

2014 Draft Final Selenium TMDLs for the Newport Bay Watershed

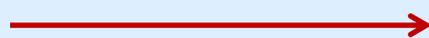
Karen Cowan
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*Santa Ana Regional Water Quality Control Board
June 13, 2014*



Challenges Remaining from 2009

- Appropriate numeric targets, in particular fish tissue
- Appropriate allocations – translation of tissue into water column concentrations and/or use of mass-based allocations
- BMPs required to attain final allocations
- Compliance schedule
- Permitting consequences, given the challenges and unknowns
- SSOs



Decoupled TMDL and SSO
into separate Basin Plan
Amendments

Public Workshops

- Purpose: resolve outstanding issues
- Purpose: create basis for finalizing TMDL
- Professionally facilitated
- Continued historic stakeholder process

Stakeholder Group	Representatives at the Table
Regulated Dischargers	4
Regional Board / State Board Staff	4
US EPA	1
USGS/USFWS	2
Environmental Community	2
Business Community	2
Consultants supporting TMDL development	4

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD



NOTICE OF PUBLIC WORKSHOPS

A series of three workshops will be held to discuss the development of Total Maximum Daily Loads (TMDLs) for Selenium in the Newport Bay Watershed

BACKGROUND

In 2002, the United States Environmental Protection Agency (US EPA) promulgated Toxics TMDLs for the Newport Bay watershed. These Toxics TMDLs covered many different constituents, including selenium. Since the promulgation of the Toxics TMDLs, the Santa Ana Regional Water Quality Control Board (Regional Board) has been working to develop several constituent-specific Basin Plan Amendments in order to adopt Implementation plans and compliance schedules, as well as to modify, as appropriate, the TMDLs promulgated by US EPA.

In 2004, stakeholders in the Newport Bay watershed developed and implemented the Nitrogen and Selenium Management Program (NSMP), focused on addressing issues of nitrogen and selenium. The Regional Board has worked collaboratively with the stakeholders in the NSMP on selenium-specific efforts, including development of tissue-based site-specific objectives and a Best Management Practices (BMP) Strategic Plan for the watershed.

Building off the work and collaborative process of the NSMP, the Regional Board worked with stakeholders to develop a draft staff report and Basin Plan Amendment to incorporate selenium-specific TMDLs. These TMDLs, once adopted and approved, would supersede the selenium components of US EPA's 2002 Toxics TMDLs. In 2009, working documents of the staff report and Basin Plan Amendment were prepared, but due to numerous scientific, legal and economic challenges, the TMDL development process was halted.

Since that time, Regional Board staff has continued to work with stakeholders and other regulatory and resource agencies to identify solutions to these challenges. In order to proceed with the TMDL development process, a series of three workshops will be held to provide an opportunity for focused discussion on remaining issues. These workshops will form the basis for the NSMP stakeholders, acting as a third-party with consultant support, to assist the Regional Board in completing the staff report and Basin Plan Amendment by mid-2014. Regional Board staff intends to bring the selenium-specific TMDLs forward for consideration by the Regional Board by the end of 2014.

Public Workshops (con't)

Newport Bay Watershed Selenium TMDLs Staff Report

Annotated Outline

March 19, 2014

This annotated outline is intended to present the anticipated organization, content, and objectives of the 2014 Newport Bay Watershed Selenium TMDLs. The outline will be used to support the discussions between staff of the Santa Ana Regional Water Quality Control Board (Regional Board), State Water Resources Control Board (State Board), United States Environmental Protection Agency (USEPA), County of Orange, and the consultant team.

The outline is based upon the discussion, key points of consensus, and modifications agreed to through the Selenium TMDLs Workshop Process (Workshops #1 - #3) for the development of revised TMDLs for Selenium in the Newport Bay Watershed. Participants¹ in the Workshop Process are identified in Attachment A.

