# Status of SQOs and Harbor TMDL Test Drive

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# Overview

- Summary of efforts since last meeting
  - Harbor Technical Work Group
  - Compliance Subcommittee
- Benthic Community Protection SQO
  - Overview
  - Issues associated with SQO and application within TMDL
  - Approach to resolving issues
- Human Health SQO
  - Overview
  - Issues associated with SQO and application within TMDL
  - Approach to resolving issues
- Benefit to SQOs

# HTWG and Compliance Subcommittee

- Advisory Committee on hold till funds available
  - Collaborative effort focused on Harbor Technical Work Group
- Initial HTWG meetings focused on technical needs and studies
  - Identify data gaps and information needs
  - Review of proposed studies

- Multiple TMDL implementation issues identified early on, but limited opportunity to resolve
- Compliance subcommittee established January 2014
  - Separate meeting with select members
    - Experience with policy permit and compliance requirements
  - Provided time and discussion to make progress

# Benthic Community SQO

Overview

- Based on Weight of Evidence at each station
  - Sediment Chemistry, Sediment Toxicity, Benthic Community Health
- Provides a station level categorization that integrates LOE responses
  - Degraded: possibly, likely, clearly impacted categories
  - Healthy: unimpacted categories
- Categorical result does not provide information on cause of the toxicity or benthic community degradation
  - Only addresses condition (healthy/degraded)

# SQO Implementation Strategy

Water Quality Control Plan:

- Assess sediment quality using the Weight of Evidence approach
- If stations classified as likely or clearly impacted must perform stressor identification (SI)
  - Confirm stations classified as possibly impacted prior to SI
- After cause determined, all regulatory or management actions would be chemical specific – contaminants identified by SI
  - Approach used generally in sediment cleanup programs such as Superfund
- Does not address TMDL related applications

# TMDL Implementation Issues

1. How should compliance with TMDL allocations through the SQO target option be determined?
2. How should monitoring program be designed to address TMDL compliance needs?
3. How should stressor identification be incorporated into TMDL?

# 1. Compliance Determination – Background

- Plan does not provide guidance on how to determine compliance with TMDL SQO-based targets
- Unclear what statistical approach should be used with SQO category data
- 303(d) statistical approach currently specified in plan for assessment
  - Uncertain whether 303(d) approach appropriate for TMDL use
  - Data requirements are burdensome

