

Yakima Basin Integrated Plan Surface Water Storage Element

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Yakima Integrated Plan Overview

YAKIMA RIVER BASIN INTEGRATED WATER RESOURCE MANAGEMENT PLAN

Structural & Operational Changes

1. Raise the Cle Elum Pool by three feet to add 14,600 ac-ft in storage capacity.
2. Modify Kittitas Reclamation District canals to provide efficiency savings.
3. Construct a pipeline from Lake Keechelus to Lake Kachess to reduce flows and improve habitat conditions during high flow releases below Keechelus and to provide more water storage in Lake Kachess for downstream needs.
4. Decrease power generation at Roza Dam and Chandler power plant to support outmigration of juvenile fish.
5. Make efficiency improvements to the Wapatox Canal.

Enhanced Water Conservation

1. Implement an agricultural water conservation program designed to conserve up to 170,000 acre-feet of water in good water years.
2. Create a fund to promote water use efficiency basin-wide using voluntary, incentive-based programs. Focus on outdoor uses as top priority.

Habitat/Watershed Protection & Enhancement

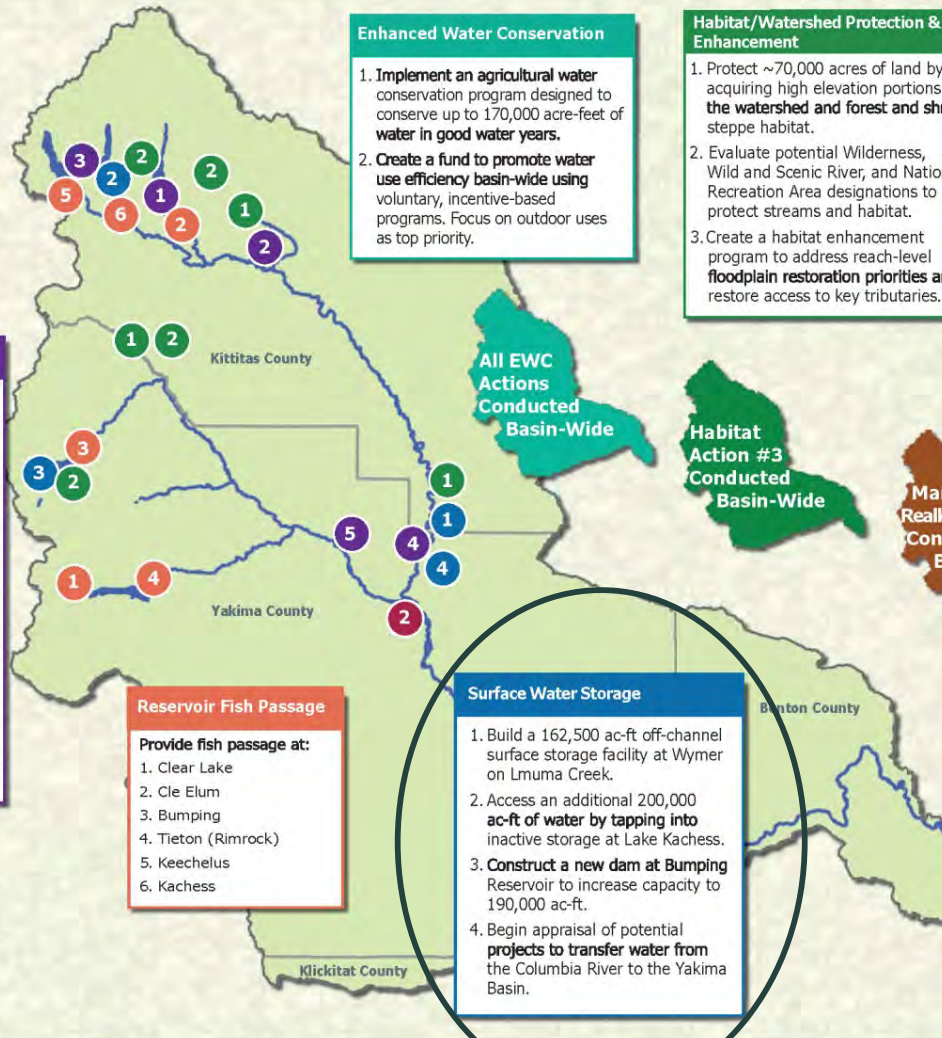
1. Protect ~70,000 acres of land by acquiring high elevation portions of the watershed and forest and shrub steppe habitat.
2. Evaluate potential Wilderness, Wild and Scenic River, and National Recreation Area designations to protect streams and habitat.
3. Create a habitat enhancement program to address reach-level floodplain restoration priorities and restore access to key tributaries.

Market Reallocation

Employ a water market and/or a water bank to improve water supply in the Yakima River basin. Market reallocation would be conducted in two phases:

The near-term phase would continue existing water marketing and banking programs in the basin, but take additional steps to reduce barriers to water transfers.

The long-term program would focus on facilitating water transfers between irrigation districts. This would allow an irrigation district to fallow land within the district and lease water rights for that land outside the district.



