

Central Santa Monica Bay Watershed Area Steering Committee (WASC) Meeting Minutes



Tuesday, December 5, 2023
1:00pm – 3:00pm

Culver City Hall, Patacchia Room
9770 Culver Blvd, Culver City, CA 90232
WebEx

Committee Members Present:

Marcela Benavides, LA County Flood Control District (Agency)
*Matthew Veeh, West Basin Metropolitan Water District (Agency)
*Art Castro, LA Department of Water and Power (Agency)
Susie Santilena, LA City Sanitation and Environment (Agency), Co-Chair
*Darryl Ford, LA City Recreation & Parks (Agency)
Rita Kampalath, LA County Chief Sustainability Office (Community), Co-Chair
*Cecilia Mokler, PSOMAS (Community)
*Gloria Medina, The Solutions Project/SCOPE (Community)
*Maggie Gardner, LA Waterkeeper (Community)
*Matthew Magener, Beverly Hills/West Hollywood (Municipal)
Sean Singletary, Culver City (Municipal)
Roberto Perez, Los Angeles (Municipal)
*Blayne Sutton-Wills, Los Angeles (Municipal)
Michelle Barton, Los Angeles (Municipal)
Bruce Hamamoto, Los Angeles County (Municipal)
Joshua Carvalho, Santa Monica (Municipal)
Mikaela Randolph, Heal the Bay (Watershed Coordinator, non-voting member)
Stephen Groner, S. Groner Associates (Watershed Coordinator, non-voting member)

*Committee Member Alternate

Absent Committee Members

Edgar Campos, T.R.U.S.T. South LA (Community)

See attached sign-in sheet for full list of attendees.

1) Welcome and Introductions

Los Angeles County Flood Control District (District) staff conducted a brief tutorial on WebEx for participants joining online. Rita Kampalath, Co-Chair of the Central Santa Monica Bay (CSMB) Watershed Area Steering Committee (WASC), welcomed Committee Members, shared housekeeping items, and called the meeting to order.

District staff facilitated the roll call of Committee Members. District staff and all Committee Members made self-introductions and a quorum was established.

2) Approval of Meeting Minutes from November 7, 2023

Member Darryl Ford made a motion to approve, seconded by Member Blayne Sutton-Wills. The Committee voted to approve the November 7, 2023 minutes, with 15 votes in favor and 1 vote in abstention (approved, see vote tracking sheet attached).

Central Santa Monica Bay Watershed Area Steering Committee (WASC) Meeting Minutes



3) Committee Member and District Updates

District staff provided an update, noting:

- The Scoring Committee has begun scoring all Round 5 Infrastructure Program (IP) projects and will continue until all projects are scored and rescored as needed. The Baldwin Vista Green Streets IP project was deemed “unable to be scored” and the Scoring Committee requested additional information from the project applicant. The Baldwin Vista Green Streets IP project will be rescored on December 7.
- Fiscal Year 2023-2024 (FY23-24) Quarter 1 (July–September) quarterly reports were due on November 15.
- Municipal Program Annual Reports are due on December 31. This report should cover activities between July 2022 through June 2023. Project developers should notify the District of any expenditures or activities that deviate from the Annual Plan so that the module’s reports can be updated.
- Regional Program Annual Reports are due on December 31. This report should cover activities between July 2022 through June 2023.
- Project Modification Guidelines have been finalized. The purpose of this document is to provide more specific guidance to WASCs, applicants, recipients, and other interested stakeholders when modifications to a Project, project concept, or study are proposed. The new Project Modification Request (PMR) form will facilitate a timely and transparent resolution of proposed modifications. The deadline to submit the PMR form for the current fiscal year was on November 30. On October 19, District staff hosted a virtual information session on Project Modification Guidelines. The recording, presentation, and Frequently Asked Questions (FAQs) are available in the Adaptive Management section of the Regional Program dropdown menu on the [SCW Program website](#).
- The SCW Program’s Spatial Data Library (SDL) now has an instructional video and written guidance document. The SDL can be accessed on the [SCW Program website](#) under the Regional Program dropdown menu.
- The Regional Oversight Committee’s (ROC) Draft Biennial Report will be presented this Thursday, December 7. A vote to initiate the 30-day public period will be held at the ROC meeting. The Biennial Report will be made accessible on the SCW Program website. Committee Members are welcome to attend virtually or in person at the Los Angeles County Public Works Headquarters in Alhambra.

4) Watershed Coordinator Updates

Watershed Coordinator Stephen Groner presented an update on recent engagement events. Presentation slides can be found on the [SCW Program website](#). Recent events include a presentation at the Los Angeles County’s Youth Climate Commission meeting and the second Schools and Stormwater Tour at Northridge Middle School. The Watershed Coordinators will be meeting with Culver City Union School District and other parties interested in stormwater projects, especially in areas where leveraged funding could be pursued.

5) Public Comment Period

No comment cards were received before the meeting. There were no public comments made during the meeting.

6) Discussion

a) Ex Parte Communication Disclosure

Central Santa Monica Bay Watershed Area Steering Committee (WASC) Meeting Minutes



No ex parte communications were disclosed.

b) Round 5 Presentations:

The Scientific Study (SS) presentations can be found on the SCW Program website.

i. SS: Identifying Best Practices for Maintaining Stormwater Drywell Capacity

California State Polytechnic University, Pomona

Presenters: Dr. Ali Sharbat and Dr. Mehrad Kamalzare, Cal Poly Pomona

The project applicant shared that the purpose of this SS is to create a stormwater manual that contains best practices for maintaining deep infiltration infrastructure. Presentation slides can be found on the [SCW Program website](#). Two drywell sites would be selected in the CSMB Watershed Area, and the SS is requesting funds from all SCWP Watershed Areas. The goals of the study, in addition to developing best practices, include training the next generation of engineers. The funding requested over 5 years from all SCWP Watershed Areas is \$4,951,453, with \$408,871 being requested in the CSMB Watershed Area.

Co-Chair Susie Santilena asked the project applicant about whether the study will only consider drywells that are constructed in public rights of way. The project applicant explained that while drywells belonging to public agencies are preferred, the study would be open to discussing with private landowners that are especially interested in having their drywells selected. The applicants prefer selecting recently installed drywells rather than older drywells that might already be significantly clogged. Selecting a newer drywell would help establish a better baseline to track how clogged the drywell may become over the study timeline.

Member Sutton clarified with the project applicant that the study plans on interviewing different agencies and observing maintenance crews to understand current maintenance procedures and evaluate those procedures for areas of improvement.

Co-Chair Kampalath clarified with the project applicant that the study intends to suggest new practices in addition to evaluating existing ones. The study would create a database of maintenance activities observed and develop best practices based on their analysis. The study does not intend to prescribe solutions to each agency or interfere with current practices, but to observe and provide suggestions for improvement.

Member Art Castro noted that the private sector may have some related studies. Member Castro noted that it would be useful for the study to compile the various data and procedures that different vendors currently provide. The project applicant has been working with drywell construction companies, who often provide maintenance manuals specific to their drywells.

Watershed Coordinator Mikaela Randolph asked the project applicants to speak on the ways this SS plans to benefit students. The project applicant explained that each year, a group of 50 to 60 students enroll in senior design classes that span a nine-month timeline. This study would support one of three technical elective courses related to stormwater management that would be offered as a certificate program. The students would receive hands-on stormwater workforce training and be directly involved in the project. Cal Poly Pomona is a Hispanic-Serving Institute and a Minority-Serving Institute, and thus receives federal funding from the Department of Education and National Science Foundation. These federal funds would provide pay to the students working on this project, rather than using funds from the SCW Program.

ii. SS: Street Sweeping Study

City of Los Angeles

Presenter: Jon Ball, City of Los Angeles Sanitation and Environment (LASAN)

Central Santa Monica Bay Watershed Area Steering Committee (WASC) Meeting Minutes



Presentation slides can be found on the [SCW Program website](#). The project applicant mentioned that the two studies being submitted by LASAN are related to each other; both intend to reduce stormwater pollutant loads in receiving waters. This SS, if funded, will be conducted in the CSMB, Upper Los Angeles River (ULAR), and South Santa Monica Bay (SSMB) Watershed Areas. The main purpose of this study is to enhance the City of Los Angeles' existing street sweeping program. The timing is unique given that the City of Los Angeles is concurrently looking to electrify the street sweeping vehicle fleet. The City of Los Angeles has already contributed funds to the first phase of this study, which was conducted in a simulated and controlled environment. The second phase of the study will include sharing results and will be conducted over a three-year period.

Member Bruce Hamamoto clarified with the project applicant that the second phase of the study will only involve streets owned by the City of Los Angeles. The project applicant confirmed that the study would only analyze City of Los Angeles streets but noted that the outcome of the study is expected to still benefit the wider watershed areas given the objectives to improve receiving water quality by controlling point source pollution.

Member Ford noted that the presentation showed the Cities of San Diego, Glendale, Burbank have conducted similar studies and asked how the City of Los Angeles' study would differ from those. The project applicant noted that this study will examine different factors, such as vehicle speed and pollutant particle size, which were not observed by other studies.

