

# South Orange County Watershed Management Area Highlight

May 9, 2018  
Item No. 8  
Supporting Document No. 1




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Deputy Director  
OC Public Works/OC Environmental  
Resources

[www.ocwatersheds.com](http://www.ocwatersheds.com)



*Presentation to the San Diego Regional Water Board  
May 9, 2018*

 OC Public Works

## MISSION

Protect and enrich the community through efficient delivery and maintenance of public works infrastructure, planning, and development services

## VISION

Provide excellent, innovative, and professional public works projects and services to our community

## VALUES

Integrity, Accountability, Service and Trust



*San Juan Creek*



# OC Public Works



**OC Public Works**  
Shane L. Silsby  
DIRECTOR  
(714) 667-9700



**Strategic Communications Officer**  
Shannon Widor  
(714) 667-9759



**Customer Services ASSISTANT DIRECTOR**  
Vicki Quiram  
(714) 667-3255



**Engineering Services ASSISTANT DIRECTOR/ COUNTY ENGINEER**  
Khalid Bazmi  
(714) 667-3213



**Human Resources Manager**  
Marc Gallonio  
(714) 667-9601



**OC Fleet Services**  
DEPUTY DIRECTOR  
Ron Vienna  
(714) 667-4945

*Services/Functions*

- County Vehicle Usage
- Vehicle Maintenance
- County Fuel Cards
- Safety & Compliance
- Green Fleet
- Standards/ Specifications
- DMV



**OC Development Services**  
DEPUTY DIRECTOR  
Colby Cataldi  
(714) 667-8860

*Services/Functions*

- Permit Application & Processing
- Grading & Building
- Land Use Permits
- County Property Permits
- Strategic Land Planning
- Code Enforcement



**Administrative Services**  
DEPUTY DIRECTOR  
Becky Juliano  
(714) 667-9701

*Services/Functions*

- Budget/ Finance
- Payroll
- Procurement
- Information Technology
- Cams/E-Agenda
- Card Access
- Parking Administration



**OC Facilities Design & Const. Mgmt**  
DEPUTY DIRECTOR  
James Treadaway  
(714) 667-3948

*Services/Functions*

- Vertical Projects
- Project Management
- Custodial
- Compliance



**OC Facilities Maintenance & CUF**  
DEPUTY DIRECTOR  
Tim Corbett  
(714) 667-4931

*Services/Functions*

- Vertical Facilities O&M
- Maintenance & Engineering
- Central Utility Facility
- Property Management
- Utility Purchasing & Tracking
- Sustainability



**OC Infrastructure Programs**  
DEPUTY DIRECTOR  
Nardy Khan  
(714) 647-3906

*Services/Functions*

- Horizontal Road/ Flood Projects
- Programming
- Santa Ana River Project
- Traffic Engineering
- Regulatory Permits
- Infrastructure Funding



**OC Operation & Maintenance**  
DEPUTY DIRECTOR  
Kevin Onuma  
(714) 647-3939

*Services/Functions*

- Horizontal Facilities O&M
- Inspection/ Regulation
- General Maintenance
- City Contracts
- Equipment Operations



**OC Survey**  
DEPUTY DIRECTOR  
Kevin Hills  
(714) 967-0824

*Services/Functions*

- Field Unit
- Special Projects
- Right-of-Way Mapping
- GIS Mapping
- Aerial Photogrammetry
- Subdivision Map Checking



**OC Construction**  
DEPUTY DIRECTOR  
Octavio Rivas  
(714) 245-4520

*Services/Functions*

- Construction Administration
- Materials Lab
- Special Projects
- Job Order Contracts
- Roads, Bridges, Flood Control Construction Management



**OC Environmental Resources**  
DEPUTY DIRECTOR  
Amanda Carr  
(714) 955-0601

*Services/Functions*

- Agricultural Programs
- Environmental Engineering
- Pesticide Regulation
- Watershed Management
- Weed Abatement
- Weights & Measures
- Water Quality





