Purdy, Renee@Waterboards

Subject:	WMP discussion / RAA guidelines (Thursday, 830a)
Location:	RB office
Start:	Thu 1/16/2014 8:30 AM
End:	Thu 1/16/2014 9:00 AM
Show Time As:	Tentative
Recurrence:	(none)
Meeting Status:	Not yet responded
Organizer:	Bambic, Dustin

When: 16 Jan 8:30AM-16 Jan 10:00AM.
Where: RB office

~~*~*~*~*~*~*~*~*~*~*~*

Thursday, 830am

From: Purdy, Renee@Waterboards [mailto:Renee.Purdy@waterboards.ca.gov]
Sent: Friday, January 10, 2014 1:59 PM
To: Bambic, Dustin; Ridgeway, Ivar@Waterboards; Lai, Ching-piau@Waterboards; Nguyen, Thanhloan@Waterboards
Cc: Riverson, John; Carter, Steve
Subject: RE: Meeting request: WMP discussion / RAA guidelines

Dustin,

Great, see you then. And, thanks in advance for sending an appointment to reserve the time on our calendars.

Renee

From: Bambic, Dustin [mailto:Dustin.Bambic@tetratech.com]
Sent: Friday, January 10, 2014 11:54 AM
To: Ridgeway, Ivar@Waterboards; Lai, Ching-piau@Waterboards; Nguyen, Thanhloan@Waterboards; Purdy, Renee@Waterboards
Cc: Riverson, John; Carter, Steve
Subject: RE: Meeting request: WMP discussion / RAA guidelines

Thanks so much. Yes, please plan on Thursday at 830am. I will send a calendar invite.

See you then, thanks again.

Dustin

Dustin Bambic, PH | Director, Water Resources | Tetra Tech
Direct: 615.252.4795 | Mobile: 615.970.2040

-----Original Message-----
From: Purdy, Renee@Waterboards [Renee.Purdy@waterboards.ca.gov]
Received: Friday, 10 Jan 2014, 11:47AM
To: Bambic, Dustin [Dustin.Bambic@tetratech.com]; Ridgeway, Ivar@Waterboards [Ivar.Ridgeway@waterboards.ca.gov]; Lai, Ching-piau@Waterboards [Ching-piau.Lai@waterboards.ca.gov]; Nguyen, Thanhloan@Waterboards [Thanhloan.Nguyen@waterboards.ca.gov]
CC: Riverson, John [john.riverson@tetratech.com]; Carter, Steve [steve.carter@tetratech.com]
Subject: RE: Meeting request: WMP discussion / RAA guidelines
Dustin,

I, and the rest of our team here at the Regional Board, am happy to meet with Tetra Tech regarding the RAA approach you are developing for several WMP groups.

Could you come in on Thursday, January 16th, from 8:30-10:00 AM? I have a management meeting at 10:00 AM, and want to give us enough time to fully discuss your approach and the topics raised at the RAA subcommittee meeting yesterday.

Renee

From: Bambic, Dustin [mailto:Dustin.Bambic@tetratech.com]
Sent: Friday, January 10, 2014 8:58 AM
To: Purdy, Renee@Waterboards; Ridgeway, Ivar@Waterboards; Lai, Ching-piau@Waterboards; Nguyen, Thanhloan@Waterboards
Cc: Riverson, John; Carter, Steve
Subject: Meeting request: WMP discussion / RAA guidelines

Hello Renee et al. We had a very good discussion at the RAA subcommittee yesterday. As you might know, Tetra Tech is responsible for developing several WMP RAAs and the deadline is approaching quickly. It would be great if we could sit down with Board staff and describe our proposed WMP RAA approach and get feedback.

At the same time, the discussion could support your revisions to the RAA guidelines and increase understanding of the topics we raised yesterday. Several of these topics have broad implications to the E/WMPs and Permit compliance.

We'll be in town next week, and it would be great if you could make time for a meeting / presentation. I know this is short notice, but a quick meeting will also support your RAA guideline revisions. We will come to your office. Would you have time on:

- Afternoon of Wednesday 1/15?
- Morning of Thursday 1/16?

Hopefully we can get together, and I look forward to it.

Thank you, Dustin

Dustin Bambic, PH | Director, Water Resources | Tetra Tech
Direct: 615.252.4795 | Mobile: 615.970.2040

Dustin Bambic, PH | Director, Water Resources | Tetra Tech

Direct: 615.252.4795 | Mobile: 615.970.2040

RAA Targets

85th Percentile Storm

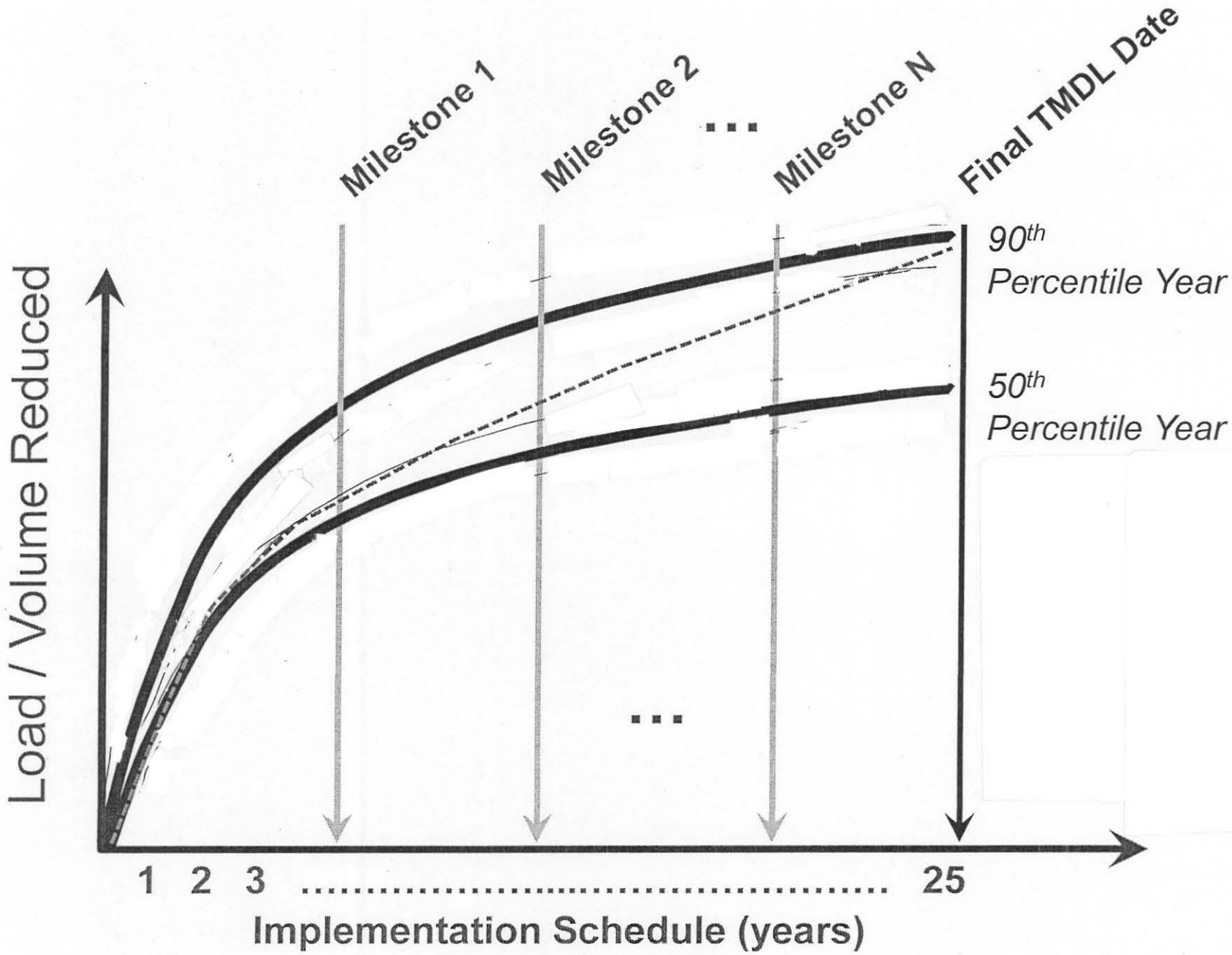
- Based on design storm simulation
- Compliance with all pollutants
- Compliance with final TMDLs

Pollutant Load Reductions

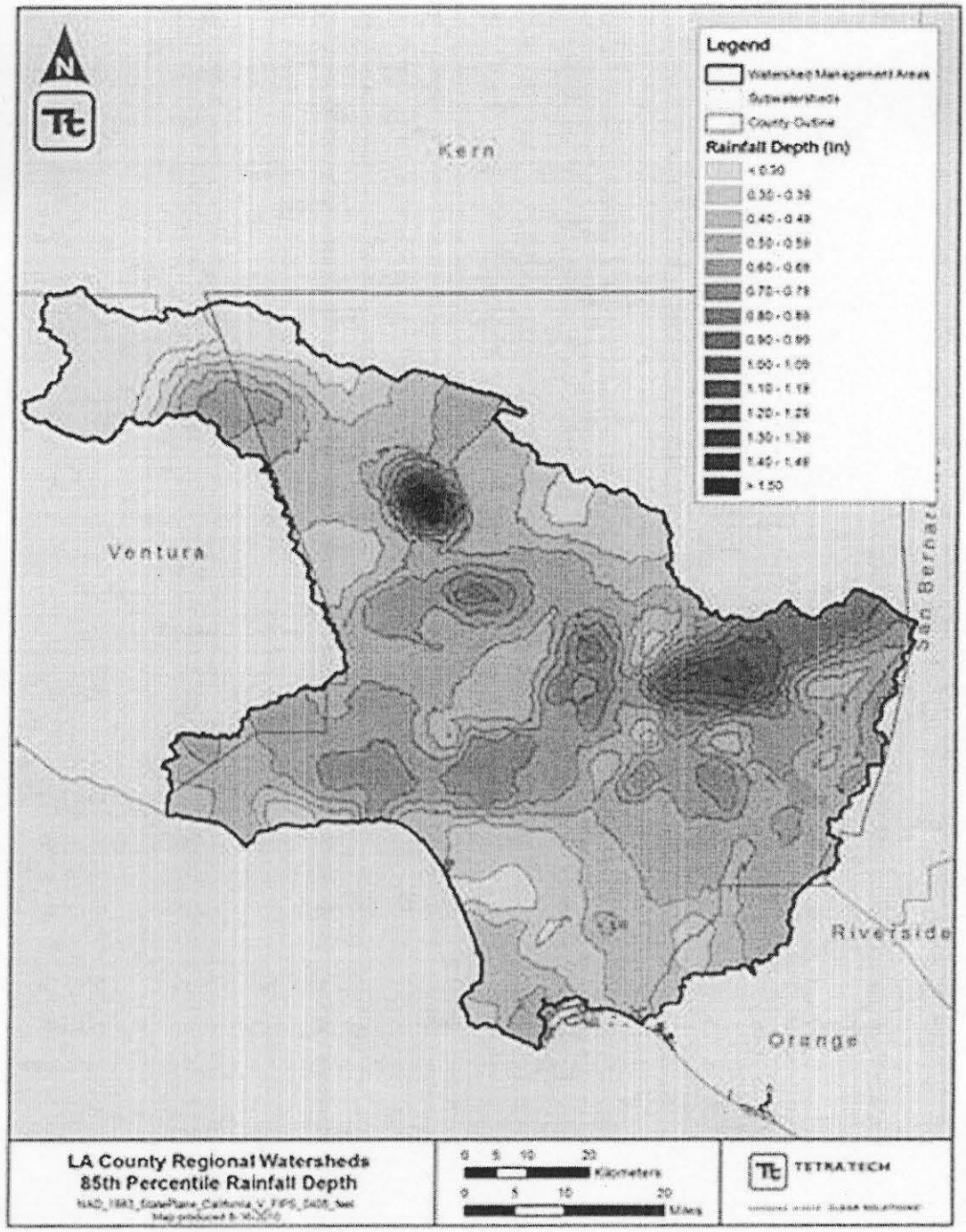
- Based on simulation of representative year
- Compliance for simulated pollutants
- Compliance with interim TMDLs

WMP Control Measures

RAA Discussion


Milestone 1
Milestone 2
...
Milestone N
Final TMDL Date
90th Percentile Year
50th Percentile Year
Load / Volume Reduced
1 2 3 25
Implementation Schedule (years)

85th Percentile, 24-hour storm

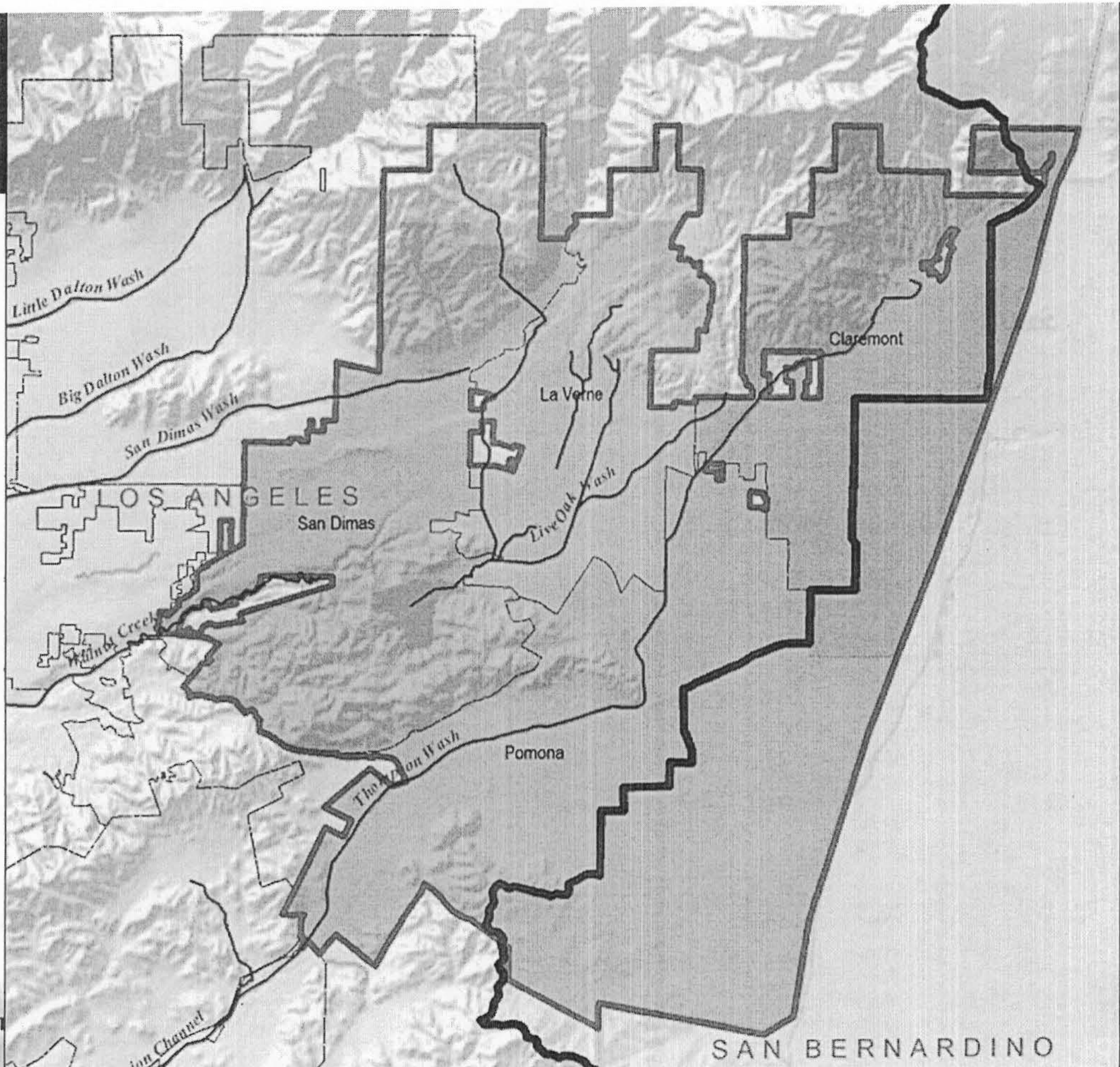


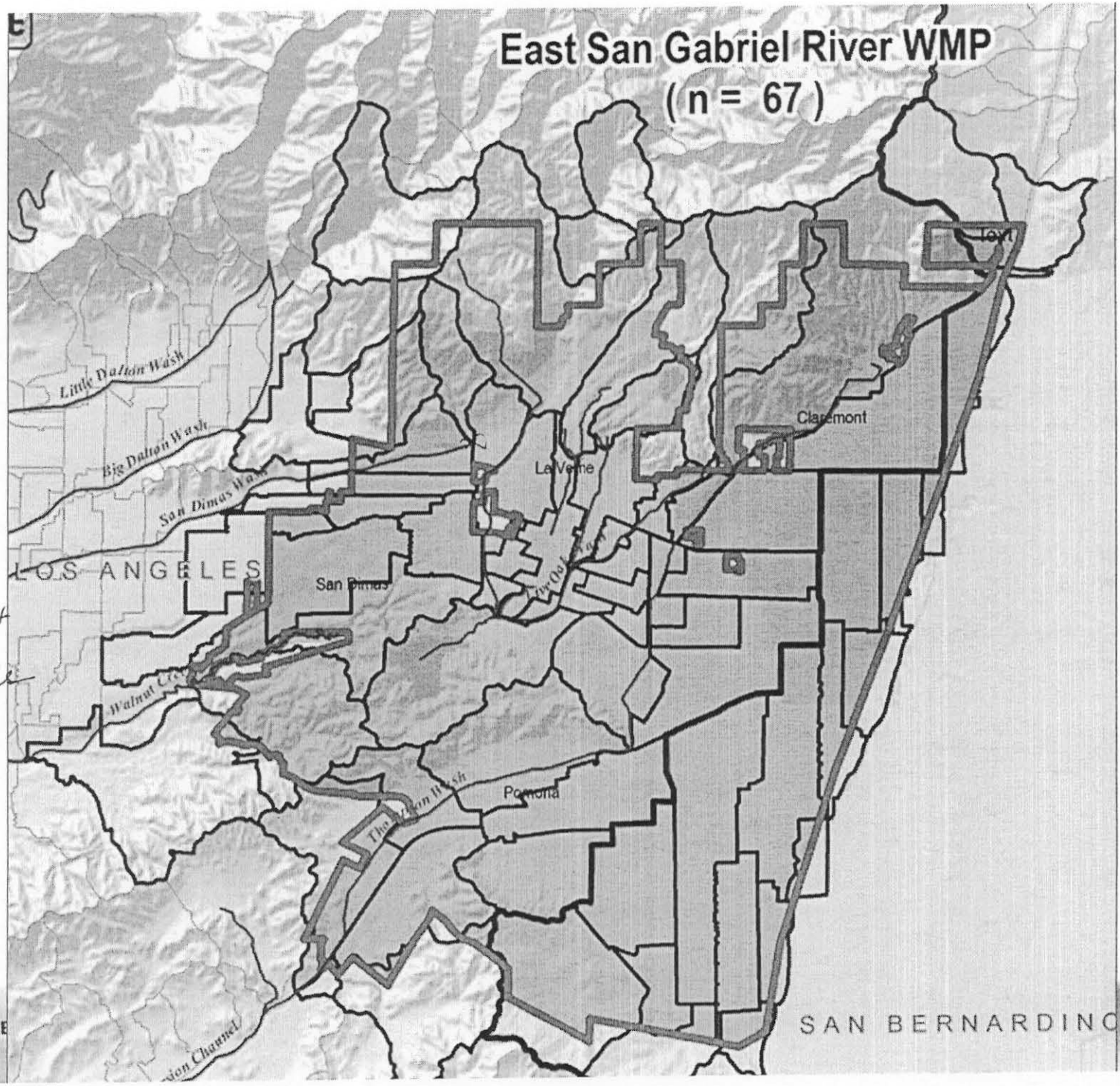
RB-AR1812

Hypothetical RAA Output (Combined Area)

Jurisdiction	Total Number of Regional BMPs	Total Capacity of Distributed BMPs			
		Treat-ment Depth (inches)	Green streets (ft)	Bio-retention (ft^3)	LID on private (ft^3)
La Verne	1	0.54	884,323	662,676	421,567
San Dimas	1	0.37	97,634	88,954	14,623
Claremont	2	0.34	56,534	47,453	7,890
Pomona	1	0.23	46,784	12,053	5,900

RB-AR1813


Little Dalton Wash
Big Dalton Wash
San Dimas Wash
LOS ANGELES
San Dimas
La Verne
Live Oak Wash
Claremont
Pomona
Thompson Wash
SAN BERNARDINO



break into broad by area

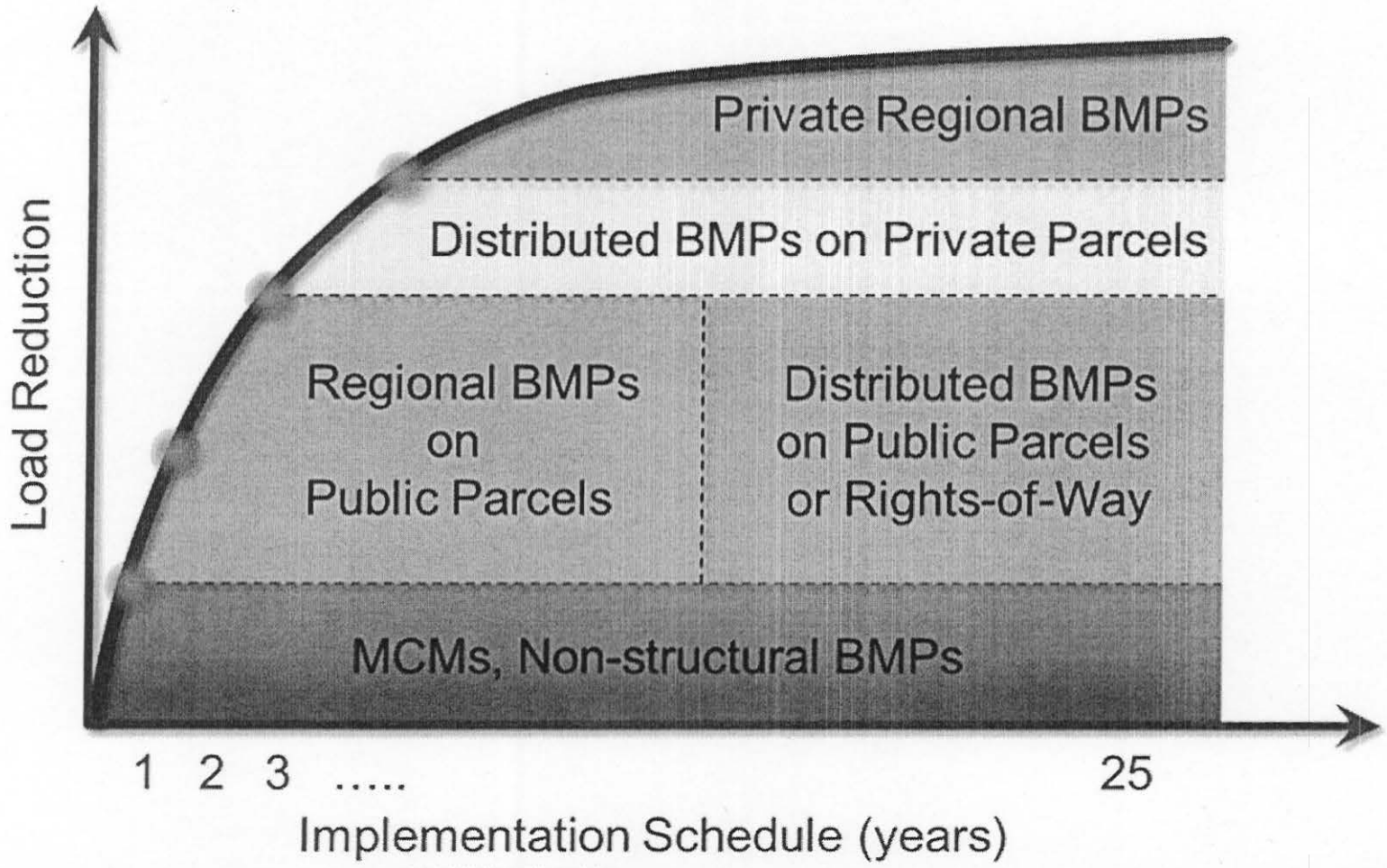
roll up to be consistent w/ TMDL subwatersheds

Hypothetical RAA Output (Jurisdiction Specific)

Jurisdictional Sub-area (sub-watershed)	Total Number of Regional BMPs	Total Capacity of Distributed BMPs			
		Treat-ment Depth (inches)	Green streets (ft)	Bio-retention (ft^3)	LID on private (ft^3)
1	1	0.54	4,323	676	567
2	0	0	0	0	0
3	1	0.24	534	453	890
4	2	0	0	0	0
.	.	.	.	.	.
.	.	.	.	.	.
67	0	0.68	8,634	4,954	3,623

RB-AR1816

BMP Selection and Scheduling



Green Street Capacity Analysis

Types of Roads

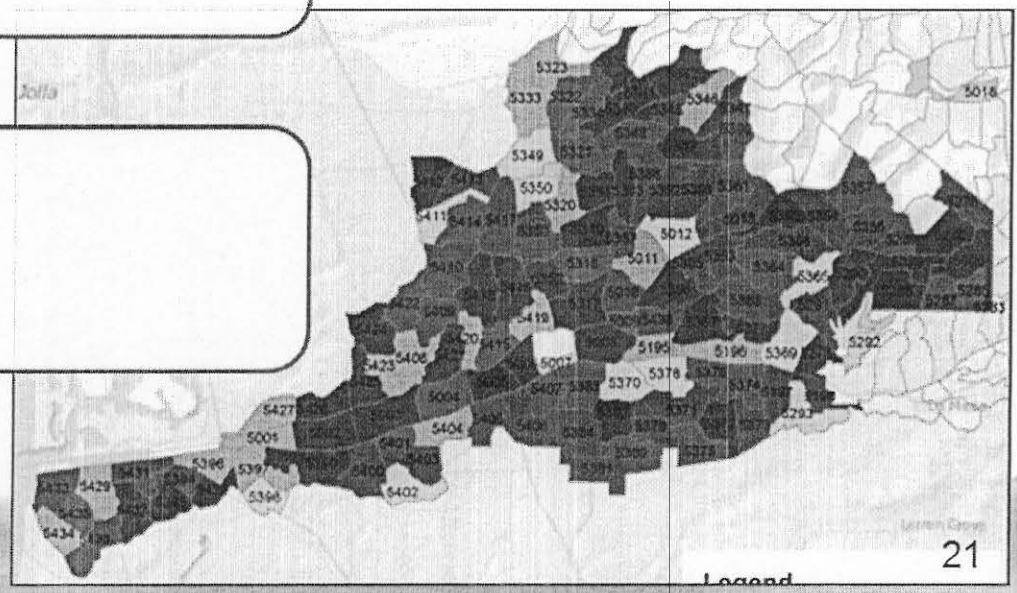
- Exclude freeways, highways, on-ramps, etc.
- Focus on city streets, local neighborhood roads, and rural roads

