

# Technical Projects Update

YRBWEP Workgroup Meeting  
December 17, 2014



# Ongoing Projects

- Kachess Drought Relief Pumping Plant
- Keechelus-to-Kachess Conveyance
- Bull Trout Enhancement
- **Wymer Dam and Reservoir**
- Bumping Dam & Reservoir Enlargement
- Cle Elum Pool Raise
- **Cle Elum Dam Fish Passage Facilities**
- Tieton Dam Fish Passage Facilities Study
- Clear Lake Fish Passage
- Groundwater Storage – Basinwide Analysis
- Groundwater Storage – City of Yakima Aquifer Storage & Recovery (ASR)
- Manastash Creek Conservation & Tributary Enhancement
- **Habitat Enhancement and Agricultural Conservation Projects**
- Teanaway Community Forest



# Wymer Dam and Reservoir Cost-Risk Analysis



# What is Cost-Risk Analysis?

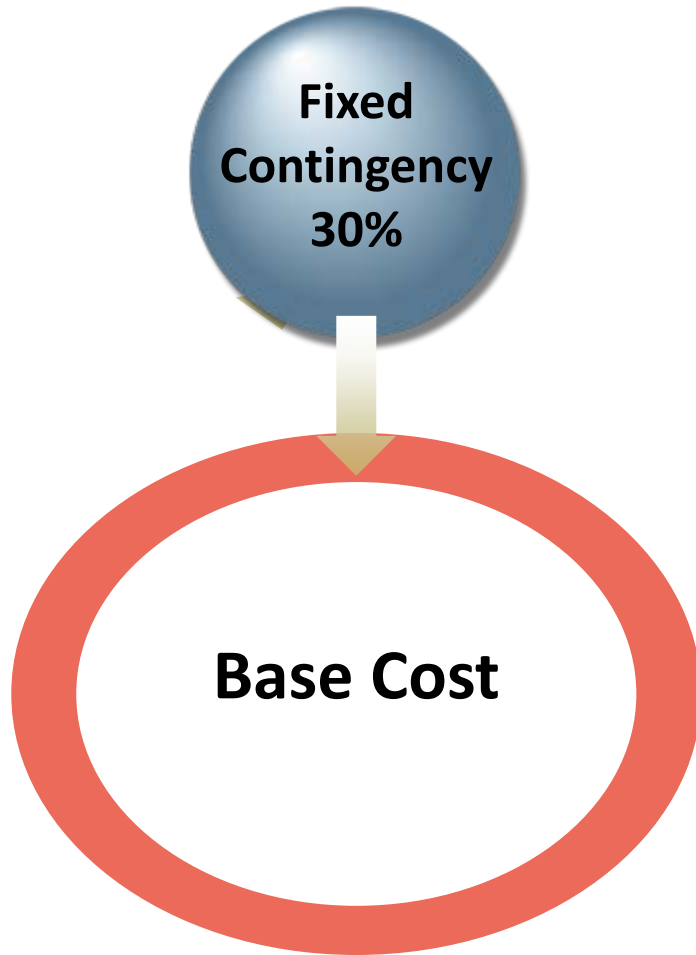
- Standard construction cost estimate has line items plus percentages for **contingencies** (unknowns)
- Cost-risk analysis replaces the general contingencies with specific **risk items and probabilities**



