

## Workshop Presentation

# Enhanced Watershed Management Program and Coordinated Integrated Monitoring Plan for North Santa Monica Bay Coastal Watersheds

May 22, 2014 - Calabasas, CA



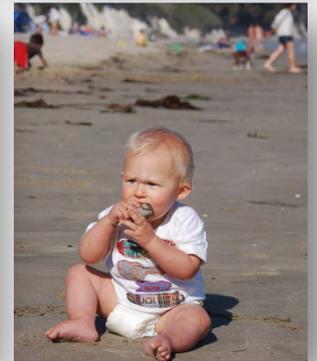
# Overview

- Purpose and Introductory Statements
- Enhanced Watershed Management Program
  - Water Quality Priorities
  - Control Measures to Address Water Quality Priorities
  - Modeling (Reasonable Assurance Analysis)
- Monitoring Program
- Next Steps
- Q&A



# Purpose

- To improve and protect beach and receiving water quality
- Compliance with:
  - Federal Clean Water Act
  - California Porter-Cologne Act
  - Municipal Stormwater Permit

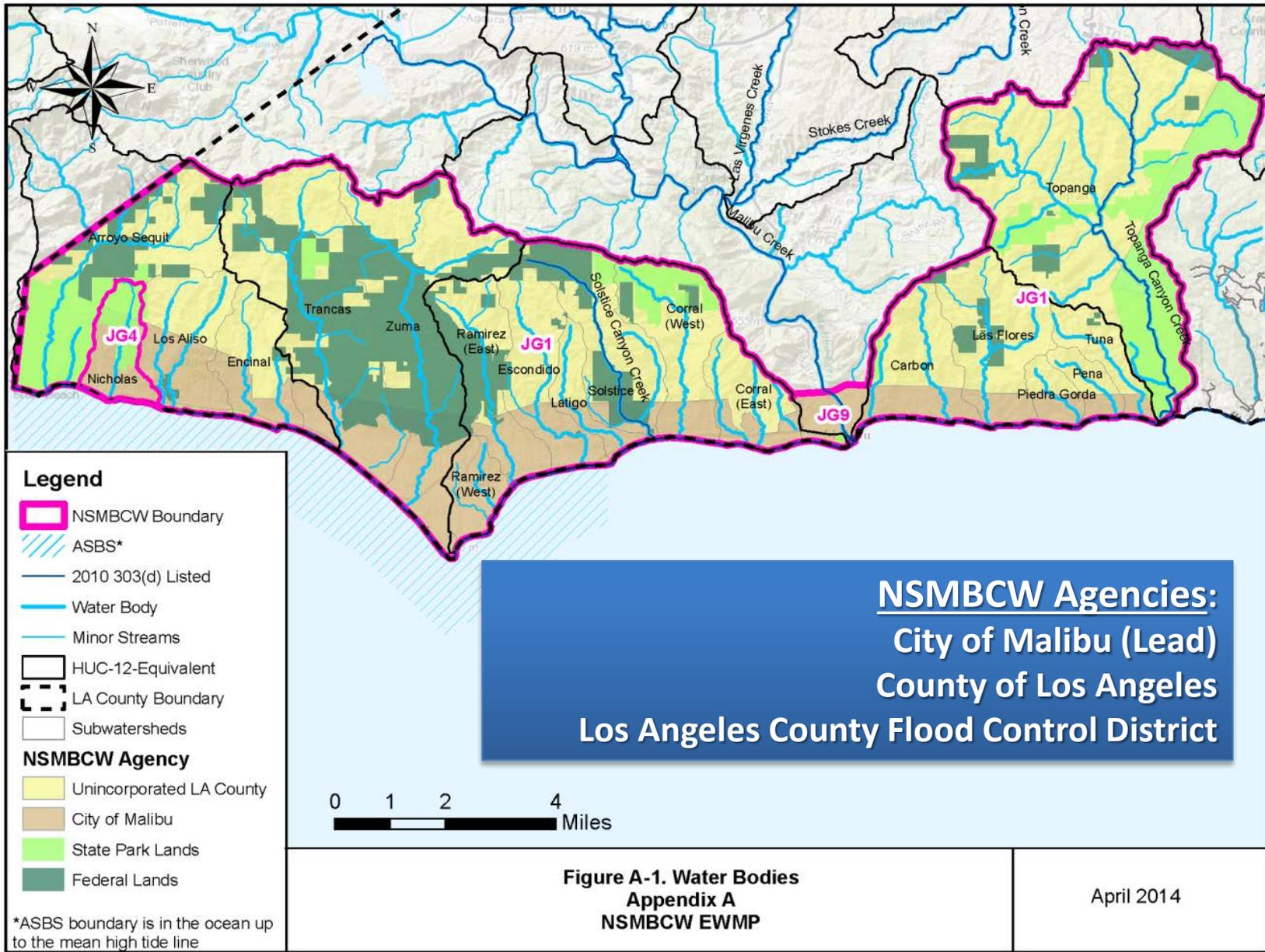


# Your Role in EWMP Development

- Share ideas to improve our process and results
- Provide information that could be helpful
- Submit comments/comment cards
- Sign-in and provide contact information for future notifications