Slope

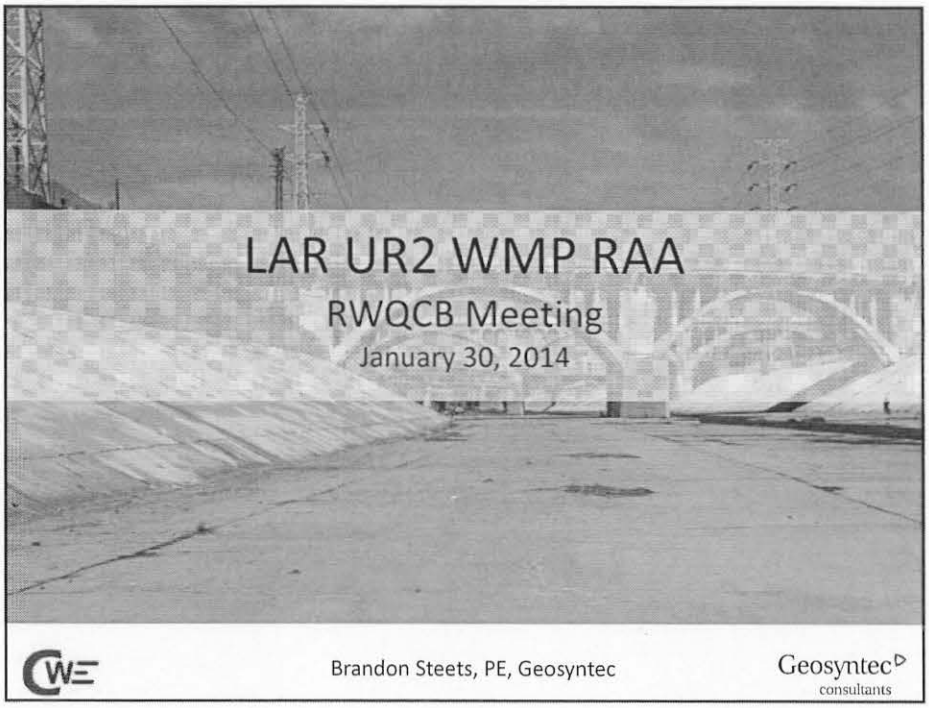
- Exclude roads with slopes >10%

Other

- Contaminated soils
- Liquefaction zones



RB-AR1818



Outline

- Overview of Proposed RAA Approach
  - Defining Modeled Area
  - Estimating Target Load Reductions
  - Estimating BMP Load Reductions
  - Demonstrating "Reasonable Assurance"
  - Dry Weather RAA Approach
- Consistency with RAA Guidance
- Discussion

Defining Modeled Area

WMMS subcatchments (grey lines) clipped to WMAs' jurisdictional boundaries (red lines)

Estimating Target Load Reductions

- TLRs = "baseline" loads – "allowable" loads
- Use LSPC model (from WMMS)
  - Wet weather runoff only
  - Model is pre-calibrated
- Use 50th ("average") and 90th percentile ("critical condition") years from 1989-2011 WMMS period
  - Use "TMDL year" calendar periods (Nov 1-Oct 31)
  - LSPC rain gage used for identifying modeled years: LACFCD South Gate Transfer Station (D1256)
  - Modeled years:
    - For bacteria (based on no. of wet days): 1994 (50th), 2011 (90th)
    - For other pollutants (based on rainfall): 2008 (50th), 1995 (90th)

Estimating Baseline Loads

- "Baseline" loads reflect existing conditions in LSPC model, e.g.,
  - All parcels (e.g., IGP sites) included
  - 2006 land use layer
  - Calibrated EMCs or buildup/washoff parameters
  - County's parcel-specific percent impervious

Draft Baseline Loads (per year):

R/W Segment	Total Copper (lbs)	Total Lead (lbs)	Total Zinc (lbs)	Fecal Coliform (#*10^12)	Total Nitrogen (lbs)
LA River (90th)	672	536	6,784	997	99,952
LA River (50th)	506	411	5,189	431	42,660
Rio Hondo (90th)	147	105	1,594	206	23,183
Rio Hondo (50th)	115	84	1,247	85	11,900

Note: Bacteria modeled years: 1994 (50th), 2011 (90th)
Metals/Nitrogen modeled years: 2008 (50th), 1995 (90th)

Estimating Allowable Loads

- For **metals and nitrogen**, "allowable" loads are the baseline runoff volumes x WQBEL concentrations:
  - 15 µg/L Total Copper (load-based WQBELs divided by daily volume)
  - 56 µg/L Total Lead (load-based WQBELs divided by daily volume)
  - 140 µg/L Total Zinc (load-based WQBELs divided by daily volume)
  - 10.4 mg/L Total Nitrogen (based on sum of NO3 and NH3 WQBELs [8 + 2.4], and assuming zero organic nitrogen, which is conservative but doesn't affect outcome since LSPC output shows R/W to consistently meet WQBELs)

  SSO values not yet applied to results shown below
- For **bacteria**, "allowable" loads are determined by iteratively reducing urban land use fecal coliform EMCs until the number of predicted daily mean receiving water concentrations that exceed 400 mpn/100mL is less than or equal to the wet weather AEDs
  - AEDs = sum of 10 (from reference stream) plus the High Flow Suspension days (or rain >= 0.5" + following day)

DRAFT Allowable Loads (per year):

R/W Segment	Total Copper (lbs)	Total Lead (lbs)	Total Zinc (lbs)	Fecal Coliform (#*10^12)	Total Nitrogen (lbs)
LA River (90th)	789	2,945	7,363	60	546,981
LA River (50th)	331	1,237	3,092	17	229,711
Rio Hondo (90th)	182	680	1,701	14	126,356
Rio Hondo (50th)	92	345	862	6	64,000

Note: Bacteria modeled years: 1994 (50th), 2011 (90th)
Metals/Nitrogen modeled years: 2008 (50th), 1995 (90th)

Resulting Target Load Reductions

- 50th percentile is the year driver; concentrations during wetter 90th percentile year are diluted and so less relative load reduction require
- Bacteria is the pollutant driver; its TLRs are substantial and their achievement may be limited by number of feasible BMP retrofit opportunities (without acquisition of private property).

Median reductions higher than 90th for Cu and Zn

No Pb or TN load reduction required

SSO values not yet applied to results shown below

DRAFT Target Load Reductions (per year, relative to baseline):

R/W Segment	Total Copper (lbs)	Total Lead (lbs)	Total Zinc (lbs)	Fecal Coliform (#*10^12)	Total Nitrogen (lbs)
LA River (90th)	0	0	0	937	0
LA River (50th)	174	0	2,097	413	0
Rio Hondo (90th)	0	0	0	192	0
Rio Hondo (50th)	23	0	385	79	0

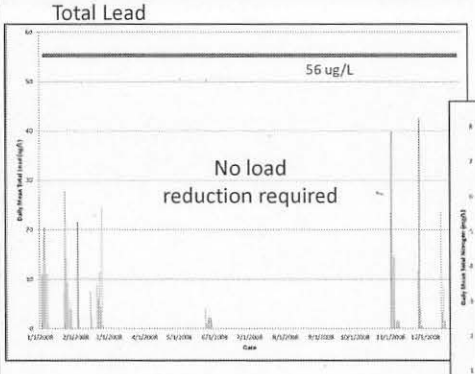
DRAFT Target Load Reductions (as % of baseline):

R/W Segment	Total Copper	Total Lead	Total Zinc	Fecal Coliform	Total Nitrogen
LA River (90th)	0%	0%	0%	94%	0%
LA River (50th)	**34%**	0%	**40%**	**96%**	0%
Rio Hondo (90th)	0%	0%	0%	93%	0%
Rio Hondo (50th)	**20%**	0%	**31%**	**93%**	0%

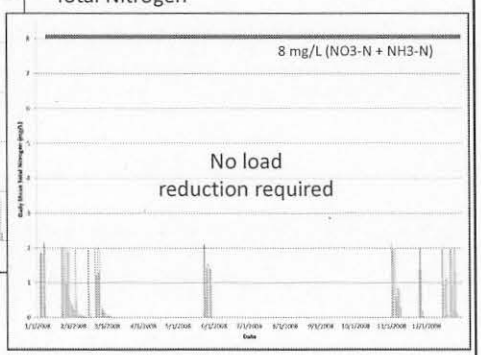
Baseline Lead and Nitrogen Concentrations Meet WQBELs

L.A. River Median Year

Total Lead



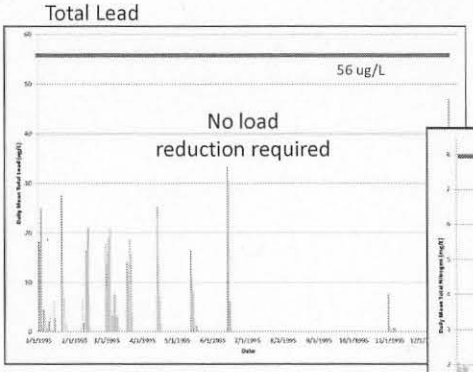
Total Nitrogen



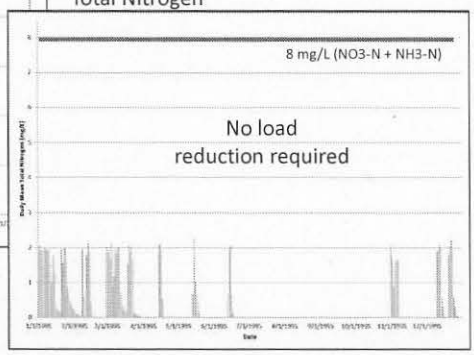
Baseline Lead and Nitrogen Concentrations Meet WQBELs

L.A. River 90th Percentile Year

Total Lead



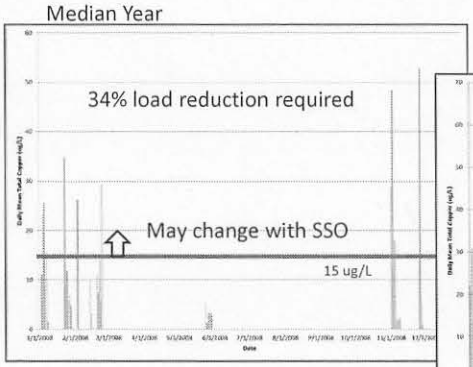
Total Nitrogen



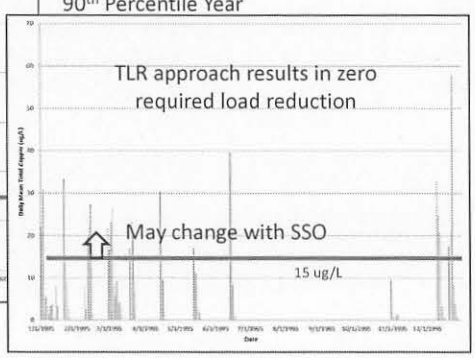
Baseline Copper and Zinc Concentrations Do Not Meet WQBELs

Total Copper

Median Year



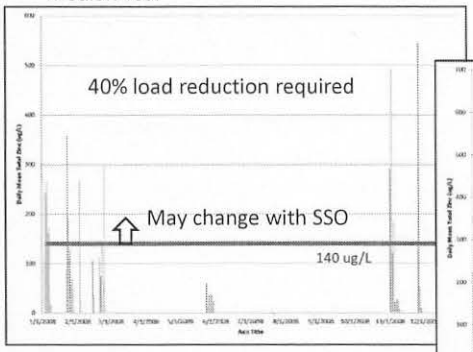
90th Percentile Year



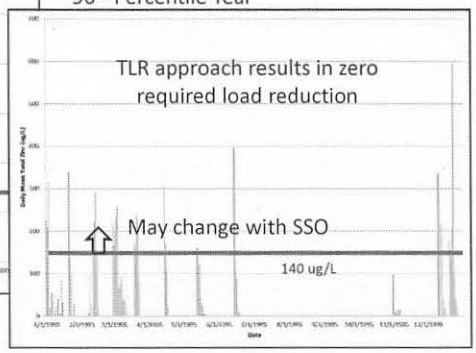
Baseline Copper and Zinc Concentrations Do Not Meet WQBELs

Total Zinc

Median Year



90th Percentile Year

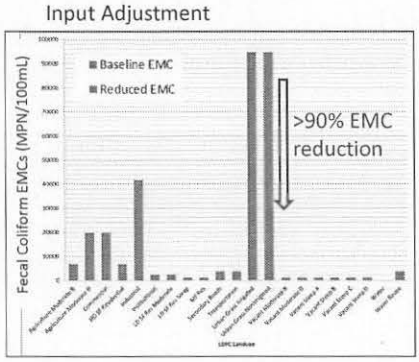


Bacteria TLR Approach Illustrated

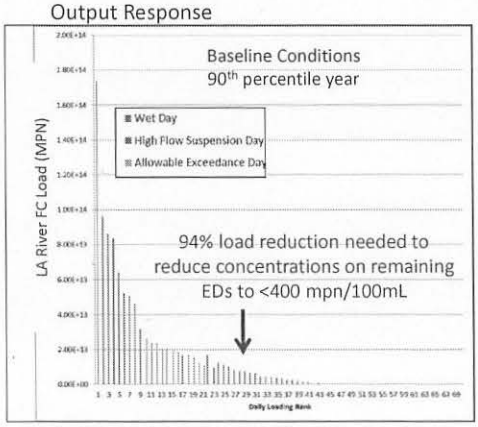
Bacteria is the driver

- Demonstrating reasonable assurance will be a challenge
- If RA demonstrated, then we can assume all pollutants have been demonstrated (meanwhile BMP load reductions will be reported for all SBPAT modeled pollutants)

Input Adjustment



Output Response



Bacteria TLR Approach Illustrated

Bacteria is the driver

- Demonstrating reasonable assurance will be a challenge
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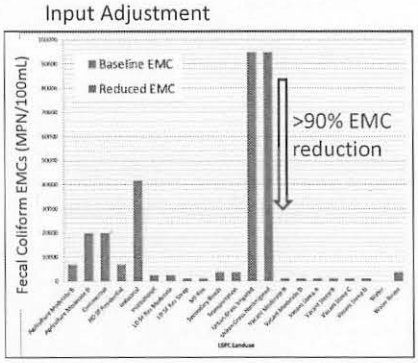
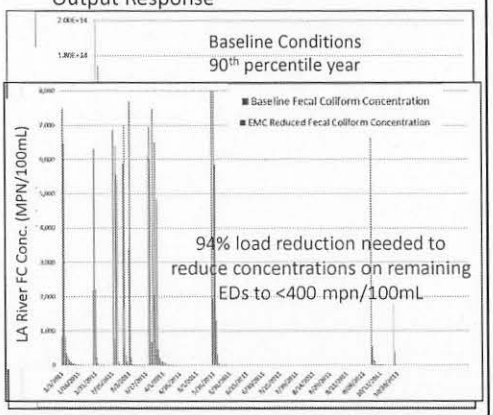
Input Adjustment



Output Response



Approach for Addressing Other Pollutants

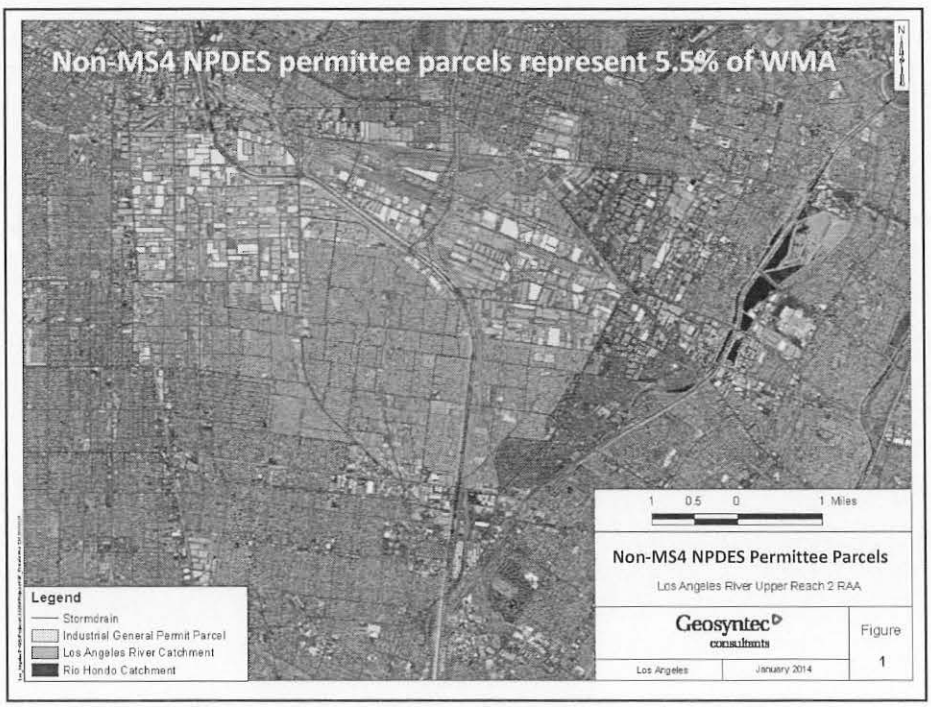
- No other TLRs will be developed, however BMP load reductions will be reported for all SBPAT modeled pollutants:
  - **TSS** – assume equivalent reduction of toxics
  - **Nutrients** (TN)
  - **Metals** (TCu, TPb, TZn) – assume this addresses RA demonstration for Cd
  - **Bacteria** (FC) – FC used as surrogate for *E. coli*
- FC load reduction is so high that we can assume that all other priority pollutants will be addressed (ie, RAA demonstrated) if it is

Estimating BMP Load Reductions

- Use **SBPAT** to model (regional and distributed) structural BMPs
- Use **SBPAT and spreadsheet calcs** to model non-structural BMPs, e.g.,
  - **Inspection of IGP and other non-MS4 NPDES permittee parcels (MCM)** – model in SBPAT by setting their land use EMCs to WQBELs
  - **LID ordinances (MCM)** – model in SBPAT by applying retention BMPs to applicable redevelopment area
    - Assume retention sized to 85th percentile storm
    - Assume applicable redevelopment area based on rates (as % of area, by land use) provided by agencies, otherwise use values from City of LA from Ballona TMDL IP
    - Allow greater rate if agency adopts more stringent applicability threshold
    - Estimate total redeveloped area between 2013 and effective date of final limits
  - **Brake pad copper phase-out** – assume 50-60% load reduction per CASQA report (Moran)
  - Other NS BMPs consistent with available SoCal studies or San Diego CLRPs, e.g.,
    - **LID incentive programs** (e.g., rebates for rain barrels, downspout disconnects, rain gardens)
    - **Pet waste controls** (ordinance, signate, education/outreach, mutt mitt stations, etc.)
    - **Enhanced street sweeping** (e.g., 100% vacuum sweepers, increased frequency)
    - **Increased catch basin cleaning**

LARUR2 agencies to provide applicable redevelopment rates based on available local data:

Land Use	Annual Redevel. Rate (% of LU area)
Residential	TBD
Commercial	TBD
Industrial	TBD
Education	TBD
Transportation	TBD



Demonstrating "Reasonable Assurance"

- Report BMP load reductions as average expected values and low-high ranges (i.e., 25th-75th percentile values, driven by variability in land use EMCs and BMP performance)
- Hypothetical example:

Pollutant	Target Load Reduction	Sum of NS Load Reductions (low-high range)	Sum of Structural Load Reductions (low-high range)	Total Estimated Load Reductions (low-high range)
Fecal Coliform (mpn/100mL)	100	17 (12-20)	60 (40-80)	77 (52-100)

Dry Weather RAA Approach

- Initial inventory showed only 10% of LARUR2 outfalls had NSW flows, several of which were trickles
- Some of these flows may be from non-MS4 NPDES permitted or conditionally exempt sources
- To address remaining non-exempt flows, WMAs may adopt new residential/commercial over-irrigation controls such as:
  - smart controller rebates,
  - water waste ordinance,
  - outreach/education,
  - site inspection/audits
- RAA will be narrative (ie, no modeling) and will assume that proposed non-structural BMPs will eliminate any existing non-exempt NSW flows
  - Therefore 100% reduction of baseline load, and RA demonstrated

Consistency with RAA Guidance

- Only Permit-approved models will be used (WMMS and SBPAT)
- Targets will be set using LSPC based on average (50^{th} percentile) and critical conditions (90^{th} percentile)
- Key model input datasets will be consistent with Guidance, e.g.,
  - Land use EMCs
  - BMP performance data
- LSPC calibration documented in LA County WMMS reports

Conclusions

- We'd like verification that our proposed RAA approach will be acceptable
- May assume adoption of metal SSOs
- Plan to use "high" BMP load reduction estimates for bacteria, while additional BMPs are evaluated
  - Future monitoring data will be used to recalibrate model, and revise BMP load reduction estimates

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

Water Quality NEWSFLASH

DEDICATED TO THE ADVANCEMENT OF STORMWATER QUALITY MANAGEMENT, SCIENCE AND REGULATION

November 10, 2014 **Number 2014-23**

Copper – ***Brake pad progress*** – California Senate Bill 346 (2010), strongly supported by CASQA, requires the eventual phase-out of copper and also reduces the release of other toxic substances from brake pads. Manufacturers have indicated the transition to copper free (<0.5% copper) brake pads is proceeding more quickly than originally anticipated and currently about 40% of brake pads available from manufacturers are <0.5% copper (certification list, level "N"). Brake pads are the source of more than half the copper in urban runoff and copper is one of the pollutants in stormwater that most frequently exceeds standards at the point of discharge. Washington State has similar requirements and is also tracking the average concentration of the metals of concern in brake pads. The Department of Toxic Substances Control is developing regulations for the program.

EPA and the brake manufacturing industry are expected to soon announce an MOU called the "Copper-Free Brake Initiative". The MOU will call for voluntary reductions in copper by manufacturers and will be modeled on the laws in California and Washington. The actions by CASQA, BASMAA, and others on brake pads are consequently having a significant impact nationwide. The copper in brake pad control program is also a good example of addressing problem pollutants at their original or true source (i.e., true source control).

Clean Water Act Section 319(h) Grants – ***Nonpoint source (NPS) control and citizen monitoring*** – EPA's Nonpoint Source Management Program is based on CWA Section 319 and provides funding to states. The State Water Board NPS Control Program, in turn, allocates approximately $4M of 319(h) funds annually for planning and implementation projects that address water quality problems in surface and ground water resulting from NPS pollution. NPS refers to stormwater and related runoff from diffuse sources. Runoff regulated by NPDES permits—MS4 permits, CGP, and IGP—is technically a point source, however, funded NPS projects are sometimes directed at pollutants that may be discharged from permitted sources.

The State Water Board has issued 319(h) grants for BMP and treatment implementation and also for citizen monitoring and other community-based programs – see LA Region projects. Proposals that address TMDL implementation or address problems in 303(d)-listed waters are favored in the selection process. (State Water Board 2013 approved projects)

Citizen monitoring efforts are also supported by the State Water Board's Clean Water Team, which is part of the Surface Water Ambient Monitoring Program (SWAMP). Citizen monitoring provides surface water and stormwater characterization support to SWAMP and sometimes is the basis for citizen suits under the Clean Water Act. For example, Los Angeles Waterkeeper recently filed a complaint in October against a solid waste processing facility alleging "illegal discharge of polluted stormwater runoff" based on samples collected by the company and Waterkeeper.

Climate Change – ***Lahontan schedules workshops*** – The Lahontan Water Board will hold workshops November 13 and January 15, 2015, on *Climate Change Adaptation Planning*. The *California Adaptation Planning Guide - Strategies*, proposes that stormwater programs prioritize low-impact development (LID) practices in areas where storm sewers may be impaired by high water due to sea level rise or flood waters. State Water Board climate change webpage.

Water Quality NewsFlash is a bi-weekly update of stormwater and related news for CASQA members, co-sponsored by Caltrans Stormwater Program as a public education and outreach partnership. ***Verify information before taking action on these bulletins.*** Contact CASQA at info@casqa.org or (650) 366-1042 with questions. Posted online in the members-only section at: www.casqa.org.

February 26, 2014

Meeting with Los Cerritos Channel WMP Group

(2:00-3:00 p.m.)

March 13, 2014

Meeting with City of Los Angeles (8:30-9:30 a.m.)

March 27, 2014

Meeting with City of Los Angeles (8:30-9:30 a.m.)

