ULAR

UPPER LOS ANGELES RIVER

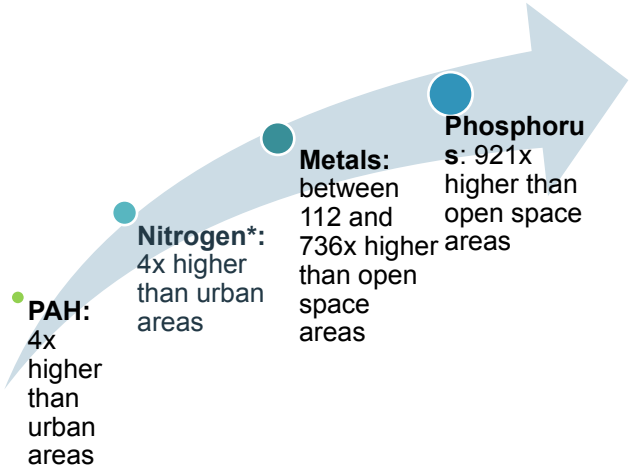
Fire Effects Study in the Upper Los Angeles Watershed Management Area

2023 State of the Los Angeles River Watershed Symposium

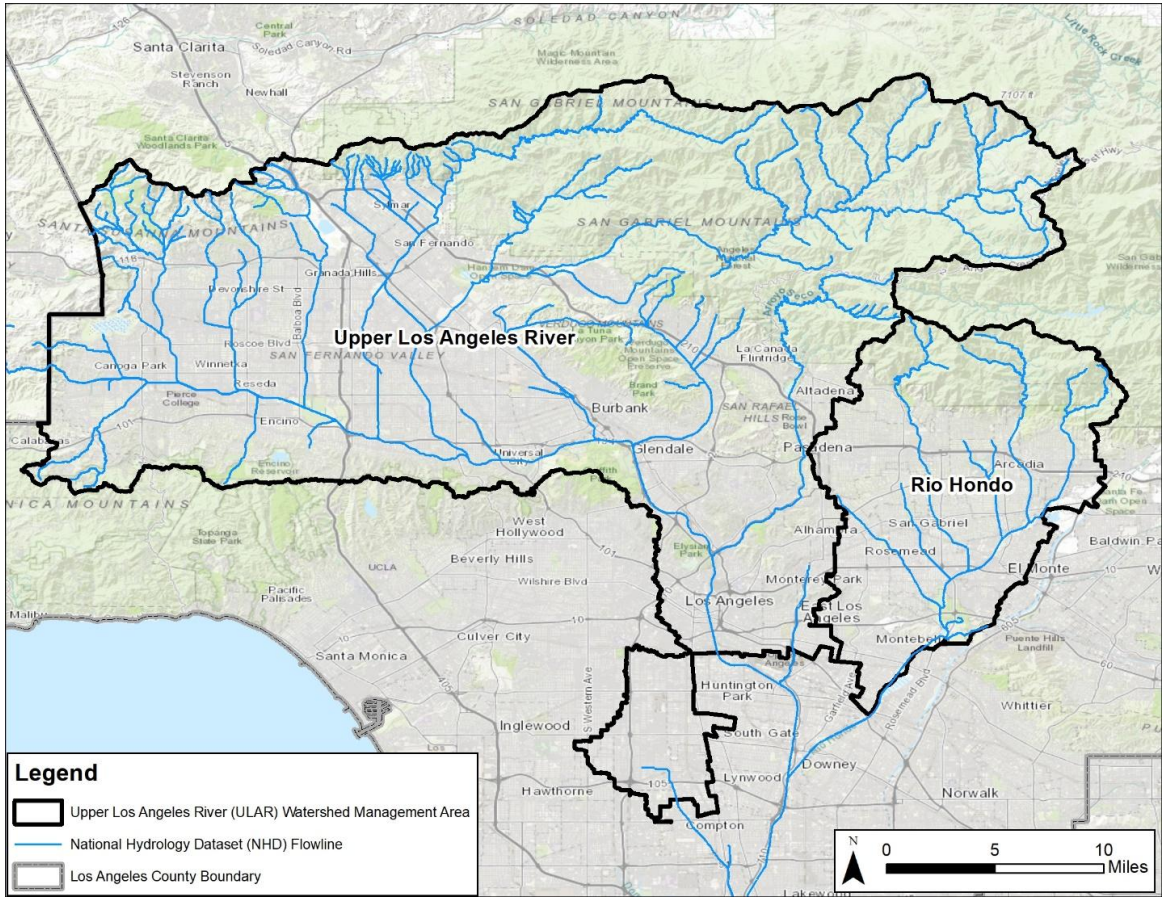
September 19, 2023

Introduction

Wildfires produce pollutants including aerially-deposited particulates, fire retardants and suppression chemicals, sediment, and ash. Increased nutrients and metals have been documented.



