

***CEQA Scoping Meeting for
Newport Bay
Copper TMDL
and other Metals***

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Purpose of CEQA Scoping Meeting

- *To inform the public of proposed projects including TMDLs*
- *To solicit public comment on environmental impacts of proposed projects*

Proposing to revise

USEPA's Metals TMDLs (Cu, Cd, Zn, Pb) for Newport Bay (2002)

Recommending

1 Revised Copper (Cu) TMDL

2 Non-TMDL Metals Action Plans (Zn, Hg, As, Cr)

3 Depromulgation of USEPA's Cd, Zn, Pb TMDLs

(Cu=copper, Cd=cadmium, Zn=zinc, Pb=Lead)

(Hg=Mercury, As=Arsenic, Cr=Chromium)

Legislation to Protect Water

Clean Water Act –federal (1972)

Goal -all waters of the U.S. are fishable and swimmable

States shall establish water quality standards

(beneficial uses + water quality objectives)

(beneficial uses -what water bodies are used for?)

California Water Code

Regions must establish

- *beneficial uses for water bodies in region*
- *water quality objectives to protect those uses*

Water Boards' responsibilities

- *Our job is protect and, where possible, enhance the quality of California's waters*

In California:

9 Regional Water Boards and State Water Board

Water Quality Control Plan (Basin Plan)

- *establishes water quality standards
(beneficial uses + water quality objectives)
for the ground and surface waters of the region*

Basin Plan Amendment (BPA)

To make changes in the Basin Plan

→ Basin Plan Amendment (BPA)

Public participation is part of the process

- *CEQA scoping meeting –environmental impacts*
- *Comment period on draft BPA (TMDL) and staff report*
- *Regional Board hearing for approval and adoption*
- ***Proposed revised Cu TMDL and USEPA's metals TMDLs will be BPAs if adopted***

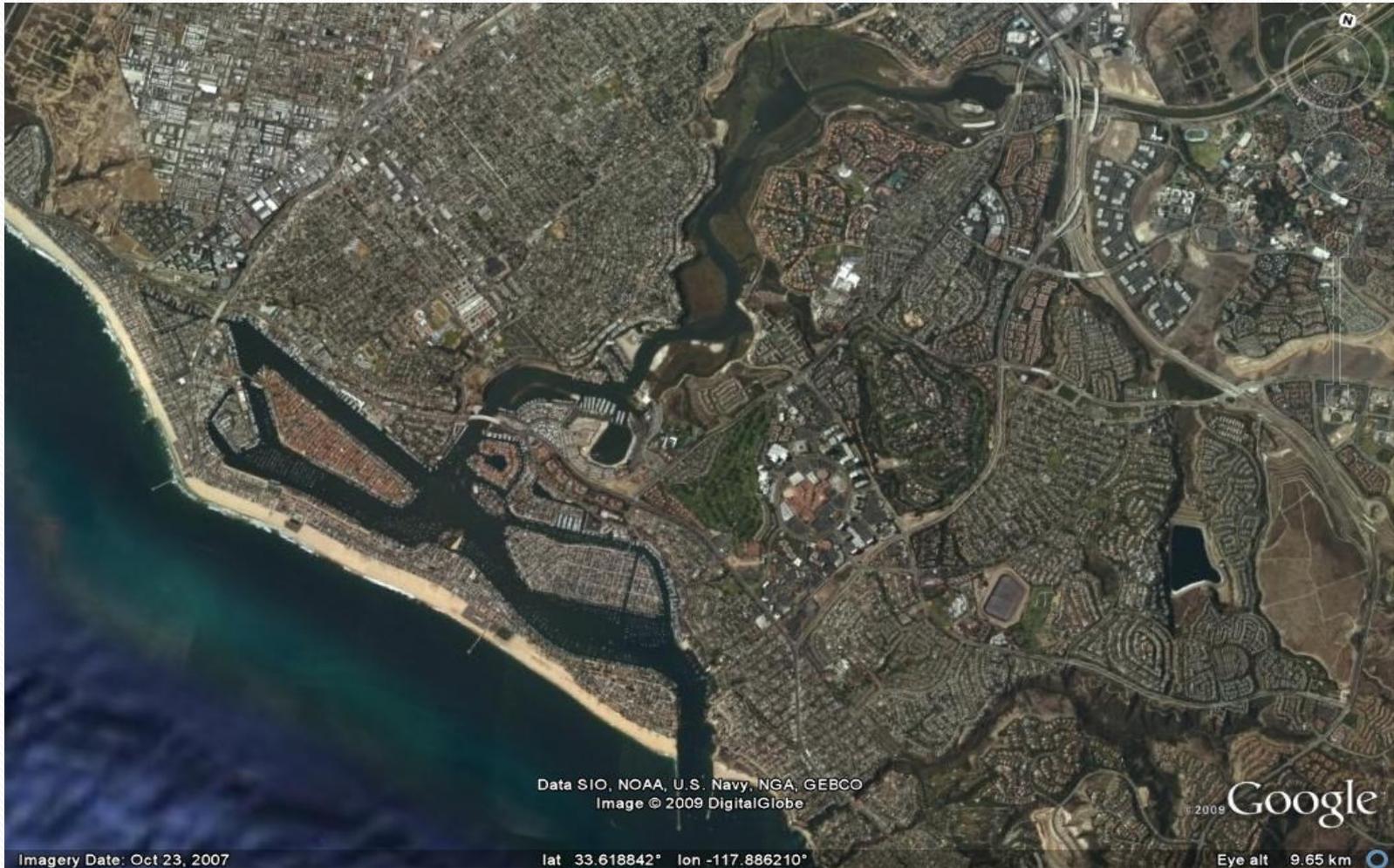
What is a TMDL??

