STORMWATER DATA PROJECT &
2018 WHITEPAPER

MWD Conservation & Local Resources Committee | May 8, 2018

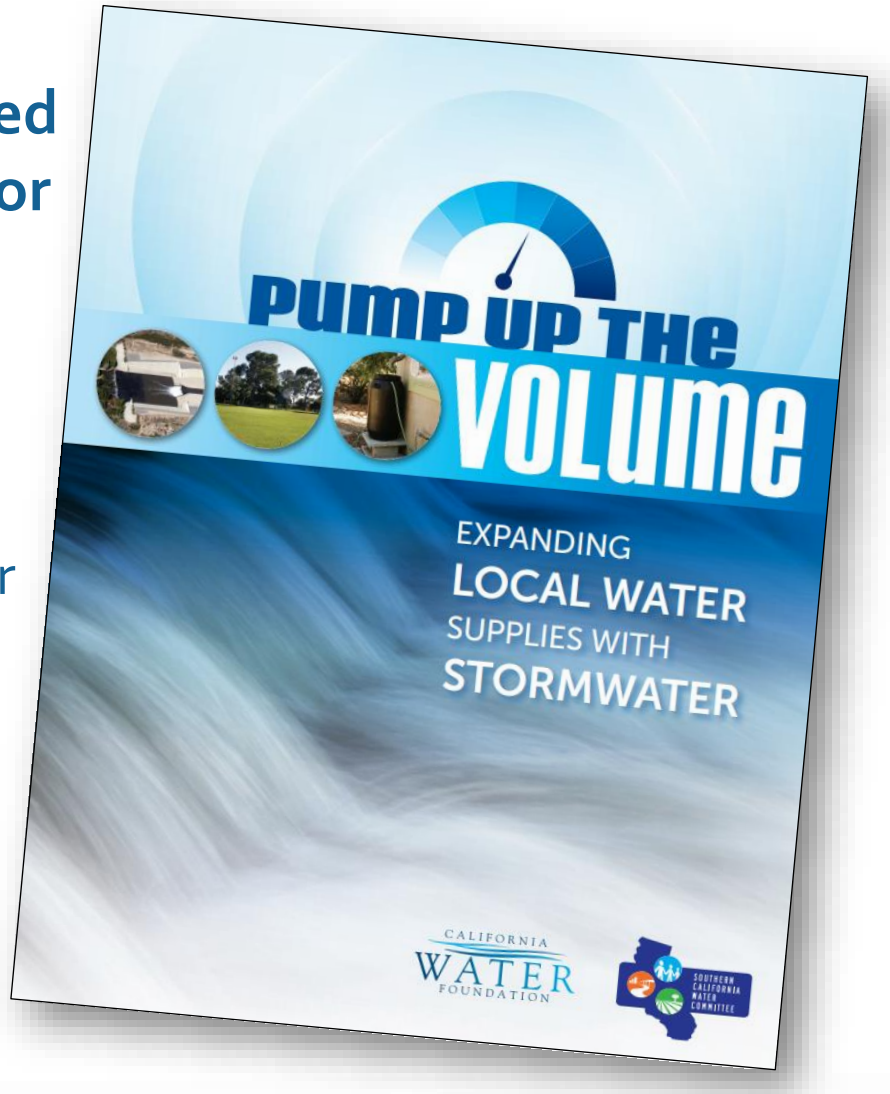
SOUTHERN CALIFORNIA WATER COALITION | OVERVIEW

200+ Member Organizations Across 8 Counties

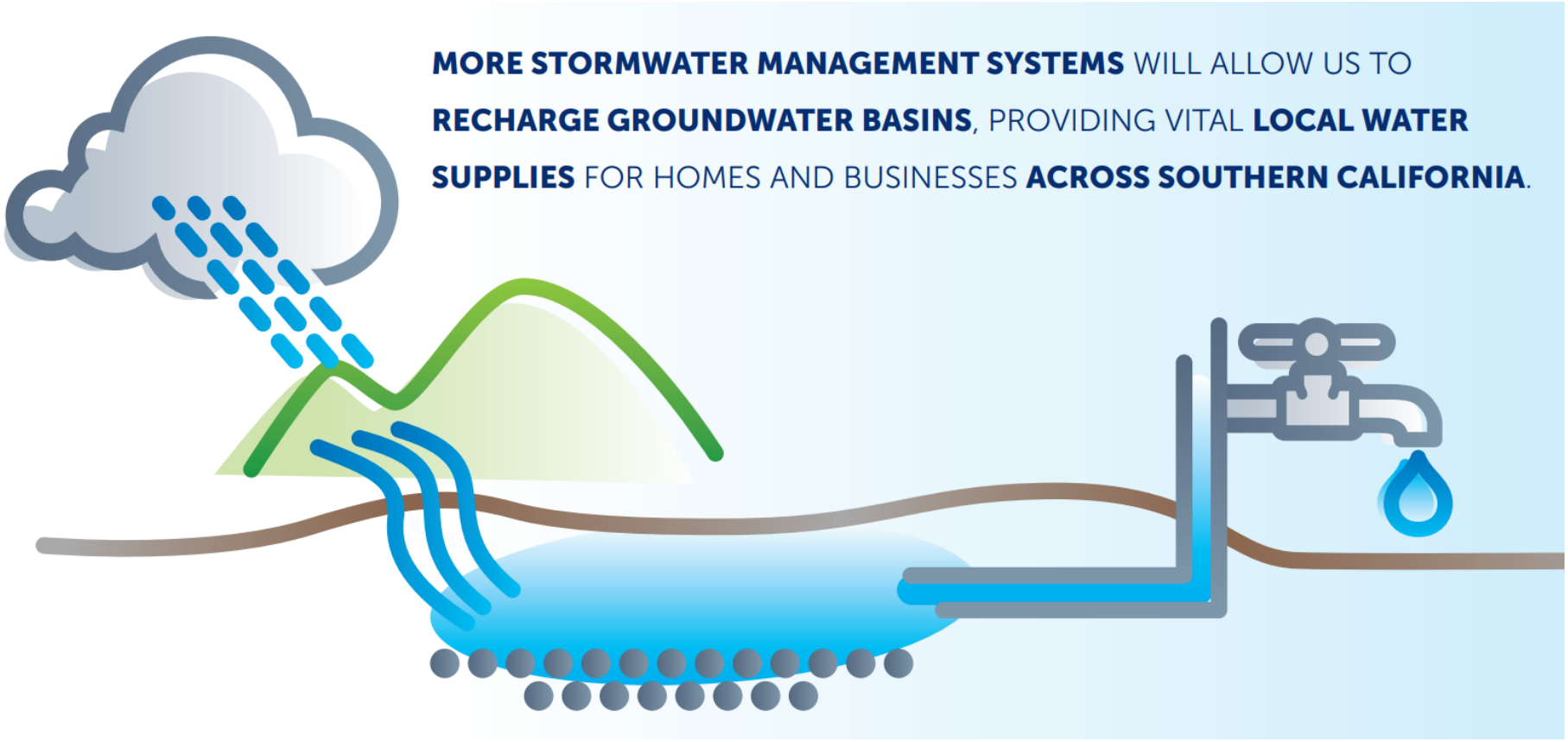
"Through measured advocacy, SCWC works to ensure the health and reliability of Southern California's water supply."

SCWC | STORMWATER TASK FORCE

- **Develop regional consensus-based strategies & recommendations for utilizing stormwater effectively**
  - Identify potential issues
  - Recognize opportunities and constraints related to stormwater management
  - Provide a forum for discussion of challenges for watersheds within SoCal