Member Hamamoto asked if electrifying fleets is a requirement that all agencies are subject to or if the City of Los Angeles is being proactive, to which the project applicant noted that it seemed like a statewide requirement but cannot confirm.

A Committee Member asked the project applicant how many different types of sweepers will be analyzed. The project applicant explained that the project intends to involve traditional broom sweeper vehicles and vacuum sweeper/regenerative vacuum sweeper vehicles.

iii. **SS: Pollutant Source Characterization Study**

City of Los Angeles

Presenter: Jon Ball, City of Los Angeles Sanitation and Environment (LASAN)

Presentation slides can be found on the [SCW Program website](#). This SS is a five-year study that is being proposed in CSMB, ULAR, and SSMB watershed areas. The study will evaluate different land use types as modeled in LA County's Watershed Management Modeling System 2.0 (WMMS 2.0) modelling software. In addition to collecting pollutant source data, this study will also focus on workforce development. The total cost of this project collectively for the three Watershed Areas is \$3,500,000, with \$623,000 being requested in the CSMB Watershed Area.

Co-Chair Santilena expressed excitement about having more updated data and asked if the Regional Water Quality Control Board (Regional Board) is involved. The applicant explained that the Regional Board has not yet been contacted since the study itself does not affect any current watershed management plans. However, since the study would benefit strategic planning by improving modeling efforts, the Regional Board will eventually be informed.

In response to a question by Co-Chair Santilena, the project applicant noted that it may be difficult to proceed with the study if the ULAR WASC does not fund the study, given that ULAR's share of the requested funding contribution is significant (\$2,471,000).

Member Ford asked why the study is not being expanded to different watersheds if the study is meant to benefit all watersheds. The applicant shared that the initial reason for applying only within CSMB, ULAR,

Central Santa Monica Bay Watershed Area Steering Committee (WASC) Meeting Minutes



and SSMB is because the City of Los Angeles exists within those three watershed areas. However, the applicant noted that LASAN would be open to collaborating with other agencies that exist in other watershed areas, either in the data collection phase or when integrating the model with updated data.

Co-Chair Kampalath confirmed with the project applicant that the study plans to test around 500 samples across more than 50 sites.

Member Hamamoto confirmed with the applicant that the study does not intend to change the actual WMMS 2.0 model and intends to only gather more updated data that eventually could be added to the WMMS 2.0 model. Member Hamamoto noted that the Regional Board accepts the WMMS 2.0 model to inform planning and therefore would be interested in updates to improve the model.

Co-Chair Kampalath clarified with the applicant that the data collected from this study is meant to enhance and augment existing data, not completely replace the older data. The applicant agreed, noting that the older data is good and would benefit from updates.

7) Public Comment Period

There were no public comments.

8) Voting Items

None.

9) Items for Next Agenda

The next meeting is scheduled for Tuesday, January 2, 2024, 1:00pm – 3:00pm and will be hybrid, held in person at Culver City Hall and online via WebEx. See SCW Program website for meeting details. Items on the next agenda include:

- a) Continue Round 5 Presentations

District staff will coordinate rescheduling the next meeting and will send out an attendance survey to Committee Members.

10) Adjournment

Co-Chair Kampalath thanked WASC Members and the public for their attendance and participation and adjourned the meeting.

CENTRAL SANTA MONICA BAY WASC MEETING - December 5, 2023

		Quorum Present				Voting Items
Member Type	Organization	Primary Member	Attendance: In-person ("x" for present)	Alternate Member	Attendance: In-person ("x" for present)	Approval of 11/7/23 Meeting Minutes
Agency	Los Angeles County Flood Control District	Marcela Benavides	x	Mark Beltran		Y
Agency	West Basin Municipal Water District	E.J. Caldwell		Matthew Veeh	x	Y
Agency	Los Angeles City Water & Power	Delon Kwan		Art Castro	x	Y
Agency	Los Angeles City Sanitation and Environment	<u>Susie Santilena</u>	x	Hubertus Cox		Y
Agency	Los Angeles City Recreation & Parks	Cathie Santo Domingo		Darryl Ford	x	Y
Community Stakeholder	Los Angeles County Chief Sustainability Office	<u>Rita Kampalath</u>	x	Rebecca Ferdman		Y
Community Stakeholder	PSOMAS / Business Sector	Alysen Weiland		Cecilia Mokler	x	Y
Community Stakeholder	The Solutions Project / SCOPE	Gloria Walton		Gloria Medina	x	Y
Community Stakeholder	Los Angeles Waterkeeper	Bruce Reznik		Maggie Gardner	x	Y
Community Stakeholder	T.R.U.S.T. South LA	Edgar Campos		Kiara Phillips		
Municipal Members	Beverly Hills / West Hollywood	Joseette Descalzo		Matthew Magener	x	Y
Municipal Members	Culver City	Sean Singletary	x	Yanni Demitri		Y
Municipal Members	Los Angeles	Roberto Perez	x			A
Municipal Members	Los Angeles	Rafael Prieto		Blayne Sutton-Wills	x	Y
Municipal Members	Los Angeles	Michelle Barton	x	Ryan Jackson		Y
Municipal Members	Los Angeles County	Bruce Hamamoto	x	Geremew Amenu		Y
Municipal Members	Santa Monica	Joshua Cavalho	x	Selim Eren		Y
Watershed Coordinator	Heal the Bay	Mikaela Randolph	x			N/A
Watershed Coordinator	SGA Marketing	Stephen Groner	x			N/A
Total Non-Vacant Seats		17			Yay (Y)	15
Total Voting Members Present		16			Nay (N)	0
Agency		5			Abstain (A)	1
Community Stakeholder		4			Total	16
Municipal Members		7				Approved

Other Attendees
Alynn Sun
Brenda Ponton
Charlotte Bloemsmas
Chris Minton
Christopher Vong
Gabriela
Geremew Amenu
Michael Scaduto
Marisol Serrano
Mark Beltran
Mark Nguyen
Conor Mossavi
Nancy Shrodes
Paige Bistromowitz
Rafael
Ryan Parks
Sara



Central Santa Monica Bay
 Watershed Area Steering Committee Meeting
 COMMITTEE MEMBER AND ALTERNATE SIGN-IN: DECEMBER 5, 2023

Member Type	Member Name	Municipality/ Organization	Role	Signature
Agency	Marcela Benavides	Los Angeles County Flood Control District	P	<i>Marcela Benavides</i>
Agency	Mark Beltran	Los Angeles County Flood Control District	A	
Agency	E.J. Caldwell	West Basin Metropolitan Water District	P	
Agency	Matthew Veeh	West Basin Metropolitan Water District	A	<i>Matthew Veeh</i>
Agency	Delon Kwan	Los Angeles City Water & Power	P	
Agency	Art Castro	Los Angeles City Water & Power	A	<i>Art Castro</i>
Agency	Susie Santilena	Los Angeles City Sanitation and Environment	P	<i>Susie Santilena</i>
Agency	Hubertus Cox	Los Angeles City Sanitation and Environment	A	
Agency	Cathie Santo Domingo	Los Angeles City Recreation & Parks	P	
Agency	Darryl Ford	Los Angeles City Recreation & Parks	A	<i>Darryl Ford</i>
Community Stakeholder	Rita Kampalath	Los Angeles County Chief Sustainability Office	P	
Community Stakeholder	Rebecca Ferdman	Los Angeles County Chief Sustainability Office	A	
Community Stakeholder	Alysen Weiland	PSOMAS / Business Sector	P	
Community Stakeholder	Cecilia Mokler	PSOMAS / Business Sector	A	<i>Cecilia Mokler</i>
Community Stakeholder	Gloria Walton	The Solutions Project / SCOPE	P	
Community Stakeholder	Gloria Medina	The Solutions Project / SCOPE	A	<i>Gloria Medina</i>
Community Stakeholder	Bruce Reznik	Los Angeles Waterkeeper	P	
Community Stakeholder	Maggie Gardner	Los Angeles Waterkeeper	A	<i>Maggie Gardner</i>
Community Stakeholder	Edgar Campos	T.R.U.S.T. South LA	P	
Community Stakeholder	Kiara Phillips	T.R.U.S.T. South LA	A	
Municipal Member	Josette Descalzo	Beverly Hills / West Hollywood	P	
Municipal Member	Matthew Magener	Beverly Hills / West Hollywood	A	<i>Matthew Magener</i>
Municipal Member	Sean Singletary	Culver City	P	<i>Sean Singletary</i>
Municipal Member	Yanni Demitri	Culver City	A	



