SAFE CLEAN WATER PROGRAM

SCIENTIFIC STUDY PROGRAM
FISCAL YEAR 2027-2028

A Holistic Assessment of Trash in Watersheds

SSMB WATERSHED AREA

PROJECT LEAD:

Study Lead:
Moore Institute for Plastic Pollution Research
Presenter Name(s):
Dr. Win Cowger

PRESENTATION DATE:
Nov 18, 2026



Scientific Study Overview

OVERVIEW

Five-year study measuring roadside trash, harmonizing monitoring data, modeling watershed transport, and ranking prevention strategies.



NEXUS

Rain and urban runoff mobilize roadside trash through storm drains into rivers and the ocean.

STUDY LEAD

Moore Institute for Plastic Pollution Research (MIPPR)
PI: Dr. Win Cowger

WATERSHED AREA(S)

Lower San Gabriel River; Rio Hondo; South Santa Monica Bay; Upper Los Angeles River; North Santa Monica Bay; Santa Clara River

TOTAL FUNDING REQUESTED

$1.74 million

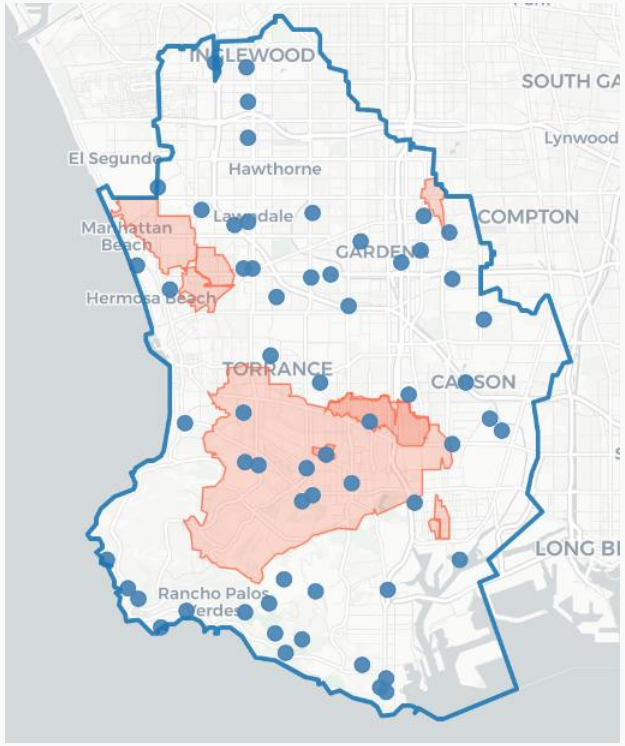
$290,000 per WASC

FUNDING PHASE(S)/FY(S)