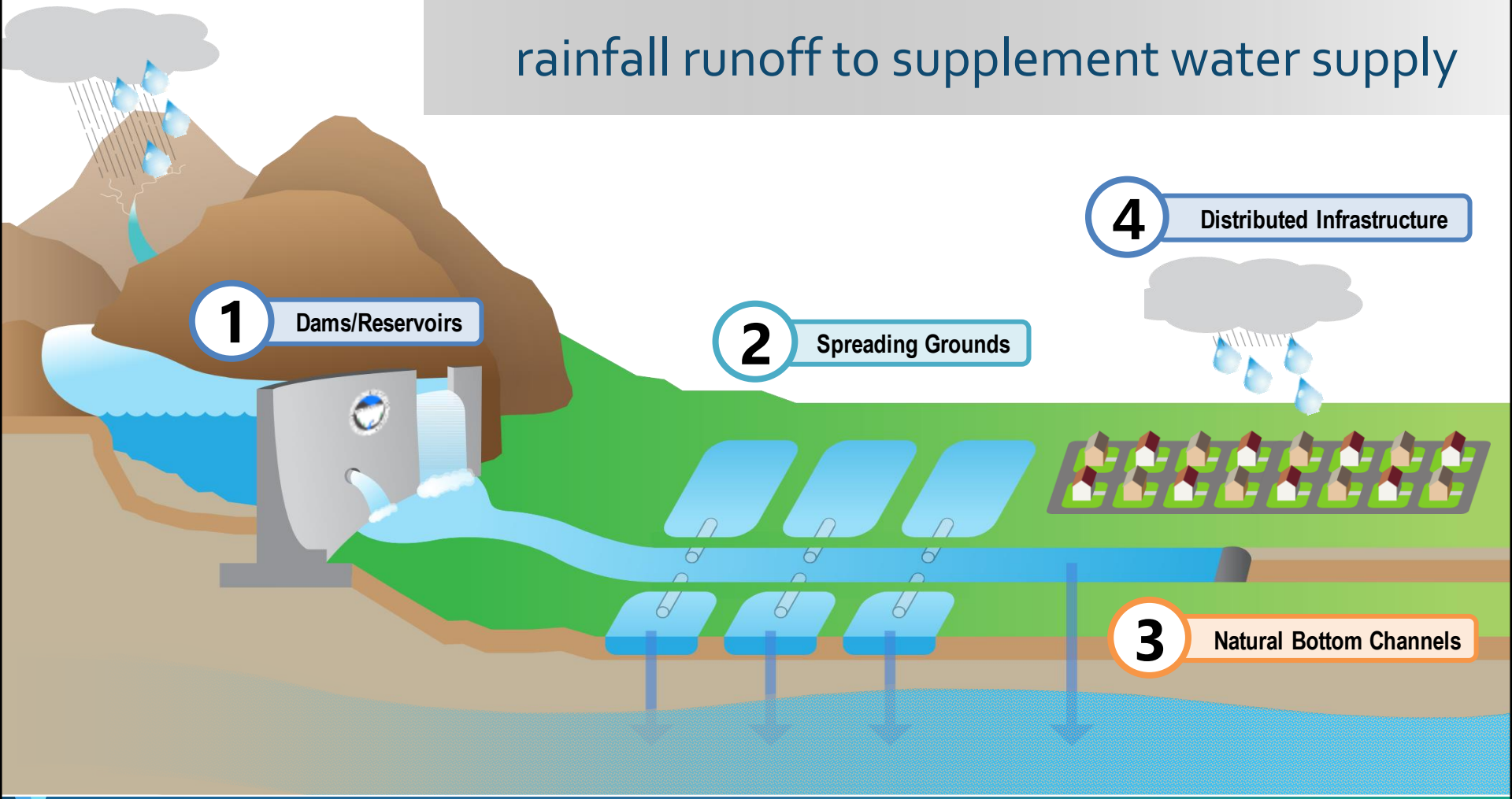


SCWC | PUMP UP THE VOLUME

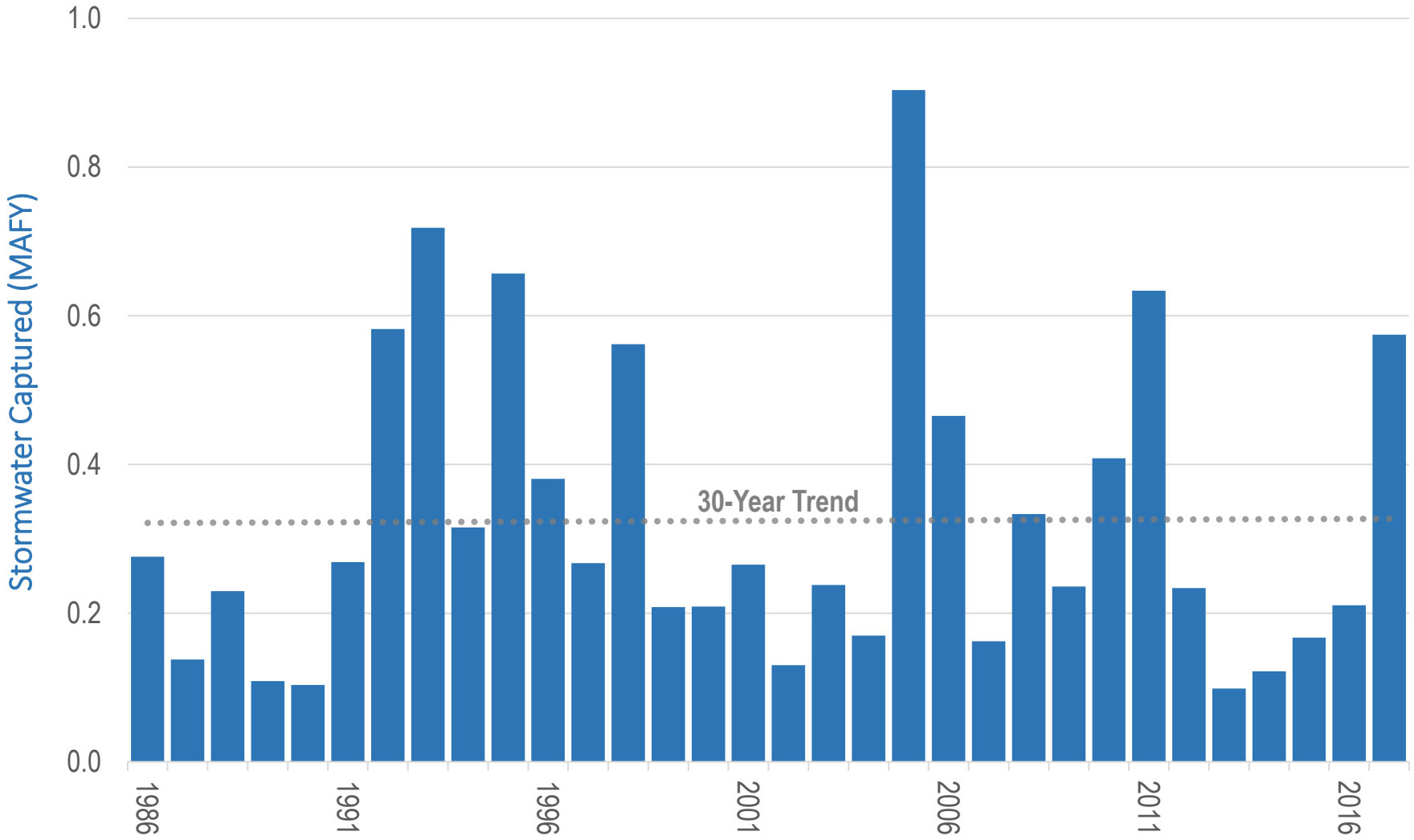


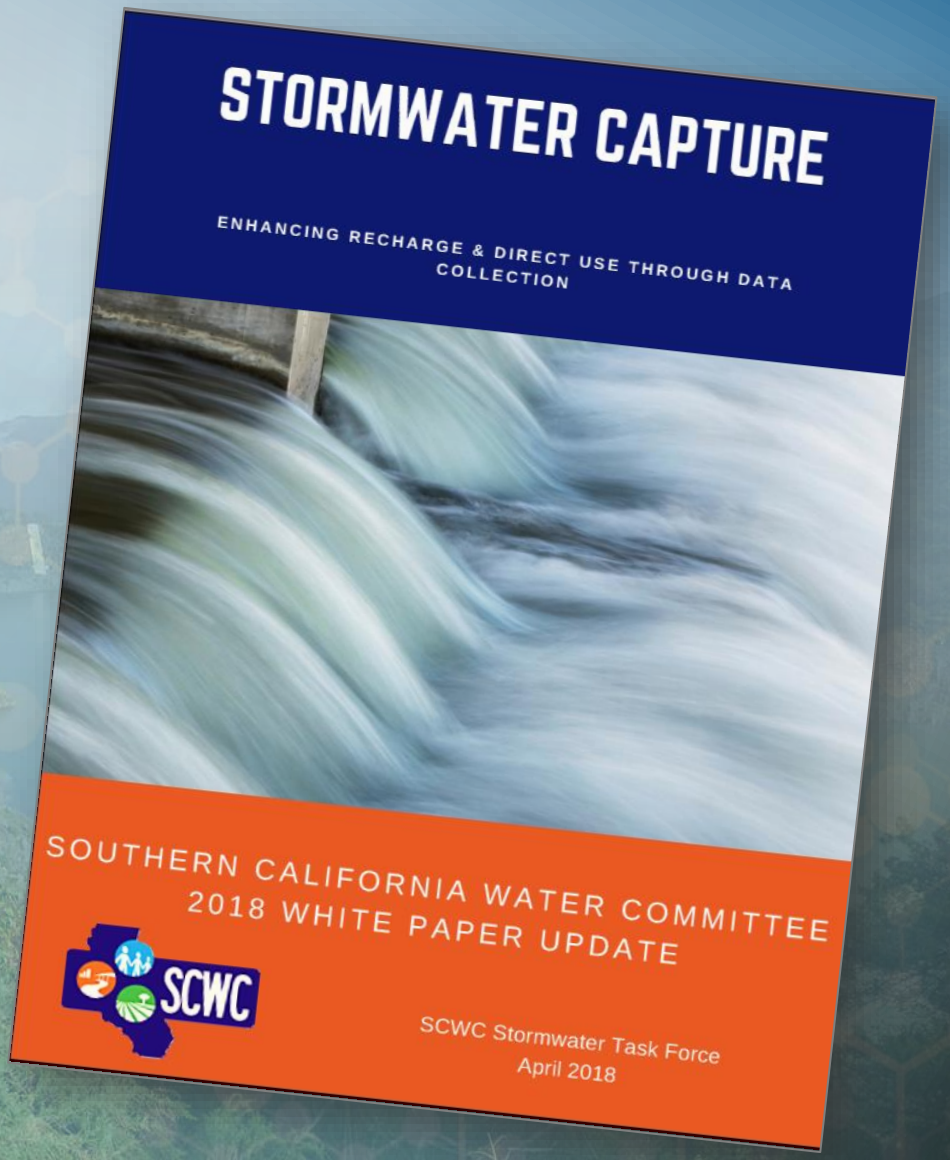
STORMWATER | CAPTURE DEFINED