For each section of the Staff Report, the annotated outline contains four sections as follows:

- Objective – identifies the objective for each section (for required TMDL elements the language is based upon State Water Resources Control Board descriptions).
- Approach – identifies the general approach for the section, including the major sub-sections that will be addressed.
- Key Points of Consensus – following the format of the workshops, the key points of consensus agreed to in that process are identified.
- Key Modifications – following the format of the workshops, the key modifications to the 2009 Draft TMDLs agreed to in that process are identified.

In addition to the modifications identified in each section, several universal modifications will be made to the 2009 documentation:

- Revisions for clarity – Text will be reviewed and modified to ensure that information is provided in as clear a manner as possible. The intent is to ensure all parties clearly understand the TMDL and the components of each TMDL section.

¹ Consistent with the Workshop procedures, the term “participants” refers to the people functioning as table participants (e.g., those who were actively part of the discussion). Unless otherwise noted, each person participated in all three workshops as a “table participant” at some point in the process. The full list of attendees, including parties who were present in the audience during these discussions (and who also had opportunity to engage during the public comment portions of each agenda), are included as Attachment B.

MEMORANDUM



DATE: March 19, 2014

TO: Chris Crompton, County of Orange
Jian Peng, County of Orange

COPY TO: Participants in the Se TMDLs Workshop Process

SUBJECT: **Summary of Key Points of Consensus and Modifications Agreed to through the Selenium TMDLs Workshop Process**

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The information presented in this memorandum summarizes the key points of consensus and modifications agreed to through the Selenium TMDLs Workshop Process (Workshops #1 - #3) for the development of revised TMDLs for Selenium in the Newport Bay Watershed. The intent of the Workshop Process was to identify and discuss remaining key issues and to form the basis for completing the TMDL Staff Report and Basin Plan Amendment for these TMDLs. Participants¹ in the Workshop Process are identified in Table 1. The full lists of attendees at the workshops are included as Attachment A.

All of the topics summarized in this memorandum were discussed during Workshops #1 and #2, with several “retention pond” issues discussed during Workshop #3. Also during Workshop #3, the key points of consensus and modifications were presented and summarized to ensure all parties concurred with the conclusions. As such, this document will form the basis of revisions to the draft documentation developed in 2009.

¹ Consistent with the Workshop procedures, the term “participants” refers to the people functioning as table participants (e.g., those who were actively part of the discussion). Unless otherwise noted, each person participated in all three workshops as a “table participant” at some point in the process. The full list of attendees, including parties who were present in the audience during these discussions (and who also had opportunity to engage during the public comment portions of each agenda), are included as Attachment A.

Table 1. Selenium TMDLs Workshop Process Table Participants

Santa Ana Regional Water Quality Control Board	State Water Resources Control Board	US EPA⁴	USGS/USFWS⁴
Joanne Schneider	Rik Rasmussen	Daniel Oros	Sam Luoma ² (USGS)
Terri Reeder	David Rice		Joe Skorupa ² (USFWS)
Regulated Dischargers	Environmental Community	Business Community	Consultants Supporting TMDL Development
Amanda Carr (City of Irvine)	Ray Heimstra (Orange County Coastkeeper)	Susan Paulsen (Flow Science, on behalf of The Irvine Company)	Karen Cowan (LWA)
Chris Crompton (County of Orange)	Jack Skinner (Stop Polluting Our Newport) ^{2,3}	Mark Grey ³ (BIA)	Steve Canton (GEI)
Mary Anne Skorpanich (County of Orange)	Bill Bretz (UC Natural Reserve System) ¹		Daniel Apt (RBF)
Jian Peng (County of Orange)			Harry Ohlendorf ² (CH2M Hill)
Mary Lynn Coffee (Nossaman, on behalf of the City of Irvine)			Karen Ashby ¹ (LWA)
Bob Stein (City of Newport Beach)			

1 = Table participant in workshop #1 only

2 = Table participant in workshop #2 only

3 = Table participant in workshop #3 only

4 = Other federal agency staff participated in the workshop process via telephone and did occasionally participate as a "table participant" in the process (e.g., participated during the non-public discussion agenda items). These federal agency staff (1) EPA: Cindy Lin, Eugenia McNaughton, Suesan Saucerman and (2) USGS: Theresa Presser.

