

Yolo Bypass Salmonid Habitat Restoration & Fish Passage

Environmental Impact Statement
Environmental Impact Report

June 29, 2017



State of California
Department of Water Resources



U.S. Department of the Interior
Bureau of Reclamation

Background

2009 National Marine Fisheries Service Biological Opinion on State Water Project and Central Valley Project Operations

- Concluded project operations were likely to jeopardize continued existence of endangered and threatened fish species (e.g. winter-run Chinook Salmon)
- Required 73 habitat restoration actions – to allow the CVP and SWP to continue operating and avoid jeopardy to the species.
- Five actions are specific to Yolo Bypass.

Background

2009 National Marine Fisheries Service Biological Opinion on State Water Project and Central Valley Project Operations

- This EIS/EIR focuses on two of the Yolo Bypass actions:
 - Action I.6.1 - Increase seasonal floodplain inundation in the lower Sacramento River Basin
 - Action I.7 - Improve fish passage throughout the Yolo Bypass

RPA I.6.1 & I.7 Biological Objectives

- Restore floodplain fisheries rearing habitat
- Reduce migratory delays and loss of fish at Fremont Weir and other structures in the Yolo Bypass



Some Work Being Accelerated

- These accelerated projects contribute to meeting objectives of Action I.7 (Adult Fish Passage)
 - Wallace Weir Fish Rescue Facility
 - Fremont Weir Adult Fish Passage Modification Project
 - Ag Crossing Replacement
 - Lisbon Weir



Project Evolution

Environmental Analysis Process



Permitting activities will begin in 2017 and continue after completion of the EIS/EIR process

Alternatives Development Process

- Developed a list of potential alternatives to address objectives
- Evaluated initial alternatives
- Narrowed alternatives for additional evaluation

