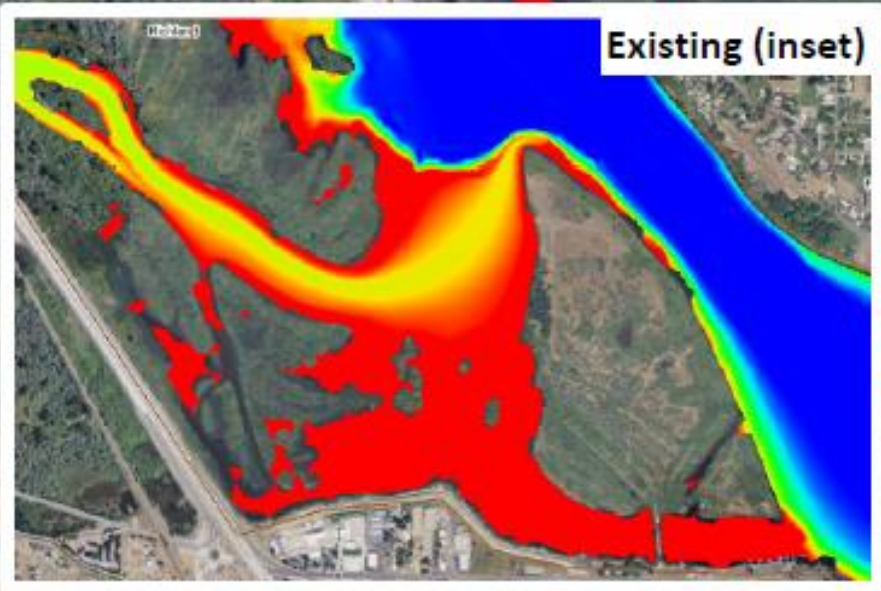
Existing (inset)



Alternative 8, July 8, 2012



Richland





Source: plan.critfc.org

Number of summer days when downstream temperature > upstream

Alternative	Measured just above confluence			Measured in reopened causeway channel	
	2012	2014		2012	2014
Alt. 1 - Existing Conditions	38	38		N/A	N/A
Alt. 6 - 130 foot Breach	28	36		54	34
Alt. 7 - 200 foot Breach	30	35		46	32
Alt. 5 - 260 foot Breach	18	26		31	26
Alt. 3 - 560 foot Full Breach	14	24		28	25
Alt. 8 – 560 foot Breach + Breakwater	16	28		32	25



Source: Michael Porter, YN

Maximum Spring (March 15 – May 31) 7-DADMax Temperature

Alternative	Measured in channel west of island	
	2012	2014
Alt. 1 - Existing Conditions	19.6 °C	21.1 °C
Alt. 6 - 130 foot Breach	17.7 °C	18.7 °C
Alt. 7 - 200 foot Breach	17.6 °C	18.6 °C
Alt. 5 - 260 foot Breach	17.6 °C	18.5 °C
Alt. 3 - 560 foot Full Breach	17.6 °C	18.5 °C
Alt. 8 – 560 foot Breach + Breakwater	17.6 °C	18.5 °C

