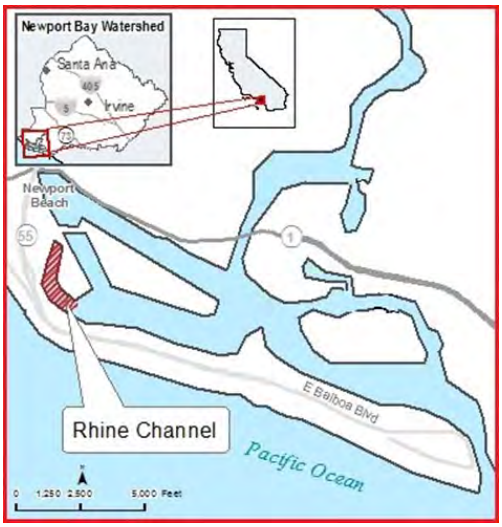
Water Quality Report Card		Metals and Organics in Rhine Channel (Lower Newport Bay)		
Regional Water Board:	**Santa Ana, Region 8**	**STATUS**	☐ Conditions Improving ☐ Data Inconclusive ☑ **Improvement Needed** ☐ Targets Achieved/Water Body Delisted	
Beneficial Uses Affected:	COMM, MAR, NAV, RARE, REC-1, REC-2, SHEL, SPWN, WILD			
Implemented Through:	Stakeholder actions	**Pollutant Type:**	☑Point Source ☑ Nonpoint Source ☑Legacy	
Effective Date:	June 14, 2002 (TMDL)	**Pollutant Source:**	Urban Storm Water Runoff	Atmospheric Deposition
Attainment Date:	To Be Determined		Anti-Fouling Paints	Contaminated Sediment

Water Quality Improvement Strategy

The Rhine Channel is an approximately 2.5 acre dead-end channel located on the western side of Lower Newport Bay, south of the Lido Peninsula in Newport Beach, California. The Rhine Channel was listed as impaired for organics and metals on the 1998 303(d) List. The pollutant levels in Channel sediments and water have caused persistent sediment toxicity that exceed standards for human health protection, and are associated with impacts to the benthic community, and bioaccumulative effects in the food web. In 2002, USEPA established a TMDL for toxic pollutants in the Newport Bay Watershed, including the Rhine Channel, that establishes numeric targets for metals (copper, lead, zinc, chromium, and mercury), organochlorine pesticides (chlordane, dieldrin, and DDT), and polychlorinated biphenyls (PCBs) in sediment. The TMDL also establishes numeric targets for dissolved metals in water (copper, lead, and zinc) for the Lower Newport Bay that also apply to the Rhine Channel. The primary source of pollutants to the Bay and Channel is legacy contamination from shipyards (e.g., copper from anti-fouling paints), plating facilities, a cannery, and other industrial activities. Monitoring was conducted in 2002 and 2004 to characterize the contaminants present in the Channel sediments and to evaluate remediation alternatives. Dredging of the Channel was determined to be a feasible option for remediation and was completed in 2011, removing approximately 80,000 cubic yards of contaminated sediment. Surficial sediment sampling and sediment quality data collected after dredging indicate continued impairment of beneficial uses despite removal of approximately 76 percent of the existing contaminated sediment in the Channel. Additional monitoring stations, increased monitoring frequency, and identification of potential pollutants or conditions that are resulting in impacts are needed to determine what is causing the continued impairment.

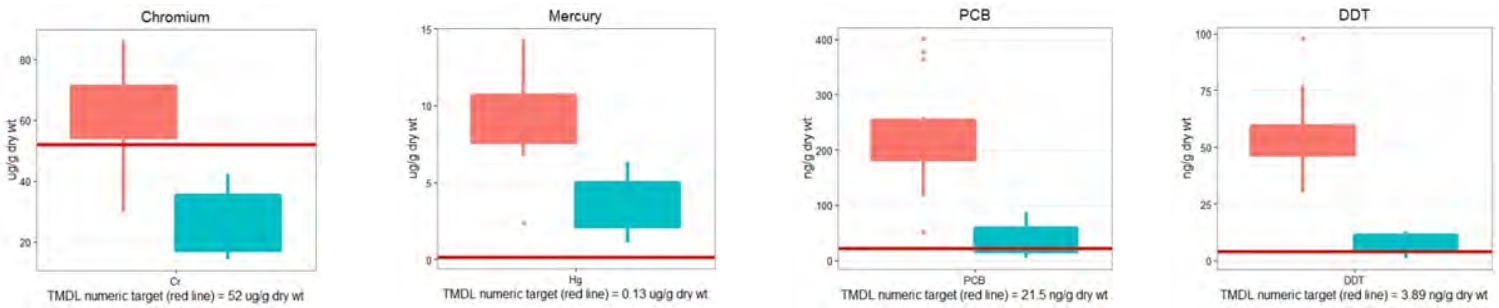
Lower Newport Bay Watershed



Water Quality Outcomes

- There have been significant post-dredge reductions in organochlorine pesticides and PCBs in Rhine Channel.
- However, high levels of metals (copper, mercury, and zinc) remain in the Channel sediment, especially along the perimeter of the Channel where dredging was not conducted.
- Though sediment toxicity has significantly declined in the areas that were dredged, limited post-dredging data indicate that the benthic community (an indicator of watershed health) within the Channel remains impacted.
- Continued impairment of Channel water and sediment may be attributed to several factors, including poor tidal flushing and the disturbance of sediment from high boat traffic.
- The Regional Water Board will continue to work with stakeholders to increase monitoring and data collection within the Channel to help assess and identify the cause and extent of the remaining impairment.

Sediment Quality in Rhine Channel[a,b]



[a]Red boxes indicate pre-dredge concentrations; blue boxes indicate post-dredge concentrations.
[b]Dredging was completed in 2011.

Released October 2016