# NSMBCW Management Group



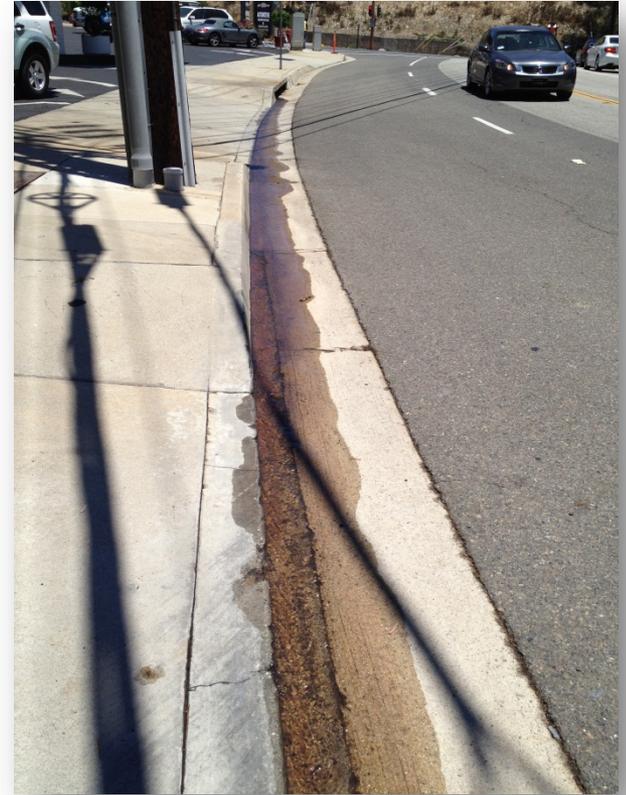
# Definitions

- Basin Plan = Water Quality Control Plan: Los Angeles Region - Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties
- 303(d) list = List of water bodies that have impaired beneficial uses based on water quality objectives
- TMDL = Total Maximum Daily Loads
- MS4 = Municipal Separate Storm Sewer System
- BMP = Best Management Practice (Stormwater Control Measure)
- EWMP = Enhanced Watershed Management Program
- CIMP = Coordinated Integrated Monitoring Program
- RAA = Reasonable Assurance Analysis



# MS4 Permit Objectives

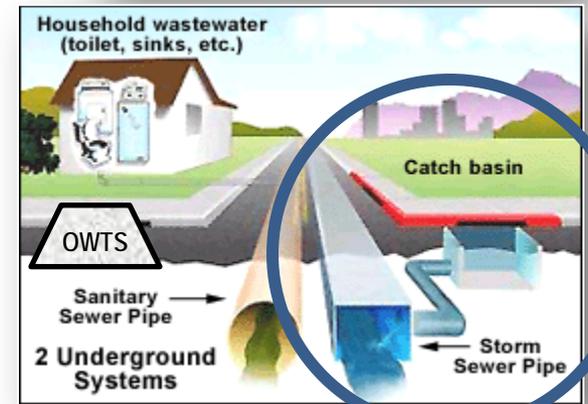
- Prohibit and eliminate *non-*stormwater discharges (with a few exceptions)
- Prevent/minimize stormwater pollution via best management practices (BMPs)
- Enforces pollutant limits including TMDLs



# MS4 System

Conveyance or system of conveyances for stormwater owned by public body, including:

- Roads with drainage systems
- Municipal streets
- Catch basins
- Curbs
- Gutters
- Ditches
- Manmade channels
- Storm drains