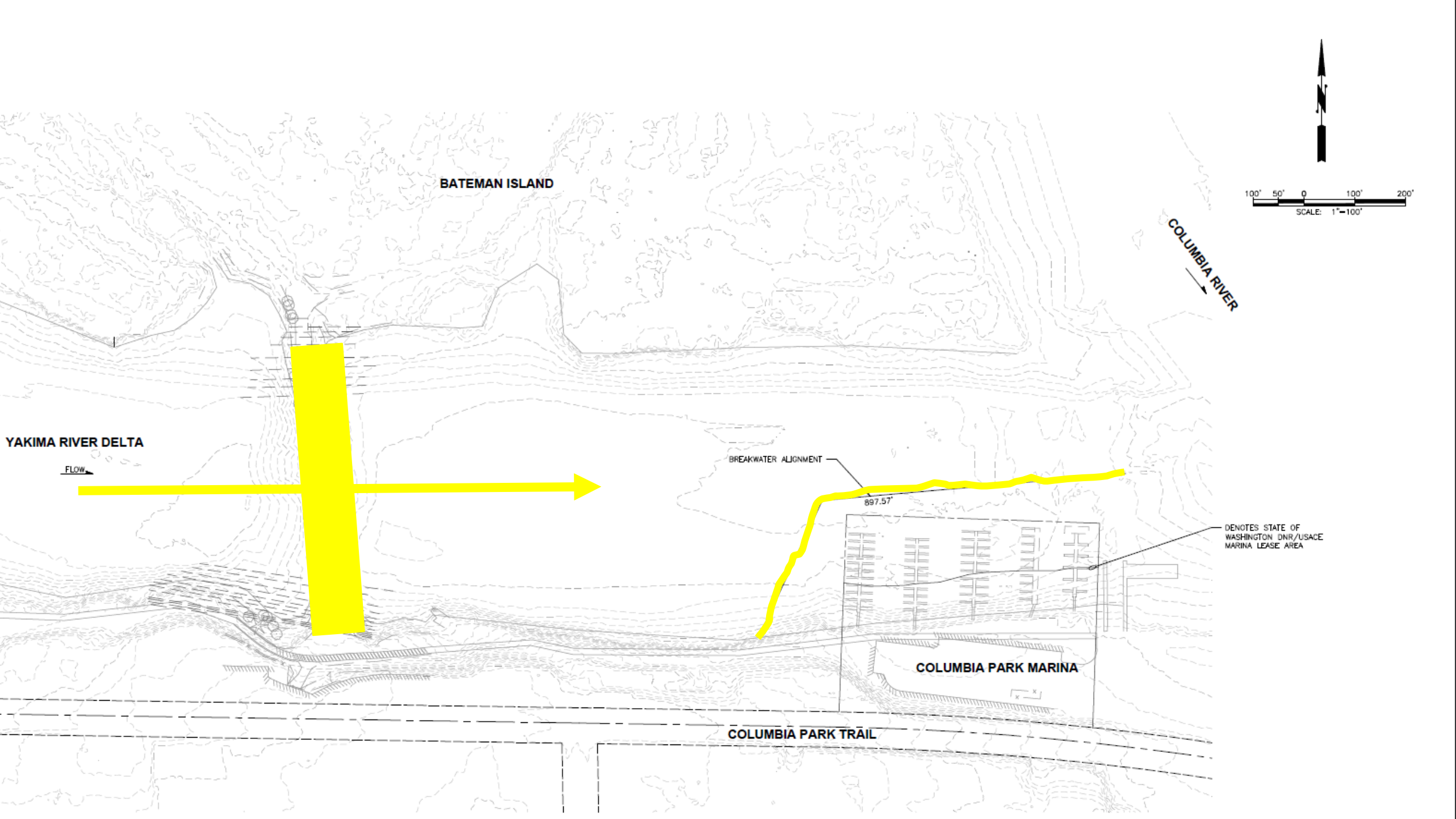
Sediment



Time required for full erosion at each area after full breach

Area	Low Flow	Mid Flow	High Flow
	weeks	weeks	weeks
Area 6: North of Yakima Inflow	11.9	0.7	0.2
Area 5: Yakima River	no movement	1.1	0.3
Area 1: West Side of Island	112	6.2	1.8
Area 4: Small Channel South	no movement	184.7	10.2
Area 3: West of Causeway	57.9	3.5	1.0





BATEMAN ISLAND

COLUMBIA RIVER

100' 50' 0 100' 200'
SCALE: 1"=100'