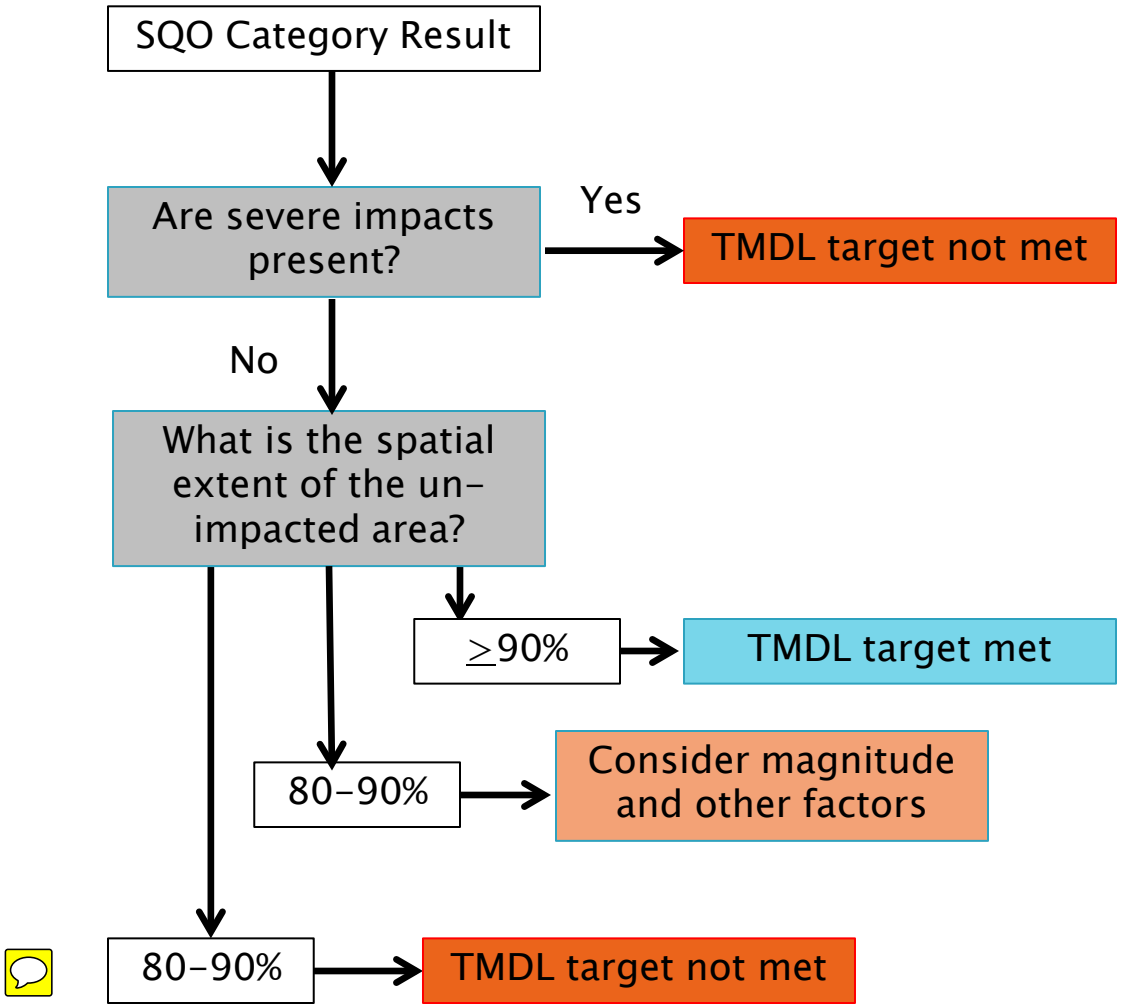
# 1. Compliance Determination – Approach

- Use a different method than that for 303(d) listing/delisting
- Develop conceptual approach for TMDL compliance determination
- Determine statistical method for data evaluation