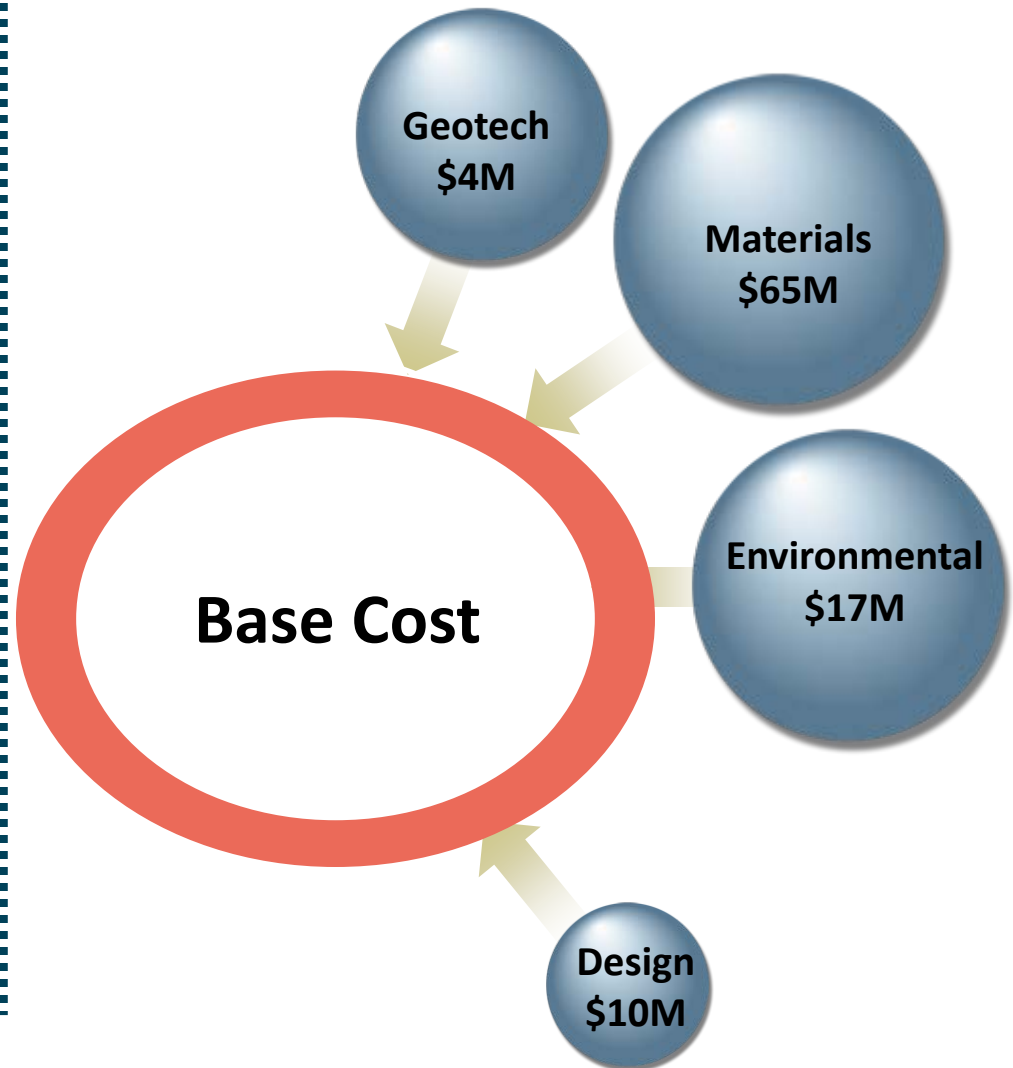


# Estimation Approaches

## Traditional



## Risk-Based

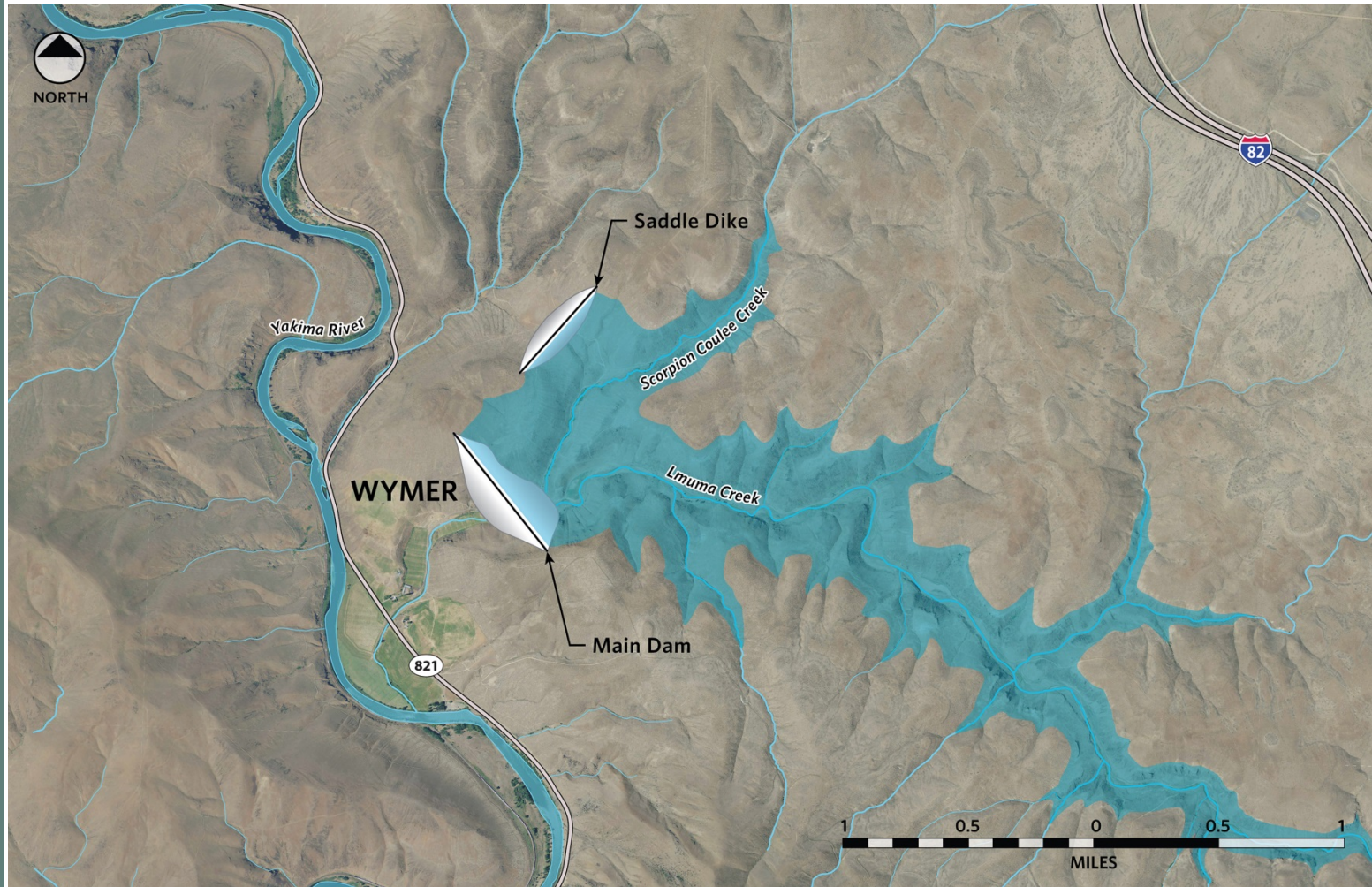


# Workshop Held October 2014

- Reviewed findings from Wymer Reservoir site exploration in 2014
- Considered:
  - Alternate designs and dam materials
  - Alternate reservoir sizes/siting