# EWMP



## ENHANCED WATERSHED MANAGEMENT PROGRAM

North Santa Monica Bay Coastal Watersheds  
May 22, 2014 Public Workshop

### EWMP - CIMP

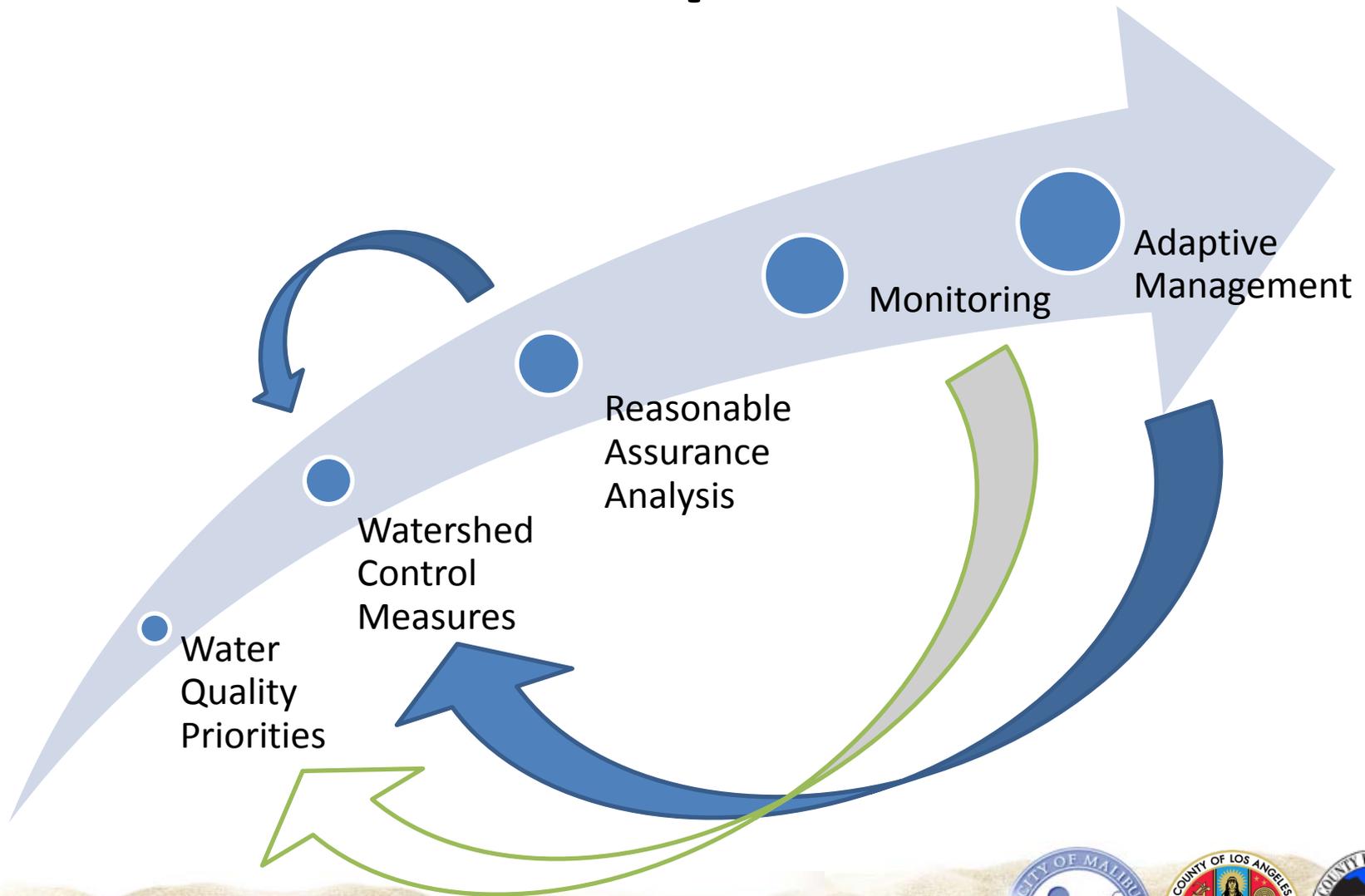


# Enhanced Watershed Management Program

- Evaluates opportunities for multi-benefit regional projects:
  - Collaboration among Permittees and other partners
  - If feasible, retain all non-stormwater runoff and stormwater runoff from the design storm
  - Provide other benefits: e.g., flood control, water supply
- Where it is not feasible to retain design storm, demonstrate via Reasonable Assurance Analysis (RAA) that all final TMDLs and receiving water limitations will be met

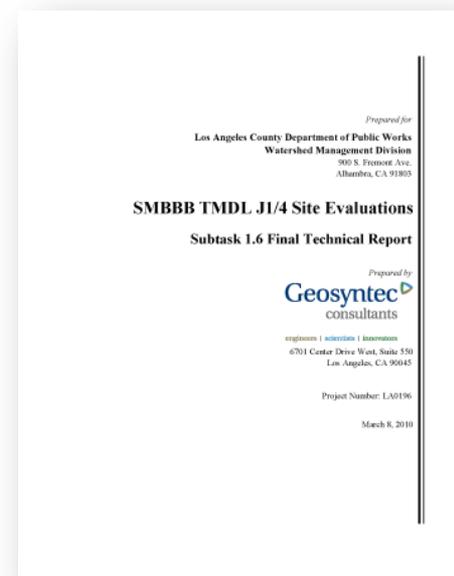


# EWMP Development Process

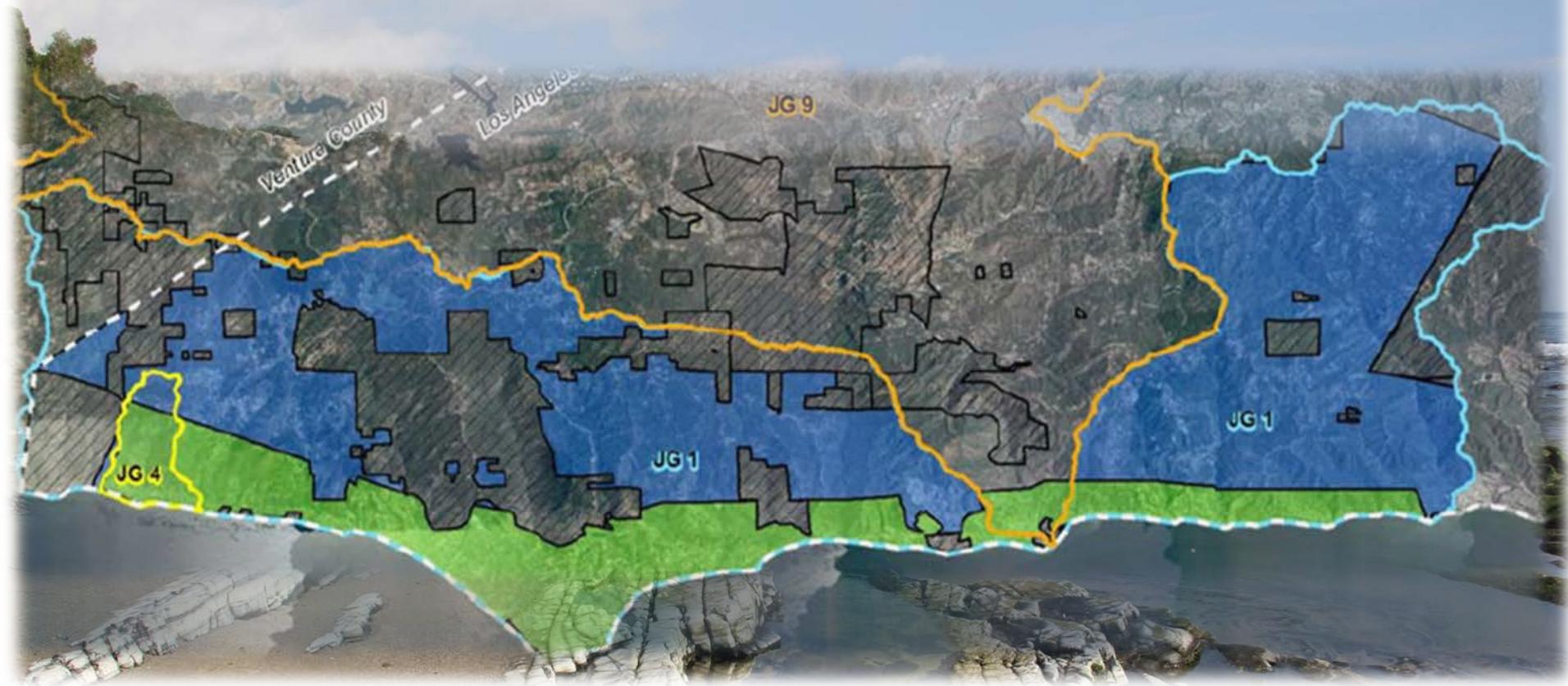


# EWMP Builds on Previous Work

- Santa Monica Bay Beaches Bacteria TMDL Implementation Plan: Jurisdictional Groups 1&4 (2005)
- Santa Monica Bay Beaches Bacteria TMDL – Jurisdictional Groups 1&4 Implementation (County of Los Angeles)
- Design of Malibu Legacy Park, Broad Beach Biofilters, Wildlife Road (City of Malibu)
- Bacteria TMDL Reopener Studies
- Green Solutions Project Methods
- Ongoing Coastal Bacteria Applied Research
- Malibu Creek Studies



