Public Workshop & CEQA Scoping Meeting For

TMDLs for Toxic Pollutants in Sediment for the Mouths of Paleta, Chollas, and Switzer Creeks

October 14, 2008

Today's Agenda

- Public Workshop:
  - Overview of 303(d) and TMDLs
  - Overview of Basin Planning Process
  - Timeline for this TMDL Project
  - Presentation of Toxic Pollutants TMDLs
    - Public Input and Comment
- CEQA Scoping Meeting
    - Public Input and Comment on Physical Impact on the Environment from TMDL Implementation

Clean Water Act Section 303(d)

- As enacted in 1972, §303(d) of the Clean Water Act requires States to:
  - Identify waters not meeting State water quality standards -- §303(d) list
  - Develop a TMDL for each pollutant, for each listed water body

Total Maximum Daily Loads

The Purpose of TMDLs is to ...

Attain Water Quality Objectives and Restore Beneficial Uses

A TMDL is defined as ...

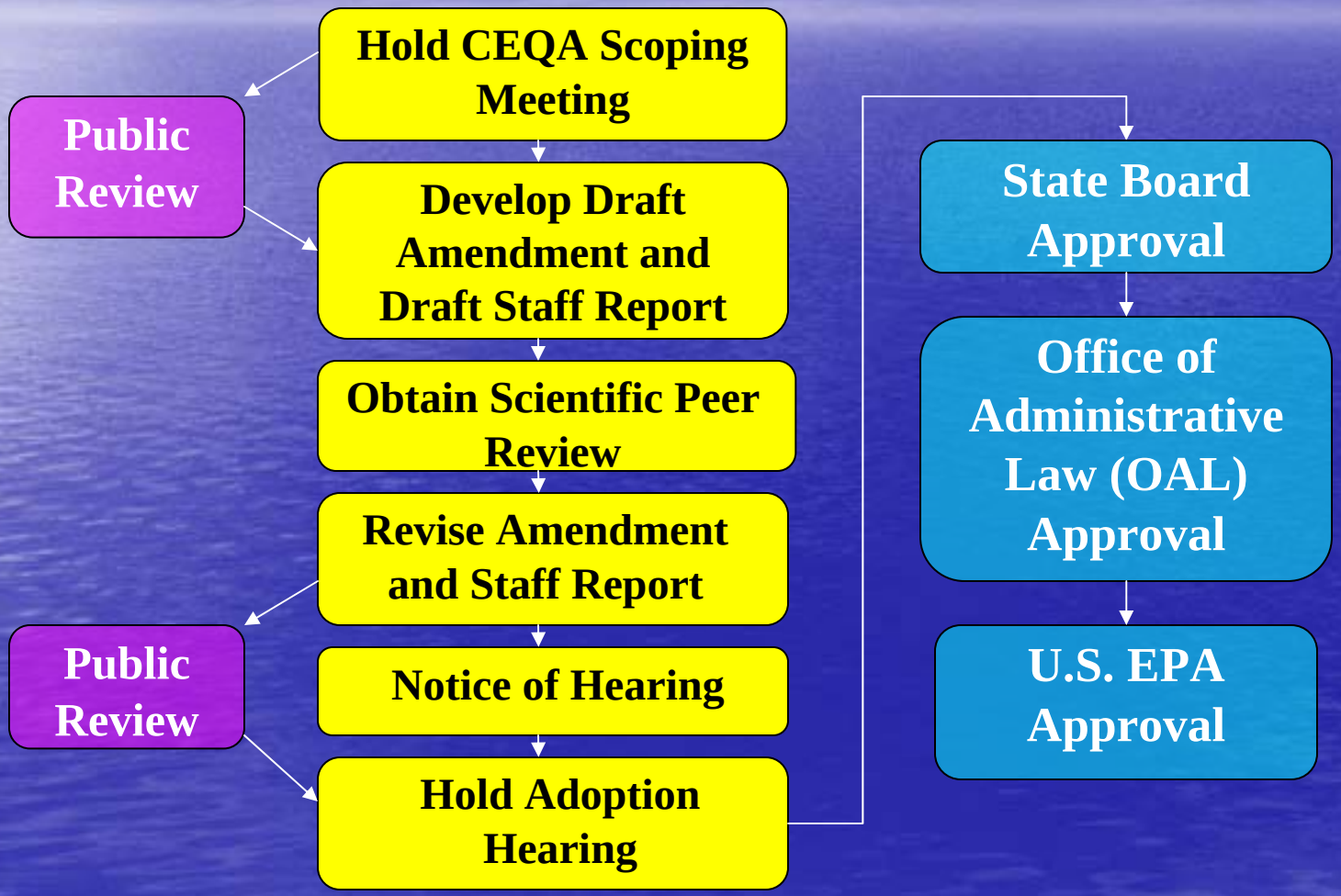
The amount of a pollutant that a waterbody can receive and still meet water quality standards

