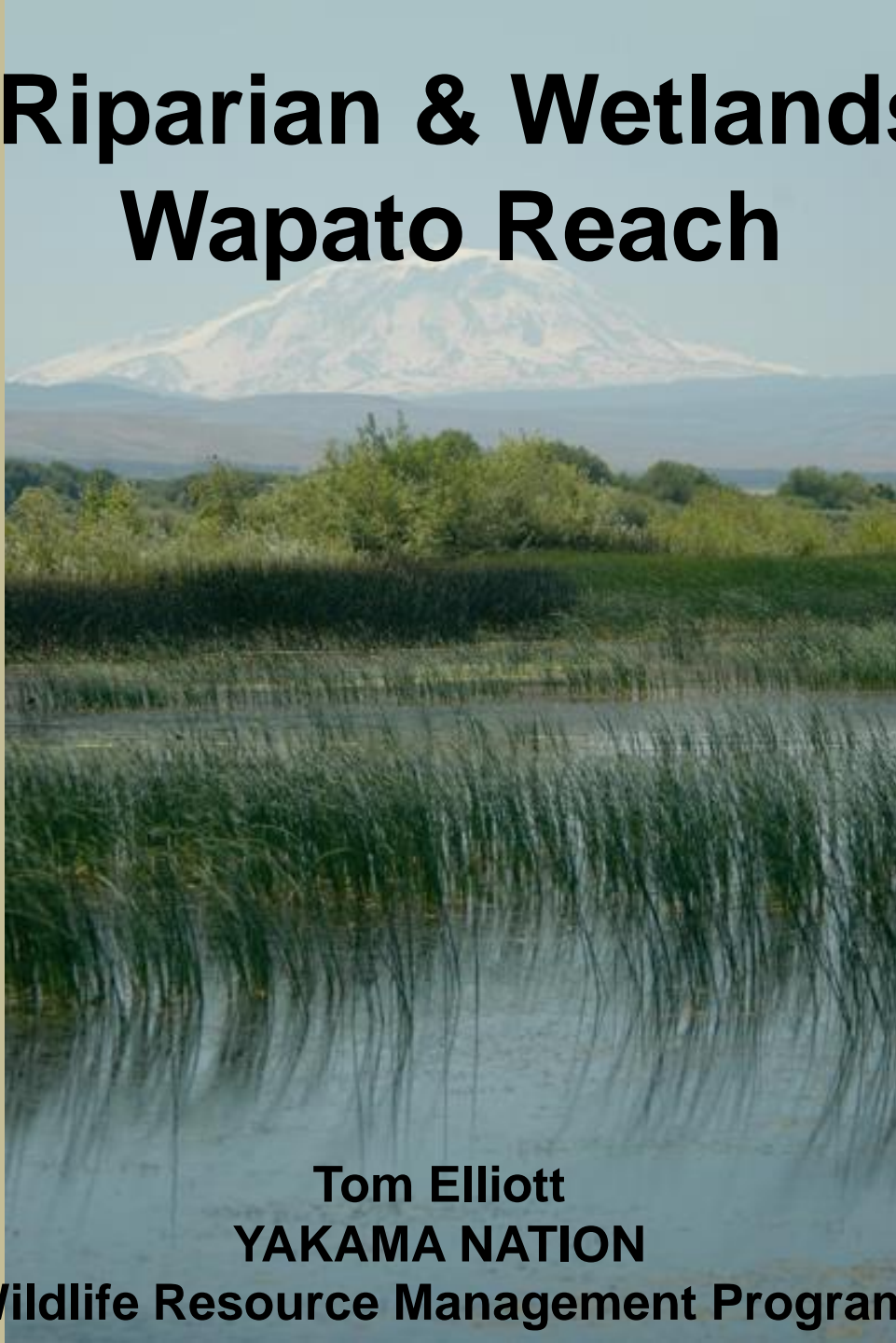


Yakama Riparian & Wetlands Project

Wapato Reach



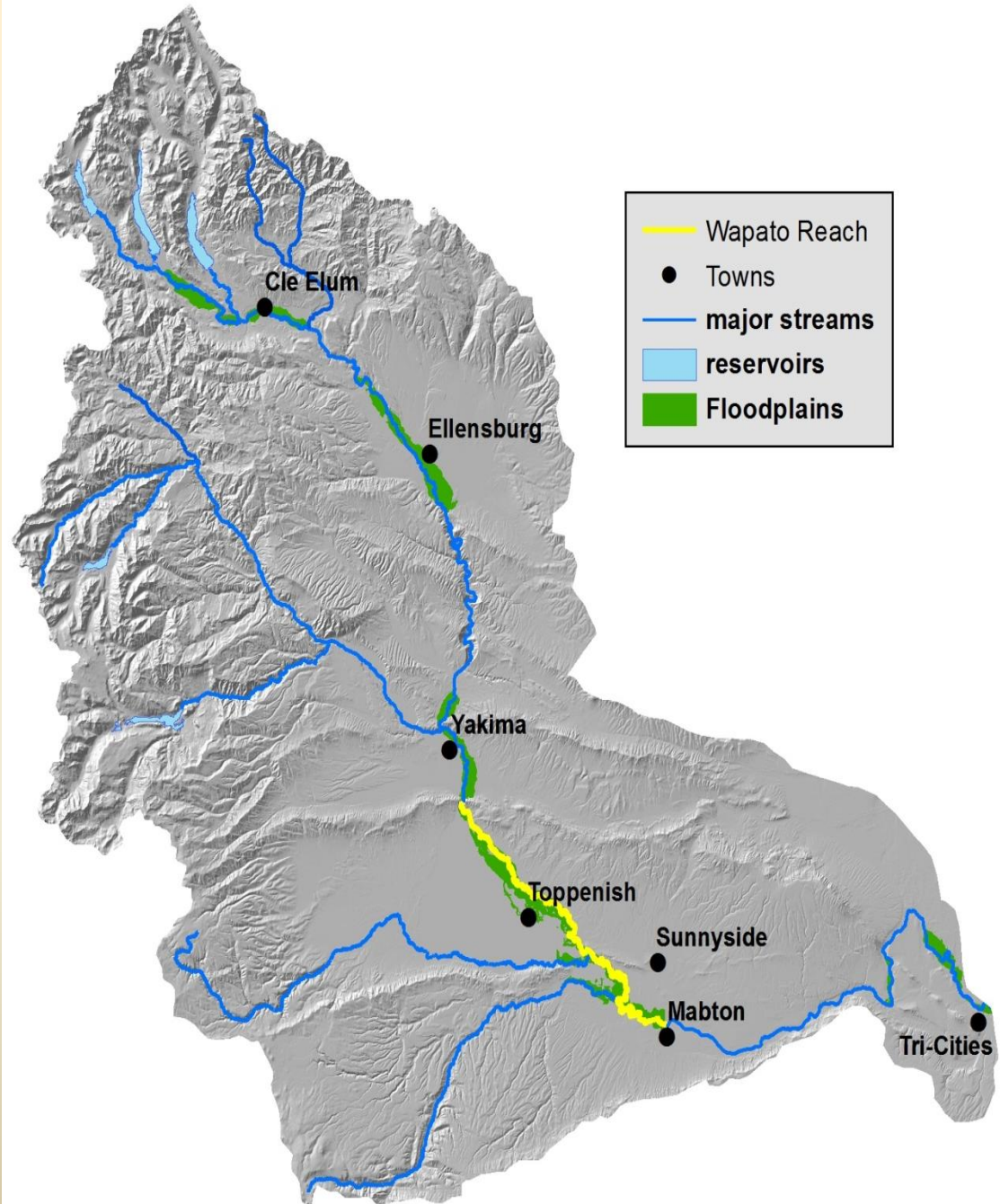
Tom Elliott
YAKAMA NATION

Wildlife Resource Management Program



THE WAPATO REACH IS CRITICAL FOR FISH AND WILDLIFE

- Migration for all salmon, steelhead, and lamprey, in and out
- Spawning for fall and summer Chinook
- Holding and rearing for Toppenish/Satus steelhead, lamprey
- Abundant deer and fur-bearing mammals
- Riparian forest supports eagles, songbirds, gamebirds
- Large wetland complexes provide habitat for waterfowl

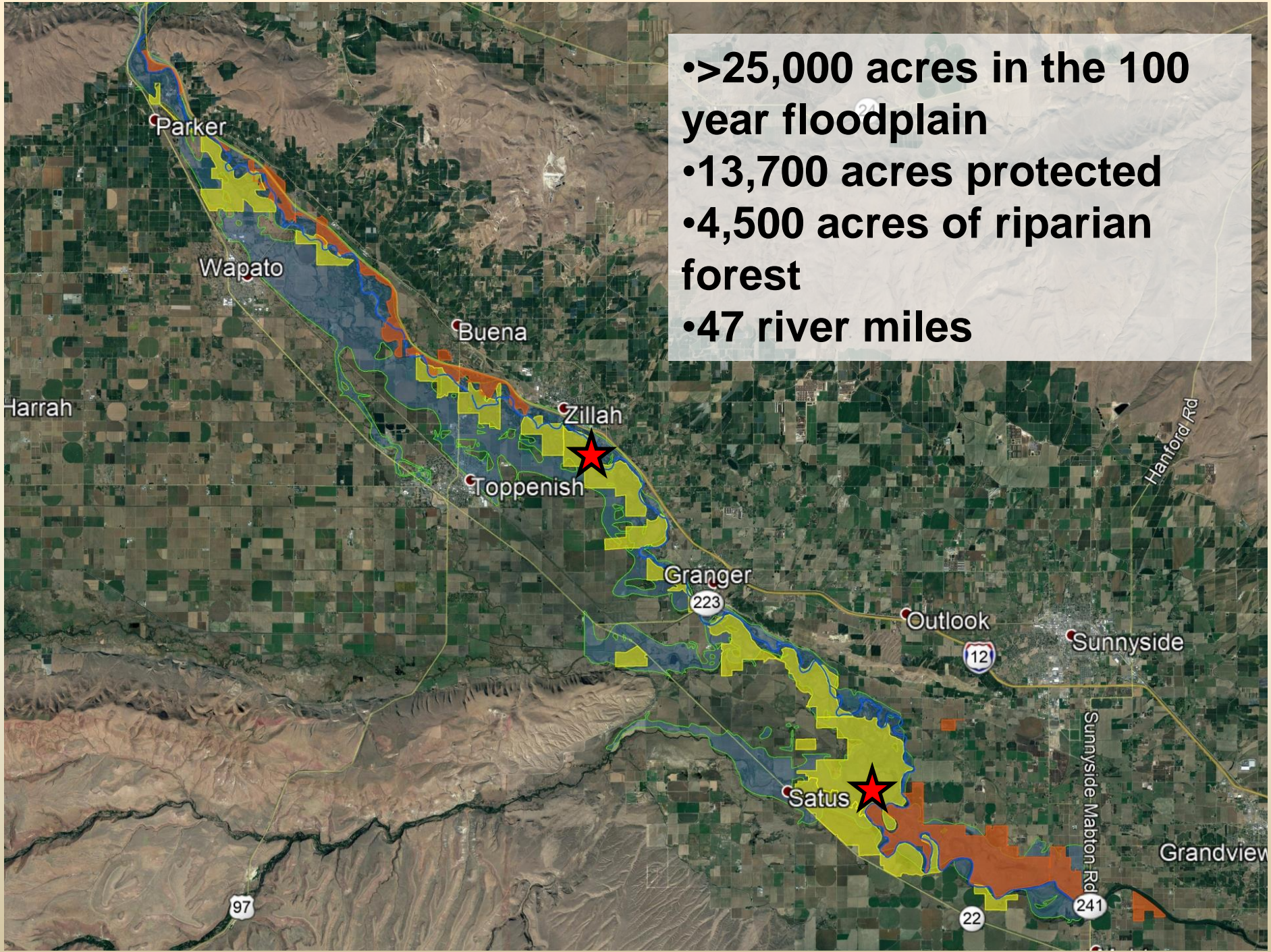


THE WAPATO REACH IS CRITICAL FOR PEOPLE

- Traditional utilization by Yakama people
- Expansive floodplains provide flood control and sediment storage
- Recreational use-fishing, birding, hunting
- Floodplains provide cropland and pasture
- Identified as a priority in multiple basin wide assessments-IP the latest



- >25,000 acres in the 100 year floodplain
- 13,700 acres protected
- 4,500 acres of riparian forest
- 47 river miles



NEED FOR A PROGRAM

A wide river flows through a lush, green landscape. In the center of the river, a large, tangled pile of driftwood and branches is partially submerged. The banks are lined with dense trees and vegetation. The sky is blue with scattered white clouds. The overall scene suggests a natural, undisturbed environment.

- **Integrated, multi-objective floodplain management**
- **Long term, stable funding required**
- **Commitment to the adaptive cycle**
- **TAG to provide guidance and coordination**

Wapato Reach Action Plan

Yakima River Basin, Washington



Protect and restore a vibrant, intact river system that provides healthy habitats for abundant fish and wildlife populations, protects cultural resources, creates opportunities for recreation, and preserves ecosystem services for local communities.