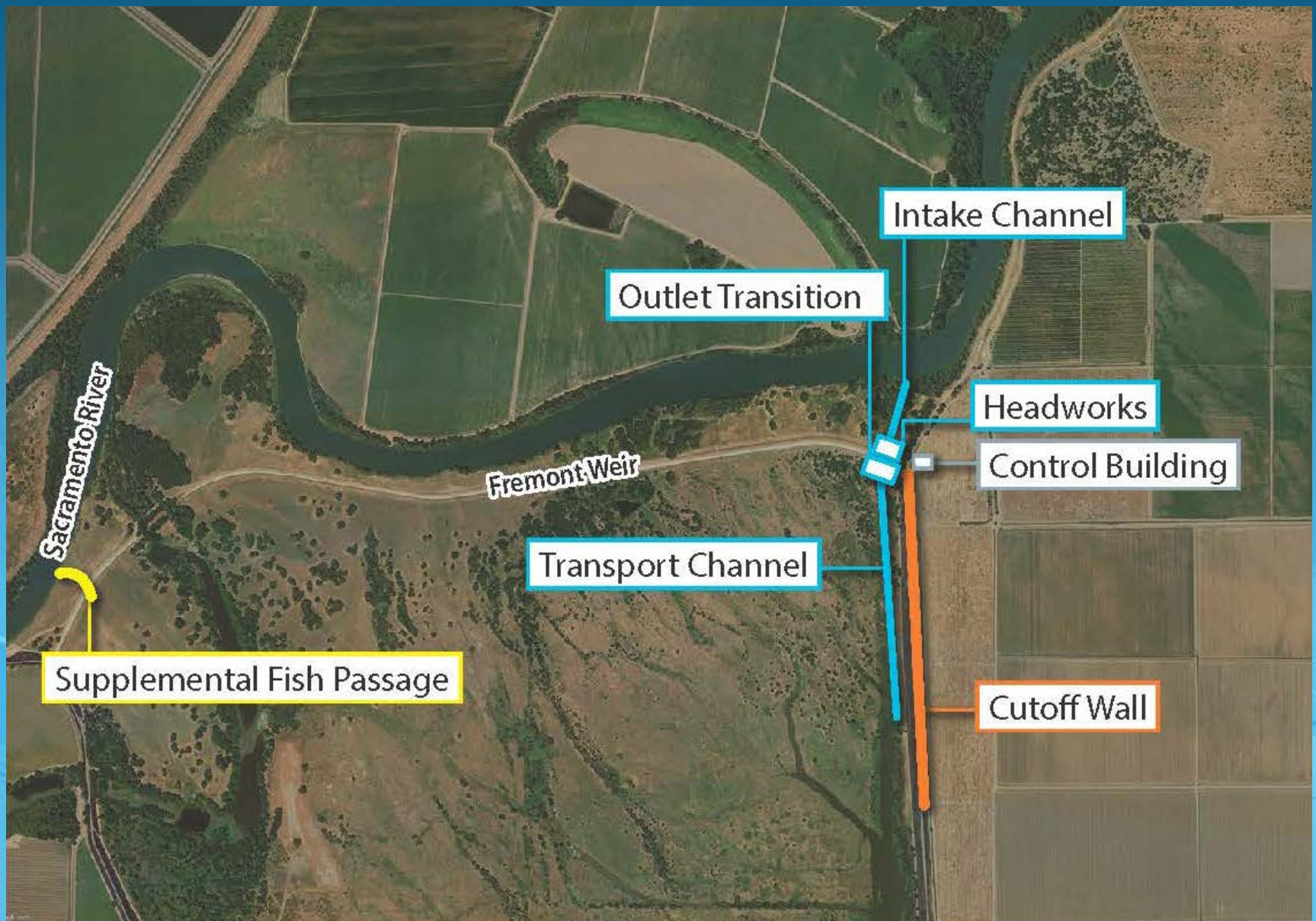
Project Overview

- **Seasonal floodplain habitat for juvenile salmonids**
- **Working with natural hydrograph**
- **Typically extending natural flood events by weeks**
 - Project would not inundate entire Bypass for the entire winter
- **Working with existing land uses in Bypass**
- **Improving fish passage for**
 - Winter-run Chinook Salmon
 - Spring-run Chinook Salmon
 - Central Valley Steelhead
 - Green Sturgeon