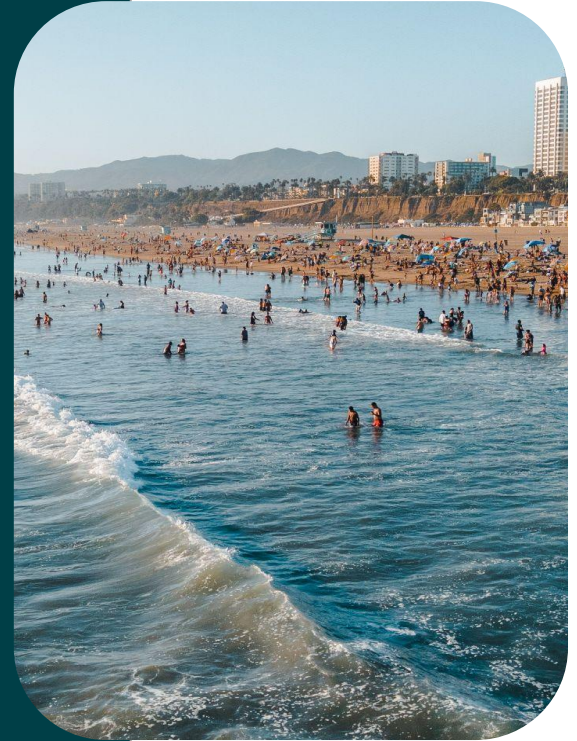
Central Santa Monica Bay
 Watershed Area Steering Committee Meeting
 COMMITTEE MEMBER AND ALTERNATE SIGN-IN: DECEMBER 5, 2023

Member Type	Member Name	Municipality/ Organization	Role	Signature
Municipal Membe	Roberto Perez	Los Angeles	P	
Municipal Member	Rafael Prieto	Los Angeles	P	
Municipal Member	Blayne Sutton-Wells	Los Angeles	A	<i>Blayne Sutton-Wells</i>
Municipal Member	Michelle Barton	Los Angeles	P	<i>Michelle Barton</i>
Municipal Member	Ryan Jackson	Los Angeles	A	
Municipal Member	Bruce Hamamoto	Los Angeles County	P	<i>Bruce Hamamoto</i>
Municipal Member	Geremew Amenu	Los Angeles County	A	
Municipal Member	Joshua Carvalho	Santa Monica	P	
Municipal Member	Selim Eren	Santa Monica	A	
Watershed Coordinator	Mikaela Randolph	Heal the Bay	WC	
Watershed Coordinator	Stephen Groner	SGA Marketing	WC	<i>Stephen Groner</i>

CENTRAL SANTA MONICA BAY

WASC MEETING - December 2023

Watershed Coordinators Updates

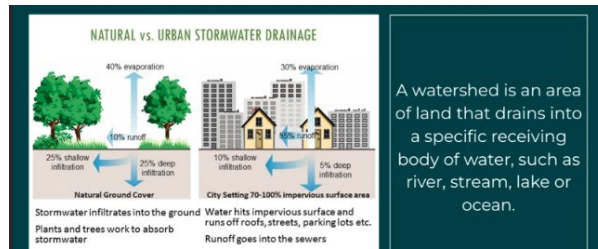


**SAFE
CLEAN
WATER**





Youth Climate Commission Presentation (11/02)



A watershed is an area of land that drains into a specific receiving body of water, such as river, stream, lake or ocean.

SAFE, CLEAN WATER PROGRAM MISSION

MISIÓN DEL PROGRAMA DE AGUA LIMPIA Y SEGURA

CAPTURE IT

Increase water supply

CLEAN IT

Reduce volume of trash that reaches waterways and the ocean

MAKE IT SAFE

Eliminate toxins and chemicals from our waterways

MAKE IT FOR EVERYONE

Provide community benefits

CAPTURARLO

Incrementar el suministro de agua

LIMPIARLO

Reducir el volumen de basura que llega a las vías fluviales y al mar.

HAZLO SEGURO

Elimina toxinas y productos químicos de nuestras vías fluviales.

HAZLO PARA TODOS

Proporcionar beneficios comunitarios



WHAT CAN YOU DO?



Connect

1. **Connect with Your Watershed Coordinator**
 - Identify parties with project ideas

Engage

2. **Engage with Your Respective Watershed Area Steering Committee**
 - Attend a meeting to better understand the projects

Educate

3. **Educate Your Peers and Community on this Program**



Schools Stormwater Tour #2: Northridge Middle School (11/17)



Identifying Best Practices for Maintaining Stormwater Drywell Capacity

Scientific Studies Program by:
California State Polytechnic University, Pomona

Presentation by:
Dr. Ali Sharbat (PhD, PE), Dr. Mehrad Kamalzare (PhD, PE)





Study Overview

Summary of Study:

- Track the infiltration capacity of recently installed drywells over a period of **five years**
- **Two drywell sites** will be carefully selected to represent a range of factors, including:
 - Drywell design & construction
 - Pre-treatment methods
 - Operations / maintenance practices
 - Drywell's basin size & annual runoff volume
 - Land use & traffic volumes
 - Soil types

Why?

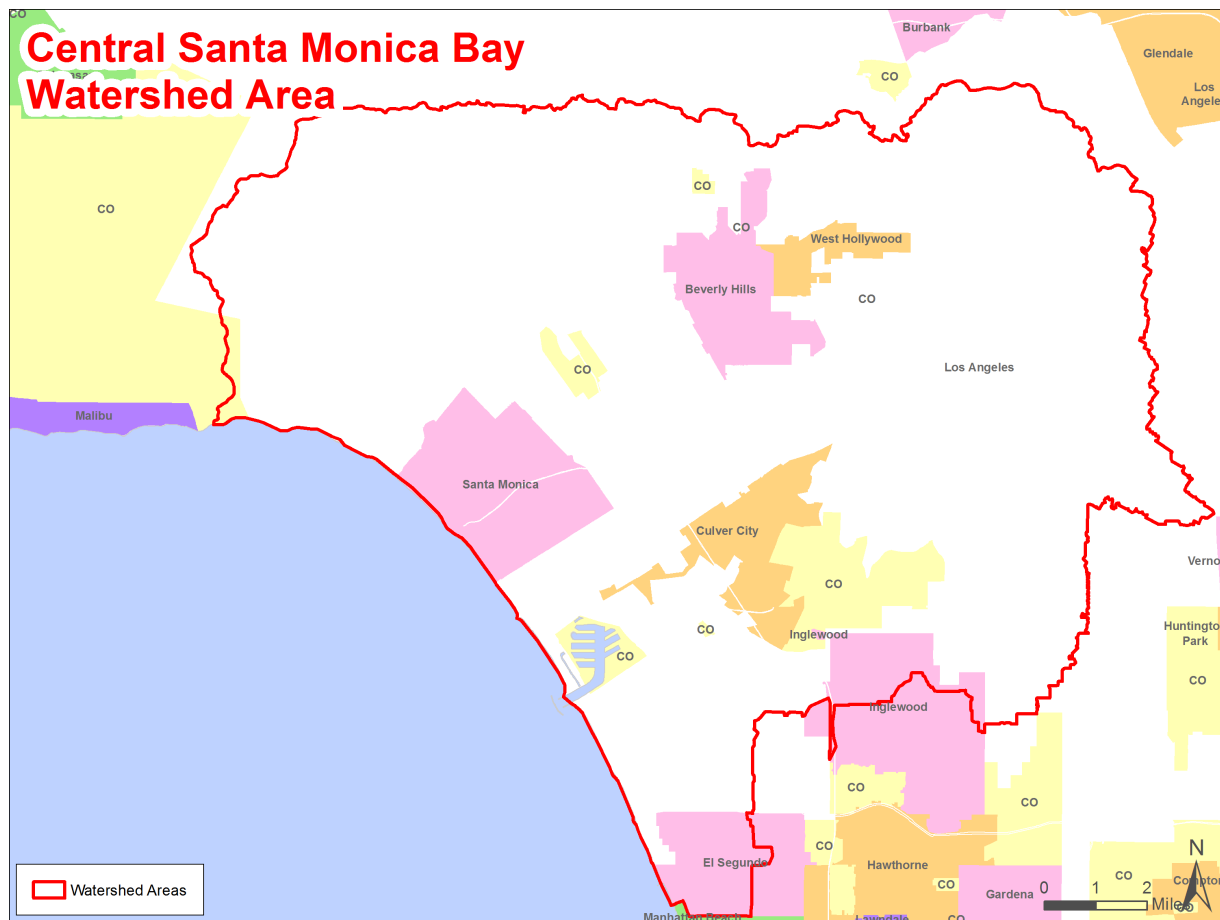
- Tremendous uncertainties in drywell performance & appropriate maintenance procedures
- Drywell systems may be improperly managed and maintained resulting in degraded capacity over time

Outcome

- Identify **best practices** for different drywells with various site conditions & disseminate the findings
- Benefits to local disadvantaged communities (DACs) (workforce development and local stormwater infrastructure improvements)
- Development of trained work-force by the University
- Support regional sustainability goals by promoting stormwater capture and local water supply recharge



Study Location



- **Watershed to be Studied:**
 - Central Santa Monica Bay Watershed
- **Study Location:**
 - Locations will be further chosen from both existing and proposed drywell locations
- **Benefits for the entire LA County:**
 - The implementation of updated best practice will benefit tax-payers via increased drywell cost-effectiveness
 - Improved & more resilient stormwater treatment, reduced pollutant runoff, and enhanced water quality



Similar Studies

- This study would be **the first of its kind** by identifying best practices for maintaining drywell capacity. It appears that there is no study to quantify the effectiveness of LID/GSI maintenance protocols in extending the longevity of drywells
- **Sedimentation compartments** and **vegetative pretreatment** systems were demonstrated to reduce the clogging rate of infiltration systems. (Edwards et. al., 2016)
- **Infiltration infrastructure are prone to clogging** even if there are no suspended sediments introduced to the infrastructure, as evidenced by multiple studies examining physical, chemical, and biological clogging mechanisms in soil columns (Baveye et. al., 1998). These mechanisms are commonly observed in practice, and various physical and chemical causes of clogging have been documented.
- **The geometry of the pore space** is closely related to the **chemical properties of solid particles** in soils. Factors such as electrolyte concentration, organic compound, acidity, redox potential, mineralogical composition of the soil, surface characteristics, and chemical reactions all influence the shape and stability of the pores, and the value of hydraulic conductivity.
- Various carbon/energy sources, such as **plant residues**, and hydrocarbons have been found to both accelerate and enhance soil clogging (Frankenberger et al., 1979). Moreover, addition of **nitrogen** affects clogging (Frankenberger et al., 1979).





