SAFE CLEAN WATER PROGRAM

SCIENTIFIC STUDY PROGRAM
FISCAL YEAR 2027-2028

Pollutant Runoff Study

SOUTH SANTA MONICA BAY WATERSHED AREA

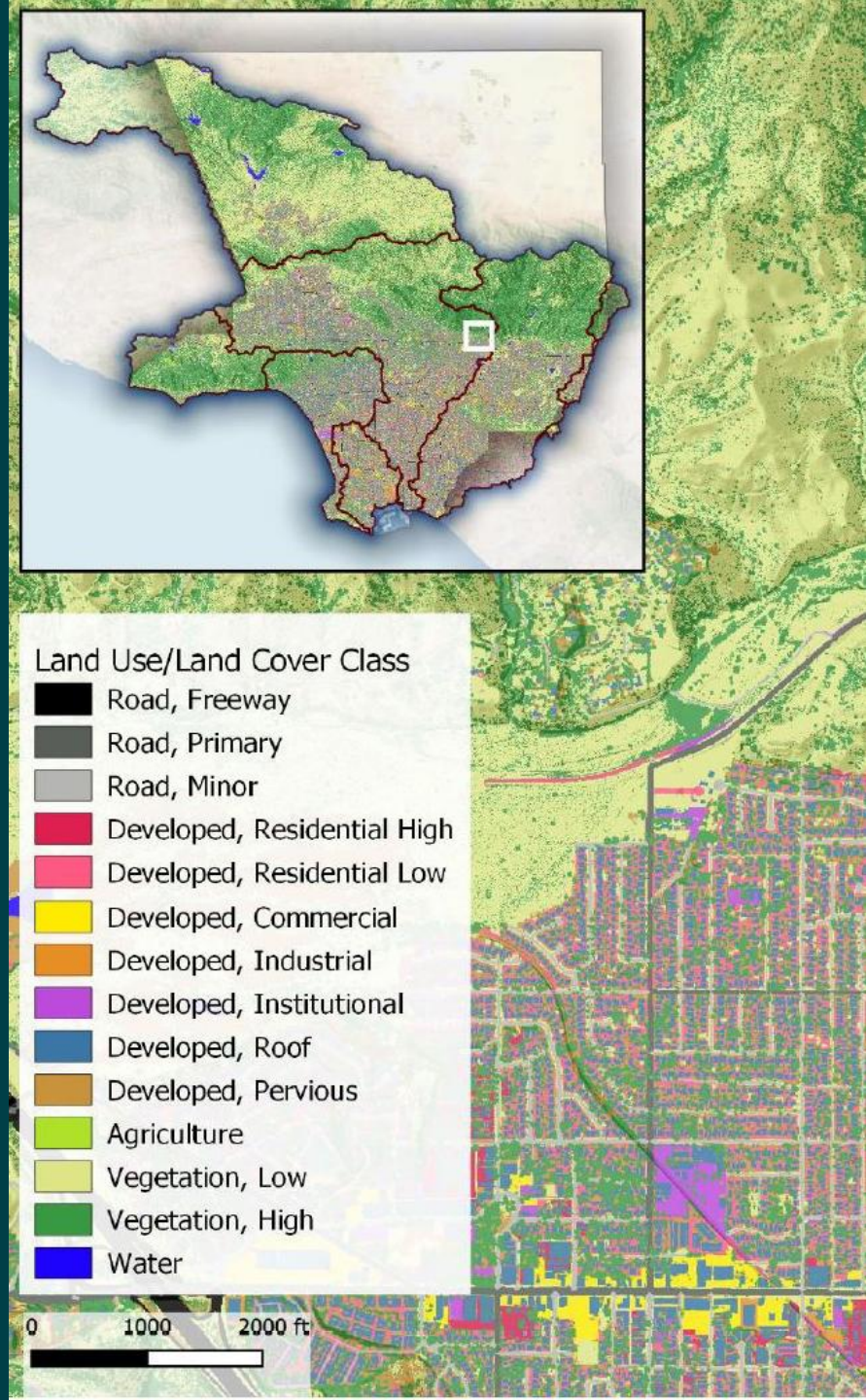
PROJECT LEAD:

Los Angeles Sanitation and Environment (LASAN)

PRESENTATION DATE:
NOVEMBER 18, 2026

PRESENTER:

Jon Ball,
Assistant Division Manager



Scientific Study Overview

The Study is a regional characterization of stormwater runoff that will update event mean concentrations (EMCs) for the pollutants driving SCW implementation.