Se TMDL Overview

TENTATIVE REVISED STAFF REPORT: SELENIUM TMDL TABLE OF CONTENTS

Executive Summary

- 1 Introduction
- 2 Regulatory Background and Public Participation
- 3 Problem Statement
- 4 Numeric Targets ←
- 5 Source Analysis
- 6 Linkage Analysis ←
- 7 TMDLs, Allocations, and Margin of Safety ←
- 8 Implementation Plan ←
- 9 Antidegradation Analysis
- 10 CEQA Analysis
- 11 References

Appendices

TMDL Structure

- Common structure is continuous, **adaptive management**

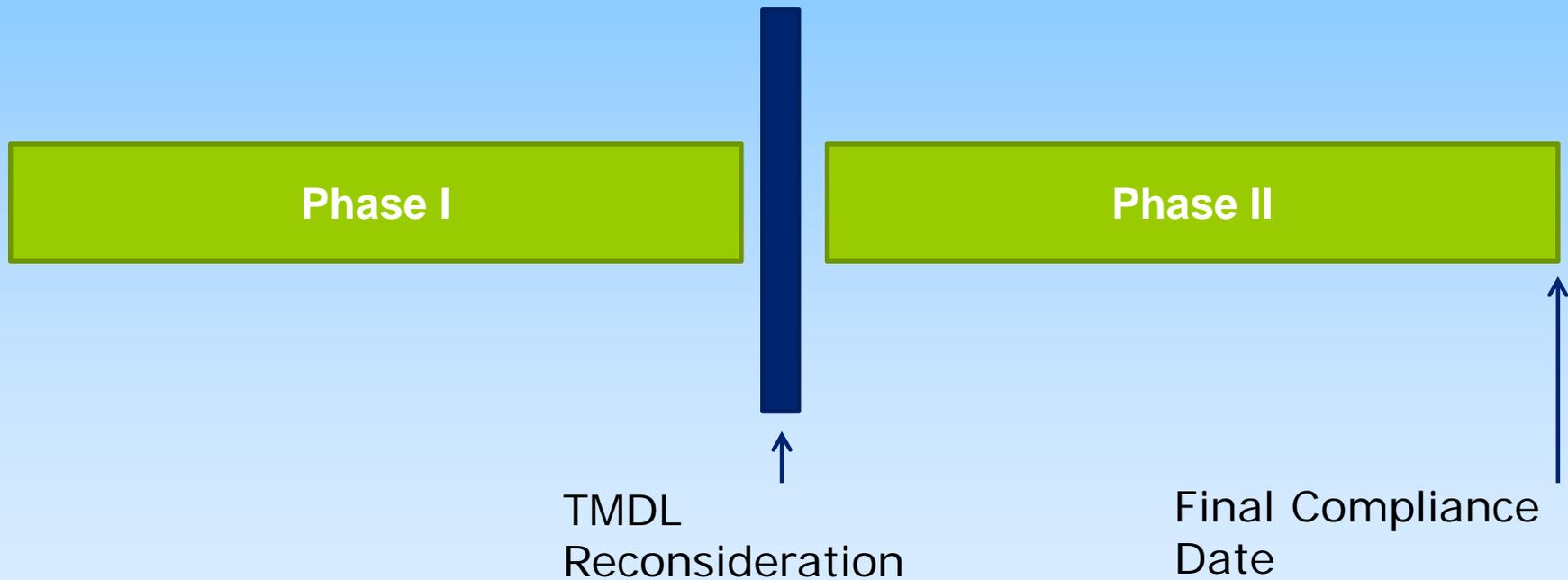


- Significant uncertainty due to:
 - Revisions to Water Quality Objectives (Numeric Targets)
 - Associated WLAs and LAs

TMDL Structure

- Establish TMDL as a **Phased TMDL**
- Per EPA Guidance (2006)
 - Phased TMDL = matter of TMDL development
 - Adaptive Management = post-development implementation concepts
 - Phased TMDLs warranted when revision to applicable water quality standard is underway