Study Details

Study Goals

- Determine which commonly used **drywell design / construction methods** provide the best balance between *cost* and *long-term performance*;
- Determine which common **pre-treatment** and **maintenance** practices provide the best balance between *cost* and *long-term performance*;
- Determine how **soil characteristics** can impact long-term drywell performance and provide recommendations for design and maintenance to address fine-grained soils.
- Develop guidelines for **maintenance practices** and frequency, for different levels of **land-use and traffic loading**;
- Train next generation of **workforce** for the local industry.



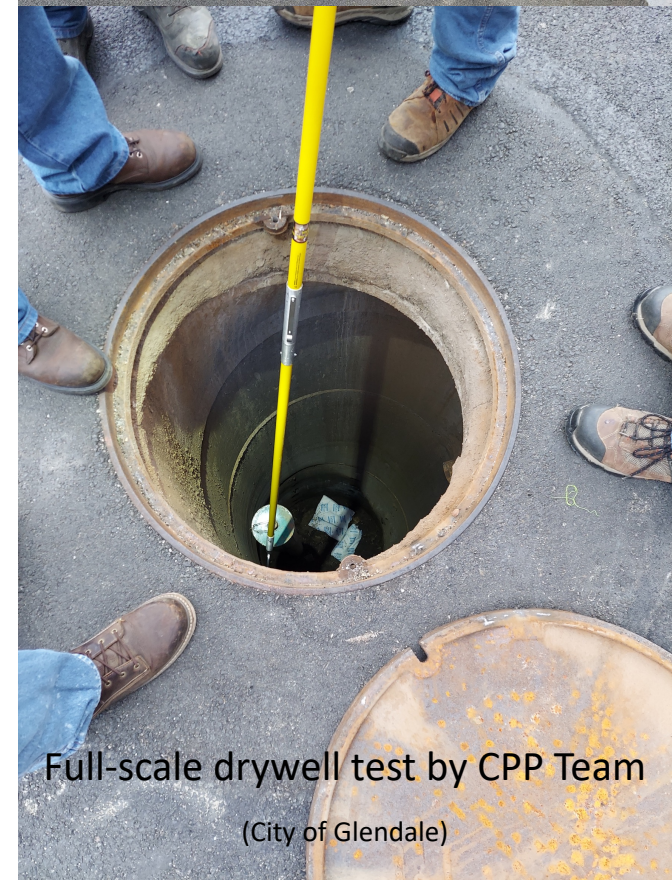
❖ **Stormwater Infiltration is a cost-effective, resilient approach for managing wet weather impacts, that provides many community benefits.**



Study Details

Watershed Benefits

- More accurate and customized post-construction planning for O&M
- More accurate budgeting for drywell maintenance
- More groundwater recharge for less money
- More sustainable and resilient drywells in the watershed
- ❖ Better efficiency and long-term performance of drywell systems
- ❖ Better water quality and improved local water supply (aligned with SCW Goals)
- ❖ **This study's recommendations will optimize the return on investment from stormwater infrastructure, and contribute to the longevity of drywell systems.**

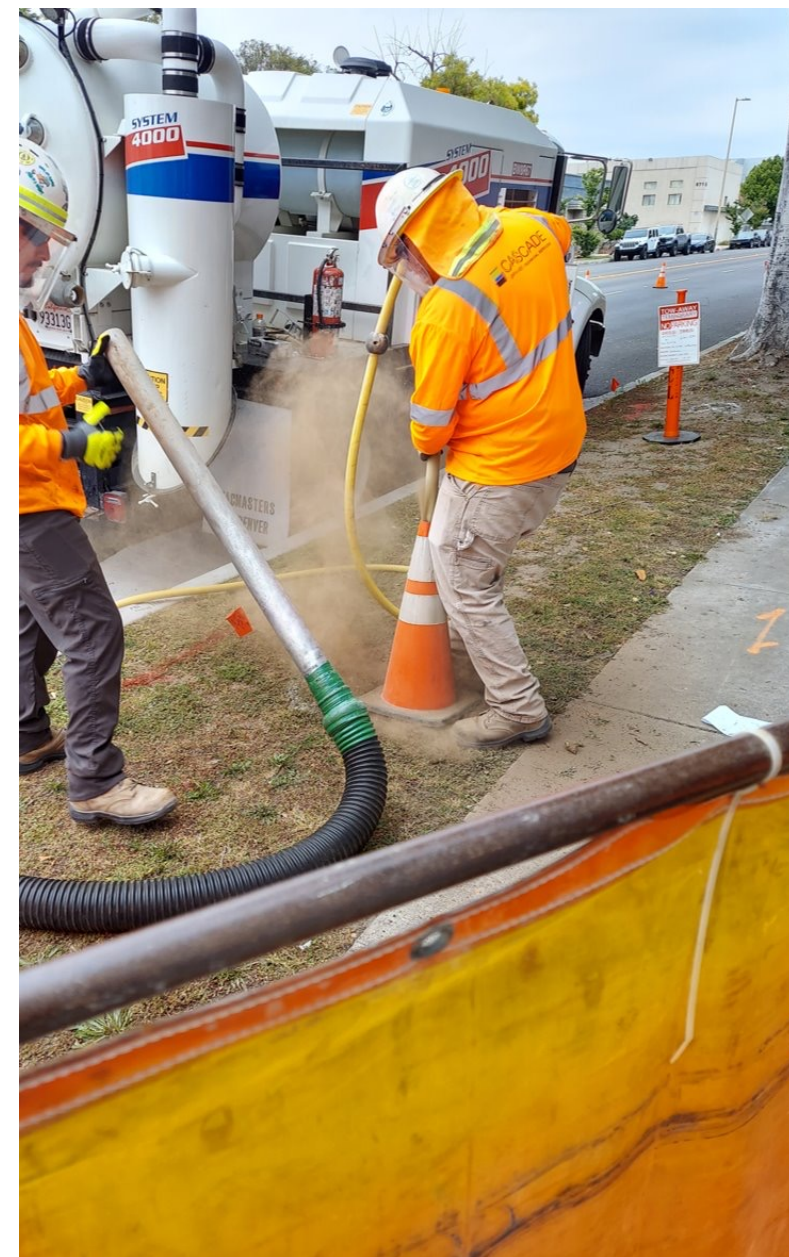


Full-scale drywell test by CPP Team
(City of Glendale)



Scope of Work

- Task 1: Study-site selection
- Task 2: Operations documentation
- Task 3: Planning the field program
- Task 4: Infiltration testing
- Task 5: Field visits for O&M activities
- Task 6: Outreach and engagement
- Task 7: Reporting and publication





Scope of Work and Schedule

Phase	Description	Completion Date
Task 1	Study-Site Selection	06/30/2025
Task 2	Operations Documentation	12/31/2025
Task 3	Planning Field Program	09/30/2025 + (Q1 every following year)
Task 4	Infiltration Testing	06/31/2029
Task 5	Field Visits for O&M Activities	06/31/2029
Task 6	Outreach & Engagement	06/31/2029
Task 7	Reporting & Publications	06/31/2029

Tasks	2024-25				2025-26				2026-27				2027-28				2028-29			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1: Study-Site Selection	■	■	■	■																
2: Operations Documentation			■	■	■	■														
3: Planning Field Program			■	■	■				■				■				■			
4: Infiltration Testing			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
5: Field Visits: O&M Activities					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
6: Outreach & Engagement							■	■			■	■			■	■			■	■
7: Reporting & Publications																	■	■	■	■