- Status:
  - Draft approach developed
  - Investigating statistical methods

# 1. Compliance Determination–Preliminary Concept

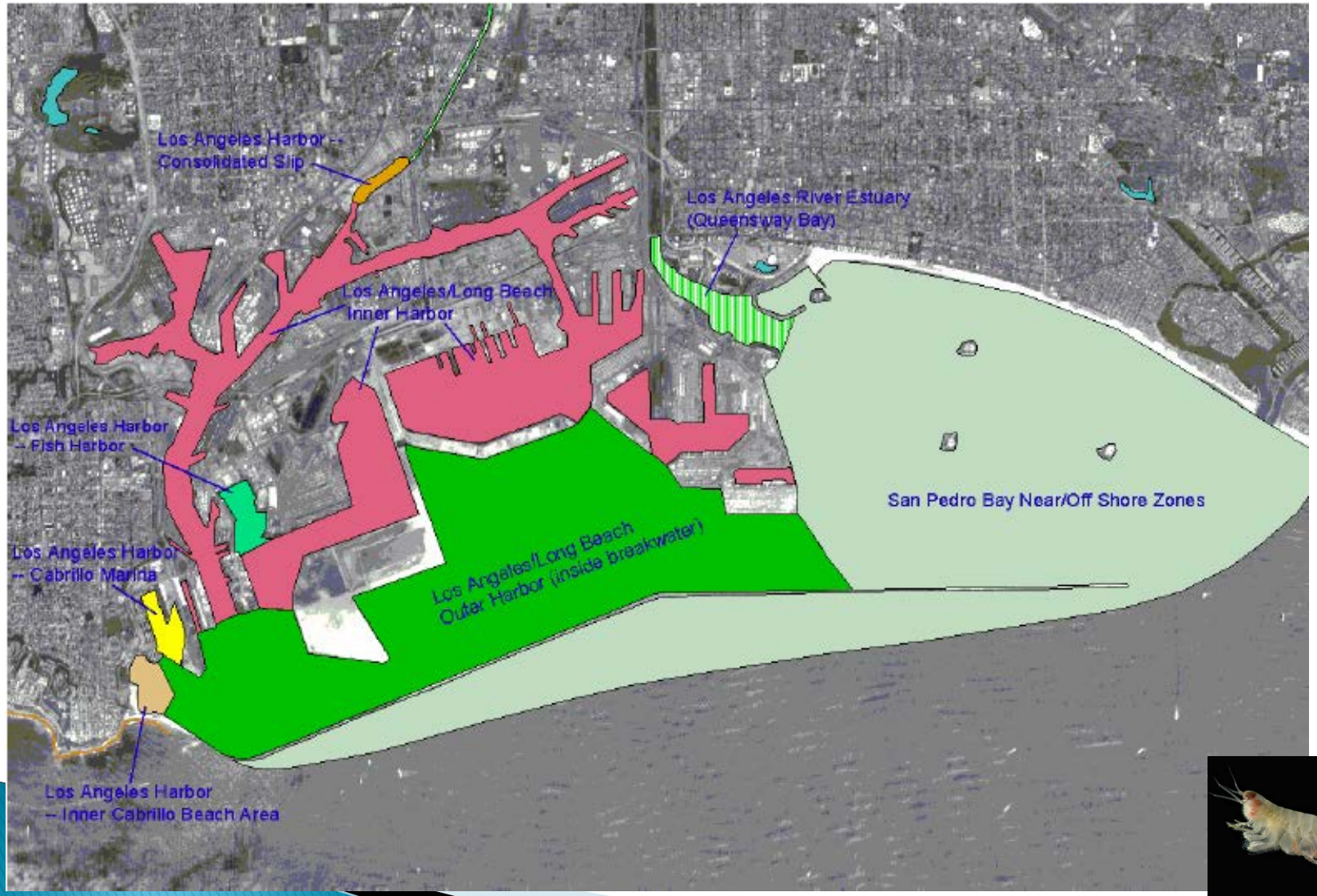
- New approach aligned with SQO data characteristics
- Key elements
  - Based on percent area meeting SQO
  - Magnitude of impacts is considered
- Statistical method under development


SQO Category Result
Are severe impacts present?
Yes
TMDL target not met
No
What is the spatial extent of the un-impacted area?
≥90%
TMDL target met
80-90%
Consider magnitude and other factors
80-90%
TMDL target not met

# 2. Monitoring Program Design – Background

- TMDL requires a SQO compliance decisions for each assessment unit
- Need to develop MLOE Monitoring program for each TMDL assessment unit
- Suitability of existing assessment units uncertain
  - Existing assessment units established in Basin Plan and used for 303(d) Water Body designations
  - Not necessarily based on factors that commonly drive sediment quality
    - Hydrodynamics
    - Sources
    - Hydrology
    - Habitats

# Assessment Units




# 2. Monitoring Program Design – Approach

- Develop assessment unit design parameters
- Reevaluate and potentially modify assessment units

- Status:
  - Ongoing
  - Changes to ongoing monitoring program would be disruptive

# 3. Stressor Identification – Background

- Limited guidance for performing stressor identification on sediment
- No standardized process for interpreting results
  - How should the adequacy of stressor identification studies be judged?
- No formal process for incorporating results into TMDL
  - What is the mechanism to amend list of stressors within TMDL?

