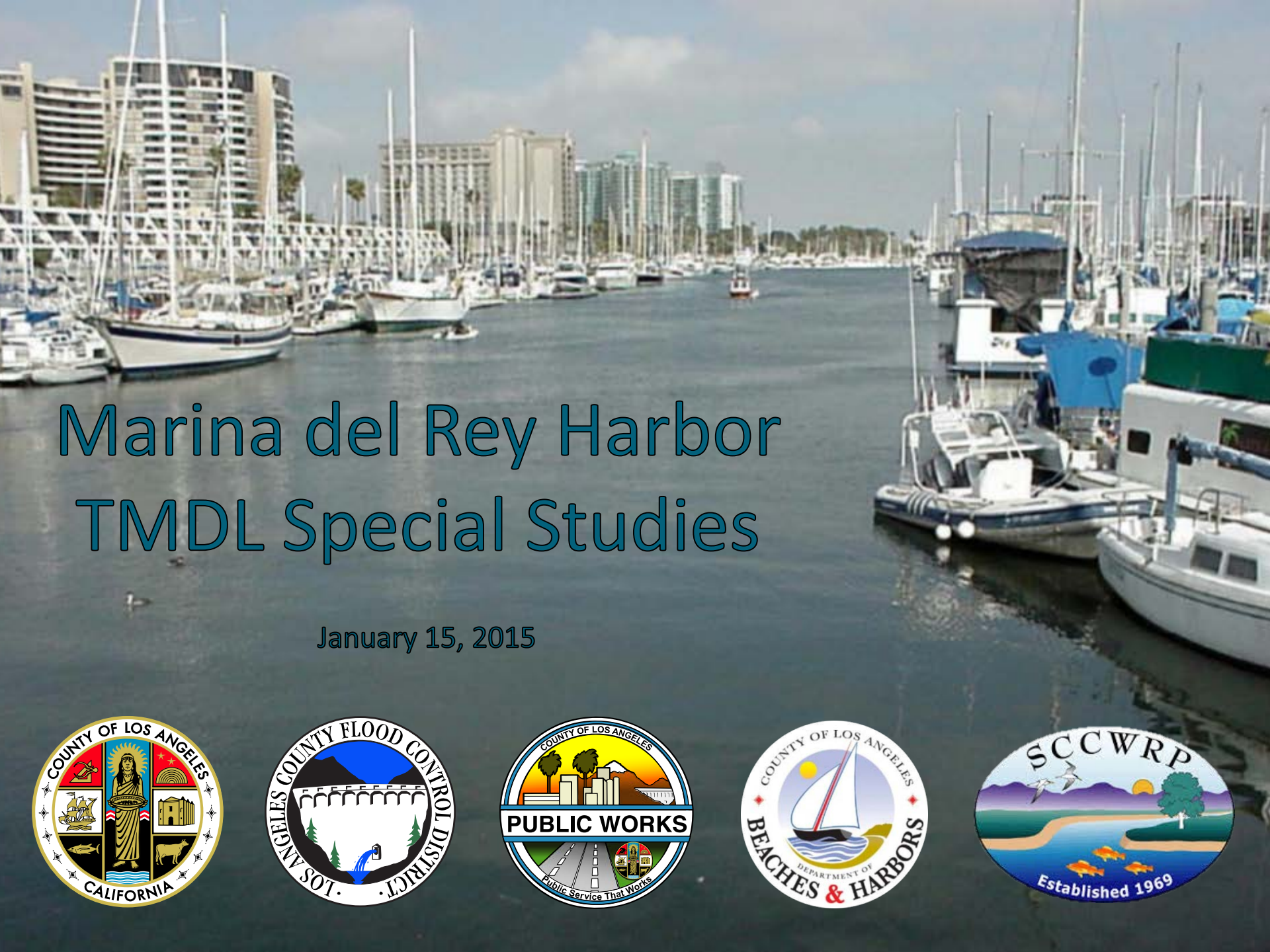

Marina del Rey Harbor TMDL Special Studies

January 15, 2015

Presentation Overview

- Background issues
- Study objectives
- Study design
- Schedule

Background

- Contaminants above levels of concern in water and sediment at many locations in the harbor
- Sediments contain elevated levels of trace metals and pesticides
- Water frequently exceeds state standards for copper and bacteria
- Coastal embayments receive pollutants from multiple sources
  - Urban runoff
  - Industry discharges
  - Port and marina activities

Toxics Total Maximum Daily Load (TMDL)