SANTA MONICA BAY WATERSHEDS

Reasonable Assurance Analysis (RAA) Approach for Enhanced Watershed Management Programs (EWMPs)

Los Angeles Regional Water Quality Control Board

April 9, 2014

Geosyntec consultants

engineers | scientists | innovators

DRAFT

Outline

- Objectives
- WMGs & Study Area Overview
- Reasonable Assurance Analysis (RAA) Approach
  - Dry Weather Approach
  - SBPAT Overview & Calibration
  - Target Load Reduction Approach
  - Structural BMPs
  - Non-Structural BMPs
  - Demonstrating "Reasonable Assurance"
- Summary

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Objectives

- To present our draft RAA approach for RWQCB consideration
- To receive initial feedback and input from RWQCB
- To confirm acceptance of approach

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Watershed Management Groups

- North Santa Monica Bay Coastal Watersheds WMG (Jurisdictional Groups 1 and 4)
- Santa Monica Bay WMG (Jurisdictional Groups 2 and 3)
- Beach Cities WMG (Jurisdictional Groups 5 and 6)
- Peninsula WMG (Jurisdictional Group 7)

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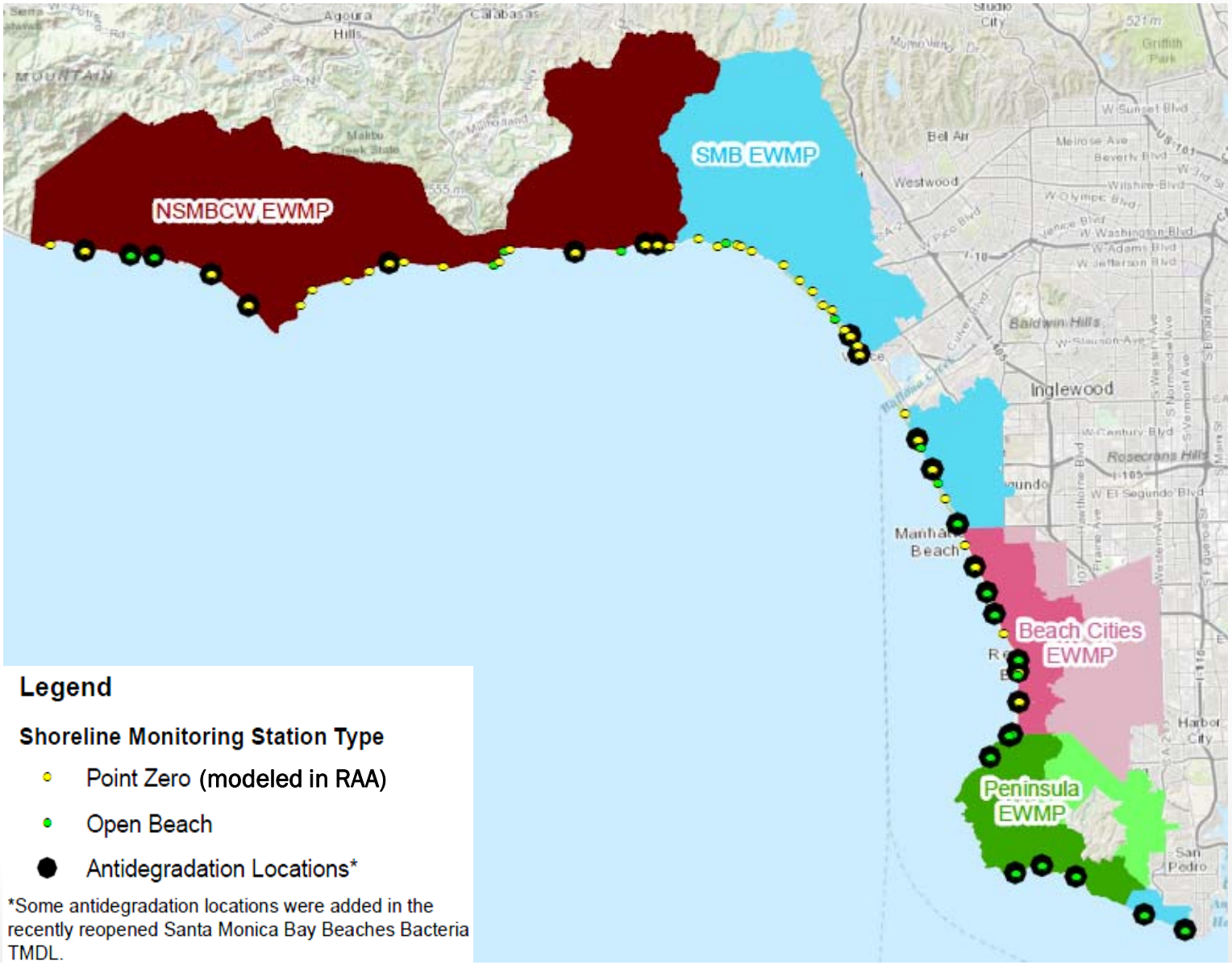
Study Area Overview



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RB-AR1837

North Santa Monica Bay Coastal Watersheds WMG

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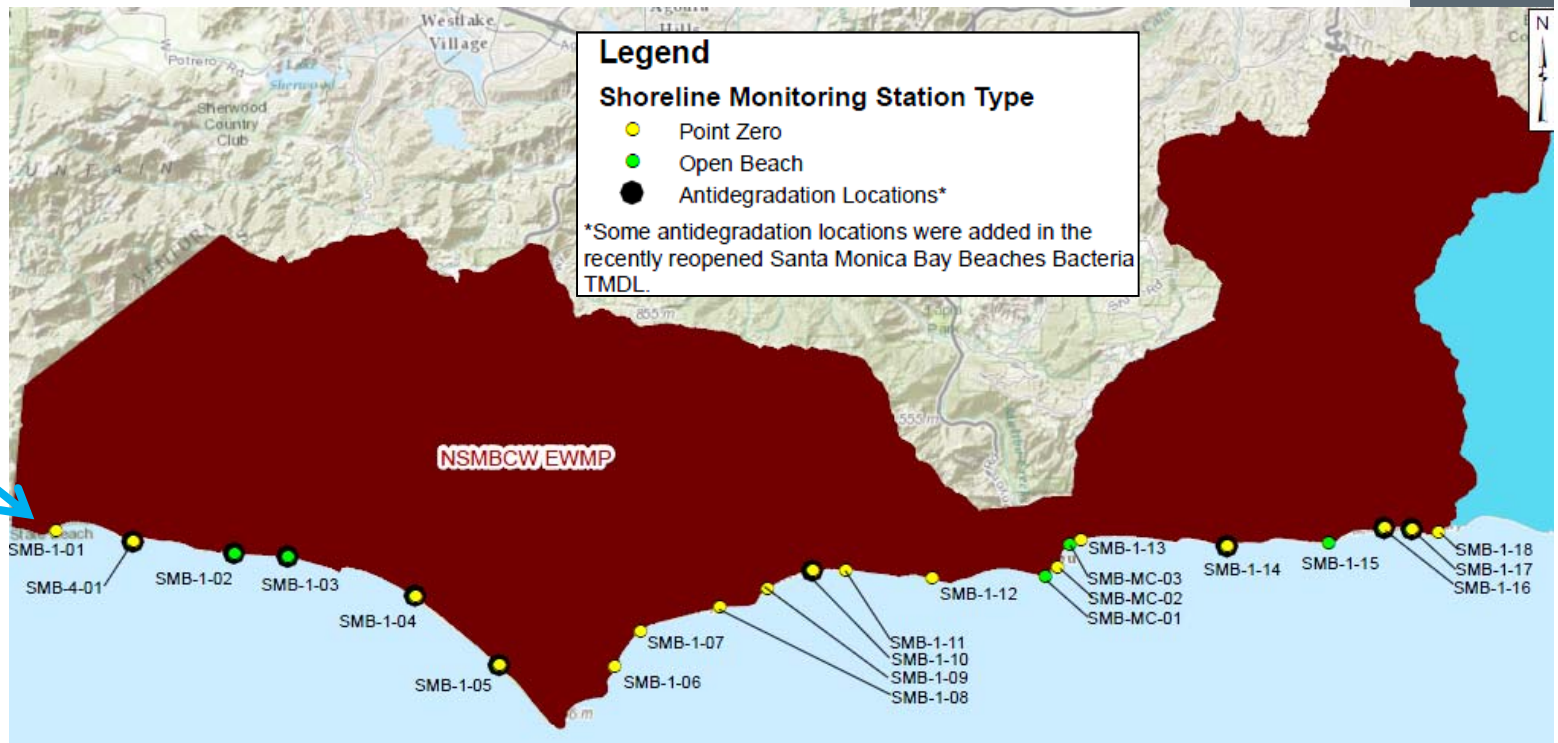
WMG Agencies

- City of Malibu
- Los Angeles County Flood Control District (LACFCD)
- County of Los Angeles

Reference Watershed



RB-AR1838

NSMBCW WBPCs

WBPCs established consistent with RB Guidelines for RAA

Category	Water Body	Pollutant
1	SMB	Trash/Debris
		DDTs/PCBs
	SMB Beaches	Dry Weather Bacteria, Wet Weather Bacteria
	Malibu Creek and Lagoon	Indicator Bacteria
		Nutrients
	Malibu Creek	Trash
2	Topanga Canyon Creek	Lead
	Malibu Creek	Sulfates & Selenium
	Malibu Lagoon	pH
3	None	None

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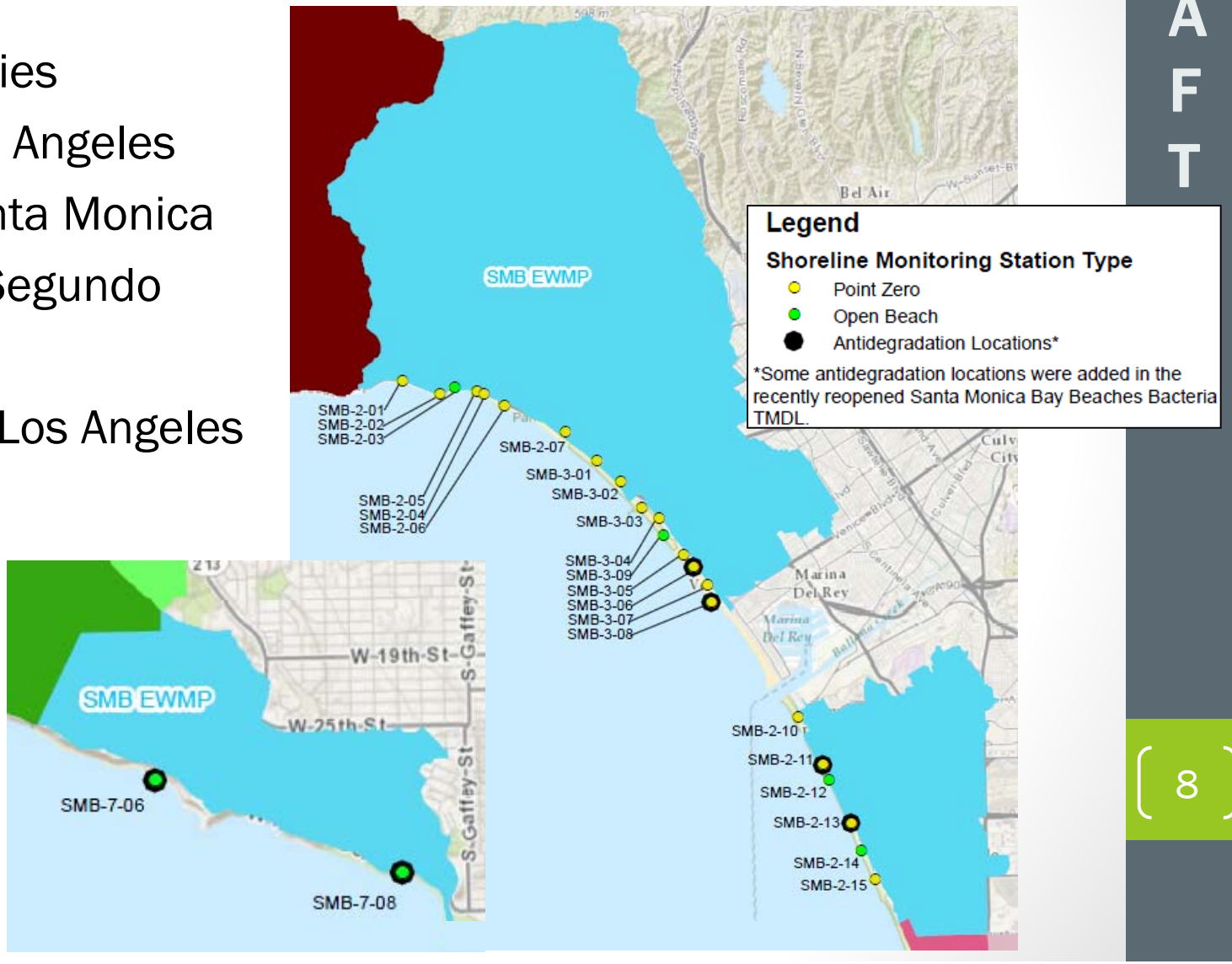
Santa Monica Bay WMG

WMG Agencies

- City of Los Angeles
- City of Santa Monica
- City of El Segundo
- LACFCD
- County of Los Angeles



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SMB WBPCs

WBPCs established consistent with RB Guidelines for RAA

Category	Water Body	Pollutant
1	SMB Beaches	Dry Weather Bacteria, Wet Weather Bacteria
	SMB	PCBs/DDTs
	SMB Offshore/ Nearshore	Debris
2	Santa Monica Canyon Channel	Lead
		Indicator Bacteria
3	None	None

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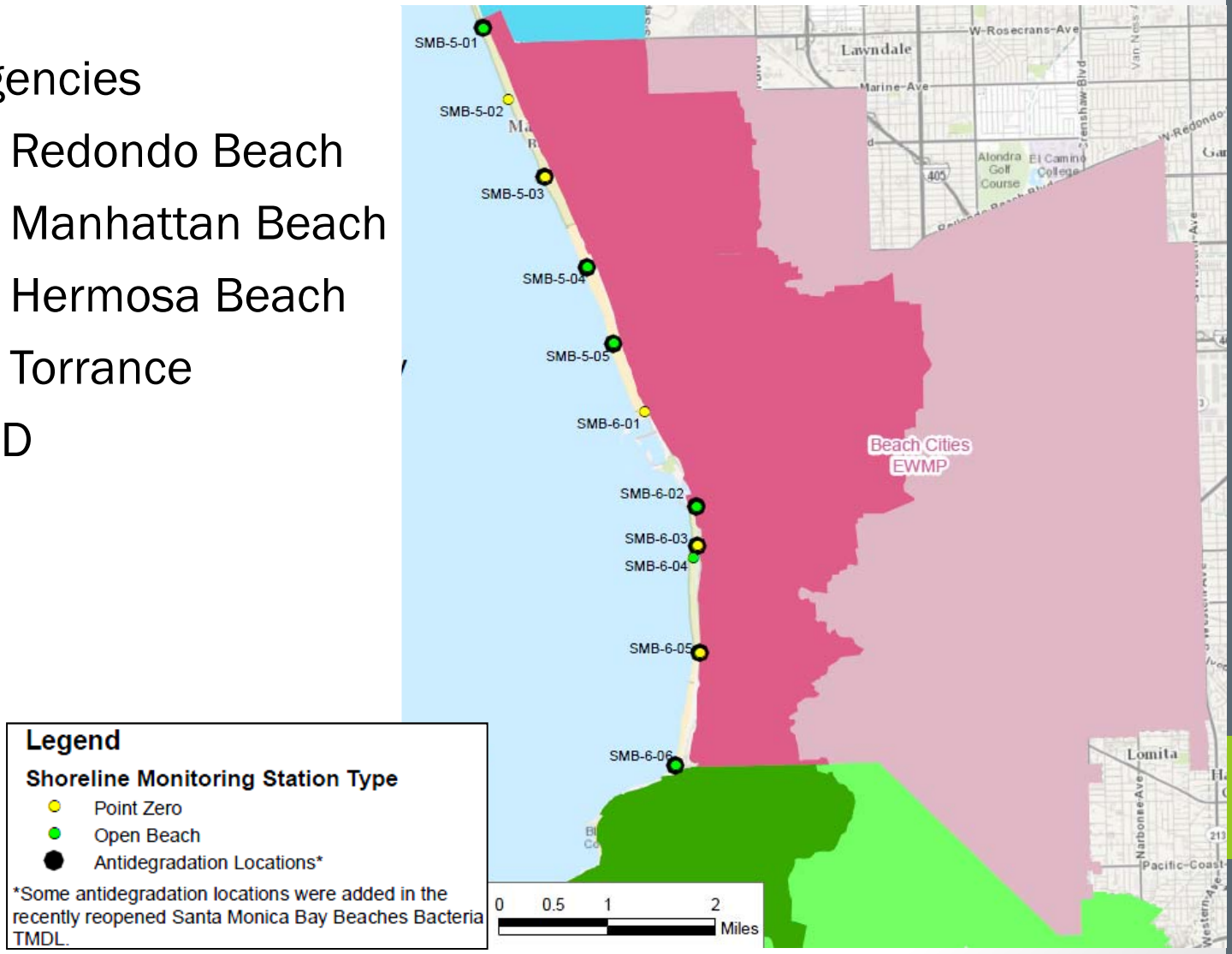
Beach Cities WMG

WMG Agencies

- City of Redondo Beach
- City of Manhattan Beach
- City of Hermosa Beach
- City of Torrance
- LACFCD



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Beach Cities WBPCs

WBPCs established consistent with RB Guidelines for RAA

Category	Water Body	Pollutant
1	SMB Beaches	Dry Weather Bacteria, Wet Weather Bacteria
	SMB	Trash/Debris
		DDTs/PCBs
	Dominguez Channel (including Torrance Lateral)	Toxicity
		Total Copper, Total Lead, Total Zinc
2	Dominguez Channel (including Torrance Lateral)	Indicator Bacteria
3	Dominguez Channel (including Torrance Lateral)	Cyanide
		pH
		Selenium
		Mercury

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Peninsula WMG

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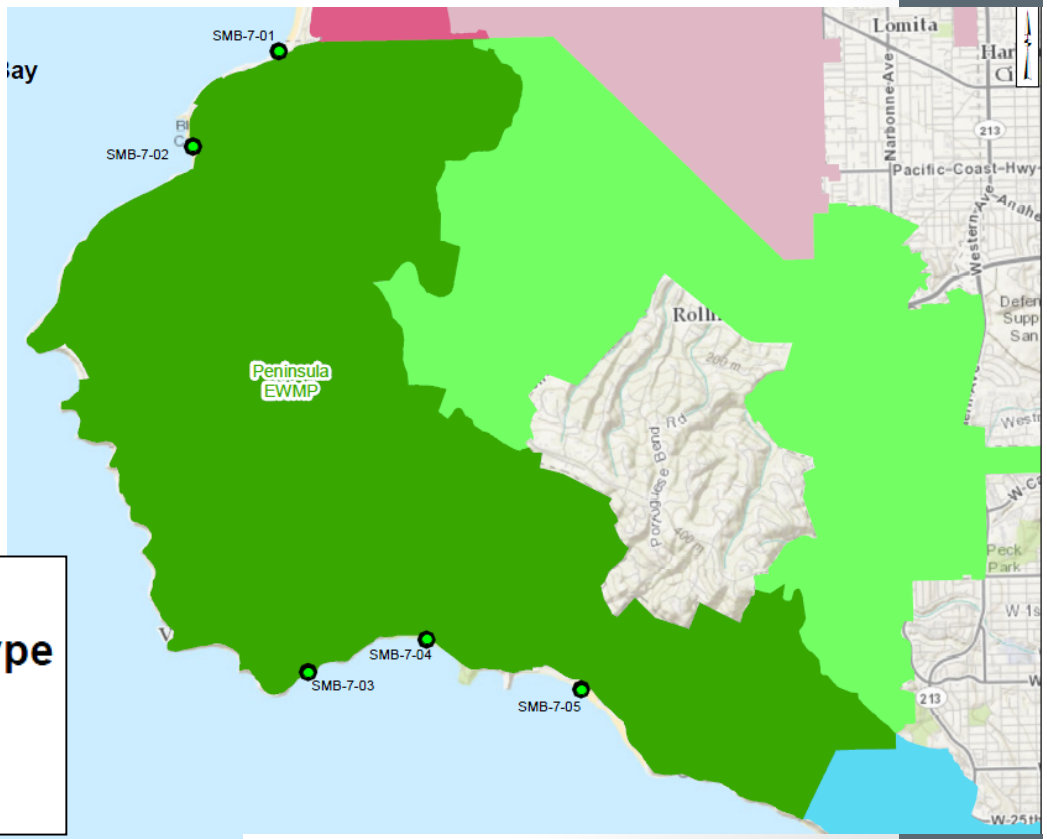
WMG Agencies

- City of Palos Verdes Estates
- City of Rolling Hills Estates
- City of Rancho Palos Verdes
- County of Los Angeles
- LACFCD



Legend

Shoreline Monitoring Station Type

- Open Beach
- Point Zero
- Antidegradation Locations*

Peninsula WBPCs

WBPCs established consistent with RB Guidelines for RAA

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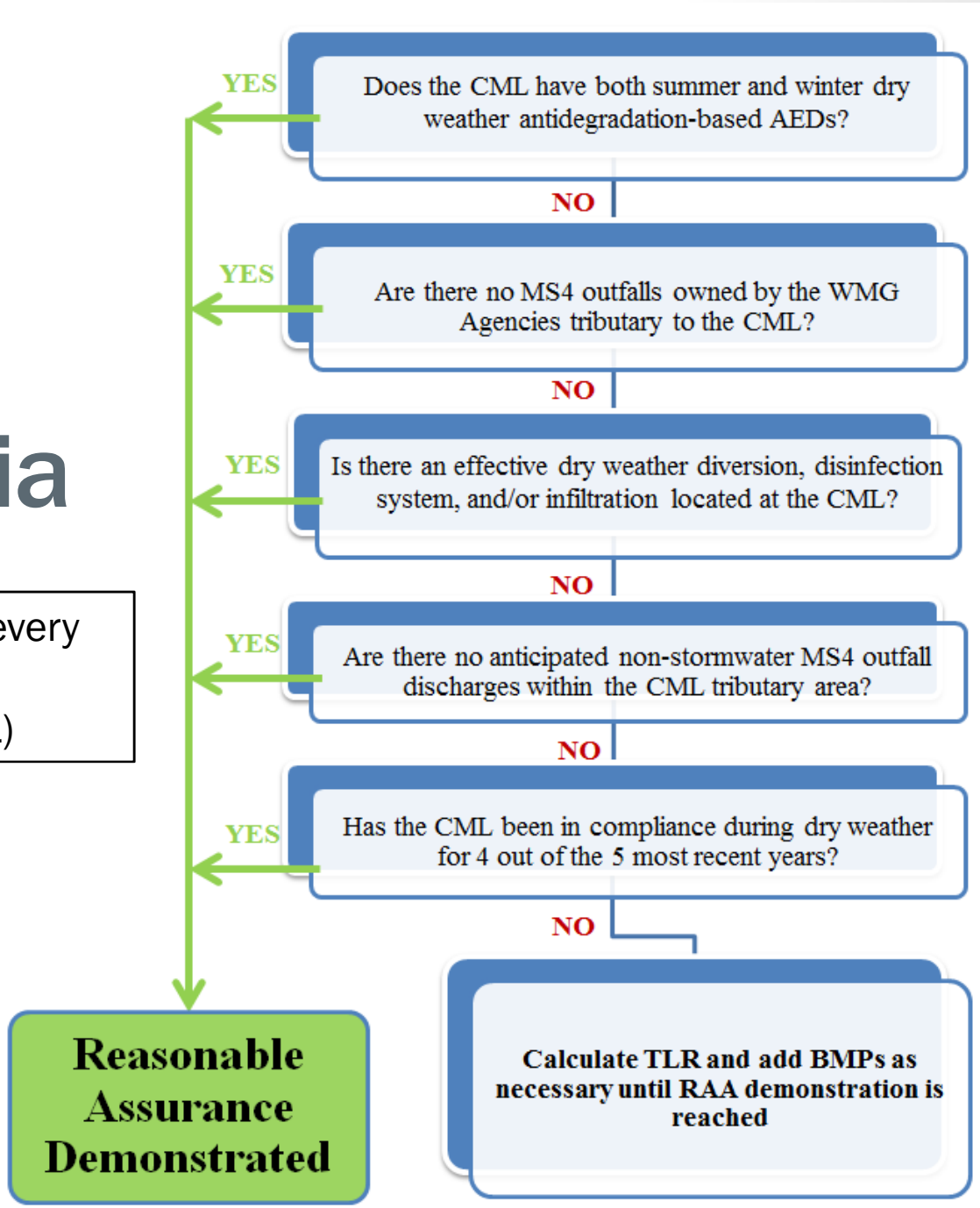
Category	Water Body	Pollutant
1	SMB Beaches	Dry Weather Bacteria, Wet Weather Bacteria
	SMB	Trash/Debris
		DDTs/PCBs
	Machado Lake	Trash
		DDTs/PCBs
		Chlordane
		Dieldrin
		Odor, Eutrophic Conditions, Algae, Nitrogen, Phosphorus, Ammonia, Chlorophyll a, Dissolved Oxygen
	Inner Harbor, Outer Harbor, Cabrillo Marina, Fish Harbor	Copper, Lead, Mercury, Zinc
		PAHs
		DDTs/PCBs
		Chlordane
2	Wilmington Drain	Copper, Lead
		Coliform Bacteria
	Machado Lake	ChemA (fish tissue)
	Palos Verdes Shoreline Park	Pesticides
	SMB	Sediment Toxicity
3	None	None

Dry Weather Approach for Bacteria

Evaluation questions for every shoreline Compliance Monitoring Location (CML)



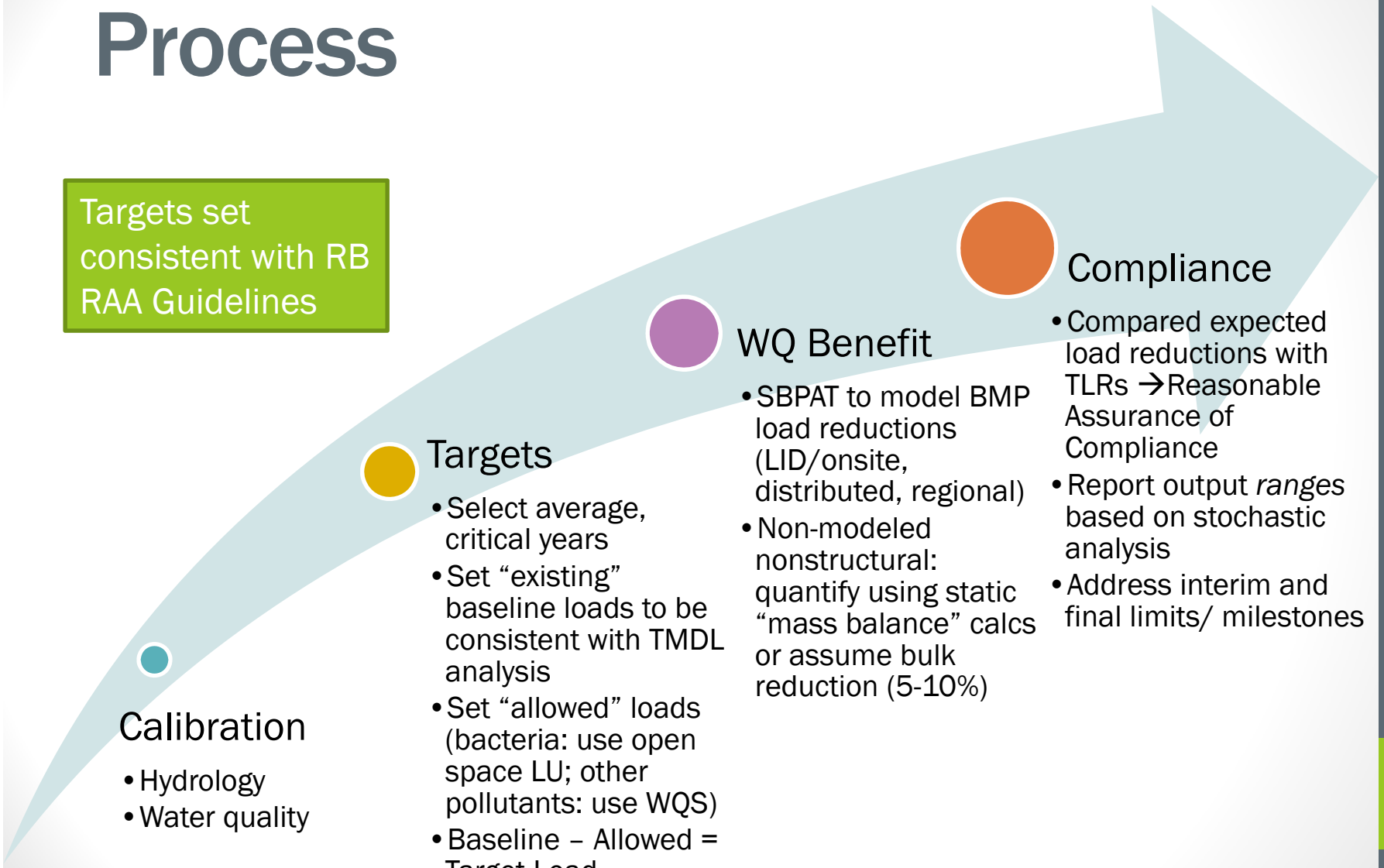
RB-AR1846

Dry Weather Approach for Other Pollutants

- Dry weather flows may be from non-MS4 NPDES permitted or conditionally exempt sources
- To address remaining non-exempt flows, WMAs may adopt new residential/commercial over-irrigation controls such as:
  - Smart controller rebates
  - Water waste ordinance
  - Outreach/education
  - Site inspection/audits
  - Wet weather BMP that will also capture/treat dry weather flows
- RAA will be narrative (i.e., no modeling) and will assume that proposed non-structural BMPs will eliminate any existing non-exempt NSW flows
  - Therefore 100% reduction of baseline load, and RA demonstrated

Wet Weather Modeling Process

Targets set consistent with RB RAA Guidelines



Calibration

- Hydrology
- Water quality

Targets

- Select average, critical years
- Set "existing" baseline loads to be consistent with TMDL analysis
- Set "allowed" loads (bacteria: use open space LU; other pollutants: use WQS)
- Baseline – Allowed = Target Load Reduction