TMDL Structure



Numeric Targets

- OBJECTIVE: describe the desired future condition by defining measurements that will ensure recovery of the beneficial uses that are impaired and the attainment of standards
 - APPROACH:
 - Fish Tissue
 - Bird Eggs
 - Water
 - Alternatives Considered
- Interpretation of narrative objective

Numeric Targets (con't)

Primary Numeric Targets Where Bird Egg Tissue Targets <u>Not Attained</u> ^{1,4}		Secondary Numeric Target ²
Bird Egg ³ Tissue	Fish Tissue	Freshwater Water Column
8 µg Se/g dw	5 µg Se/g dw OR site-specific fish tissue concentration at which the bird egg target is met	5 µg Se/L
Primary Numeric Targets Where Bird Egg Tissue Targets <u>Attained</u> ^{1,4}		Secondary Numeric Target ²
Bird Egg ³ Tissue	Fish Tissue	Freshwater Water Column
8 µg Se/g dw	8.1 µg Se/g dw	5 µg Se/L

1. The tissue-based tissue targets may be subject to revision upon adoption and approval of revised objectives (e.g., a site-specific objective).
2. Target is based on CTR criterion for freshwater. This target will no longer be in effect once the CTR freshwater criterion has been replaced by revised objectives.
3. Aquatic-dependent shorebirds
4. The fish tissue target is dependent upon the attainment of the bird egg target. Where the bird egg target is attained, the fish tissue target of 8.1 µg Se/g dw applies. Where the bird egg target has not been attained, the fish tissue target of 5 µg Se/g dw applies. In all cases, the bird egg target of 8 µg Se/g dw applies.

Linkage Analysis

- OBJECTIVE: link the numeric targets to the identified problem in order ***to determine the actions*** that will result in achievement of the relevant standards
- APPROACH:
 - Conceptual Models
 - Biodynamic Model
 - Assumptions
 - Alternatives Considered

Linkage Analysis (con't)

Table 6-3A. Range in Water Column Guidelines ($\mu\text{g/L}$) Predicted by the Newport Bay Watershed Biodynamic Model Using the Dietary Fish Tissue Target of $5 \mu\text{g/g dw}$ with Median and 75th Percentile Kd Values

Lower Peters Cyn Wash	San Diego Creek (All Sites)	IRWD Wetlands	UCI Wetlands	Santa Ana Delhi Channel	Big Canyon Creek

Table 6-3B. Range in Water Column Guidelines ($\mu\text{g/L}$) Predicted by the Newport Bay Watershed Biodynamic Model Using the Fish Tissue Target of $8.1 \mu\text{g/g dw}$ with Median and 75th Percentile Kd Values

Lower Peters Cyn Wash	San Diego Creek (All Sites)	IRWD Wetlands	UCI Wetlands	Santa Ana Delhi Channel	Big Canyon Creek

Table 6-3C. Range in Water Column Guidelines ($\mu\text{g/L}$) Predicted by the Newport Bay Watershed Biodynamic Model Using the Bird Egg Tissue Target of $8 \mu\text{g/g dw}$ with Median and 75th Percentile Kd Values

Lower Peters Cyn Wash	San Diego Creek (All Sites)	IRWD Wetlands	UCI Wetlands	Santa Ana Delhi Channel	Big Canyon Creek

Water Column Concentrations to Attain **Fish Tissue** Targets

Water Column Concentrations to Attain **Bird Egg** Target

TMDLs and Allocations

- OBJECTIVE: allocate responsibility to both point and nonpoint sources and identify the categories of dischargers that will be required to take specific actions (via the assignment of WLAs and LAs)
- APPROACH
 - Loading Capacity
 - Seasonal Variations and Critical Conditions
 - Allocations Approach (WLAs and LAs)
 - Margin of Safety

TMDLs and Allocations (con't)

WLAs	Primary WLAs (Based upon Linkage Analysis)	Secondary WLAs (Based upon CTR)	Conditional Mass-Based WLAs
MS4 Permittees	TBD µg/L	5 µg/L	Optional. Applies when following conditions met: 1. Participate in approved offset and trading program 2. Offset entirety of discharge (concentration x flow)
Other NPDES Permittees			
LAs			
Agricultural Discharges	TBD µg/L	5 µg/L	
Open Space			
Rising Groundwater			

Note: Simplified version of the intended allocations table. Does not include necessary footnotes.

