

***Overview of Issues Affecting Water Quality
in the Los Angeles Region***

April 19, 2006

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MS4



LID

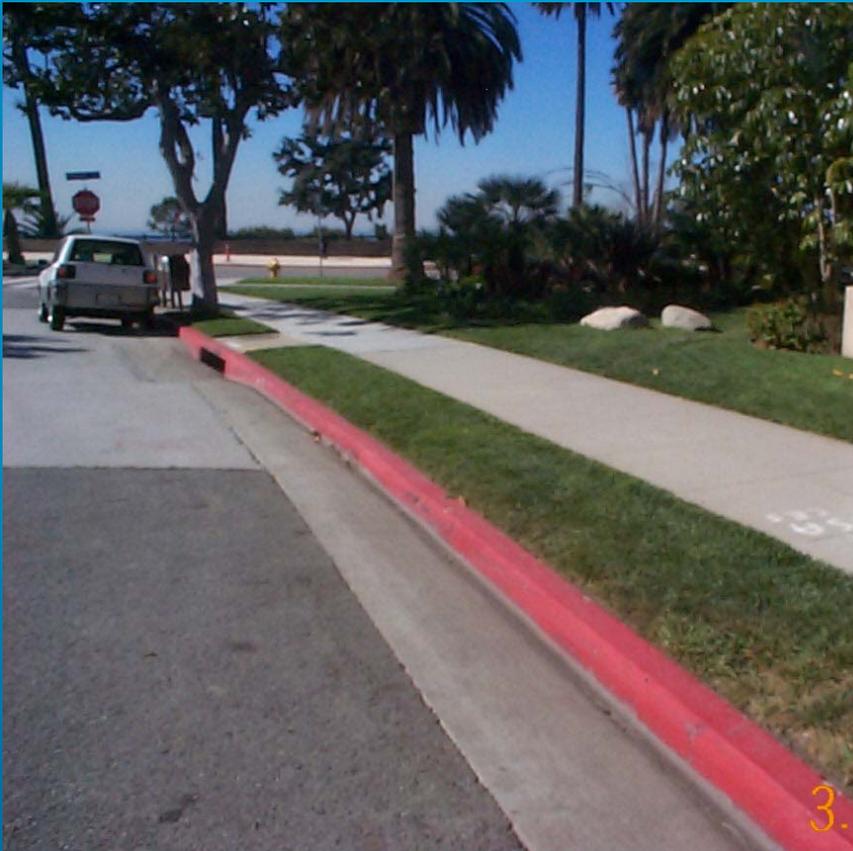
TMDLs

Hydro-mod

SUSMP

- First included in our 1996 LA MS4 Permit
- Post Construction requirements being implemented across the Region.
- City of Santa Monica has been innovative in their approaches
- SM required the installation of treatment devices and/or infiltration devices in residential homes
- MWD of Southern California 23K gave the City of Santa Monica a grant 55K total for the San Vicente infiltration project.

MWD of So. Cal and City of Santa Monica Before and After



Biofilter (gravel) for runoff from driveway and roof



Concrete Pavers with Groundcover Infill for Driveway



Innovative Implementation Approach to Bacteria Total Maximum Daily Loads

- First adopted by Board for Santa Monica Bay Beaches in 2002
- Implementation provisions encouraged an *integrated water resources approach (IWRA)* to comply
- IWRA achieves TMDL & myriad other environmental benefits
 - integrates planning for future wastewater, storm water, recycled water, and potable water needs and systems
 - beneficially re-uses urban runoff
 - addresses multiple pollutants
 - achieves other environmental & public goals

Integrated Water Resources Approach to TMDL Compliance



- **Captures stormwater for beneficial re-use, including infiltration into groundwater**
 - Tree wells & sunken medians capture and infiltrate street runoff
 - Rain barrels & cisterns capture roof runoff as a non-potable water supply
- **Relationship between reduction in runoff & reduction in bacteria**

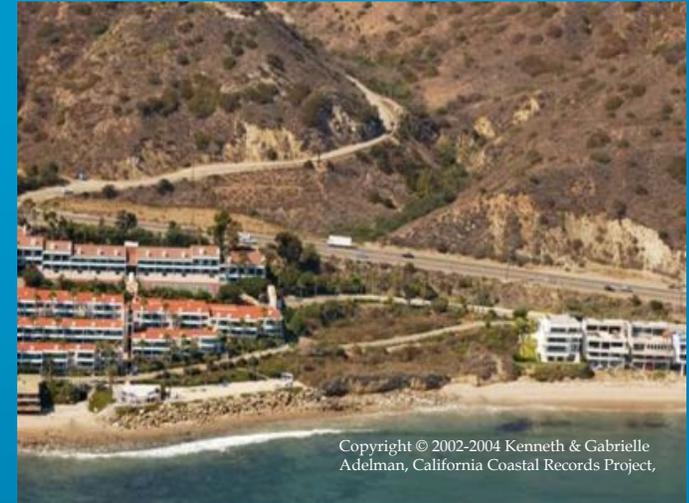
Implementation Approach



- Focus on a distributed suite of projects and programs
- Utilize a phased, iterative approach to improve water quality
- Focused on maximizing reuse
- Manage multiple pollutants