$$TMDL = \Sigma WLA + \Sigma LA + Bkg + MOS$$

Elements of TMDL Development

- Problem Statement
- Numeric Targets
- Source Analysis
- Linkage Analysis
- TMDL & Pollutant Load Allocations (WLA & LA)
- Margin of Safety (MOS)
- Seasonal Variation & Critical Condition
- Implementation and Monitoring Strategy

Overview of Basin Planning Process

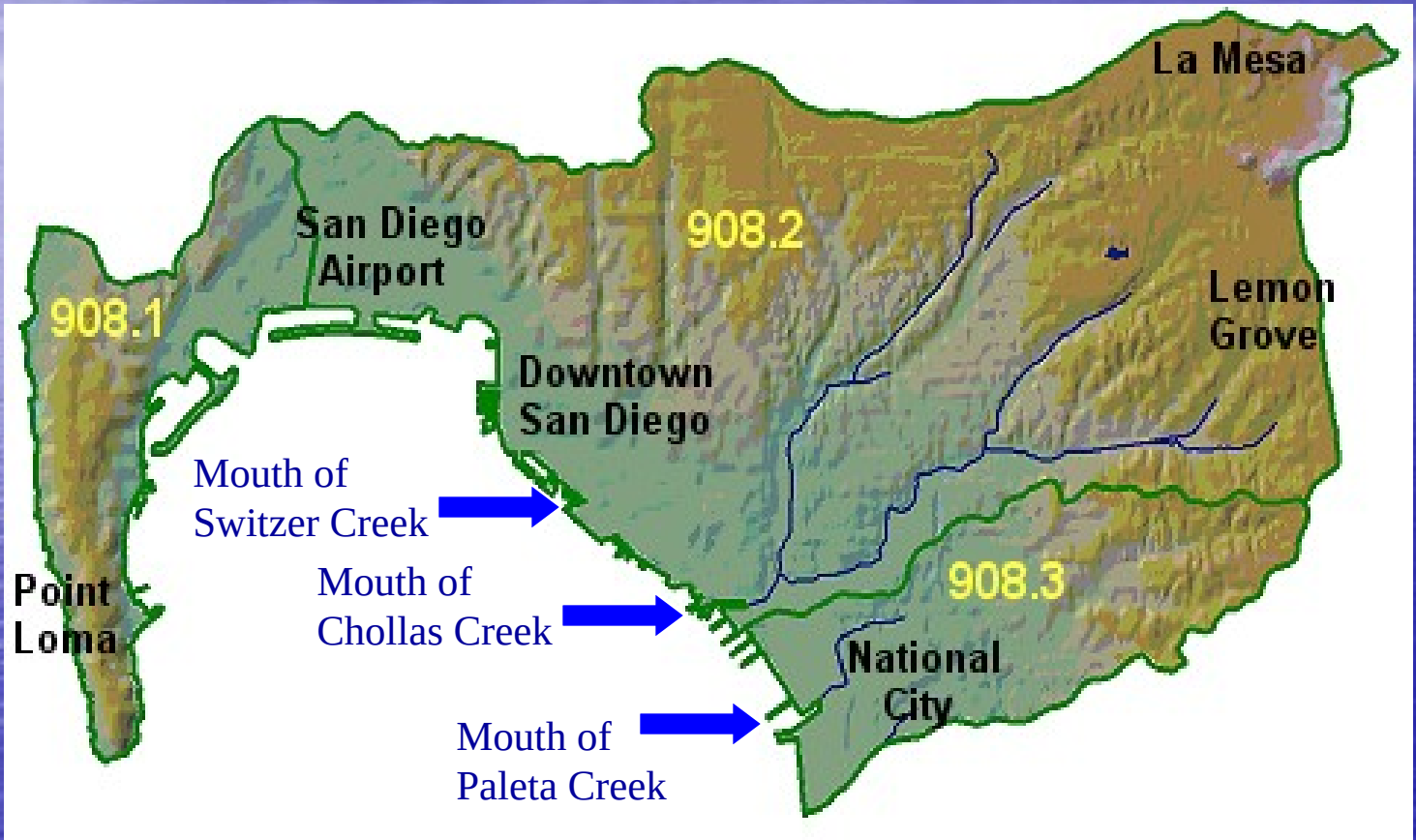


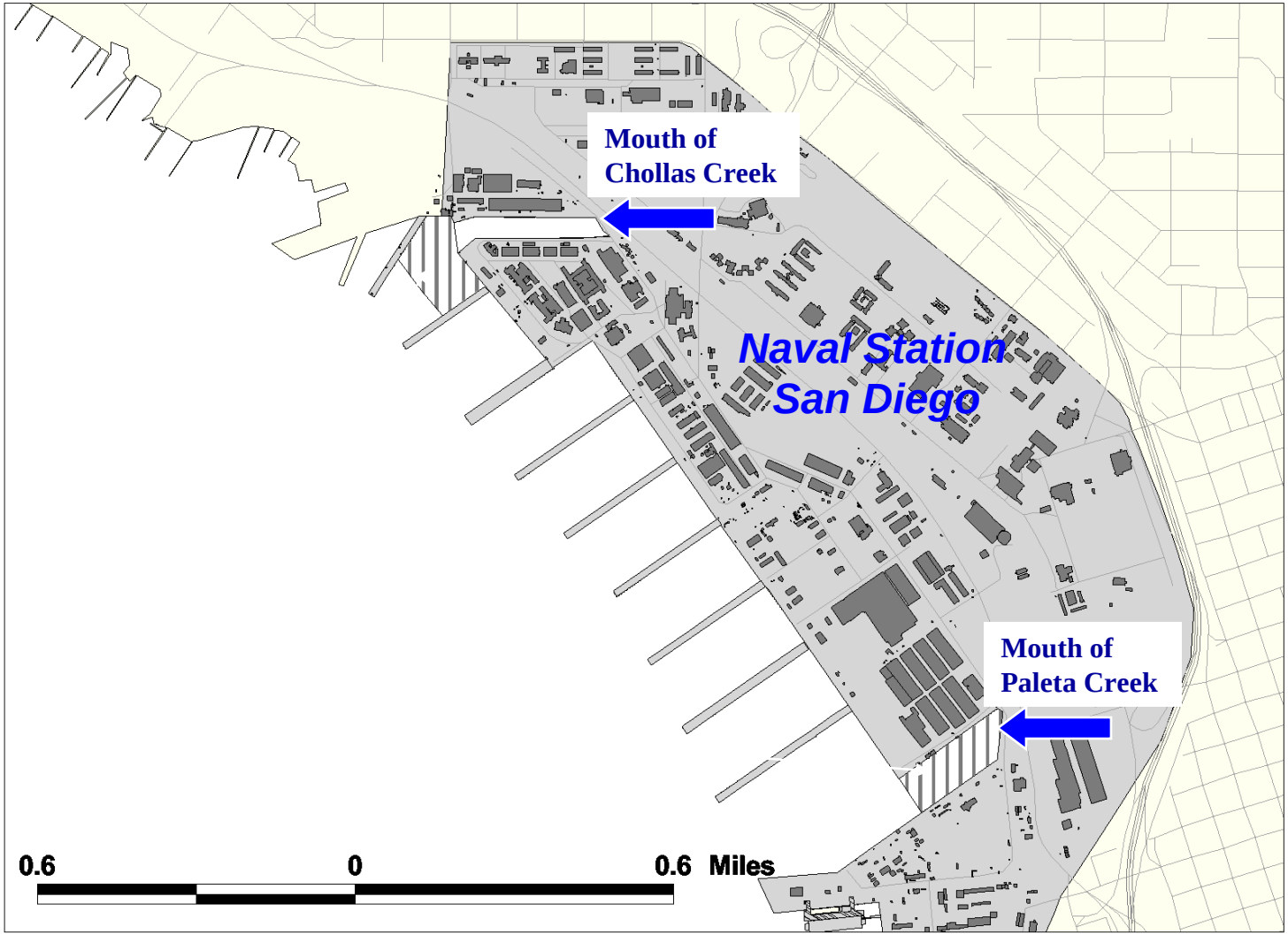
TMDL Project Timeline

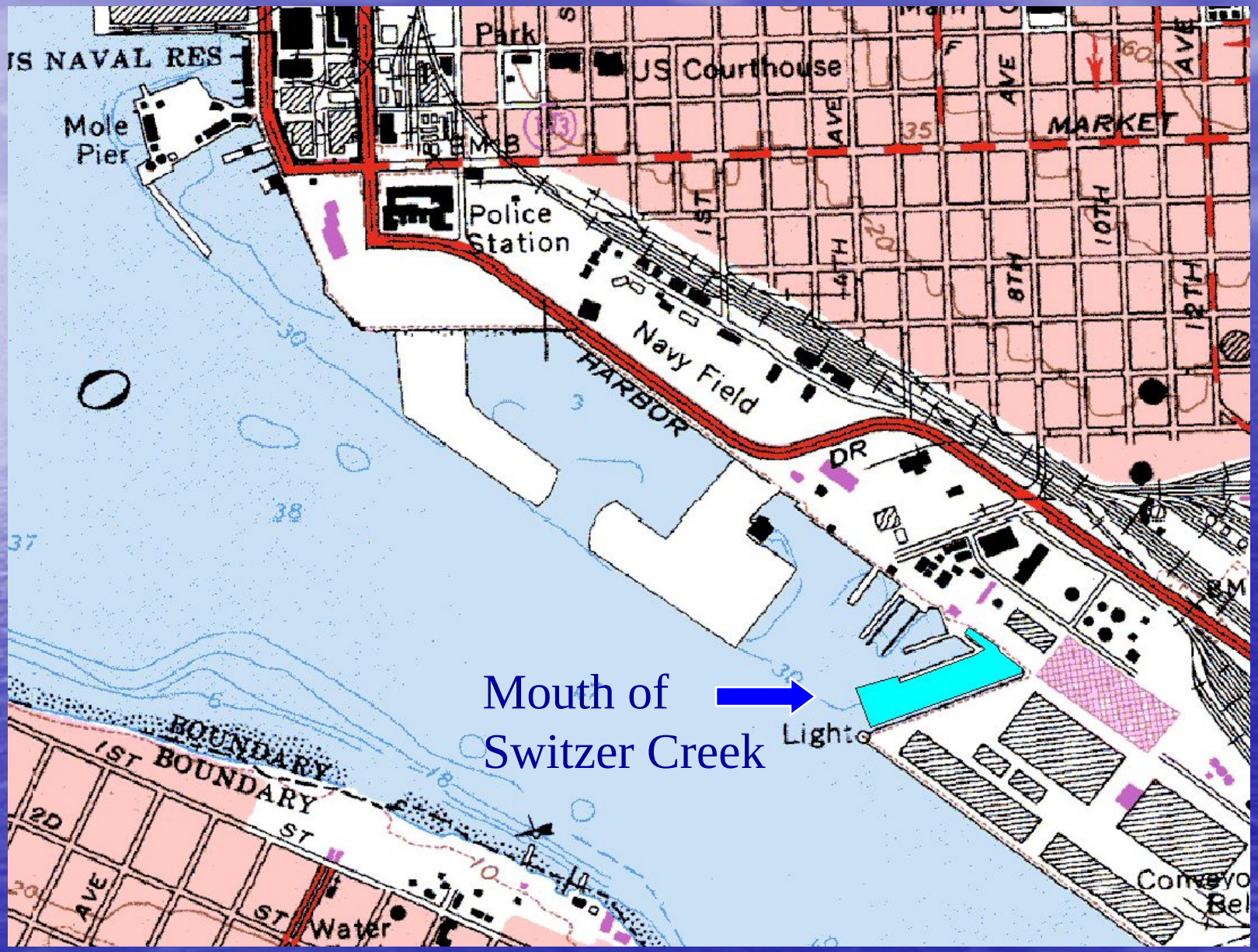
- January 2009 –
  - Complete Draft TMDL Staff Report for Peer Review
- April - May 2009 –
  - Address Peer Review Comments
  - Complete CEQA Documentation
  - Prepare TMDL Staff Report and Basin Plan Amendment for Public Review
- August 2009 – Regional Board Hearing