WQ Benefit

- SBPAT to model BMP load reductions (LID/onsite, distributed, regional)
- Non-modeled nonstructural: quantify using static "mass balance" calcs or assume bulk reduction (5-10%)

Compliance

- Compared expected load reductions with TLRs →Reasonable Assurance of Compliance
- Report output *ranges* based on stochastic analysis
- Address interim and final limits/ milestones

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SBPAT Overview

Model selection consistent with RB RAA Guidelines

Fixed Data

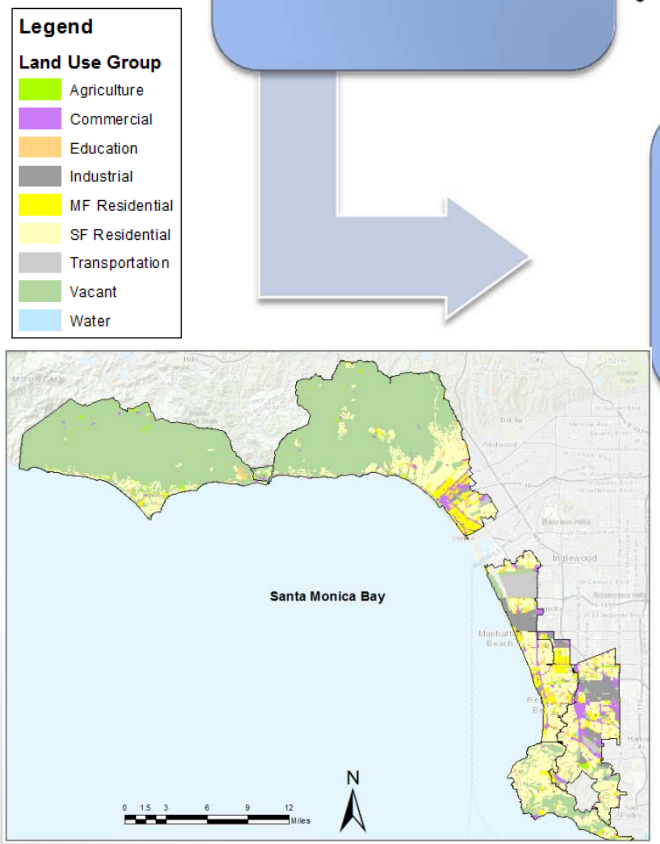
- Catchments definition/characterization
- Land uses
- Parcels
- BMP designs

Variable/ Stochastic Data

- Precipitation and hydrology
- Land use EMCs
- BMP effectiveness
- BMP treatment/bypass volumes

Models

- Monte Carlo
- EPA SWMM



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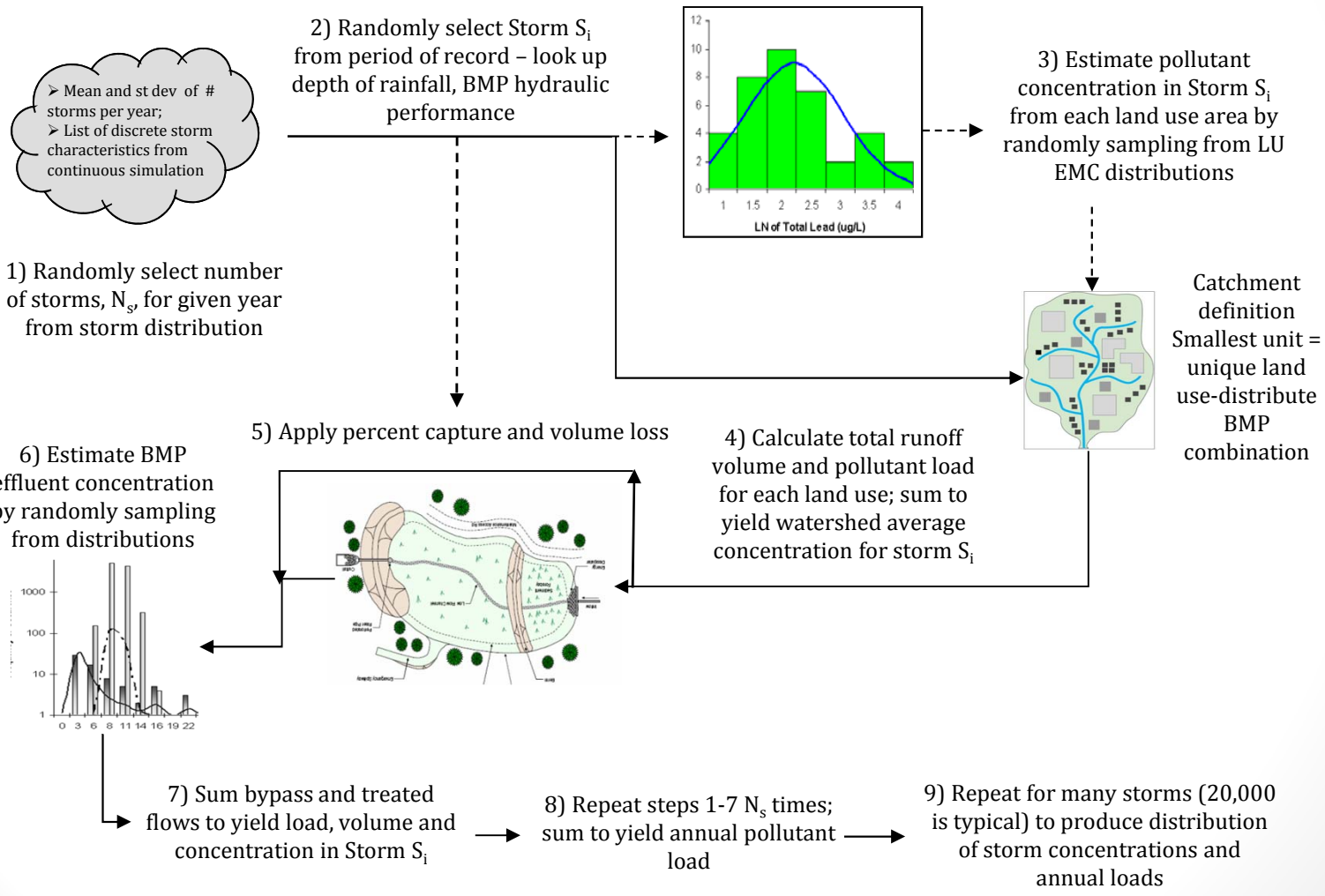
Monte Carlo

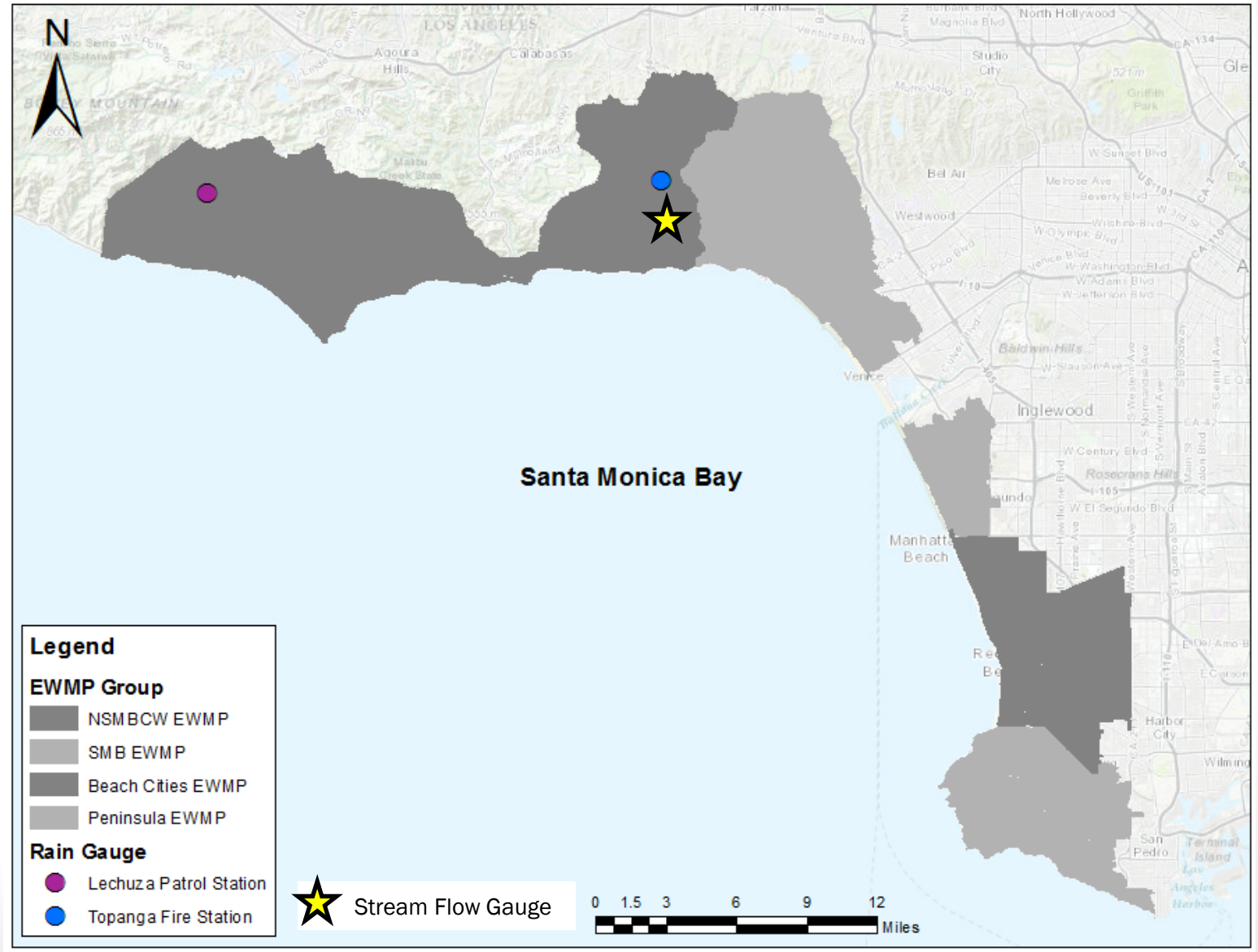


SBPAT Calibration

Model calibrated consistent with RB RAA Guidelines

- **Hydrology:** Modeled (predicted) vs. observed annual discharge volumes compared for Topanga Canyon
  - Precipitation gauge -- LA County Lechuza Station (#72) (hourly record adjusted using ratio with Topanga Canyon gauge)
  - Streamflow gauge -- LA County Topanga Gauge (F54C)
  - Calibration period -- 2001-2012 (WY 2007 excluded due to stream flow measurement outliers)
- **Water Quality:** Demonstrated linkage between modeled annual bacteria loads and measured annual (wet weather) exceedance days at SMB 1-18 (Topanga Canyon)

Calibration Gauges



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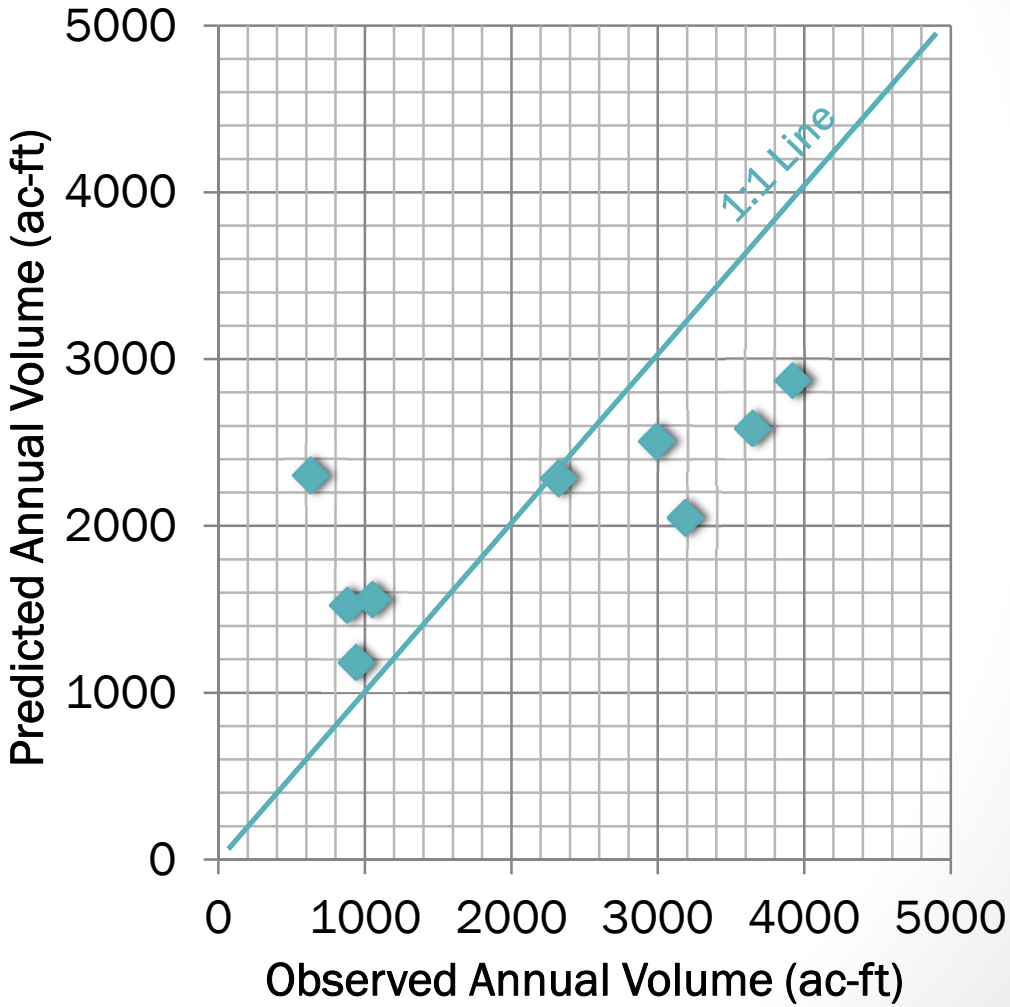
Hydrology Calibration

Average prediction error*
= 1 – (observed/predicted)
= 2%

Model average prediction error meets "target tolerance" from RB Guidelines



*Average of the percent differences between each observed and modeled annual runoff volume

RB-AR1853

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Calibrated Parameters

Los Angeles County Soil Number	Saturated Hydraulic Conductivity (in/hr)	
	Default	Calibrated
2	0.11	0.06
22	0.35	0.20
24	1.26	0.60
25	0.15	0.06
26	3.6	2.0
27	0.64	0.60
30	0.72	0.60
33	0.51	0.06
35	1.5	0.6
38	0.50	0.06
66	0.29	0.20

RUNOFF INCREASES

Land Use Designation	Effective Imperviousness	
	Default	Calibrated
Vacant Undifferentiated	1%	10%

Note: Calibrated values are still within the recommended ranges from reference manuals (NRCS, *2004. Chapter 9 - Hydrologic Soil-Cover Complexes. Part 630 Hydrology, National Engineering Handbook. 20pp. Washington, DC.)*

RB-AR1854

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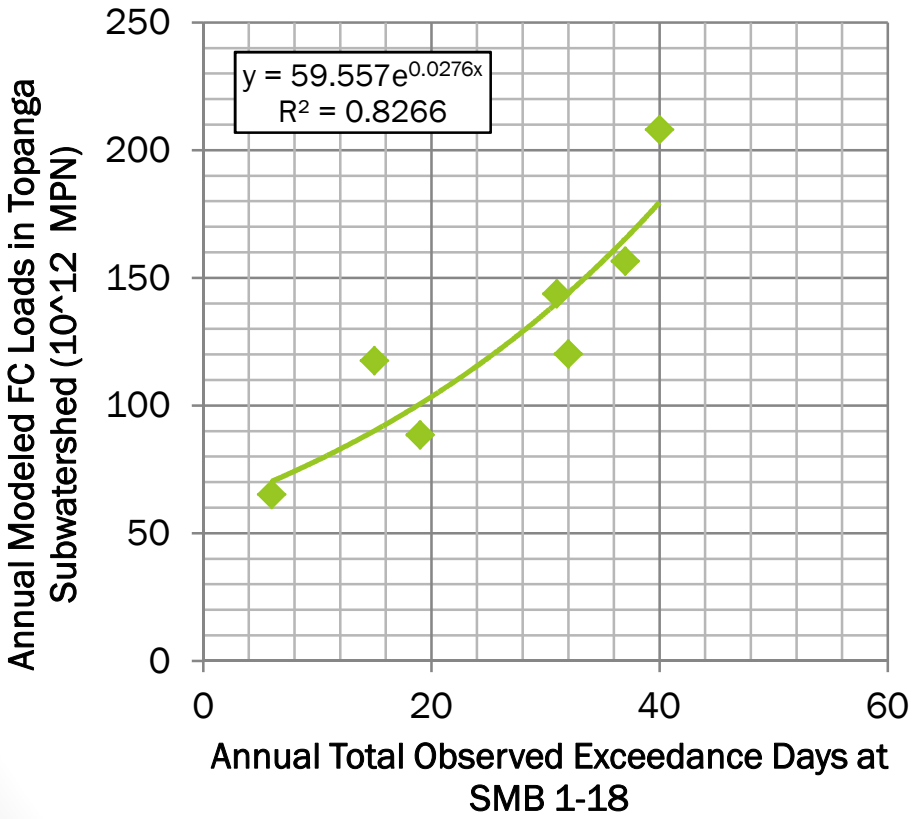
Use Modeled FC Loads to Predict Observed Exceedance Days



Open Space Data Source	FC EMC (MPN/100mL)	
	Mean	Standard Deviation
SBPAT Default (based on SCCWRP[1] 2007 [n=2])	6,310	1,310
Revised based on Arroyo Sequit samples (n=11)	484	806

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RB-AR1855

Target Load Reduction Approach

- Santa Monica Bay Watershed WBPCs
  - Bacteria
    - Point Zero Beaches: Land-use-based approach based on reference watershed
    - Anti-Degradation Beaches: TMDLs acknowledge that historic exceedance rates for each of these subwatersheds are lower than that of the reference beach, on average → No RAA modeling
  - **Other Pollutants** (e.g., lead in Topanga & Santa Monica Canyon Channel): Allowed load = WQS x SBPAT volume. Exceptions:
    - SMB PCBs/DDT since TMDL sets allowable MS4 load at existing conditions → Zero TLR = No RAA modeling
    - Malibu Creek nutrients since urban EMCs are below TMDL WLA → Zero TLR = No RAA modeling
    - Trash/debris → Alternative compliance mechanism (full/partial capture systems)
  - **Open Beaches, all pollutants:** No MS4 outfalls → No RAA modeling
- Peninsula EWMP will also use SBPAT to set TLRs for WBPCs in Machado Lake and LA Harbor Watersheds
- **TLR set based on 50th and 90th percentile years:** Based on wet days for bacteria, based on rainfall depth for other pollutants.

Average and Critical Years to be Modeled

Average and critical years used to set TLRs consistent with RB RAA Guidelines

Note: SMB had 86 wet days in 1995

EWMP WMG	Using Number of Wet Days*		Using Total Annual Rainfall*	
	50th Percentile TMDL Year	90th Percentile TMDL Year	50th Percentile TMDL Year	90th Percentile TMDL Year
NSMBCW	2010 (59) (15.3")	1995 (85) (31.1")	1996 (13.3")	2005 (28.2")
SMB	1999 (52) (7.3")	2005 (78) (36.6")	2008 (15.3")	1995 (33.1")
Beach Cities	1996 (58) (10.2")	1995 (73) (22.0")	2004 (10.9")	2005 (21.9")
Peninsula	2006 (54) (9.1")	1995 (81) (29.5")	2008 (12.7")	2005 (26.5")

EWMP WMG	LACFCD Hourly Rain Gage Selected	Elevation (ft)	Justification
NSMBCW	D253 Lechuza Patrol Station	1620	Influences most area
SMB	D491 Pacific Palisades	293	Elevation is most representative
Beach Cities	D1070 Manhattan Beach	182	Influences most area
Peninsula	D1252 Palos Verdes Landfill	400	Influences most area

*Period of record: 1989 – 2011 TMDL years (Nov 1 – Oct 31)

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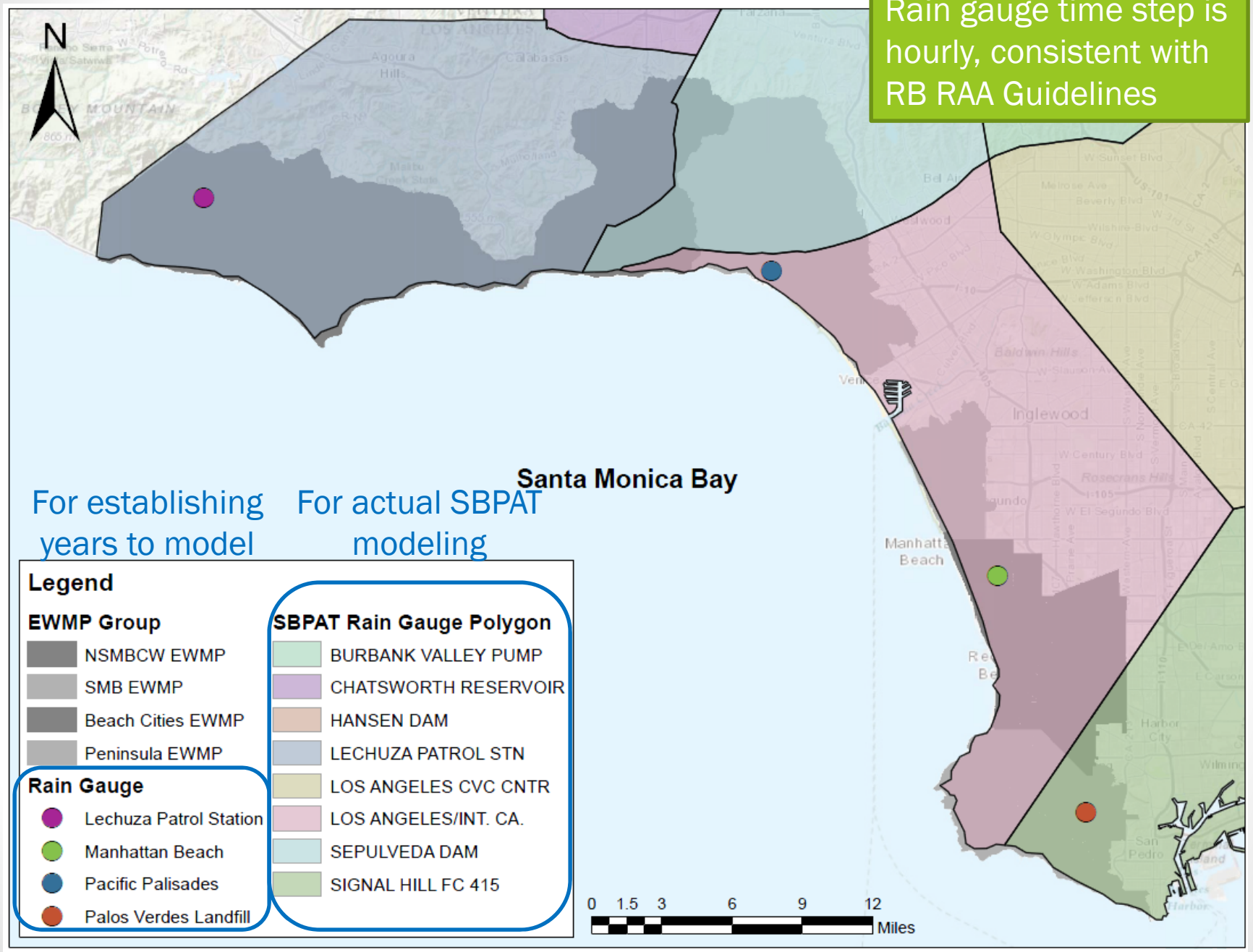
Rain gauge time step is hourly, consistent with RB RAA Guidelines



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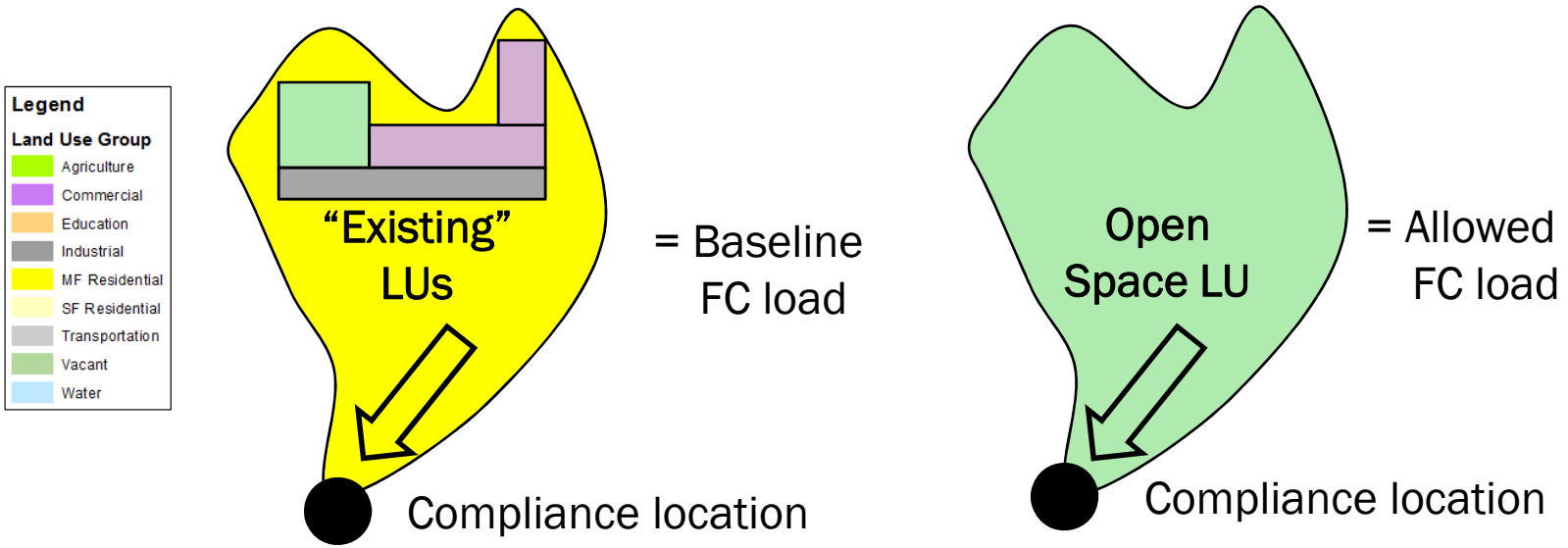
Setting Target Load Reductions (TLRs) for Bacteria

Land use-based approach using SBPAT to meet required AEDs that are based on reference watershed.