TMDL Allocations (Footnotes)

- Attainment of tissue = meet WLAs/LAs
- Linkage analysis equation built directly into the allocations
- CTR-based allocations no longer applicable once revised objective effective
- Conditional mass-based WLAs linked to Implementation Plan
- Compliance options part of the assumptions and requirements of the WLAs

Implementation Plan

- **OBJECTIVE:** describe what actions will be undertaken to alleviate the impairment and identify enforceable features and triggers for Regional Board action

Implementation Plan (con't)

■ APPROACH

- Regulation by Regional Board
- Regulated Parties ←
- Implementation Plan Structure and Approach
- Phase I: WLAs Implementation ←
- Phase I: LAs Implementation ←
- TMDL Reconsideration ←
- Phase II: WLAs Implementation ←
- Phase II: LAs Implementation ←

Implementation Plan (con't)

■ APPROACH (con't)

- SSO Development, Process and Schedule
- Compliance Schedule and CWA 303(c)(2) Requirements
- Incorporation of TMDLs into NPDES Permits
- Economic Analysis
- Implementation Plan Tasks and Schedules ←

Regulated Parties

- Groundwater Dewatering and Cleanup NPDES Permittees

- Individual NPDES Permits (e.g., City of Irvine)
- General NPDES Permits

- MS4 Permittees

- County of Orange & OC Flood Control District
- 9 Watershed Cities

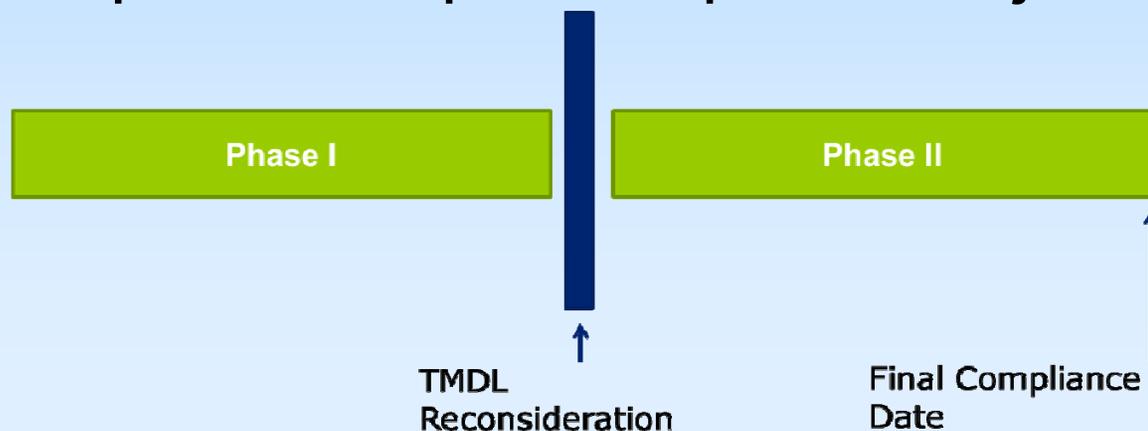
- Others*

- Irvine Ranch Water District
- University of California Irvine
- CA Dept of Fish and Wildlife

* Not assigned WLAs or LAs at this time, but required to participate in implementation of these TMDLs

Phase I Implementation

- Address controllable sources of selenium (point source discharges, assigned WLAs)
- Address portion of LAs through BMPs for WLAs
- Evaluate BMP effectiveness
- Implement any special studies
- Develop and adopt site-specific objectives