Wapato Reach Action Plan

2	Goals, Strategies and Objectives
2.1	Protect Floodplain Lands from Incompatible Uses
2.2	Restore Instream, Floodplain, Wetland, and Riparian Habitats ...
2.2.1	Reconfigure Transportation Infrastructure
2.2.2	Reconfigure Irrigation Infrastructure
2.2.3	Reconfigure Levees, Riprap, and Other Structures
2.2.4	Enhance Floodplain Vegetation
2.2.5	Improve Instream and Side Channel Habitat Complexity
2.2.6	Enhance Wetland Habitat
2.2.7	Enhance Upland Habitat
2.3	Improve Water Management
2.3.1	Improve Instream Flows for Habitat Benefit
2.3.2	Manage Drains and Return Water for Habitat Benefit

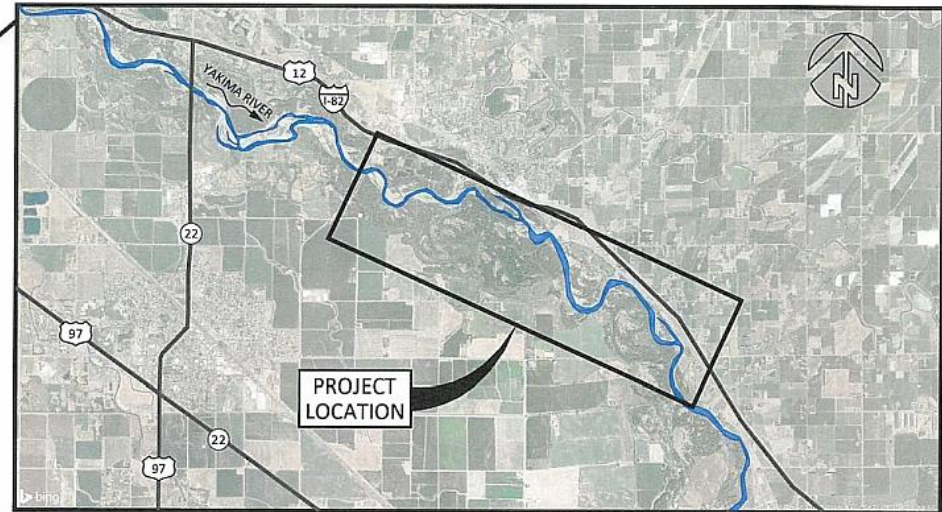
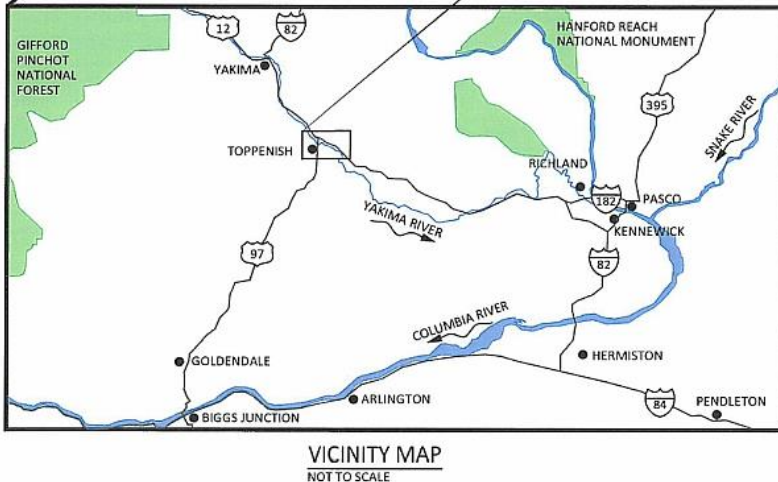
1. Yakima River mile 89.5 (Meninick) Floodplain Reconnection

- Design complete, in permitting with U.S. Army Corps
- Reconnects 6 miles of side channel
- Enhances connectivity for ~800 acres of floodplain
- IP and BPA funded



1. Yakima River mile 89.5 (Meninick)

Yakima River RM 89.5 Floodplain Restoration Project Final Construction Plan Yakima County, Washington May 31, 2018

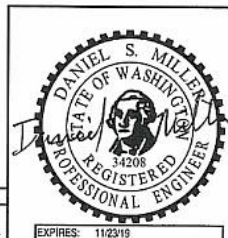


SHEET INDEX

- 1 - COVER, SHEET INDEX AND VICINITY MAP
- 2 - GENERAL NOTES
- 3 - GENERAL NOTES, QUANTITIES AND ABBREVIATIONS
- 4 - EROSION CONTROL & COFFERDAM DETAILS
- 5 - EXISTING CONDITIONS
- 6 - PROPOSED CONDITIONS AND SHEET INDEX
- 7 - ALIGNMENT 1 A & B - PLAN, PROFILES, TYPICAL CROSS-SECTIONS
- 8 - ALIGNMENT 1C - PLAN, PROFILE, TYPICAL CROSS-SECTION
- 9 - ALIGNMENT 3A & 1D - PLAN, PROFILES, TYPICAL CROSS-SECTIONS
- 10 - ALIGNMENTS 3B & 1E - PLAN, PROFILES, TYPICAL CROSS-SECTIONS
- 11 - ALIGNMENT 4 - PLAN, PROFILE, TYPICAL CROSS-SECTION
- 12 - ALIGNMENT 1F - PLAN, PROFILE, TYPICAL CROSS SECTIONS
- 13 - FORD CROSSING AND BEAVER DAM ENHANCEMENT DETAILS
- 14 - TYPICAL WOOD DETAILS
- 15 - TYPICAL WOOD BALLASTING DETAILS
- 16 - FABRIC-ENCAPSULATED SOIL LIFT DETAILS
- 17 - FABRIC-ENCAPSULATED SOIL LIFT DETAILS
- 18 - FABRIC-ENCAPSULATED SOIL LIFT DETAILS
- 19 - REVEGETATION PLAN
- 20 - REVEGETATION PLAN
- 21 - REVEGETATION PLAN
- 22 - REVEGETATION DETAILS

SITE MAP NOT TO SCALE

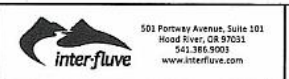
COORDINATES:
LATITUDE: 46°23'26.22" N
LONGITUDE: 120°15'38.58" W
WATERBODY: YAKIMA RIVER
TRIBUTARY OF: COLUMBIA RIVER