TMDL = Total Maximum Daily Load

Total allowable pollutant load whereby water quality objectives are met and beneficial uses are protected

TMDL document includes

- *Total allocation for pollutant → TMDL capacity of a water body to assimilate pollutant load and still meet water quality objectives*
- *Source analysis for pollutant (copper (Cu))*
 - *determine sources of pollutant*
 - *quantify pollutant load from each source*
- *Allocations for each source (% of total allocation)*
- *Load reduction needed to meet TMDL*



Newport Bay (Storm Drain Study 2010)

Beneficial uses for Newport Bay (What is the Bay used for?)

	Upper Newport Bay	Lower Newport Bay
NAV		X
REC ₁	X	X
REC ₂	X	X
COMM	X	X
BIOL	X	
WILD	X	X
RARE	X	X
SPWN	X	X
MAR	X	X
SHELL	X	X
EST	X	

X = Existing or potential beneficial use, * Includes the Rhine Channel

Beneficial uses for Newport Bay

NAV =Navigation

REC₁ =Water contact recreation

REC₂ =Non-contact water recreation

COMM =Commercial and sportfishing,

BIOL =Preservation of biological habitats of special significance

WILD =Wildlife habitat

RARE =Rare, threatened, or endangered species,

SPWN =Spawning, reproduction, and development

MAR =Marine habitat

SHEL =Shellfish harvesting

EST =Estuarine habitat



*Upper Newport Bay –Ecological Reserve, Nature Preserve,
Marine Protected Area (Photo Robert Ellis)*

Beneficial uses impacted by Cu and other metals

- *Biological (the Bay is an important biological resource)*
 - *Preservation of biological habitats of special significance*
 - *Upper Newport Bay Ecological Reserve (DFG)*
 - *Upper Newport Bay State Marine Conservation Area (all UNB -DFG)*
 - *Upper Newport Bay Nature Preserve (OC Parks)*
 - *Protection of wildlife habitat*
 - *Protection of rare, threatened, or endangered species (especially during breeding)*
 - *Protection of areas for spawning, reproduction, and development*
 - *Protection of estuarine habitat, marine habitat*
- *Commercial and sport fishing, shellfish harvesting*

Water Quality Objectives for Metals

- *equivalent to criteria in California Toxics Rule (CTR) (USEPA 2000)*
- *legally enforceable by Water Boards*
Regional Boards must take action(s) to make sure water quality objectives are met
→ TMDLs or other regulatory action
(i.e. permit, prohibition)

Water Quality Objectives for Metals

- *CTR criteria are for Dissolved Metals*
- *Separate criteria for saltwater and freshwater*
- *Saltwater CTR chronic criterion for Cu is 3.1 $\mu\text{g}/\text{L}$*