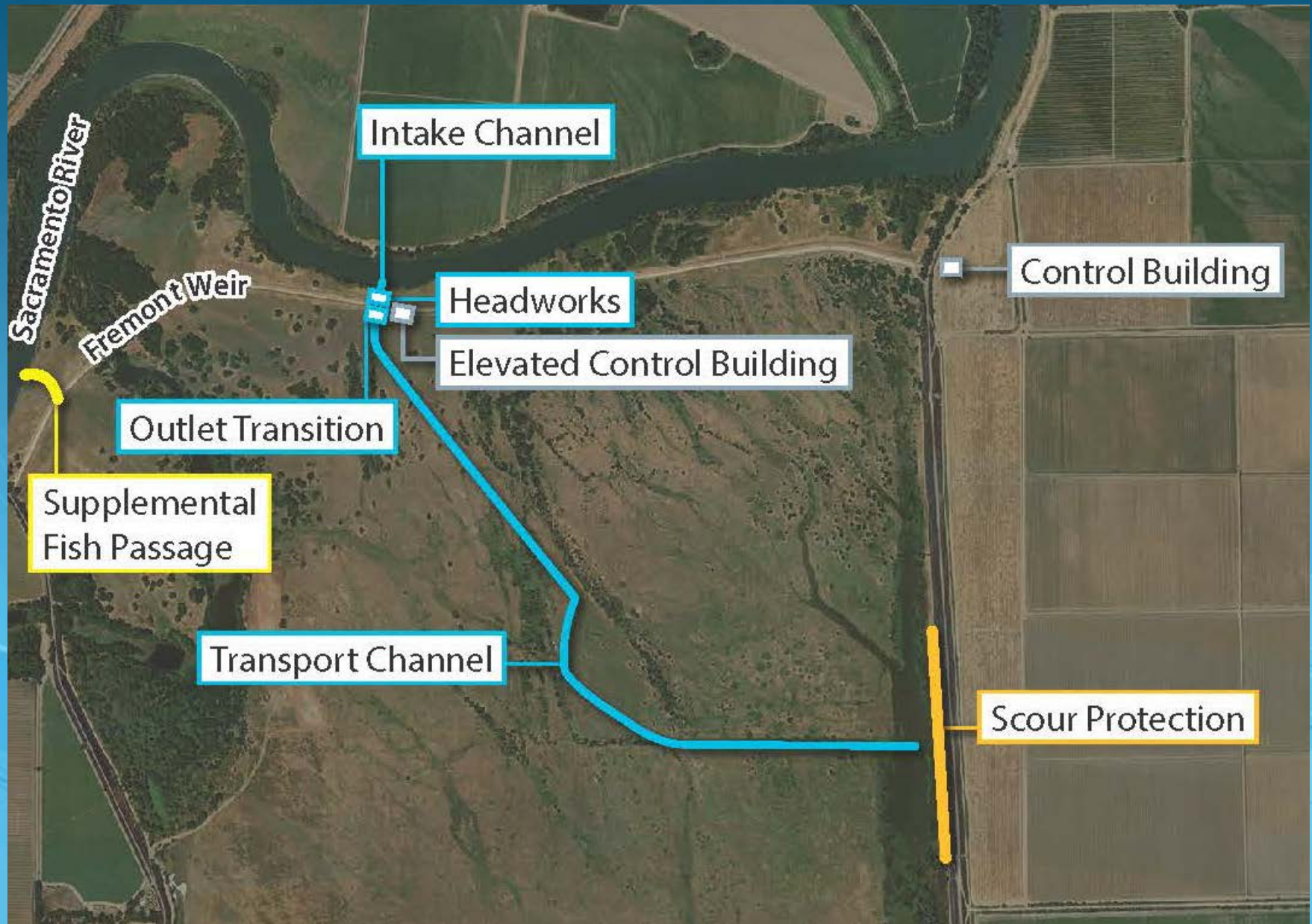
EIS/EIR Alternatives

- **Alternative 1 – East Side Gated Notch**
- **Alternative 2 – Central Gated Notch**
- **Alternative 3 – West Side Gated Notch**
- **Alternative 4 – Managed Flow**
- **Alternative 5 – Multiple Gates**
- **Alternative 6 – Large Gated Notch**