Reservoir Fish Passage

Provide fish passage at:

1. Clear Lake
2. Cle Elum
3. Bumping
4. Tieton (Rimrock)
5. Keechelus
6. Kachess

Surface Water Storage

1. Build a 162,500 ac-ft off-channel surface storage facility at Wymer on Lmuma Creek.
2. Access an additional 200,000 ac-ft of water by tapping into inactive storage at Lake Kachess.
3. Construct a new dam at Bumping Reservoir to increase capacity to 190,000 ac-ft.
4. Begin appraisal of potential projects to transfer water from the Columbia River to the Yakima Basin.

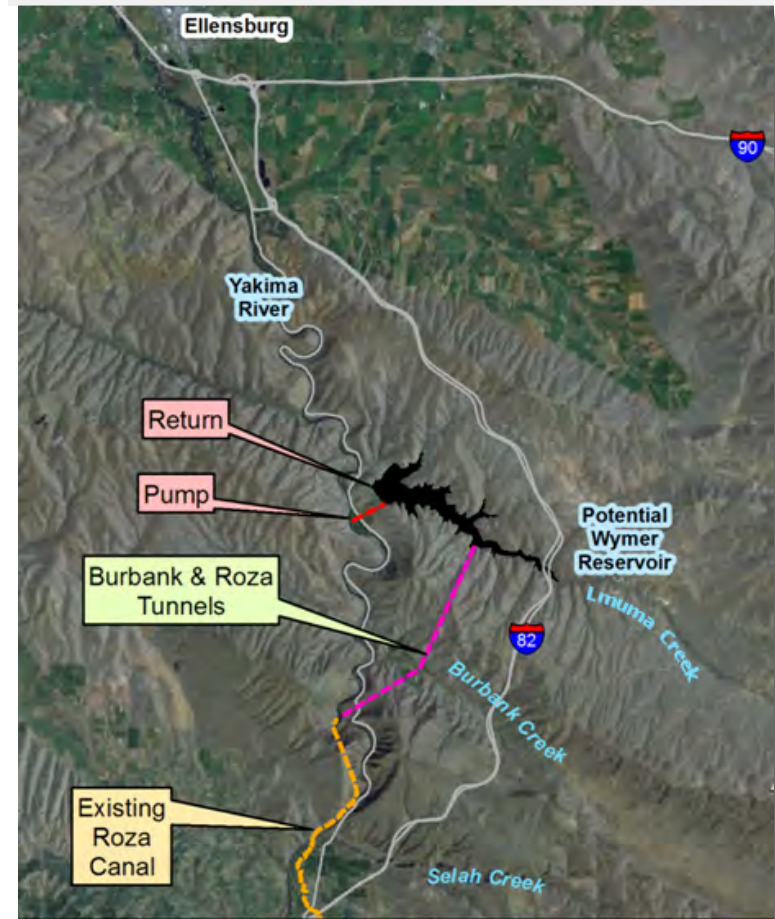
Groundwater Storage

1. Construct pilot projects to evaluate recharging shallow aquifers via groundwater infiltration. Full scale implementation may follow.
2. Build an aquifer storage and recovery facility allowing Yakima City to withdraw water from the Naches River during high flow periods and store it underground for use during low flow periods.

Surface Water Storage Element

- **Kachess Drought Relief Pumping Plant**
 - Existing Reservoir:
Access up to 200,000 acre-feet from inactive storage in drought years
- **Wymer Dam & Reservoir**
 - New off-channel reservoir, 163,000 acre-feet
- **Bumping Dam & Reservoir Enlargement**
 - Replace existing dam to add 165,000 acre-feet