NO.	BY	DATE	REVISION DESCRIPTION

NS, DF	PL, DM	PL
DRAWN	DESIGNED	CHECKED
DM	05/31/18	170233
APPROVED	DATE	PROJECT

YAKAMA NATION
YAKIMA RIVER 89.5 FLOODPLAIN RESTORATION
FINAL CONSTRUCTION PLAN

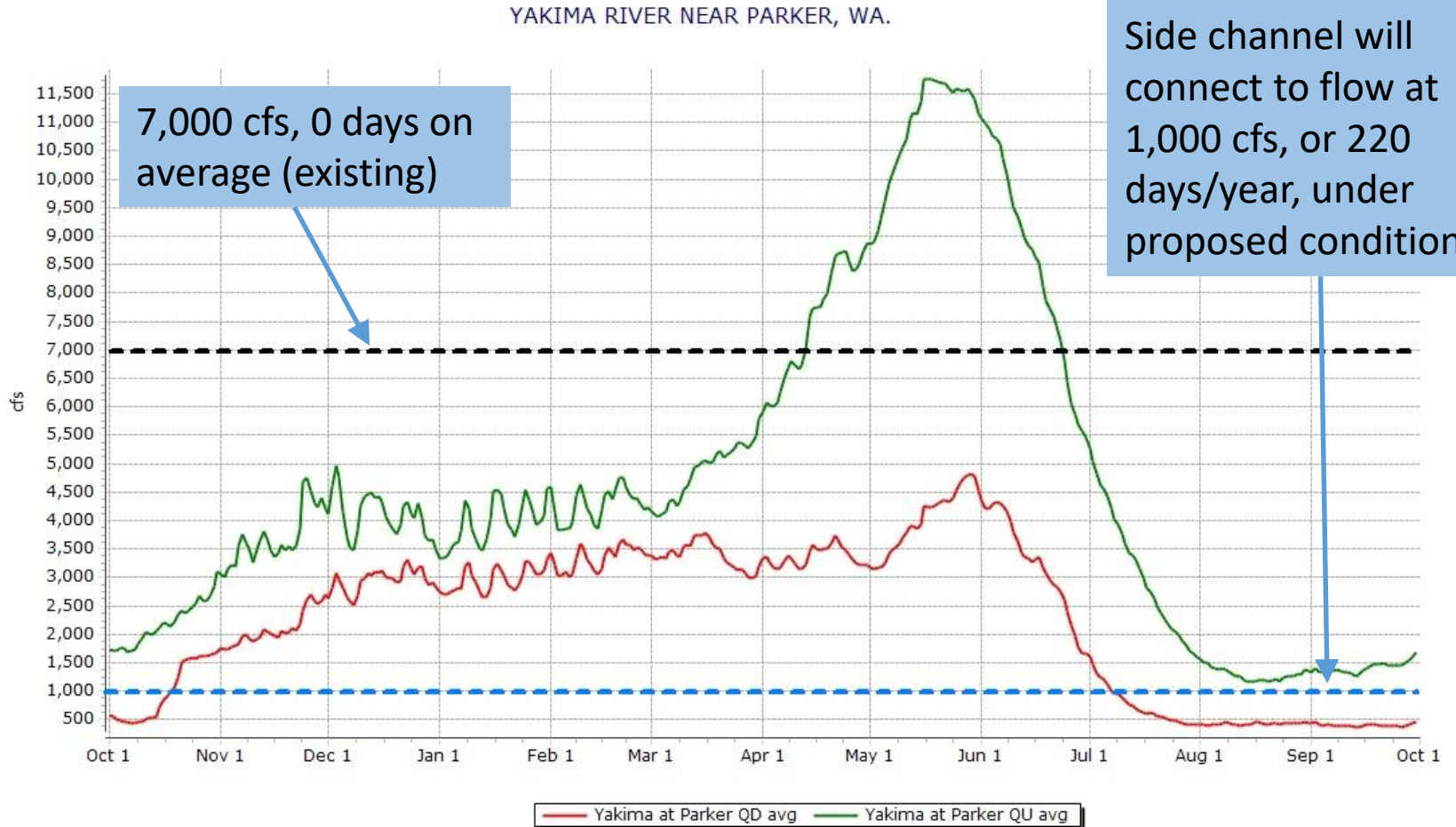


COVER, SHEET INDEX AND
VICINITY MAP

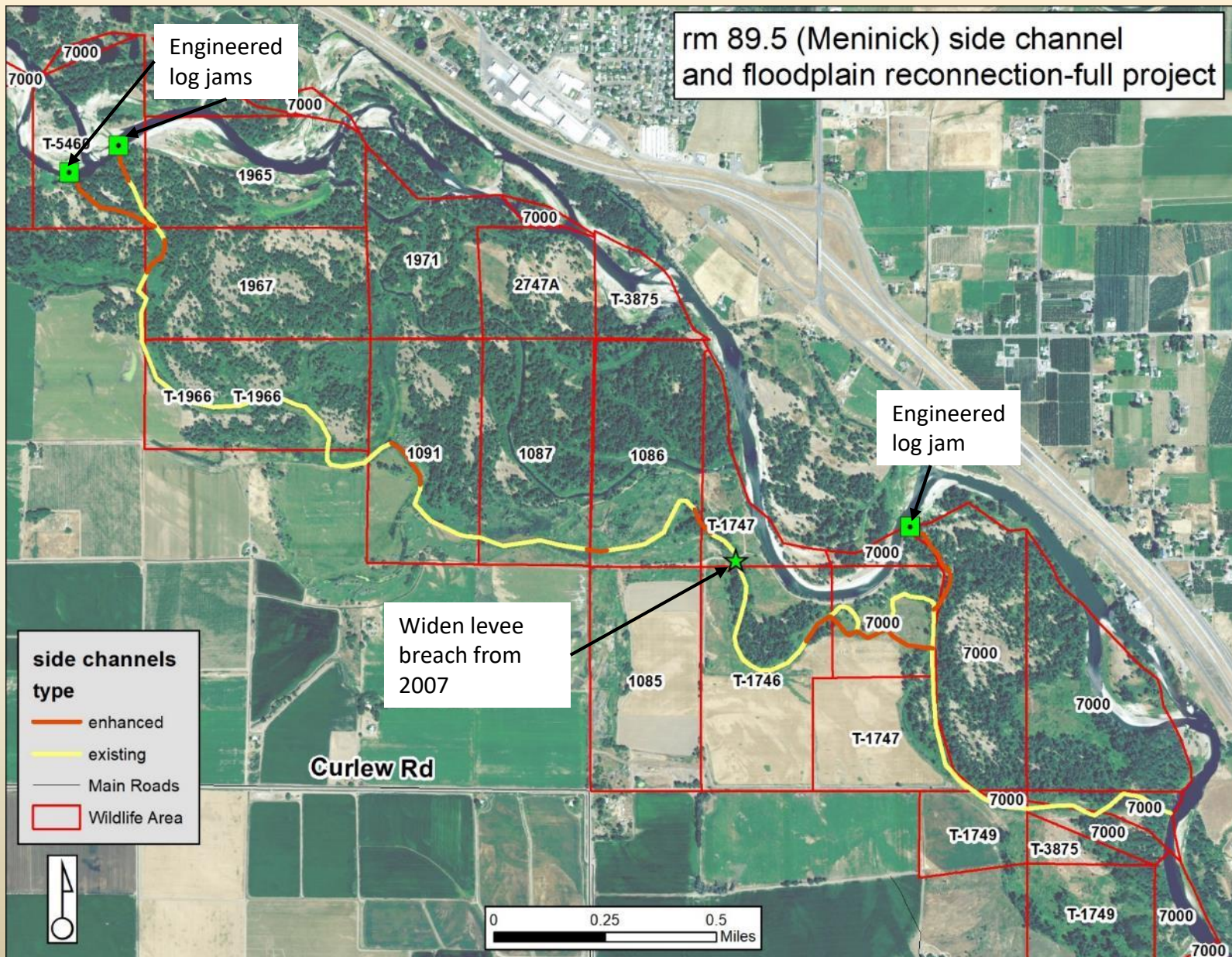
SHEET
1 of 22

EXPIRES: 11/23/19

Yakima River at Parker, Regulated vs Unregulated hydrograph