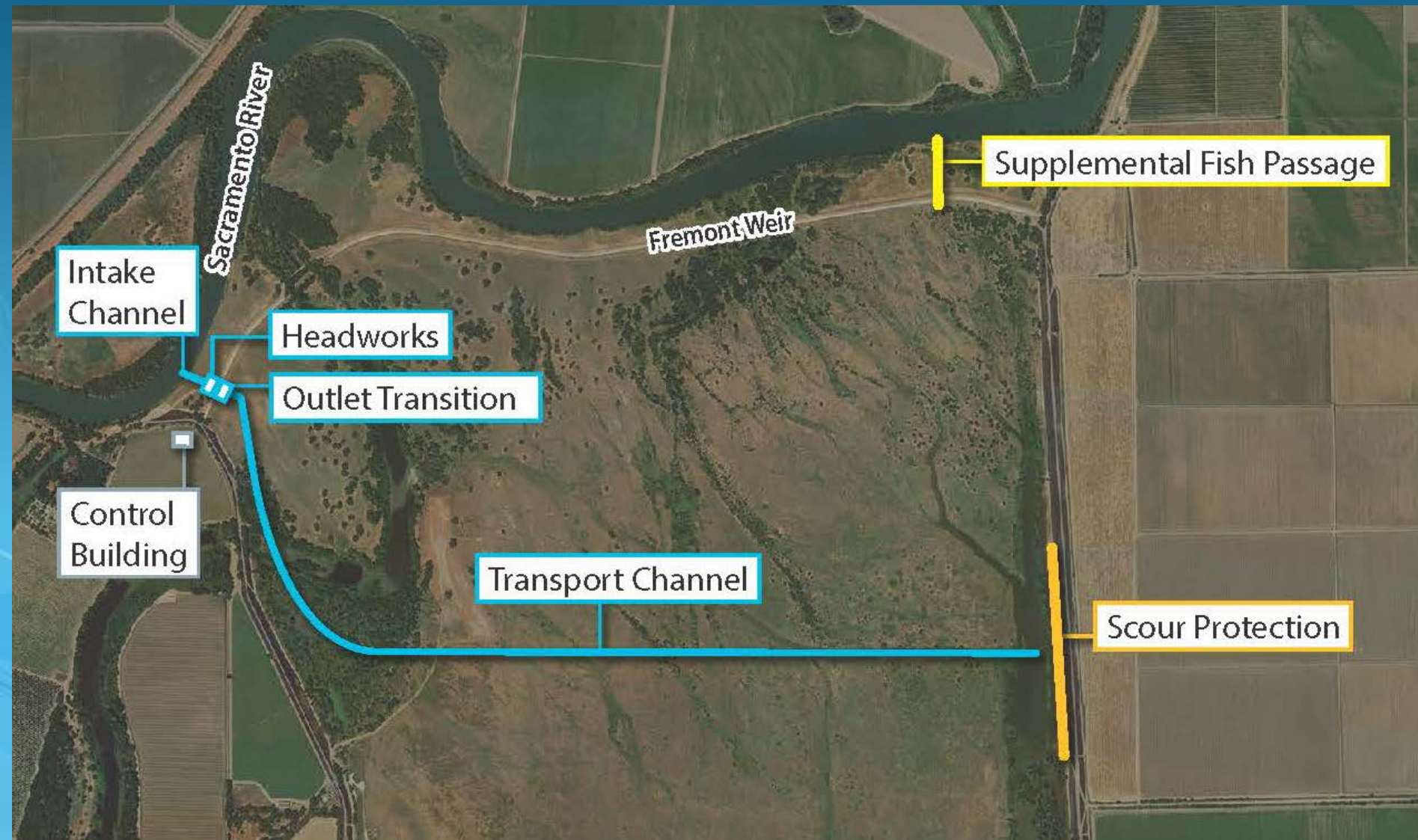
Alternative 1 - East



Alternative 2 - Central



Alternative 3 - West

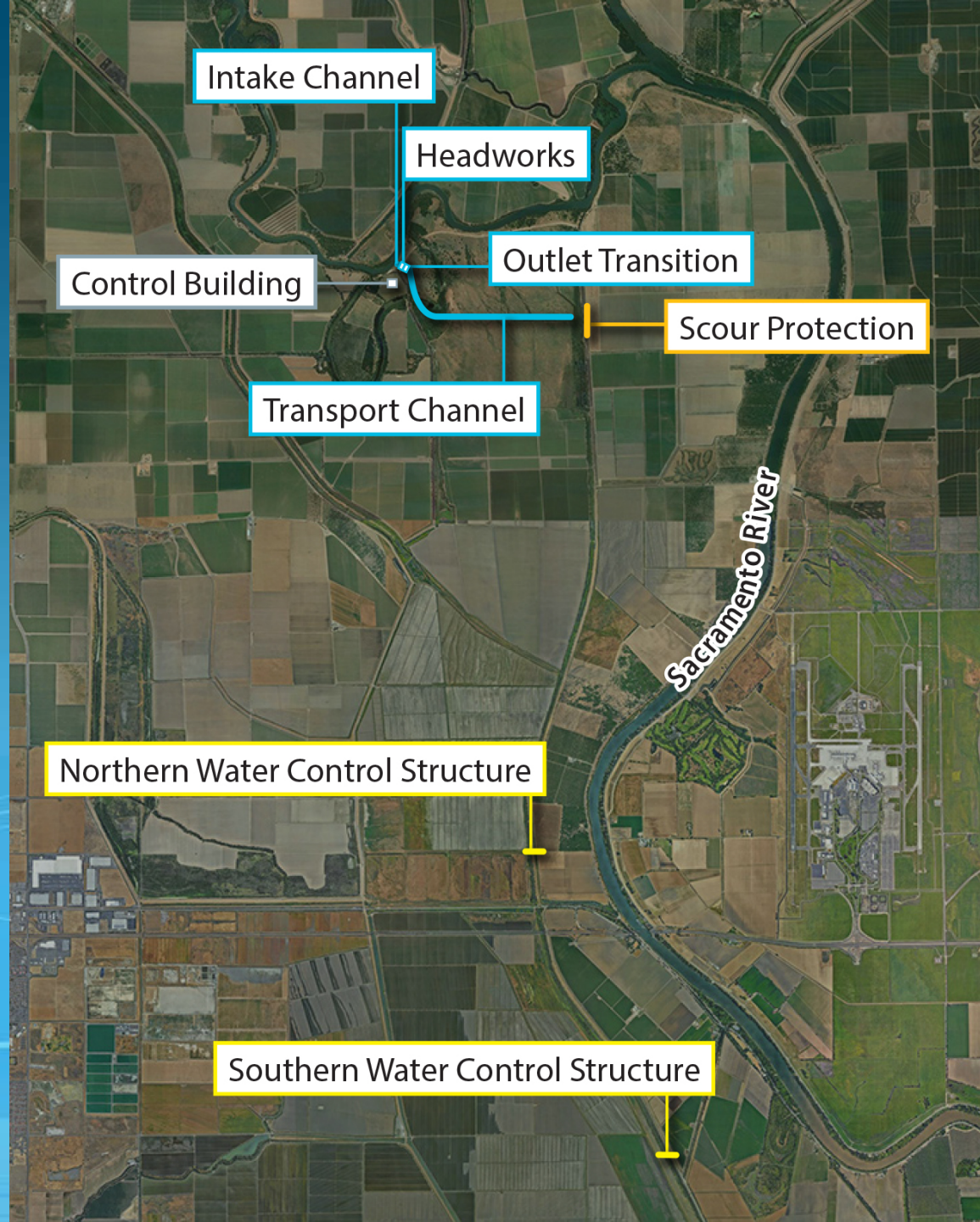


Operations

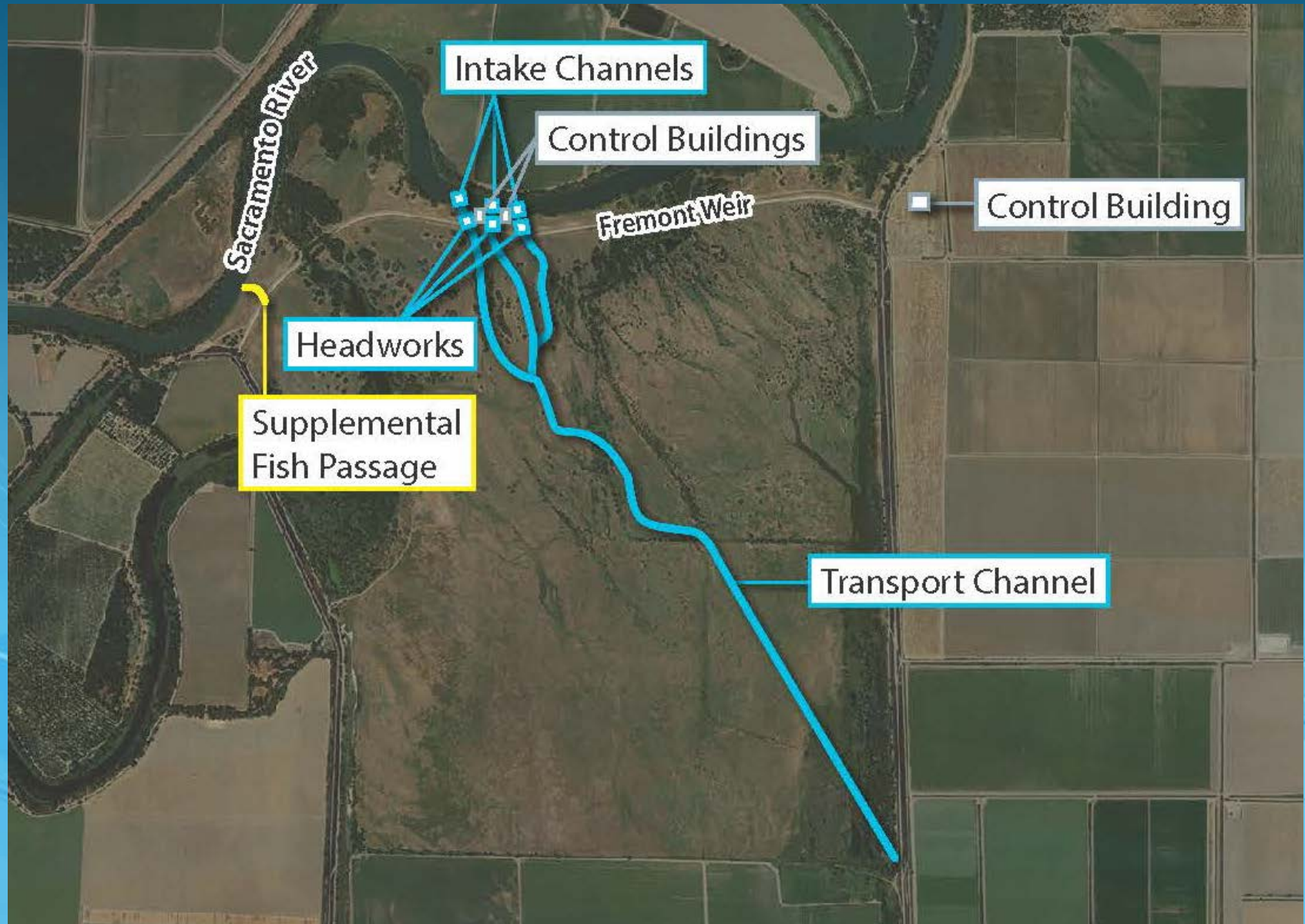
Alternatives 1, 2, and 3

- Allow flow up to 6,000 cfs through gated notch
- Rising river levels – notch opens when river level exceeds 17' at eastern location
- Falling river levels – notch closes when river level falls below 14' invert
- Gated notch could operate between November 1 and March 15