# 3. Stressor Identification – Approach

- Stressor identification study needed
  - Funding and timing uncertain
- Review results and findings of SI study
  - Determine weight of evidence needed to support causal determination
- Develop process for modification of TMDL list of stressors
  - Adaptive management

- Status
  - Future topic

# Human Health SQO

- Relies on two independent measures to assess sediment quality
  - Sediment Chemistry used assess sediment contribution
  - Tissue chemistry used to characterize risk to human consumers and to evaluate sediment contribution
- The data collected represents a snapshot of processes that act over broad spatial and temporal scales
  - Fish foraging area, age and life history of fish
  - Trends in contaminant loads and losses to system

# Human Health SQO

- Tiered Assessment Framework results in a categorical outcome that reflects average conditions across the area of interest or site

# Implementation Strategy

As envisioned by State Water Board Staff

- Use tiered approach, depending on site characteristics, to assess entire site
- If site classified as possibly, likely or clearly impacted, SQO not met and stressor is known
- Evaluate management options and take appropriate action

# Implementation Strategy

## Multiple Tiers

- Data requirements and complexity relate to situation
- Reduced effort for sites of no or low risk

**Tier 1: Screening**
**Low Data Requirements**
**Conservative Assumptions**

→ Site meets SQO

**Tier 2: Site Assessment**
**More Data Required**
**Site Specific Conditions**

→ Site meets SQO

→ Site does not meet SQO

**Tier 3: Refined Assessment**
**More Complex Situations**
**Evaluate Management Options**

→ Site meets SQO

→ Site does not meet SQO

# Human Health SQO Issues

1. What are the monitoring program design requirements?
2. What constitutes a Tier 3 assessment?
   - What is allowed?
3. How should compliance be determined?
   - One result per site
4. How to address spatial patterns in contamination?
   - Hotspots
   - Regional background

# 1. Monitoring Program – Background

- No requirements or specifications for monitoring have been developed
- Guidance for determining assessment units is not available

# 1. Monitoring Program – Approach

- Determine monitoring program parameters based on science study results
- Develop assessment unit design parameters
- Reevaluate and potentially modify assessment units
  - Consider benthic SQO needs

- Status:
  - HTWG has helped refine monitoring program design
    - E.g., species selection and results interpretation
  - Assessment unit design is a future topic

# 2. Tier 3 Assessment – Background

- Role of Tier 3 in assessment and remedy planning is unclear.
- Requirements for Tier 3 have not been established
- Limited guidance on how to interpret results

# 2. Tier 3 Assessment – Approach

- Clarify role of Tier 3 through HTWG and Advisory Committee discussion
- Determine Tier 3 requirements through work plan review by HTWG
- Develop interpretation guidance through results review by HTWG
  - Maintain consistency with SQO assessment framework

- Status:
  - Ongoing
  - Clarified role of Tier 3 in assessment and remedy planning
  - Refined study design

# 3. Compliance Determination – Background

- Assessment outcome differs from benthic SQO assessment
  - Assessment results in single categorical result for entire site
    - Instead of a multiple stations within site
  - Statistical evaluation usually requires multiple data points

# 3. Compliance Determination – Approach

- Limited discussion to date
- Initial focus has been on benthic SQO

- Status
  - To be addressed in upcoming meetings

# 4. Contaminant Spatial Patterns Background

- Legacy contamination is widespread in coastal sediments
- Legacy contamination may dominate bioaccumulation in sportfish
  - Due to fish movement/foraging outside of site
  - How should this contribution be addressed?
- Small sites also present assessment challenges
  - Difficult to quantify contribution to bioaccumulation in sportfish
  - How should hotspots be addressed?

# 4. Contaminant Spatial Patterns Approach

- Develop approaches to address each situation
  - Background contamination
  - Small sites/hotspots
- Test and refine approaches using port science study results

- Status:
  - Ongoing

# SQO "Test Drive"

- Application of draft assessment framework to complex situation
- Developing practical implementation guidance
- Comparing bioaccumulation models

# Window of Opportunity

- Overlap with TMDL special studies
- Similar issues identified for the TMDL are important for SQO implementation
- Special studies provide data for comparison
- Contract with SCCWRP awarded in March, 2014