Phase I: WLAs Implementation

- MS4 Permittees:
 - BMP Strategic Plan
 - Offset/Trading Program (optional)
 - Monitoring Program
 - Reporting
- All other NPDES Permittees:
 - BMP Strategic Plan OR Individual Action Plan
 - Offset/Trading Program (optional)
 - Monitoring Program
 - Reporting

Phase I: BMP Strategic Plan(s)

- Allows development at subwatershed-scale or combining into grouped plans (min 1; max 3 plans)
- Must identify quantitative goals to be achieved (e.g., pounds removed; reduction in concentration)
- Must be approved by Executive Officer
- Approved plans are basis for BMP-based compliance option

BMP Strategic Plan Components

- Baseline and Source Control Activities
- Selenium Reduction Projects
- BMP Effectiveness Monitoring
- BMP/Technology Evaluation
- Goals
- Adaptive Management
- Schedule

Individual Action Plans

- Option for Other NPDES Permittees (non MS4)
 - In certain cases, discharges may be short-term and a tailored, alternative approach may be appropriate
- Plans must be approved by the Executive Officer and include:
 - Volume Reduction BMPs
 - Identification of method to attain final WLAs
 - Schedule
 - Monitoring
 - Reporting

Offset and Trading Program

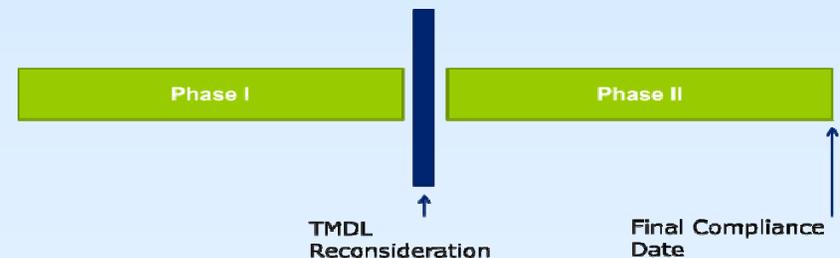
- Purpose of the program
- Certification of a project
- Eligibility requirements
- Demonstrating compliance with WLAs

TMDL Reconsideration

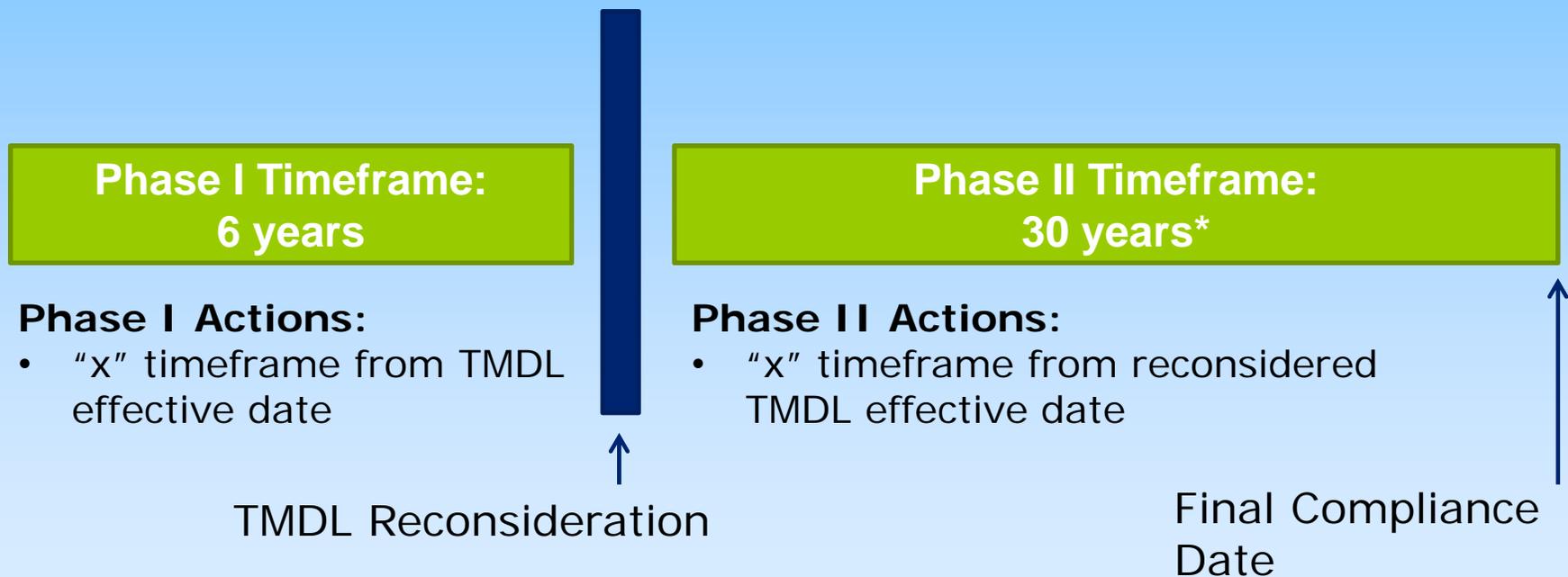
- Based upon key information and regulatory actions during Phase I implementation
 - Revised objectives for selenium (SSOs)
 - Results of BMP implementation and monitoring
 - Special studies
- Will require reconsideration of a significant portion of the TMDL
- Actions to attain final TMDLs identified
- Future reconsiderations possible during Phase II