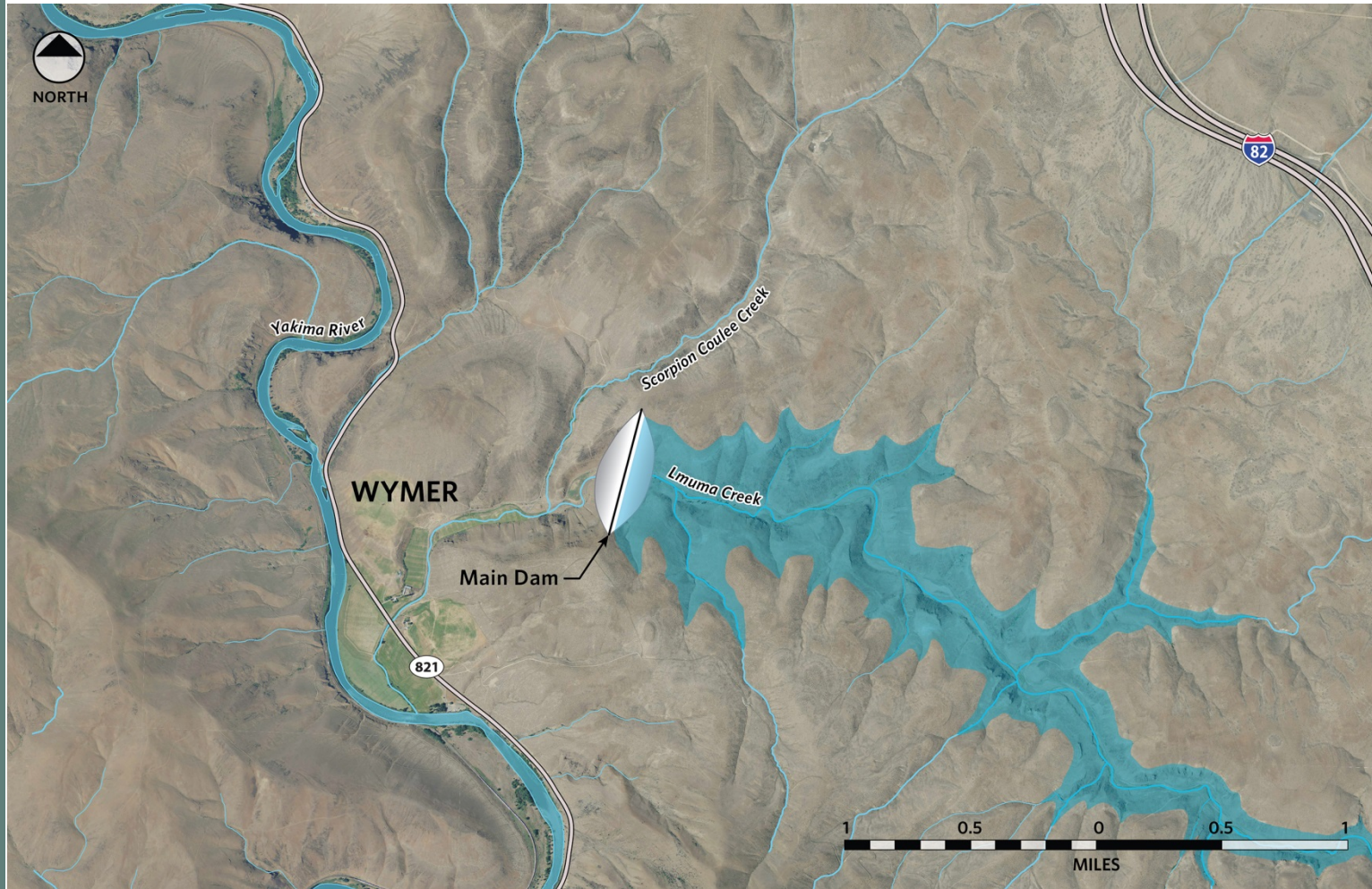


# Reservoir Site at 162,500 Acre-Feet





# Reservoir Site at 110,000 Acre-Feet



# Wymer Cost-Risk Analysis

- Identified events that could raise or lower costs; and the probability each one will occur
- Identified mitigation actions for each risk
- Generated new estimates incorporating risks and risk-mitigation