Funding Request

WASC	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
CSMB	\$79,989	\$81,181	\$82,176	\$80,937	\$84,588	\$408,871
<i>LLAR</i>	<i>\$79,989</i>	<i>\$81,181</i>	<i>\$82,176</i>	<i>\$80,937</i>	<i>\$84,588</i>	<i>\$408,871</i>
<i>LSGR</i>	<i>\$79,989</i>	<i>\$81,181</i>	<i>\$82,176</i>	<i>\$80,937</i>	<i>\$84,588</i>	<i>\$408,871</i>
<i>NSMB</i>	<i>\$79,989</i>	<i>\$81,181</i>	<i>\$82,176</i>	<i>\$80,937</i>	<i>\$84,588</i>	<i>\$408,871</i>
<i>RH</i>	<i>\$79,989</i>	<i>\$81,181</i>	<i>\$82,176</i>	<i>\$80,937</i>	<i>\$84,588</i>	<i>\$408,871</i>
<i>SCR</i>	<i>\$79,989</i>	<i>\$81,181</i>	<i>\$82,176</i>	<i>\$80,937</i>	<i>\$84,588</i>	<i>\$408,871</i>
<i>SSMB</i>	<i>\$79,989</i>	<i>\$81,181</i>	<i>\$82,176</i>	<i>\$80,937</i>	<i>\$84,588</i>	<i>\$408,871</i>
<i>ULAR</i>	<i>\$208,972</i>	<i>\$211,953</i>	<i>\$214,440</i>	<i>\$211,343</i>	<i>\$220,470</i>	<i>\$1,067,178</i>
<i>USGR</i>	<i>\$199,972</i>	<i>\$202,953</i>	<i>\$205,440</i>	<i>\$202,343</i>	<i>\$211,470</i>	<i>\$1,022,178</i>
TOTAL	\$968,867	\$983,173	\$995,112	\$980,245	\$1,024,056	\$4,951,453



Our Team

➤ Cal Poly Pomona

- Ali Sharbat, PhD, PE - *Water Resources Engineering*
- Mehrad Kamalzare, PhD, PE - *Geotechnical Engineering*
- Alan Fuchs, PhD - *Filtration Engineering*
- Seema Shah-Fairbank, PhD, PE - *Water Resources Engineering*
- Yasser Salem, PhD, PE - *Professional Civil Engineer*

➤ Cal Poly Pomona Students (Future workforce for local stormwater projects)

➤ University of California Santa Barbara

- Hugo Loaiciga, PhD, PE - *Hydrologist*

➤ Private Consultants

- Scott Kindred, P.E. (Kindred Hydro, Inc., State of Washington) - *Hydrogeologist and Drywell expert*

➤ Local Drywell Experts

- Geologists, engineers, and drywell Contractors
- Local drywell and stormwater infrastructure experts



Summary of Benefits

Benefits to Technical Community:

- Better Stormwater Infiltration Project Planning
- Identifying Best Practices - Accepted by Stakeholders - for Drywell Maintenance with Various Site Conditions
- Accurate and Cost-Effective Drywell Systems

Benefits to LA County Taxpayers:

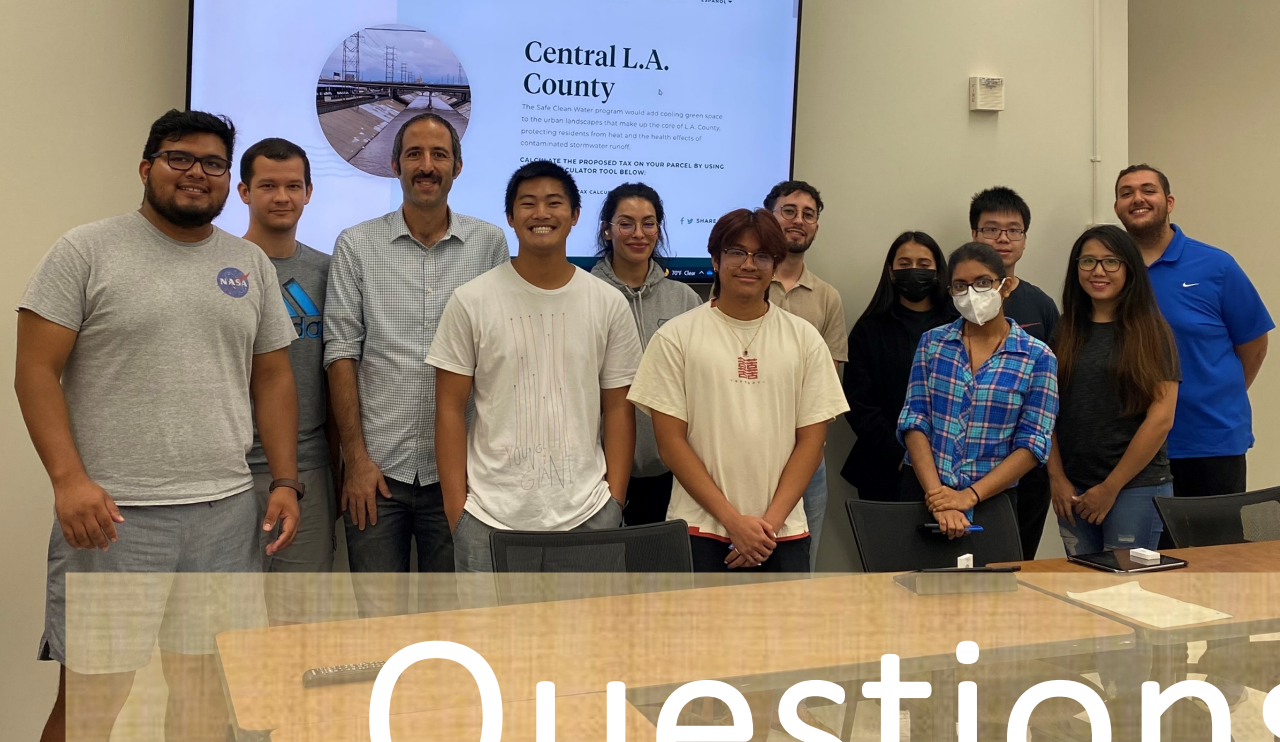
- Municipalities will get the best value for their investment in stormwater infiltration.
- Helping the community meet stormwater management and water-supply objectives faster and cheaper.
- Developing technical skills of underserved minority students at Cal Poly Pomona.
- Serving local Disadvantaged Communities by improving the existing stormwater infrastructure.



Summary of Benefits

Broader Impacts of the Scientific Study for Regional Workforce Development:

- Developing technical skills of underserved minority students at Cal Poly Pomona
- Offering Senior Project (EGR 4810/4820/4830) focused on stormwater engineering
- Developing a new technical elective course focused on Low Impact Development and Green Infrastructure
- Developing of a certificate program focused on stormwater engineering through CPP Extended University
- Hosting minority students sponsored by NSF and Department of Education in our scientific study project
- More than 90 students directly involved



Questions





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Scope of Work

- **Task 1: Study-Site Selection:**

In this task, the core team will work closely with local agencies, cities, and other stakeholders in each watershed basin to finalize the list of drywells for the study. Two to five drywells will be identified for the study in each watershed. A scoring matrix will be developed to assess each site based on the following 9 criteria: 1. Age of Drywell, 2. Drywell Design and Construction, 3. Pre-Treatment Methods, 4. Land-use and Traffic Loading Scenarios, 5. Soil Types, 6. Proximity to a Nearby Fire Hydrant, 7. Minimal Disturbance to Residents and Businesses, 8. Minimal Traffic Control Requirements, and 9. Minimal Access and Permitting Challenges.

- **Task 2: Drywell Operations Documentation**

This task will involve conducting interviews with municipalities that have significant experience in installing, operating, and maintaining drywell systems. These municipalities, located within the western United States, have relied on drywells for many decades, resulting in a wealth of anecdotal knowledge regarding the long-term capacity of these systems.

By engaging in interviews with representatives from these municipalities, we aim to gather valuable firsthand information and document their experiences.

- **Task 3: Planning the Field Program**

This task will involve conducting a detailed assessment of the selected drywell locations in collaboration with the relevant agencies responsible for overseeing these sites.

By working closely with these agencies, we will gather information about the specific characteristics and conditions of each drywell site.

The survey process will involve evaluating the accessibility of each drywell and assessing the availability of nearby fire hydrants.

We will thoroughly examine the requirements for permits, right of entry, and any other necessary documentation to ensure compliance with legal and regulatory protocols. In cases where access to the drywell sites is challenging, we will develop appropriate strategies to obtain the required permissions.



Scope of Work (cont.)

- **Task 4: Infiltration Testing and Flow Rate Monitoring**

Initial Infiltration testing will be conducted in each of the drywells as soon as the appropriate and suitable drywells were identified in each watershed ideally starting Q4 of year 1 of the project.

A constant head infiltration test will be conducted in each drywell by adjusting the flow rate to maintain a constant ponding depth in the drywell for a period of 4-6 hours. A pressure transducer will be installed in the bottom of the drywell to monitor the ponding depth during the test. Water will be supplied by the nearest fire hydrant and the flow rate will be measured using a flow meter.

A pressure transducer will be installed in the drywell following the infiltration test to monitor water levels and document runoff events during the duration of the study.

The water level data will be downloaded twice a year.

Based on results of the infiltration testing and methods provided by Kindred and Reynolds (2020), the water levels can be used to estimate flow rates into the drywells and determine how much runoff is infiltrated through the drywell. This is a much more cost-effective way to estimate runoff compared with retrofitting the drywells to include a flow meter.

Infiltration testing will be conducted every year in all the drywells to determine the change in capacity over time and evaluate the effects of different runoff volumes and any changes in operation and maintenance procedures.

- **Task 5: Field visits for Operation and Maintenance Activities**

The primary objective of this task is to compile a comprehensive record of the maintenance activities undertaken, which will contribute to understanding the relationship between maintenance practices and the long-term performance of drywells. This task involves comprehensive tracking and documentation of maintenance activities conducted at each drywell throughout the duration of the study.