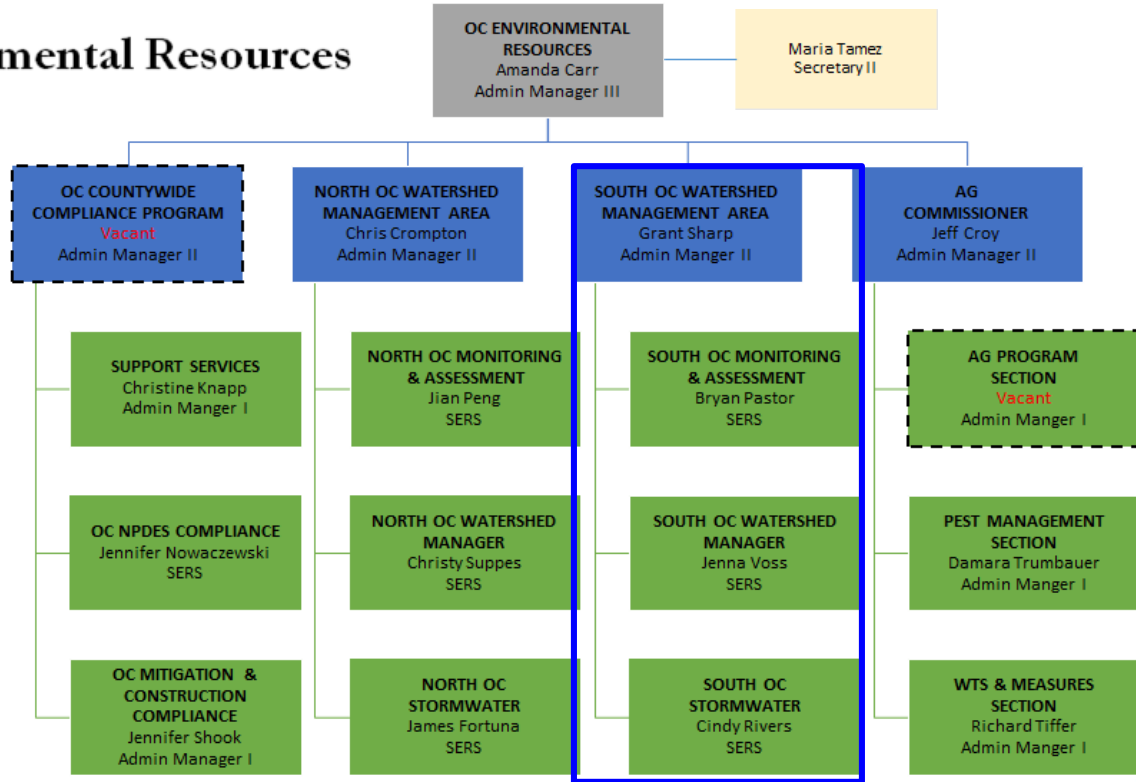
**OC ENVIRONMENTAL  
RESOURCES**

**OC Public Works**

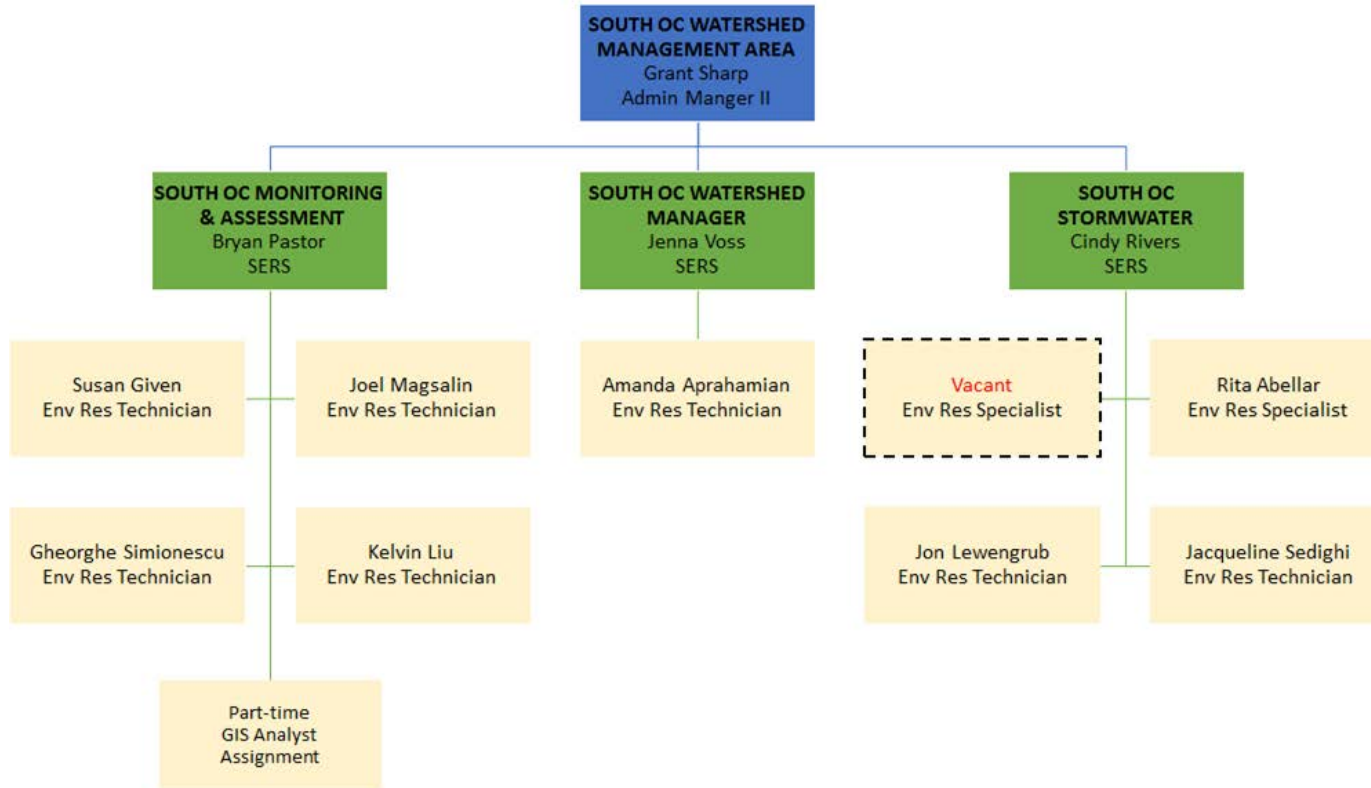


**OC ENVIRONMENTAL RESOURCES** manages the OC Watersheds and OC Agricultural Commissioner /Sealer of Weights and Measures programs, which protect public health and safety, promote environmental quality, certify consumer weights and measures, and sustain business competitiveness through education, regulation and collaborative regional programs.

# OC Environmental Resources Reorganization



# South OC Watershed Management Area





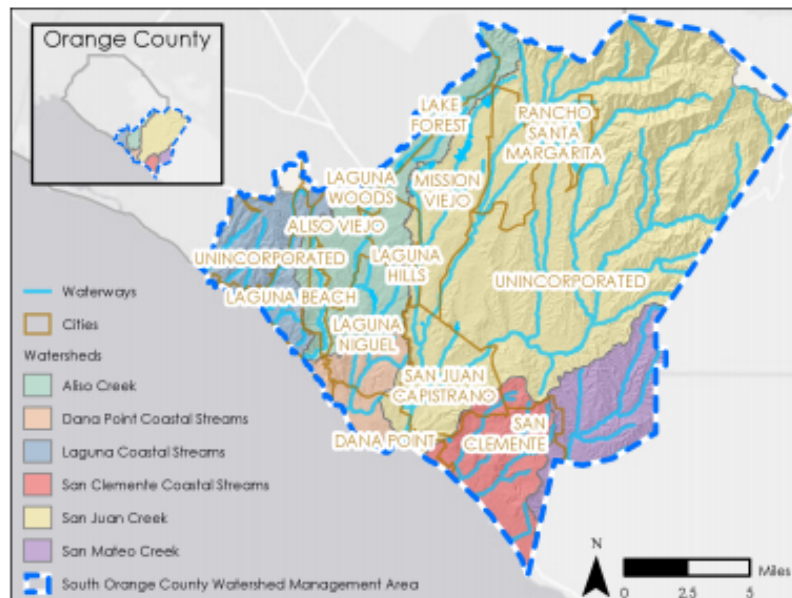
# South OC Watershed Management Area



## WHAT:

### What is the South OC Watershed Management Area?

The OC Environmental Resources Service Area of OC Public Works has reorganized its OC Watersheds function to align with the North and South Watershed Management Areas (WMAs) of Orange County. South OC WMA Staff will focus on leading collaborative water resource management efforts in the watersheds of South Orange County, which encompass a large portion of the 496 square mile San Juan Hydrologic Unit.

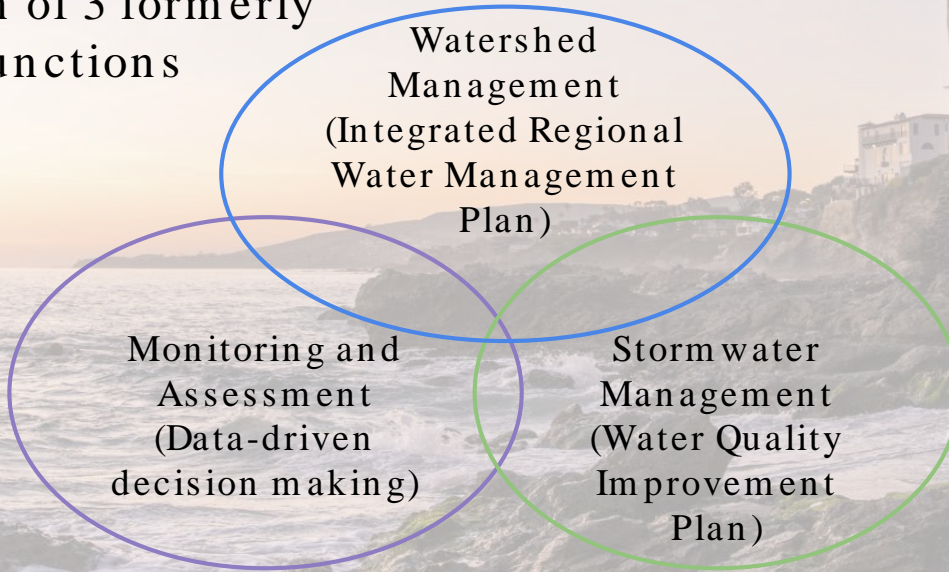




# South OC Watershed Management Area



Integration of 3 formerly separate functions



**WHO:**

South OC Watershed Management	Jenna Voss	<a href="mailto:Jenna.Voss@ocpw.ocgov.com">Jenna.Voss@ocpw.ocgov.com</a>
South OC Stormwater	Cindy Rivers	<a href="mailto:Cindy.Rivers@ocpw.ocgov.com">Cindy.Rivers@ocpw.ocgov.com</a>
South OC Monitoring & Assessment	Bryan Pastor	<a href="mailto:Bryan.Pastor@ocpw.ocgov.com">Bryan.Pastor@ocpw.ocgov.com</a>
Manager	Grant Sharp	<a href="mailto:Grant.Sharp@ocpw.ocgov.com">Grant.Sharp@ocpw.ocgov.com</a>





