California Department of Transportation

An Overview of the State Movable Bridge Inventory
Movable Bridges of California

• 63 Operating in California
  – (15 State, 30 County, 13 Railroad, 3 Military, 2 Private)
• 15 Movable Bridges O&M By Caltrans
  – 4 Vertical Lift
  – 5 Swing
  – 6 Bascule (2 single span, 4 two span)
• 14 Closed to Operations
Meridian Bridge

- Waterway Served: Sacramento River
- Bridge Type: Center Swing, Rim Bearing, 360 Ft Span
- Year built: 1977
- Structural Details: 2 Lane, Steel Plate Girder, Cable Stayed (supposedly only one in U.S.)
- Drive Control: Induction Motor, Single Speed, Manual Pushbutton Control
- Drive Type: Open Gear
Meridian Bridge on SR 20 over Sacramento River
Meridian Bridge on SR 20 over Sacramento River
Knights Landing Bridge

• Waterway Served: Sacramento River
• Bridge Type: Simple Trunnion Bascule, 2 Spans @ 104 Ft
• Year built: 1933, Widened 1949
• Structural Details: 2 Lane, Double Leaf Steel Bascule Truss
• Drive Control: Wound Rotor Motor Speed Control, Manual Drum Switch
• Drive Type: Open Gear
Knights Landing Bridge on SR 113 over Sacramento River
Knights Landing Bridge on SR 113 over Sacramento River
Tower Bridge

- Waterway Served: Sacramento River
- Bridge Type: Vertical Lift, Span Drive Haul Rope, 210 Ft Span
- Year built: 1933, Widened 1949, 10 ft Sidewalks Added 2008
- Structural Details: 4 Lane, Steel Thru Truss
- Drive Control: Wound Rotor Motor Speed Control, PLC Logic
- Drive Type: Enclosed Gear
Tower Bridge on SR 275 over Sacramento River
Tower Bridge on SR 275 over Sacramento River
Tower Bridge on SR 275 over Sacramento River
Tower Bridge Encased and Closed for Painting
Miner Slough Bridge

- Waterway Served: Miner Slough
- Bridge Type: Center Swing, Rim Bearing, 191 Ft Span
- Year built: 1933, Widened 1953
- Structural Details: 2 Lane, Steel Thru Truss
- Drive Control: No Electrical, 16 HP Gas Engine with Hydraulic Pump, Manual Speed Control
- Drive Type: Open Gear Driven Hydraulic Rotary Motor
Miner Slough Bridge on SR 84 over Miner Slough
Paintersville Bridge

- Waterway Served: Sacramento River
- Bridge Type: Patented Strauss Heel-Trunnion Bascule, 2 Spans @ 113 ft
- Structural Details: 2 Lane, Steel, Double Leaf Strauss Bascule Truss
- Drive Control: PLC Logic, Volts-Hz VFD Speed Control
- Drive Type: Open Gear
Paintersville Bridge on SR 160 over Sacramento River
Paintersville Bridge on SR 160 over Sacramento River
Paintersville Bridge on SR 160 over Sacramento River
Showing New Control House
Paintersville Bridge on SR 160 over Sacramento River
Steamboat Slough Bridge

- Waterway Served: Steamboat Slough
- Bridge Type: Patented Strauss Heel-Trunnion Bascule, 2 Spans @ 113 ft
- Year built: 1924, Widened 1953, Control House Upgrade 2008
- Structural Details: 2 Lane, Steel, Double Leaf Strauss Bascule Truss
- Drive Control: PLC Logic, Volts-Hz VFD Speed Control
- Drive Type: Open Gear
Steamboat Slough Bridge on SR 160 over Steamboat Slough
Steamboat Slough Bridge on SR 160 over Steamboat Slough
Steamboat Slough Bridge on SR 160 over Steamboat Slough
Original Control House Being Removed
Steamboat Slough Bridge on SR 160 over Steamboat Slough
New Control House Being Lifted Into Place
Steamboat Slough Bridge on SR 160 over Steamboat Slough
New Control House In Place
Isleton Bridge

- Waterway Served: Sacramento River
- Bridge Type: Patented Strauss Heel-Trunnion Bascule, 2 Spans @ 102 ft
- Year built: 1923, Widened 1953, Control House Upgrade 2008
- Structural Details: 2 Lane, Steel, Double Leaf Strauss Bascule Truss
- Drive Control: PLC Logic, Volts-Hz VFD Speed Control
- Drive Type: Open Gear
Isleton Bridge on SR 160 over Sacramento River
Showing New and Much Larger Control House
Isleton Bridge on SR 160 over Sacramento River
Isleton Bridge on SR 160 over Sacramento River
Rio Vista Bridge

- Waterway Served: Sacramento River
- Bridge Type: Vertical Lift, Tower Drive, 306 Ft Span
- Year built: 1944, Widened 1960
- Structural Details: 2 Lane, Warren Thru Truss
- Drive Control: Manual Pushbutton, Magnetic Amplifier Speed Reference Feedback, Selysn Skew Control
- Drive Type: Enclosed Gear, DC Eddy-Current Clutch Motor Control
Rio Vista Bridge on SR 12 over Sacramento River
Rio Vista Bridge on SR 12 over Sacramento River
Rio Vista Bridge on SR 12 over Sacramento River
Tower Machinery
Rio Vista Bridge on SR 12 over Sacramento River
Tower Machinery
Rio Vista Bridge on SR 12 over Sacramento River
Dirty Counterweight Suspender Ropes
Rio Vista Bridge on SR 12 over Sacramento River
Scraping Tools To Clean Ropes
Rio Vista Bridge on SR 12 over Sacramento River
Clean and Lube Units
Rio Vista Bridge on SR 12 over Sacramento River
Cleaned and Lubed Wire Ropes
Rio Vista Bridge on SR 12 over Sacramento River
Rope Spread for Clean and Lube Units
Rio Vista Bridge on SR 12 over Sacramento River
Rope Spread for Clean and Lube Units
Rio Vista Bridge on SR 12 over Sacramento River
Rope Spread for Clean and Lube Units
Rio Vista Bridge on SR 12 over Sacramento River
Lube Process A Very Messy Business
Rio Vista Bridge on SR 12 over Sacramento River
Finished Product
Three Mile Slough Bridge