Baseline Load – Allowed Load = TLR

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Approach for Addressing Other Pollutants

- No other TLRs will be developed, however BMP load reductions can be reported for all modeled WBPCs:
  - Bacteria (FC)
  - Nutrients (TP and TN, or NO3 + TKN)
  - Metals (TCu, TPb, TZn)
  - Particulate associated toxics (TSS as surrogate), if necessary
- Debris/trash is not addressed in RAA due to alternate compliance mechanisms
- Non-MS4 pollutants are not addressed in RAA (e.g., pH, sulfate, selenium, odor, etc.)
- Toxicity or non-particulate toxicants will not be modeled

NSMBCW WBPCs

WBPCs qualitatively evaluated in RAA are greyed out

Category	Water Body	Pollutant
1	SMB	Trash/Debris
		DDTs/PCBs*
	SMB Beaches	Dry Weather Bacteria, Wet Weather Bacteria
	Malibu Creek and Lagoon	Indicator Bacteria
		Nutrients
	Malibu Creek	Trash
2	Topanga Canyon Creek	Lead
	Malibu Creek	Sulfates & Selenium
	Malibu Lagoon	pH
3	None	None

* If we need to quantify load reductions, model TSS as a surrogate

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SMB WBPCs

WBPCs qualitatively evaluated in RAA are greyed out

Category	Water Body	Pollutant
1	SMB Beaches	Dry Weather Bacteria, Wet Weather Bacteria
	SMB	PCBs/DDTs*
	SMB Offshore/ Nearshore	Debris
2	Santa Monica Canyon Channel	Lead
		Indicator Bacteria
3	None	None

* If we need to quantify load reductions, model TSS as a surrogate

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Beach Cities WBPCs

WBPCs qualitatively evaluated in RAA are greyed out

Category	Water Body	Pollutant
1	SMB Beaches	Dry Weather Bacteria, Wet Weather Bacteria
	SMB	Trash/Debris
		DDTs/PCBs*
	Dominguez Channel (including Torrance Lateral)	Toxicity
		Total Copper, Total Lead, Total Zinc
2	Dominguez Channel (including Torrance Lateral)	Indicator Bacteria
3	Dominguez Channel (including Torrance Lateral)	Cyanide
		pH
		Selenium
		Mercury

* If we need to quantify load reductions, model TSS as a surrogate

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Peninsula WBPCs

WBPCs qualitatively evaluated in RAA are greyed out

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Category	Water Body	Pollutant
1	SMB Beaches	Dry Weather Bacteria, Wet Weather Bacteria
	SMB	Trash/Debris
		DDTs/PCBs*
	Machado Lake	Trash
		DDTs/PCBs*
		Chlordane*
		Dieldrin*
		Odor, Eutrophic Conditions, Algae, Nitrogen, Phosphorus, Ammonia, Chlorophyll a, Dissolved Oxygen
	Inner Harbor, Outer Harbor, Cabrillo Marina, Fish Harbor	Copper, Lead, Mercury, Zinc
		PAHs*
		DDTs/PCBs*
		Chlordane*
2	Wilmington Drain	Copper, Lead
		Coliform Bacteria
	Machado Lake	ChemA (fish tissue)
	Palos Verdes Shoreline Park	Pesticides
	SMB	Sediment Toxicity
3	None	None

BMPs and Pollutants Modeled in SBPAT

BMPs*	Pollutants*
Constructed Wetland / Wetpond (with Extended Detention)	Total suspended solids (TSS)
Constructed Wetland / Wetpond (without Extended Detention)	Total phosphorus (TP)
Dry Extended Detention Basin	Dissolved phosphorus as P (DP)[2]
Hydrodynamic Separator	Ammonia as N (NH3)
Media Filter	Nitrate as N (NO3)
Sub-surface Flow Wetland	Total Kjeldahl nitrogen as N (TKN)
Treatment Plant	Dissolved copper (DCu)
Vegetated Swale	Total copper (TCu)
Biofiltration	Total lead (TPb)
Bioretention (volume reduction only)	Dissolved zinc (DZn)
Cistern (volume reduction only)	Total zinc (TZn)
Green Roof (volume reduction only)	Fecal Coliform (FC)
Porous Pavement (volume reduction only)	
Infiltration Basin (volume reduction only)	

[1] All pollutants are addressed for all BMPs that provide treatment (i.e., excluding those identified as "volume reduction only").

[2] Dissolved phosphorus and orthophosphate data sets were combined to provide a larger dataset because the majority of orthophosphate is typically dissolved and many datasets either report dissolved phosphorus or orthophosphate, but not both.

* Modeling for the RAA will be limited to Category 1 and 2 WBPCs

SBPAT EMCs

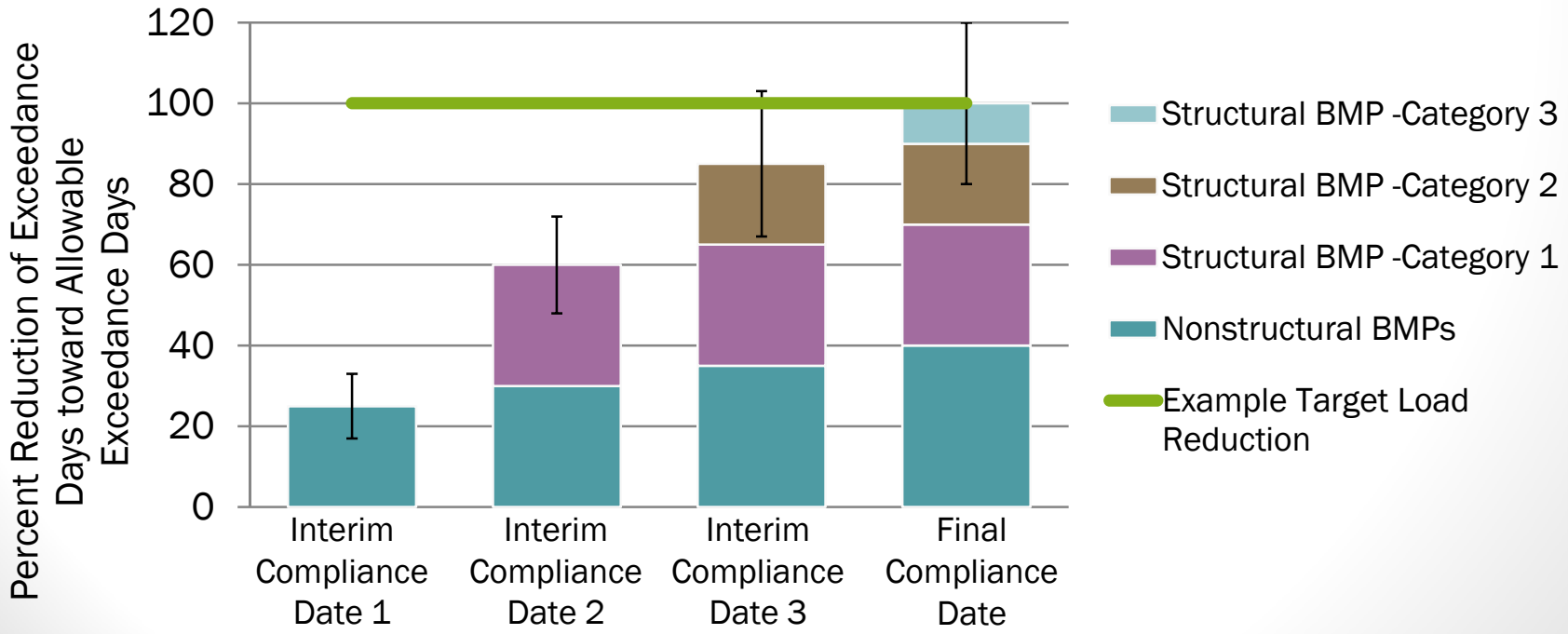
Model inputs consistent with RB RAA Guidelines

- Land use EMCs and BMP effluent EMCs are based on references listed in the RAA Guidance Document, with the following exceptions:
- BMP Effluent
  - SSF wetland effluent is the lowest of all IBD categories; except for Fecal Coliform where 90% removal is used (SSF wetlands are generally capable of a 1 to 2 log reduction in fecal coliforms per [USEPA 1993, Sleytr et al 2007, Edwards et al 1993, Geosyntec 2009, and Puigagut et al 2007])
  - BMP effluent data was analyzed in 2012 based on the 2011 interim release of the IBD
- Land Use EMCs
  - Open space fecal coliform EMC revised based on Arroyo Sequit samples
  - The “single-family residential” EMC for fecal coliform is based on the SCCWRP dataset for “low-density residential”
  - The “multi-family residential” EMC for fecal coliform is based on the SCCWRP dataset for “high-density residential”
  - The “education” EMC for fecal coliform is based on the “multi-family residential” land use since the educational land use is not available in the SCCWRP fecal coliform dataset

Estimating BMP Load Reductions

Goal is to meet TLRs using combination of both structural and nonstructural BMPs

- Structural BMPs: Use SBPAT to model regional and distributed BMPs
- Non-Structural BMPs: Use SBPAT, spreadsheet calcs, or assume general load reduction percent for non-modeled BMPs



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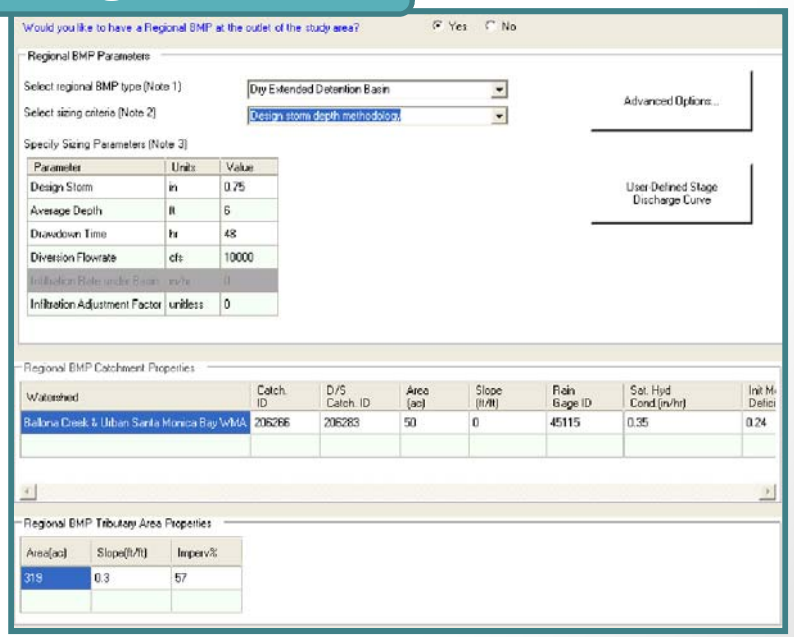
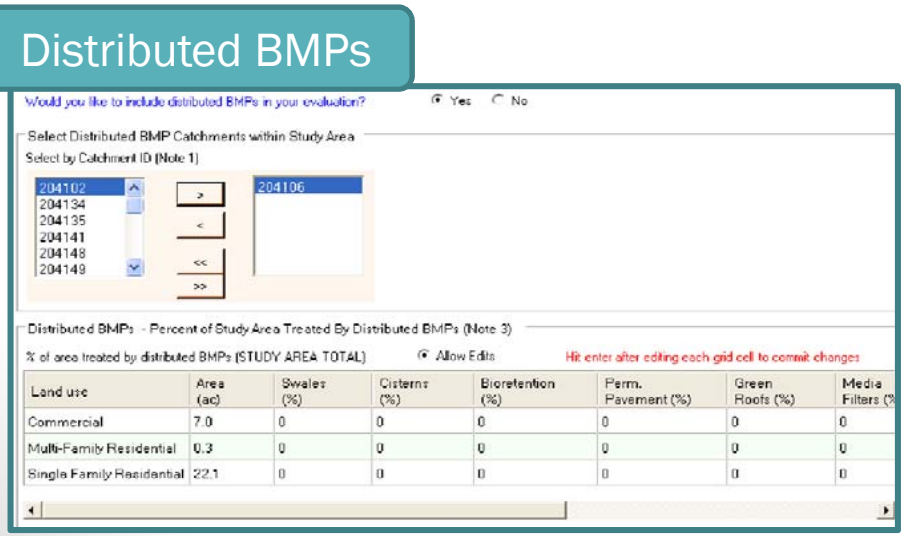
Structural BMPs

- Distributed BMPs will be generally planned
- Regional BMPs will be sited
- Regional EWMP BMPs meeting the 85th percentile criteria for future conditions (e.g., after LID is implemented in the watershed until final limits become effective) will not be modeled for RAA, but sizing will be confirmed through use of hydrologic calculations or model

Regional BMPs



Distributed BMPs



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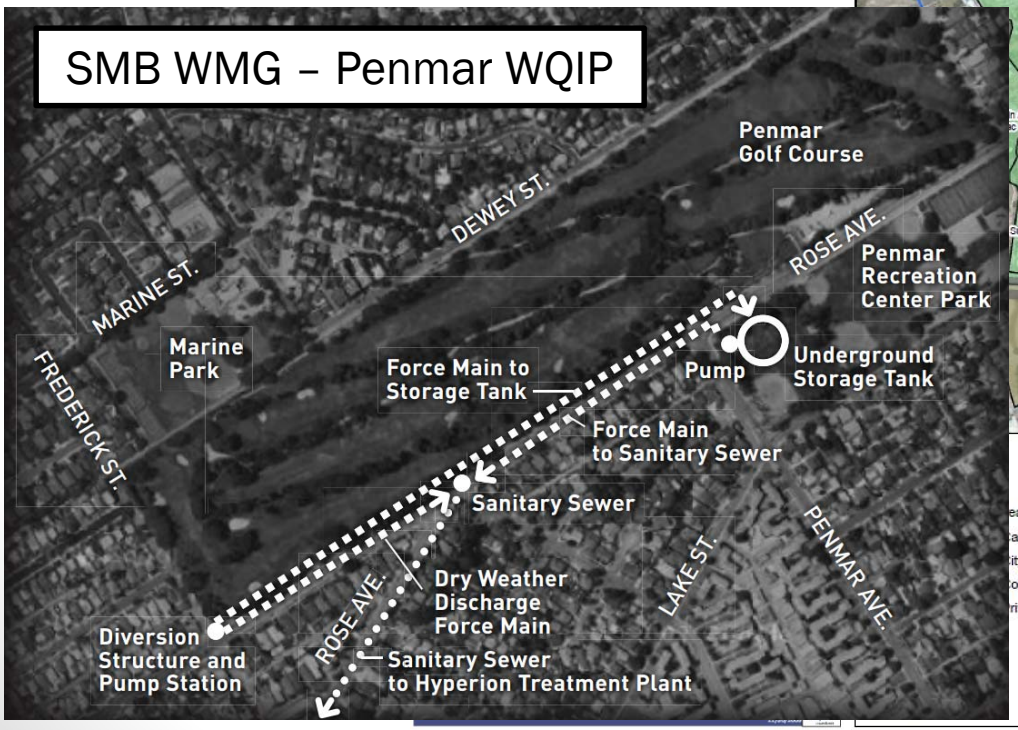
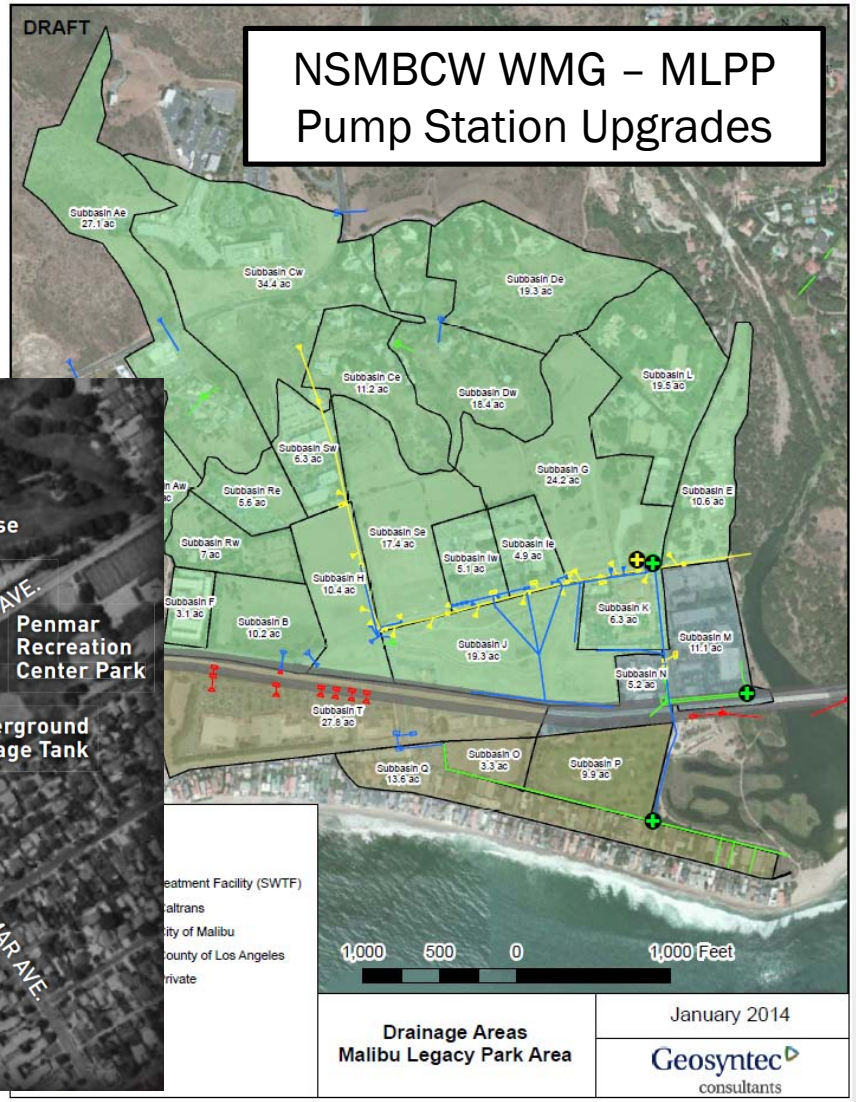
Regional EWMP BMPs - Examples





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Non-Structural BMPs

- Inspection of IGP and other non-MS4 NPDES permittee parcels: Model in SBPAT by setting these land use EMCs to WQS in all conditions
- LID Ordinances: Model by applying retention BMPs to applicable redevelopment area
  - Assume retention sized to 85th percentile storm
  - Assume applicable redevelopment area based on rates (as % of area, by land use) provided by agencies, otherwise use values from City of LA from Ballona TMDL Implementation Plans
  - Allow greater rate if agencies adopt more stringent applicability threshold
  - Estimate total redeveloped area between ordinance date and effective date of final limits
- LID Programs:
  - E.g., rain barrels, downspout disconnects, rain gardens
  - Model by assuming percent (~10%) of residential parcels implement this over compliance period

Non-Structural BMPs (cont'd)

- Copper brake pad phase-out (SB346): Assume 50-60% reduction per CASQA/Moran analysis
- Other NS BMPs: Calculate individual load reductions consistent with SoCal Comprehensive Load Reduction Plans and Water Quality Implementation Plans (referencing available SoCal studies), or assume 5-10% bulk percent load reduction, e.g.:
  - Pet waste controls (ordinance, signage, education/outreach, mutt mitt stations, etc.)
  - Human waste source tracking and remediation (homeless source controls, leaking sewer investigations, etc.)
  - Enhanced street sweeping (e.g., 100% vacuum sweepers, increased frequency)
  - Increased catch basin and storm drain cleaning

Demonstrating "Reasonable Assurance"

- Report BMP load reductions as average expected values and low-high ranges (i.e., 25th-75th percentile values, driven by variability in land use EMCs and BMP performance)
- Hypothetical example:

Subwatershed	Pollutant	Target Load Reduction	Sum of NS Load Reductions (low-high range)	Sum of Structural Load Reductions (low-high range)	Total Estimated Load Reductions (low-high range)
1	Fecal coliform	100	17 (12-20)	60 (40-85)	77 (52-105)
2	Fecal coliform	75	15 (11-19)	60 (40-85)	75 (51-104)

- For some WBPCs, agencies may elect to use the high load reduction value for RAA demonstration

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Example Output

Pollutant	Units	Average Annual MS4 Loads and Volumes			% of MS4 Load Removed	
		Base-line	w/Dist. BMPs	w/ Dist. + Reg. BMPs	w/Dist. BMPs	w/ Dist. + Reg. BMPs
Total runoff volume	Ac-ft	220	172	172	22%	22%
DCu	lbs	8.8	6.9	6.8	22%	23%
DP	lbs	170	125	118	27%	30%
DZn	lbs	163	73	63	55%	62%
FC	10^{12} MPN	52.8	35.4	24.3	33%	54%
NH3	lbs	435	276	190	37%	56%
NO3	lbs	500	384	378	23%	25%
TCu	lbs	18.9	10.7	8.1	43%	57%
TKN	lbs	1645	1257	1194	24%	27%
TPb	lbs	7.63	4.18	3.54	45%	54%
TP	lbs	235	140	98	41%	58%
TSS	Tons	42	19	12	54%	71%
TZn	lbs	218	101	66	54%	70%

Ranges not shown here.
Not all pollutants may be reported.

DRAFT

RB RAA Guidance

- Proposed approach is consistent with RAA Guidance
  - Only Permit-approved model will be used (SBPAT)
  - Targets will be set based on average (50th percentile) and critical conditions (90th percentile)
  - Key model input datasets will be consistent with Guidance, e.g.:
    - Land use EMCs (updated)
    - BMP performance data (updated)
    - Rainfall (1-hour timesteps)
  - SBPAT calibration will be documented in RAA memo
  - Output variability will be characterized
- Request for approval of minor variations
  - Updated EMCs
  - Updated BMP performance data
  - Model output consistent with model capabilities (e.g., SBPAT does not produce continuous time series output for load reductions, pollutographs, hydrographs, etc.)
  - WMGs intend to define “baseline” as the TMDL effective date

Summary

- For dry weather, decision tree approach
- For wet weather, SBPAT for SMB watersheds
- SBPAT calibration using Topanga
- Targets will only be set for:
  - pollutants associated with MS4 discharges
  - pollutants with load reduction required
  - reference watershed-based beaches (not antidegradation sites)
- Define baseline loads based on TMDL effective date
- Bacteria TLRs based on open space (using data from reference watershed)
- Open beaches do not require modeling
- For non-structural: model LID, take bulk credit for remaining BMPs
- For some WBPCs, agencies may consider using the predicted load reduction range for RAA demonstration
- Standard SBPAT output will be provided for the RAA WBPCs

Questions

DRAFT

INLAND WATER BODIES

Reasonable Assurance Analysis (RAA) Approach for Enhanced Watershed Management Programs (EWMPs): LSPC plus SBPAT

Los Angeles Regional Water Quality Control Board

April 9, 2014

Geosyntec consultants

engineers | scientists | innovators

DRAFT

Model Approaches

Model selection consistent with RB RAA Guidelines

Watershed	Set TLR	Model BMPs
Santa Monica Bay	SBPAT	SBPAT
Machado Lake	SBPAT	SBPAT
LA Harbor	SBPAT	SBPAT
Dominguez Channel	LSPC	SBPAT

Target Load Reduction Approach

Dominguez Channel

- **Bacteria:** LSPC to set TLRs by "dialing down" EMCs by % until AEDs are met
  - REC-2 with High Flow Suspension
- **Other Pollutants:** LSPC to set TLRs based on WQS
- **Calibration:** LSPC is pre-calibrated
- TLR set based on higher of 50th/90th percentile years: Based on wet days for bacteria, based on total rainfall for other pollutants

DRAFT

Average and Critical Years to be Modeled

Average and critical years used to set TLR consistent with RB RAA Guidelines

EWMP WMG	Using Number of Wet Days*		Using Total Annual Rainfall*	
	50th Percentile TMDL Year	90th Percentile TMDL Year	50th Percentile TMDL Year	90th Percentile TMDL Year
Beach Cities	1996 (58)	1995 (73)	2004 (10.9”)	2005 (21.9”)

EWMP WMG	LACFCD Hourly Rain Gage Selected	Elevation (ft)	Justification
Beach Cities	D1070 Manhattan Beach	182	Influences most area

*Period of record: 1989 – 2011 TMDL years (Nov 1 – Oct 31)

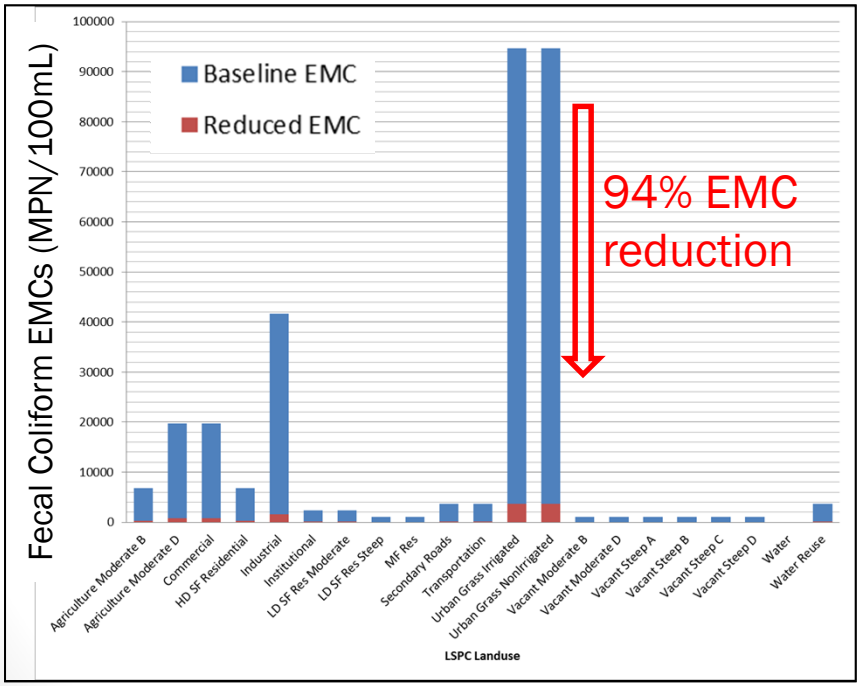
DRAFT

Bacteria TLR Approach Illustrated

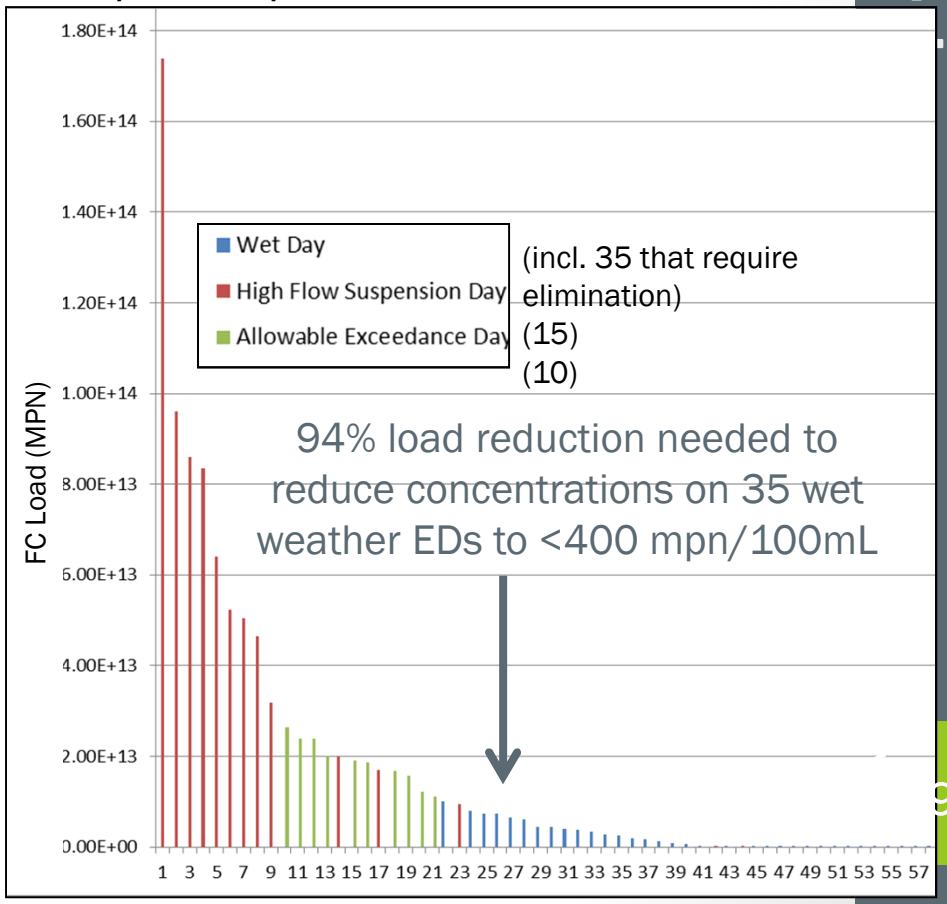
DRAFT

LA River Example
Baseline Conditions
90th percentile year (2011)