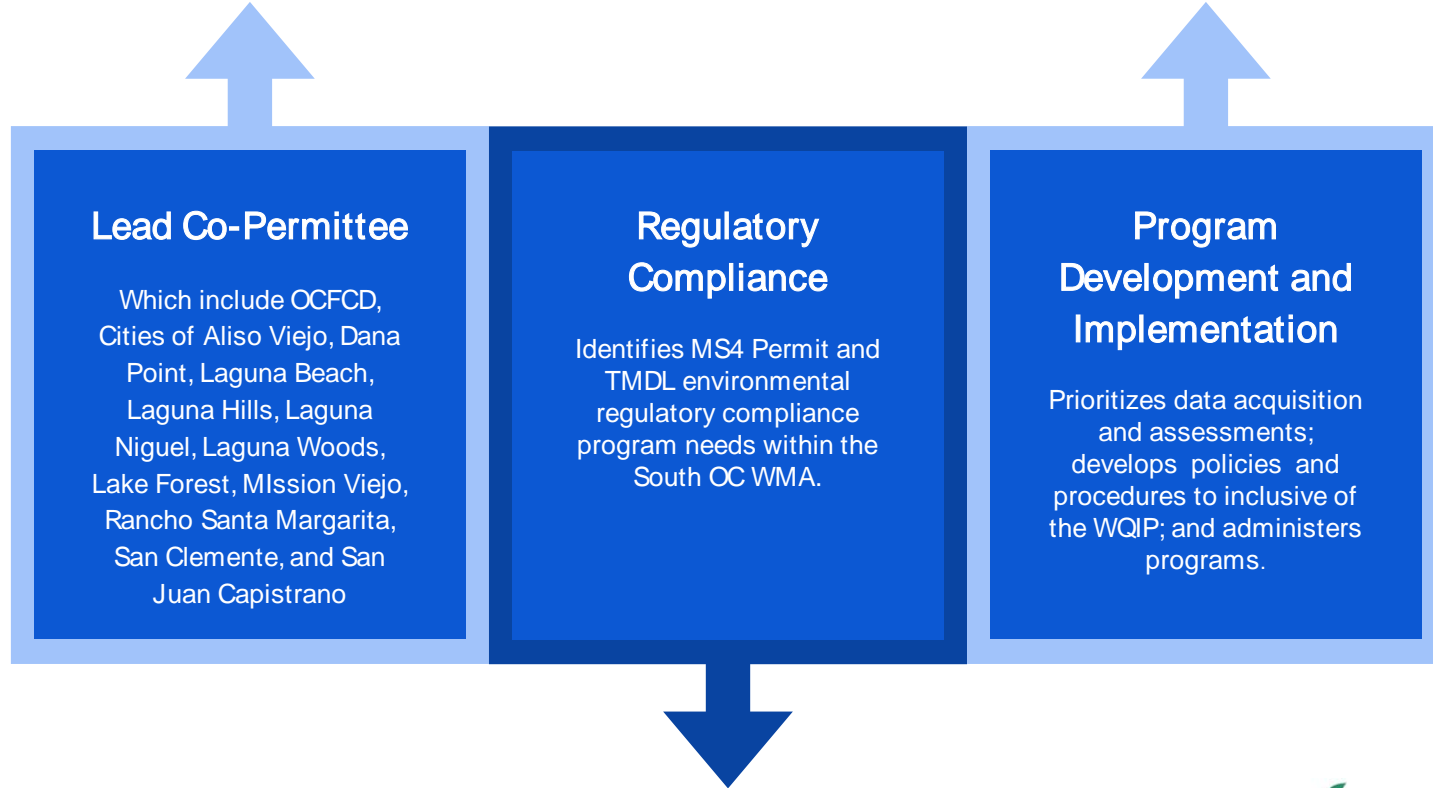


# Storm water





# Stormwater Management Overview



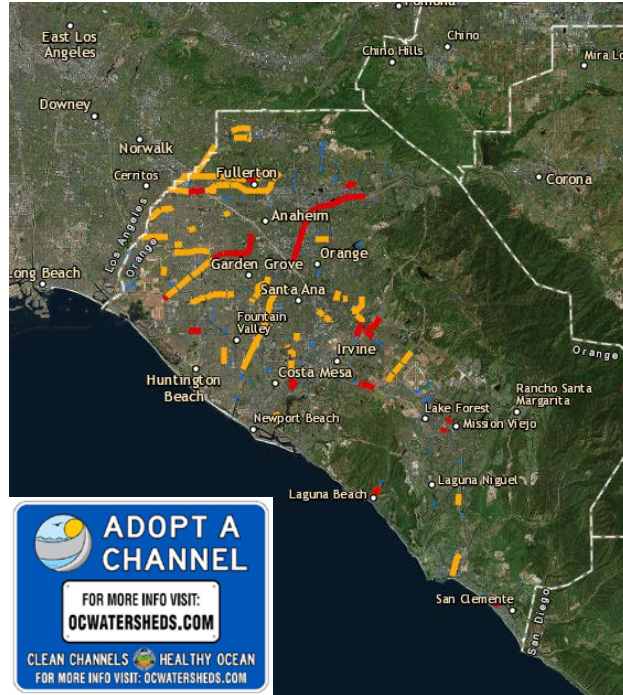


# Adopt A Channel

Initiated in 2016 to improve the physical appearance of channels, enhance the environment by removing trash and debris, and to increase awareness and commitment to keep our channels, creeks, bays and ocean clean.

## Current Adopters in South OC:

- Wyland Foundation
  - Laguna Canyon Channel
- The Sharp Family
  - Segunda Deshecha Channel
- The Ranch at Laguna Beach
  - Aliso Creek Channel



## Laguna Canyon Channel

### ADOPTION SECTION:

Vicinity of Canyon Acres Dr to Forest Dr in the City of Laguna Beach (AAC #3)

Status: Available for Adoption

Section Type: Concrete trapezoidal section transitioning into concrete open box

Recommended Adoption Type: Volunteer or Sponsored

Length (miles)	Level of Trash (1-4)	Level of Graffiti (1-4)
0.86	1 (Low)	1 (Low)

Volunteer Adoption Costs: Costs associated with supplies for cleanup (gloves, trash bags, rollers, paint, etc.)

Sponsored Adoption Costs: ~\$1,000/yr  
Contractor completes work on behalf of Adopter (estimate based upon level of trash and graffiti and channel surface area)

Watershed: The Laguna Canyon Channel is located within the Laguna Coastal Streams Watershed which is approximately 20 square miles. The channel drains directly into the Pacific Ocean at Laguna Beach.



Potential adoption recognition sign location with high visibility to commuters on Highway 53.

OC Public Works operates and maintains more than 380 miles of regional flood control channels. The objectives of the Adopt A Channel Program are to improve the physical appearance of these channels, enhance the environment by removing trash and debris, and increase an awareness of and a commitment to keeping our waterways clean and healthy.

ORANGE COUNTY  
**Public Works**  
Our Community. Our Commitment.