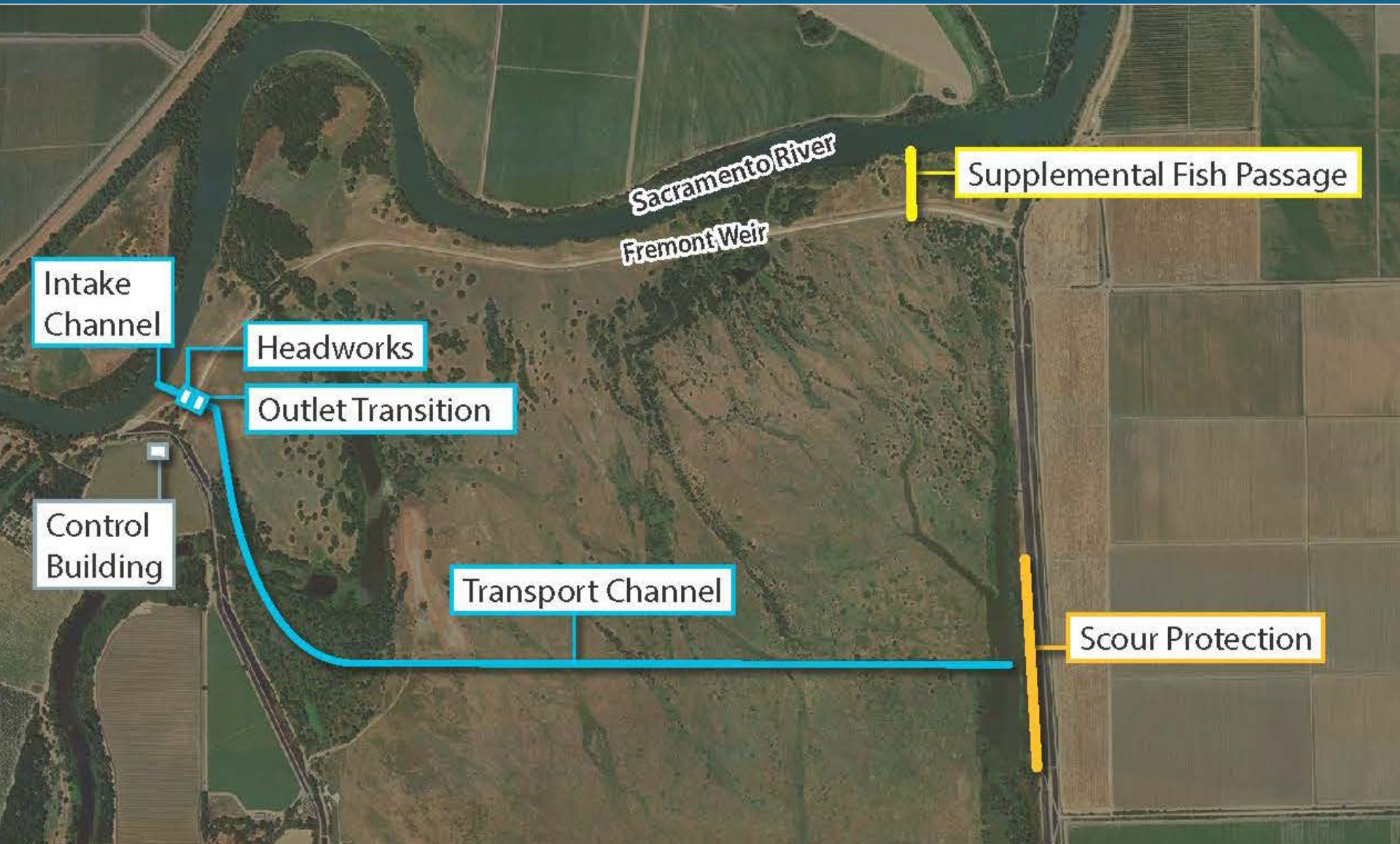
Alternative 4 – Managed Flows



Alternative 5 – Multiple Gates



Alternative 6 – Large Gated Notch



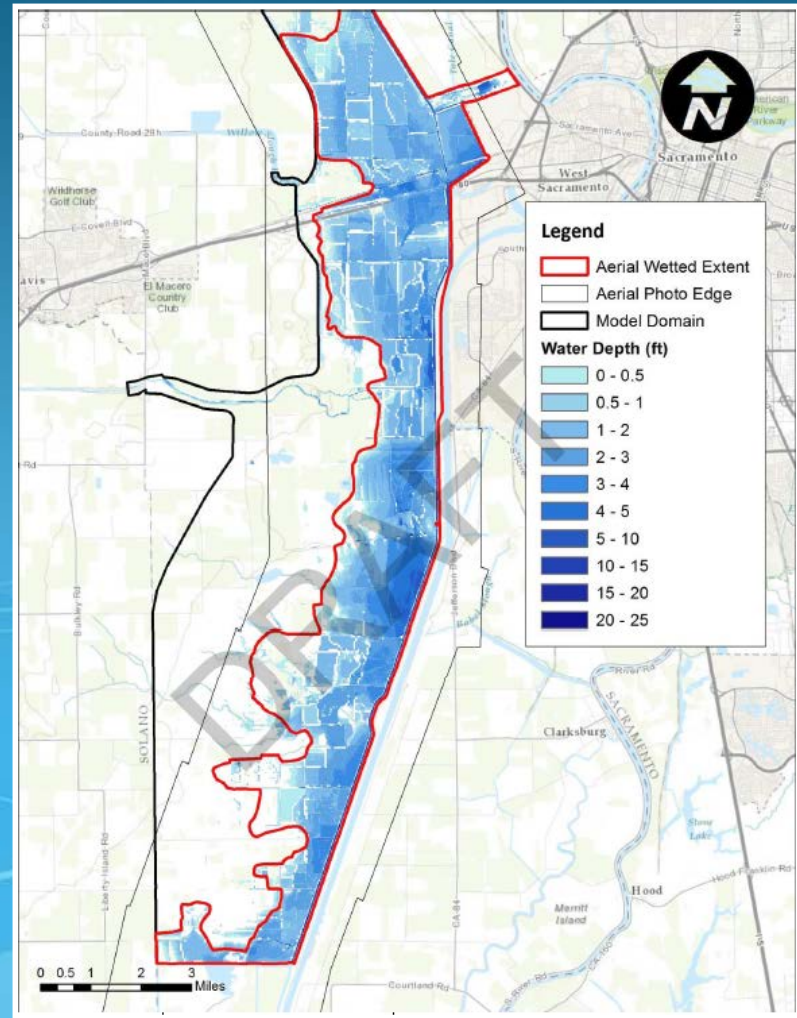
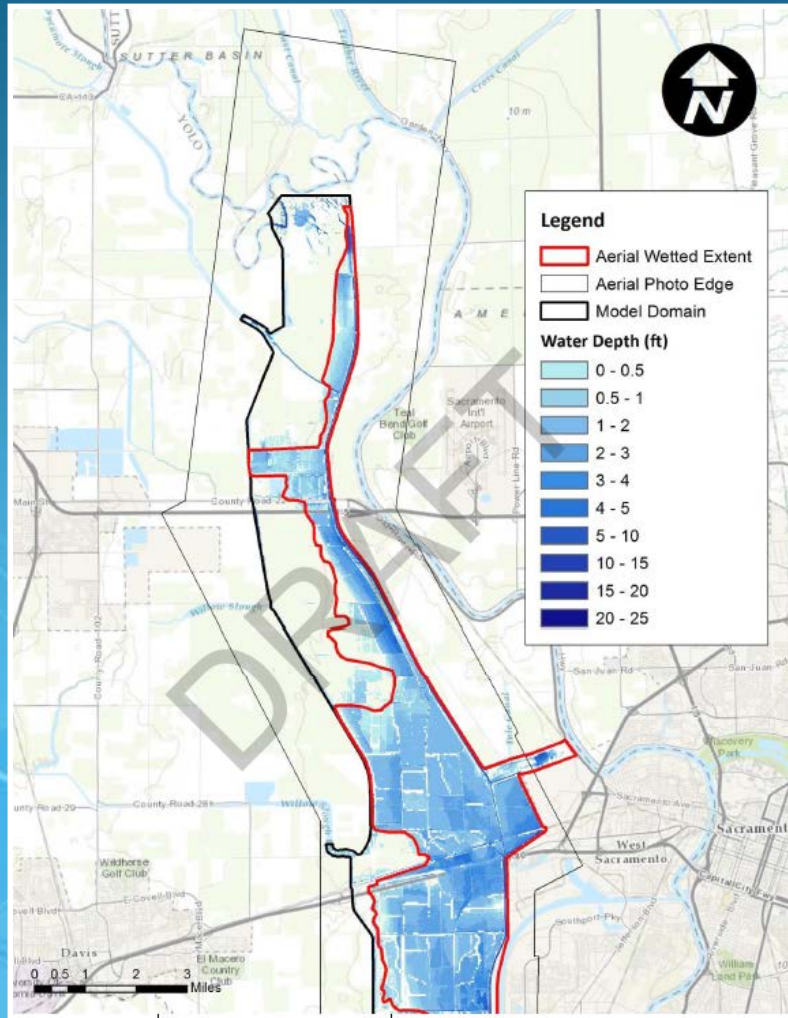
Environmental Impact Analysis

- Analyzing direct, indirect, and cumulative impacts from construction and operation
- Construction-related impacts (such as air quality, noise, traffic, biological resources) are greater for alternatives with more ground disturbance
- Operations-related impacts (such as agricultural land use, socioeconomics, biological resources) are affected by period of inundation, amount of flow entering the Bypass, and area of inundation

Hydraulics Modeling for Impact Analyses

- **Developed a Two-Dimensional model of the Yolo Bypass**
- **Model used to provide inputs to:**
 - **Agricultural Economic Model**
 - **Fisheries Benefits Models**
 - **Ducks Unlimited Waterfowl Model**

Hydraulics Modeling



Analysis Approach: Vegetation, Wetlands, and Wildlife

- Analysis is considering construction actions and habitat that could be disturbed by new facilities
- Consider impacts to
 - Special-status plant species
 - Valley elderberry longhorn beetle
 - Giant garter snake
 - Western pond turtle
 - Federal-listed, State-listed, and special-status bird species
 - Bats
 - Natural communities
- Mitigate through pre-construction surveys, avoidance, training, best management practices, and (if needed) compensatory mitigation