Impaired Waters

- *Clean Water Act Section 303(d) –states must identify water bodies that exceed water quality objectives*
- *CA Listing Policy -methodology to determine if water body is impaired*
- *Impaired waters listed on 303(d) list*

USEPA's Metals TMDLs (2002)

- *Upper Bay -cadmium (Cd), copper (Cu),
zinc (Zn), lead (Pb)*
- *Lower Bay -copper (Cu),
zinc (Zn), lead (Pb)*
- *legally enforceable by state*

The BPA Process

New data → Impairment Assessment (Metals)

Metals exceeded standards → impaired water body

→ List water body (USEPA 303(d) list)

(Delist or Do Not List based on no exceedances)

if List → TMDL? Other regulatory action?

(revise USEPA's Metals TMDLs?)

if TMDL → Basin Plan Amendment

and Implementation Actions

Metals Impairment Assessment for Newport Bay

- *Water*
- *Sediments*
- *Fish Tissue*

Metals in Water

*Dissolved Copper (Cu) exceeded CTR criterion in Upper and Lower Newport Bay → TMDL required
(Data from Cu-Metals Marina study, O.C. monitoring)*

No other metal exceeded the CTR criteria in the Bay

Sources of Copper (Cu)

- *Largest source of Cu to Bay
= recreational and commercial boats
(36,000 lbs dissolved Cu/yr)
(Cu load = Cu leach rate x hull area x # slips)*

(USEPA's Cu TMDL also found boats to be largest source of Cu to Bay ~50,000 lbs/yr)



Boats near Balboa Island (Photo from City of Newport Beach)

Hull Water Effects

Cu AFPs → *Cu* → *fouling organisms*

→ *other marine organisms*

sublethal effects on fish

-reproductive, nervous system

lethal effects on invertebrates

Cu in Newport Bay

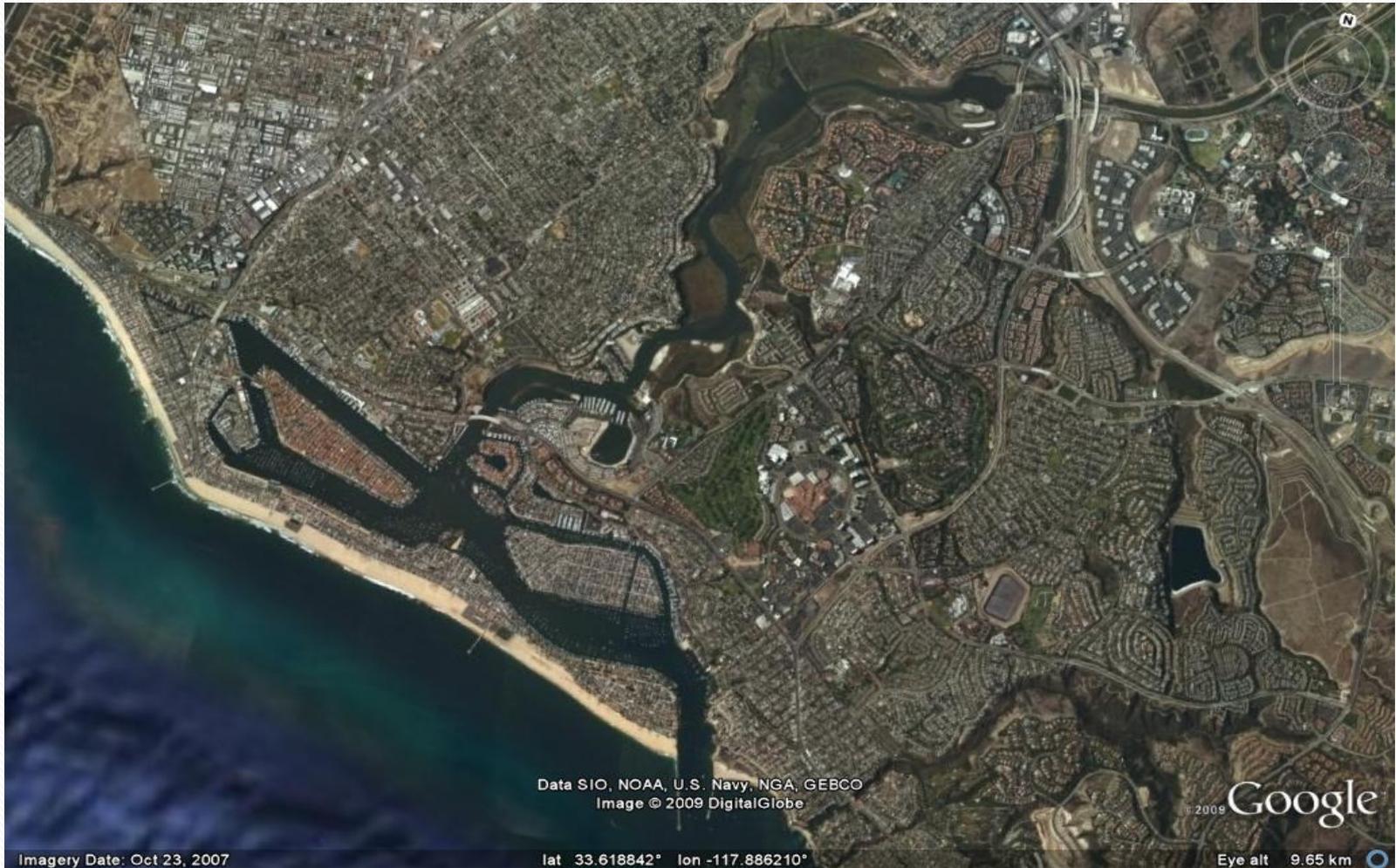
- *Cu inputs from boats = 36,000 lbs/yr*
- *Cu allocations for boats = ~6,000 lbs/yr*
- *An 83% reduction of Cu discharges from boats is needed to meet the proposed Cu TMDL*
- *Recommend Phased Cu TMDL*