For more info visit: [ocwatershed.com](http://ocwatershed.com)  
or contact:  
[ocadoptachannel@ocpw.ocgov.com](mailto:ocadoptachannel@ocpw.ocgov.com)  
(714) 955-0600







# South OC Water Quality Improvement Plan

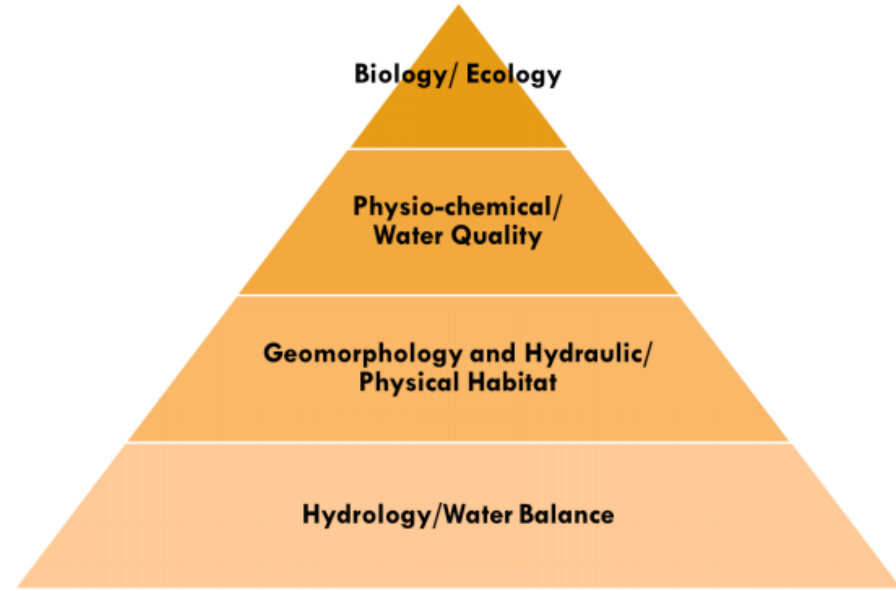


The South OC WQIP identifies 3 high priority water quality conditions:

1. Pathogen Health Risk (Rec Waters)
2. Unnatural Water Balance/Flow Regime
3. Channel Erosion/Geomorphic Impacts

**Figure 2-3: Function-Based Framework for Stream Restoration**

**An important premise:** efforts to improve riparian biological communities are likely to be most successful if supporting foundational layers are in place.





# Next Steps

## WQIP Implementation

Develop supporting plans and implement projects to meet WQIP milestone. Such plans and projects include:

- Identifying and eliminating Human Waste Sources
- Channel Erosion Rehabilitation
- Flow regime characterization
- Asset Inventory Tool

## Stakeholder

Continue the involvement of stakeholders to assist with WQIP implementation which include:

- Executing an Urban Runoff MOU
- Incorporate MNWD Urban Drool Tool
- Seek partnership (public and private) to increase local water supplies

## Adaptive Management

To ensure management decisions of available resources are focused on addressing priority water quality conditions to ultimately improve and protect water quality







# Monitoring & Assessment



# Hydrologic/Water Quality Data Networks

- Public Health and Safety
  - Real-Time Flood Warning
- Hydraulic Data
  - Stream Discharge, Rainfall Summaries
- Water Quality
  - Pollutant Loading Calculations

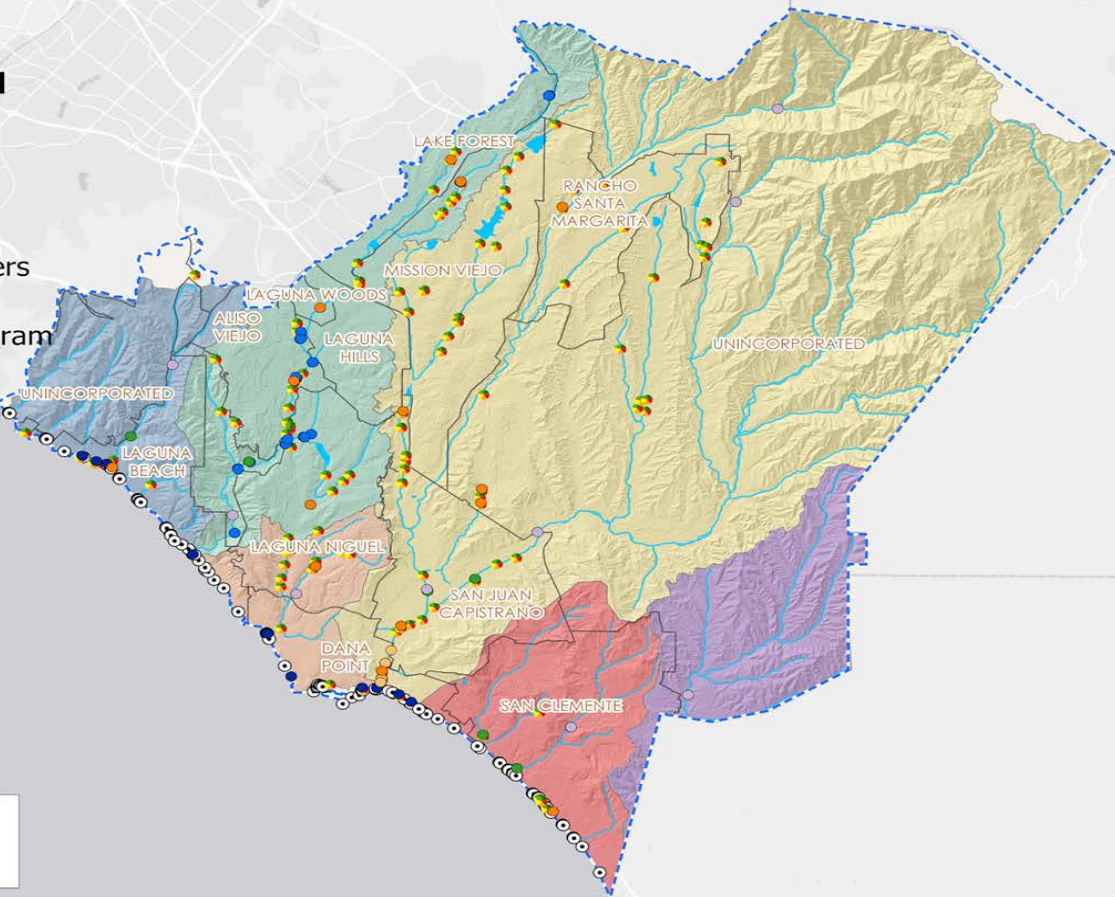




# South Orange County Watershed Management Area: Water Quality Monitoring Sites

## Water Quality Monitoring Locations

- SDR Aliso Creek Bacteria TMDL
- SDR Ambient Coastal Receiving Waters Monitoring Program
- SDR Mass Emissions Monitoring Program
- SDR San Juan Creek Bacteria TMDL
- SDR Transitional Monitoring Program
- SDR Urban Stream Bioassessment
- Transitional Monitoring
- Unified Beach Monitoring Program
- South Orange County Watershed Management Area
- Cities
- Waterways
- Waterbodies



