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Design and Permitting

Coordination to Find Balance in Environmental Permitting Requirements

UPRR Salt Creek Bridge
Southern California

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Presentation Outline

- Overview of New Second Mainline Bridge at MP 640.85 Yuma Subdivision
- Wetland Delineation and Revision
- Los Angeles District Regional Conditions
- Sensitive Species Avoidance
- Design and Permitting Coordination to Achieve Project Schedule
- Construction Best Management Practices
- Benefits of Innovative UPRR Approach

Project Location

adjacent to Salton Sea and CA-111

Riverside County, CA

Existing Structure

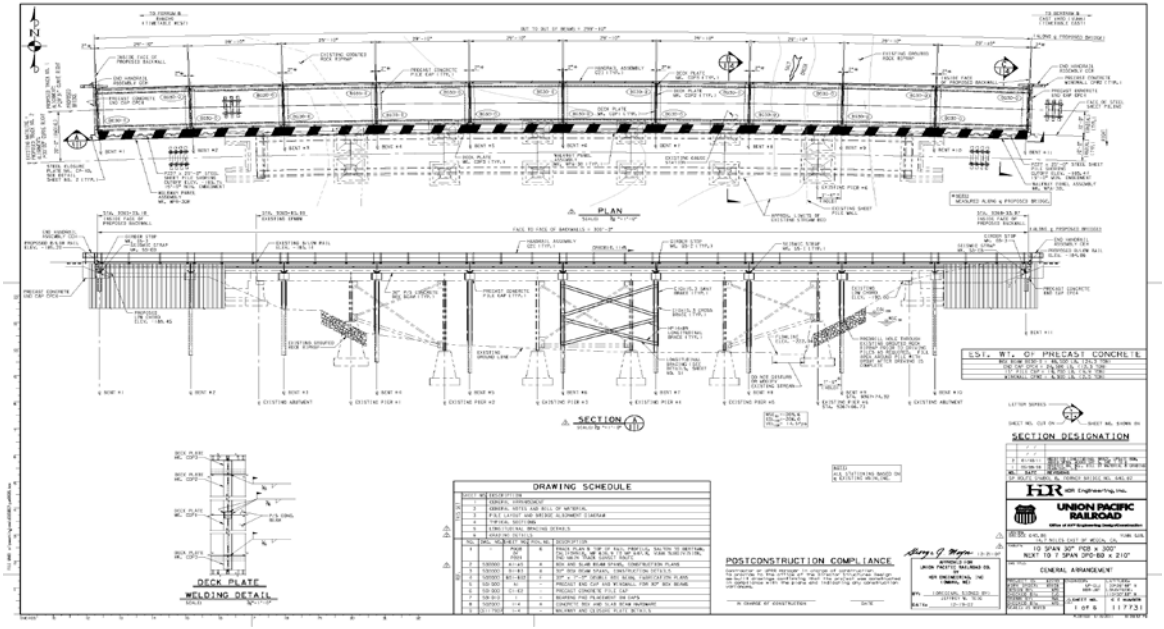
Yuma Subdivision MP 640.85

Existing bridge at Salt Creek, Riverside County, California

- UPRR Sunset Route Double Track capacity expansion
- Existing 7-span 210’ DPG-BD steel bridge
- Second bridge originally planned as 9, 30-ft PCB segments with 10 driven H-pile bents
- Second bridge to be constructed alongside existing bridge, with new bents offset from existing piers

Final Design following Design and Permitting Coordination

Yuma Subdivision MP 640.85



- Addition of another 30’ PCB span
- Elimination of all regulated fill activities, eliminating need for Section 404 Clean Water Act permit
- Best management practices to avoid any placement of fill, erosion control, protect potential sensitive species
- Placement of pilings not subject to Section 404 permitting