Phased Cu TMDL (Proposed)

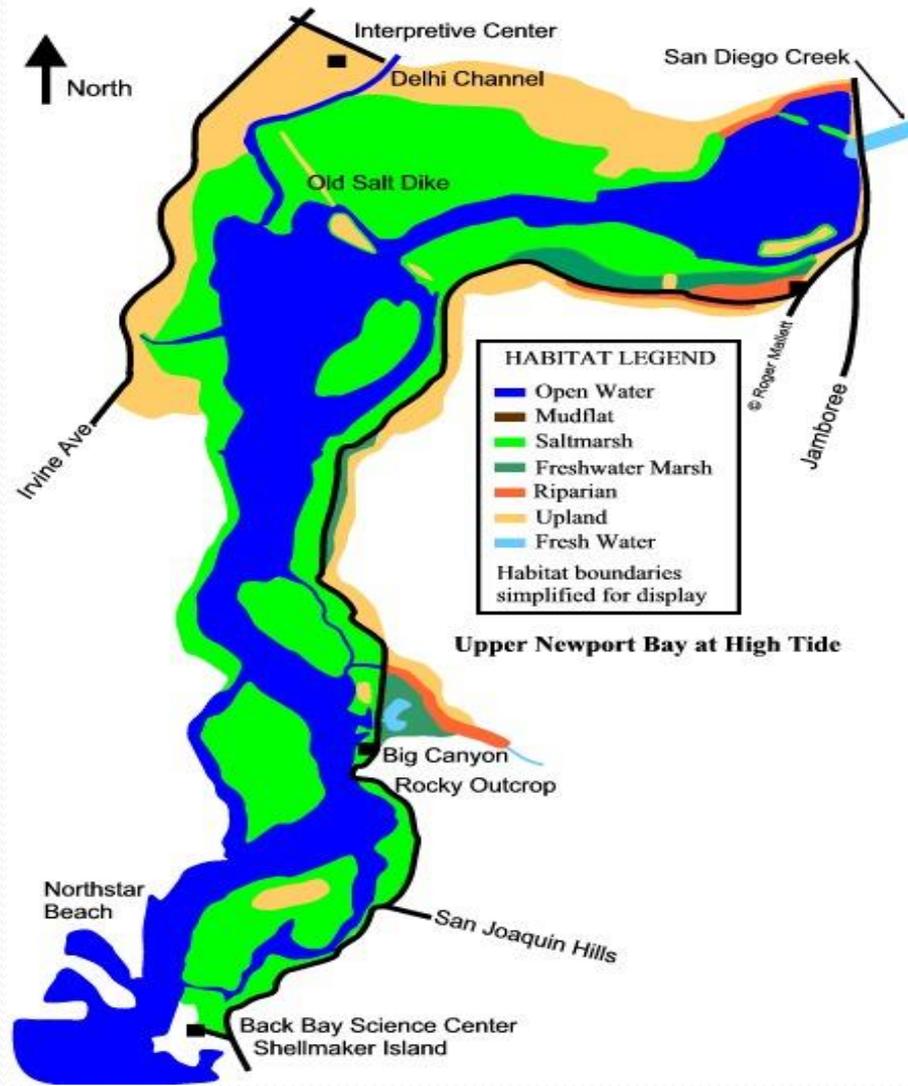
- *83% reduction in Cu discharges from boats as soon as possible but no later than 15 years (from USEPA approval date of BPA (Cu TMDL))*
- *Interim schedule:*
- *As soon as possible but no later than*
- *3 years (from date of approval of the BPA),
20% reduction in Cu discharges from boats*
- *7 years, 50% reduction*
- *11 years, 70% reduction*
- *15 years, 83% reduction*