It is anticipated that the municipality responsible for the drywell will carry out regular maintenance activities to ensure optimal functionality. To facilitate this process, the project team will maintain close communication with the maintenance staff, actively monitoring and recording both past and planned maintenance activities.

The project team will be physically present at the drywell sites to observe and document a selected number of maintenance events. By being on-site, they will have the opportunity to gather valuable firsthand information about the maintenance procedures employed. Whenever feasible, the team will document the quantity and nature of materials removed during each maintenance event, distinguishing between trash and sediment.



Scope of Work (cont.)

- **Task 6: Outreach and Engagement**

The purpose of this task is to ensure that potential users of these drywell infiltration testing and design methods are engaged during the study and the methods meets their needs when the work is complete. Outreach and engagement will include:

- Forming an Advisory Committee
- Integration into Engineering Courses
- Workshops with interested stakeholders to present results and solicit feedback.
- Presentations at conferences and technical meetings.
- Regular emails to present results and solicit feedback.

Outreach will be targeted at stakeholders such as regulators, municipal stormwater managers, and civil/geotechnical/hydrogeologic professionals that regularly conduct infiltration testing and design.

- **Task 7: Documentation and Reporting**

Interim quarterly reports will be submitted during the course of the project. All the interim reports and field procedures developed in the previous tasks will be compiled and summarized in a single technical report. This technical report will summarize the results of the study and provide an assessment of the best practices for stormwater drywell systems. In addition, the results of this study will be summarized and presented to the sponsoring Watershed Area Steering Committees. This will provide the region with methodology for optimal site selection, pre-treatment, drywell design and maintenance plan. The student research assistants participating in this scientific project will undergo comprehensive training, equipping them with the necessary skills and knowledge to contribute to the local stormwater engineering industry. To ensure a smooth transition and knowledge transfer, a peer-mentoring system will be established, connecting graduates from the project with the subsequent cohort of students involved in the ongoing study.

It is expected that one or more peer-reviewed papers will be produced and submitted to a technical journal for publication. This process will ensure that the study results are subject to technical review.

An aerial photograph of the Los Angeles coastline and city grid, showing the ocean on the left and the city extending inland to the right. The image is used as a background for the title slide.

Street Sweeping Study

Scientific Studies Program

Fiscal Year 2024-2025

Watershed Areas: Central Santa Monica Bay, South Santa Monica Bay,

Upper Los Angeles River

Project Lead: City of Los Angeles (LASAN)

Presenter: Jon Ball



Study Overview

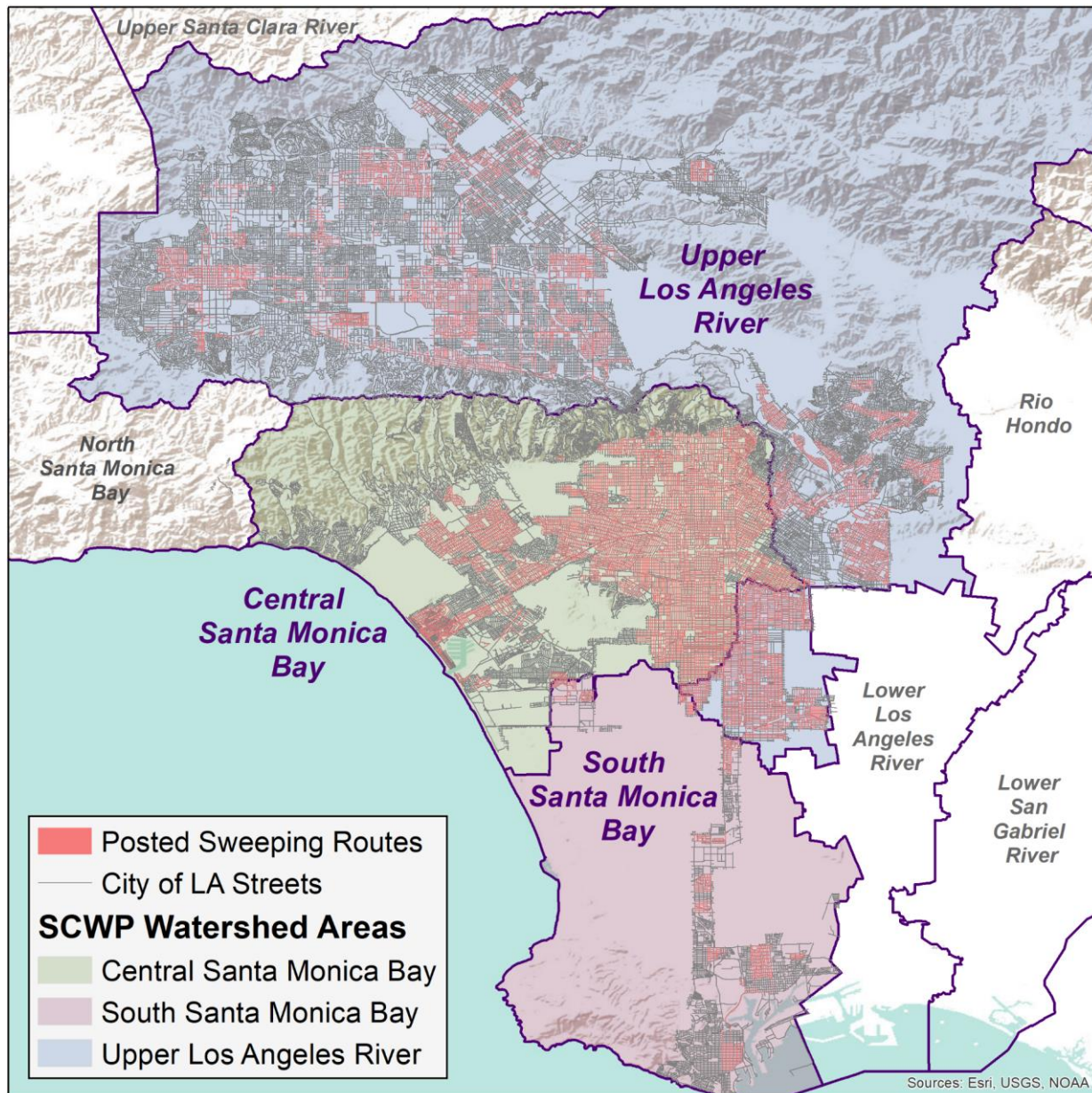
The Street Sweeping Study will collect information that will be used to identify potential enhancements to the City of Los Angeles' street sweeping program that would result in greater removal of pollutants from street surfaces and increased benefit to downstream water quality.

- Street sweeping is recognized as an effective water quality BMP
 - Removes a variety of priority pollutants from street surfaces (e.g., metals, organics)
- The Study will support improved pollutant removal via street sweeping by:
 - Evaluating new and more effective sweeping technologies and approaches
 - Identifying areas and conditions with the greatest pollutant accumulation where sweeping can be prioritized.





Study Location

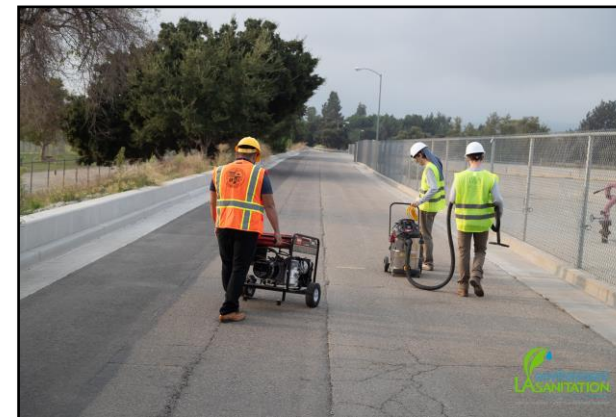


- SCW watershed areas:
 - Central Santa Monica Bay
 - South Santa Monica Bay
 - Upper Los Angeles River
- Study locations will include:
 - Posted street sweeping routes
 - Other City streets
 - Controlled environment testing locations



Study Team

- Study Lead: LASAN Watershed Protection Division (WPD)
 - Jon Ball, Environmental Affairs Officer
 - Miller Zou, Environmental Supervisor II
 - Bryan Truong, Environmental Supervisor II
- Study Partner: StreetsLA
 - Coordinating with staff on work plan development, study implementation, and interpretation of results.
- Study Support: LWA
 - Prior experience in street sweeper testing
 - Currently supporting LASAN with implementation of first phase of Study





Study Details: Problem Statement

- Urban streets accumulate “street dirt” containing a variety of pollutants
 - Metals, PAHs, PCBs, pesticides, and more
- Street sweeping can be highly effective and cost-efficient at removing pollutants, if conducted with pollutant removal in mind
- Pollutant removal by street sweeping can be improved by:
 - Sweeping with the best technologies and approaches
 - Sweeping streets with the highest pollutant loads
 - Sweeping at the right times and frequencies
- **Local data is needed to identify and support improved street sweeping pollutant removal**





Study Details: Objectives and Outcomes

- Objective: Increase pollutant removal via street sweeping by addressing the following questions:

Study Questions		Expected Outcomes
How to Sweep?	<ul style="list-style-type: none">• Which equipment is most effective?• What is the most efficient operating speed?	<ul style="list-style-type: none">• Inform sweeper selection• Inform target operating speeds
Where to Sweep?	<ul style="list-style-type: none">• Where is pollutant loading on street surfaces highest?	<ul style="list-style-type: none">• Inform prioritization of areas with high pollutant load
When to Sweep?	<ul style="list-style-type: none">• How frequently should streets be swept?• When should streets be swept for greatest water quality benefit?	<ul style="list-style-type: none">• Inform sweeping frequency for greater efficiency• Inform targeted sweeping at particular times of year



Study Details - Methodology

Task 1: Compilation of Existing Data

- Inform design of subsequent tasks (e.g., site selection)
- Data Types: Sweeping routes, street conditions, land use, traffic volume

Task 2: Sweeper Effectiveness Testing

- Evaluate pollutant removal efficiencies of existing mechanical sweepers and potential new sweepers (e.g., regenerative air, vacuum, electric)
- Controlled environment and real street testing

Task 3: Street Dirt Characterization

- Sample sites representing varied land uses, traffic volumes, times of year
- Measure pollutant concentrations, loadings, and accumulation rates

Task 4: Reporting

- Annual status memos and final report summarizing results
- Communication tools and data products to inform street sweeping implementation

Task 5: Project Management

- Includes coordination w/ StreetsLA



Study Details – Relationship to Other Studies

- Previous Studies
 - City of San Diego (2008-2014), Cities of Burbank and Glendale (2011)
 - Demonstrate potential for improved pollutant removal via street sweeping
 - Lacking current, site-specific data needed to inform City's program
- Ongoing Studies
 - SMC: Focused on quantifying impact of street sweeping on runoff quality
 - City of Santa Barbara: Focused on microplastics
 - Objectives of existing studies are complementary
 - City has reached out to discuss potential collaboration





Cost & Schedule

Phase	Description	Cost	Completion Date
1	Work Plan Development	\$15,000	10/1/2024
1	Task 1: Compilation of Existing Data	\$15,000	10/1/2024
1	Task 2.1: Sweeper Effectiveness Testing – Controlled Environment	\$70,000	10/1/2024
2	Task 2.2: Sweeper Effectiveness Testing – Real Streets	\$400,000	11/1/2025
2	Task 3: Street Dirt Characterization	\$467,000	11/1/2026
2	Task 4: Reporting	\$93,000	9/30/2027
2	Task 5: Project Management	\$20,000	9/30/2027
Total Study Cost		\$1,080,000	
Total SCWP Funding Requested		\$975,000	

Phase 1
Funded by: City of LA
Subtotal: \$105,000

Phase 2
Funded by: SCWP
Subtotal: \$975,000



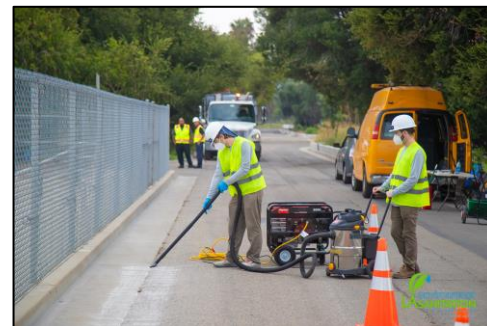
Funding Request

WASC	Year 1	Year 2	Year 3	Total
CSMB	\$71,200	\$80,990	\$21,360	\$173,550
SSMB	\$46,400	\$52,780	\$13,920	\$113,100
ULAR	\$282,400	\$321,320	\$84,720	\$688,350
TOTAL	\$400,000	\$455,000	\$120,000	\$975,000



Summary of Benefits

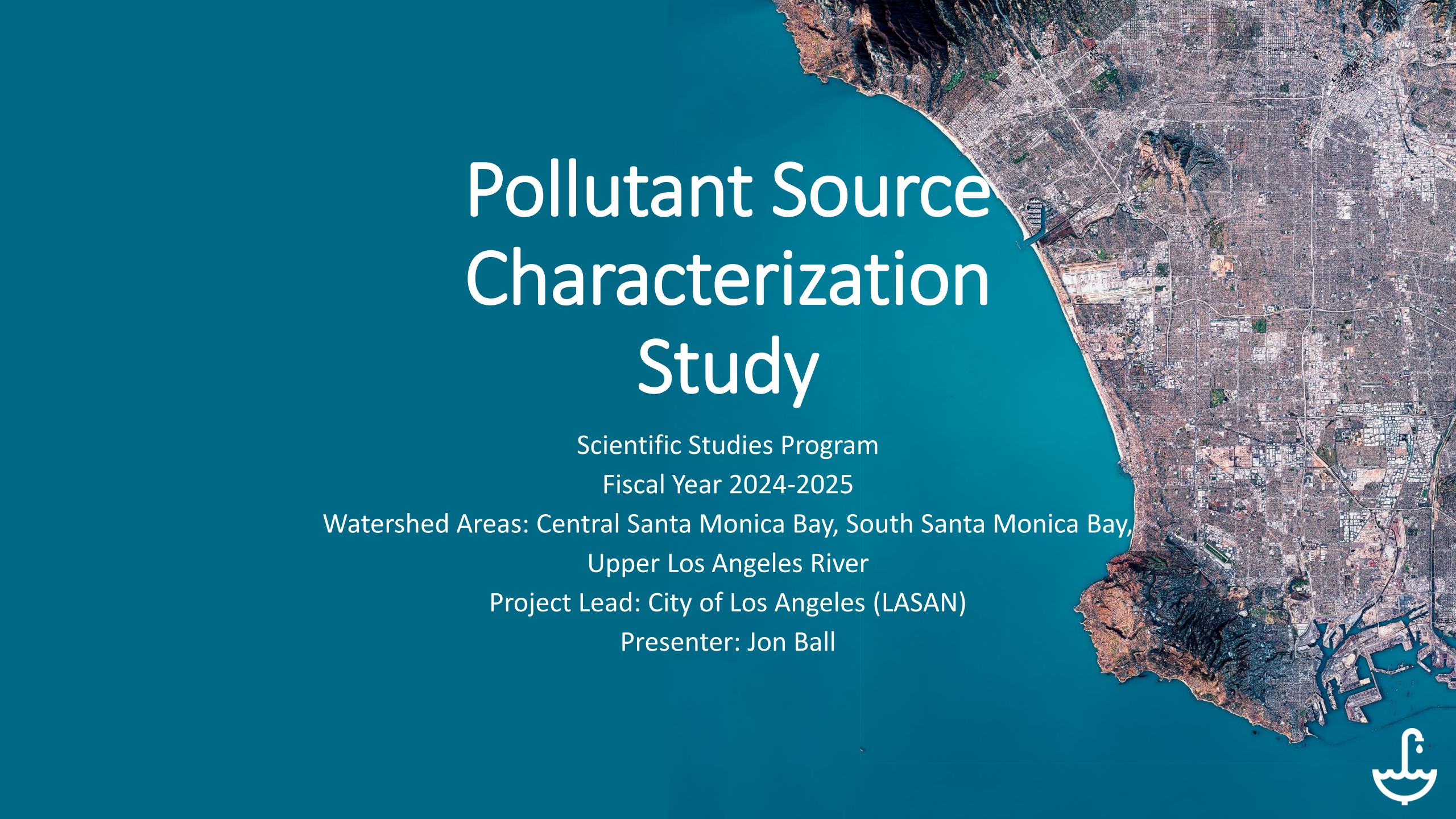
- Identification and support for potential enhancements to the City's street sweeping program
 - Potential to inform street sweeping by other agencies
- Greater recognition, support, and use of street sweeping as a tool for improving water quality, resulting in:
 - Greater pollutant removal, leading to improved water quality (and potentially air quality)
 - More cost-effective attainment of water quality priorities
- Data on pollutant loading from streets that can support other stormwater program elements:
 - Selection, design, and placement of BMPs
 - Water quality modeling



A person is seen in profile on the left, pointing with their right hand towards a whiteboard. The whiteboard is covered with numerous sticky notes of various colors (yellow, white, red) and handwritten text. Some notes are connected by lines, suggesting a flowchart or process map. The room has large windows with blinds in the background, and the overall lighting is dim, with a blueish tint. The text 'Questions?' is overlaid in a white box in the center of the image.

Questions?

Jon Ball
e-mail

An aerial photograph of the Los Angeles coastline and city grid, showing the city's layout and the surrounding terrain. The image is rotated 90 degrees clockwise. The city grid is visible as a dense pattern of streets, and the coastline is clearly defined. The background is a solid teal color.