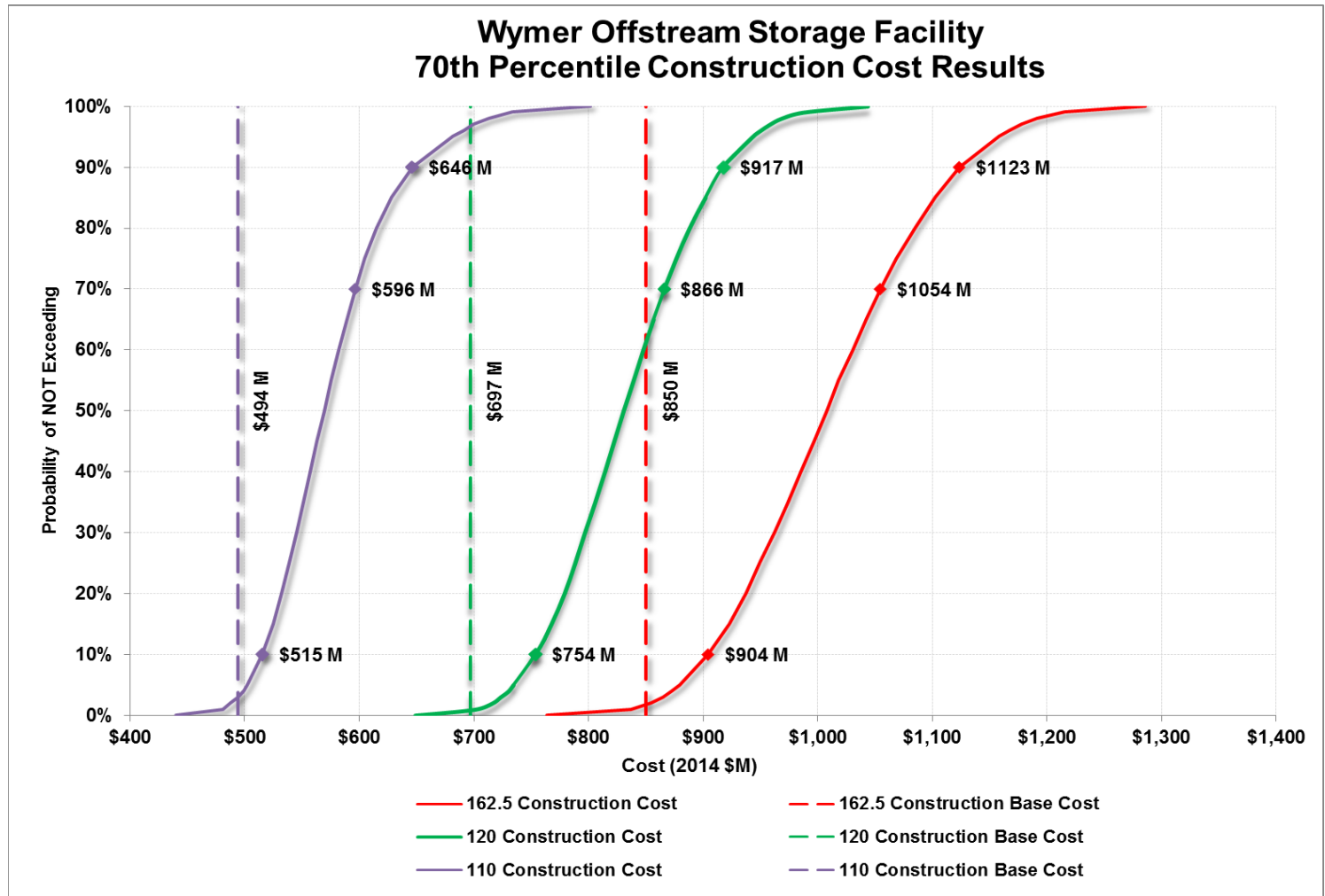


# Cost Range for Three Alternatives

Capacity (acre- feet)	10th Percentile (\$M)	70th Percentile (\$M)	90th Percentile (\$M)
163,000	\$986	<b>\$1,136</b>	\$1,206
120,000	\$821	<b>\$932</b>	\$983
110,000	\$565	<b>\$647</b>	\$697



# Cost Ranges for Three Alternatives



# How Will this be Used?

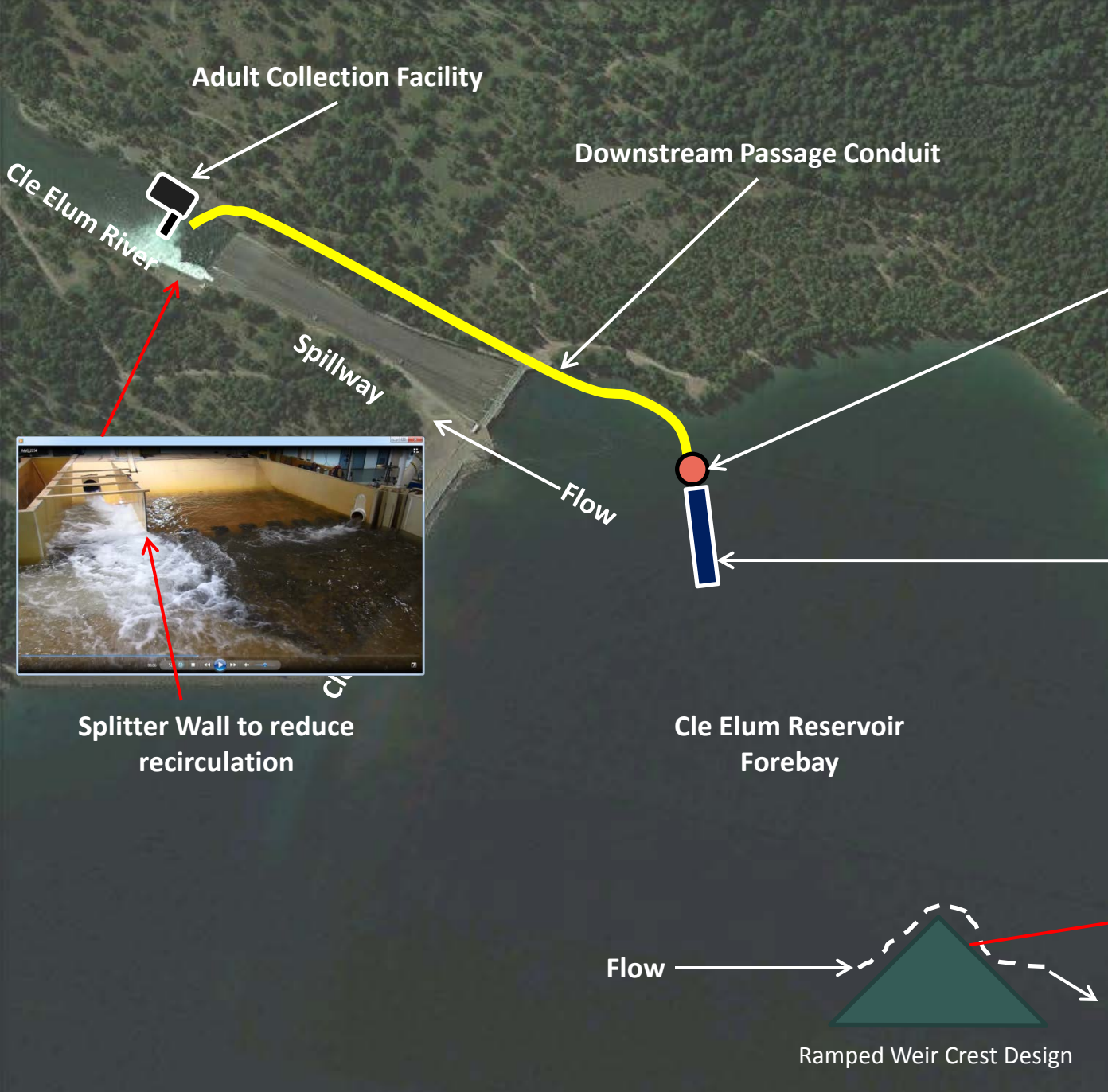
- If a feasibility study on Wymer is done, use list of construction risk items and risk-mitigation to refine cost estimates
- Perform more detailed analysis of items that can swing cost the most
- Update cost ranges periodically as major new information is developed