Nexus

Connection to Stormwater/Urban Runoff capture or pollution reduction

- Improves understanding of the sources of pollutants in stormwater runoff
- Supports identification of projects and programs that maximize pollutant load reductions
- Generates the data needed to guide effective SCW Program investments

STUDY LEAD

LASAN

WATERSHED AREA(S)

SSMB, CSMB, ULAR

TOTAL FUNDING REQUESTED

$3,500,000

Funding Phase(s)/FY(s): FY27-28 – FY31-32

Limited Data

Existing EMC Data

- Limited Sample Size (N=33)
- 20+ Years Old
- Lacking Key Pollutants
- Not Tailored to Current Model Needs

Less Representative Modelling



Compromised Planning & Implementation

- SCW Watershed Plans
- SCW Project Benefit Estimation & Scoring
- Watershed Management Programs (WMPs)

$5+B in Planned Investments

Robust Data

Study EMC Data

- Large Sample Size (>300)
- Current Conditions
- Key Pollutants
- Tailored to Model Needs

Representative Modelling

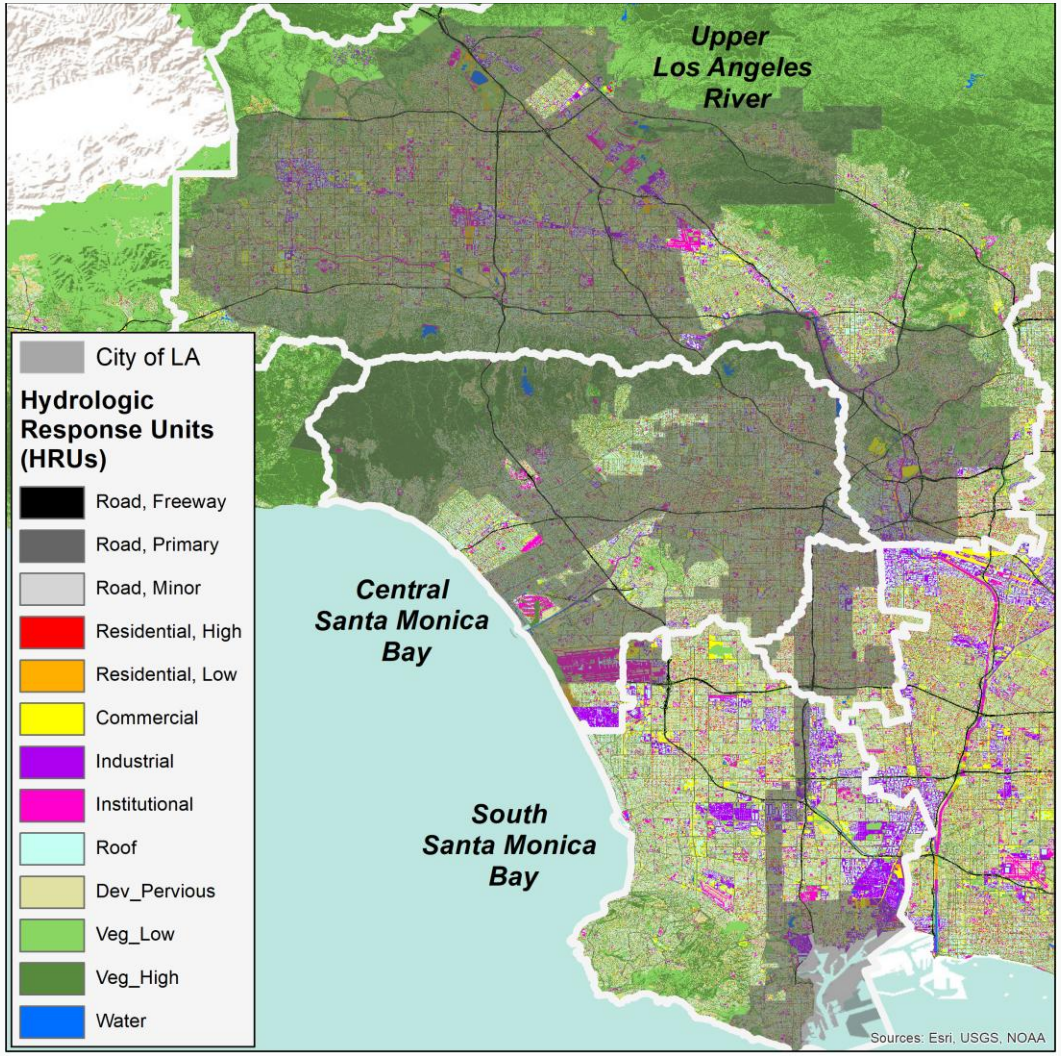
WMMS 2
WATERSHED MANAGEMENT MODELING SYSTEM

Effective Planning & Implementation

- SCW Watershed Plans
- SCW Project Benefit Estimation & Scoring
- Watershed Management Programs (WMPs)

$5+B in Planned Investments

Study Location



Monitoring locations in each Watershed Area will represent:

- UPDATED Land Use Runoff EMCs
- NEW Runoff EMCs for hydrologic response units (HRUs)
- NEW data characterizing pollutant build-up (sediment pollutant concentrations and accumulation rates on HRUs)

Exact locations will be identified during Work Plan development.

