



VACC Recent Key Projects: Replacement Bridge Construction Underwater Noise Monitoring Bethel Island Bridge over Dutch Slough Near Oakley, California

Owner
Contra Costa County
Public Works Department

Contractor
CC Meyers

New Structure Length
870 feet

Project Value / Duration
\$12.2M / 2009 - 2010

VACC Project Scope
Underwater Sound Monitoring
(Hydroacoustic Monitoring)



The existing timber-structure Bethel Island Bridge is outdated, to be replaced by a new nine-span structure supported by cast-in-steel-shell concrete piles.

We were asked to monitor **underwater noise levels** due to pile driving during construction. NOAA established an underwater sound (hydroacoustic) criterion for the project, at 192dB@10m for temporary piles and 202dB@10m for permanent piles. Temporary piling is currently underway; our monitoring has revealed typical underwater noise levels of about 186dB, six decibels below the limit.

The bridge is in a delicate part of the Delta Region of the San Francisco Bay. Several species of endangered fish, turtle, and waterfowl are present, therefore requiring environmental monitoring of construction activities.

Permanent piling will start in midsummer. Exceedances are anticipated, and the contractor plans to implement “bubble curtain” mitigation. If our monitoring reveals that the bubble curtain fails to provide sufficient attenuation, dewatering has been suggested as a fallback measure.

Work is scheduled to extend for two seasons, with completion in 2010.