Pre-Study: FY27-28
Study: FY28-29 to FY30-31
Post-Study: FY31-32

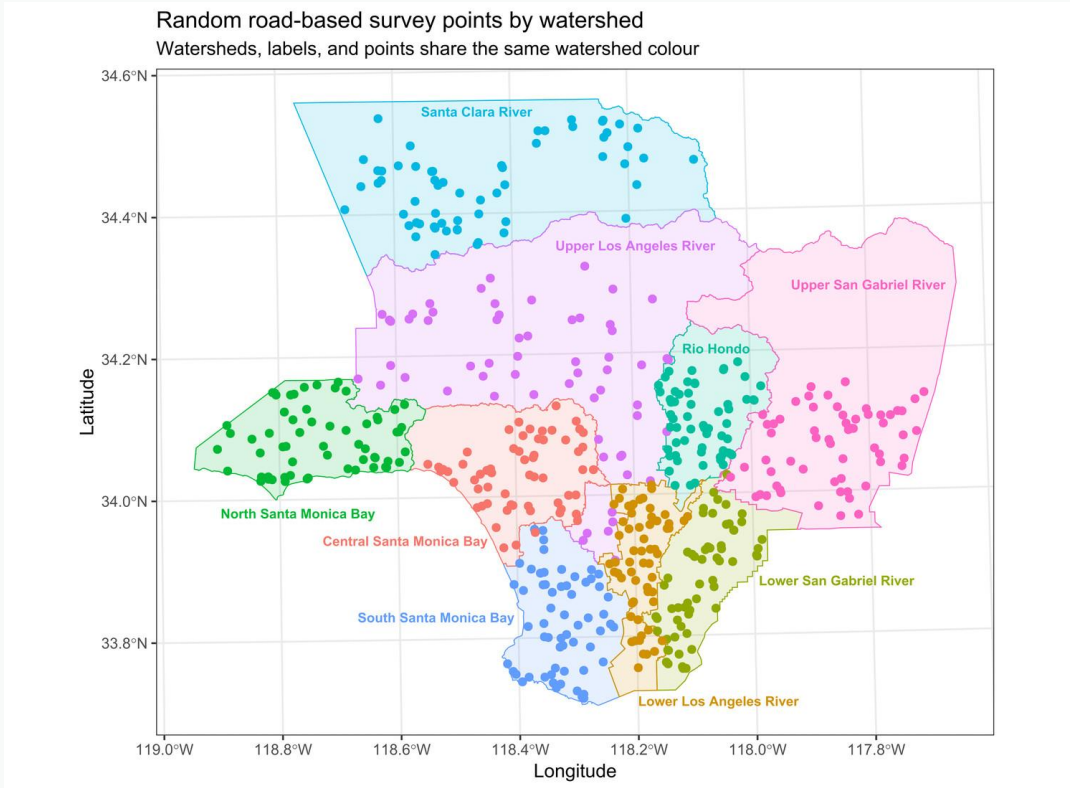
Study Location

South Santa Monica Bay



60 randomized road sites

REGIONAL NETWORK



3 already funded and 6 current requests

Problem Statement, Study Questions, & Objectives

PROBLEM STATEMENT



Roadside litter harms people and the environment and drives recurring cleanup and maintenance costs.

STUDY QUESTIONS



What are the sources of local litter, and where can prevention have the greatest effect?

OBJECTIVES



Measure accumulation, model transport, and rank locally effective prevention.

PRIOR SIMILAR STUDIES

Inland Empire roadsides tested the field method (Cowger et al. 2022). Pinole Creek linked community science to local policy (Cowger et al. 2023). Santa Ana River quantified downstream flux (Cowger et al. 2022). MaTCH harmonizes incompatible trash datasets (Hapich et al. 2024).

Also builds on the Trash Taxonomy, SCCWRP Bight monitoring, the ULAR Street Sweeping Study, and Microplastics in LA County Stormwater.

Study Methodology

DATA COLLECTION

60 randomized road sites per WASC. Paired crews photograph, geotag, classify, remove, and weigh trash, then revisit within one week.

DATA VALIDATION

Crew cross-checks, TAC quality criteria, entry review, and comparisons with DGR, OLVTA, and overlapping datasets.

BASELINE CONDITIONS

Fixed road segments up to 1 km or 100 items. Clean-and-revisit surveys calculate pounds per day; weather and gage data support flux estimates.

DOCUMENTATION

MaTCH harmonization, metadata, version-controlled R/Python, open datasets, annual reports, and a public portal.



5 Outcomes for Each WASC



Local accumulation dataset



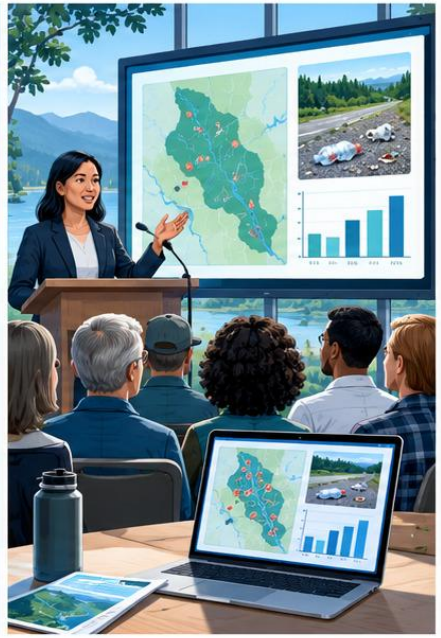
Regional records in one format



Watershed transport model



Ranked prevention options



Briefings, reports, and open portal

Designed for Watershed Plan and MS4 decisions.

Summary of Benefits

WATER QUALITY

WATER SUPPLY (INDIRECT)

OTHER CO-BENEFITS



Identifies trash sources and hotspots, then estimates the pollution reduction expected from prevention.

Less debris available for transport can support stormwater conveyance, capture, and O&M decisions.

Can lower recurring cleanup and maintenance burdens, align decisions with community priorities, and expand access to open data and training.

The study enables these benefits by supplying local evidence and evaluation capacity.