Sources of Copper (Cu)

- *Largest source of Cu to Bay*
= *recreational and commercial boats*
(36,000 lbs/yr)
- *Second largest source of Cu*
= *tributary runoff (3,000 lbs/yr)*



Newport Bay and tributaries (Storm Drain Study 2010)



Upper Newport Bay and tributaries (Map -Newport Bay Conservancy)

Sources of Copper (Cu)

- *Largest source of Cu to Bay*
= *recreational and commercial boats*
(36,000 lbs/yr)
- *Second largest source of Cu*
= *tributary runoff (3,000 lbs/yr)*
- *Other sources of Cu = storm drain runoff*
(~300 lbs/yr) *may be important locally*



Carnation storm drain (Storm drain study 2010)



PCH West storm drain (Storm drain study 2010)

Metals in Sediments

Copper (Cu), Zinc (Zn) and Mercury (Hg) exceeded sediment guidelines in parts of Lower Newport Bay (marinas and West Newport Bay)



Sediment data –Cu (LNB Sediment study 2013)

Metals in Fish Tissue

- *Arsenic (As) exceeded lower fish tissue guideline for human health (hh) in Upper & Lower Bay*
- *Chromium (Cr) exceeded fish tissue guideline for wildlife (wl) in Upper & Lower Bay*
- *Zinc (Zn) exceeded fish tissue guideline for wildlife (wl) in Lower Newport Bay*

Metals Impairment Assessment Summary

- *Water: dissolved Cu (UNB, LNB)*
- *Sediments: Cu, Zn, Hg (parts of LNB)*
- *Fish Tissue: As (hh), Cr (wl) (UNB, LNB)
Zn (wl) (LNB)*
- *No impairment found for Zn (UNB)
or Pb and Cd (UNB, LNB)*

Recommendations

*Recommendations for revising USEPA's TMDLs
(Cu, Zn, Pb, Cd)*

- *Revise Copper (Cu) TMDLs in UNB +LNB*
- *USEPA depromulgate TMDLs for Zn, Pb, Cd*
- *Zinc (Zn) & Mercury (Hg)
List in LNB, Non-TMDL Action Plan*
- *Arsenic (As) and Chromium (Cr)
List in UNB +LNB, Non-TMDL Action Plan*

Recommendations for Cu

- *Revise USEPA's Cu TMDL*
- *Implementation -must reduce Cu loading from boats (Cu antifouling paints)*
 - *Control sale & use of Cu paints*
(DPR -Dept. of Pesticide Regulation)
 - *Control Cu discharge from Cu paints*
(Regional Board, USEPA)
 - *RB and DPR authority*

- *Control sale & use of Cu paints*
(DPR –Dept. of Pesticide Regulation)
 - *DPR set max. allowable leach rate in 2014*
 - *DPR has stated that this leach rate will not achieve Cu criterion in larger marinas and*
 - *we need additional management strategies to achieve compliance (conversions to non-Cu paints, BMPs)*
 - *May get some decrease in Cu loading if Cu paints now used in Newport Bay have leach rates > max. allowable leach rate*
 - *Discussions w/DPR regarding regional restriction/ban on the sale & use of Cu paints*