Problem Statement, Study Questions & Objectives

Problem Statement

The knowledge gap this Study addresses

- $5B+ in planned SCW investments
- Based on 33 data points, 20+years old
- Priority pollutants not represented
- New data are needed to support effective decision-making

Study Questions

What this Study aims to answer

1. At what concentrations are priority pollutants found in runoff from land uses?
2. At what concentrations are priority pollutants found in runoff from HRUs?
3. What are the accumulation rates, pollutant concentrations, and particle size distributions of sediment on HRU surfaces?

Objectives

How Study Questions investigate the Problem

1. Update EMC datasets characterizing land use runoff
2. Generate new EMC data characterizing HRU runoff
3. Characterize sediment accumulation rates, pollutant concentrations, and particle size distributions on HRU surfaces.

Prior Similar Studies

Have any been done before? How this differs?

- Existing Data: LA County (1994-2000) and SCCWRP (2001-2005)
- Key Differences of this Study:
  - Includes HRU data needed for current modelling
  - Characterizes priority pollutants (e.g., PCBs, pesticides) using more sensitive analytical methods
  - Represents current conditions

Study Methodology

Data Collection

How and under what conditions data is gathered

- **Land Use Runoff Sampling**: Composite samples at historical locations under variable storm conditions.
- **HRU Runoff Sampling**: Composite samples at *new,* representative locations under variable storm conditions.
- **HRU Accumulation Sampling**: Collected using vacuum at representative locations following multiple accumulation periods
- **Constituents:** Priority pollutants driving management (e.g., metals, nutrients, bacteria, PCBs, PAHs, pesticides)

Target Sample Size in Comparison to Existing Data

	Existing Data	Pollutant Runoff Study
Land Use Runoff	33	108
HRU Runoff	0	216
HRU Accumulation	0	48

Data Validation

QA/QC and comparison to benchmarks

- Field and Lab QC Samples
- Comparison to performance criteria
- Corrective actions where appropriate

Baseline Conditions

Existing conditions used for comparison

- Comparison to LA County and SCCWRP datasets
- Evaluate changes in pollutant concentrations/loads

Documentation

How records ensure reproducibility

- Work Plan developed with stakeholder input
- Progress Updates throughout Study implementation
- Final Report documenting methods and results
- Final Data Product made publicly available

Expected Outcomes & Alignment

Expected Outcomes

Anticipated results, use cases, and target audience

- **Final Report** summarizing methods, results, key findings
- **Final Data Product** containing:
  - EMCs for representative land uses and HRU
  - Sediment pollutant concentrations and particle size distributions for HRU surfaces
  - Metadata related to QA/QC and interpretation
- **Primary Use Case:** Future updates to the watershed model underpinning the SCW Program
- **Intended Audience**: MS4 Permittees, LA County Flood Control District Staff and Modelers, Project Developers

Alignment

Fit with Watershed Plans or WASC SIP priorities

- Supports multiple Actions identified in the Watershed Plans to implement Strategy 1.1 supporting SCW Goal A: Improve Water Quality:
  - ***Action 1.1.2:*** *Enables identification and prioritization of projects, "in areas with the highest annual load reduction opportunity" by generating updated EMC data for priority pollutants (e.g., zinc, bacteria, phosphorus) to support future updates to the SCW Program watershed model*
  - ***Action 1.1.3:*** *"Invest[s] in research to evaluate and standardize quantification of bacteria, DDTs, PCBs, and trash."*

Summary of Benefits

- Improved understanding of pollutants in LA County stormwater that can inform more effective design of structural projects and non-structural programs.
- Supports future refinements to the watershed model underpinning the SCW Program, leading to:
  - More accurate evaluation of project benefits through the SCW Projects Module
  - Selection and siting of projects with greater pollutant load reduction potential
  - Greater water quality benefit for each SCW investment

Study Team & Dissemination

Study Team

Lead entity, partners, relevant expertise

- **LASAN Watershed Protection Division:** Experienced in managing large monitoring projects and studies (e.g., CIMPs in each WA, special studies addressing various pollutants
- **Consultant Team:** Selected via City's contracting process to provide complementary expertise and capacity

Regulations

If applicable — relevant regulatory requirements

- Supports effective implementation of LA MS4 Permit by:
  - Improving selection and siting of projects in Watershed Management Program (WMPs)
  - Supporting enhanced implementation of other Permit-required stormwater program elements (e.g., MCMs).