Proposed Wymer Reservoir

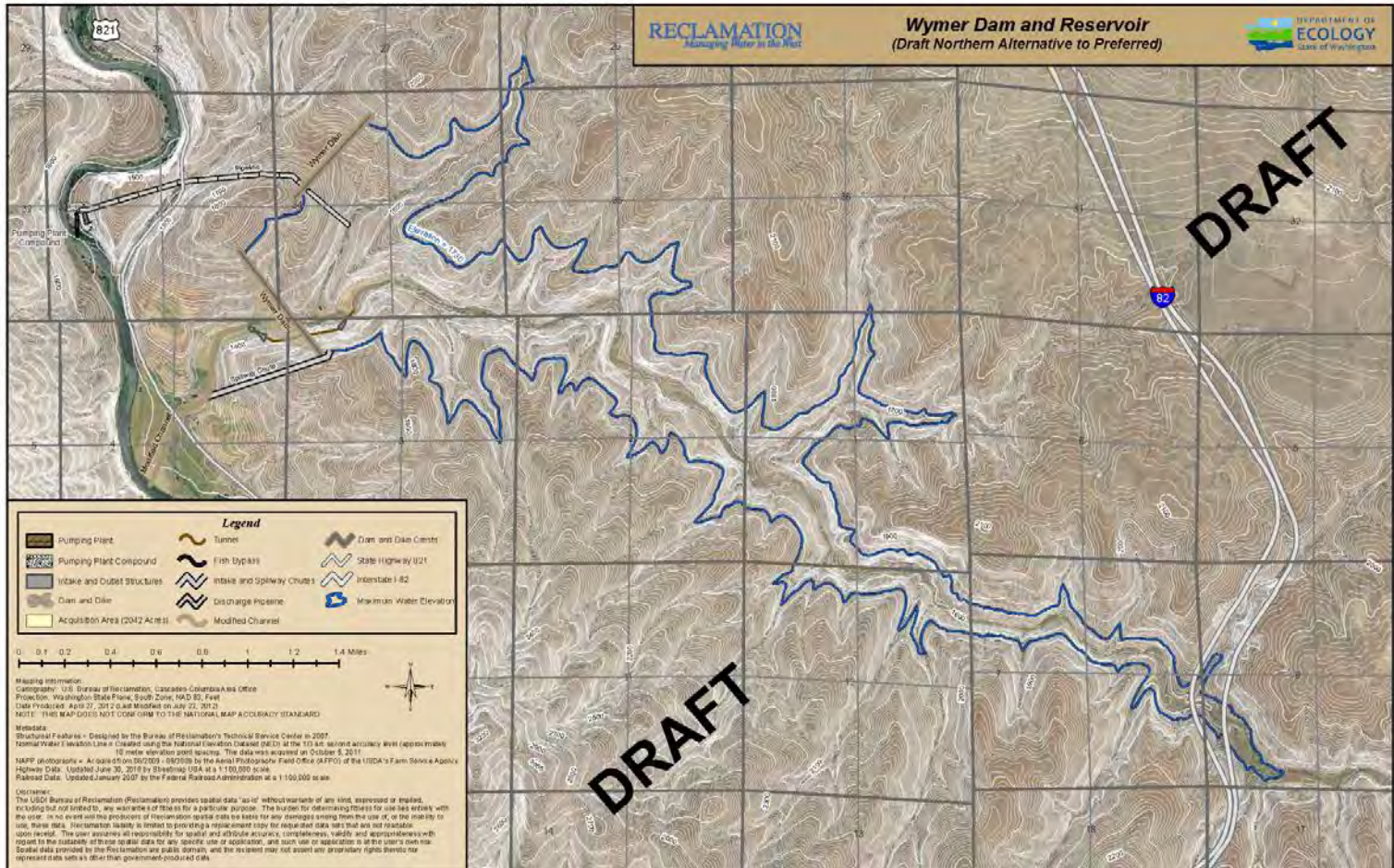


What about Wymer and Bumping?

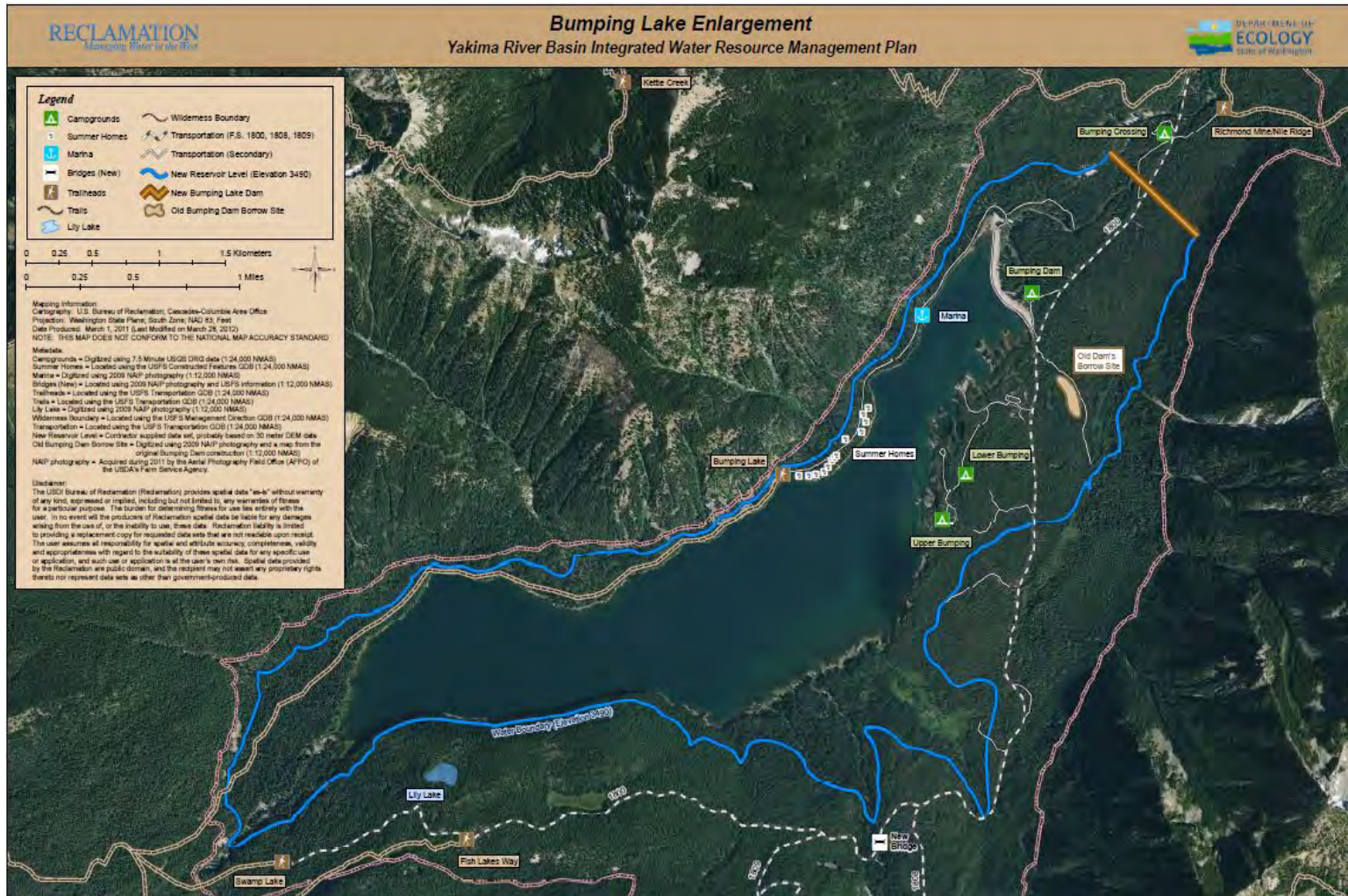
- **Not included in the Initial Development Phase**
- **Ongoing Analysis:**
 - **Key Consideration Analysis - Engineering**
 - **Geologic Investigations**
 - **Seismic Evaluation**
 - **State and Federal Endangered Species Surveys**
- **Next steps**
 - **Decision which project to advance first**
 - **Feasibility Study**
 - **Environmental Compliance**
 - **Authorization/Appropriations**