*Nitrogen as Nitrate+Nitrite



ULAR Watershed Management Area (WMA) Extent

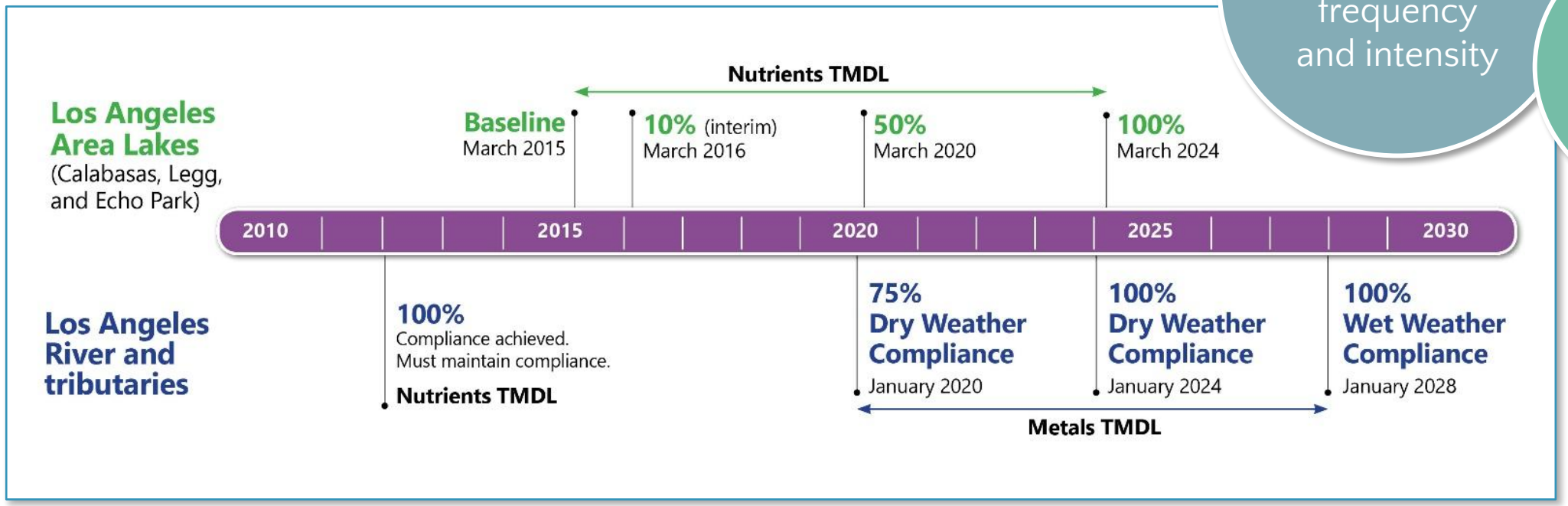
Impacts of Wildfires on Water Quality

Increased metals and nutrients are critical for the ULAR Watershed Management Group due to existing impairments and approaching TMDL compliance deadlines.

Multiple TMDL requirements

Increased wildfire frequency and intensity

62 impaired waterbody segments



Benefits of the Fire Effects Study

Study Benefits to Water Quality, Water Supply and Community:

This study will model post-fire water quality and help inform better BMP design to provide a more resilient environment.