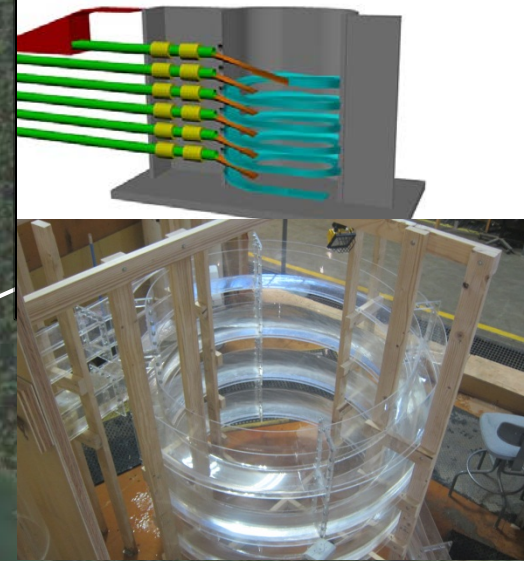


# Cle Elum Dam Fish Passage Facilities

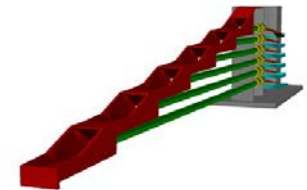




Helix Conduit Structure



Inlet Ramp





# Cle Elum Dam Fish Passage - Road System

Yakima River Basin Water Resource Management Plan



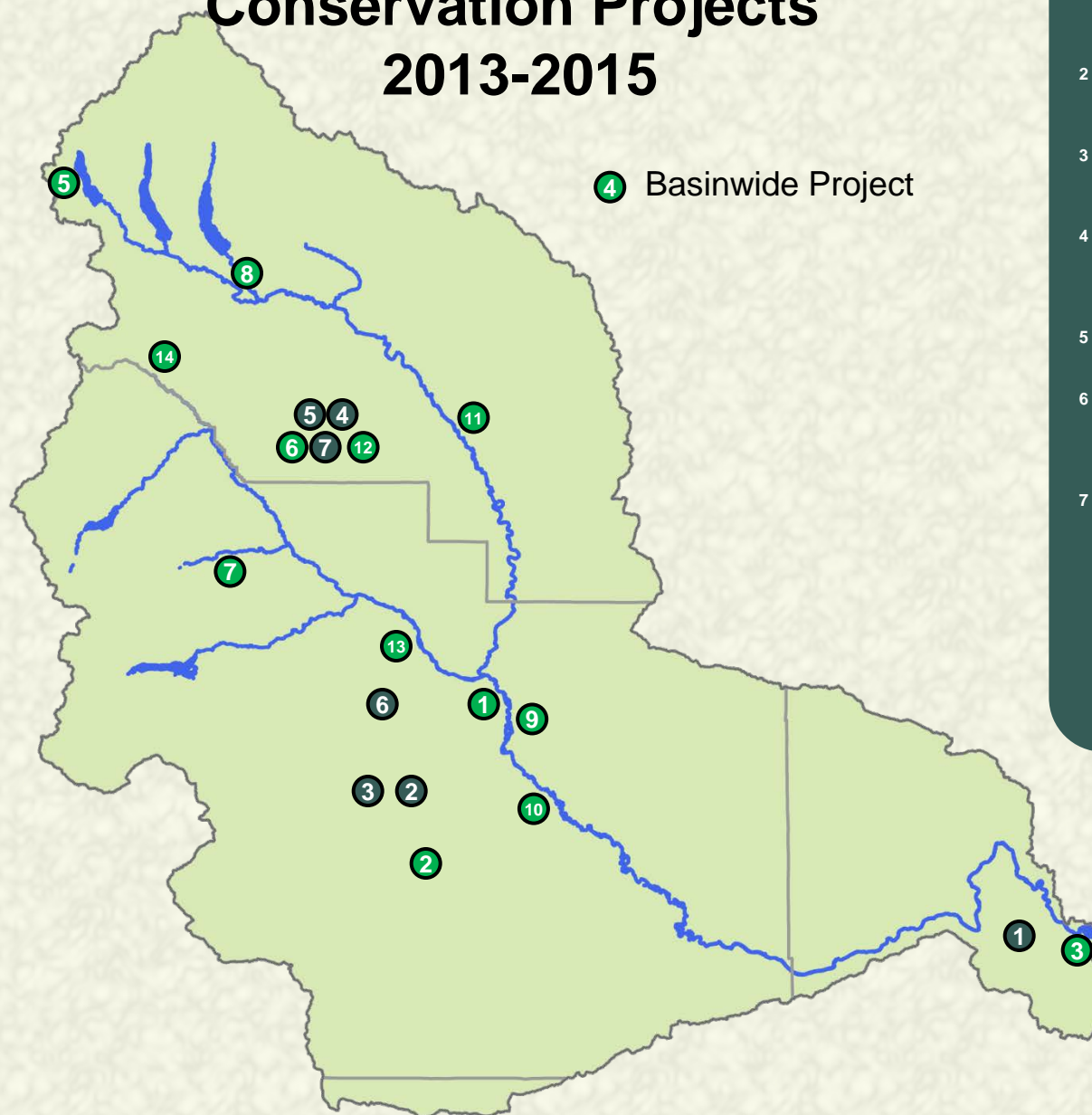
# Habitat Enhancement and Agricultural Conservation Project Implementation