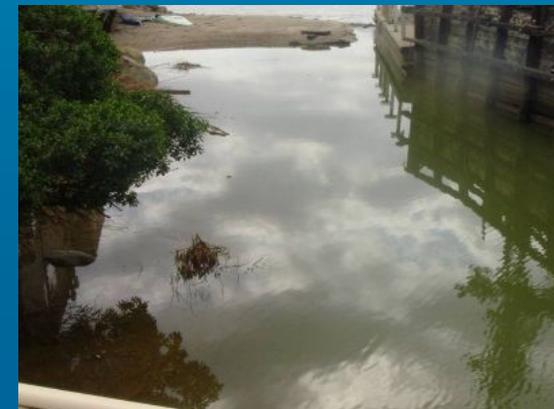
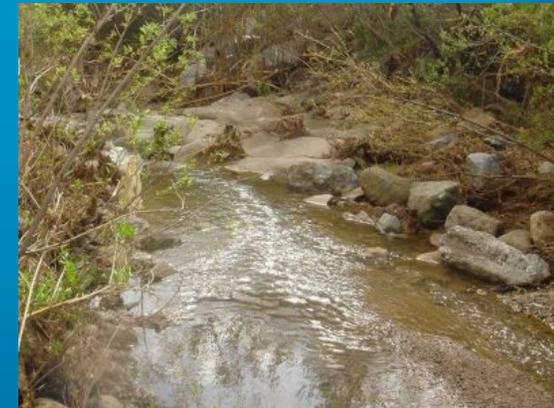
Latigo: Pilot

Project Name	Latigo Shores Subsurface Flow Wetland
Jurisdictional Lead	County of Los Angeles *
Project Description/Benefit	Utilize vacant County Beaches and Harbors land, east of Tivoli Condominiums and south of PCH, for treatment of creek flows through subsurface flow wetland system. Project requires pretreatment screens for gross solids removal. Diversion of flows and temporary storage. Assume wetland system can be fed during dry season with nuisance flows from creek or treated septic leach sources. System to be encase in concrete box to mitigate slope stability issues.
Regional, Sub-Regional, or On-Site	Subregional
Subwatershed and basis for selection	Latigo: High Priority based on TMDL exceedance days in critical year
Integrated Project Element	Multiple Pollutants and potential integrated water resources (treated septic leach source)
Candidate Locations	Adjacent to outlet in vacant parcel. Alternative site may be privately owned land north of PCH and west of creek. Approximate land required (note storage can be covered at additional expense): 1 acre
Candidate Target Volume	90% of area (estimated). 50% of reduced volume assumed, or Operational storage = 0.45 MGD
Permitting/ Environmental Issues	Groundwater/ septic leach water usage Potential private land ownership issues for access: This stipulation makes the feasibility of the proposed pilot project somewhat in question. Therefore the pilot project should be considered "conditional" of resolution of right-of-way issues. Engineering issue: Potential slope stability issues must be addressed and investigated as part of preliminary design process.



Las Flores: Pilot

Project Name	Las Flores Canyon Restoration and Water Quality Improvements
Jurisdictional Lead	City of Malibu*
Project Description/ Benefit	Restoration of Las Flores creek and acquisition of adjacent properties for biofiltration and infiltration prior to discharge to the creek.
Regional, Sub-Regional, or On-Site	Regional and sub-regional
Subwatershed and basis for selection	Las Flores High Priority based on TMDL exceedance days in critical year
Integrated Project Element	Multiple pollutants, biodiversity and habitat enhancement
Candidate Locations	Las Flores creek upstream of PCH
Candidate Target Volume	80-90% of watershed area 5 MGD total, smaller volumes in tributary drains
Permitting/ Environmental Issues	CDFG 1600 USACE 404 RWQCB 401
Budgetary Estimates	To be determined



Sub-Regional Structural BMP Program

- Seven public sub-regional structural BMP projects were proposed
- Projects include cisterns, bio strips, porous paving, and filterrras



Bio-strip

Hydro-Mod

- **A Vision of Integrated Water Resources Management for the Los Angeles Region**
 - Maintaining the natural functions of streams, and restoring streams that have been modified by human activity, maximizes opportunities for stormwater conservation and groundwater recharge
 - Vision also achieves other public policy goals: increased open space and natural habitat as well as recreational and environmental education opportunities

Los Angeles Regional Board Approach

- Encourage an *integrated water resources approach in TMDLs*
 - emphasizing beneficial reuse of runoff throughout a watershed to address water quality problems in tandem with other public goals such as increased water supply, open space, habitat and recreational opportunities
- Set runoff volume control criteria for new and re-development to protect stream habitat, prevent downstream erosion and sedimentation and the need for in-stream hydromodifications
- Discourage direct hydromodification of streams (i.e. channelization, hardening of stream banks and bottoms)

LA Regional Board Approach (cont.)

- Implementation of TMDLs using an integrated water resources approach
- Certifications under section 401 of federal Clean Water Act
- Provisions in MS4 stormwater permits to reduce adverse impacts of hydromodifications on beneficial uses
- Adoption of Hydromodification Resolution (January 2005) to emphasize priority of Board to maintain *physical, chemical and biological integrity* of Region's waters

Next Steps

- MS4
 - Include Principals of Low Impact Development in next round of MS4 Permits
- TMDLs
 - Re-open Santa Monica Bay Wet Weather TMDL
 - Include IWRA Future Urban TMDLs
- Hydro-Mod
 - Complete volume control criteria for new and re-development
 - Amend Basin Plan