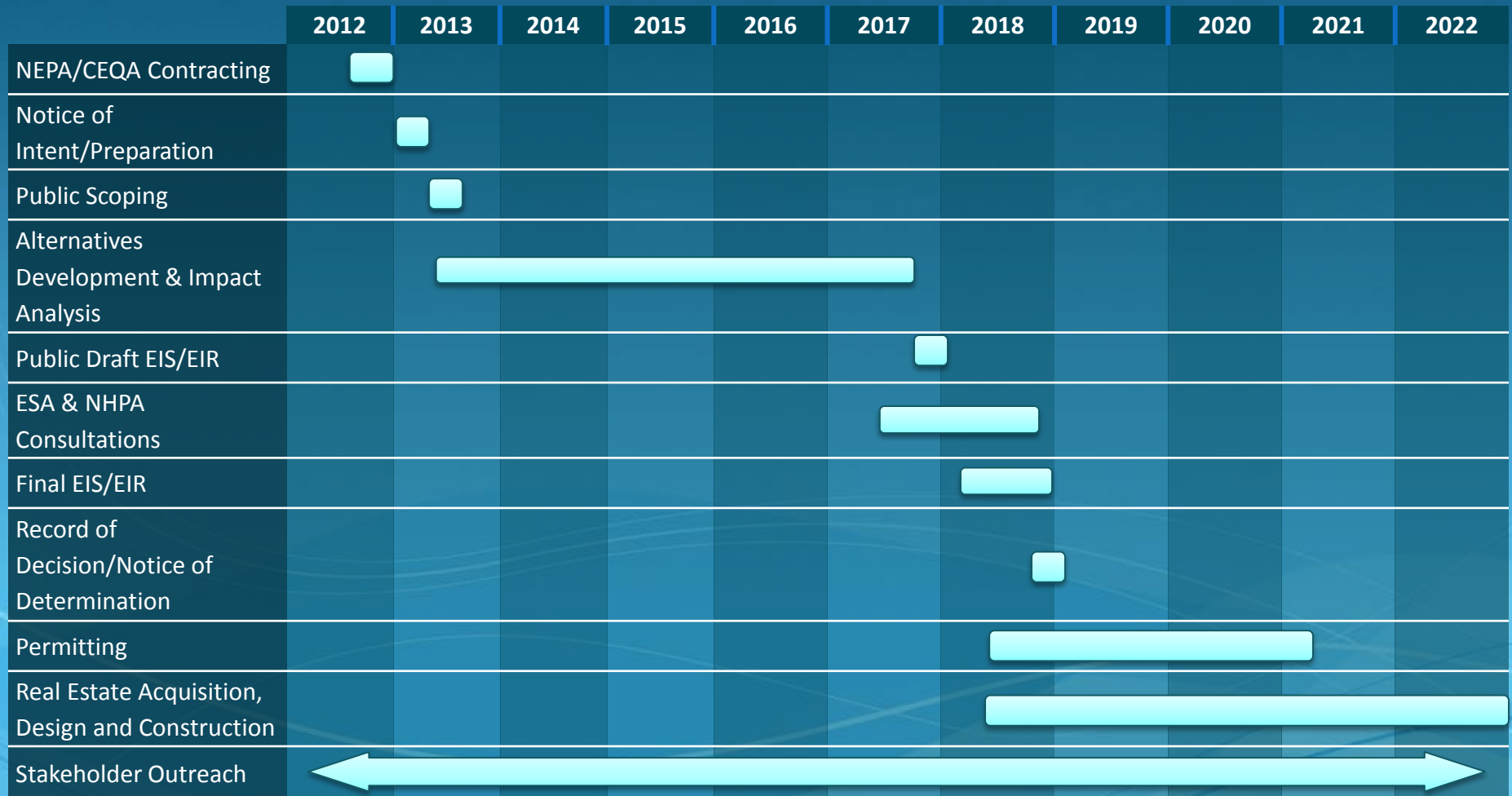
Analysis Approach: Recreation

- **Recreation impact analysis considering effects to hunting with a focus on waterfowl**
- **Consider how changes in inundation timing and locations could affect waterfowl**
 - Increase water depth greater than 18 inches (which would make depths unsuitable for dabbling ducks)
 - Affect food production in refuge areas
 - Affect regional food production
- **Modeling effort being conducted by Ducks Unlimited**

Analysis Approach: Agricultural Economics

- **Bypass Production Model estimates economic effects to agricultural users in the Yolo Bypass**
 - Planting could begin after inundation (last day wet plus 34 days for field drying and preparation)
 - Model considers how growers would change planting with longer inundation
 - Later planting dates (or no planting) would affect crop yields and revenue
 - Inundation structure closure dates prevent most impacts to agricultural users
- **“Tipping point” analysis considered indirect effects**

Implementation Schedule



Next Steps

- Let us know if you want individual (or small group) meetings
- Public meetings on public draft in November

For Additional Information

- Program website:
http://www.water.ca.gov/environmentalservices/yolo_bypass/yolo_bypass_salmonid.cfm
- Ben Nelson, Bureau of Reclamation,
bcnelson@usbr.gov, 916-414-2424
- Karen Enstrom, Department of Water Resources,
karen.enstrom@water.ca.gov, 916-376-9778