# EWMP



## WATER QUALITY PRIORITIES



# Total Maximum Daily Loads

- Santa Monica Bay Beaches
  - Dry Weather Bacteria
  - Wet Weather Bacteria
- Santa Monica Bay
  - Nearshore Debris
  - DDT and PCBs
- Malibu Creek and Lagoon
  - Bacteria
  - Trash



# Water Quality Priorities

Category	Water Body	Pollutant
<b>1: Highest Priority (TMDLs)</b>	Malibu Creek	Trash
	Malibu Creek and Lagoon	Nutrients
		Indicator Bacteria
	SMB Beaches	Dry Weather Bacteria
		Wet Weather Bacteria
	SMB	Trash/Debris
		DDTs
PCBs		
<b>2: High Priority (303[d] listings)</b>	Topanga Canyon Creek	Lead
	Malibu Creek	Sulfates & Selenium
	Malibu Lagoon	pH
<b>3: Medium Priority (WQ Data)</b>	None	



Regional BMPs  
Distributed BMPs  
Non-Structural BMPs

## WATERSHED CONTROL MEASURES

# Watershed Control Measures

- Structural BMPs
  - **Regional:** Designed to collect runoff from large usually multi-parcel, multi-land use areas (e.g., large infiltration basins, constructed wetlands, etc.)
  - **Distributed:** Designed to collect runoff from small areas, such as single parcels (e.g., porous pavement, bioretention, etc.)
- Non-Structural BMPs

Source control measures that are intended to prevent the release of flow and/or pollutants to the MS4, (e.g., enhanced street sweeping, “pick up after your pet” program, water conservation ordinance, etc.)



Regional BMPs  
Distributed BMPs  
Non-Structural BMPs

## WATERSHED CONTROL MEASURES STRUCTURAL BMPS

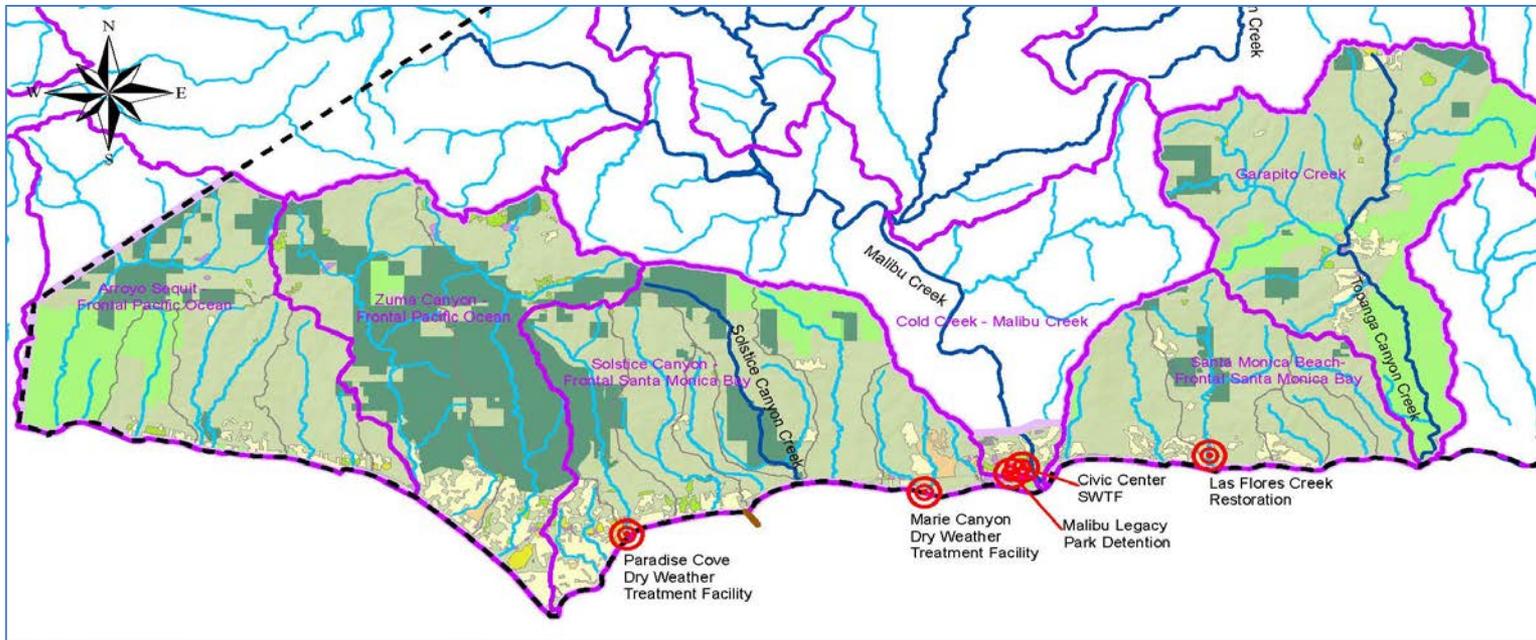
# Regional BMPs

- **Regional BMPs** treat runoff from large, typically multi-parcel, multi-land use areas
- **Regional EWMP projects** retain runoff from 85<sup>th</sup> percentile, 24-hour event while also achieving other benefits including flood control and water supply, among others



# Existing Regional Projects

- Paradise Cove Treatment Facility
- Marie Canyon Treatment Facility
- Legacy Park/SWTF (Regional EWMP project)
- Las Flores Creek Restoration