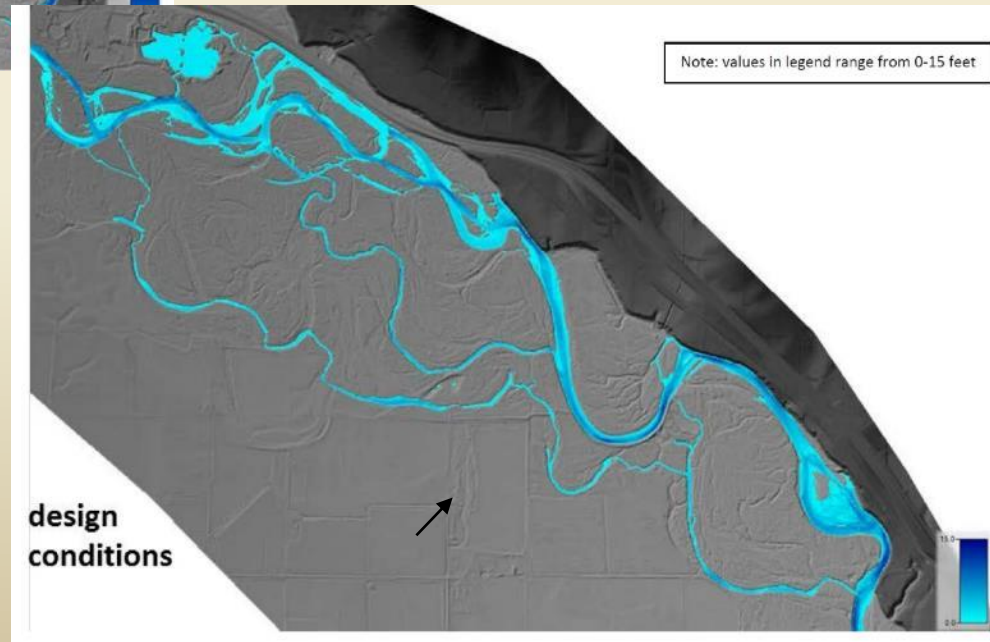
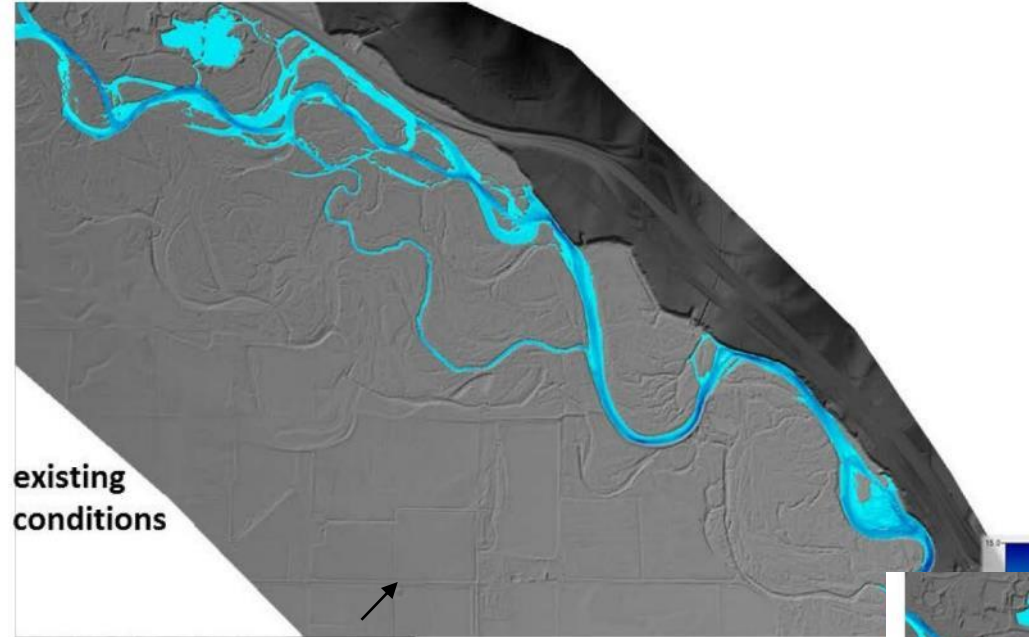


Full project basic design



3000 cubic feet/second (84 times since 1934)

Model Results depicting 3,000 cfs – design conditions compared to existing conditions



Black arrows show intersection of Curlew and Blue Heron Roads

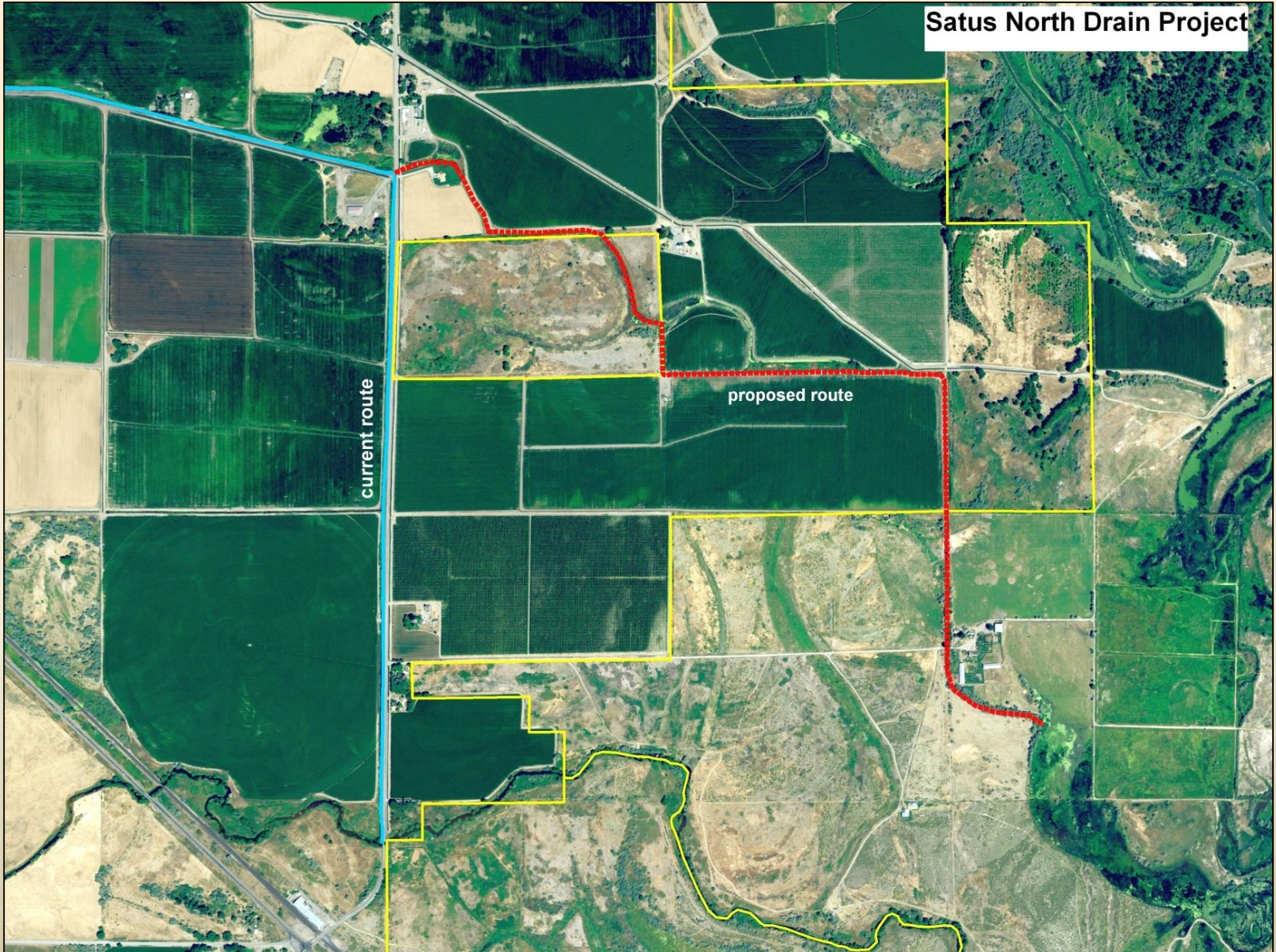
2. North Drain Re-alignment and Wetlands Enhancement