Original Wetland Delineation

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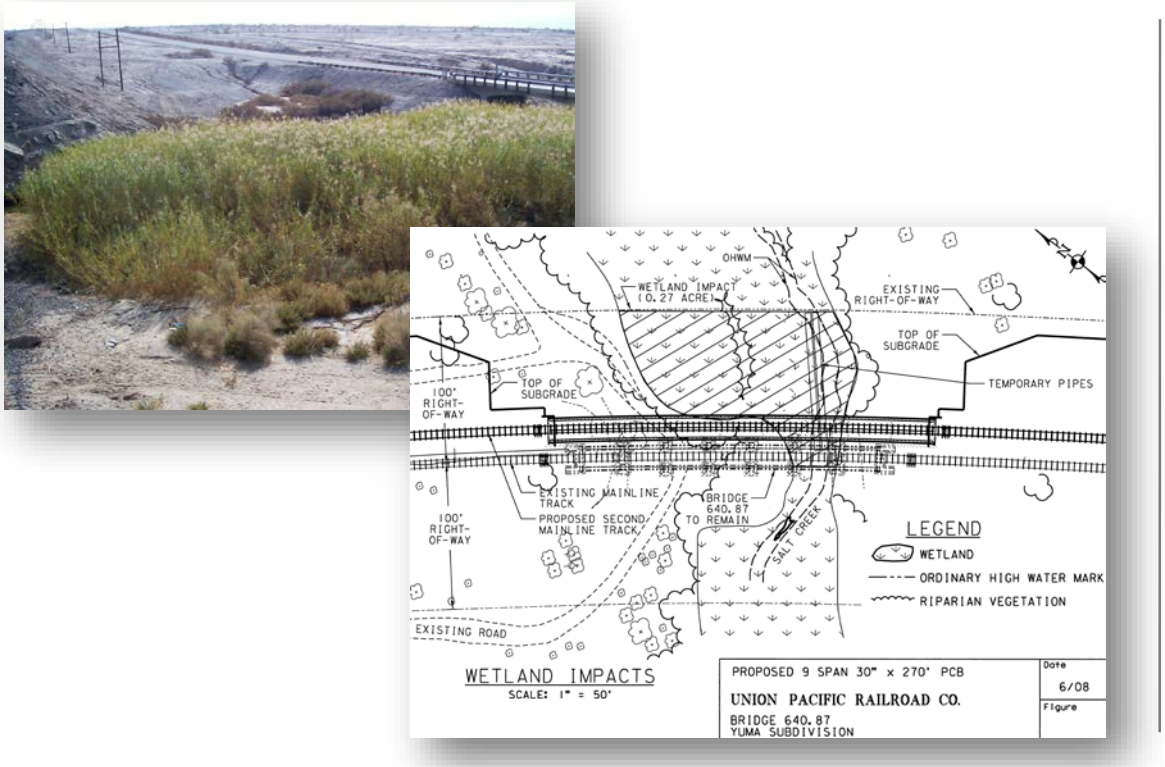
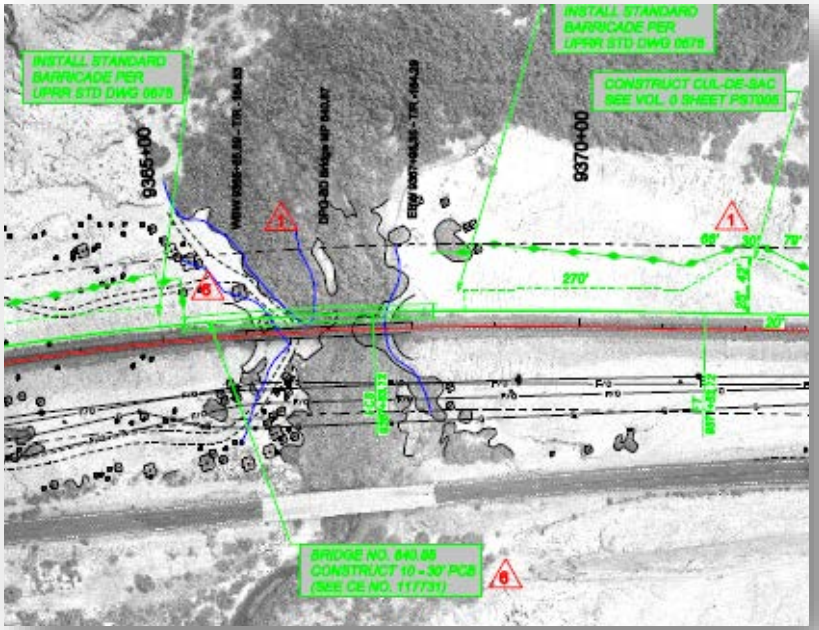