Input Adjustment



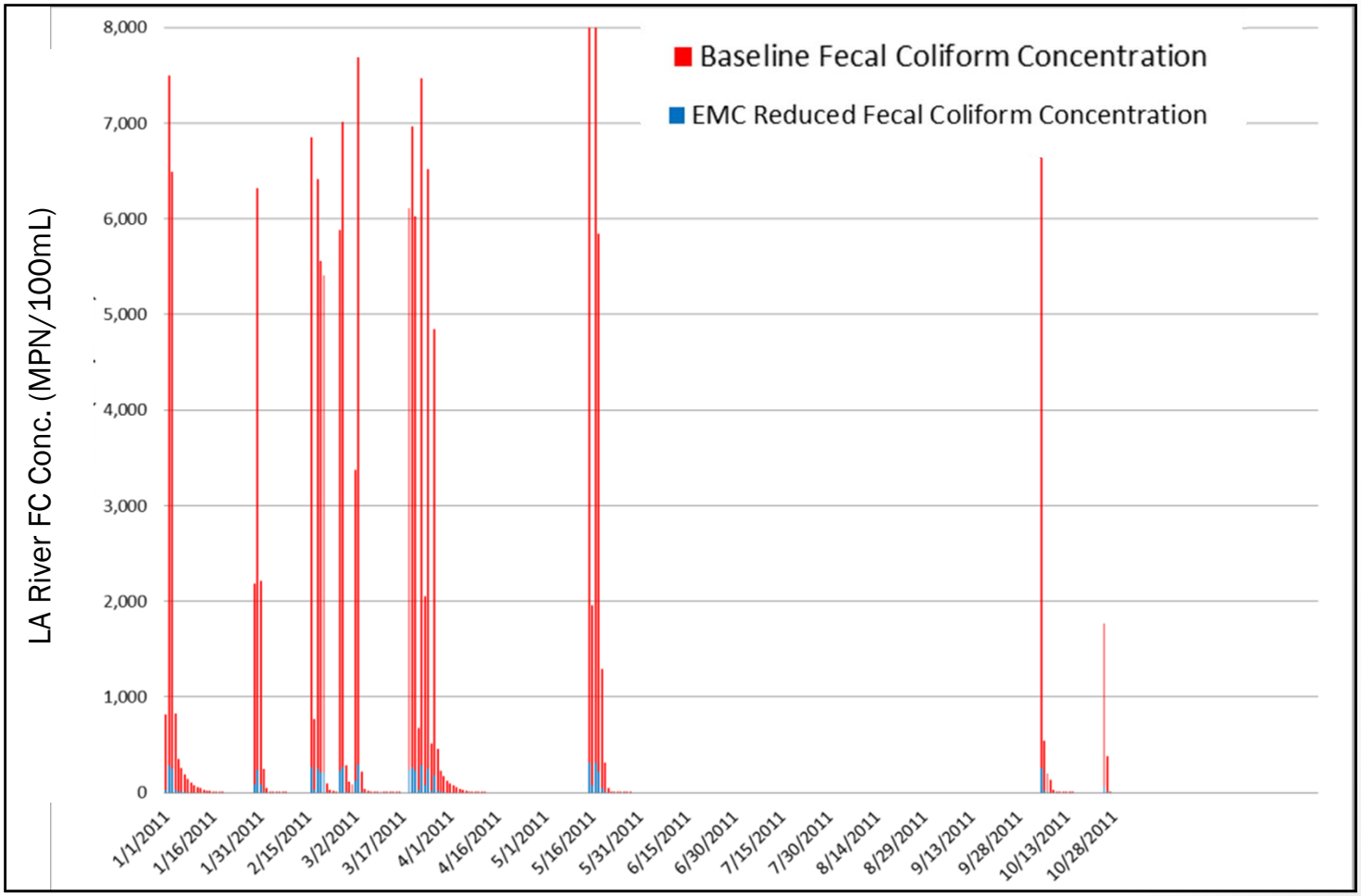
Output Response



RB-AR1881

Bacteria TLR Approach Illustrated

LSPC concentration timeseries output



RB-AR1882

DRAFT

Questions

DRAFT

Geosyntec consultants

April 17, 2014

Meeting with City of Los Angeles (8:30-9:30 a.m.)

April 22, 2014

Meeting with East San Gabriel Valley WMP Group

(2:00-3:00 p.m.)

April 24, 2014

Meeting with City of Los Angeles (8:30-9:30 a.m.)

May 14, 2014

Meeting with Alamitos Bay-Los Cerritos Channel WMP Group (2:00–3:00 p.m.)

May 15, 2014

Meeting with City of Los Angeles (8:30-9:30 a.m.)

June 6, 2014

Meeting with City of Los Angeles (9:00-10:00 a.m.)

July 17, 2014

Meeting with Heal the Bay and Los Angeles Waterkeeper via Teleconference (1:30 p.m.-2:30 p.m.)

State of California
Environmental Protection Agency
State Water Resources Control Board
Los Angeles Regional Water Quality Control Board

Meeting with the County of Los Angeles and LACFCD
Alamitos Bay/Cerritos Channel WMP

September 15, 2014 at 10:00 AM

Name	Organization	Telephone Number	E-Mail Address
Rebecca Christmann	LARWQCB	213)576-5734	rebecca.christmann@waterboards.ca.gov
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Geneviev Osmena	LACDPW	626-458-3978	gosmena@dpw.lacounty.gov
Bill Johnson	LACDPW	626-458-4319	wjohnson@dpw.lacounty.gov
Ivar K. Ridgeway	LARWQCB	(213) 620-2150	Ivar.Ridgeway@waterboards.ca.gov
Renee Purdy	RWQCB	(213) 576-6622	Renee.Purdy@waterboards.ca.gov

October 2, 2014

Meeting with City of El Monte via Teleconference

(9:00-10:30 a.m.)

October 14, 2014

Meeting with Lower San Gabriel River WMP Group via Teleconference (12:00-12:30)

December 1, 2014

Samuel Unger, PE, Executive Officer
Regional Water Quality Control Board, Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, CA 90013

Subject: Clarifications Request Regarding the October 27, 2014, LAR UR2 WMA Draft WMP and RAA and November 21, 2014 Draft CIMP Comment Letters Sent Pursuant to Part VI.C of the Los Angeles County MS4 NPDES Permit No. CAS004001; Order No. R4-2012-0175

Dear Mr. Unger,

The distribution list for the Los Angeles River Upper Reach 2 Watershed Management Area (LAR UR2 WMA) has received your October 27, 2014 Watershed Management Program (WMP) Plan review letter and will continue to implement the four watershed control measures, identified as (a) through (d), while we continue to diligently work to gain your approval of the revised draft LAR UR2 WMA WMP. The Group has also received the November 21, 2014 CIMP Review Letter and will continue to cooperate with approved TMDL plans until your approval of the revised draft CIMP is received.

Although the initial Reasonable Assurance Analysis (RAA) followed the approach proposed during the January 30, 2014 meeting with Board Staff (a copy of that presentation is attached), the RAA comments necessitate a substantially more complex approach and several changes to the draft WMP. The Group is unclear regarding the intent and magnitude of some RAA and WMP comments, but they appear to suggest that the consultant contract will need to be revised and approved by City Councils; several of which will meet, for the last time this year, during the first week of December. For these reasons, we request an immediate opportunity to meet with Board staff to clarify the intent of the comments, how they reflect the intent of the MS4 permit, how they will improve the RAA and WMP plan, and to request an extension to the WMP submission date. After the meeting, we would likely request a written confirmation regarding our agreed upon approach to several key comments, to maximize the likelihood that the RAA and WMP will be approved during your second review.

If you have any questions, please contact me at (714) 526-7500 Ext. 207 or ggreene@cwecorp.com.

Respectfully submitted on behalf of the Los Angeles River Upper Reach 2 Watershed Management Group,

Gerald Greene, DEnv, PE, QEP, QSD/P

enc: Discussion Points Related to Board WMP, RAA, and CIMP Comment Letters
January 30, 2014 RAA Presentation to Board staff
November 10, 2014 CASQA Water Quality Newsflash

Issue #2 Part VI.C.5.a.iii Source Assessment (page 59-60)

The draft WMP, including RAA, excludes stormwater runoff from non-MS4 facilities within the WMA from the stormwater treatment target.

This approach was proposed during our January 30, 2014 meeting with Board staff, as the Union Pacific Railroad Company regularly asserts federal preemption from state regulations, including the General Industrial Permit. Including them in baseline and reduction load estimates, only to delete the load from many small parcels during treatment target development, would unnecessarily complicate the RAA and could lead to an assertion that local agencies are supplanting state and federal jurisdictional powers.

While the draft WMP inventories General Industrial facilities within the watershed management area, the WMP should utilize General Industrial Stormwater Permittee monitoring results (available from SMARTS) to assess and potentially refine estimates of pollutant loading from the identified "non-MS4" areas.

SMARTS GIP monitoring data were downloaded in late 2013, during RAA and WMP development. Of 161 Permittees, 35 reported site specific water quality monitoring data, most of which appeared unsuitable for refining land use pollutant loading estimates, due to poor QA/QC and the pollutants monitored. The industrial land use pollutant EMCs, recommended in the March 26, 2014 RAA Guidelines, appeared to provide the more credible input data source. In support of the 5% non-structural load reduction issue, addressed later in this response, the WMP will be modified to reflect that SMARTS monitoring data will be reviewed prior to, and incorporated as part of, the Permit Part VI.D.6 Industrial/Commercial Facilities Program inspections, so that the contribution of these sources can be better assessed through the AMP.

In addition to General Industrial Stormwater Permittee monitoring results, Permittees should also review their inspection findings including past violations and enforcement actions of industrial/commercial facilities to assess potential pollutant sources.

The WMP will be revised to include that industrial and critical source inspection findings and violations were requested from the UR2 Permittees, but no actionable responses were received. These inspections emphasize visual observations and pollutant "observations", without monitoring data, are discouraged since they may contribute to the characterizations that the violation is unsubstantiated.

Although the RAA includes modeling to assess existing loads overall, the source assessment (section 2.3) does not use modeling to evaluate specific sources.

RAA modeling data is integrated at the land use, as opposed to parcel, level; however SBPAT does evaluate and identify catchments as priority sources of specific pollutants and recommends appropriate watershed control measures to address and alleviate the impact from these highest priority sources.

The draft WMP does refer to statements included in the various TMDLs applicable to the watershed area, but there is no indication that the model results from the different TMDLs were used in the pollutant source assessment.

TMDL models, like the UR2 RAA model, are stimulated by land use EMCs, build-up/wash-off parameters, and other input data. Both model analyses evaluate pollutant sources based on the available land use GIS data. Pollutant source assessments will be improved through implementation of the approved CIMP, particularly the Stormwater Outfall and Non-stormwater Source Assessment Programs, the data from which, can then be applied through the AMP to development of future RAAs and WMP Plans.

The draft WMP should consider existing TMDL modeling data, where available, when refining the source assessment.

Understandably, from the receiving water quality viewpoint, existing TMDL models did not separately characterize and model non-MS4 dischargers at the catchment level, which impedes the extrapolation of their results to source assessment or load reduction planning within the UR2 Group catchments. The UR2 RAA corrects this oversight and narrows the source assessment, which can be validated through implementation of the approved CIMP and applied through the AMP to future RAAs and WMP Plans.

Issue #4 Part VI.C.5.b. Selection of Watershed Control Measures (pages 61-64) Selection of Watershed Control Measures to Comply with Interim WQBELS and Associated Deadlines
The draft WMP does not clearly specify a strategy to comply with the interim WQBELS for the LA River metals TMDL (January 11, 2012; January 11, 2020, and January 11, 2024 deadlines).
Section 3 of the WMP identifies Watershed Control Measures being implemented to address all pollutants. This Section will be expanded to include the: Los Angeles River Copper Water Effects Ratio and Lead Recalculation Site Specific Objectives (WERSSO) study, funded by most of the Watershed Permittees and scheduled for Board consideration in February 2015; chaptering of SB-346 to eliminate copper from brake pads; and Department of Toxic Substances Control efforts to eliminate lead wheel weights. Similar, true source control efforts, are planned to target zinc in automotive tires. Table 5-1 includes implementation of the John Anson Ford Park Regional BMP prior to 2024 to comply with interim wet-weather objectives. The UR2, Permittees have implemented a strategy to comply with TMDL identified WQBELs, although some minor corrections may be necessitated as a result of the CIMP Outfall Monitoring programs and subsequently instituted through the Permit provided Adaptive Management Process (AMP).

Specificity of Proposed Watershed Control Measures
Although the draft WMP includes several specific regional BMPs (Section 4.3.3.3) the specific LID street projects and their locations are not identified. The draft WMP should provide as much specificity as feasible in describing the potential locations for LID streets.
Alternative designs are being vetted for implementation by the UR2 Permittees and were not ready for inclusion in 2014-2015 municipal Capital Improvement Program (CIP) budgets. Adoption of the concept, through WMP approval by the Board, will hasten this process. Based on the RAA, WMP Table 5-5 identifies land use tributary areas and possible LID Street construction costs for each UR2 Permittee.

Additionally, the permittees that would be responsible for implementing LID street projects should be specified.
This comment appears to be addressed by the rightmost column of Table 4-10 and second to rightmost columns of Table 5-5, which indicate LID streets will be required in each of LAR UR2 city.

Specificity is particularly important where LID streets are relied upon to achieve some of the pollutant reductions necessary to achieve interim WQBELs with compliance deadlines in this permit term and the next permit term.
Notwithstanding the prior two responses, WMP Tables 4-17 to 4-20 indicate that the primary contribution of LID Streets will be in complying with the Bacteria TMDL during wet-weather, for which compliance must be achieved following the next planned Permit term. Adoption of the LID Street concept, through WMP approval by the Board, will hasten the process of incorporating LID Street improvements into Pavement Management System (PMS) and municipal CIPs planning and budgeting processes.

Part VI.C.5.b. Selection of Watershed Control Measures (pages 61-64)
Assumptions regarding Non-structural BMPs and Source Control Measures
The draft WMP assumes a 5% load reduction from non-structural BMP enhancements. However, Section 3.3.1 of the WMP only indicates that such enhancements would be considered, and a firm commitment to implement them is lacking. The draft WMP needs to include specific commitments to implement the non-structural BMP enhancements, or it should not rely upon the 5% load reduction anticipated from these non-structural BMP enhancements to meet compliance deadlines in this permit term or the next permit term.
The 2012 MS4 Permit introduces many significant new water quality programs, including the WMP, CIMP, RAA, Minimum Control Measures (MCMs), several new databases, new inspection and assessment efforts, and reporting requirements linked to each program. The impacts of these programs are anticipated to greatly exceed a 5% load reduction. The WMP will be revised to identify that SMARTS data will utilized in preparing for General Industrial Permittee inspections and conveying follow up information.

The WMP assumes a significant reduction in copper based on the phase-out of copper in automotive brake pads, via approved legislation SB346, to achieve the necessary copper load reductions. Given the combination of other copper sources identified in various LA TMDLs such as building materials, other vehicles wear, air deposition from fuel combustion and industrial facilities, and that SB346 progressively phases out copper content in brakes of new cars (5% by weight until 2021, 0.5% by weight until 2025), additional structural BMPs may still be needed to reduce copper loads prior to entering receiving waters and eliminate copper exceedances of RWLs.

As attached, CASQA recently reported that over 40% of cars are now manufactured to the 2021 objective of having brakes containing <0.5% copper. While the Permit requires implementation of the AMP every two years to accommodate new data and evolving challenges, which could include a slower implementation of SB-346, this legislation appears to have been adopted by the automotive industry and precludes the need for additional structural measures as demonstrated through the RAA.

A. General comments on the draft Reasonable Assurance Analysis (RAA) section of the Watershed Management Program.

The concentration-based WQBELs for metals listed on page 78 of the WMP are incorrect and should not be used to set allowable loads. The correct concentration based WQBELs for metals, which can be used in lieu of calculating allowable loads during dry weather, are identified in Attachment O, Part C.2.c.

The concentration-based WQBELs on page 78 of the WMP are for **wet** weather and are essentially identical to the values in Permit Attachment O, Part C.2.d allowed loads for wet weather.

The load-based WQBELs for metals applicable during wet weather, which are identified in Attachment O, Part C.2.d of the permit should be used to calculate the allowable load and required reduction for metals during wet weather conditions. In summary, allowable pollutant loadings should be calculated separately for wet and dry weather using the WQBELs listed in Attachment O, Parts C.2.c and C.2.d of the permit. Loads must be expressed as daily loads, consistent with the expression of the WQBELs; Table 4-4 should be revised to specify that the loads presented are daily loads.

The wet-weather RAA will be revised to report baseline and allowed loads expressed as daily loads consistent with the TMDL WQBELs. The dry weather RAA approach is narrative (i.e., not model based) as was presented to Regional Board staff during the January 30, 2014 meeting. While assumed dry-weather flows and concentrations could be developed, the UR2 Group dry-weather approach is to eliminate non-exempt non-stormwater discharges from their MS4, as was characterized in the WMP. Elimination of all dry-weather discharges, if possible, is the preferred MS4 Permit compliance pathway, since there would no longer be a discharge to "cause or contribute" to receiving water impairments.

If concentration-based WQBELs are selected to be used to calculate the allowable loads, and these allowable loads are different from the mass-based WQBELs listed in Attachment O, the WMP should provide a clear explanation on how the proposed concentration-based WQBELs and allowable loads were derived from the WQBELs in Attachment O.

Some Permit Attachment O WQBELs are simultaneously concentration and load based. Concentration based WQBELs are multiplied by variable daily storm flows, or critical dry-weather flow, to produce the allowed daily load. The UR2 RAA analysis used these allowed concentration WQBELs and modeled annual runoff volume to produce allowed annual loads; however we will revise the RAA and WMP to use *daily* loads, consistent with the expression of the Permit WQBELs.

B. Modeling comments regarding analysis of copper, lead, zinc, nitrogen and bacteria concentrations/loads:

1. The model predicted loads presented in Table 4-3 for the baseline condition are not consistent with those results directly from model output (see Figures A and B, for example). These discrepancies could be due to the usage of the 90th percentile year for the predicted

results of pollutant loads. Further, all model results of pollutant loads are presented in terms of lbs/year in Table 4-3 through Table 4-6. However, the results for the RAA should be presented in units consistent with the expression of each of the WQBELs in Attachment 0 of the MS4 Permit.

The LSPC-based baseline and allowed metal loads will be recomputed on a daily basis (using the 90th percentile daily load day) and compare these with SBPAT's BMP load reductions to demonstrate reasonable assurance. We will require additional discussion to define the critical analysis conditions or period associated with the analysis for bacteria.

3. The differences between baseline concentrations/loads and allowable concentrations/loads should be presented in a time series for each pollutant under long term continuous simulation and then as a summary of 90th percentile of the differences between pollutant concentrations/loads and allowable concentrations/loads for wet weather periods, in units consistent with the applicable WQBELs and Receiving Water Limitations (e.g., mass or number per day), instead of using the predicted results of selected year presented only as an annual reduction in load to represent for load reduction target. In addition, a detailed explanation should be provided of the calculations used to derive the target load reductions.

We are unclear regarding the intent of the analysis of the 90th percentile difference between pollutant concentration and allowable concentration analysis and wish to obtain further clarification.

4. The report used a pollutant load-based approach to evaluate BMP performance and compliance with applicable WQBELs for wet weather conditions. However, the report should also provide predicted concentrations in the receiving water or at the downstream outlets under the BMP scenarios.

Additionally, Table 4-17 to Table 4-20 need to be revised to clarify the units for the values presented in each table.

Finally, it appears that model output is only provided for final compliance deadlines. Model output should also be provided for phased BMP implementation to demonstrate that interim WQBELs for metals and bacteria will be met.

We are unclear regarding the intent of this question, especially as it relates to downstream outlets and BMP scenarios.

7. Model simulation for copper, lead, zinc, nitrogen, and bacteria under the dry weather condition was not included in the Report and needs to be addressed.

We would propose to use a static, spreadsheet-based annual load calculations and assumptions regarding water conservation programs and other dry weather non-structural BMPs.

8. The report did not describe how the model was calibrated, including calibration results compared to calibration criteria in Table 3.0 of the RAA Guidelines, and no historical hydrology and water quality monitoring data were used for comparison with the model results for the baseline prediction. According to Part G, pages 12-13 of the RAA Guidelines, model calibration is necessary to ensure that the model can properly assess all the variables and conditions in a watershed system.

We would propose to use SBPAT's predicted annual volumes will be compared to LSPC's for the WMP modeling area, and hydrologic input parameters adjusted as necessary, with an emphasis on relative error consistent with the RAA Guidelines.

CIMP Section 5, MS4 Permit Att. E Part IX.H .I, page E-28

The draft CIMP does not specify that flow-weighted composite samples will be taken for a non-stormwater discharge using a continuous sampler, or be taken as a combination of a minimum of 3 sample aliquots, taken in each hour during a 24-hour period. The sampling protocol for non-stormwater monitoring needs to be included in the revised CIMP.

It is unclear when this is proposed to begin. The outfalls are unsuitable for installing composite samplers. NSW flows are generally below the depth suitable for flow assessment. NSW flows tend to self integrated input from the catchment. The area is unsafe for 24 hour manual collection. We propose that it would be more prudent to start with grab samples, then move to other sample collection methods when more understanding of flows and NSW discharge sources or pollutants is available.

CIMP Sections 2.4 and 4.3, Toxicity Monitoring

Toxicity monitoring is mentioned in the draft CIMP but there is no specific guidance included on how toxicity testing is to be conducted. The draft CIMP needs to be revised to include information on how toxicity testing is to be conducted. See Enclosure 2.

The Special Study suggested by Enclosure 2, leads to chasing pollutants using a relatively expensive and intensive method, but less than the analytical method for the identified pollutants of concern. Data collected would not be comparable between years. The amount of required water risks becoming unmanageable.

LAR UR2 WMP RAA

RWQCB Meeting

January 30, 2014

Brandon Steets, PE, Geosyntec

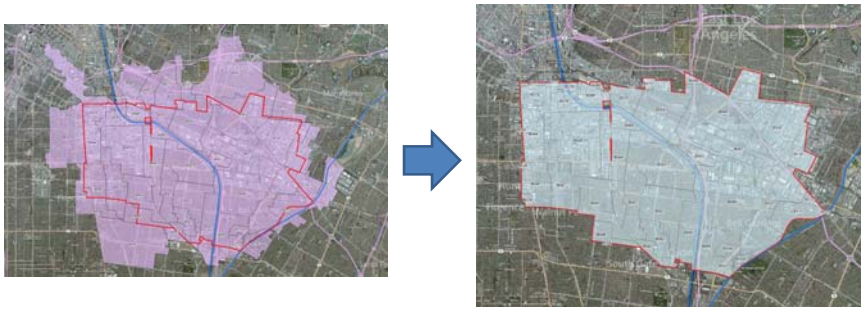
Geosyntec consultants

Outline

- Overview of Proposed RAA Approach
  - Defining Modeled Area
  - Estimating Target Load Reductions
  - Estimating BMP Load Reductions
  - Demonstrating "Reasonable Assurance"
  - Dry Weather RAA Approach
- Consistency with RAA Guidance
- Discussion

Defining Modeled Area

WMMS subcatchments (grey lines) clipped to WMAs' jurisdictional boundaries (red lines)



Estimating Target Load Reductions

- TLRs = "baseline" loads – "allowable" loads
- Use LSPC model (from WMMS)
  - Wet weather runoff only
  - Model is pre-calibrated
- Use 50th ("average") and 90th percentile ("critical condition") years from 1989-2011 WMMS period
  - Use "TMDL year" calendar periods (Nov 1-Oct 31)
  - LSPC rain gage used for identifying modeled years: LACFCD South Gate Transfer Station (D1256)
  - Modeled years:
    - For bacteria (based on no. of wet days): 1994 (50th), 2011 (90th)
    - For other pollutants (based on rainfall): 2008 (50th), 1995 (90th)

Estimating Baseline Loads

- "Baseline" loads reflect existing conditions in LSPC model, e.g.,
  - All parcels (e.g., IGP sites) included
  - 2006 land use layer
  - Calibrated EMCs or buildup/washoff parameters
  - County's parcel-specific percent impervious

Draft Baseline Loads (per year):

R/W Segment	Total Copper (lbs)	Total Lead (lbs)	Total Zinc (lbs)	Fecal Coliform (#*10^12)	Total Nitrogen (lbs)
LA River (90th)	672	536	6,784	997	99,952
LA River (50th)	506	411	5,189	431	42,660
Rio Hondo (90th)	147	105	1,594	206	23,183
Rio Hondo (50th)	115	84	1,247	85	11,900

Note: Bacteria modeled years: 1994 (50th), 2011 (90th)
Metals/Nitrogen modeled years: 2008 (50th), 1995 (90th)

Estimating Allowable Loads

- For **metals and nitrogen**, "allowable" loads are the baseline runoff volumes x WQBEL concentrations:
  - 15 µg/L Total Copper (load-based WQBELs divided by daily volume)
  - 56 µg/L Total Lead (load-based WQBELs divided by daily volume)
  - 140 µg/L Total Zinc (load-based WQBELs divided by daily volume)
  - 10.4 mg/L Total Nitrogen (based on sum of NO3 and NH3 WQBELs [8 + 2.4], and assuming zero organic nitrogen, which is conservative but doesn't affect outcome since LSPC output shows R/W to consistently meet WQBELs)

SSO values not yet applied to results shown below

- For **bacteria**, "allowable" loads are determined by iteratively reducing urban land use fecal coliform EMCs until the number of predicted daily mean receiving water concentrations that exceed 400 mpn/100mL is less than or equal to the wet weather AEDs
  - AEDs = sum of 10 (from reference stream) plus the High Flow Suspension days (or rain >= 0.5" + following day)

DRAFT Allowable Loads (per year):

R/W Segment	Total Copper (lbs)	Total Lead (lbs)	Total Zinc (lbs)	Fecal Coliform (#*10^12)	Total Nitrogen (lbs)
LA River (90th)	789	2,945	7,363	60	546,981
LA River (50th)	331	1,237	3,092	17	229,711
Rio Hondo (90th)	182	680	1,701	14	126,356
Rio Hondo (50th)	92	345	862	6	64,000

Note: Bacteria modeled years: 1994 (50th), 2011 (90th)
Metals/Nitrogen modeled years: 2008 (50th), 1995 (90th)

Resulting Target Load Reductions

- 50th percentile is the year driver; concentrations during wetter 90th percentile year are diluted and so less relative load reduction require
- Bacteria is the pollutant driver; its TLRs are substantial and their achievement may be limited by number of feasible BMP retrofit opportunities (without acquisition of private property).