## Habitat Enhancement Projects

- 1 Gap-to-Gap Outfall Relocation
- 2 Toppenish Fan
- 3 Bateman Island Causeway Modification Conceptual Design
- 4 Bull Trout Task Force Habitat Improvements
- 5 Gold Creek Habitat Assessment and Conceptual Design
- 6 Reed Diversion Removal
- 7 Little Rattlesnake Road Decommissioning
- 8 Cle Elum River Side Channel Restoration Project, Phase 2
- 9 Gap-to-Gap Property Acquisitions
- 10 Upper Wapato Riparian Restoration
- 11 Ellensburg Water Company / Coleman Creek Restoration
- 12 Reed Diversion Barrier Removal
- 13 Trout Meadows Acquisition / Enhancement
- 14 Plum Creek / Little Naches Land Acquisition

# Yakima Integrated Plan Habitat Enhancement and Agricultural Conservation Projects 2013-2015



4 Basinwide Project

## Agricultural Conservation Projects

- 1 Kennewick Irrigation District (KID) Division IV Lining
- 2 Wapato Irrigation Project (WIP) Piping Lateral 4-414C
- 3 Wapato Irrigation Project Piping Satus East Lateral E73
- 4 Manastash Creek, Anderson Diversion Irrigation Water Acquisition
- 5 Manastash Creek Sprinkler Conversions
- 6 Yakima-Tieton Irrigation District (YTID) Feasibility Study – Tieton to Ahtanum Exchange
- 7 Manastash – Consolidated Pipeline & Manastash Water Ditch Association (MWDA) Pipeline Construction