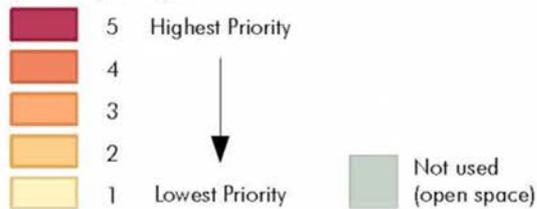
# Potential EWMP Projects

Multiple methods to identify new projects



## Water Quality Priorities: Cumulative

Receiving water score and CPI combined with equal weighting, quantiles by subregion:



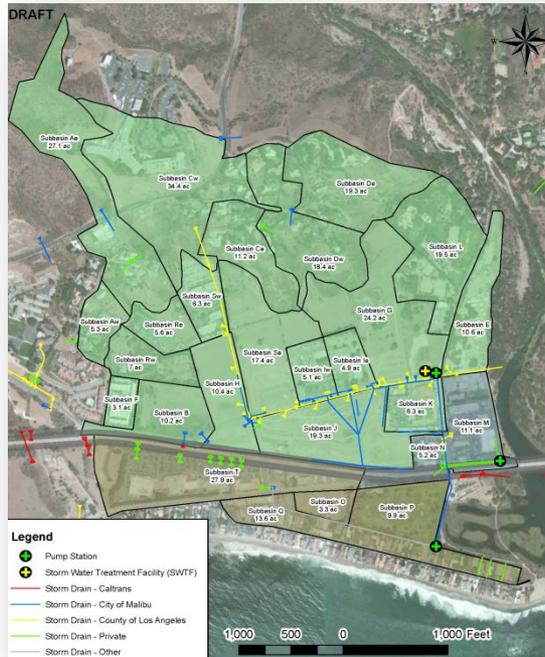


**SBPAT**  
Structural BMP Prioritization and Analysis Tool – created with the City of Los Angeles, County of Los Angeles Public Works, Heal the Bay, GreenInfo Network, and Geosyntec with funding from the RWQCB and SWRCB

# MALIBU LEGACY PARK PROJECT

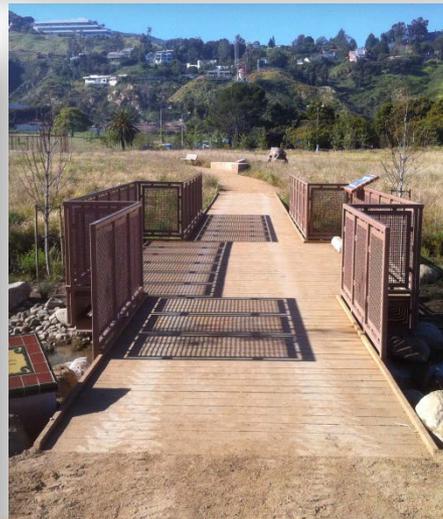
FULFILL A DREAM, LEAVE A LEGACY

- EWMP Regional Project
- Bacteria TMDL Compliance
- Stormwater capture, disinfection and use
- Habitat development
- Public recreation
- **Upgrading to increase capacity/area**

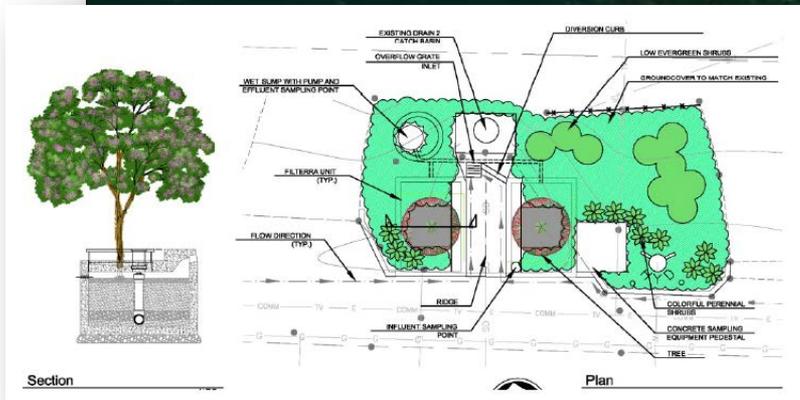


## MALIBU LEGACY PARK: A WALK THROUGH THE PARK

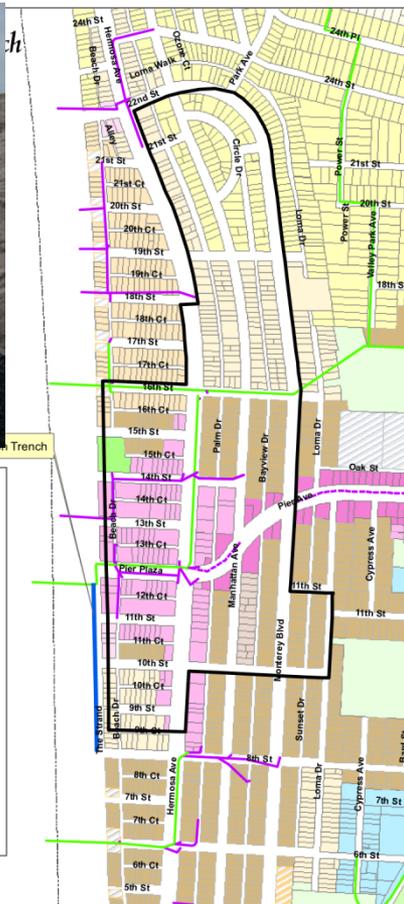
The Malibu Legacy Park Project, a private/public partnership and multi-benefit clean water project for the region, is the centerpiece of the City of Malibu's commitment to water quality and the environment.