Median reductions higher than 90th for Cu and Zn

No Pb or TN load reduction required

SSO values not yet applied to results shown below

DRAFT Target Load Reductions (per year, relative to baseline):

R/W Segment	Total Copper (lbs)	Total Lead (lbs)	Total Zinc (lbs)	Fecal Coliform (#*10^12)	Total Nitrogen (lbs)
LA River (90th)	0	0	0	937	0
LA River (50th)	174	0	2,097	413	0
Rio Hondo (90th)	0	0	0	192	0
Rio Hondo (50th)	23	0	385	79	0

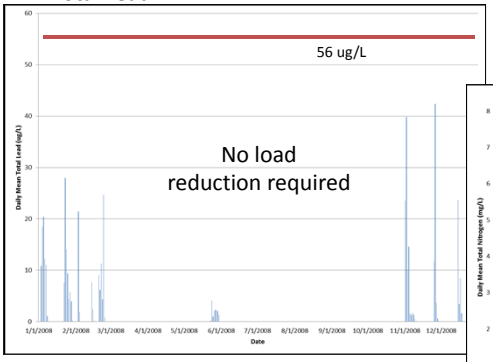
DRAFT Target Load Reductions (as % of baseline):

R/W Segment	Total Copper	Total Lead	Total Zinc	Fecal Coliform	Total Nitrogen
LA River (90th)	0%	0%	0%	94%	0%
LA River (50th)	**34%**	0%	**40%**	**96%**	0%
Rio Hondo (90th)	0%	0%	0%	93%	0%
Rio Hondo (50th)	**20%**	0%	**31%**	**93%**	0%

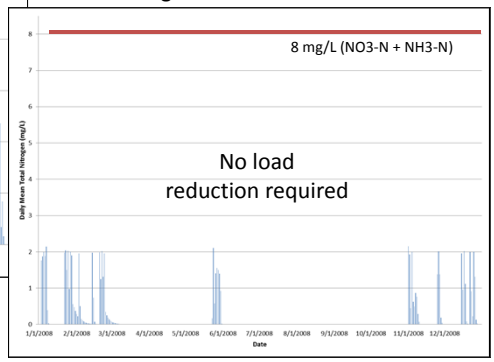
Baseline Lead and Nitrogen Concentrations Meet WQBELs

L.A. River Median Year

Total Lead



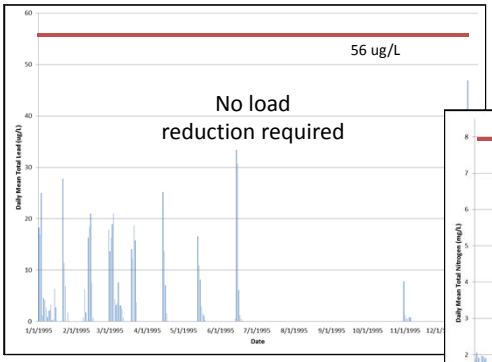
Total Nitrogen



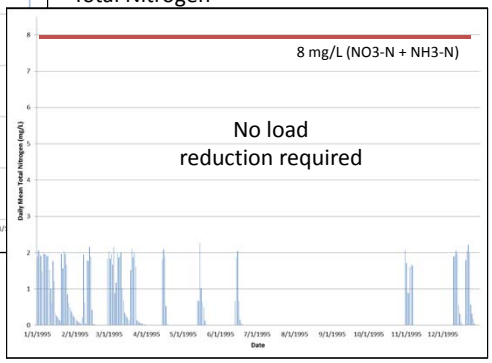
Baseline Lead and Nitrogen Concentrations Meet WQBELs

L.A. River 90th Percentile Year

Total Lead



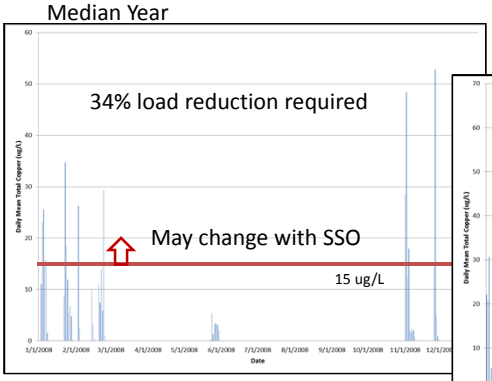
Total Nitrogen



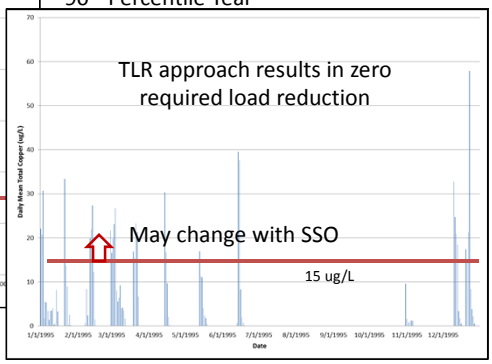
Baseline Copper and Zinc Concentrations Do Not Meet WQBELs

Total Copper

Median Year



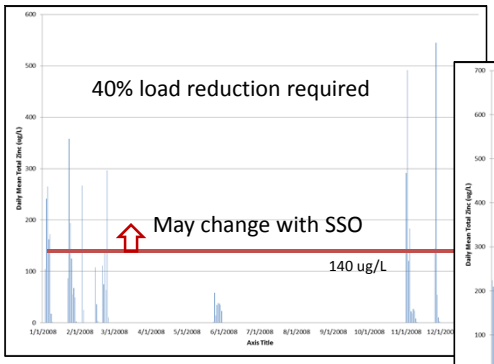
90th Percentile Year



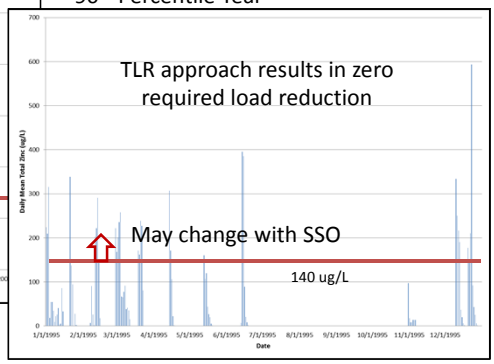
Baseline Copper and Zinc Concentrations Do Not Meet WQBELs

Total Zinc

Median Year



90th Percentile Year

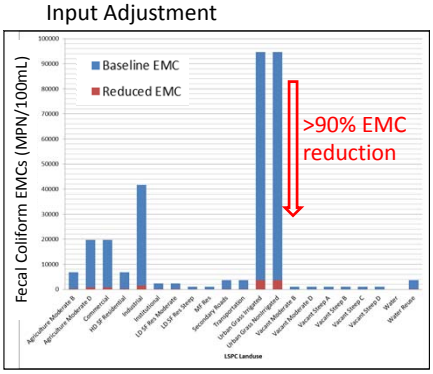


Bacteria TLR Approach Illustrated

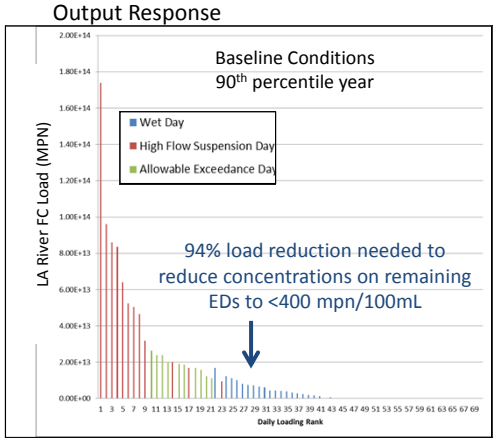
Bacteria is the driver

- Demonstrating reasonable assurance will be a challenge
- If RA demonstrated, then we can assume all pollutants have been demonstrated (meanwhile BMP load reductions will be reported for all SBPAT modeled pollutants)

Input Adjustment



Output Response



Bacteria TLR Approach Illustrated

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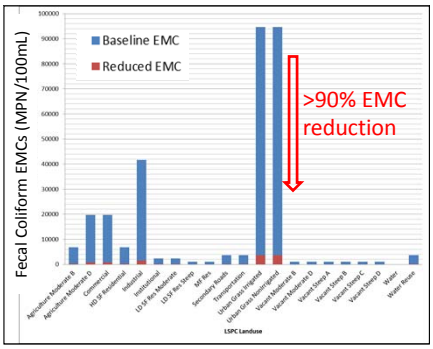
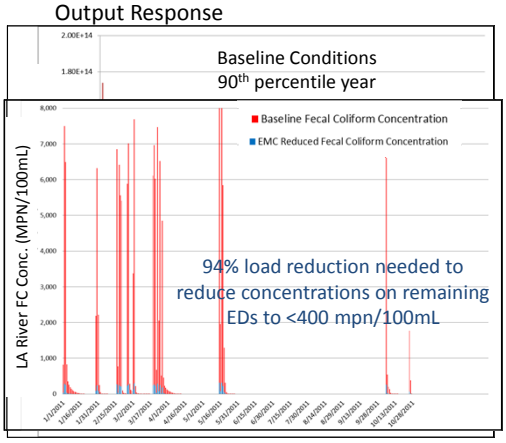
Input Adjustment



Output Response



Approach for Addressing Other Pollutants

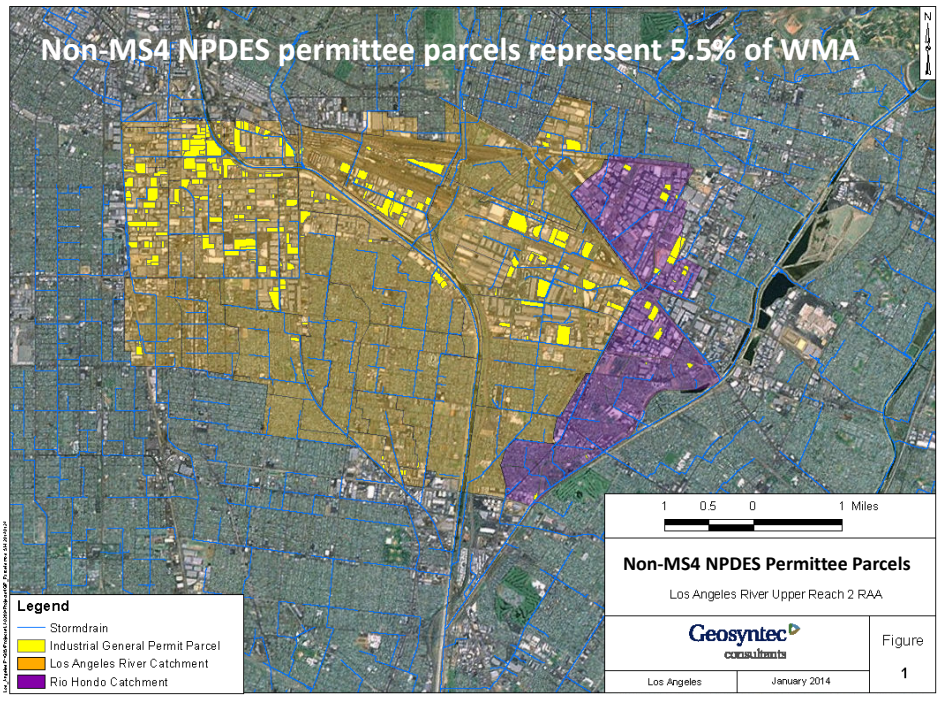
- No other TLRs will be developed, however BMP load reductions will be reported for all SBPAT modeled pollutants:
  - **TSS** – assume equivalent reduction of toxics
  - **Nutrients** (TN)
  - **Metals** (TCu, TPb, TZn) – assume this addresses RA demonstration for Cd
  - **Bacteria** (FC) – FC used as surrogate for *E. coli*
- FC load reduction is so high that we can assume that all other priority pollutants will be addressed (ie, RAA demonstrated) if it is

Estimating BMP Load Reductions

- Use **SBPAT** to model (regional and distributed) structural BMPs
- Use **SBPAT and spreadsheet calcs** to model non-structural BMPs, e.g.,
  - **Inspection of IGP and other non-MS4 NPDES permittee parcels (MCM)** – model in SBPAT by setting their land use EMCs to WQBELs
  - **LID ordinances (MCM)** – model in SBPAT by applying retention BMPs to applicable redevelopment area
    - Assume retention sized to 85th percentile storm
    - Assume applicable redevelopment area based on rates (as % of area, by land use) provided by agencies, otherwise use values from City of LA from Ballona TMDL IP
    - Allow greater rate if agency adopts more stringent applicability threshold
    - Estimate total redeveloped area between 2013 and effective date of final limits
  - **Brake pad copper phase-out** – assume 50-60% load reduction per CASQA report (Moran)
  - Other NS BMPs consistent with available SoCal studies or San Diego CLRPs, e.g.,
    - **LID incentive programs** (e.g., rebates for rain barrels, downspout disconnects, rain gardens)
    - **Pet waste controls** (ordinance, signate, education/outreach, mutt mitt stations, etc.)
    - **Enhanced street sweeping** (e.g., 100% vacuum sweepers, increased frequency)
    - **Increased catch basin cleaning**

LARUR2 agencies to provide applicable redevelopment rates based on available local data:

Land Use	Annual Redevel. Rate (% of LU area)
Residential	TBD
Commercial	TBD
Industrial	TBD
Education	TBD
Transportation	TBD



Demonstrating "Reasonable Assurance"

- Report BMP load reductions as average expected values and low-high ranges (i.e., 25th-75th percentile values, driven by variability in land use EMCs and BMP performance)
- Hypothetical example:

Pollutant	Target Load Reduction	Sum of NS Load Reductions (low-high range)	Sum of Structural Load Reductions (low-high range)	Total Estimated Load Reductions (low-high range)
Fecal Coliform (mpn/100mL)	**100**	17 (12-20)	60 (40-80)	77 (52-**100**)

Dry Weather RAA Approach

- Initial inventory showed only 10% of LARUR2 outfalls had NSW flows, several of which were trickles
- Some of these flows may be from non-MS4 NPDES permitted or conditionally exempt sources
- To address remaining non-exempt flows, WMAs may adopt new residential/commercial over-irrigation controls such as:
  - smart controller rebates,
  - water waste ordinance,
  - outreach/education,
  - site inspection/audits
- RAA will be narrative (ie, no modeling) and will assume that proposed non-structural BMPs will eliminate any existing non-exempt NSW flows
  - Therefore 100% reduction of baseline load, and RA demonstrated

Consistency with RAA Guidance

- Only Permit-approved models will be used (WMMS and SBPAT)
- Targets will be set using LSPC based on average (50th percentile) and critical conditions (90th percentile)
- Key model input datasets will be consistent with Guidance, e.g.,
  - Land use EMCs
  - BMP performance data
- LSPC calibration documented in LA County WMMS reports

Conclusions

- We'd like verification that our proposed RAA approach will be acceptable
- May assume adoption of metal SSOs
- Plan to use "high" BMP load reduction estimates for bacteria, while additional BMPs are evaluated
  - Future monitoring data will be used to recalibrate model, and revise BMP load reduction estimates

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

Water Quality NEWSFLASH

DEDICATED TO THE ADVANCEMENT OF STORMWATER QUALITY MANAGEMENT, SCIENCE AND REGULATION

November 10, 2014 **Number 2014-23**

Copper – *Brake pad progress* – California Senate Bill 346 (2010), strongly supported by CASQA, requires the eventual phase-out of copper and also reduces the release of other toxic substances from brake pads. Manufacturers have indicated the transition to copper free (<0.5% copper) brake pads is proceeding more quickly than originally anticipated and currently about 40% of brake pads available from manufacturers are <0.5% copper (certification list, level "N"). Brake pads are the source of more than half the copper in urban runoff and copper is one of the pollutants in stormwater that most frequently exceeds standards at the point of discharge. Washington State has similar requirements and is also tracking the average concentration of the metals of concern in brake pads. The Department of Toxic Substances Control is developing regulations for the program.

EPA and the brake manufacturing industry are expected to soon announce an MOU called the "Copper-Free Brake Initiative". The MOU will call for voluntary reductions in copper by manufacturers and will be modeled on the laws in California and Washington. The actions by CASQA, BASMAA, and others on brake pads are consequently having a significant impact nationwide. The copper in brake pad control program is also a good example of addressing problem pollutants at their original or true source (i.e., true source control).

Clean Water Act Section 319(h) Grants – *Nonpoint source (NPS) control and citizen monitoring* – EPA's Nonpoint Source Management Program is based on CWA Section 319 and provides funding to states. The State Water Board NPS Control Program, in turn, allocates approximately $4M of 319(h) funds annually for planning and implementation projects that address water quality problems in surface and ground water resulting from NPS pollution. NPS refers to stormwater and related runoff from diffuse sources. Runoff regulated by NPDES permits—MS4 permits, CGP, and IGP—is technically a point source, however, funded NPS projects are sometimes directed at pollutants that may be discharged from permitted sources.

The State Water Board has issued 319(h) grants for BMP and treatment implementation and also for citizen monitoring and other community-based programs – see LA Region projects. Proposals that address TMDL implementation or address problems in 303(d)-listed waters are favored in the selection process. (State Water Board 2013 approved projects)

Citizen monitoring efforts are also supported by the State Water Board's Clean Water Team, which is part of the Surface Water Ambient Monitoring Program (SWAMP). Citizen monitoring provides surface water and stormwater characterization support to SWAMP and sometimes is the basis for citizen suits under the Clean Water Act. For example, Los Angeles Waterkeeper recently filed a complaint in October against a solid waste processing facility alleging "illegal discharge of polluted stormwater runoff" based on samples collected by the company and Waterkeeper.

Climate Change – *Lahontan schedules workshops* – The Lahontan Water Board will hold workshops November 13 and January 15, 2015, on *Climate Change Adaptation Planning*. The *California Adaptation Planning Guide - Strategies*, proposes that stormwater programs prioritize low-impact development (LID) practices in areas where storm sewers may be impaired by high water due to sea level rise or flood waters. State Water Board climate change webpage.

January 2, 2015

Samuel Unger, PE, Executive Officer
Regional Water Quality Control Board, Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, CA 90013

Subject: December 3, 2014 Meeting Summary Regarding October 27, 2014, LAR UR2 WMA Draft WMP/RAA and November 21, 2014 Draft CIMP Comment Letters Sent Pursuant to Part VI.C of the Los Angeles County MS4 NPDES Permit No. CAS004001; Order No. R4-2012-0175

Dear Mr. Unger,

On Wednesday December 3, 2014, your staff, including Renee Purdy, Ivar Ridgeway and CP Lai, met with representatives of the Los Angeles River Upper Reach 2 Watershed Management Area (LAR UR2 WMA), including Gina Nila, Claudia Arellano, and myself, to discuss the subject Board Comment Letters. The discussions were candid and productive in clarifying differing conceptions and, as will be summarized in the attachment, we believe that approaches to most of the Board Staff comments were identified for incorporation in the draft WMP. However, despite good faith efforts by all, a common understanding of an intended approach to some portions of the Reasonable Assurance Analysis (RAA) could not be satisfactorily defined by the meeting conclusion and, as of last Friday, Board staff have been unable to internally meet and unify the divergent analyses approaches expressed during the meeting.

It is vitally important to the LAR UR2 WMA that the revised draft WMP and CIMP Plans ultimately meet with your approval, so the attachment to this letter includes proposals to clarify the RAA approach and unify comments received during our meeting. The attachment summarizes our recollections regarding the agreed upon WMP revisions and we would appreciate a prompt reply, as to the concurrence of your staff regarding its contents, in order to meet the revised WMP submittal deadline of January 28, 2015. If the attached summary does not reflect your staff's recollections from the meeting, we request another meeting and an extension of adequate time in which to finalize the LAR UR2 WMA WMP. If you have any questions, please contact me at (714) 526-7500 Ext. 207 or ggreene@cwecorp.com.

Respectfully submitted on behalf of the Los Angeles River Upper Reach 2 Watershed Management Group,

Gerald Greene, DEnv, PE, QEP, QSD/P

cc: Renee Purdy, Ivar Ridgeway, and CP Lai
LAR UR2 WMA Permittee leads

enc: December 3, 2014 Meeting Summary Points Related to Board WMP, RAA, and CIMP Comments

December 3, 2014 LAR UR2 WMA and LARWQCB Staff WMP/RAA Meeting Summary Points

Part VI.C.5.a.iii Source Assessment (page 59-60)
The draft WMP, including RAA, excludes stormwater runoff from non-MS4 facilities within the WMA from the stormwater treatment target.
As indicated on draft WMP pages 79-81, runoff from these facilities was included in the RAA, so that the model would generate accurate runoff volume and rate estimates; however, for these facilities, pollutant EMCs were set to the TMDL WQBELs based on the assumption that those facilities would at least comply with WQBELs. In reality, the discharges from these parcels could be less than these EMCs. Table 4-7 will be expanded to include other RAA modeled pollutants, but no change in analysis will be warranted.

While the draft WMP inventories General Industrial facilities within the watershed management area, the WMP should utilize General Industrial Stormwater Permittee monitoring results (available from SMARTS) to assess and potentially refine estimates of pollutant loading from the identified "non-MS4" areas.
WMP section 2.3 Source Assessment will be revised to reflect that during RAA and WMP development, SMARTS GIP monitoring data was available for only 35 of 161 Permittees and even that appeared less useful or representative than the "industrial" land use pollutant EMCs in the March 26, 2014 RAA Guidelines. Since the models (LSPC and SB-PAT) use only a few (~10) land use categories, individual SMARTS Monitoring Data cannot be applied to each of the many Industrial Permittees in the area.

In addition to General Industrial Stormwater Permittee monitoring results, Permittees should also review their inspection findings including past violations and enforcement actions of industrial/commercial facilities to assess potential pollutant sources.
WMP section 2.3 Source Assessment will be revised to include that the findings of future industrial and commercial facility inspections findings will be used to identify and assess potential pollutant sources.

Although the RAA includes modeling to assess existing loads overall, the source assessment (section 2.3) does not use modeling to evaluate specific sources.
There is inadequate LAR UR2 specific subwatershed monitoring data upon which to model source parcels. Source identification and assessment are components of the Non-Stormwater Screening and the Load Reduction Strategy (LRS) Programs will be addressed through the Adaptive Management Process (AMP).

The draft WMP does refer to statements included in the various TMDLs applicable to the watershed area, but there is no indication that the model results from the different TMDLs were used in the pollutant source assessment.
The WMP will be revised to clarify that TMDLs models were reviewed as part of the pollutant source assessment; however, TMDL models do not provide parcel level, source assessment resolution.

The draft WMP should consider existing TMDL modeling data, where available, when refining the source assessment.
One or more subsections within WMP sections 2 and 3 will be revised to reference and more fully characterize the recommendations of the Los Angeles River Metals TMDL Reach 2 Implementation Plan.

Part VI.C.5.b. Selection of Watershed Control Measures (pages 61-64) Selection of Watershed Control Measures to Comply with Interim WQBELS and Associated Deadlines
The draft WMP does not clearly specify a strategy to comply with the interim WQBELS for the LA River metals TMDL (January 11, 2012, 2020, and 2024 deadlines).
Subsections within WMP Sections 2 and 3 will be revised to reference the Los Angeles River Metals TMDL Reach 2 Implementation Plan, and Coordinated Monitoring Plan (CMP) data, which support the assertion that compliance will be achieved by the identified interim dates. WMP Table 5-1 includes implementation of the John Anson Ford Park Regional BMP, prior to 2024, to comply with interim wet-weather objectives.

Specificity of Proposed Watershed Control Measures

Although the draft WMP includes several specific regional BMPs (Section 4.3.3.3), the specific LID street projects and their locations are not identified. The draft WMP should provide as much specificity as feasible in describing the potential locations for LID streets.

The WMP will be revised to clarify that LID streets control pollutant loads (e.g. bacteria) from residential and commercial land use areas and will be located near runoff collection (e.g. catch basin) and discharge points where the benefit is greatest. Approved LID or Green Street Projects will be identified; however, the design and implementation of additional projects will occur primarily through CIP programs, which will be facilitated by Board approval of the revised WMP, and elaborated upon in the AMP.

Permittees responsible for implementing LID street projects should be specified.

This comment is addressed by the rightmost column of Table 4-10 and second to rightmost column of Table 5-5, which indicate the extent of LID streets that will be required for each LAR UR2 Permittee.

Specificity is particularly important where LID streets are relied upon to achieve some of the pollutant reductions necessary to achieve interim WQBELs with compliance deadlines in this permit term and the next permit term.

Notwithstanding the prior two responses, WMP Tables 4-17 to 4-20 indicate that the primary contribution of LID Streets will be in complying with the Bacteria TMDL during wet-weather, for which compliance must be achieved following the next planned Permit term. Adoption of the LID Street concept, through WMP approval by the Board, will hasten the process of incorporating LID Street improvements into municipal Pavement Management System (PMS) or Capital Improvement Program planning processes.

Part VI.C.5.b. Selection of Watershed Control Measures (pages 61-64)

Assumptions regarding Non-structural BMPs and Source Control Measures

The draft WMP assumes a 5% load reduction from non-structural BMP enhancements. However, Section 3.3.1 of the WMP only indicates that such enhancements would be considered, and a firm commitment to implement them is lacking. The draft WMP needs to include specific commitments to implement the non-structural BMP enhancements, or it should not rely upon the 5% load reduction anticipated from these non-structural BMP enhancements to meet compliance deadlines in this permit term or the next permit term.

Section 3.1 of the WMP will be revised to better detail and account for changes in MCMs, and other WCMs, between the 2001 and 2012 MS4 Permits and how these changes can be expected to cumulatively result in the modest 5% pollutant load reductions proposed by the LAR UR2 WMA RAA.

The WMP assumes a significant reduction in copper based on the phase-out of copper in automotive brake pads, via approved legislation SB346, to achieve the necessary copper load reductions. Given the combination of other copper sources identified in various LA TMDLs such as building materials, other vehicles wear, air deposition from fuel combustion and industrial facilities, and that SB346 progressively phases out copper content in brakes of new cars (5% by weight until 2021, 0.5% by weight until 2025), additional structural BMPs may still be needed to reduce copper loads prior to entering receiving waters and eliminate copper exceedances of RWLs.

WMP section 3.1.3 will be revised to indicate that as a result of SB 346, >40% of cars being manufactured in 2014, already achieve the 2021 objectives of having friction pads containing <0.5% copper. Source controls for zinc are expected to address other remaining copper sources. The effectiveness of the BMPs in controlling pollutants, including copper, will be reassessed through the AMP.

A. General comments on the draft Reasonable Assurance Analysis (RAA) section of the Watershed Management Program.

The concentration-based WQBELs for metals listed on page 78 of the WMP are incorrect and should not be used to set allowable loads. The correct concentration based WQBELs for

metals, which can be used in lieu of calculating allowable loads during dry weather, are identified in Attachment O, Part C.2.c.