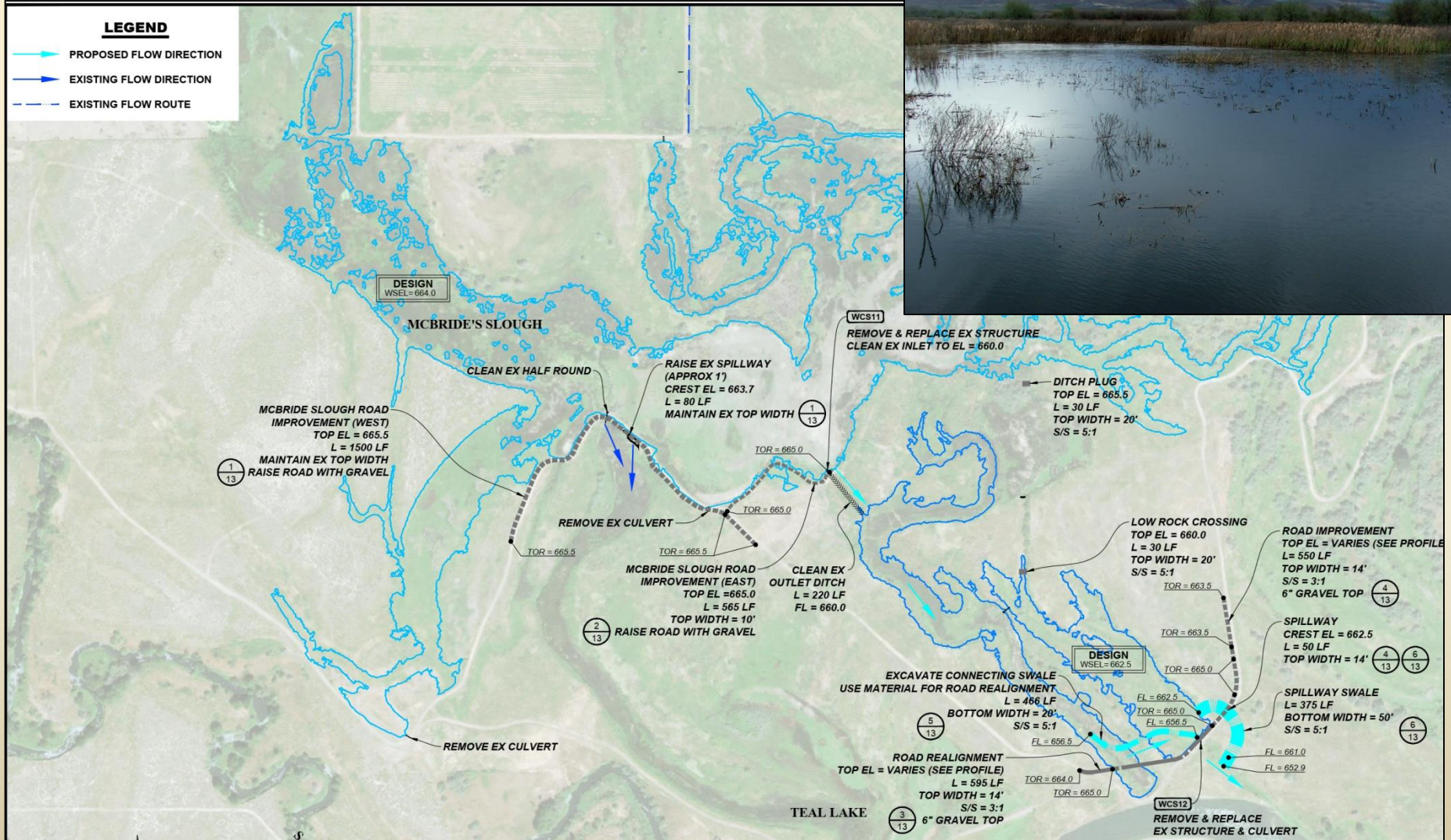
- Increase water supply to Satus wetlands
- Enhance water management over 1000+ acres
- Design at 90% by Ducks Unlimited, RCPP and BPA funded

2. Satus North Drain

Satus North Drain Project



2. North Drain-McBride's Slough



3. Riparian Forest Management

- Goal is to Manage and Restore for Sustainable Cultural and Natural Resource Values for future generations
- Requires defining scope, understanding obstacles (limiting factors?) to sustainable healthy forests, describing strategies for restoration and management

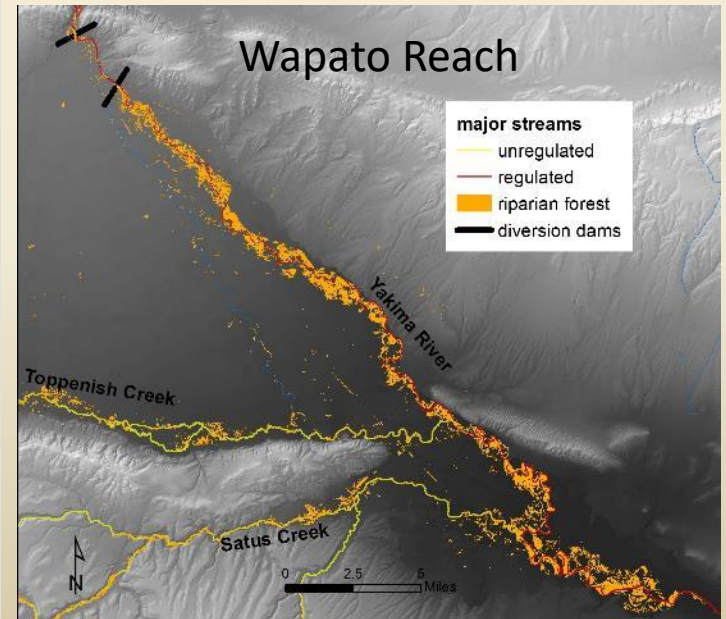
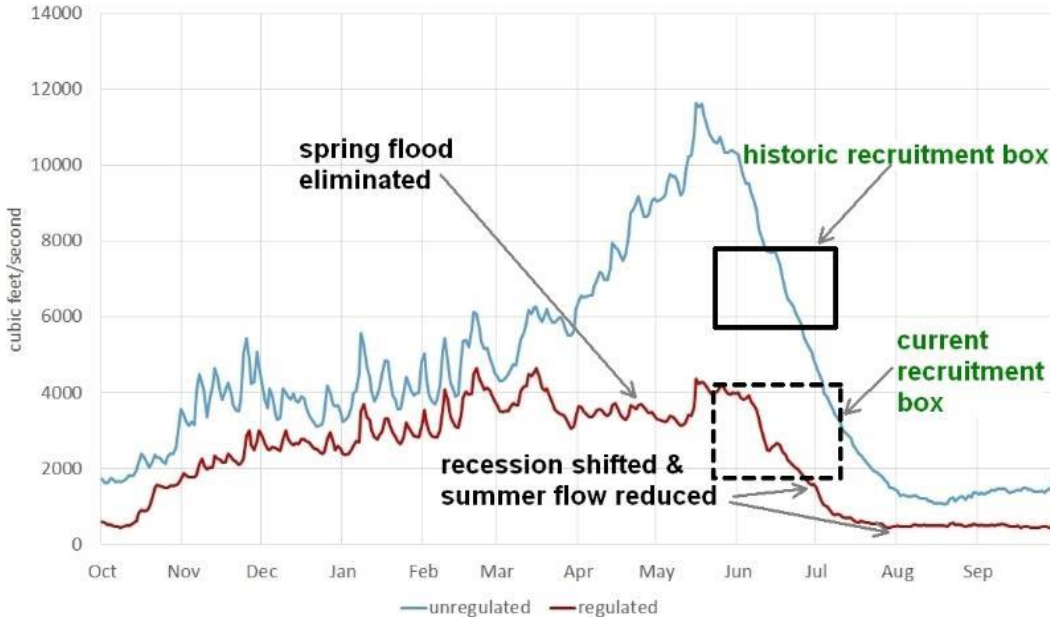