Pollutant Source Characterization Study

Scientific Studies Program

Fiscal Year 2024-2025

Watershed Areas: Central Santa Monica Bay, South Santa Monica Bay,

Upper Los Angeles River

Project Lead: City of Los Angeles (LASAN)

Presenter: Jon Ball



Study Overview

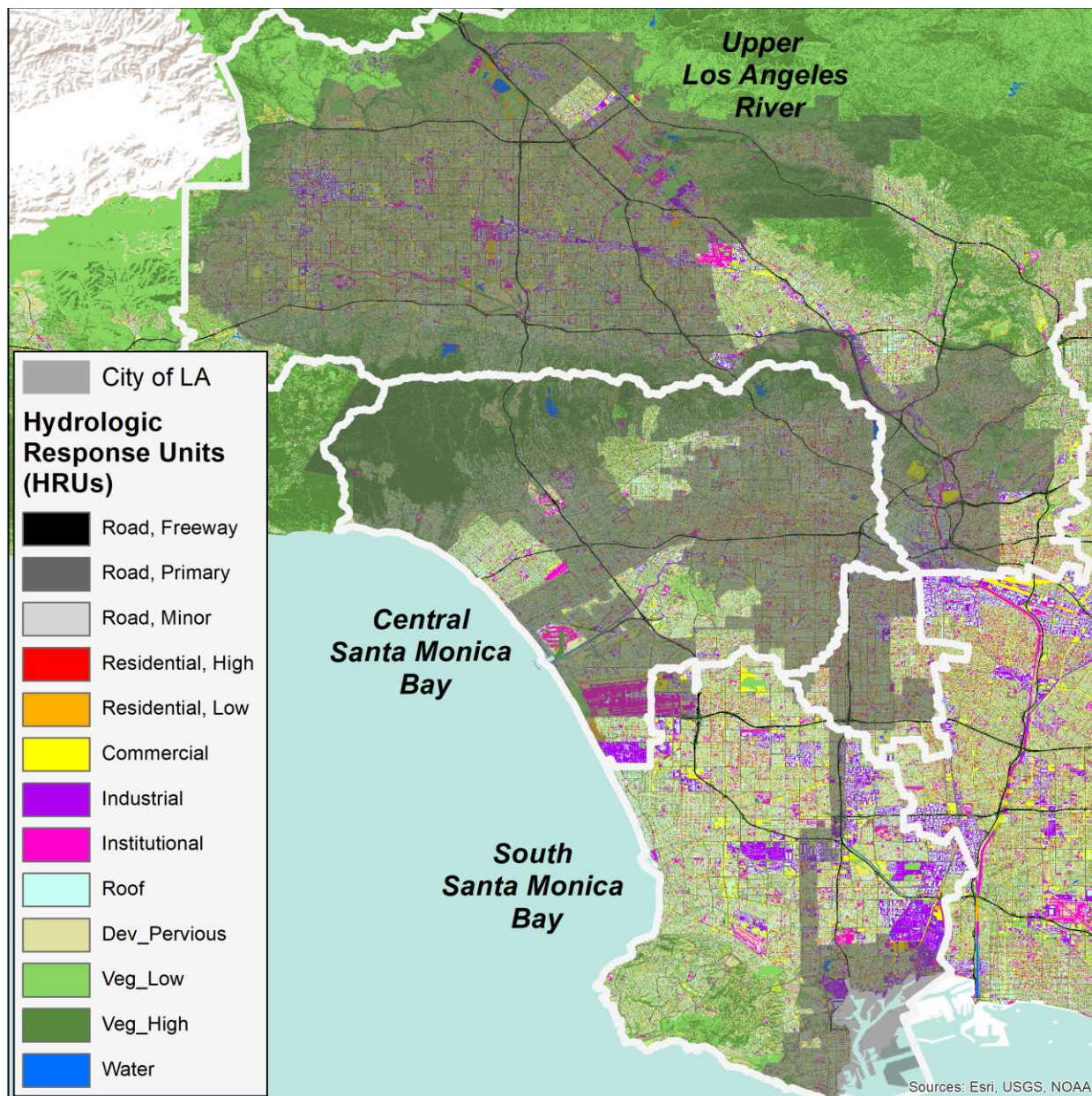
The Pollutant Source Characterization Study will collect data to better understand pollutant sources, improve water quality model configuration and calibration based on current conditions, and support Best Management Practice (BMP) planning.

- The Study will support stormwater capture and pollutant reduction by providing the information needed to:
 - Improve the precision and accuracy of water quality modeling
 - Select and site more effective structural BMPs
 - Identify and implement potential source control BMPs
 - Maximize the water quality benefit from SCWP and other investments





Study Location



- SCW watershed areas:
 - Central Santa Monica Bay
 - South Santa Monica Bay
 - Upper Los Angeles River
- Study locations will include:
 - Sites representing runoff from homogenous land uses
 - Sites representing hydrologic response units (HRUs) modeled in WMMS 2.0



Study Team

- Study Lead: LASAN Watershed Protection Division (WPD)
 - Jon Ball, Environmental Affairs Officer
 - Miller Zou, Environmental Supervisor II
 - Bryan Truong, Environmental Supervisor II
- Study Support: LWA & Paradigm Environmental
 - Accomplished in the implementation of large studies involving multiple stakeholders
 - Experienced in utilizing pollutant source data to calibrate and configure water quality models (e.g., WMMS 2.0)



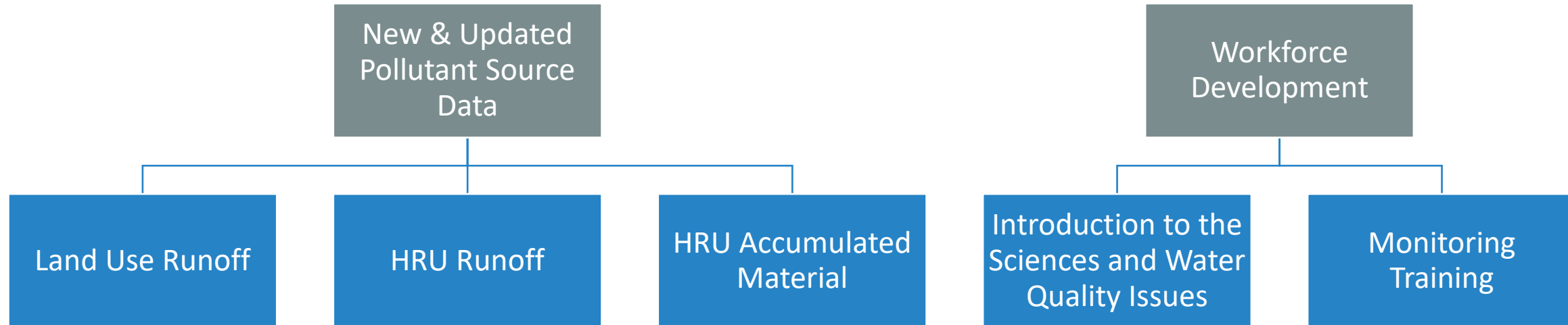
Study Details: Problem Statement

- Existing pollutant source data were collected 20+ years ago by SCCWRP and LA County
 - Do not reflect current conditions
 - Lack sufficient data for important pollutants
 - Lack the spatial resolution of current water quality models
- Modeling and decision making based on existing data can lead to:
 - Implementation of BMPs that provide suboptimal water quality benefit
 - Inefficient use of Safe Clean Water Program and other resources
- Updated data are needed to inform effective management decisions



Study Details: Objectives and Outcomes

- Objective: Improve understanding of pollutant sources to inform more effective implementation of structural and source control BMPs.





Study Details - Methodology

Task 1: Work Plan Development

- Selection of representative sites and constituents
- Design of workforce development approach
- Input from Technical Advisory Group & stakeholders

Task 2: Data Collection and Workforce Development

- Collection of runoff and accumulated material samples
- Coordination with local organizations and institutions to implement workforce development approach

Task 3: Reporting and Data Summary

- Annual and final reports on methodology and results
- Final dataset to support future model calibration and inform other program elements

Task 4: Stakeholder Engagement

- Technical Advisory Group (TAG)
- Interested stakeholders



Cost & Schedule

Phase	Description	Cost	Completion Date
1	Task 1: Work Plan Development	\$110,000	10/1/2025
2	Task 2: Data Collection and Workforce Development	\$2,940,000	5/1/2029
2	Task 3: Reporting and Data Summary	\$275,000	9/30/2029
1 & 2	Task 4: Stakeholder Engagement	\$175,000	9/30/2029
TOTAL		\$3,500,000	



Funding Request

WASC	Year 1	Year 2	Year 3	Year 4	Year 5	Total
CSMB	\$24,920	\$193,130	\$155,750	\$155,750	\$93,450	\$623,000
SSMB	\$16,240	\$125,860	\$101,500	\$101,500	\$60,900	\$406,000
ULAR	\$98,840	\$766,010	\$617,750	\$617,750	\$370,650	\$2,471,000
TOTAL	\$140,000	\$1,085,000	\$875,000	\$875,000	\$525,000	\$3,500,000



Summary of Benefits



Improved understanding of pollutant sources in stormwater



More accurate and precise water quality modeling



Greater water quality benefit from improved BMP selection and siting



Development of water work force and community relationships

A man with a beard is shown in profile on the left, looking towards a wall covered in numerous sticky notes and diagrams. The room appears to be a meeting or workshop space. The lighting is dim, with a blueish tint. The sticky notes contain various handwritten notes and diagrams, some with red dots. A white semi-transparent banner is overlaid across the middle of the image.

Questions?

Jon Ball
jon.ball@lacity.org