WMP section 4.3 will be revised to include dry- and wet-weather analysis sections with pollutant and flow condition (dry, wet) target concentrations based on the daily effluent loads in Attachment O. The Board-approved RAA models are rainfall dependent making then inappropriate for application to dry weather flow conditions. Since dry-weather flows are more than 70% non-MS4 (e.g. POTW, individual, and general) Permittee discharges and the LAR URA WMA makes up only about 4% of the total watershed MS4 tributary area, the contribution of the LAR UR2 WMA to dry-weather pollutant concentration is only about 1% and below the resolution of available RAA methods. The WMP revision will note that dry-weather compliance for the LAR UR2 WMA is demonstrated by the Los Angeles River Bacteria TMDL Load Reduction Study, Los Angeles River Metals TMDL Coordinated Monitoring Plan (CMP) Annual Reports, and will continue to be assessed through CIMP implementation, particularly dry-weather receiving water monitoring and non-stormwater outfall screening, source assessments, and, if necessary, monitoring.

The load-based WQBELs for metals applicable during wet weather, which are identified in Attachment O, Part C.2.d of the permit should be used to calculate the allowable load and required reduction for metals during wet weather conditions. In summary, allowable pollutant loadings should be calculated separately for wet and dry weather using the WQBELs listed in Attachment O, Parts C.2.c and C.2.d of the permit. Loads must be expressed as daily loads, consistent with the expression of the WQBELs; Table 4-4 should be revised to specify that the loads presented are daily loads.

Dry-weather revisions were characterized in the prior paragraph. WMP section 4.3 will be revised with a separate wet-weather analysis section expressing daily baseline and allowable effluent loads using the WQBELS units in Attachment O. For conservative pollutants like nutrients and metals, the analysis will shift from an annual summary to a summary of daily analyses within the larger hydrologic record. For bacteria, we will continue to follow a 90th percentile year analysis, due to the inclusion of High Flow Suspension (HFS) or Allowable Exceedance Day (AED) within the TMDL, however a summary of daily baseline and allowable loads and concentrations will be included to track individual days for compliance.

If concentration-based WQBELs are selected to be used to calculate the allowable loads, and these allowable loads are different from the mass-based WQBELs listed in Attachment O, the WMP should provide a clear explanation on how the proposed concentration-based WQBELs and allowable loads were derived from the WQBELs in Attachment O.

Permit Attachment O WQBELs can be translated from concentration-based to load-based, when multiplied by observed or modeled daily flow volumes. The revised WMP will more clearly explain how runoff volume is used in translating between concentration and load based WQBELs. For bacteria, the analysis is more complex due to HFS and AEDs, during which effluent limitations may be exceeded, but not result in noncompliance. Since runoff volumes will be reduced through implementation of watershed control measures (WCMs), concentration compliance will be assessed based on baseline, rather than post-WCM implementation, runoff volumes to coincide with the reduction in pollutant loads.

B. Modeling comments regarding analysis of copper, lead, zinc, nitrogen and bacteria concentrations/loads:

1. The model predicted loads presented in Table 4-3 for the baseline condition are not consistent with those results directly from model output (see Figures A and B, for example). These discrepancies could be due to the usage of the 90th percentile year for the predicted results of pollutant loads. Further, all model results of pollutant loads are presented in terms of lbs/year in Table 4-3 through Table 4-6. However, the results for the RAA should be presented in units consistent with the expression of each of the WQBELs in Attachment O of the MS4 Permit.

The LSPC-based baseline metal and nitrogen loads will be separatable into daily periods so that the 90th percentile load day for the LAR UR2 WMA may be more clearly identified. Milestone and final reductions

from this baseline load will be demonstated using SBPAT's BMP load reduction analysis to demonstrate reasonable assurance. The 90th percentile year analysis for bacteria in the draft RAA and WMP was appropriate, but the analysis will focus on the storm events that make up that year, rather than as a yearly summary. The units will be consistent with those of the WQBELs in MS4 Permit Attachment O.

3. The differences between baseline concentrations/loads and allowable concentrations/loads should be presented in a time series for each pollutant under long term continuous simulation and then as a summary of 90th percentile of the differences between pollutant concentrations/loads and allowable concentrations/loads for wet weather periods, in units consistent with the applicable WQBELs and Receiving Water Limitations (e.g., mass or number per day), instead of using the predicted results of selected year presented only as an annual reduction in load to represent for load reduction target. In addition, a detailed explanation should be provided of the calculations used to derive the target load reductions.
For the RAA hydrologic series of 1986 to 2011, daily baseline concentrations/loads will be determined for the primary pollutants of concern in units consistent with the wet-weather WQBELs or RWLs for those pollutants. The allowed concentration or load, based on the final compliance WQBELs or RWLs for the specific pollutant will then be subtracted, resulting in a time series of required load reductions. The 90th percentile daily load reduction value will then be identified for each pollutant and a detailed explanation of the analysis added to section 4.2.1 of the revised WMP.

4. The report used a pollutant load-based approach to evaluate BMP performance and compliance with applicable WQBELs for wet weather conditions. However, the report should also provide predicted concentrations in the receiving water or at the downstream outlets under the BMP scenarios.
Additionally, Table 4-17 to Table 4-20 need to be revised to clarify the units for the values presented in each table.
Finally, it appears that model output is only provided for final compliance deadlines. Model output should also be provided for phased BMP implementation to demonstrate that interim WQBELs for metals and bacteria will be met.
As was discussed during the meeting, calculation of receiving water pollutant concentrations would require a knowledge of boundary conditions such as flows and pollutant concentrations from EWMP groups, which will unavailable for at least another year, or the use of assumed pollutant concentration and runoff flow volumes. Based on this limitation, it was agreed to constrain the analysis to the determination of pollutant loads, or concentrations, and runoff volumes for the LAR UR2 WMA. As additional modeling or monitoring information develops, for the boundary conditions, they will be incorporated into future analyses through the AMP. Tables 4-17 to 4-20 will be modified to reflect the standard WQBEL units. Section 4.2.3 of the draft WMP identified milestone and final compliance dates for completion of WCMs including distributed BMPs (LID or Green Streets) and regional BMPs, so that compliance with WQBELs could be demonstrated during wet weather conditions. The final compliance dates were analyzed in the draft WMP, so the only wet-weather compliance deadline to address is January 11, 2024 for 50% compliance with the metals TMDL. For the 90th percentile load reduction event identified in the prior paragraph, the subwatersheds will be assessed to confirm 50% subwatershed or area compliance with the metals WQBELs. Dry-weather interim or milestone compliance dates are addressed in the following paragraph.

7. Model simulation for copper, lead, zinc, nitrogen, and bacteria under the dry weather condition was not included in the Report and needs to be addressed.
The Board-approved RAA models are rainfall-dependent and inapplicable to dry weather flow conditions. Since dry-weather flows are more than 70% non-MS4 Permittee discharges (e.g. POTW, Individual, and General Permittees) and the LAR URA WMA makes up only about 4% of the total watershed MS4 tributary area, the contribution of the LAR UR2 WMA to dry-weather pollutant concentration is only about 1% and below the resolution of available RAA methods. The revised WMP will explain that dry-weather

compliance for the LAR UR2 WMA is demonstrated by the Los Angeles River Bacteria TMDL LRS, Los Angeles River Metals TMDL Coordinated Monitoring Plan (CMP) Annual Reports, and will continue to be assessed through implementation of the Board approved CIMP.

8. The report did not describe how the model was calibrated, including calibration results compared to calibration criteria in Table 3.0 of the RAA Guidelines, and no historical hydrology and water quality monitoring data were used for comparison with the model results for the baseline prediction. According to Part G, pages 12-13 of the RAA Guidelines, model calibration is necessary to ensure that the model can properly assess all the variables and conditions in a watershed system.

No flow or wet-weather pollutant concentration exists in the LAR UR2 WMA area, and where such watershed data exists, contributions from the LAR UR2 WMA are essentially de minimus. Therefore, we propose to add a new subsection to section 4, comparing SBPAT's predicted annual runoff volumes to those generated by LSPC, for the WMP modeling area, so that hydrologic input parameters may be adjusted if necessary, with an emphasis on achieving a relative error consistent with the RAA Guidelines.

CIMP Section 5, MS4 Permit Att. E Part IX.H .l, page E-28

The draft CIMP does not specify that flow-weighted composite samples will be taken for a non-stormwater discharge using a continuous sampler, or be taken as a combination of a minimum of 3 sample aliquots, taken in each hour during a 24-hour period. The sampling protocol for non-stormwater monitoring needs to be included in the revised CIMP.

The LAR UR2 WMA outfalls are generally unsuitable for secure overnight installation of composite samplers and the area is unsafe for 24 hour staffing. Observed NSW flows are mostly small and difficult to integrate for composite analysis since the flows are poorly estimated at very shallow water depths. NSW flows also tend to self integrate due to differing travel velocities observed for shallow flows in large diameter pipes. We suggest that the Board reconsider this comment and recommend that CIMP implementation of NSW monitoring begin with grab samples, then consider other sample collection methods when a better understanding of local flow characteristics and NSW discharge sources or pollutants has been developed.

CIMP Sections 2.4 and 4.3, Toxicity Monitoring

Toxicity monitoring is mentioned in the draft CIMP but there is no specific guidance included on how toxicity testing is to be conducted. The draft CIMP needs to be revised to include information on how toxicity testing is to be conducted. See Enclosure 2.

The revised CIMP will include additional information regarding how the toxicity testing will be conducted. We are coordinating with other watershed groups to develop a phased toxicity testing approach.

Razzak, Erum@Waterboards

From: Gerald Greene <GGreene@cwecorp.com>
Sent: Friday, January 09, 2015 11:03 AM
To: Ridgeway, Ivar@Waterboards; Purdy, Renee@Waterboards
Cc: Lai, Ching-piau@Waterboards; 'Arellano, Claudia'; 'Gina Nila'; Nguyen, Thanhloan@Waterboards
Subject: RE: December 3, 2014 LAR UR2 WMA WMP/CIMP Comment Letters Meeting Summary

Mr. Ridgeway (Ms. Purdy, Mr. Lai, and Ms. Nguyen)
The LAR UR2 WMA is gratified that the meeting summary letter satisfied most of the October 2014 Board WMP/RAA/CIMP comments and demonstrated the "better than good" faith efforts of our group in complying with the challenging MS4 Permit objectives, while cutting a trail that many other Permittees are still only contemplating.
We agree the revised WMP Source Assessment should, and will, more extensively clarify the rationale for our assumption that non-MS4 Permittee facilities, particularly General Industrial Permittees (GIPs), a few of which have submitted monitoring data to SMARTS, were assumed for future conditions to have EMC and discharge loads equal to WQBELs, making their contribution to load, or load concentration, essentially "neutral" with respect to MS4 Permittee loads.

With respect to incorporating current or future SMARTS derived monitoring data into our RAA, let me try to clarify our viewpoints regarding the few comments that remain of mutual concern.
1) Philosophically, the "non-MS4" facilities include General Construction Permittees (which frequently change in extent, location, and number; so we conservatively excluded them from our RAA resulting in their inclusion in the MS4 Permittee load), GIPs, Caltrans, other general Permittees, Individual Permittee, and extensive areas of Rail Right of Ways, switching yards, maintenance facilities, and intermodal transportation transition yards. Currently, only the GIPs are required to provide monitoring Data to SMARTS, so assumptions regarding discharges from the other facility categories would still be necessary, opening the RAA to claims of bias in analysis assumptions among these very divergent discharger groups. Broad application of WQBEL based EMCs eliminates the potential for such an assertion.
2) Technically, monitoring results are variable due to storm characteristics, including antecedent rains, varying intensity, event time to sample collection, differing sample and laboratory analytical methods, etc. Our internal January 2014 review of the SMARTS GIP monitoring data found it lacking in quantity, quality, and both variable and biased, so as to preclude its use in developing credible EMC characterizations.
3) Philosophically, by including non-MS4 pollutant loads (above the WQBELs) in the RAA, the WMP must incorrectly delegate responsibility for the loads to the MS4 Permittees, otherwise the RAA would fail to achieves its compliance objectives. This would impose significant additional design, construction and operational costs on the MS4 Permittees, essentially subsidizing non-MS4 (primarily privately owned) facilities, and dis-incentivizing non-MS4 facility source control efforts since: "The City has proposed downstream facilities to accommodate our discharges." Furthermore, page 7 of the recent (November 26, 2014) USEPA Memorandum advocates for disaggregating stormwater WLAs, to avoid such outcomes. The non-MS4 facilities must remain responsible for their discharges and inclusion of their excess pollutant load (as derived from SMARTs data) defers and obfuscates the necessary acceptance of this responsibility.
4) Technically, it would be irrational and counterproductive to only use SMARTS data that exceeds WQBEL based EMC assumed values. If data exceeding WQBELs was credible, than so should the data below the WQBELs based EMCs. The technically defensible position, which has also has implications for comparisons with data developed by the UR2 monitoring program (CIMP) would use both higher and lower than WQBEL data, IF it is credible. However our viewpoint remains that the SMARTS data is currently not credible for this particular, and potentially very critical and costly, application or assumption.

With respect to updating the LSPC and SB-PAT RAA models based on SMARTS monitoring data, our original (2013) intent was to utilize many additional jurisdictionally specific land use categories (e.g. disaggregate open space into parks, golf courses, cemeteries, athletic fields, etc.). This original modeling objective was thwarted, not by the limited land use

EMC categories identified in the March 2013 RAA guidelines, but by the Board identified computer models themselves, which currently accommodate between 8 and 20 land use categories, including the extensive "non-MS4" category. Our understanding is that it is not currently computationally possible to include differing EMCs, derived from SMARTS monitoring data, for the over 160 GIPs in the LAR UR2 WMA and even it if was, we would recommend that the initial emphasis be on regional land use categories that include tens or hundreds of acres of tributary area, rather than the few acres which make up a typical GIP facility.

Once again the LAR UR2 WMA greatly appreciate everyone's efforts towards developing useful and informative RAA, WMP, and CIMP planning documents. However, due to well deserved vacations, mandatory agency holidays, and translational difficulties with technical jargon (statistics, modeling, planning, etc.), it is doubtful that a complex, credible, and iteratively (with respect to WCM and regional BMPs) RAA can be completed, understood to accurately reflect the intent of the LAR UR2 Permittees, and incorporated into the revised WMP in the less than 12 business days, assuming this email were to resolve all of our remaining divergences. Frankly, with respect to my personal well being, I believe it is impossible. Therefore, I must reiterate our prior request that RAA incorporation into the final WMP be extended, preferable for 60 days, so that we might meet the intervening revised WMP (focusing on non RAA revisions) submittal deadline of January 28, 2015 and a revised CIMP submittal deadline of February 19, 2015.
As always, we appreciate your considered and thoughtful oversight of these complex matters.
Sincerely,

Gerald Greene, DEnv, PE, QEP, QSD/P
Senior Project Manager/Director, Stormwater
Certified 8(a), DBE, MBE, and SBE
1561 E. Orangethorpe Ave., Suite 240, Fullerton, CA 92831
☎ (714) 526-7500 x207 (714) 310-9528 ✉ ggreene@cwecorp.com

From: Ridgeway, Ivar@Waterboards [mailto:Ivar.Ridgeway@waterboards.ca.gov]
Sent: Thursday, January 08, 2015 8:53 AM
To: Gerald Greene; Purdy, Renee@Waterboards
Cc: Lai, Ching-piau@Waterboards; 'Arellano, Claudia'; 'Gina Nila'; Nguyen, Thanhloan@Waterboards
Subject: RE: December 3, 2014 LAR UR2 WMA WMP/CIMP Comment Letters Meeting Summary

Mr. Greene,

Regional Board staff has reviewed your meeting summary and proposed revisions to the draft WMP to address deficiencies identified in our WMP review letter. The proposed revisions appropriately address our concerns except for the following:

- **Part VI.C.5.a.iii Source Assessment: The revise Sources assessment should include the assumption that EMCs were set to the TMDL WQBELs for those facilities. If future monitoring data show that the actual concentrations are higher than the assumption, the RAA will be updated accordingly**
- **LSPC and SB-PAT should be updated in order to incorporate SMARTS monitoring data**

Please let us know if you have any questions or concerns.

Ivar K. Ridgeway
Senior Environmental Scientist
California Regional Water Quality Control Board, Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013-2343
(213) 620-2150
Ivar.Ridgeway@waterboards.ca.gov

From: Gerald Greene [mailto:GGreene@cwecorp.com]
Sent: Friday, January 02, 2015 5:05 PM

To: Purdy, Renee@Waterboards
Cc: Ridgeway, Ivar@Waterboards; Lai, Ching-piau@Waterboards; 'Arellano, Claudia'; 'Gina Nila'
Subject: December 3, 2014 LAR UR2 WMA WMP/CIMP Comment Letters Meeting Summary

Ms. Purdy
As with our December 1, 2014, letter, I am routing the attached Meeting Summary Letter through you, for distribution among Board staff as you feel appropriate.
We hope that you and the other Board staff will concur with its contents.
The holidays continue to reduce the time available for preparation of a revised RAA and incorporation of its findings into a Revised, and hopefully, Final WMP.
I was recently advised by our subcontractor that there is inadequate time to complete the revised RAA analysis by January 28, 2014 and CWE would require some additional time after that to incorporate the sub consultant's findings into the document and allow our clients the opportunity to comment on the document we would prepare on their behalf.
Following staff review of the attachment's contents, I would appreciate the opportunity to verify its assertions and discuss the scheduling situation with you.
Please accept our wishes for a happy and productive New Year.

Gerald Greene, DEnv, PE, QEP, QSD/P
Senior Project Manager/Director, Stormwater
Certified 8(a), DBE, MBE, and SBE
1561 E. Orangethorpe Ave., Suite 240, Fullerton, CA 92831
☎ (714) 526-7500 x207 (714) 310-9528 ✉ ggreene@cwecorp.com

Meeting Attendance Sheet

January 13, 2015 11:00AM

Subject: East San Gabriel Valley WMP Group Meeting

Location: California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200, Los Angeles, CA 90013

	Name	Agency/ Company/ or Resident	Email Address	Telephone
1	~~Renee Purdy~~	~~Los Angeles Regional Water Quality Control Board~~	~~Renee.Purdy@waterboards.ca.gov~~	~~(213) 576-6622~~
2	Ivar Ridgeway	Los Angeles Regional Water Quality Control Board	Ivar.Ridgeway@waterboards.ca.gov	(213) 620-2150
3	Chris Lopez	Los Angeles Regional Water Quality Control Board	Chris.Lopez@waterboards.ca.gov	(213) 576-6674
4	Victor Harris	MWH	victor.harris@mwhglobal.com	(626) 568-6024
5	LISA O'BRIEN	CITY OF LA VERNE	LOBRIEN@ci.la-verne.ca.us	909-596-8741
6	Nikole Bresciani	City of La Verne	nbresciani@ci.la-verne.ca.us	909-596-8747
7	Julie Carver	City of Pomona	julie-carver@ci.pomona.ca.us	909-620-3628
8	Meg McWade	City of Pomona	meg-mcwade@ci.pomona.ca.us	909-620-2392
9	SAME GRANT	CITY OF SAN DIMAS	sgarwick@ci.san-dimas.ca.us	909 394-6248
10	Kimberly Colbert	City of Claremont and San Dimas	Kimberly@colbertgroup.com	310 729-8031
11	Loretta Mustafa	City of CLAREMONT	Lmustafa@ci.claremont.ca.us	909-399-5474
12	Bronwyn Kelly	MWH	bronwyn.kelly@mwhglobal.com	626-568-6059
13	Mitch Mysliwiec	LWA	mitchm@lwa.com	530-753-6400

} not present

RB-AR1920

State of California
Environmental Protection Agency
State Water Resources Control Board
Los Angeles Regional Water Quality Control Board

Meeting regarding Alamitos Bay/Los Cerritos Channel WMP

January 15, 2015 at 9:00 AM

Name	Organization	Telephone Number	E-Mail Address
Ivar Ridgeway IR	LARWQCB	213-620-2150	Ivar.Ridgeway@waterboards.ca.gov
Chris Lopez cl	LARWQCB	213-576-6669	Chris.Lopez@waterboards.ca.gov
Rebecca Christmann RC	LARWQCB	213-576-5734	Rebecca.Christmann@waterboards.ca.gov
Thanhloan Nguyen TN	LARWQCB	213-576-6689	Thanhloan.Nguyen@waterboards.ca.gov
C.P. Lai cp.	LARWQCB	213-576-6951	Ching-piau.Lai@waterboards.ca.gov
Bill Johnson	LACDPW	626-458-4319	wjohnson@dpw.lacounty.gov
Jolene Guerrero	LACDPW	626-458-4364	jguerrer@dpw.lacounty.gov
C.P. Lai	LARWQCB	213-576-6951	clai@waterboards.ca.gov

Agenda for 1/23/2015 Meeting with

Regional Board Offices, 320 West 4th Street Los Angeles, 2nd floor

10:00 Noon Friday January 23, 2015

Topic: Revisions to WMPs and CIMPs for LLAR, LCC, and LSGR

1. Main topic #1: Additional specificity for structural control milestones
2. Main Topic #2: Support for assumed load reductions for nonstructural (non-modeled) controls and inclusion of milestones.
3. Main Topic #3: Compliance with RWLs "as soon as possible"
4. Main topic #4: Clarification of the "limiting pollutant approach"
    a. Provide support that load reduction milestones are "as soon as possible"
    b. Comment on whether some WQPs may be controlled to meet WQOs at an accelerated rate (faster than zinc)
    c. Provide proof that each WQP will be controlled to meet WQOs by controlling zinc
    d. LSGR—Provide additional measures for bacteria beyond that suggested by limiting pollutant (zinc) approach
    e. LCC– Support for not addressing Ammonia
5. Other concerns
    a. Montrose Chemical revision
    b. Major outfall catchment maps approach
    c. LA River Trash TMDL compliance approach
    d. LA River Estuary Bacteria (re: LRS) schedule
    e. Schedules for meeting bacteria standards
6. CIMP
    a. Monthly bacteria estuary monitoring LLAR
    b. Metal Monitoring frequency
    c. LLAR 1-11 monitoring station
    d. NFCC—new outfall monitoring station
    e. SJC—existing coverage for outfall monitoring stations
    f. Special Studies (pyrethroids)
    g. Monitoring for PCBs
    h. Aquatic Toxicity

Meeting Attendance Sheet

January 23, 2015 10:00AM

Subject: Lower Los Angeles River, Los Cerritos Channel, and Lower San Gabriel River WMPs/CIMPs

Location: California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200, Los Angeles, CA 90013

	Name	Agency/ Company/ or Resident	Email Address	Telephone
1	~~Renee Purdy~~	~~Los Angeles Regional Water Quality Control Board~~	Renee.Purdy@waterboards.ca.gov	(213) 576-6622
2	Ivar Ridgeway	Los Angeles Regional Water Quality Control Board	Ivar.Ridgeway@waterboards.ca.gov	(213) 620-2150
3	Chris Lopez CL	Los Angeles Regional Water Quality Control Board	Chris.Lopez@waterboards.ca.gov	(213) 576-6674
4	Richard Watson	Richard Watson & Assoc.	rwatson@rwaplanning.com	949-855-6772
5	Adriana Figueroa	City of Norwalk & Chair of Lower San Gabriel River Group	afigueroa@norwalkca.gov	562-929-5760
6	STEVE MYRTER	SIGNAL HILL & CHAIR OF LOWER LAR	SMyrter@CITYOFSIGNALHILL.COM	(562) 989-7356
7	Jolene Guerrero	LA County Public Works	jguerrer@dpw.lacounty.gov	(626-458-4364
8	Cameron McCullough	JLHA	cmccullough@jlha.net	562 802-7880
9	Jillian Brickey	JLHA	JBrickey@JLHA.net	562-802-7880
10	ANTHONY AREVALO	LBPW-SWM	ANTHONY.AREVALO@LONGBEACH.GOV	562-570-6023
11	John Hunter	JLHA	JHunter@JLHA.net	562 802 7880 x 25
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14				
15				

RB-AR1923

March 16, 2015

Meeting with NRDC, Los Angeles Waterkeeper, and Heal the Bay

(11:00 a.m.-12:00 p.m.)

April 15, 2015

Meeting with City of Walnut via Teleconference

(11:00 a.m.-12:00 p.m.)

April 24, 2015

Meeting with City of El Monte via Teleconference

(2:30 p.m.-3:30 p.m.)

Los Angeles Regional Water Quality Control Board

MEETING ON LOS ANGELES RIVER UPPER REACH 2 REVISED WATERSHED MANAGEMENT PROGRAM (WMP) PUSUANT TO THE LOS ANGELES COUNTY MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT ORDER NO. R4-2012-0175

Los Angeles Regional Water Quality Control Board, Library
320 W. 4th Street, Los Angeles, CA 90013
Tuesday, May 5, 2015, 1:00 PM – 3:00 PM

Agenda

1) *Introductions*
2) *Significant Issues Requiring Corrective Actions in Revised WMP*
    a. *Lack of specific commitments and implementation schedules for non-structural BMP implementation in revised WMP*
    b. *Lack of interim milestones for LID Street implementation (progress demonstration)*
    c. *Lack of strategy for addressing non-compatible catch basins covered under LA River Trash TMDL*
    d. *Model results of pollutant loading and required pollutant reductions inconsistent with TMDLs*
3) *Open Discussion*

SIGN-UP SHEET

Name	Organization	Email Address
Renee Purdy	RWQCB	Renee.Purdy@waterboards.ca.gov
AL CABLAY	City of Bell	acablay@cityofbell.org
young park	City of Bell Gardens	ypark@lnfeng.co
Claudia Arellano	City of Vernon	carellano@ci.vernon.ca.us
Genevieve Osmena	LACFCD	gosmena@dpw.lacounty.gov
Christia Dixon	City of H.P	cdixon@hpca.gov
Gina Nila	City of Commerce	ginan@ci.commerce.ca.us
Gerry Greene	CWE	ggreene@CWEcorp.com

AGENDA

June 4, 2015 9:30 am

East San Gabriel Valley WMP RWQCB Meeting

Location: Los Angeles Regional Water Quality Control Board,
320 West Fourth Street, Suite 200 Los Angeles, CA 90013 | P: (213) 576-6600

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1. Introductions

2. Revised Watershed Management Program (WMP) Plan
   a. Review of Conditional Approval Items

3. Coordinated Integrated Monitoring Program (CIMP)
   a. Review of Receiving Water Monitoring Locations
      - Monitoring results from the outfall site in the SAR portion (in the Upper Chino Creek HUC12)

4. Summary

Meeting Attendance Sheet

Subject: **East San Gabriel Valley Final WMP Revisions / CIMP Issues**

Date: June 4, 2015 / 9:30AM

Location: California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200, Los Angeles, CA 90013

	Name	Agency/ Company/ or Resident	Email Address	Telephone
1	Ivar Ridgeway	Los Angeles Regional Water Quality Control Board	Ivar.Ridgeway@waterboards.ca.gov	(213) 620-2150
2	Chris Lopez	Los Angeles Regional Water Quality Control Board	Chris.Lopez@waterboards.ca.gov	(213) 576-6674
3	Latoya Cyrus	San Dimas	Lcyrus@ci.san-dimas.ca.us	909 394 6244
4	Kimberly Colbert	Claremont	kimberly@colbertgroup.com	310 729-8037
5	Loretta Mustafa	Claremont	Lmustafa@ci.claremont.ca.us	909-399-5474
6	Bronwyn Kelly	MWH	bronwynkelly@mwhglobal.com	626-568-6059
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RB-AR1930