- Completed January 2007
- Wetland impact from original design and delineation was estimated at 0.27 acre
- Any loss of wetlands does not allow NWP (therefore Individual Permit) in desert regions of California

Revised Wetland Delineation

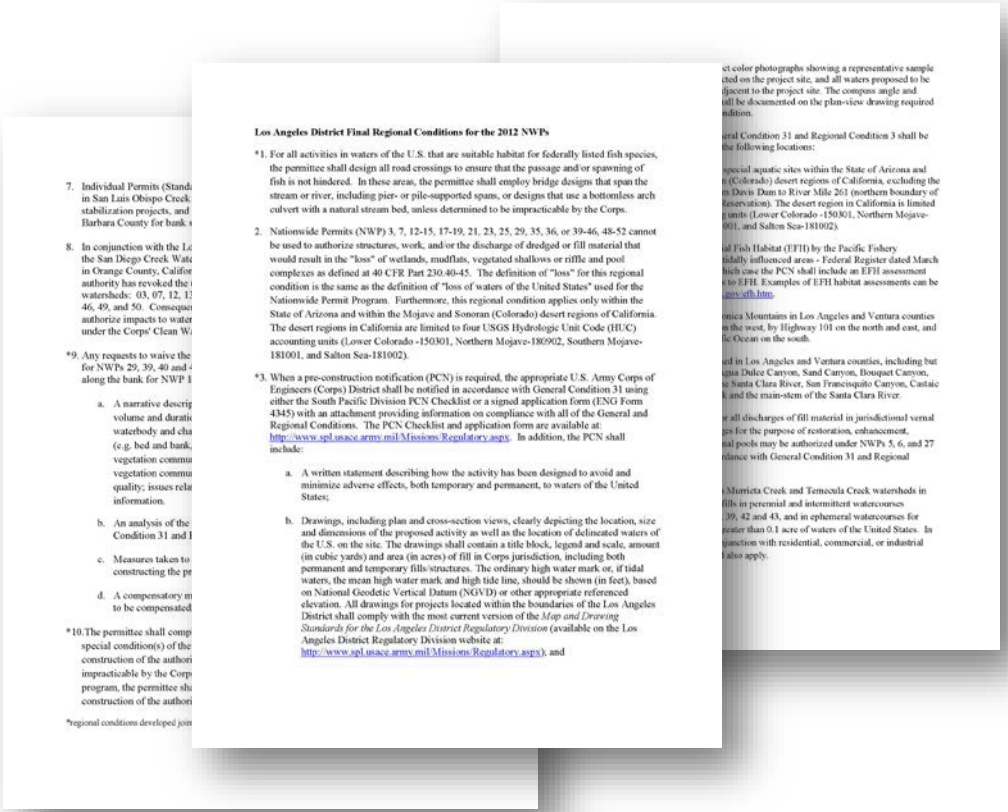
Yuma Subdivision MP 640.85

- When project was restarted in late 2010, delineation needed to be updated to capture any changes to site conditions from the past 3.5 years
- Expanded OHWM to address any potential concerns from USACE based on Arid West
  (5 yr versus 2 yr return flow)
- Design walkthrough (design, construction, permitting) and 90% design developed to avoid Section 404 permitting (no regulated fill) to achieve project schedule



Los Angeles District Regional Conditions

Two Conditions in Particular Affected Design Coordination



Los Angeles District Final Regional Conditions for the 2012 NWPs

*1. For all activities in waters of the U.S. that are suitable habitat for federally listed fish species, the permittee shall design all road crossings to ensure that the passage and/or spawning of fish is not hindered. In these areas, the permittee shall employ bridge designs that span the stream or river, including pier- or pile-supported spans, or designs that use a bottomless arch culvert with a natural stream bed, unless determined to be impracticable by the Corps.