Scale: 0 1 2 4 Miles

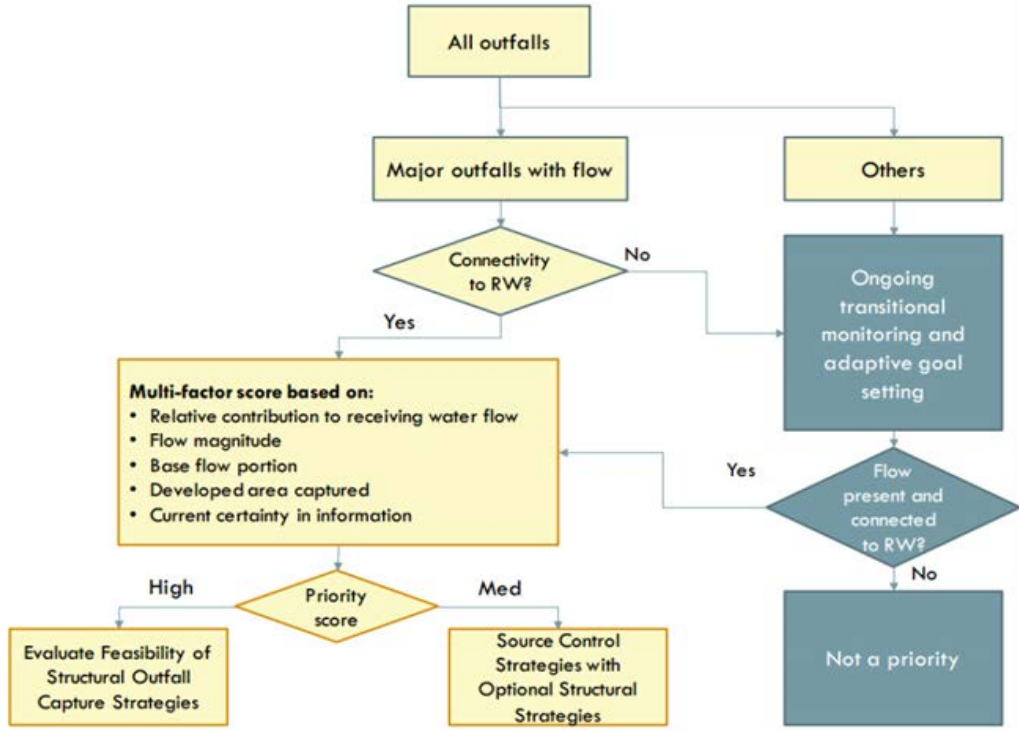


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# Outfall Prioritization



An prioritization approach was developed to more effectively screen outfalls for restoring natural water regimes, and the appropriate strategies for each outfall.



Table J-4: Weighting Factors Applied for Initial Prioritization

Factor	Weight
Relative Contribution to Downstream Flow in Stream	25%
Flow Magnitude Score	25%
Baseflow Score	25%
Developed Area Treated Score	10%
Certainty Score	15%
Sum	100%



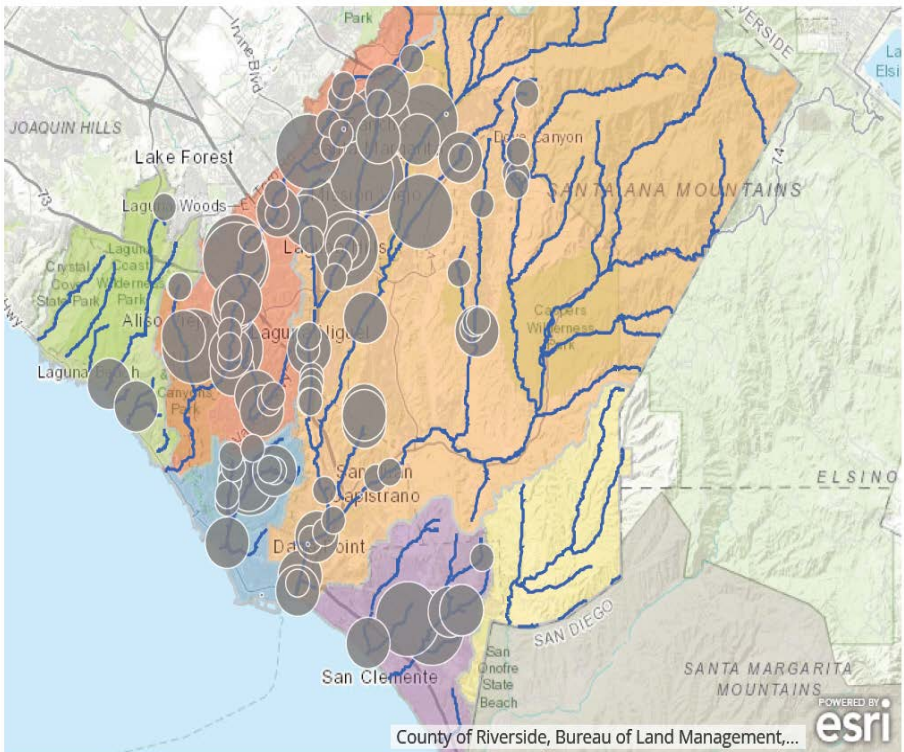
# Outfall Prioritization Inspection and Data Collection





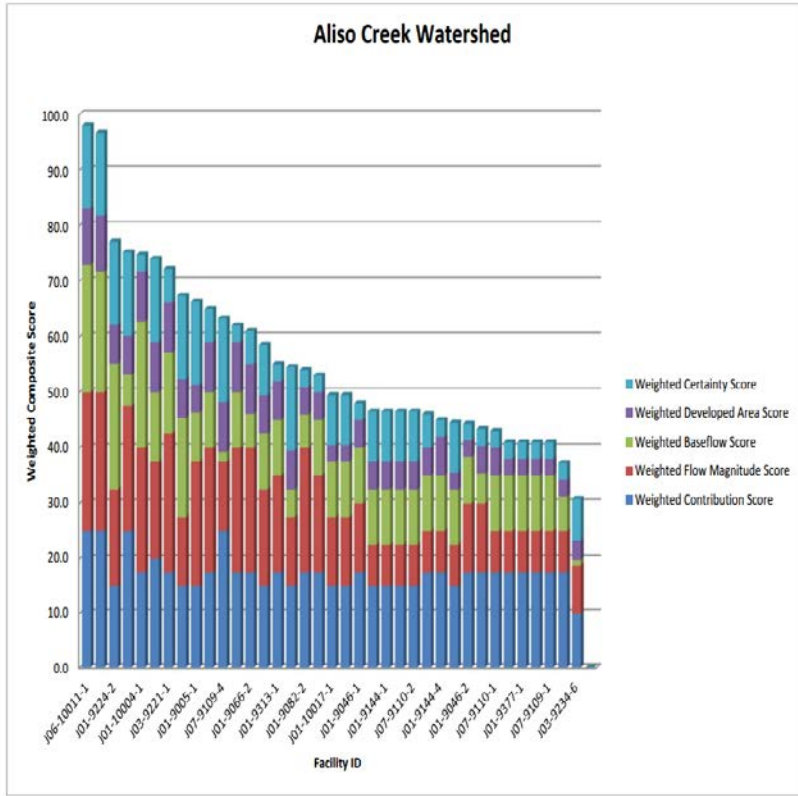


# Prioritization Results



Approximately 75% of the known flow and one-quarter of outfalls scored above 60 in the outfall prioritization. The cumulative flow in outfalls above this threshold is 5.42 cfs.

Attachment J.3: Bar Charts by Watershed Illustrating Components of Composite Score



# Outfall Inspection Dashboard



Available on the OC Environmental Resources GIS Data Portal:

<https://www.arcgis.com/apps/opsdashboard/index.html#/f754decba2e54b87bbb6109de26e607b>