YAKIMA RIVER DELTA

FLOW

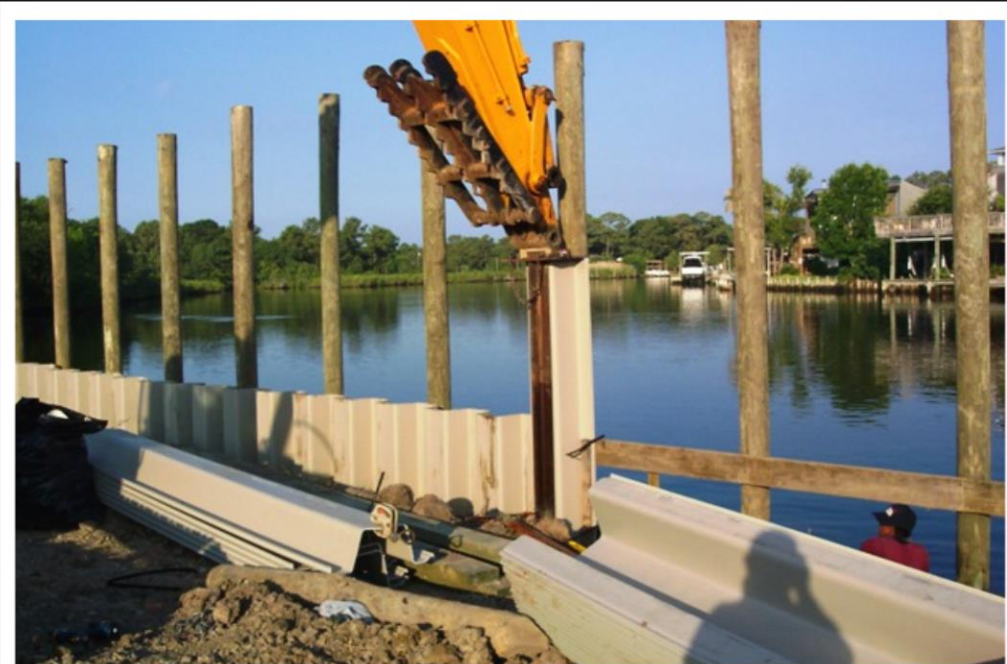
BREAKWATER ALIGNMENT

897.57

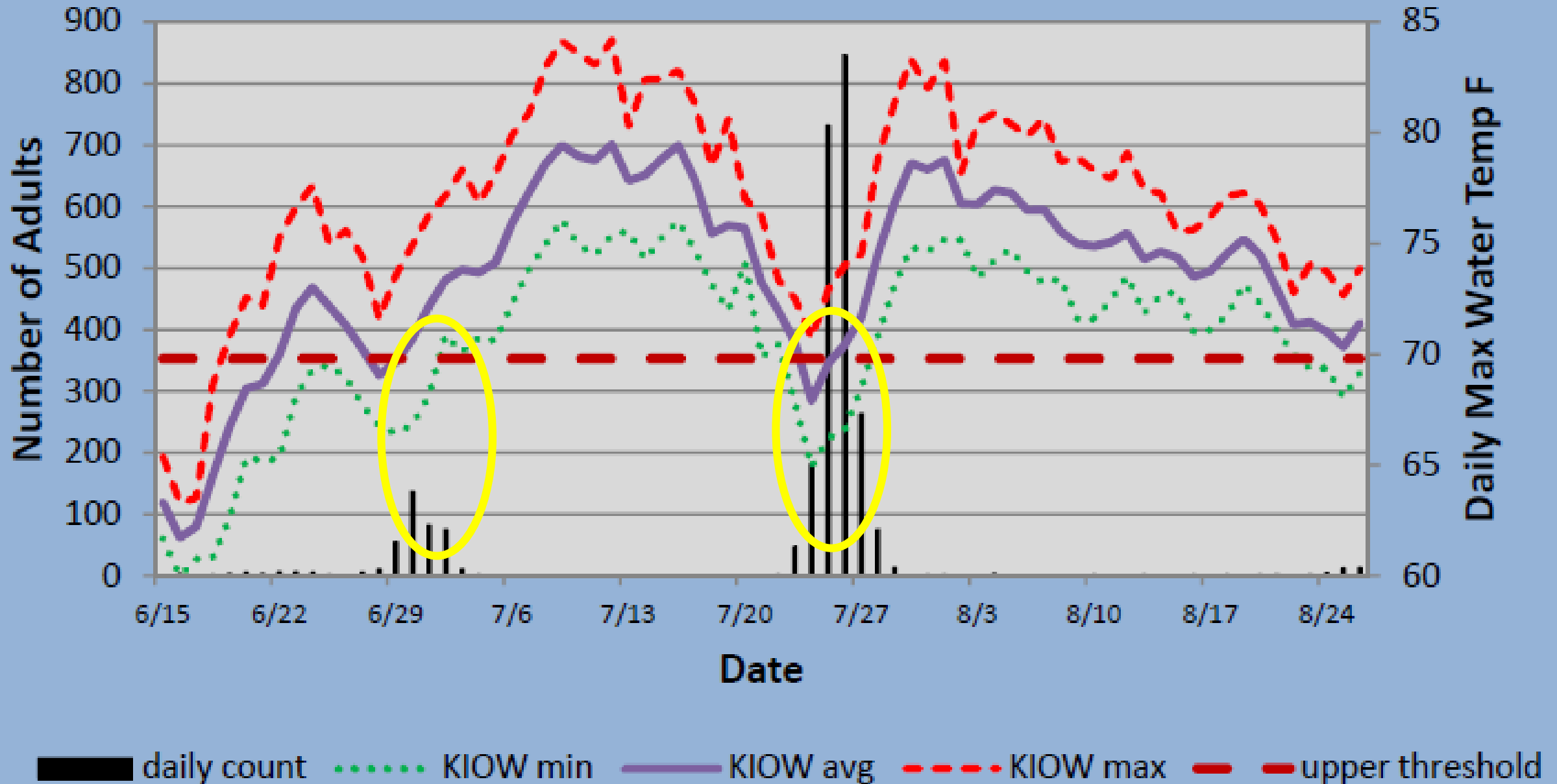
DENOTES STATE OF WASHINGTON DNR/USACE MARINA LEASE AREA

COLUMBIA PARK MARINA

COLUMBIA PARK TRAIL



2014 Sockeye Run, Prosser Dam



Next steps

- Continued public involvement
- Permitting
- Funding

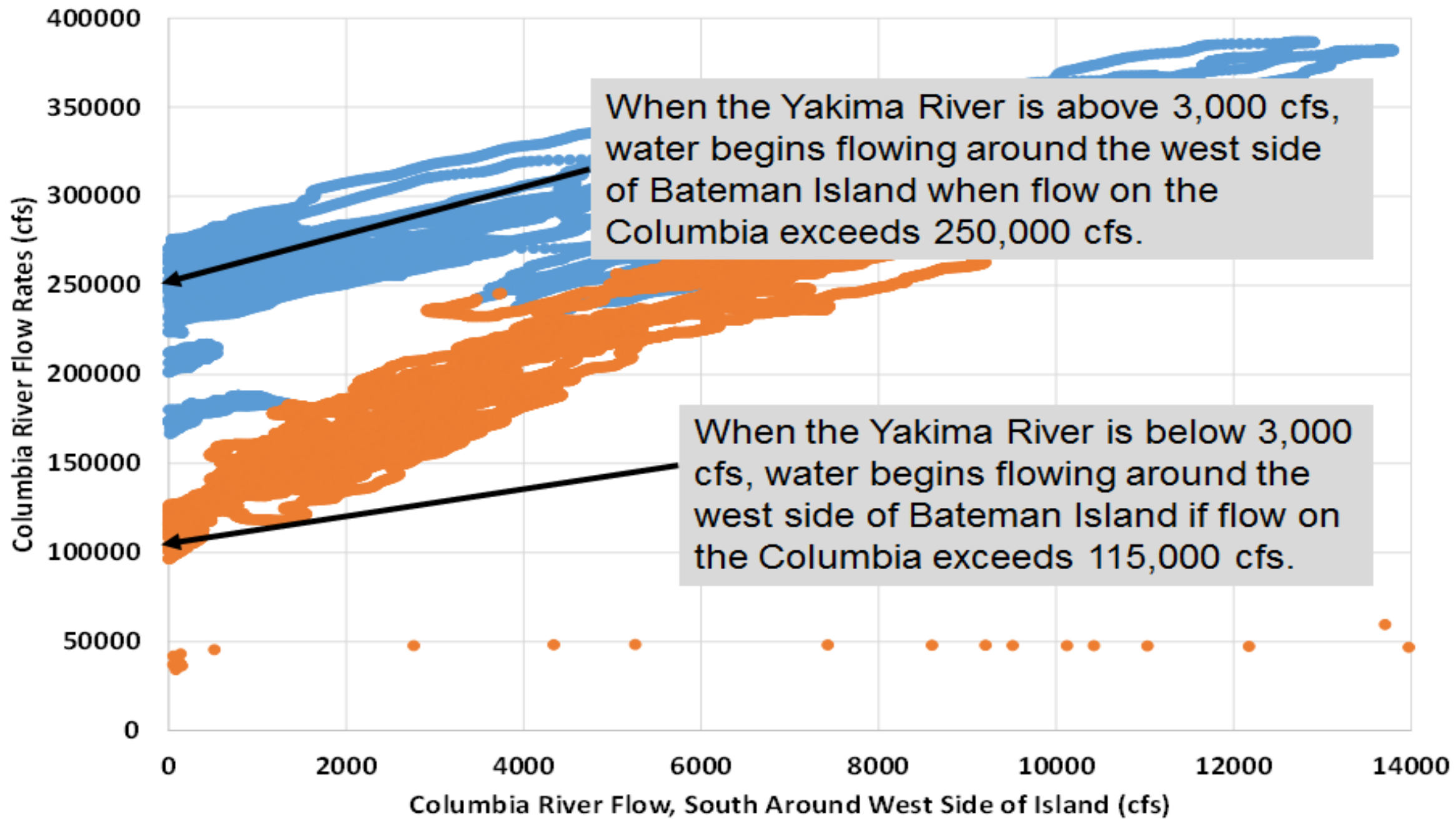


<ftp://ftp.g-o.com/outgoing/MCFEG/Bateman%20Island%20Causeway%20Modifications/>

Username: goftp

Password: @go.ftp#





● When Yakima > 3000 cfs ● When Yakima < 3000 cfs

Percent of Total Flow Volume at Causeway Channel by Source (March through October)				
Alternative	Yakima River Inflows		Columbia River Inflows	
	2012	2014	2012	2014
6 - 130' Breach	100%	99%	0%	1%
7 - 200' Breach	95%	93%	5%	7%
5 - 260' Breach	76%	83%	24%	17%
3 - Full Breach	72%	81%	28%	19%
8 – Full breach + Breakwater	75%	80%	25%	20%