2. Nationwide Permits (NWP) 3, 7, 12-15, 17-19, 21, 23, 25, 29, 35, 36, or 39-46, 48-52 cannot be used to authorize structures, work, and/or the discharge of dredged or fill material that would result in the "loss" of wetlands, mudflats, vegetated shallows or riffle and pool complexes as defined at 40 CFR Part 230.40-45. The definition of "loss" for this regional condition is the same as the definition of "loss of waters of the United States" used for the Nationwide Permit Program. Furthermore, this regional condition applies only within the State of Arizona and within the Mojave and Sonoran (Colorado) desert regions of California. The desert regions in California are limited to four USGS Hydrologic Unit Code (HUC) accounting units (Lower Colorado -150301, Northern Mojave-180902, Southern Mojave-181001, and Salton Sea-181002).

*3. When a pre-construction notification (PCN) is required, the appropriate U.S. Army Corps of Engineers (Corps) District shall be notified in accordance with General Condition 31 using either the South Pacific Division PCN Checklist or a signed application form (ENG Form 4345) with an attachment providing information on compliance with all of the General and Regional Conditions. The PCN Checklist and application form are available at: http://www.spl.usace.army.mil/Missions/Regulatory.aspx. In addition, the PCN shall include:

a. A written statement describing how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States;

b. Drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity as well as the location of delineated waters of the U.S. on the site. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and area (in acres) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the mean high water mark and high tide line, should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation. All drawings for projects located within the boundaries of the Los Angeles District shall comply with the most current version of the *Map and Drawing Standards for the Los Angeles District Regulatory Division* (available on the Los Angeles District Regulatory Division website at: http://www.spl.usace.army.mil/Missions/Regulatory.aspx), and

- **Nationwide Permits (NWP)** 3, 7, 12-15, 17-19, 21, 23, 25, 29, 35, 36, or 39-46, 48-52 **cannot be used to authorize structures, work, and/or the discharge of dredged or fill material that would result in the "loss" of wetlands**, mudflats, vegetated shallows or riffle and pool complexes as defined at 40 CFR Part 230.40-45.

- **Submission of a PCN** pursuant to General Condition 31 and Regional Condition 3 shall be **required** for all regulated activities in the following locations…All **perennial waterbodies and special aquatic sites** within the State of Arizona and within the **Mojave and Sonoran desert regions of California**

Potential for Sensitive Species

Yuma Subdivision MP 640.85

- Project planning studies revealed potential for sensitive species to be present in the vicinity
- Yuma Clapper Rail and California Black Rail
  - Construction BMP: Preconstruction survey
- Desert Pupfish
  - Construction BMP: Do not work in the channel when wet
- Burrowing Owl
  - Construction BMP: Preconstruction survey
- Southwestern Willow Flycatcher
  - Construction BMP: Preconstruction survey

Photo Sources: U.S. Fish and Wildlife Service

Design and Permitting Coordination

December 2010 Field Visit

- Collaboration between design, construction, and permitting to achieve a construction approach that would not require lengthy Section 404 permitting (Individual Permit)
- Steel sheet piling in front of existing tied-back wall at east toe of slope (near channel) and a sheet pile retaining structure at west toe of slope to prevent fill within OHWM
- Extend bridge by one span on the west end to keep grading away from OHWM
- Provide construction best management practices required for construction in bid documents

Construction Best Management Practices

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- UPRR required construction fencing to avoid sensitive areas
- Vegetation management outside breeding season
- Preconstruction surveys
- Erosion control per SWPPP
- UPRR required matting under equipment and vehicles to protect vegetation
- Contractor required to provide fencing to protect waterway from any incidental fallback
- Full time onsite environmental/biological monitoring
- Delayed construction start until August when channel was dry and did not allow contractor to work in the channel when wet

Benefits of Innovative UPRR Approach

Yuma Subdivision MP 640.85

Original Approach

- 9-span 30’ PCB (270’ total) bridge structure
- Wetland impacts triggered need for Section 404 Individual Permit
- Project permitting expected to require more than one year

Innovative UPRR Approach

- 10-span 30’ PCB (300’ total) bridge structure
- No Section 404 Permit needed
- Implement Construction Best Management Practices
- UPRR determined increased capital cost of additional bridge span and environmental compliance support allowed realization of the opportunity cost to meet the desired project schedule
- USACE agreed with pile driving exemption applicability for the project