Benefits of this Fire Effects Study include:

Identifying and designing effective management strategies;

Informing the community on the impacts of wildfire on water quality; and

Predicting impacts on water quality from future wildfires and other climate change scenarios

Study Approach

SCW Funding

Historical data review

Coordination with other Studies

Design a monitoring plan

Regional Board collaboration throughout

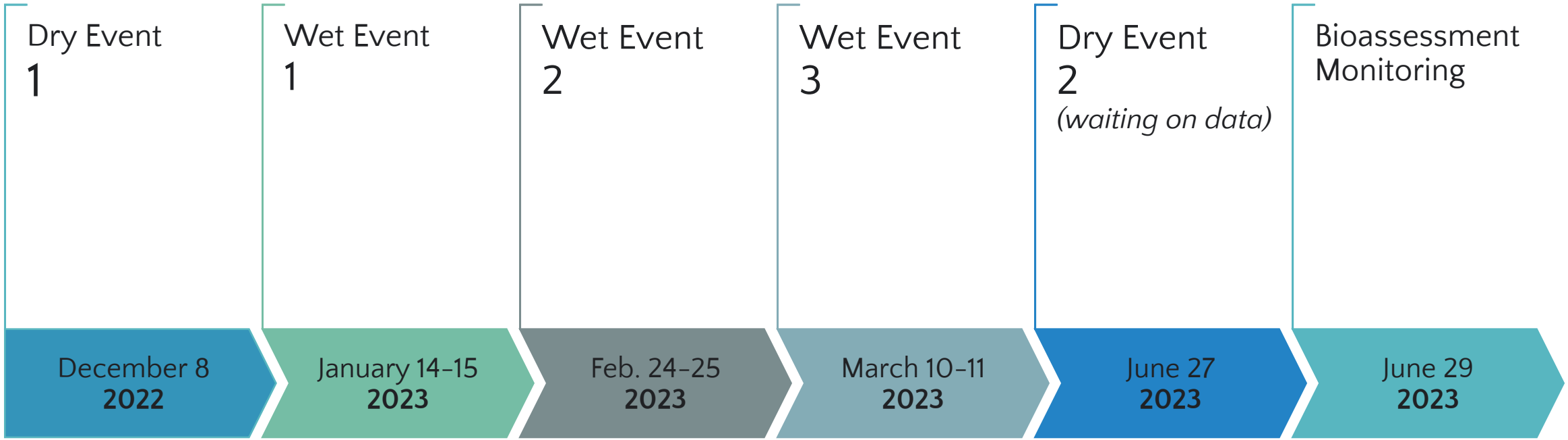
Conduct new monitoring

Technical advisory and data analysis

Modeling fire effects and climate change

Monitoring Summary

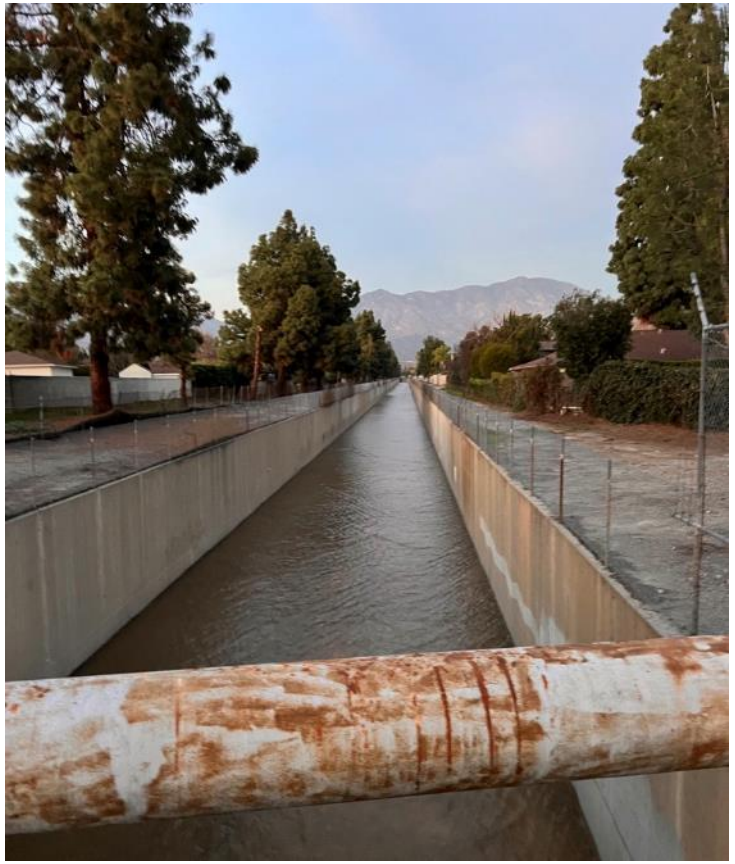
Water Quality Sampling Events:



Dry Weather Study Sampling

- December 8, 2022
- June 27, 2023

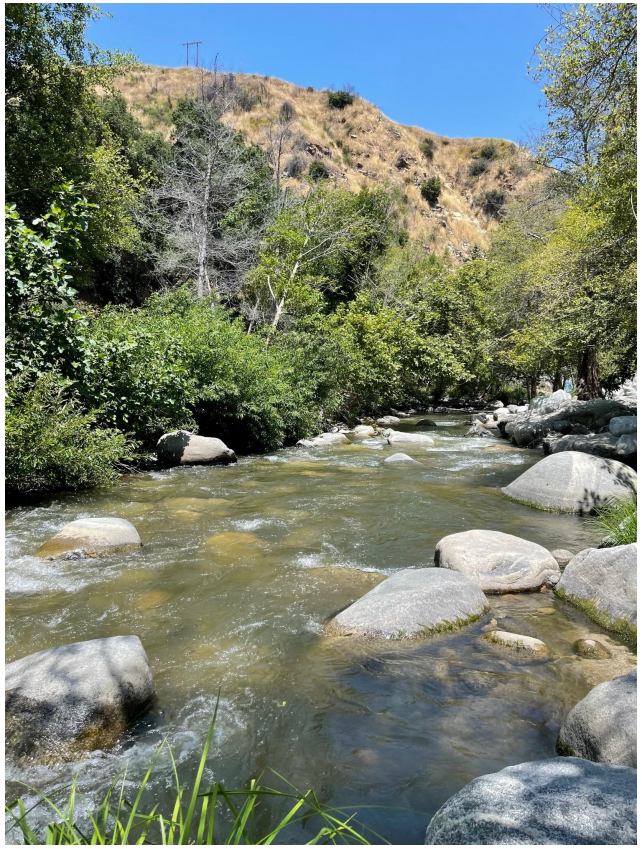
Wet Weather



- January 14-15, 2023
- February 24-25, 2023
- March 10-11, 2023

Bioassessment Monitoring

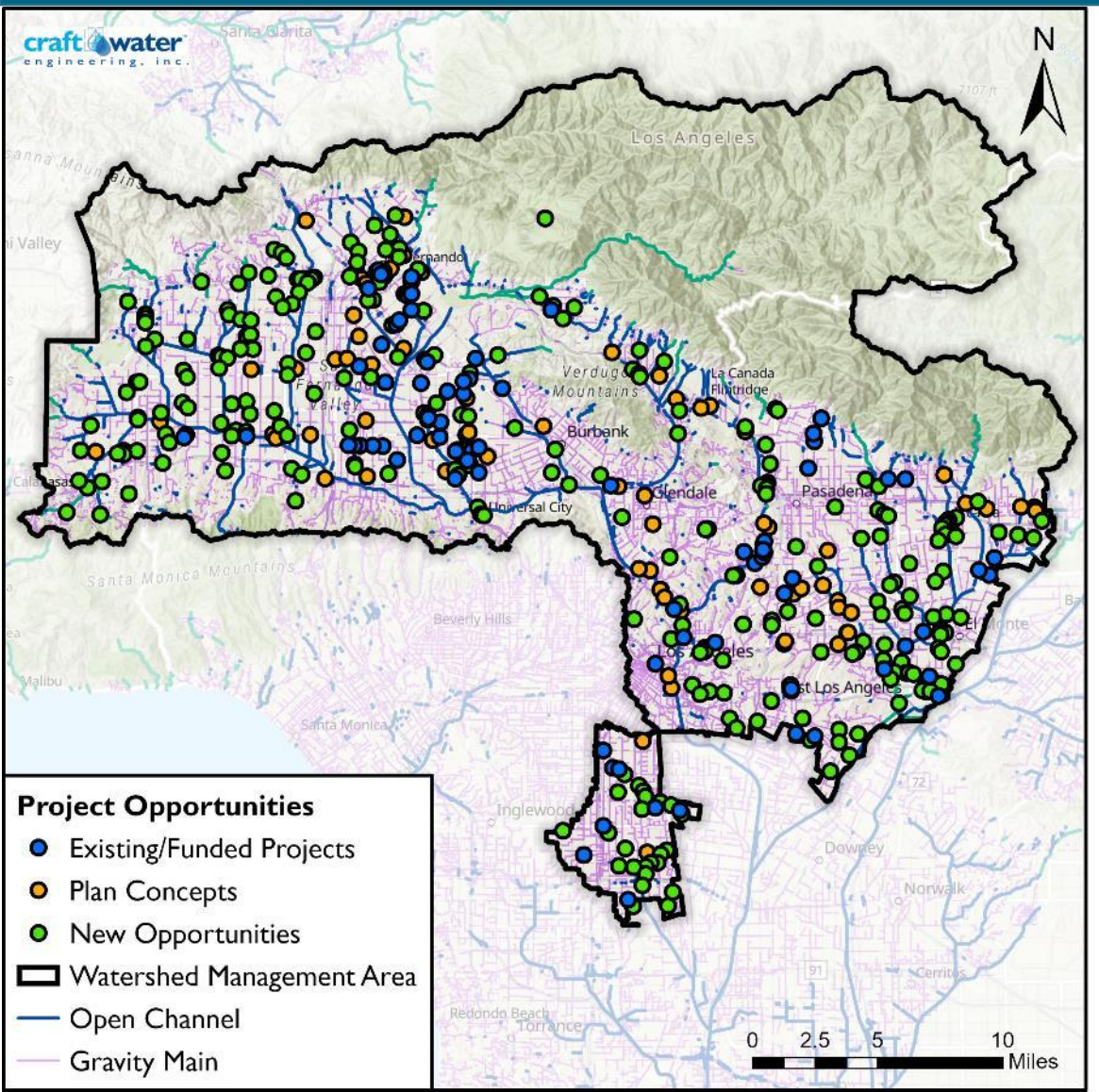
June 29, 2023 at San Gabriel River Sites 405BH2B and SMC00464