Team and Dissemination



STUDY TEAM

MIPPR: research lead
SCCWRP: TAC lead
Algalita: field training + engagement
5 Gyres: science communication
Local workforce: two early-career adults per area

COLLABORATORS

California Water Boards
City of Long Beach
The Ocean Cleanup

DISSEMINATION

TAC meetings and WASC briefings
Open data, code, portal, and reports

REGULATIONS

SB 54, Trash Amendments, Trash TMDLs

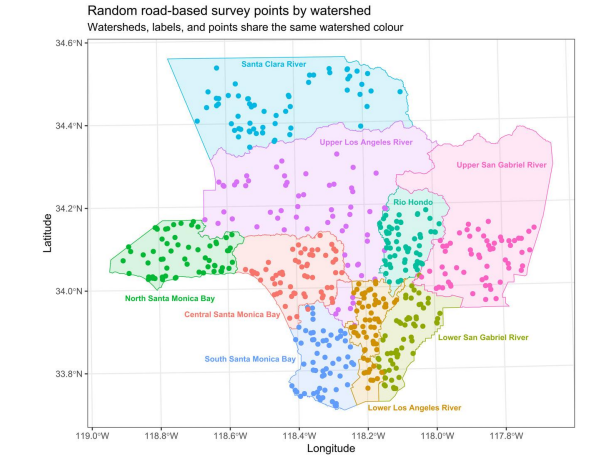
Cost & Schedule



PHASE	WORK	LSGR COST	COMPLETION
PRE-STUDY	TAC, sites, protocols, training, and data agreements	$29,000	12/31/2028
STUDY	Roadside surveys, data integration, modeling, and prevention ranking	$198,000	12/31/2031
POST-STUDY	Validation, WASC reports, publications, and public portal	$63,000	12/31/2032
TOTAL	January 2028 through December 2032	$290,000	12/31/2032

MIPPR facility match: $240,000 project-wide **Total study cost: $1.98M** **Match: 12.1%**

Funding Request by Watershed Area



3 FUNDED

6 REQUESTS

MIPPR FACILITY MATCH
$240,000 PROJECT-WIDE

WATERSHED AREA	2028	2029	2030	2031	2032	TOTAL
Lower San Gabriel River	$29,000	$61,000	$65,000	$72,000	$63,000	$290,000
Rio Hondo	$29,000	$61,000	$65,000	$72,000	$63,000	$290,000
South Santa Monica Bay	$29,000	$61,000	$65,000	$72,000	$63,000	$290,000
Upper Los Angeles River	$29,000	$61,000	$65,000	$72,000	$63,000	$290,000
North Santa Monica Bay	$29,000	$61,000	$65,000	$72,000	$63,000	$290,000
Santa Clara River	$29,000	$61,000	$65,000	$72,000	$63,000	$290,000
TOTAL	$174,000	$366,000	$390,000	$432,000	$378,000	$1,740,000

Each WASC request covers a complete five-year study. All six current requests total $1.74 million.

Watershed Planning Alignment



STUDY ALIGNMENT

Local source, hotspot, cost, and prevention evidence helps WASCs target high-load areas. The SCCWRP-led TAC, open methods, training, and public outputs strengthen regional coordination and community-informed decisions.

#	SCW PROGRAM-WIDE STRATEGY	HOW THE STUDY ADDRESSES IT
1.1	Prioritize high performance Projects and Programs in areas with the highest pollutant loads	Identifies sources and hotspots, then ranks prevention by expected reduction, cost, and local fit.
5.1	Bolster SCW Program and regional coordination to support identification and communication of alternative funding sources and opportunities	Study evidence can strengthen partners' proposals and evaluation plans for separately funded implementation.
5.2	Bolster the Scientific Study Program through enhanced review, coordination, and dissemination of results	SCCWRP-led TAC, open methods, WASC reports, public data, portal, and peer-reviewed results.
7.2	Invest in research and Programs that promote permanent career pathways	About two early-career adults per participating WASC support fieldwork, data aggregation, and research.
9.1	Promote meaningful and sustained outreach and engagement through regional coordination and expertise	TAC and community partners shape sites, variables, pilot opportunities, reports, and decision tools.
9.2	Develop and bolster existing resources and support for Project and Program-specific engagement	Wayfinder training, public data, WASC reports, and reusable tools expand access and participation.

Thank you

QUESTIONS?

Study Lead Organization: Moore Institute for Plastic Pollution Research
Presenter Name(s): Dr. Win Cowger