Phase II Implementation

- Similar in structure to Phase I for WLAs
 - BMP Strategic Plan
 - Offset and Trading Program
 - Monitoring Program
 - Reporting
- Actions TBD for LAs
- More robust adaptive management program
- (Re) Evaluation of final TMDLs



Timeframe for Implementation



* As soon as possible but no later than

Rationale for Phase I Timeframe

■ Phase I: 6 Years

- Implementation of BMPs and BMP effectiveness monitoring
- Development and adoption of SSOs
- Implementation of special studies needed to inform TMDL Reopener
- Considers shortest reasonable timeframe to implement actions that have already been approved in existing BMP Strategic Plan, or are planned to be implemented in Draft Plan for Big Canyon

Rationale for Phase II Timeframe

- Phase II: *as soon as possible but no later than* 30 Years
 - Longer timeframe based upon challenge of controlling rising groundwater, primary source
 - No “silver bullet” solutions available today
 - Need adequate and reasonable timeframe to identify and implement BMPs/Technologies to attain final TMDLs
 - Adaptive management built directly into TMDL framework to ensure process is effective and reflects most up-to-date information

Implementation and Compliance Schedule

PHASE I		
Date	Action	Implemented By
"x" timeframe from TMDL effective date	TBD	TBD
6 years from TMDL effective date	Complete implementation of Phase I BMP Strategic Plans	MS4 Permittees and Other NPDES Permittees opting to participate in the BMP Strategic Plan (in lieu of an individual action plan)
TMDL RECONSIDERATION		
As soon as possible after the completion of Phase I	Reconsider TMDL	Santa Ana Regional Water Board
PHASE II		
Date	Action	Implemented By
"x" timeframe from TMDL effective date	TBD	TBD
As soon as possible but no later than 30 years from Reconsidered TMDL effective date	Attain Final WLAs	MS4 Permittees and Other NPDES Permittees opting to participate in the BMP Strategic Plan
	Attain Final LAs	Responsible parties as identified by Regional Water Board

TMDL Schedule and Development of Selenium SSOs

- Draft TMDL staff report and Basin Plan Amendment expected to go out for concurrent peer and public review in mid-September 2014
- Revised TMDLs expected to be presented for Regional Board consideration at the December 12, 2014 meeting
- Se SSO Basin Plan amendment expected to proceed on parallel but separate path
 - Expect to complete ~1 year after TMDLs
 - Se SSOs will likely use same tissue-based approach as the TMDLs

QUESTIONS?

Terri Reeder, SARWQCB
Karen Cowan, Larry Walker Associates



Mallard Pair Peters Canyon Wash
- *Doug Shibberu, RB staff*