Modeling Fire Effects – Processing Historical Data

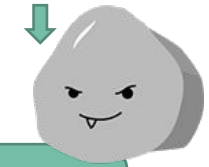
Data Source	Representation
Data within the ULAR WMA	
ULAR CIMP	2015 – Present
Los Angeles River Watershed Monitoring Program (LARWMP)	2008 – Present
Data outside the ULAR WMA representing pre- and post-fire monitoring sites	
San Gabriel River Regional Monitoring Program (SGRRMP)	2020 – 2021: burn sites from Bobcat Fire
Ventura County Monitoring Programs	2015 – 2021: includes sites impacted by Thomas, Woolsey, Hill, Maria, and Cornell Fires
Orange County Monitoring	2007 – 2008: burned areas from Santiago Fire
Riverside County Monitoring	2018: post-fire monitoring from Holy Fire
Previous southern California studies conducted by SCCWRP	
Natural resources data	2001 – 2010
Arroyo Seco (Station Fire)	
Contaminated loading following wildfires	
Aerial deposition (Santa Monica Bay)	

Modeling Fire Effects – Impact to BMP Performance

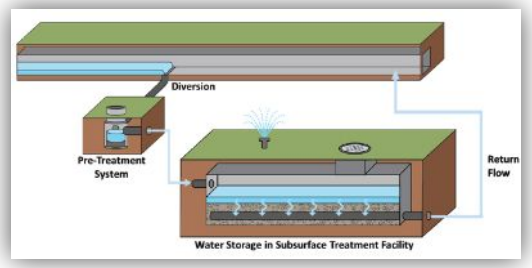


Constructed/Planned BMPs

- Updated inputs from post-fire and climate change scenarios
- Select range of BMP types identified throughout watershed
- Opportunities for more resilient BMP designs
- O&M considerations



