The San Joaquin River
OVERVIEW OF THE CALIFORNIA STATE LANDS COMMISSION ADMINISTRATIVE MAPS PRESENTATION

- Water Boundary Principles
- Best Available Evidence of High and Low Water
- Location of High and Low Water on the San Joaquin River
- Administrative Maps Effect on Adjacent Land
WATER BOUNDARY PRINCIPLES

- High Water
- Low Water
- Ambulatory in a Natural State
- Water Boundaries May become Fixed due to Artificial Changes and Avulsion
HIGH WATER LINE

- **Not** a line reached by floods
- A line where erosion occurs; change in or lack of vegetation
- May relate to bank full level on many rivers
- Best evidence and application of case law
TYPICAL BANK FULL CROSS SECTION
1914 CALIFORNIA DEBRIS COMMISSION MAPS

DISCUSSION PURPOSES ONLY
LOW WATER LINE

- Covered by water most the year
- Low Water occurs during the Fall season
- Low Water should be determined during a normal water year
- Low Water determination should exclude years of droughts or floods
- Difficult to use physical or geomorphic features
BEST AVAILABLE EVIDENCE

■ HIGH WATER LINE

■ Miller Lux Survey – generally located top of bank. Last known survey before Friant Dam
■ 1914 CDC Mapping – second choice for high water location used in areas Miller Lux did not follow the top of bank
■ 1937 Fairchild Aerial Photographs – third choice for high water line, generally follows current location

DISCUSSION PURPOSES ONLY
CALIFORNIA DEBRIS COMMISSION
MAPPING 1914

DISCUSSION PURPOSES ONLY
MILLER LUX PLATS
1920s –1930s

4” x 4”
Redwood post
Original monument?
BEST AVAILABLE EVIDENCE

- LOW WATER LINE
  - 1914 CDC Mapping – Only mapping showing a water surface during a low water period before Friant Dam
  - In areas affected by Mendota Dam, low water and channel modeled to estimate a pre-dam configuration
SAN JOAQUIN RIVER
HIGH AND LOW WATER
ADMINISTRATIVE MAPS

- Riparian Boundaries fixed due to two dominant artificial influences affecting the San Joaquin River system

- Mendota dam – first permanent structure 1871
- Friant Dam completed 1941

DISCUSSION PURPOSES ONLY
MENDOTA DAM
INFLUENCE ON HIGH AND LOW WATER

■ High water – no evidence showing alteration of bank full location of main channel prior to 1941

■ Low water
  ■ Affected the water surface 2.7 miles downstream and 2.5 miles upstream
  ■ Up to 4 feet of aggradation or sedimentation in Reach 2B upstream of Mendota dam
  ■ Dam increase river width and water surface elevation
MENDOTA DAM
INFLUENCE ON CHANNEL CONFIGURATION

DISCUSSION PURPOSES ONLY
FRIANT DAM
INFLUENCE ON HIGH AND LOW WATER

- Up to 90% of natural flows diverted from the San Joaquin river

- Retention of sediment above Friant Dam
- Degradation of channel
- Reduction of flows and water surface elevation
- Increase vegetation within channel
ADMINISTRATIVE MAPS
CSLC HIGH AND LOW WATER

Miller Lux surveyed meander line

DISCUSSION PURPOSES ONLY
Miller Lux surveyed meander line – not always a meander line
ADMINISTRATIVE MAPS
CSLC HIGH AND LOW WATER

River channel movement - Accretion

DISCUSSION PURPOSES ONLY
ADMINISTRATIVE MAPS
CSLC HIGH AND LOW WATER

River channel before Mendota Dam

DISCUSSION PURPOSES ONLY
ADMINISTRATIVE MAPS
CSLC HIGH AND LOW WATER LINES

TO BE FILED WITH THE COUNTY

DISCUSSION PURPOSES ONLY
EFFECT AND USE OF LINES SHOWN ON THE ADMINISTRATIVE MAPS

- Basis of State claims of limits of sovereign ownership and Public Trust Easement
- Subject to change if better evidence is found by or presented to the CSLC
- Basis for Real Estate purchases, Exchanges and Boundary Line Agreements
- Basis for CSLC Leases
- CSLC may exercise the Public Trust Easement rights
  - Commissioners must vote at a public meeting

DISCUSSION PURPOSES ONLY
CONCLUSION

- San Joaquin River is considered to be in an artificial state which fixes boundaries at their last natural location.

- Low and high water lines are based on features shown on historic maps and aerial photography.

- Low and high water lines are based on extensive research, fieldwork, and analysis of the best available evidence.

- Low and high water lines are subject to reconsideration if better/more reliable data is made available.

- CSLC Reach 2B Administrative Maps will be filed with Madera and Fresno Counties.

DISCUSSION PURPOSES ONLY