Engagement & Dissemination

How results will be shared, incl. SCW Program website

- **Stakeholder Meetings** throughout implementation:
  - Input and comment on Work Plan
  - Progress update meetings
  - Input and comment on Final Report and Data Product
- **Publicly Available Results**:
  - Final Study Report
  - Final Data Product

Cost & Schedule

TASK	DESCRIPTION	COST	COMPLETION DATE
Task 1. Pre-Study and Work Planning	Draft and Final Work Plan Development	$140,000	12/31/2028
Task 2. Study Implementation	Sample Collection; Data Management and QA/QC; Stakeholder Meetings and Progress Updates; Project Management	$3,167,500	6/30/2033
Task 3. Post-Study	Data Analysis; Draft and Final Reports; Final Data Product	$192,500	6/30/2033
TOTAL COST		**$3,500,000**	

Cost Share

Total Cost Share: $0

Study Collaborators are currently implementing CIMPs and will evaluate the ability to leverage those efforts to collect and analyze samples to support the Study.

Funding Request by Watershed Area

WASC	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
CSMB	$111,454	$140,300	$139,988	$139,988	$91,270	$623,000
SSMB	**$72,634**	**$91,431**	**$91,228**	**$91,228**	**$59,479**	**$406,000**
ULAR	$442,062	$556,469	$555,234	$555,234	$362,001	$2,471,000
TOTAL	**$626,150**	**$788,220**	**$786,450**	**$786,450**	**$512,750**	**$3,500,000**

Watershed Planning Alignment

GOAL A: IMPROVE WATER QUALITY, STRATEGY 1.1:

- ✓ ***Action 1.1.2:*** *Enable accurate identification and prioritization of projects, "in areas with the highest average annual load reduction opportunity for zinc, total phosphorus, and bacteria."*
- ✓ ***Action 1.1.3:*** *Study is an opportunity to, "invest in research to evaluate and standardize quantification of bacteria, DDTs, PCBs, and trash."*

SCW PROGRAM-WIDE STRATEGIES	
IMPROVE WATER QUALITY Goal A	
1.1	Prioritize high performance Projects and Programs in areas with the highest pollutant loads
INCREASE DROUGHT PREPAREDNESS Goal B	
2.1	Link MS4 compliance and water supply planning to maximize stormwater capture for water quality and water supply*
IMPROVE PUBLIC HEALTH Goal C	
3.1	Evaluate open space and large lot potential, particularly on school campuses*
3.2	Create, enhance, and restore park and green space, especially in high-need communities
3.3	Help communities most affected by extreme heat mitigate and adapt to the effects of climate change
DELIVER MULTI-BENEFITS WITH NATURE-BASED SOLUTIONS & DIVERSE PROJECTS Goal E, F,G	
4.1	Acknowledge, where feasible, other capital improvement programs that can contribute to regional outcomes*
4.2	Deliver nature-based, multi-benefit Projects and Programs that improve water quality while addressing community priorities and concerns
LEVERAGE FUNDING & INVEST IN RESEARCH & DEVELOPMENT Goal D, H, I	
5.1	Bolster SCW Program and regional coordination to support identification and communication of alternative funding sources and opportunities
5.2	Bolster the Scientific Study Program through enhanced review, coordination, and dissemination of results
EQUITABLY DISTRIBUTE BENEFITS Goal J, K	
6.1	Consider historic land use disparities and environmental justice metrics across the SCW Program area*
6.2	Advance equity and prioritize new investments particularly in communities not currently served by a SCW Program Project or Program
PROMOTE GREEN JOBS AND CAREER PATHWAYS Goal M	
7.1	Prioritize smaller Projects for which construction and maintenance jobs are more likely to come from a local labor force
7.2	Invest in research and Programs that promote permanent career pathways
7.3	Coordinate job placement and partner with workforce training and pre-apprenticeship programs
ENSURE ONGOING OPERATIONS & MAINTENANCE FOR PROJECTS Goal N	
8.1	Maintain a skilled, local workforce to ensure quality construction and comprehensive operations & maintenance (O&M)
8.2	Ensure sufficient resources are set aside for Project O&M and monitoring
8.3	Promote wildfire resilience through fire-resilient O&M protocols for Projects
8.4	Integrate post-construction monitoring data into O&M plans
PRIORITIZE MEANINGFUL ENGAGEMENT	
9.1	Promote meaningful and sustained outreach and engagement through regional coordination and expertise
9.2	Ensure sufficient resources are set aside for Project O&M and monitoring
9.3	Promote fire-adapted communities through enhanced education and outreach

*SCW Program-wide Priority Strategy based on WASC engagement
Note: While some strategies may not explicitly reference water quality, in accordance with the SCW Program Implementation Ordinance, all SCW Program Projects and Programs are required to include a Water Quality Benefit.

Thank you

QUESTIONS?

Jon Ball,
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LASAN