Wymer Dam & Reservoir



Bumping Dam & Reservoir Enlargement



Yakima River Basin Water Resource Management Act – SSSB 5367

Water supply provisions

- Water supplies developed through storage allocated for both instream and out-of-stream use
- “Water Supply Facility Permit and Funding Milestone” – Permitting and funding must be in place for one or more water supply facilities to provide at least 214,000 ac-ft of water supply by January 30, 2025
- If Milestone is not met, Teanaway Valley Acquisition may be transferred from Community Forest Trust to Common School Trust

Kachess Drought Relief Pumping Plant & Keechelus-to-Kachess Conveyance Locations

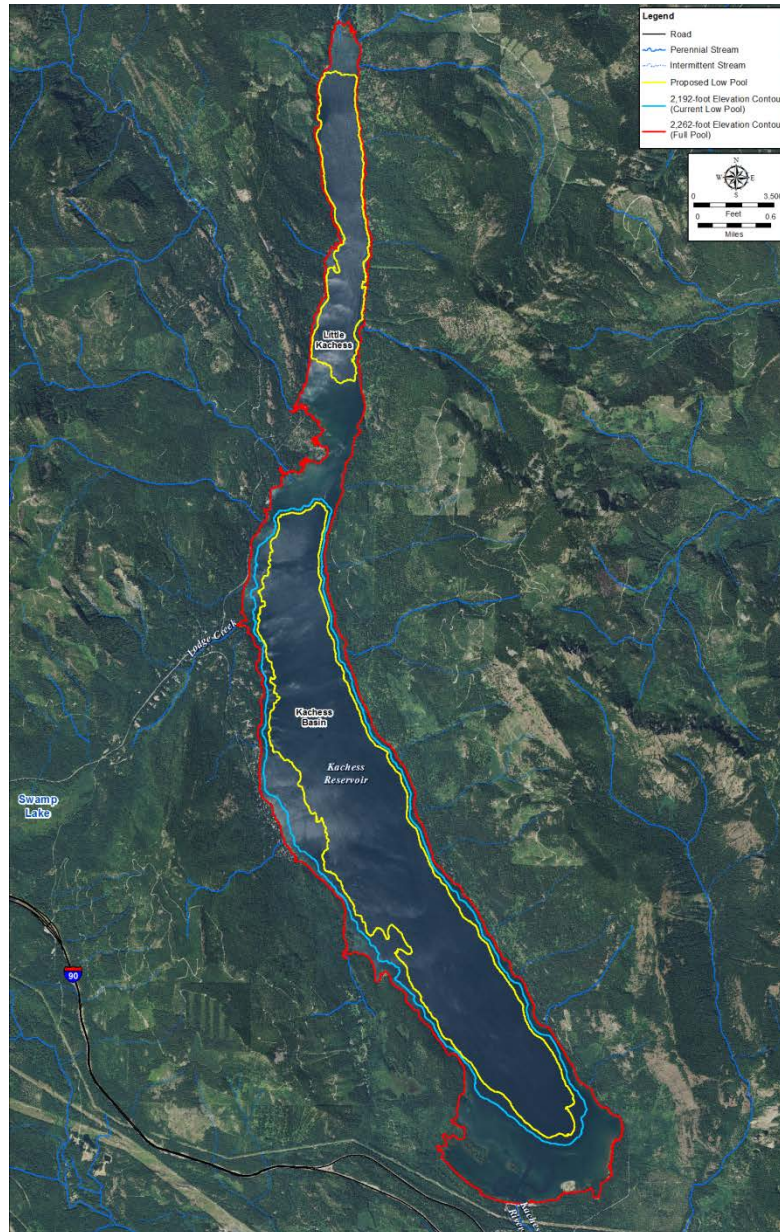
RECLAMATION
Managing Water in the West

Kachess Drought Relief Pumping Plant and
Keechelus to Kachess Conveyance Project Locations