# Habitat Enhancement – City of Yakima: Gap-to-Gap Outfall Relocation

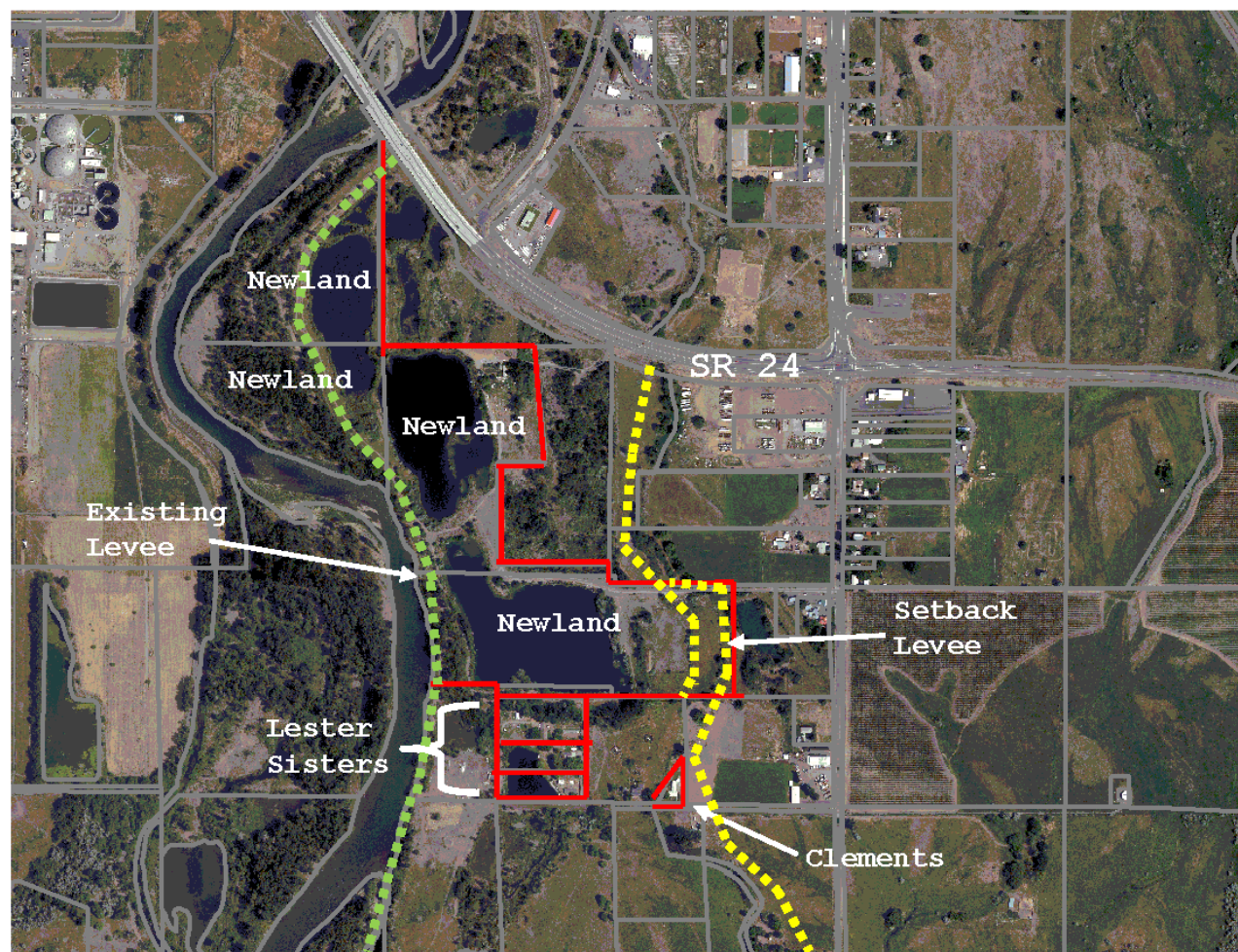


Installation of 42-inch outfall pipe has been installed except for the furthest upstream lining to the diversion dam





# Habitat Enhancement – Yakima County: Gap-to-Gap Property Acquisitions



Currently in negotiations, waiting for appraisal





# Habitat Enhancement – Kittitas County Conservation District: Manastash Consolidated Pipeline & Manastash Water Ditch Association Pipeline



Final completion for the pipeline project has been requested by the contractor





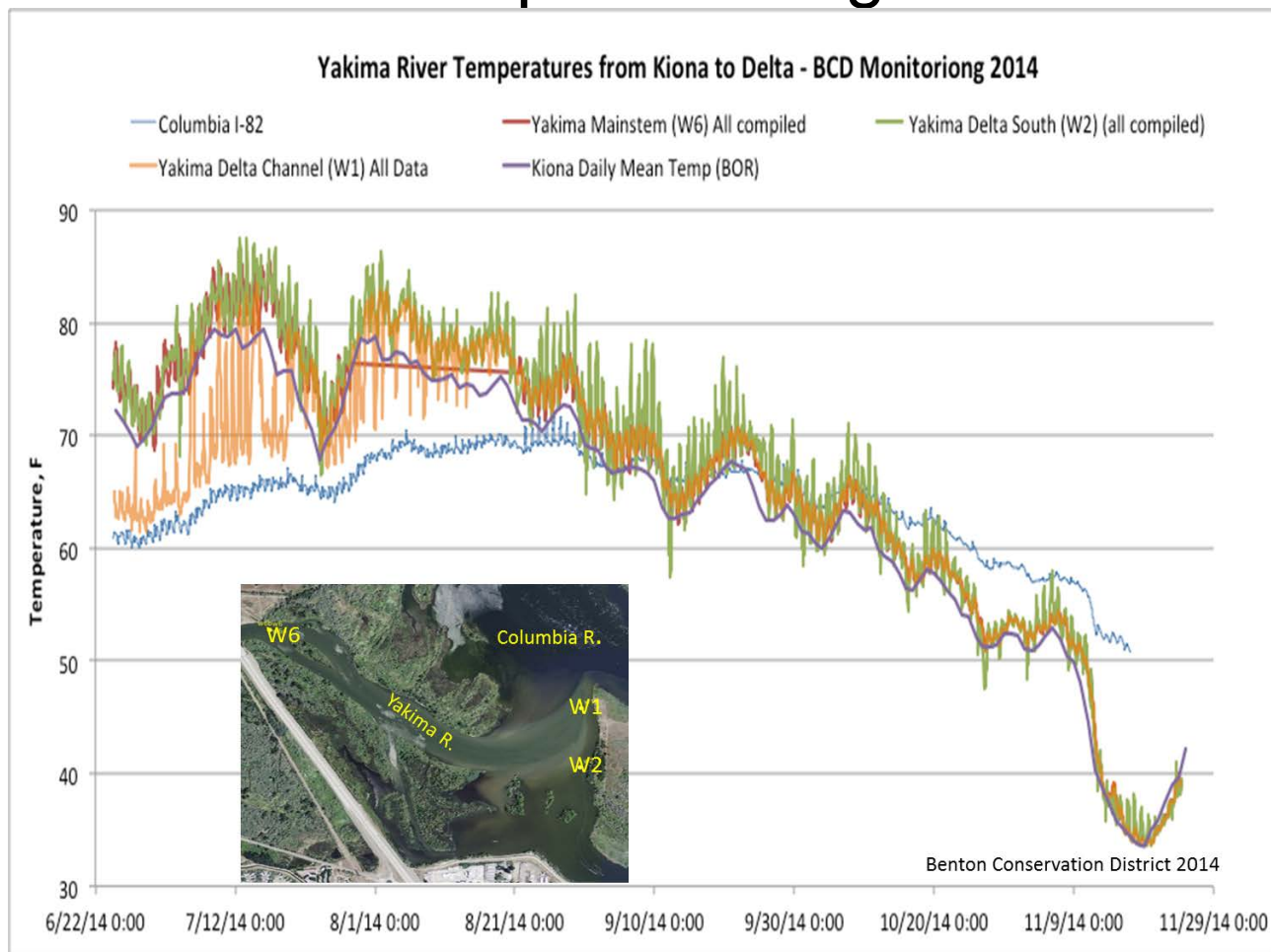
# Habitat Enhancement – Yakama Nation: Toppenish Fan Recharge