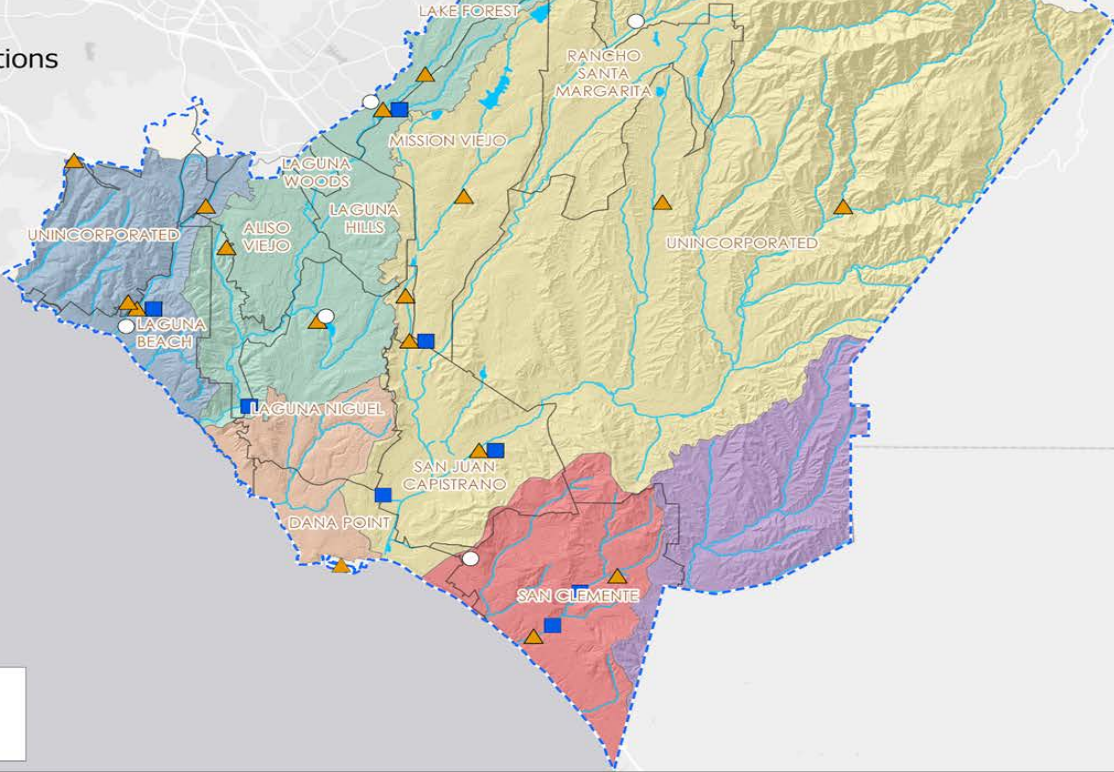






# South Orange County Watershed Management Area: Hydrologic Monitoring Sites

- .01 Inch Recording Precipitation Stations
- ▲ ALERT Precipitation Stations
- ALERT Water Level Stations
- ▭ South Orange County Watershed Management Area
- ▭ Cities
- Waterways
- Waterbodies
- Watersheds
  - Aliso Creek
  - Dana Point Coastal Streams
  - Laguna Coastal Streams
  - San Clemente Coastal Streams
  - San Juan Creek
  - San Mateo Creek



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# ALERT - Hydrologic Data Network

Automated Local Evaluation in Real Time



Newport Coast Weather Station



Lower Salt Creek Stream Gage





# Active ALERT Stations



## Legend

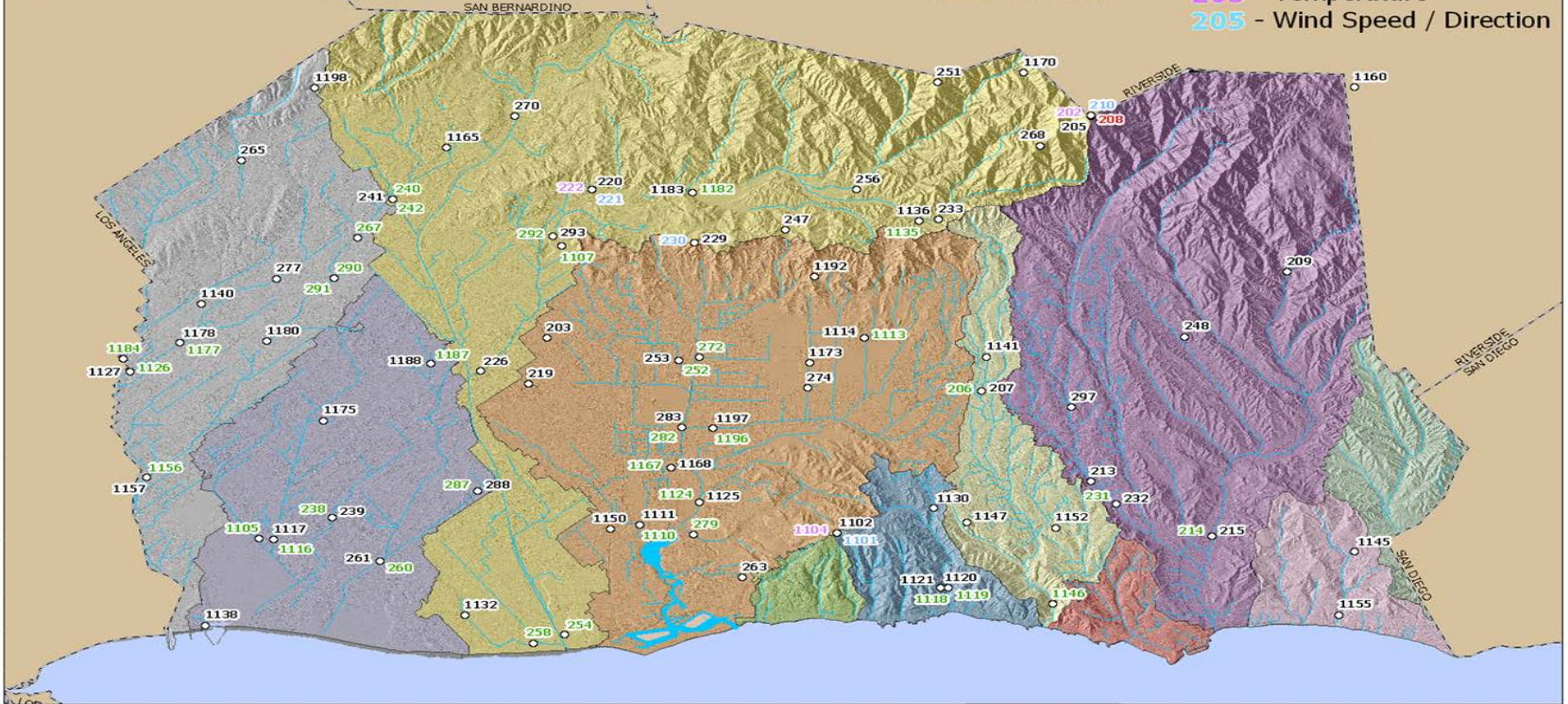
- County Boundaries
- Major Watercourse
- ALERT Station

- 205** - Precipitation
- 205** - Water Level
- 205** - Snow
- 205** - Temperature
- 205** - Wind Speed / Direction



12/7/2015 11:47 AM

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# Watershed Management







# Watershed Management Overview

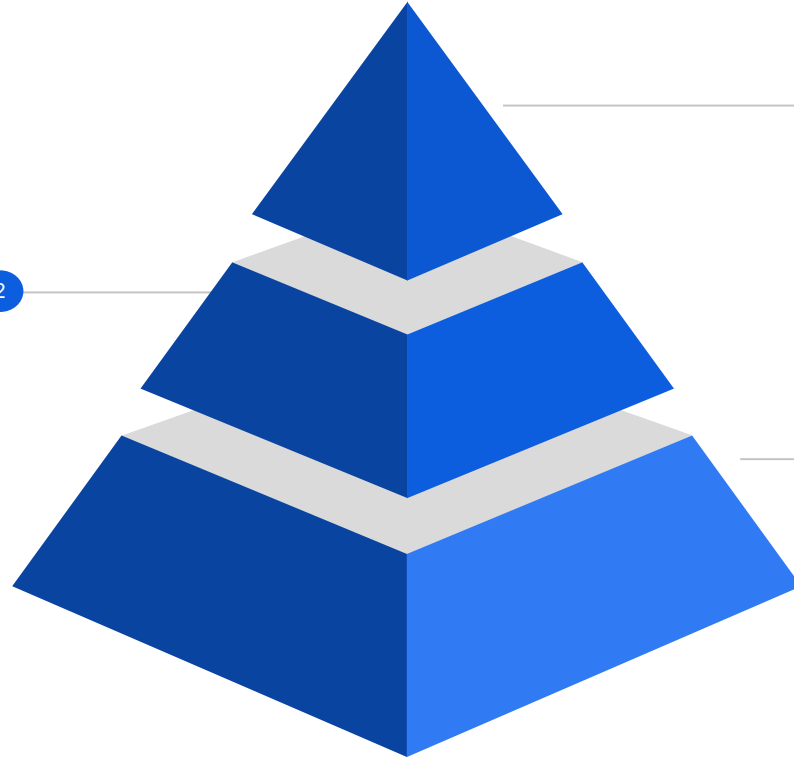
***Integrated Regional Water Management (IRWM) is a collaborative effort to manage all aspects of water resources in a region. IRWM crosses jurisdictional, watershed, and political boundaries; involves multiple agencies, stakeholders, individuals, and groups; and attempts to address the issues and differing perspectives of all the entities involved through mutually beneficial solutions.***