# Broad Beach Biofiltration



# Beach Infiltration Regional BMP Examples



## Hermosa Strand Infiltration Trench

- Low-flow diversion to subsurface trench
- 3-4 ft unsaturated native sand below the trench to provide primary filtration
- Additional saturated filtration through groundwater across 300 feet of beach to ocean interface



Regional BMPs  
**Distributed BMPs**  
Non-Structural BMPs

## WATERSHED CONTROL MEASURES STRUCTURAL BMPS

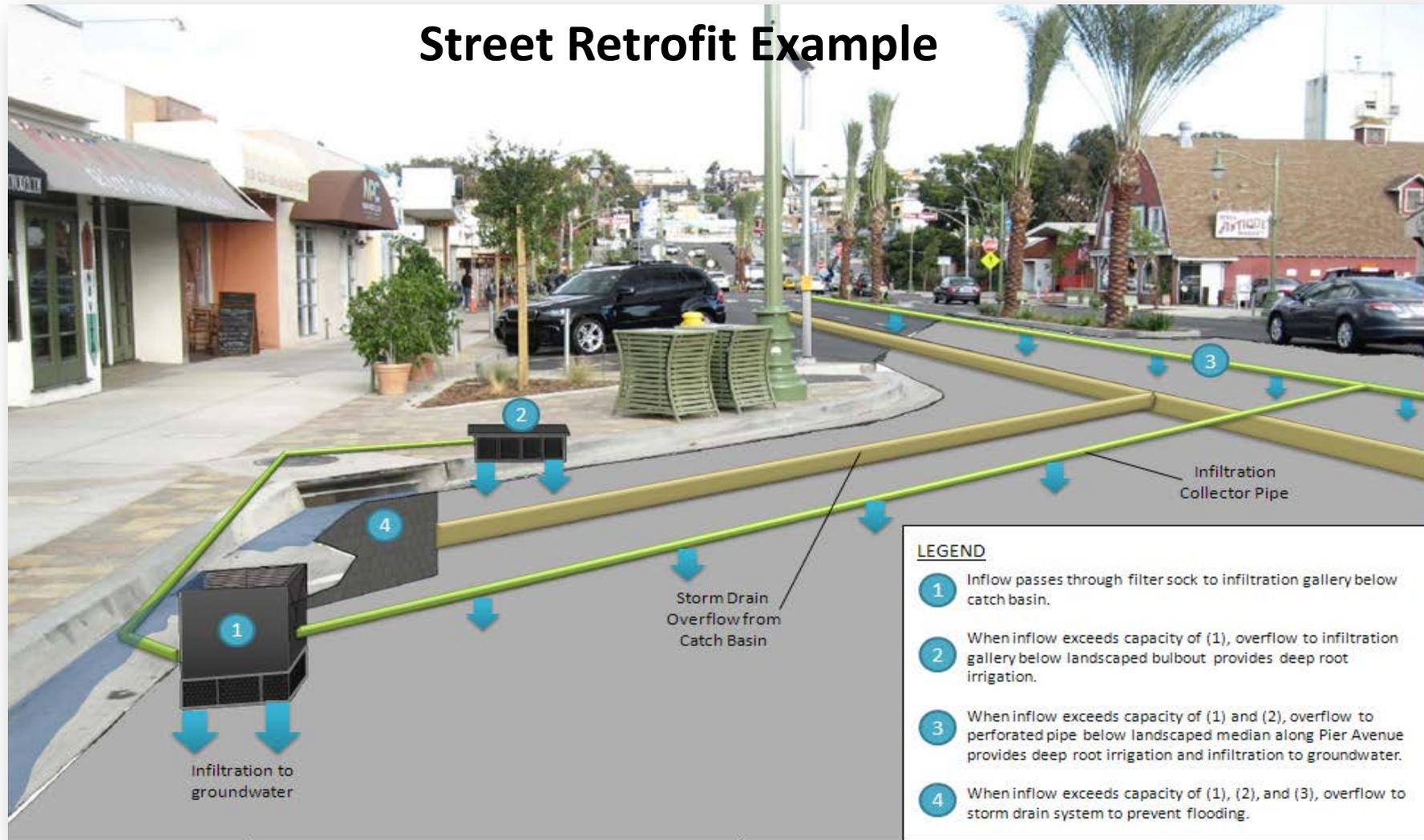


# Distributed BMPs

- Distributed BMPs treat runoff typically from a small area and/or single parcel.
- Examples:
  - Infiltration Trenches
  - Catch Basin Inserts
  - Bioretention/Biofiltration
  - Harvest and Use
  - Green Roofs
  - Drywells
  - Permeable Pavement
  - Bioswales
  - Others

# Distributed infiltration BMPs

## Street Retrofit Example



# Distributed BMPs

## Examples of Catch Basin Inserts

### Connector Pipe Screens



### Auto-retractable screens Fixed screens



# Distributed BMPs

## Bioretention/Biofiltration Example

- Utilize natural physical, biological and chemical process
- Capture and filter stormwater runoff using a combination of
  - Engineered soil media
  - Mulch
  - Plantings
  - Underdrains (if necessary)



# Distributed BMPs

## Harvest and Use Example

- Cisterns
- Rainwater harvesting
- Use for landscape irrigation



# Distributed BMPs

## Green Roof Examples

- Rainfall detention
- Evapotranspiration





Regional BMPs  
Distributed BMPs  
▶ Non-Structural BMPs

## WATERSHED CONTROL MEASURES: INSTITUTIONAL BMPS



# Non-Structural & Institutional BMPs

- More frequent Industrial/Commercial Inspection Program
- Septic Management Plan Implementation
- Malibu Local Coastal Plan
- Water Conservation Ordinance
- Ocean Friendly/CA Friendly Garden Program
- Outreach Videos and Educational Materials
  - Clean Water Act and Our Backyards
  - Living Lightly in Our Watersheds Guide
  - Keep it Clean, Malibu
- Outreach to Equestrian Community
- Collaborations with regional partners and agencies
  - Chamber of Commerce Environmental Committee
  - Malibu Area Conservation



# Low Impact Development Ordinance

- New Development and Redevelopment projects must control pollutants, pollutant loads, and runoff volume emanating from the completed project by:
  - Minimizing impervious surface area
  - Controlling runoff from impervious surfaces through:
    - infiltration, bioretention, and/or rainfall harvest and use
    - design storm = 85th percentile, 24-hour storm or  $\frac{3}{4}$  inch, whichever is greater