Foundation is being prepared for the Toppenish Fan  
Recharge facility



# Habitat Enhancement – Mid-Columbia Fisheries Enhancement Group: Bateman Island Causeway Modification Conceptual Design



Preliminary temperature results used to calibrate a model of flow and temperature in the Delta area





# Habitat Enhancement – Kittitas Conservation Trust: Cle Elum River Side-Channel Restoration Project



# Habitat Enhancement – Kittitas County Conservation District: Ellensburg Water Company / Coleman Creek Restoration

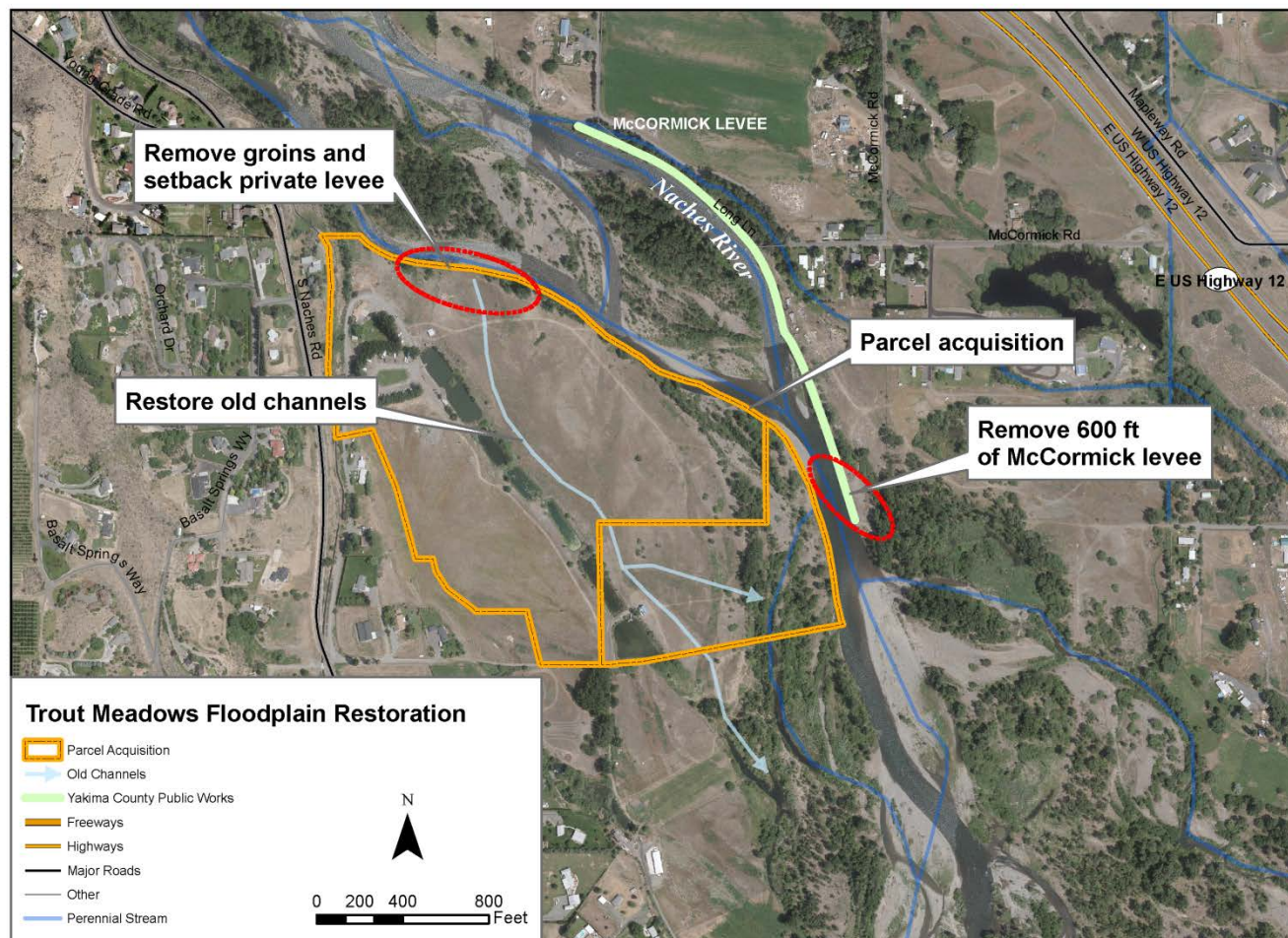


Design is complete, scheduled for construction  
Fall/Winter 2015-16





# Habitat Enhancement – City of Yakima: Trout Meadows



Close to finalizing acquisition process





# Habitat Enhancement – Mid-Columbia Fisheries Enhancement Group: Bull Trout Task Force

## Habitat Improvements



Removal of Dam



Spawning Survey





# Habitat Enhancement – Kittitas Conservation Trust: Gold Creek Project



2<sup>nd</sup> year of hydrologic monitoring completed.





# Agricultural Conservation – Kennewick Irrigation District: Division IV Lining



Access road construction & Canal shaping is  
Currently in progress





# Agricultural Conservation – Yakama Nation Wapato Irrigation Project Lateral 4-414C



Post construction photo of Lateral 4-414C Pipeline



# Agricultural Conservation – Kittitas County Conservation District: Manastash Creek Anderson Diversion Irrigation Water Acquisition



KCCD continues to work with Trout Unlimited. Initial contact has been made with the water right holders.





# Agricultural Conservation – Kittitas County Conservation Group: Manastash Creek Sprinkler Conversion



Project will be completed and tested prior to the 2015 irrigation season