DEPARTMENT OF
ECOLOGY
State of Washington



Kachess Drought Relief Pumping Plant



Surface Area:
Up to 20% less surface area than existing minimum pool

Additional Water Supply:
Up to 200,000 acre-ft for use in drought years



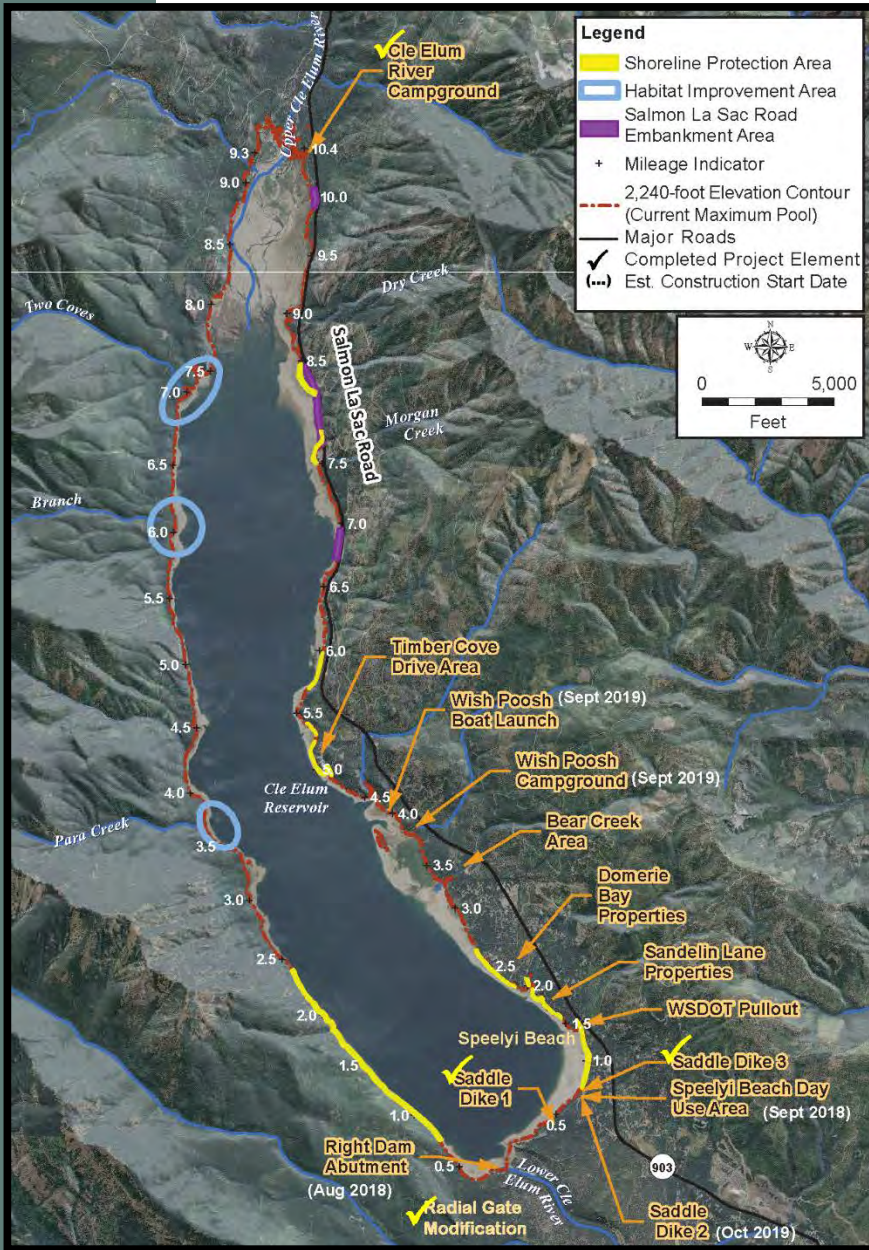
Kachess Drought Relief Pumping Plant Floating Pumping Plant Alternative