- **Stormwater Capture** is the collection of rainfall runoff to supplement water supply



STORMWATER | HISTORIC CAPTURE TREND





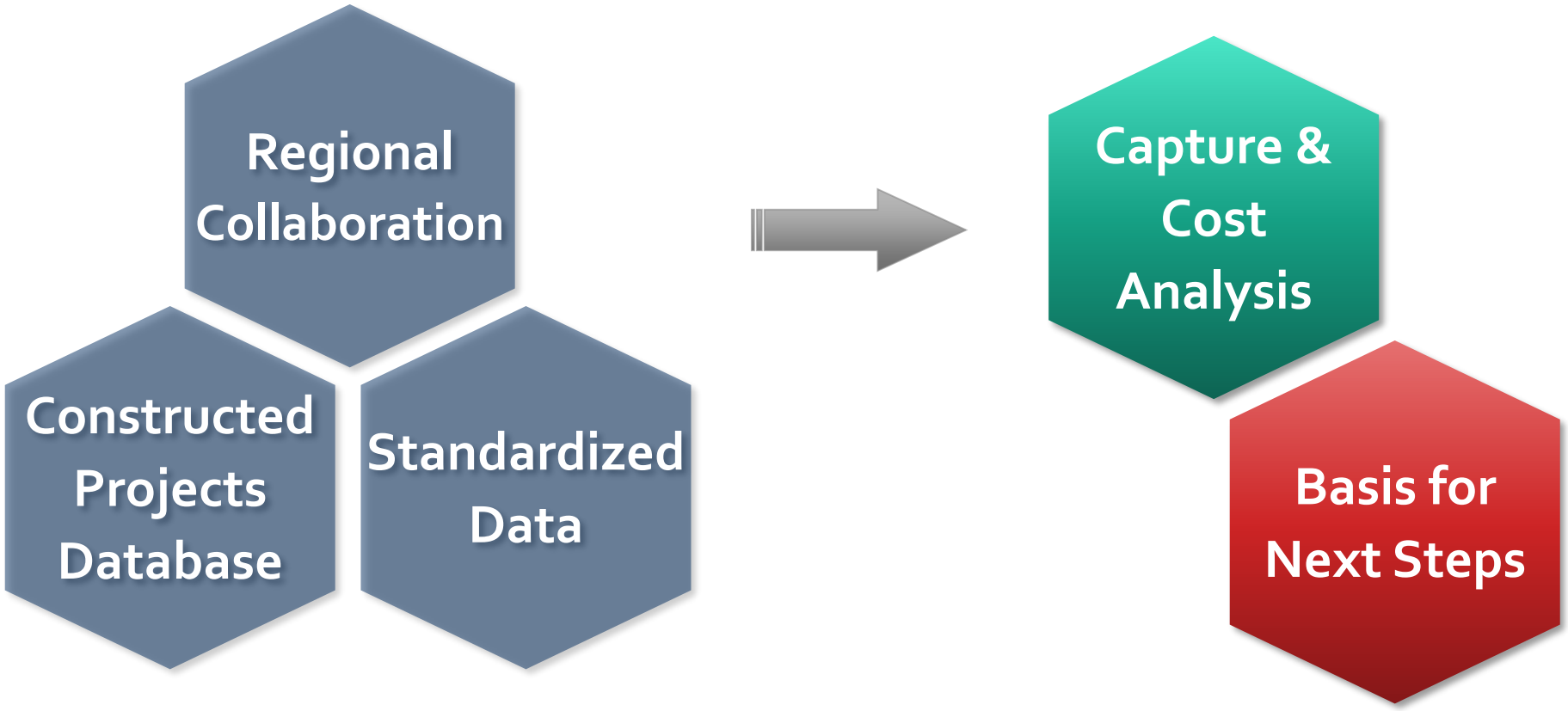
2018 WHITEPAPER

BACKGROUND | 2012 WHITEPAPER

- Initial understanding of stormwater cost per AF
- Consisted mainly of conceptual stormwater projects
- Findings presented to water and regulatory agencies