# IRWM Plan Implementation: Project Prioritization

## Objectives

Quantifiable realization of the IRWM Goals as they apply to real-world projects; measurable



## Strategies

1 Measurable; applicable to project metrics & utilized in project ranking and design

## Goals

3 Represent the bedrock of the IRWM Plan and overarching priorities of the WMA; drive project prioritization to meet multiple benefits



# Water Planning in South OC: Goals

## Natural Resources

Benefit aquatic and riparian ecosystems with consideration for climate change on water availability; benefit terrestrial ecosystems; benefit air, climate and energy resources with consideration for reducing GHG emissions; research, evaluation, monitoring, planning, recreation and education

## Water Quality

Control anthropogenic pollutants over developed area of WMA; control anthropogenic dry weather flows; control wet weather flows to meet NPDES MS4 Permit criteria, with consideration for climate change impacts to flow regimes; improve water quality regulatory framework, knowledge and/or awareness of issues

## Water Supply Reliability & Efficiency

Increase potable and non-potable supplies; improve reliability of supplies with consideration for climate change on local and external sources; reduce consumption from outdoor/indoor uses and through water utility operations; research, evaluation, planning & education

## Flood Risk Management

Improvement of conveyance, remove property from FEMA 100-yr floodplain, consider climate change on flow regimes; reduce scour and erosion; preserve or return floodplains as open space; planning, studies and research to acquire data for planning and identification of potential climate change impacts

**Integrated Water  
Resource Management &  
Project Priorities to  
Maximize Benefits**





# Accomplishments: Projects

IRWM Grant Program	Total Grant Award	Local Match Amount	Total Local Investment
Proposition 50	\$25,000,000	\$44,981,994	\$69,981,994
Proposition 84 - Planning	\$457,416	\$447,244	\$904,660
Proposition 84 - Round 1	\$2,316,780	\$2,833,560	\$5,150,340
Proposition 84 - Round 2	\$1,708,647	\$106,206,903	\$107,915,550
Proposition 84 - Drought	\$1,500,000	\$5,725,000	\$7,225,000
2015 Proposition 84	\$4,949,368	\$19,584,138	\$24,533,506
<b>GRAND TOTALS</b>	<b>\$35,932,211</b>	<b>\$179,778,839</b>	<b>\$215,711,050</b>





# Accomplishments: Dairy Fork Wetlands



## Project Description:

Identified need to address a high concentration of pollutants in urban runoff from 1,500 acre catchment & invasive *Arundo donax*; project accomplished the following:

- Two-pond wetland system designed to reduce pollutant load by up to 99% (bacteria, metals, nutrients, oil) from 1,500 acres
- Removal of *Arundo* and replacement with native plants
- Aids in preserving beneficial uses of Aliso Creek by reducing pollutant loading

## Financing (Total cost: \$1,374,000):

- OCTA, M2 Tier 2: \$568,100
- 2015 Prop 84 IRWM: \$500,000 (\$100k habitat)
- Match from Cities: \$305,900
- 20-year O&M: \$200,000

# Accomplishments: Crown Valley Park



## Project Description:

Documented localized flooding impacting use, need for water use efficiency enhancements and potable water offset; project accomplished the following:

- Treatment wetlands, bioswales and trash controls improving dry & wet weather runoff quality from 1,197 acre drainage
- Riparian habitat restoration replacing 1.54 acres of hardened channel bed
- Replacement of 2.3 acres of turf
- Culvert crossing to provide park access
- Reduce potable water demand by 7 AFY and consumption by 32 AFY

## Financing (Total cost: \$10,898,825):

- OCTA, M2 Tier 2: \$1,621,962
- 2015 Prop 84 IRWM: \$700,000
- Moulton Niguel WD: \$300,000
- City CIP: \$8,276,863