- *Control Cu discharges from Cu paints
(Regional Board, USEPA)*

**need 83% reduction in Cu discharges from boats*

*Regional Board Regulatory options to implement
TMDL*

- *Individual or General Waste Discharge Requirements*
- *Conditional Waiver of WDRs*
- *Prohibition of Waste Discharge*
- *Cleanup and Abatement Orders (sediments)*

- *Control Cu discharges from Cu paints (dischargers)*

Implementation recommendations for dischargers to reduce Cu from boats

Work w/City ,County, boat owners, boatyards, marinas to achieve this Cu TMDL (City, County take lead)

- *Convert boats from Cu to nontoxic paints*
- *Convert boats to lower leach rate Cu paints*
- *Use BMPs (best management practices) for all hull cleaning (soft pads and/or slip liners during cleaning)*
- *Education program(s)*
- *Use lease requirements and/or incentives to use nontoxic paints*

Implementation

Work w/City ,County, boat owners, boatyards, marinas to achieve this Cu TMDL

- *Some education programs have been conducted on Cu paints and converting to nontoxic paints*
- *City of Newport Beach passed a resolution recommending the use of Cu free hull paints (Resolution #2010-53)*

Implementation option

Convert boats from Cu to nontoxic paints

- *key parties –City, County, boaters, boatyards*
- *some nontoxic paints are viable (available, cost effective, last longer than Cu paints)*
- *boatyards may need additional equipment to apply nontoxic paints*
- *some grant money may be available to help w/conversion from Cu to nontoxic paints*

Implementation option

Convert boats to lower leach rate Cu paints

- *key parties – City, County, boaters, boatyards*
- *some lower leach rate Cu paints are available*
 - *may be helpful during conversion period to nontoxic paints*
- *boatyards don't need additional equipment*

Implementation option

Use BMPs (best management practices) for all hull cleaning

- *key parties – City, County, divers, boaters*
- *BMPs must be used by all divers (cleaning w/soft cloth)*
- *require permits and training for divers*
- *may also use cleaning liner for hull cleaning*

Implementation option

Use lease requirements and/or incentives to use nontoxic paints

- *key parties - City and County, marina owner/operators to use lease requirements or incentives to encourage the use of nontoxic or low Cu paints*
- *key parties - individual boaters to convert boats from Cu to nontoxic or low Cu paints*

Recommendations for Zn, Hg

- *Non-TMDL Action Plans for Zn and Hg*
- *Since sediment Zn and Hg exceed guidelines in areas of high sediment Cu, remediation for sediment Cu should also remediate Zn and Hg (dredging Turning Basin area, marinas)*
- *Remediation of sediment Zn may reduce Zn concentrations in fish tissue*

Recommendations for As, Cr

- *Non-TMDL Action Plans for As and Cr*
- *Since neither As nor Cr exceed the listing policy criteria in water or sediment, and sources need to be identified and quantified, no allocations can be assigned and a source identification study is necessary*

Options for Metals TMDLs

- 1 Recommended actions (as discussed)*
- 2 Implement USEPA's TMDLs (no action)*

USEPA's TMDLs were promulgated in 2002, allocations require significant reductions in Cu from boats (90%) and TMDLs include allocations for Zn, Pb, Cd
- 3 TMDLs for all metals causing impairment*

Meeting Summary

1 CEQA Scoping Meeting

2 Goal –to solicit comments on environmental issues for developing CEQA documents related to recommended actions that include:

- the revised Cu TMDL; Non-TMDL Action Plans for Zn, Hg, As, Cr; depromulgation of USEPA TMDLs for Zn, Pb, Cd;*
- implementation actions to support the above TMDLs and Action Plans*



Newport Bay (Photo D Ramey Logan 2012)



Contact Info

- *Linda Candelaria, PhD, CSSc*
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- For questions or comments, send an email:
 - RB8-CuTMDL@Waterboards.ca.gov
- *Join email list:*
http://www.waterboards.ca.gov/resources/email_subscriptions/reg8_subscribe.shtml
- *Web link:*
http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/tmdl_metals.shtml
- *Or call 951-782-4991*