PURPOSE | 2018 WHITEPAPER

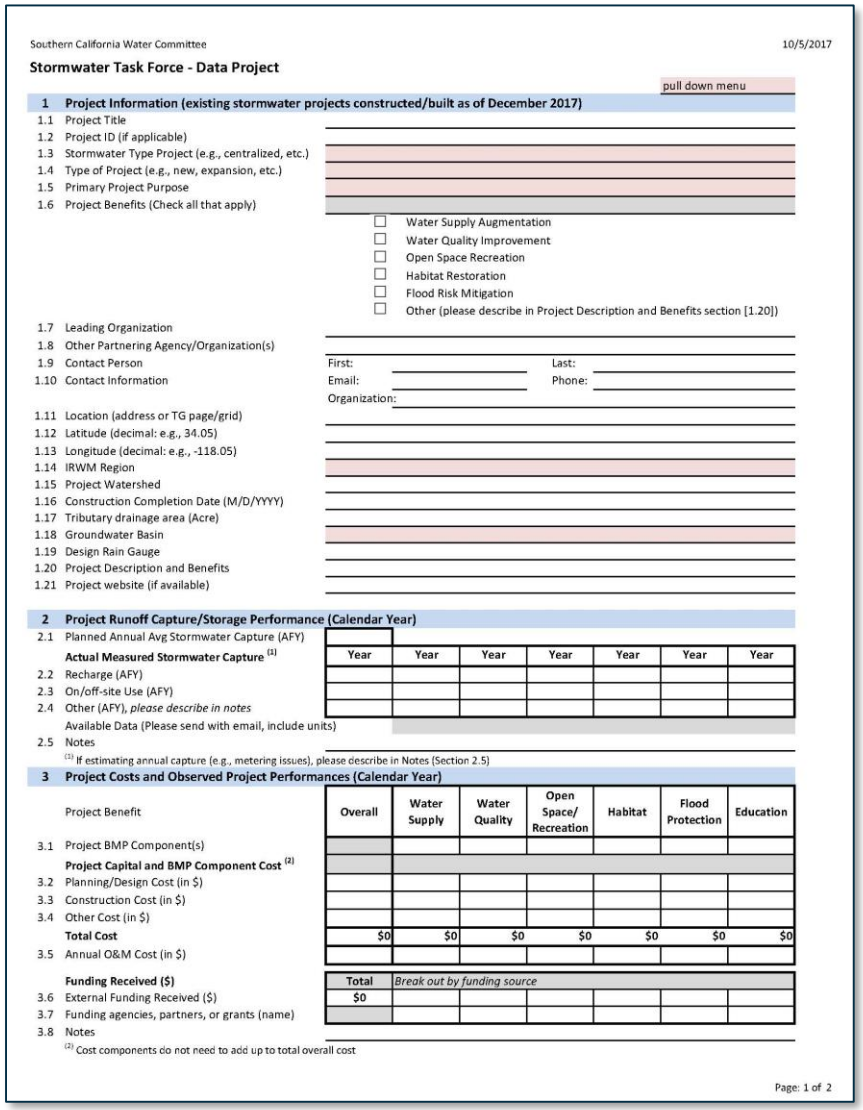
- Improve understanding of actual stormwater capture volumes, costs, benefits, and performance across the region to inform future discussions



APPROACH | WHITEPAPER DEVELOPMENT

DATA COLLECTION | AGENCIES CONTACTED

- Outreach to 30 agencies
- Received over 50 projects across the region
- Collaborated extensively
- Identified data collection challenges



Southern California Water Committee 10/5/2017

Stormwater Task Force - Data Project

pull down menu

1 Project Information (existing stormwater projects constructed/built as of December 2017)

1.1 Project Title
1.2 Project ID (if applicable)
1.3 Stormwater Type Project (e.g., centralized, etc.)
1.4 Type of Project (e.g., new, expansion, etc.)
1.5 Primary Project Purpose
1.6 Project Benefits (Check all that apply)

- ☐ Water Supply Augmentation
- ☐ Water Quality Improvement
- ☐ Open Space Recreation
- ☐ Habitat Restoration
- ☐ Flood Risk Mitigation
- ☐ Other (please describe in Project Description and Benefits section [1.20])

