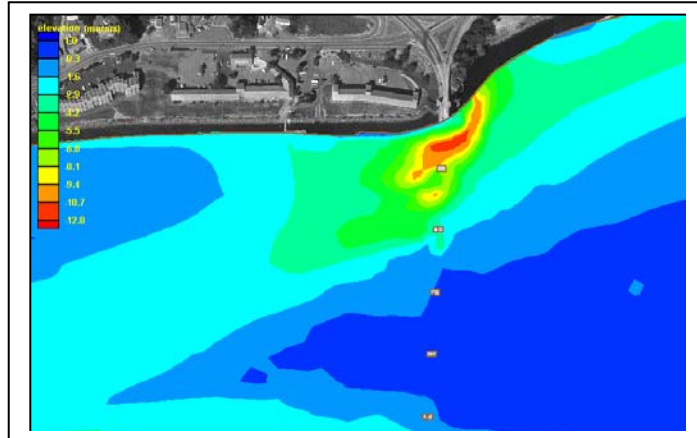




Bridge Hydraulics and Scour Assessment for Highway 101 Bridge at Rogue River (Gold Beach)

The Rogue River estuary is located approximately 35 miles north of the California/Oregon border at the confluence of the Rogue River with the Pacific Ocean. The Highway 101 Bridge crosses the Rogue River at river mile 1 at the upstream extent of the estuary, near Gold Beach in Curry County, Oregon. WEST Consultants, Inc., conducted a hydraulic and scour assessment to estimate the scour at the existing bridge for mitigation of Pier 2.



The existing bridge originally built in 1930 is a seven span reinforced concrete arch bridge structure is 1610 feet long. Pier #2 has had scour problems and its seal was undermined in the past. For this reason, a hydraulic and scour assessment was conducted for the Oregon Department of Transportation (ODOT) to estimate the scour at the Piers, with special attention being paid to Pier #2.

An HEC-RAS model of the Rogue River reach was developed for the existing and temporary work bridge conditions. The HEC-RAS model was used to determine the water surface elevations, velocity and bridge scour estimates for the 100 and 500-year flood. A two-dimensional model (RMA-2) was used to estimate the relative channel stability based upon incipient motion analysis and armoring potential. A geomorphic analysis was conducted by comparing the historical aerial photographs taken since 1939. A detailed bathymetric survey around Pier 2 was also performed. Additional work considered whether this pier could be mitigated to prevent undermining by the migrating channel.

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