Wapato Reach-Regulation Drives Decline

- Observed and documented lack of recruitment
- Seedlings establish too low
- Long-term decline of forest

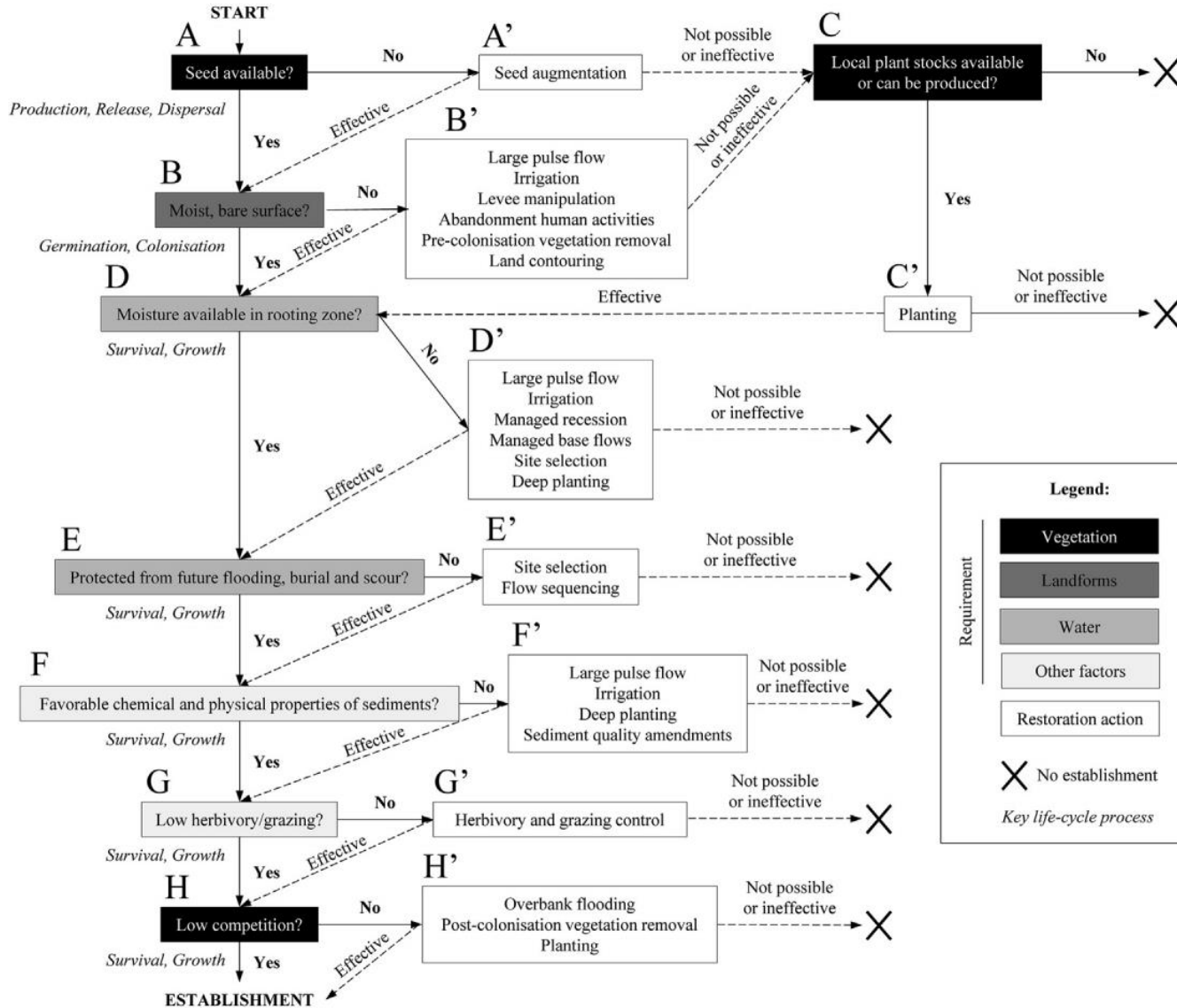


Yakima River at Parker Daily Average Flow 1980 to 2017



3. Multiple Strategies

E. González et al. / Journal of Environmental Management 218 (2018) 374–387



Final Thoughts-Bumps in the Process

- Install 360 yards of rubble bank armor
- No permit needed!
- Implementation has gone very smoothly.



Final Thoughts-Bumps in the Process

- Reconnect 6 miles of side channels, 800 acres
- Spend 4 to 6 months and >\$35,000 for permitting
- Project suffers from extra time and expense