LID = Reduce Imperviousness + Structural BMPs

# Green Street Policy

- Specify the use of green street strategies for transportation corridors
- Policy must prescribe a menu of BMPs for street and road construction projects of 10,000+ sq.ft. of impervious surface
- USEPA guidance regarding Managing Wet Weather with Green Infrastructure: Green Streets



# How Can Residents/Businesses Help

- Minimize use of fertilizer and pesticides
- Cover outdoor trash cans
- Wash cars at commercial carwash
- Fix oil leaks promptly
- Instruct contractors and gardeners to use green waste bins, and not to dispose of debris or wash water into streets & storm drains
- Do not allow irrigation to overflow property
- Deposit pet waste in the trash
- Convert to drip or high efficiency irrigation
- Replace turf with landscape that requires less water, fertilizers, pesticides
- As appropriate:
  - Use porous paving for driveways and patios
  - Divert roof drains to vegetated areas

# EWMP



Los Angeles Regional Water Quality Control Board

## GUIDELINES FOR CONDUCTING REASONABLE ASSURANCE ANALYSIS IN A WATERSHED MANAGEMENT PROGRAM, INCLUDING AN ENHANCED WATERSHED MANAGEMENT PROGRAM

MARCH 25, 2014

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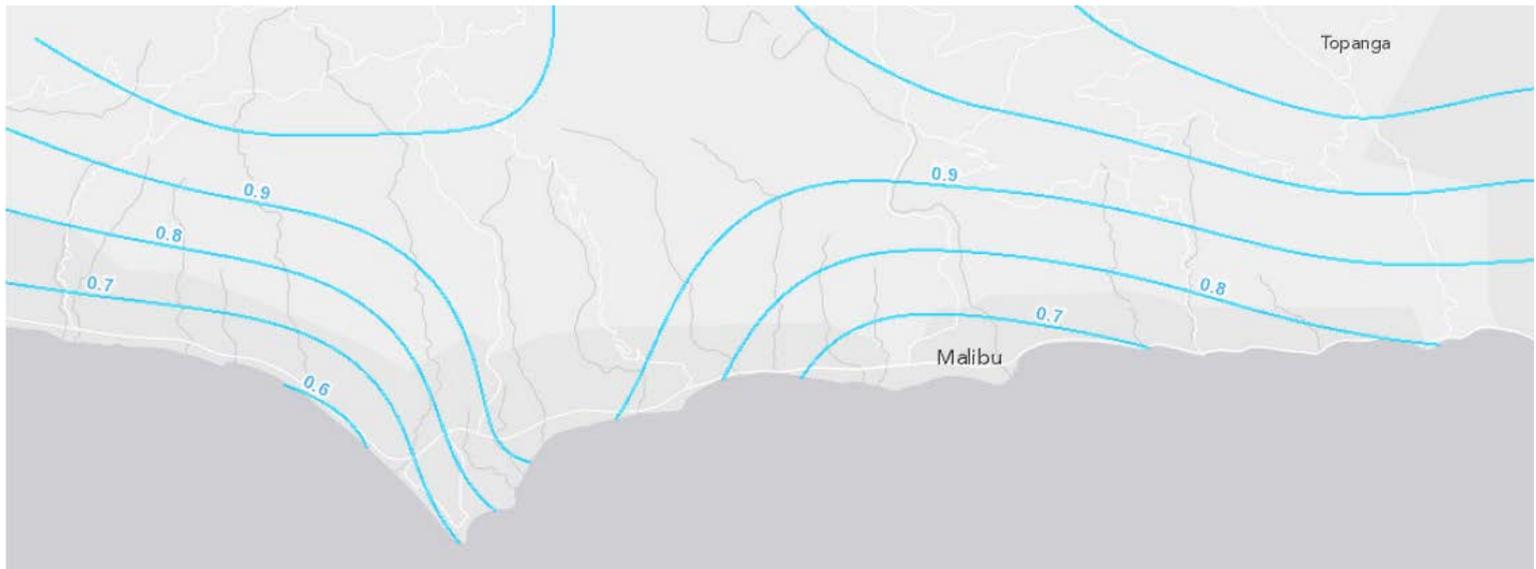