Cle Elum Pool Raise Update

14,600 acre-feet for Yakima River instream flows

- Modify radial gates
- Shoreline protection
- Land acquisition



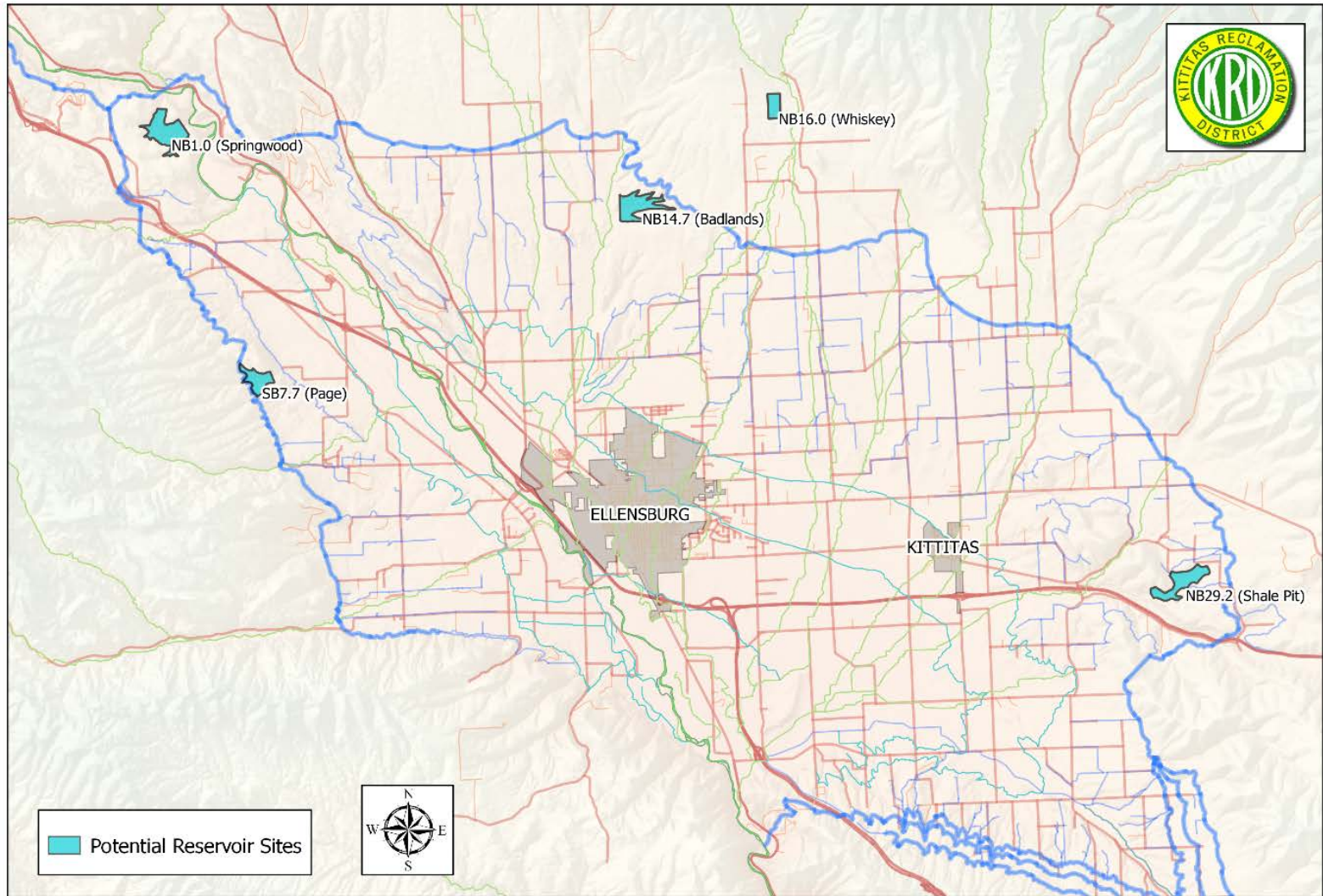
Kittitas Reclamation District

Upper Yakima System Storage Update

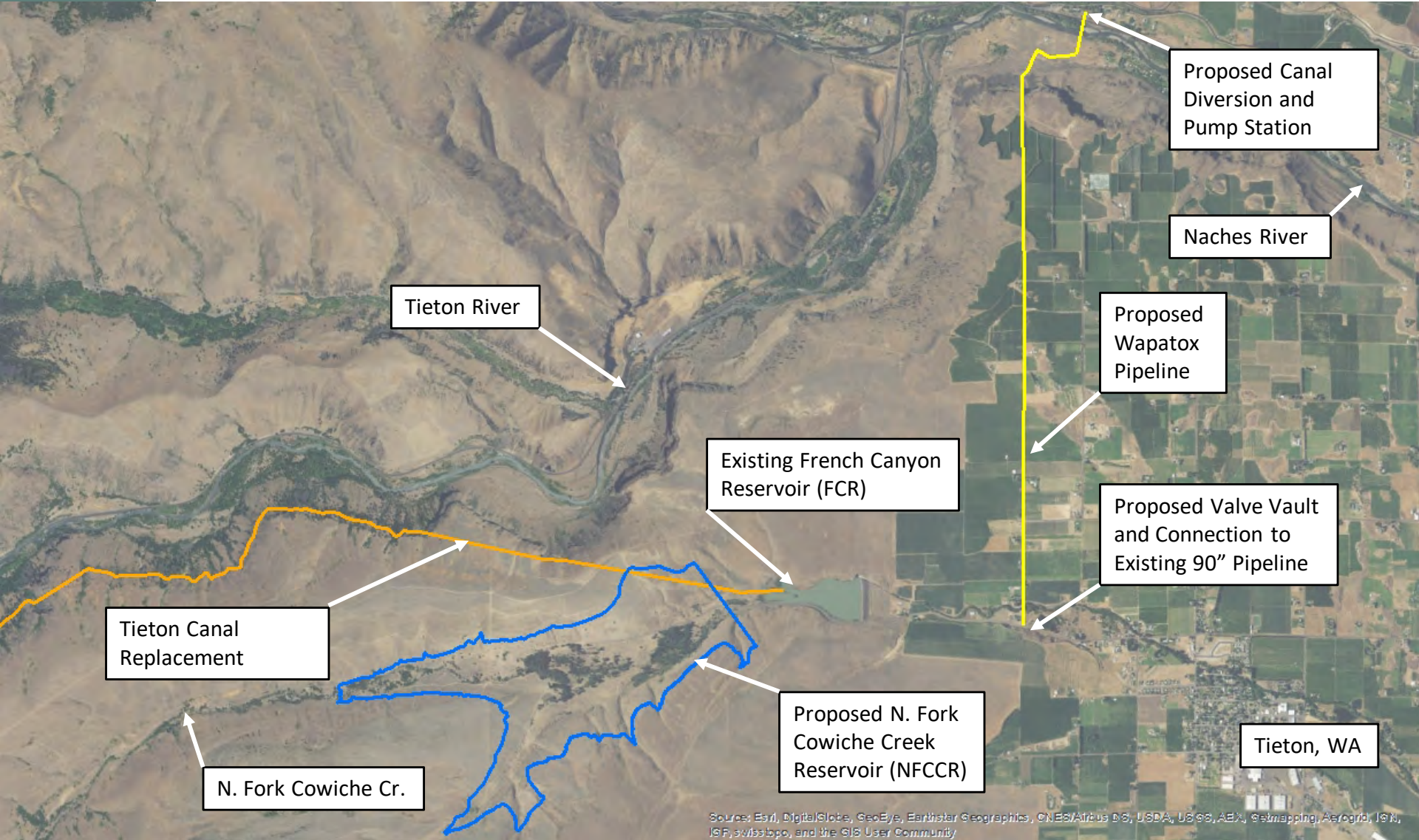
- Reclamation and Ecology 50/50 cost sharing and partnering with KRD.
 - 2 year study for storage facility feasibility in 2018
 - Five potential sites to be evaluated, focused on one site.
 - Gravity fed from KRD's North or South Branch Canals during off season irrigation.
 - Gravity fed into the Yakima River or Tributary for shaping flows for fish and proratable irrigations district during periods of drought