# Accomplishments: Team Arundo



**January 2005:** Team Arundo inaugural meeting; SOCWA, RMV, Caltrans, CDFW, City of SJC and County

**July 2006:** Receipt of CDFW Grant for Arundo Removal Activities/Implementation Plan Development

**July 2007:** Completion of invasive plant mapping by DENDRA, Inc.

**April 2008:** South Orange County Team Arundo Implementation & Program Management Plan

**September 2011:** County mitigation for Alton Parkway initiated Arundo removal in Aliso Creek (headwaters)

**September 2009:** Fish and Wildlife 1600 Streambed Alteration Agreement Signed

**September 2009:** Notice of Determination – Negative Declaration for CEQA

**January 2009:** Received Regional General Permit (RGP 41) from US Army Corps of Engineers

**September 2012:** Team Arundo utilizes permits in Aliso Creek – awarded funds through IRWM Prop 50 Grant

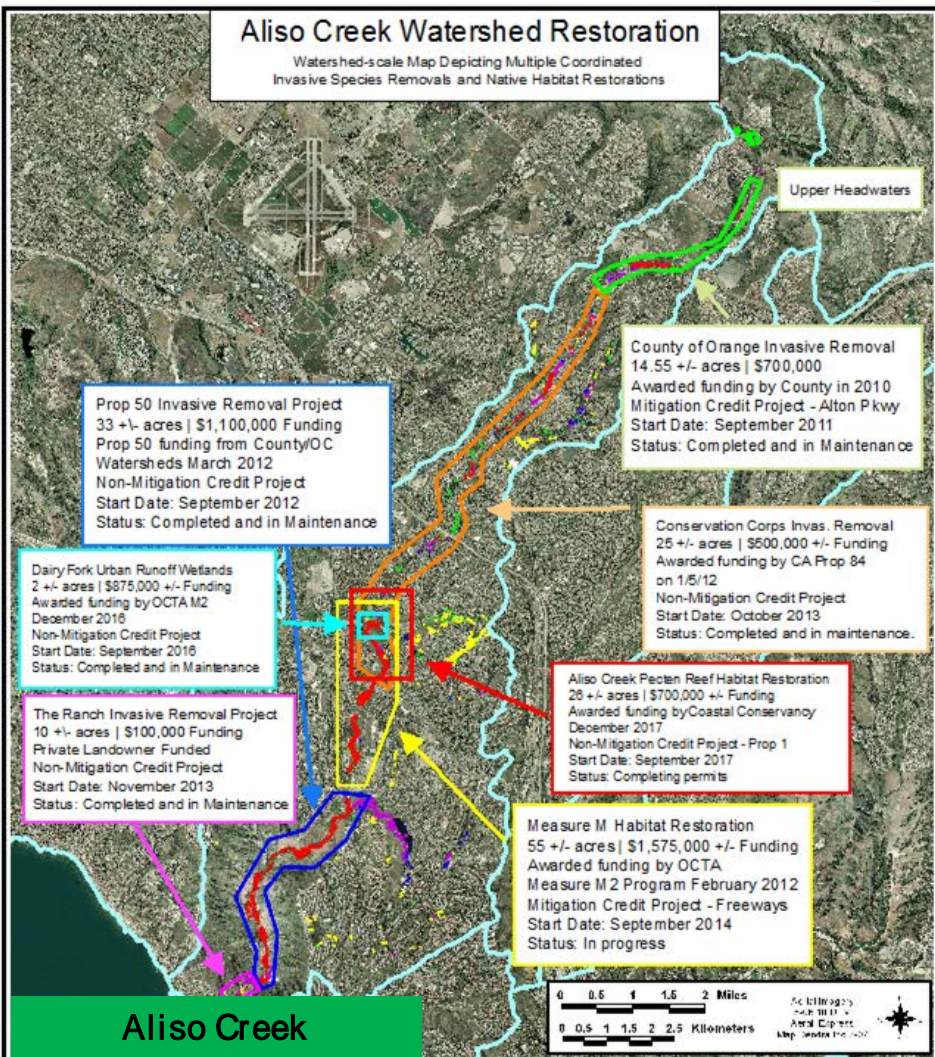
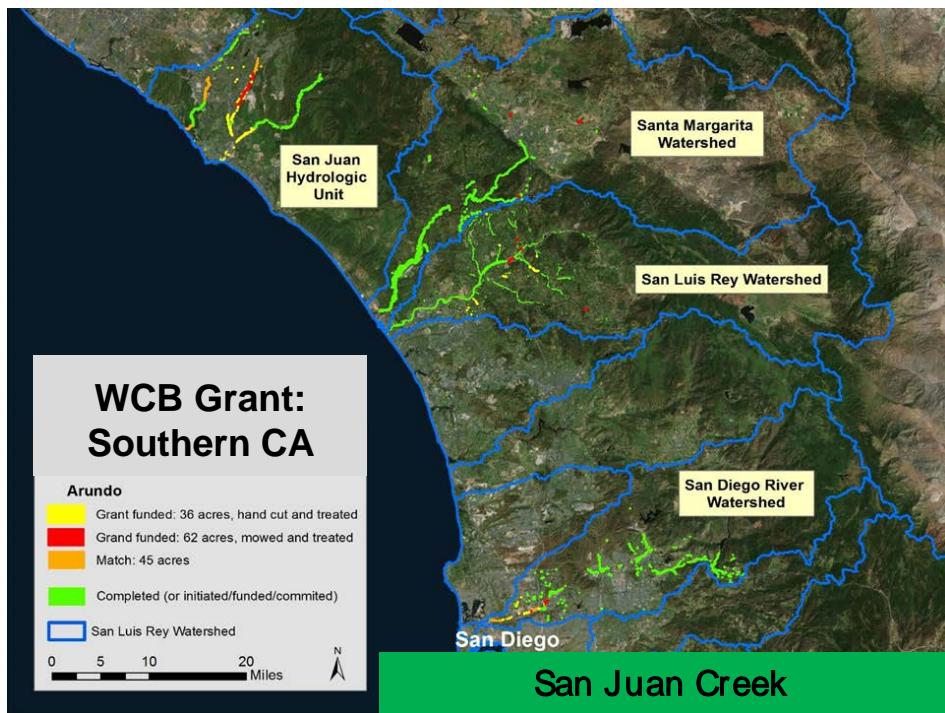
**2012-Present:** Arundo Removal Activities throughout Aliso Creek Watershed; OCTA, OCCO, The Ranch

**2016:** Dairy Fork Sub-watershed Arundo Removal through Prop 84 IRWM Grant

**2016-18:** Prop 1 Grant Award for Arundo Removal with Mission Resource Conservation District



# Accomplishments: Team Arundo



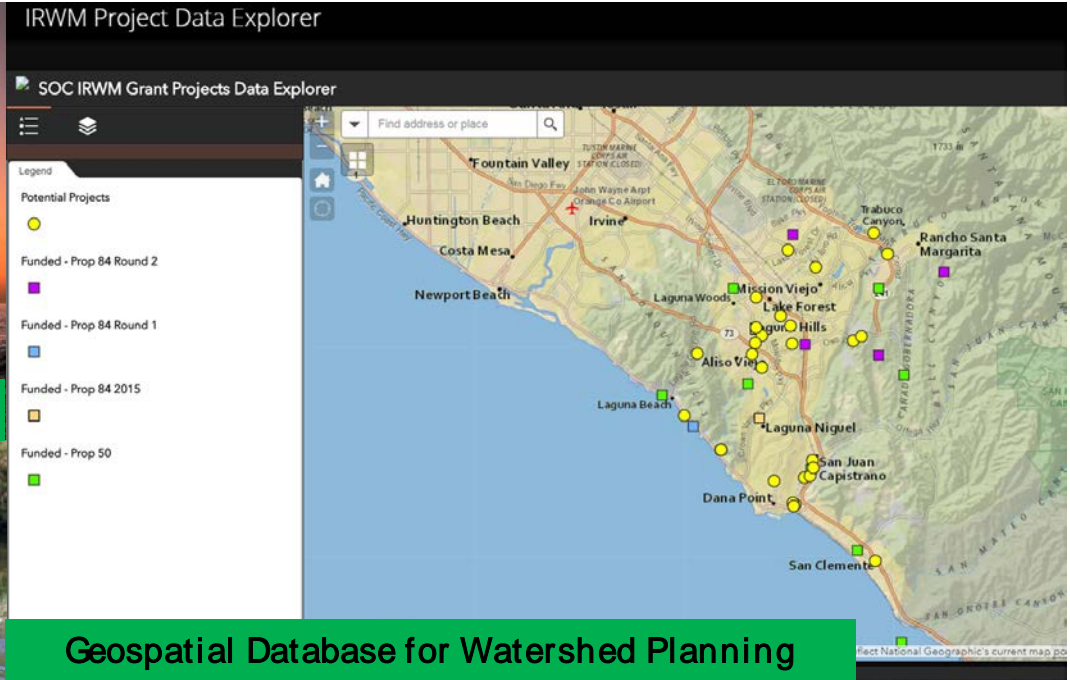




# Collaboration Tools: Data Management System



Online One-Stop Shop



Geospatial Database for Watershed Planning



Habitat Restoration Mapping





# Next Steps

## IRWM Plan Update

IRWM Plan update process to meet 2016 IRWM Plan Standards included a public comment period in March and was approved by the Executive Committee May 3rd. The updated plan will be submitted to the State Department of Water Resources (DWR) in late summer.

## DAC Needs Assessment

San Diego Funding Area Tri-FACC started process in late 2017, will continue through 2018. Goals are to identify the most critical issues for disadvantaged communities (DACs) and other stakeholders, conduct outreach to determine the highest priority water-related issues.

## Project Planning & Data Management

Continue to build the Data Management System (DMS) to best fulfill regional planning needs; provide data for regional planning and collaborate with stakeholders to determine which projects best meet the goals of the WMA.

## Proposition 1 IRWM Grant

Conduct a call for projects in late summer, early fall 2018 to develop a slate for DWR consideration; conduct workshops and prepare presentation of projects to DWR and stakeholders. Anticipate grant application due late 2018.





# Questions?

Website:

[www.ocwatersheds.com](http://www.ocwatersheds.com)

OC Environmental Resources GIS Data Portal:

<http://ocpw.maps.arcgis.com/apps/PublicGallery/index.html?appid=5f149ff6d20a403ab4688cf7b85b0027>

South OC WMA IRWM Data Management System:

<https://arcg.is/1e5aSm>