Constructed/ Planned BMPs → Range of nutrient and metal loads reduced



Integrate in PreSIP Platform

Engagement Efforts

Meetings

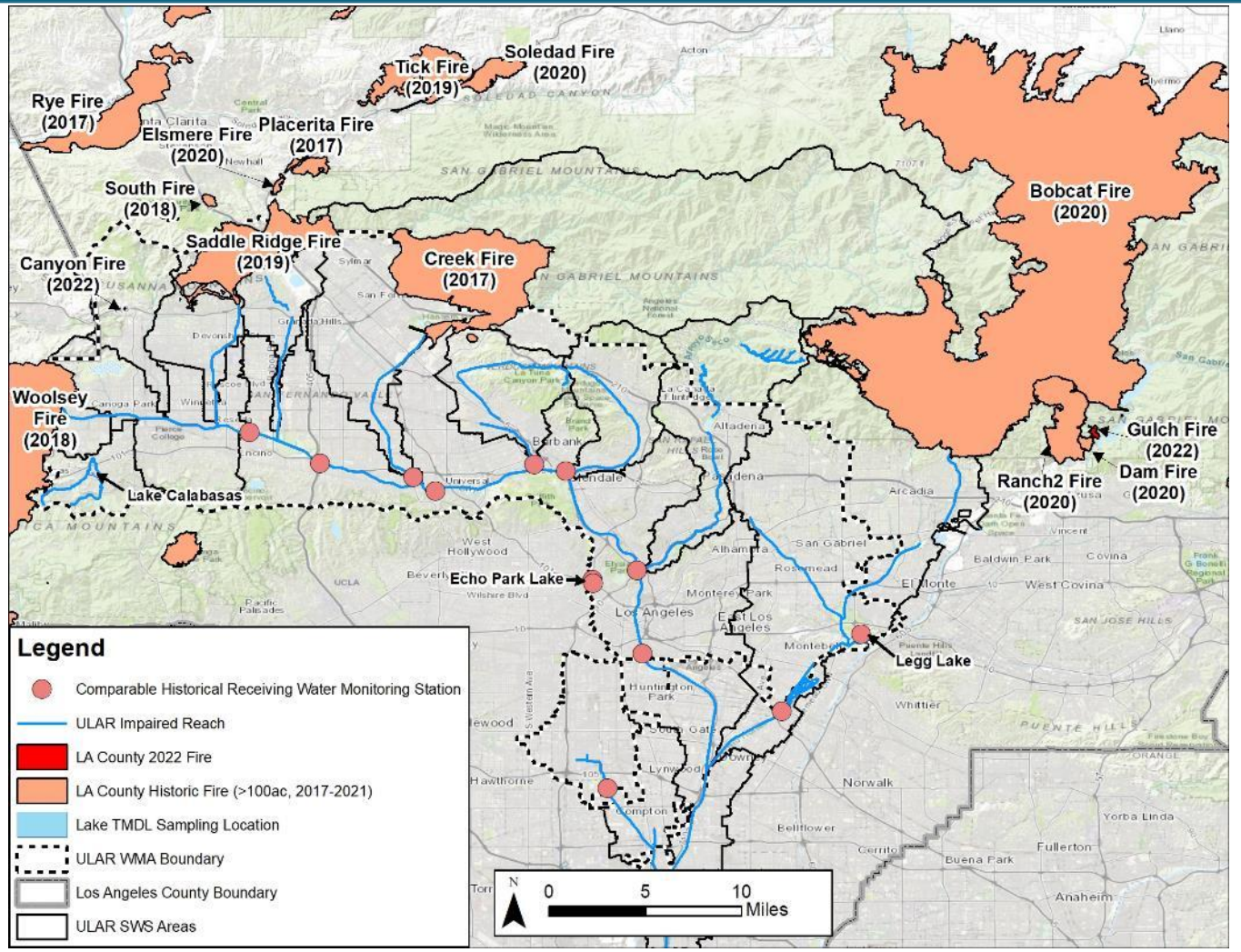
- TAC Meetings– Monthly
- Regional Board Meetings – Quarterly
- Technical Stakeholder Group Kick off meetings – Kickoff, BMP tour, Study Results

Other

- Coordination with CSU-COAST fire researchers
- Coordination with Ken Susilo at Geosyntec
- Coordination with Eric Stein at SCCWRP re: modeling
- Coordination with CalFire re: monitoring prescribed burns

Next Steps

- Fire Watch: Chantry Fire in Arcadia started on July 2, 2023 and was contained by July 3, 2023. Less than 6 acres were burned.
- Interim Report December, 2023
- Planning for Year 2 Monitoring



Questions

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References

- Stormwater Contaminant Loading Following Southern California Wildfires Study: ERIC D. STEIN, JEFFREY S. BROWN, TERRI S. HOGUE, MEGAN P. BURKE, and ALICIA KINOSHITA, Biology Department, Southern California Coastal Water Research Project, Costa Mesa, California, USA Department of Civil and Environmental Engineering, University of California, Los Angeles, California, USA (Submitted 1 April 2012; Returned for Revision 16 May 2012; Accepted 29 July 2012)