- Waterway Served: Three Mile Slough
- Bridge Type: Vertical Lift, Span Drive Haul Rope, 175 Ft Span
- Year built: 1949
- Structural Details: 2 Lane, Warren Thru Truss
- Drive Control: Wound Rotor Motor Speed Control, Manual Drum Switch
- Drive Type: Enclosed Gear
Three Mile Slough Bridge on SR 160 over Three Mile Slough
Three Mile Slough Bridge on SR 160 over Three Mile Slough
Three Mile Slough Bridge on SR 160 over Three Mile Slough
Wire Breaks on Counterweight Suspender Ropes
Three Mile Slough Bridge on SR 160 over Three Mile Slough
Wire Breaks on Counterweight Suspender Ropes
The Detour!!!

- 3 CMS sign boards at 10 decision locations
- 3 COZEEN CHP enforcement stations
- 800 number phone-in updated info number: 1-866-88BRIDGE with decision tree and Español

80 mile round trip
90 minute travel time
SR 160 closed 9PM to 5 AM
From April 1 to April 30

Bridge Site
Three Mile Slough Bridge on SR 160 over Three Mile Slough
Replacement Counterweight Suspender Ropes
Three Mile Slough Bridge on SR 160 over Three Mile Slough
Installing Counterweight Suspender Ropes
Three Mile Slough Bridge on SR 160 over Three Mile Slough
Old Rope Pulled to Failure
Three Mile Slough Bridge on SR 160 over Three Mile Slough
Old Rope Load Test Results
Three Mile Slough Bridge on SR 160 over Three Mile Slough
New Rope Pulled to Failure
Three Mile Slough Bridge on SR 160 over Three Mile Slough Replacement Counterweight Suspender Ropes
Mokelumne River Bridge

- Waterway Served: Mokelumne River
- Bridge Type: Center Swing, Center Bearing, 287 Ft Span
- Year built: 1942, Widened 1978
- Structural Details: 2 Lane, Steel Thru Truss
- Drive Control: Wound Rotor Motor Speed Control, Manual Drum Switch
- Drive Type: Open Gear
Mokelumne River Bridge on SR 12 over Mokelumne River
Mokelumne River Bridge on SR 12 over Mokelumne River
Mokelumne River Bridge on SR 12 over Mokelumne River
Little Potato Slough Bridge

• Waterway Served: Little Potato Slough
• Bridge Type: Center Swing, Center Bearing, 277 Ft Span
• Year built: 1991
• Structural Details: 2 Lane, Steel Plate Girder
• Drive Control: Manual Variac Auto Transformer Speed Control
• Drive Type: Enclosed Gear, DC Eddy-Current Clutch Motor Control
Little Potato Slough Bridge on SR 12 over Little Potato Slough
Little Potato Slough Bridge on SR 12 over Little Potato Slough
Old River Bridge

- Waterway Served: Old River
- Bridge Type: Center Swing, Center Bearing, 256 Ft Span
- Year built: 1915, Widened 1978
- Structural Details: 2 Lane, Steel Thru Truss
- Drive Control: Wound Rotor Motor Speed Control, Manual Drum Switch
- Drive Type: Open Gear
Old River Bridge on SR 4 over Old River
This Bridge Is 95 Years Old
Old River Bridge on SR 4 over Old River
This Bridge Is 95 Years Old
Bay Farm Island Bridge

- Waterway Served: San Leandro Bay and Oakland Inner Harbor
- Bridge Type: Simple Trunnion Bascule, Single 105 Ft Span
- Year built: 1953
- Structural Details: 4 Lane, Single Leaf Bascule Steel Truss
- Drive Control: Wound Rotor Motor Speed Control, Manual Drum Switch
- Drive Type: Open Gear
Bay Farm Island Bridge on SR 161 over Oakland Estuary
Bay Farm Island Bridge on SR 161 over Oakland Estuary
Bay Farm Island Bicycle Bridge

- **Waterway Served:** San Leandro Bay and Oakland Inner Harbor
- **Bridge Type:** Simple Trunnion Bascule, Single 163 Ft Span
- **Year built:** 1996
- **Structural Details:** Bicycle-Pedestrian Walkway, Single Leaf Steel Tube Truss
- **Drive Control:** Hydraulic Pump, Single Speed, Manual Pushbutton
- **Drive Type:** 2-16 Inch Hydraulic Cylinders
Bay Farm Island Bicycle Bridge on SR 161 over Oakland Estuary
Adjacent to Original Bridge for Bike Traffic
Commodore Schuyler Heim Br.

- **Waterway Served:** Cerritos Channel at Port of Long Beach
- **Bridge Type:** Vertical Lift, Tower Drive, 272 Ft Span
- **Year built:** 1945, Control House Upgrade 1988
- **Structural Details:** 6 Lane, Steel Thru Truss
- **Drive Control:** PLC Control, Wound Rotor Motor Speed with Power Tie Motor Skew Control
- **Drive Type:** Open Gear
Commodore Schuyler Heim Bridge on SR 47 over Cerritos Channel