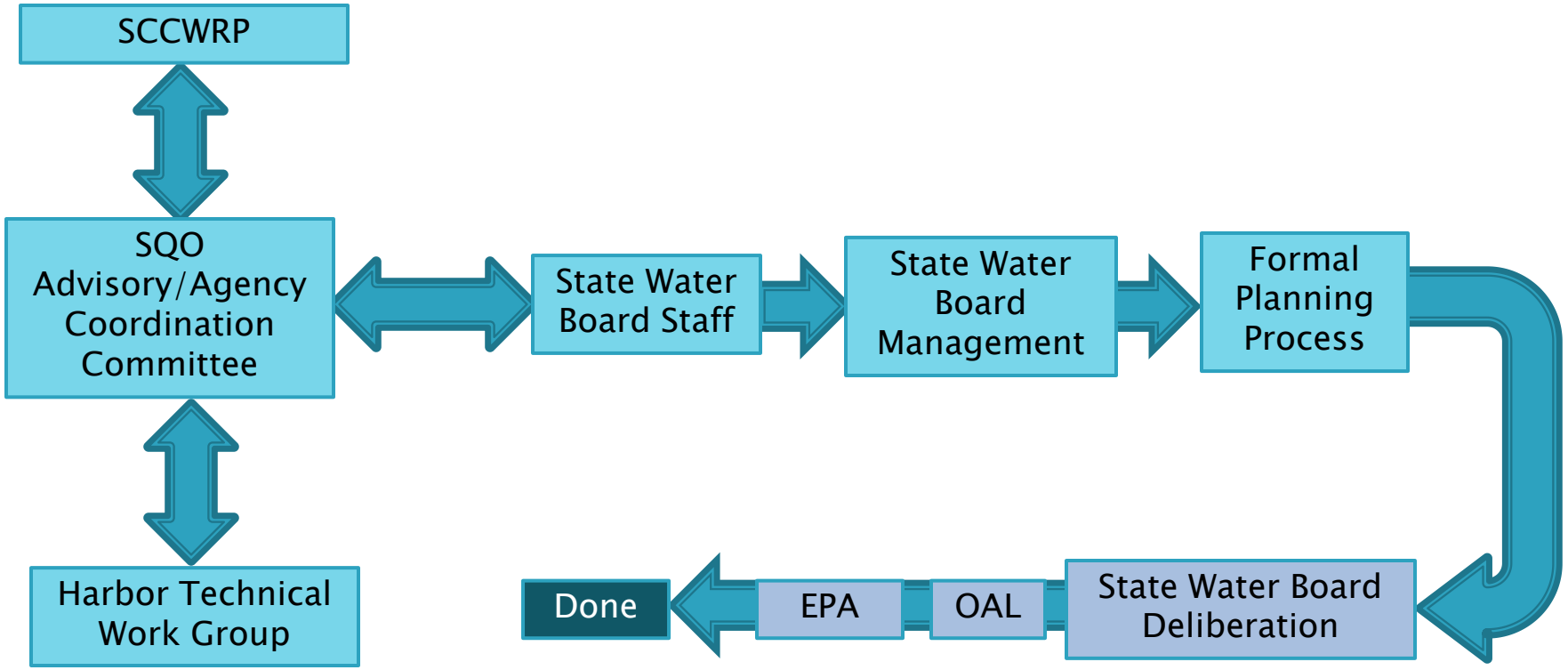
# SQO Advisory Committee Issues – Benthic Community SQO

1. Monitoring Program Design
2. Compliance Determination
3. Stressor Identification

# SQO Advisory Committee Issues– Human Health SQO

1. Monitoring Program Design
2. Role of Tier 3 and criteria for application
3. Use and interpretation of Tier 3 Assessment
4. Compliance determination
5. Spatial distribution of contaminants
   - Regional background
   - Hotspots

# Process for Development and Adoption




# Studies to Support the Harbor Toxics TMDL Reopener and Remedy Planning

- POLA/POLB have committed significant funds in order to
  - Understand sources and transport of PCBs and DDTs into and out of the LA/LB Harbor
  - Assess fish movement and uptake of PCBs and DDTs within and outside the harbor
  - Understand partitioning between water, suspended and bedded sediment
  - Refine Sediment and Hydrodynamic models
- Develop a predictive tool to assess existing conditions as well as management scenarios