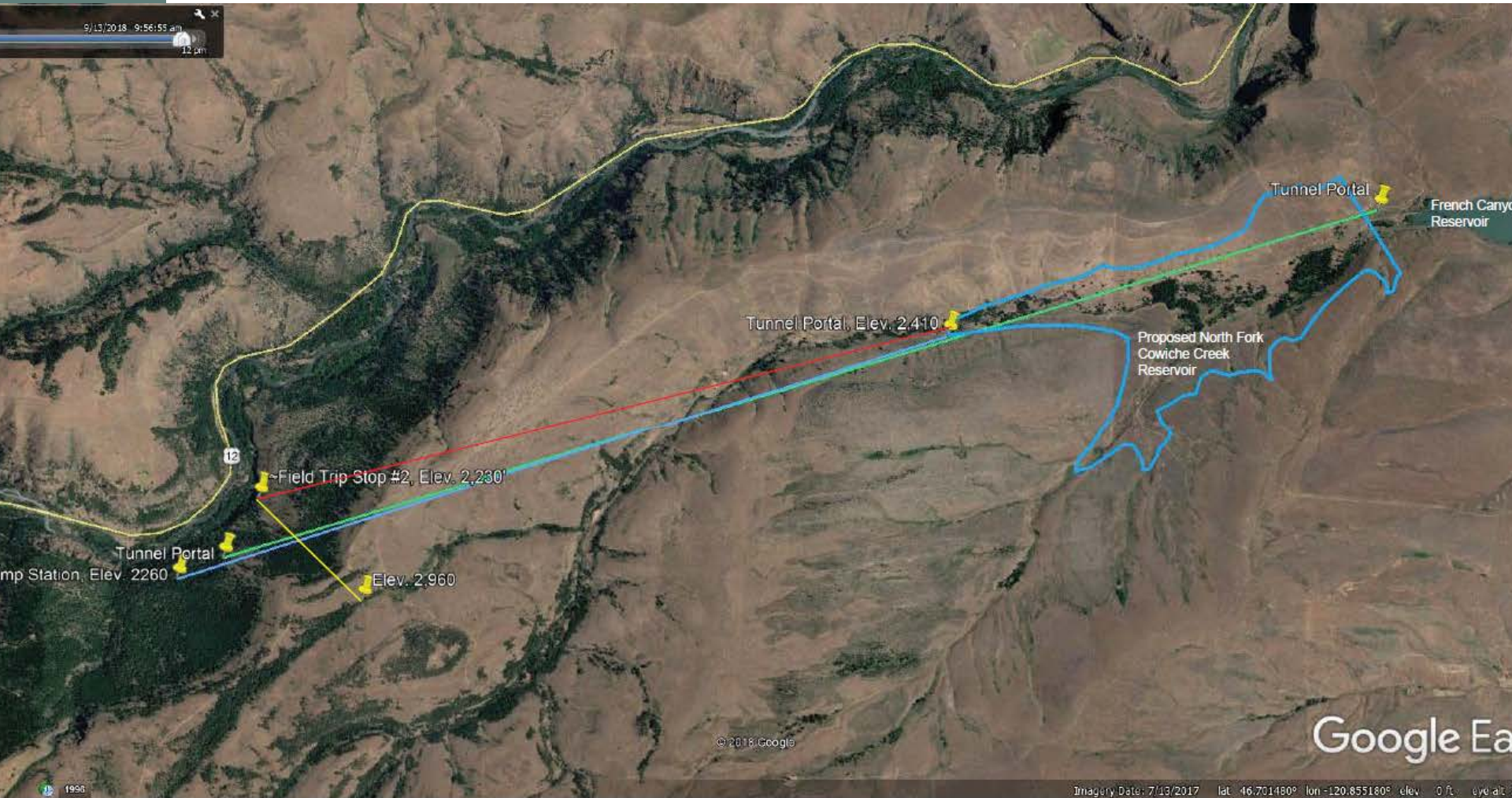
KRD UYSS - Five Potential Sites



Yakima-Tieton Irrigation District Project Alternatives



YTID - Tunnel Options

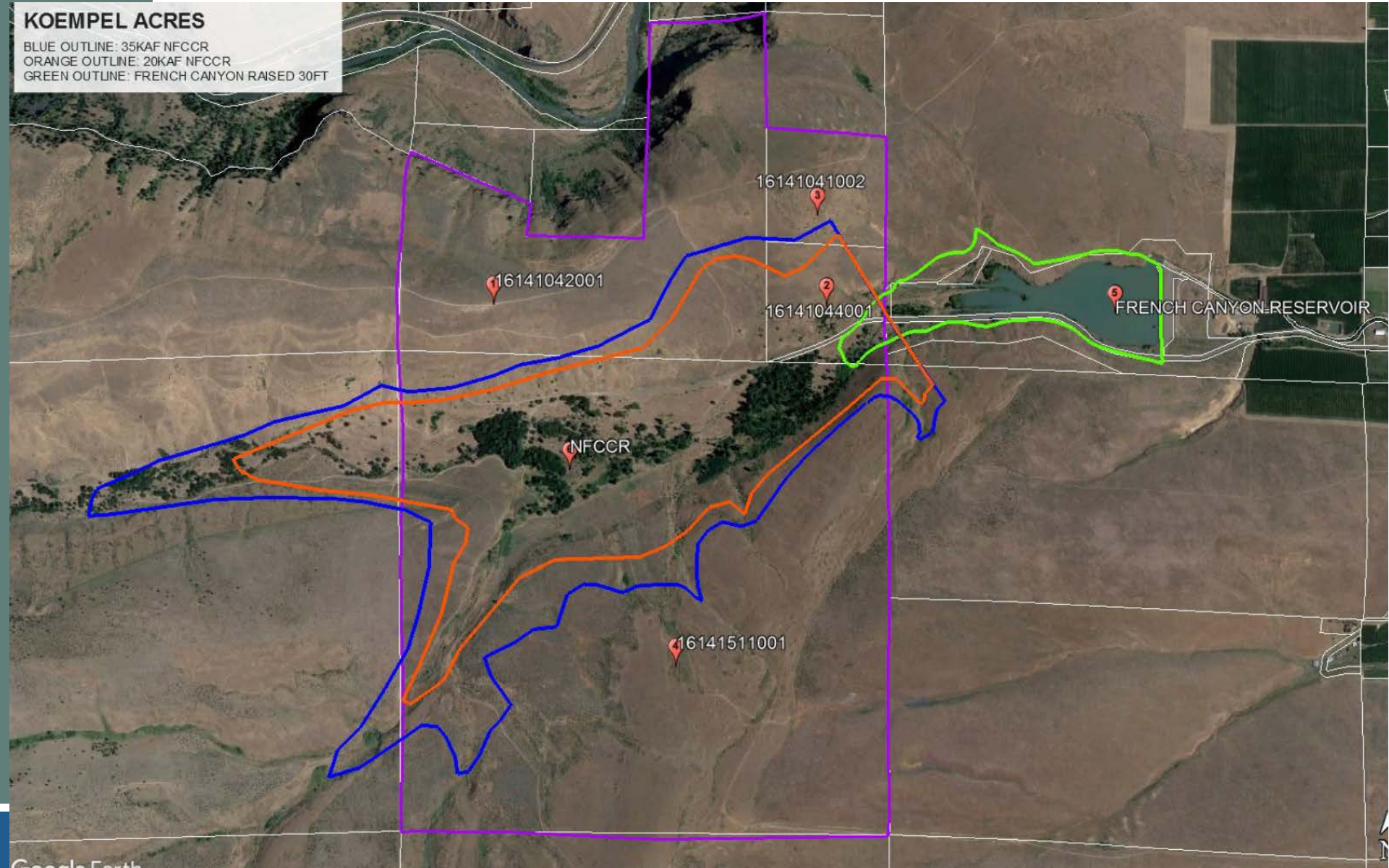


- YTID Preliminary Tunnel Alignments
- Red line = 14,600' tunnel w/ 170' lift
 - Yellow line = 3,000' tunnel w/ 730' lift
 - Green line = 25,000' tunnel
 - Blue line = 16,720' tunnel

YTID - Reservoir Options

KOEMPEL ACRES

BLUE OUTLINE: 35KAF NFCCR
ORANGE OUTLINE: 20KAF NFCCR
GREEN OUTLINE: FRENCH CANYON RAISED 30FT



Questions



For further information on the web:

<http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/>

<http://www.ecy.wa.gov/programs/wr/cwp/YBIP.html>