1.7 Leading Organization
1.8 Other Partnering Agency/Organization(s)
1.9 Contact Person
1.10 Contact Information — First: Last: Email: Phone: Organization:
1.11 Location (address or TG page/grid)
1.12 Latitude (decimal: e.g., 34.05)
1.13 Longitude (decimal: e.g., -118.05)
1.14 IRWM Region
1.15 Project Watershed
1.16 Construction Completion Date (M/D/YYYY)
1.17 Tributary drainage area (Acre)
1.18 Groundwater Basin
1.19 Design Rain Gauge
1.20 Project Description and Benefits
1.21 Project website (if available)

2 Project Runoff Capture/Storage Performance (Calendar Year)

2.1 Planned Annual Avg Stormwater Capture (AFY)

Actual Measured Stormwater Capture [1]	Year	Year	Year	Year	Year	Year	Year
2.2 Recharge (AFY)							
2.3 On/off-site Use (AFY)							
2.4 Other (AFY), *please describe in notes*							

Available Data (Please send with email, include units)

2.5 Notes

[1] If estimating annual capture (e.g., metering issues), please describe in Notes (Section 2.5)

3 Project Costs and Observed Project Performances (Calendar Year)

Project Benefit	Overall	Water Supply	Water Quality	Open Space/ Recreation	Habitat	Flood Protection	Education
3.1 Project BMP Component(s)							
Project Capital and BMP Component Cost [2]							
3.2 Planning/Design Cost (in $)							
3.3 Construction Cost (in $)							
3.4 Other Cost (in $)							
Total Cost	$0	$0	$0	$0	$0	$0	$0
3.5 Annual O&M Cost (in $)							

Funding Received ($)	Total	*Break out by funding source*					
3.6 External Funding Received ($)	$0						
3.7 Funding agencies, partners, or grants (name)							

3.8 Notes

[2] Cost components do not need to add up to total overall cost

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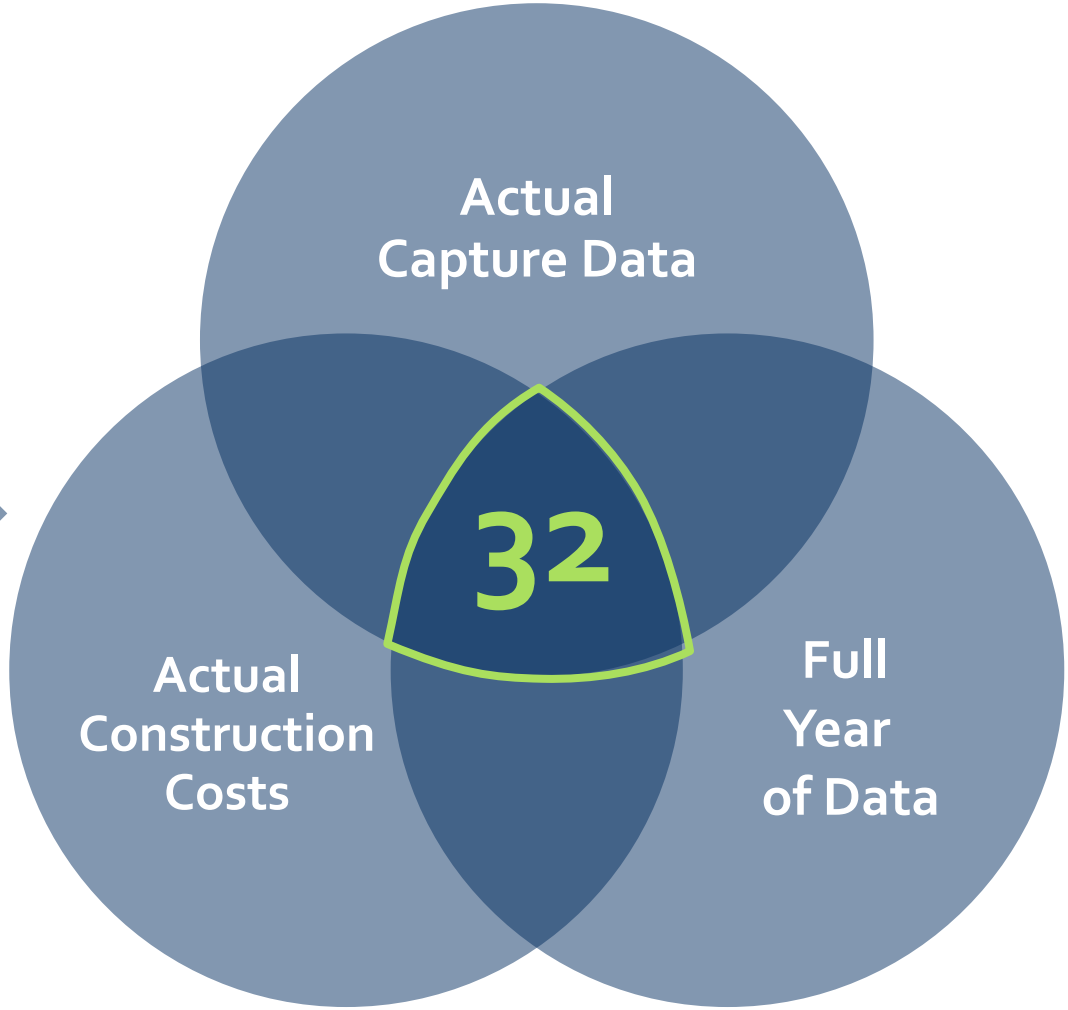
DATA COLLECTION | PROJECT TYPES