# REASONABLE ASSURANCE ANALYSIS (RAA)

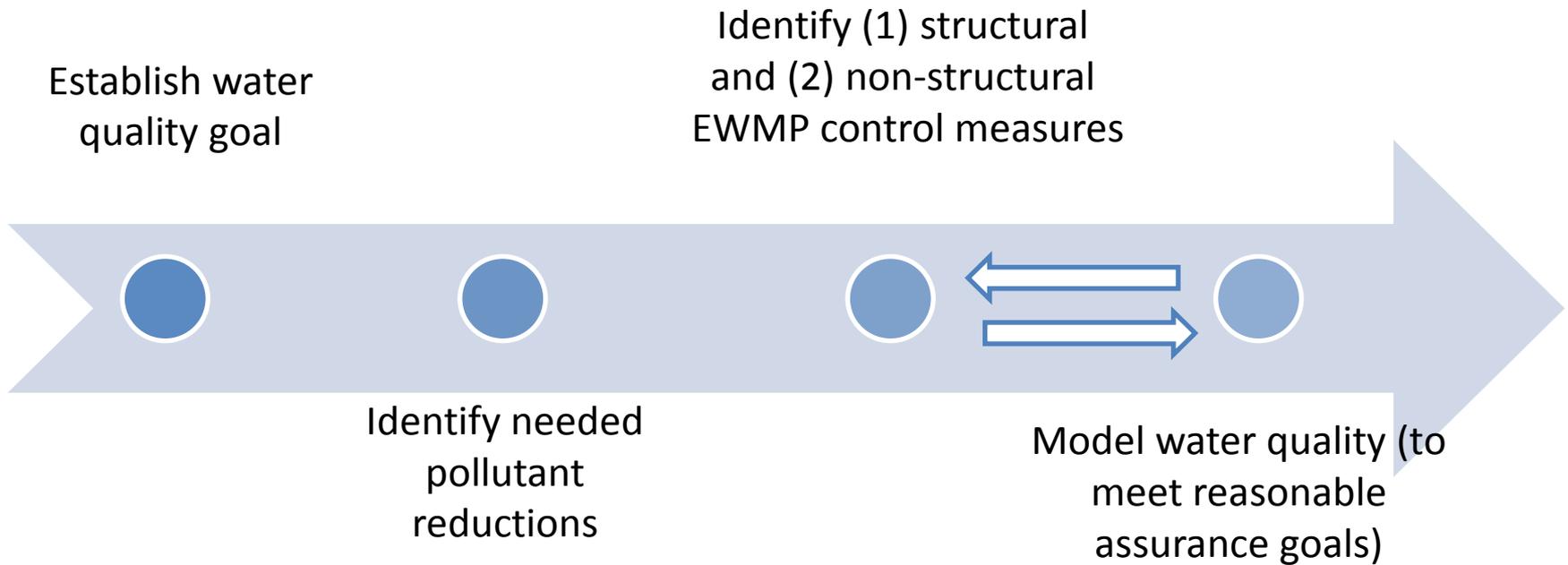


# Is RAA required?

- RAA is not required for drainage areas where non-stormwater runoff and storm water runoff from 85th percentile 24-hour storm event is retained

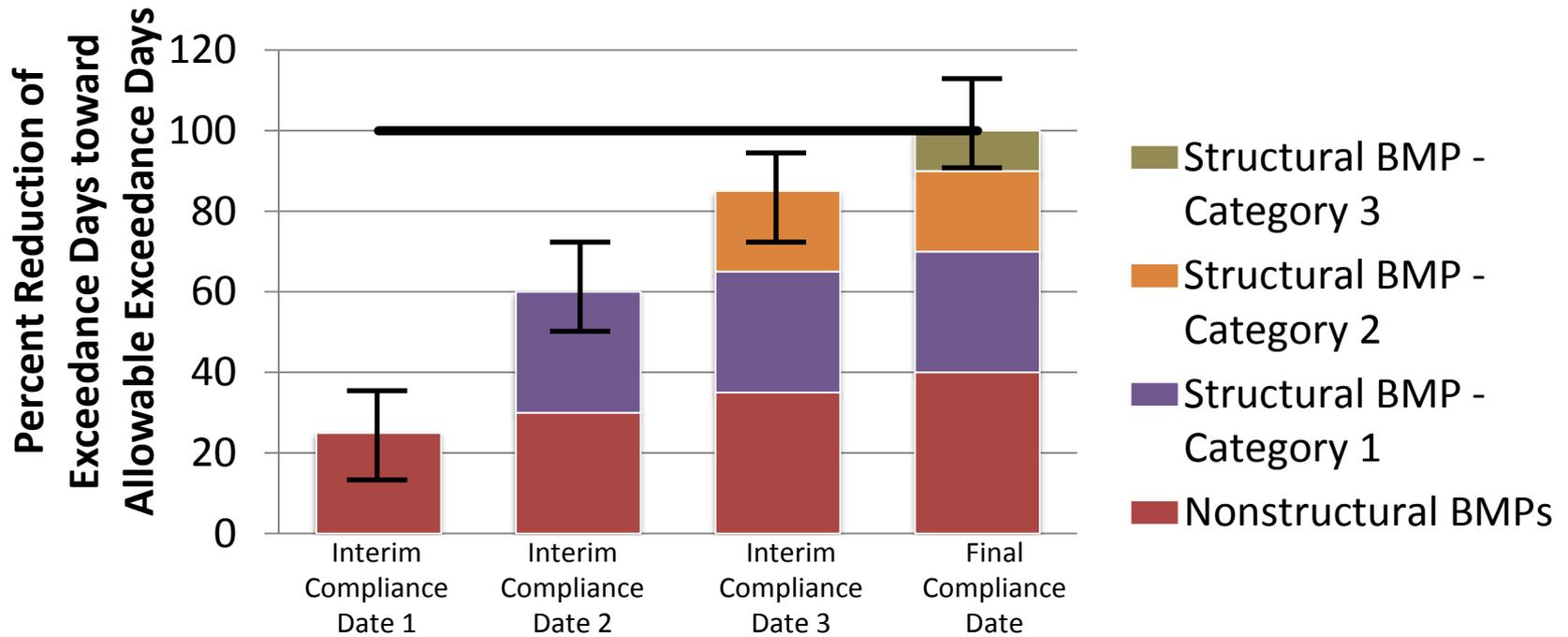


# RAA Methodology



# RAA Goals

Meet water quality targets using a combination of structural and nonstructural BMPs



# CIMP



## COORDINATED INTEGRATED MONITORING PROGRAM



# Coordinated Integrated Monitoring Program (CIMP)

- Customized monitoring program to:
  - Achieve 5 primary objectives to assess:
    1. Pollutant loads in MS4 discharges
    2. Whether water quality standards are met
    3. Sources of pollutants in MS4 discharges
    4. Chemical, physical, and biological impacts on receiving waters
    5. Effectiveness of pollutant controls
  - Provide for cost-efficient, effective water quality monitoring on a watershed basis
  - Coordinate with EWMP



# Next Steps

- EWMP Work Plan - June 28, 2014
- CIMP - June 28, 2014
- Low Impact Development Ordinances – April 2015
- Green Street Policies – June 2015
- EWMP - June 28, 2015
  
- Complete comment card/email input
- Attend next stakeholder meeting
- Sign attendee/interest list



END



# QUESTIONS - COMMENTS – ANSWERS

[www.malibucity.org/EWMP](http://www.malibucity.org/EWMP)



# RAA Process Overview