- MdRH listed as an impaired water body due to toxic pollutants in sediment and fish tissue
  - Development of TMDLs to reduce pollutant inputs and to restore water quality in the marina
- 2005 MdRH Toxics TMDL established
  - Limits on trace metals, pesticides, PCBs
  - Limited to back basins D, E and F (sediments and fish tissue)
  - Coordinated Monitoring program (CMP) for water and
  - Special studies to improve understanding and refine TMDL
    - Sediment quality characterization (2008 Weston Study)
    - Low Detection Level Study (2011)
    - Metal Partitioning Coefficient study (2011)

2014 TMDL Revision

- TMDL updated to reflect new information
- Extended to entire marina
  - Revised numeric targets for compliance
- Added new requirements for sediment monitoring
  - Stressor identification
  - Sediment quality objectives (SQOs) assessment survey
- Added limits to copper discharge based on water column standards
  - Numeric limit for dissolved copper target of 3.1µg/L
  - Require 85% reduction in copper loads to MdRH
- 2016 deadline for special study completion
- 2024 deadline for attainment of copper load allocations

MdRH Special Studies

- 2 studies initiated to address new TMDL conditions
  - Completion planned in 2016, for consideration in next revision
  - Funded by LA County and other Permittees
- Sediment quality impact stressor identification
  - Goal: Update sediment quality assessment for MdRH and determine cause of impaired sediment quality
- Copper site-specific objective development
  - Goal: Determine more accurate water quality objective for copper that may support revised load allocations

Principal Research Organizations

- PI: Southern California Coastal Water Research Project
  - Joint powers research institute focused on water quality research and management
    - Steven Bay & Doris Vidal-Dorsch
- Co-PI: Anchor QEA
  - International engineering and water quality research firm
    - Shelly Anghera, Wendy Hovel, Vada Yoon

Sediment Stressor Identification

- MdRH stressor identification study will provide information required by the TMDL
  - Assess sediment quality using SQO-specified methods
    - State guidelines/methods for Bays and Estuaries on sediment
  - Determine which contaminants are responsible for sediment quality impacts
  - Demonstrate that you are able to attain the SQO

Sediment Study Design

Four key elements

- Sediment quality assessment survey
  - Measure current conditions of chemistry, toxicity, and biological impacts at multiple MdRH stations
- Toxicity identification evaluation (TIE)
  - Laboratory studies to isolate and identify cause of sediment toxicity
- Advanced chemical analyses
  - In addition to TMDL listed contaminants, also measure concentrations of current use pesticides (pyrethroids)
  - Determine bioavailable portion of sediment-associated contaminants
- Toxicant confirmation
  - Laboratory sediment toxicity studies to verify presumptive cause of toxicity is responsible for biological effects

Expected Study Outcomes

- Current assessment of MdRH sediment quality
  - Compare to previous TMDL (2008) and regional monitoring studies (2013)
  - Temporal trend of reduced sediment toxicity may indicate partial TMDL compliance
- Determination of cause of sediment impairment
  - Support modified TMDL requirements or eliminate some contaminants of concern
- More accurate contaminant thresholds
  - May support alternative TMDL targets
  - Revised TMDL that is more effective and feasible

Site-Specific Copper Objective

- Local variations in water quality characteristics affect the toxicity of copper in marine waters
  - EPA and CA water quality objectives based on toxicity tests using laboratory reference waters
  - Site water characteristics often reduce copper toxicity
  - EPA and Water Board allow development of site-specific objective (SSO) to take into account site water characteristics
- MdRH special study will develop a copper SSO
  - Assess current levels of water toxicity and copper binding
  - Determine if a higher copper numeric target is protective of environment

SSO Study Design

Three key elements

- Toxicity and water quality surveys
  - Evaluate spatial and seasonal variations in toxicity and water chemistry
- Copper binding and water effects ratio testing
  - Laboratory toxicity tests and chemical modeling to determine copper toxicity thresholds for MdRH waters
- SSO development and analysis
  - Calculation of site-specific numeric targets for dissolved copper
  - Development of proposed revised copper load allocations

Expected Outcomes

- Current assessment of MdRH water toxicity
  - Are sensitive aquatic life currently protected?
- Revised copper water quality objective
  - May be higher than current objective
- Proposed alternative copper numeric targets and load allocations
  - Proportional to SSO
  - Water Board will consider information in next revision of TMDL

Schedule and Process

- Workplan development for both studies: early 2015
  - SSO study justification report
  - SSO Technical Advisory Committee and regulator review
  - To include: sampling and analysis plans, QA/QC plan, methods, schedule
- SSO sampling and testing: Spring 2015-Summer 2016
- Sediment sampling and testing: Summer 2015-Summer 2016
- Quarterly updates for study participants
- Data analysis and reporting: Fall 2016

Opportunities for Involvement

- Quarterly updates
  - Coordinate with Permittees and regulatory agencies
- Public outreach meetings
  - Workplan review and comment: ~Spring 2015
  - Preliminary results: ~Fall 2016

Thank You

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