

# Key Messages from EPA Guidance on Contaminated Sediment Sites

- Focus on risk-based objectives
- Ensure that sediment cleanup levels are clearly tied to risk-management goals
- Carefully evaluate the three major cleanup approaches
  - Monitored Natural Recovery
  - Capping
  - Removal

# EPA Guidance on Contaminated Sediment Sites (continued)

- Maximize the effectiveness of institutional controls and recognize their limitations
- Select and design remedies to minimize short-term risks while achieving long-term protection
- Monitor during and after sediment remediation to assess and document remedy effectiveness

## Summary of Removal Action Objectives (RAOs) for Yosemite Slough Cleanup

1. Protect Human Health
2. Protect Wildlife
3. Protect current and future beneficial uses of the Slough
4. Support and protect healthy aquatic and benthic communities, including existing habitat functions
5. Prevent contaminant migration to adjacent off-site areas and prevent recontamination during or following site remediation
6. Protect local properties, residents, workers, and natural resources during sediment remediation
7. Provide a cost effective remedy

# Yosemite Slough Sediment Remedial Goals for Contaminants of Concern

Contaminant of Concern	Remedial Goal	Reference
Polychlorinated Biphenyls (PCBs)	1,240 ug/kg or less at a given location <u>and</u> 386 ug/kg or less overall area weighted average, sitewide (corresponding to a human health risk level of 3 x 10 <sup>-6</sup> )	Navy Parcel F Risk Assessments
Lead	436 mg/kg or less at a given location <u>and</u> 218 mg/kg overall area weighted average, sitewide.	National Oceanic and Atmospheric Administration and effects range median for AWA

## **Alternatives Evaluated for Yosemite Slough Cleanup**

**Working Draft EECA; TSC Meeting May 2, 2013**

- Alternative 1 – No Action;
- Alternative 2 – Removal of sediments in the top 1-foot interval where COCs exceed RGs, engineered cap, EMNR/MNR and ICs;
- Alternative 3 – Remove sediments in the top 1-foot interval where COCs exceed two times RGs, engineered cap, EMNR/MNR, and ICs;
- Alternative 4 – Remove sediments in the top 1-foot interval where COCs exceed three times the RGs (with three exceptions), engineered cap, EMNR/MNR and ICs;
- Alternative 5 – Remove sediments in the top 1-foot interval where COCs exceed RGs, 2-foot intervals in same areas where COCs exceed two times RGs, engineered cap, EMNR/MNR and ICs;
- Alternative 6 – Removal of sediments in the top 2-foot interval where COCs exceed RGs, engineered cap, EMNR/MNR and ICs; and
- Alternative 7 – Full removal of sediments where COCs exceed RGs (up to 5 feet), backfill, and no ICs;

### **Common Components:**

- Slough bank stabilization
- Possible CSO outfall apron modification
- Reasonable upland source control
- Post removal site control and effectiveness monitoring
- Odor, noise, dust, and traffic management
- Dredging and removal of contaminated sediments
- Sediment processing
- Water treatment
- Off-site transport, treatment, and disposal of contaminated sediments
- Capping or backfilling using clean imported sands
- Controls for sediment re-suspension

Alternative Number	Estimated Sediment Volume Removed	Post-Removal AWAs		Effectiveness				Implementability		Cost (Mechanical Dredging)	Cost (Hydraulic Dredging)	Overall Score
		Lead (mg/kg)	PCBs (ug/kg)	Long-Term Effectiveness and Protection of Human Health	Short-Term Protection of Site Ecology	Short Term Protection of Human Health	Minimization of Short Term Construction Impacts to the Local Community	Technical	Administrative (Y/N)			
		RG: 218	RG: 386									
1	-	359	5,049	N/A	Not screened further				\$0	\$0	-----	
2	8,300	90	232	Moderate	High	High	High	High	Y	\$11,202,000	\$9,114,000	High
3	4,200	143	499	Moderate	Moderate	Moderate	High	High	Y	\$8,448,939	\$6,218,939	Moderate
4	2,500	259	793	Low	Low	Low	High	High	Y	\$7,354,939	\$4,932,939	Low
5	15,000	90	232	High	High	High	Moderate	High	Y	\$17,115,939	\$15,112,939	High
6	26,900	44	29	High	Moderate	Moderate	Low	High	Y	\$25,984,000	\$24,398,000	Moderate
7	44,300	42	27	High	Low	Low	Low	Moderate	Y	\$38,348,000	\$38,442,000	Low