Presentation of Technical Report for the TMDLs for Toxic Pollutants in Sediment for the Mouths of Paleta, Chollas, and Switzer Creeks in San Diego Bay

Pueblo San Diego Sub-watershed




Mouth of
Chollas Creek
Naval Station
San Diego
Mouth of
Paleta Creek
0.6
0
0.6 Miles


US NAVAL RES
Mole Pier
Park
US Courthouse
MARKET
Police Station
Navy Field
HARBOR
DR
BOUNDARY
1ST BOUNDARY ST
2D AVE
ST
Water
Mouth of Switzer Creek

Toxic Pollutants in Sediment TMDLs

- Problem Statement
- Sources
- Numeric Targets
- Linkage Analysis
- TMDLs / Allocations
- Margin of Safety
- Implementation Plan

Problem Statement

- 303 (d) Listed based on Bay Protection Toxic Cleanup Program Data – Toxic Hotspots
- Toxicity and Pesticide Narrative Objectives
- Phase I & Phase II Studies (2004-2005)
  - Verified the Impairment
  - Identified Cause of Impairment (TIE)

Sources

- Identified Sources
  - Urban/Storm Water Runoff
    - Cities, Caltrans, School Districts, Hospitals, Military
    - Various urban pollutants including oil/gas/grease, legacy pesticide laden soils, and creosote telephone pole locations
  - Storm Water from Industrial Facilities & Construction Sites
  - Atmospheric Deposition

Sources – Cont.

- Identified Sources – cont.
  - Sediment Flux
  - Sediment Resuspension
  - Leaching from Creosote Pilings
  - Ballast Water
  - Oil Spills
  - Bilge Water

Sources by Watershed – Paleta Creek

- Urban / Storm Water Runoff
  - City of San Diego
  - National City
  - San Diego Unified School District (SDUSD)
  - National School District
- Naval Station
- Caltrans

Sources by Watershed – Chollas Creek

- Urban / Storm Water Runoff
  - City of San Diego
  - City of La Mesa
  - City of Lemon Grove
  - SD Unified School District
  - La Mesa Spring Valley School District
  - Lemon Grove School District
- NASSCO
- Naval Station
- Caltrans

Sources by Watershed – Switzer Creek

- Urban / Storm Water Runoff
  - City of San Diego
  - SDUSD
  - San Diego City College
  - U.S. Navy Hospital
- 10th Avenue Marine Terminal
- Campbell Industries
- Caltrans

What is a Numeric Target?

- Identifies specific goals for TMDLs that equate to attainment of water quality objectives and provide the basis for data analysis and final TMDL allocations.
- Established to ensure that water quality objectives are met and that beneficial uses are protected.

CWA 303(d) List

- **Mouths of Chollas Creek and Paleta Creek (7th Street Channel):**

  Sediment Toxicity

  Benthic Community Effects

- **Mouth of Switzer Creek:**

  Chlordane

  Lindane

  PAHs

Contaminants of Concern Identified from TIE Study

For the Mouths of Chollas Creek and Paleta Creek:

- Chlordane
- Non-Polar Organics (PAHs, PCBs, DDTs)

Numeric Target Values Considered

- Natural Background levels
- Background levels for Shipyards Sediment Site in San Diego Bay
- Screening Values such as ERLs, ERMs, & TELs
- Risk assessment values to address bioaccumulation in wildlife and humans
- Sediment Quality Guidelines for CA – available on the State Board Website

Sediment Quality Objectives Values

- "U.S." Logistic Regression Model
  - Uses the 20% Threshold Value
  - Field, et al., 2002. Env. Tox. and Chem., 21:9:1993-2005.
- California Logistic Regression Model
  - Uses the 33% Threshold Value for screening
  - http://www.swrcb.ca.gov/bptcp/sediment.html
- We are proposing using a 20% Threshold Value as the Numeric Target.