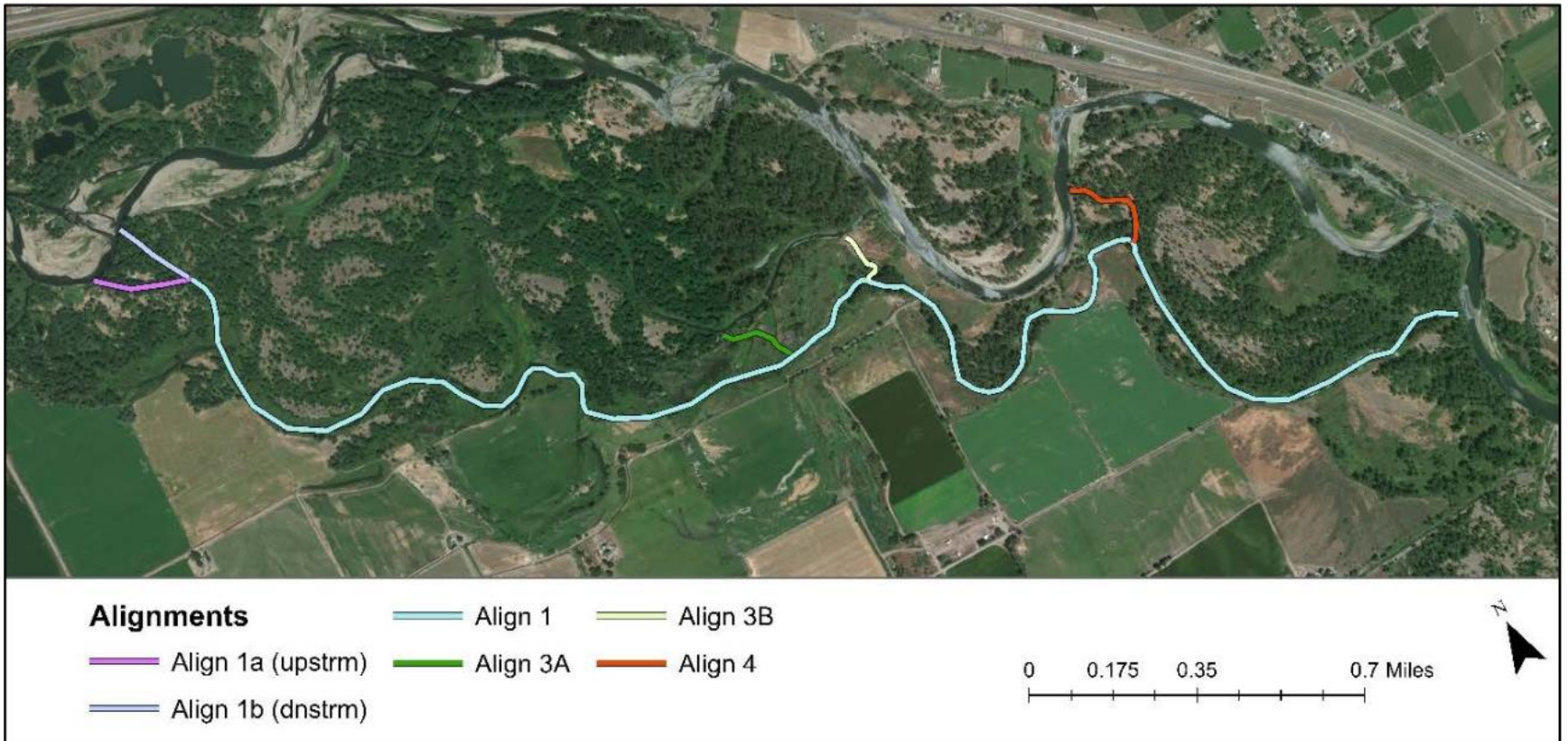


Figure 5. Basic orientation of selected activation alignments.

Final Thoughts-Potential Solution

A. COVER PAGE

EPA Region 10 Wetland Program Develop Grant

Domestic Assistance No. 66.461, Funding Opportunity No. EPA-REG10-WPDG-19-01

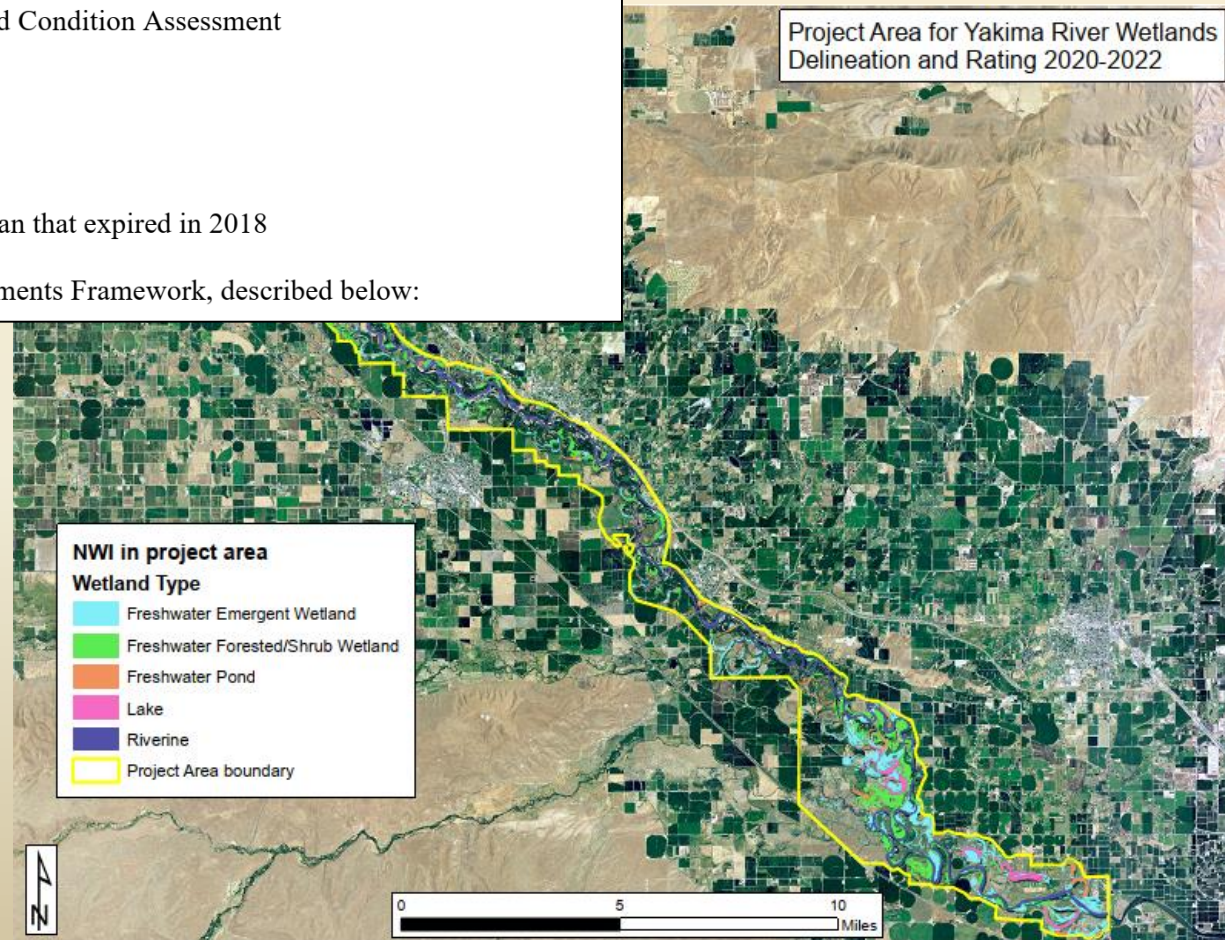
TITLE:

Yakima River Floodplain Wetlands Mapping and Condition Assessment

TRACK ONE PROPOSAL

GOALS

1. Update the Yakama Wetland Program Plan that expired in 2018
2. Address Actions from the EPA Core Elements Framework, described below:



Other Projects

- Thermal assessment (BCD)
- Yakima County 2D hydraulic modeling
- Ongoing habitat management by YN and DFW

Questions?