Screening Levels and Background Levels for Pollutants in San Diego Bay Sediments

	Units	ERL (1)	ERM (1)	CA LRM (2) T20	CA LRM (2) T33	Background (3)
HMW PAHs	μg/kg	1,700	9,600	2500	5300	673
LMW PAHs	μg/kg	552	3160	786	1600	--
p,p' DDT	μg/kg	1.19 (TEL)	4.77 (PEL)	4.71	7.30	--
PCBs	μg/kg	22.7	180	110	300	84
Chlordane	μg/kg	0.5	6.0	2.8	3.9	--

(1) Long et al., 1995
(2) Sediment Quality Objectives for the State of California
(3) Background levels for Shipyard Sediment Site in San Diego Bay

Numeric Targets

Total PCBs	110 μg/kg	(So. Cal LRM T20)
Total PAHs	3,286 μg/kg	(So. Cal LRM T20)
Chlordane	2.8 μg/kg	(So. Cal LRM T20)
Lindane	0.32 μg/kg	(TEL)

Linkage Analysis

- Watershed Model (LSPC)

  Links Sources to the Receiving Water

- Bay Model (EFDC)

  Simulates Assimilative Capacity using the output of the Watershed Model and other sources.

  – It has four sub-models: hydrodynamic, water quality, sediment transport, & toxics.

TMDL Waste Load Allocation Scenarios

- Scenario 1: The bed sediment is set at the Numeric Target Level (NT), and existing loads coming from the watershed.
- Scenario 2: The bed sediment is set at the NT, and watershed load reduced to the NT.
- Scenario 3: The bed sediment is set at the NT, and reducing water loads to less than NT until bed sediment concentrations can be sustained at or below the NT.

TMDLs and Allocations

PCBs				
Waterbody	TMDL/WLA	Existing Load	Reduction Required	
	g/d	g/d	g/d	%
Paleta Creek	6.35E-02	6.35E-02	0.00E+00	0%
Chollas Creek	2.47E-01	2.47E-01	0.00E+00	0%
Switzer Creek	3.27E-02	3.27E-02	0.00E+00	0%

TMDLs and Allocations

PAHs				
Waterbody	TMDL/WLA	Existing Load	Reduction Required	
	g/d	g/d	g/d	%
Paleta Creek	0.05E+02	1.08E+02	1.03E+02	95.5%
Chollas Creek	8.51E+01	4.07E+02	3.22E+02	80%
Switzer Creek	2.80E+01	3.50E+01	7.00E+00	20%
Chlordane				
Waterbody	TMDL/WLA	Existing Load	Reduction Required	
	g/d	g/d	g/d	%
Paleta Creek	2.23E-03	5.14E+00	5.14E+00	100%
Chollas Creek	1.37E-01	1.09E+01	1.08E+01	99%
Switzer Creek	4.50E-02	3.09E+00	3.04E+00	99%
Lindane				
Waterbody	TMDL	Existing Load	Reduction Required	
	g/d	g/d	g/d	%
Switzer Creek	7.64E-03	3.27E-02	2.50E-02	77%

Allocations

- 1 Waste Load Allocation (WLA) at bottom of watershed
- Allocate based on percent area in Watershed
- Qualitative assessment to determine contributing Land Uses, then allocate to those sources based on percent of land area

Margin of Safety

An Implicit MOS is included by the use of conservative assumptions in the model analysis

1. Used the high rainfall year for loading analysis
2. Used historic data as a constant value for background value in San Diego Bay
3. Did not assume that there was any loss of pollutants from the Bay source
4. Used ½ the detection limit value for PCBs from watershed
5. Did not include a degradation rate for toxics

Question: Do we need an Explicit MOS?

Implementation Plan

- Implementation Plan
  - Compliance Time (10 years)
  - Interim Targets (phase in reductions over time)
- Implementation Actions
  - Actions to consider for Load Reductions
  - Actions to consider for addressing Legacy Pollutants

Implementation Strategy for Load Reductions

- Actions may include:
  - Source control of sediment transport: Structural & Non Structural BMPs
  - Prevention of pollutants entering streams Structural & Non Structural BMPs
  - Creek restoration to prevent sediment erosion
  - Creosote piling replacement
  - Creosote Telephone Pole Removal

Implementation Strategies for Contaminated Bay Sediment

- Actions may include:
  - No Action
  - Dredging
  - Some Combination of Dredging and Capping
  - Other Ideas?

Regional Board Staff Contact Information

- Cynthia Gorham-Test

  phone: 858-467-2957

  e-mail: ctest@waterboards.ca.gov

- Lisa Honma

  phone: 858-467-2960

  email: lhonma@waterboards.ca.gov