Centralized for Recharge	**Large** projects that capture runoff for *groundwater recharge*
Distributed for Recharge	**Small** projects that capture on-site runoff for *groundwater recharge*
Distributed for Direct Use	**Small** projects that capture on-site runoff for *non-potable uses*

DATA REVIEW | ASSESSED DATA

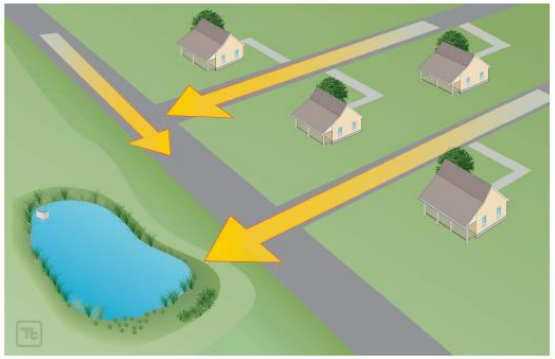
32 Projects with Complete Data

54 Projects Received

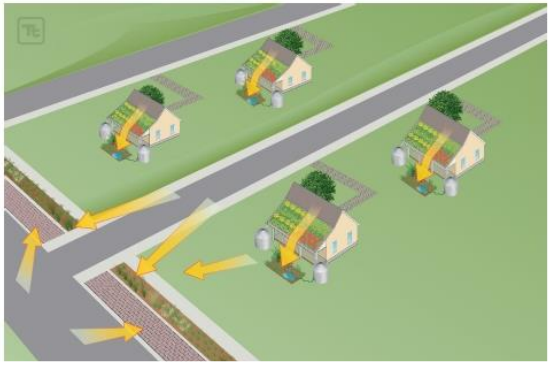


DATA SET | 32 PROJECTS ANALYZED

29 Centralized



3 Distributed

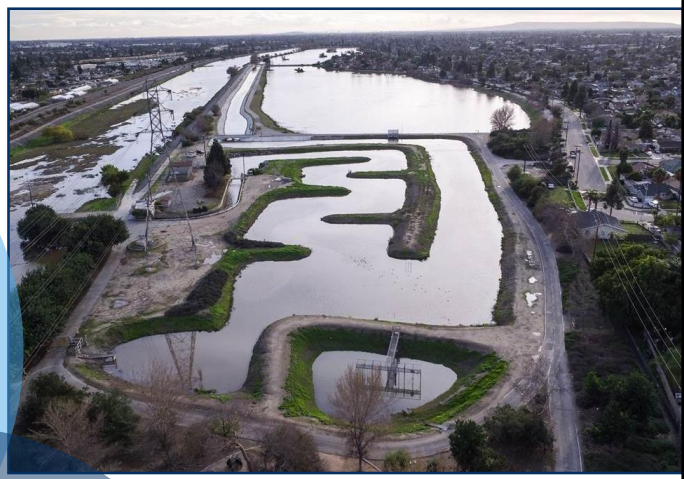


25 Retrofit/Rehabilitation

4 New

3 New

DATA SET | PRIMARY PROJECT BENEFITS



Water Supply
27 projects

Water Quality
3 projects

Flood Risk Mitigation
2 projects

DATA SET | SUMMARY OF PROJECTS

Total Construction Cost

$132 million

In 2017$

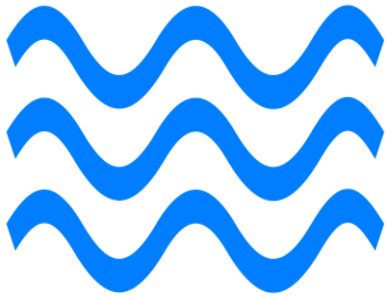
Average Rainfall

10.0”

WY 2006-16 below Long-term Average of 15.2”

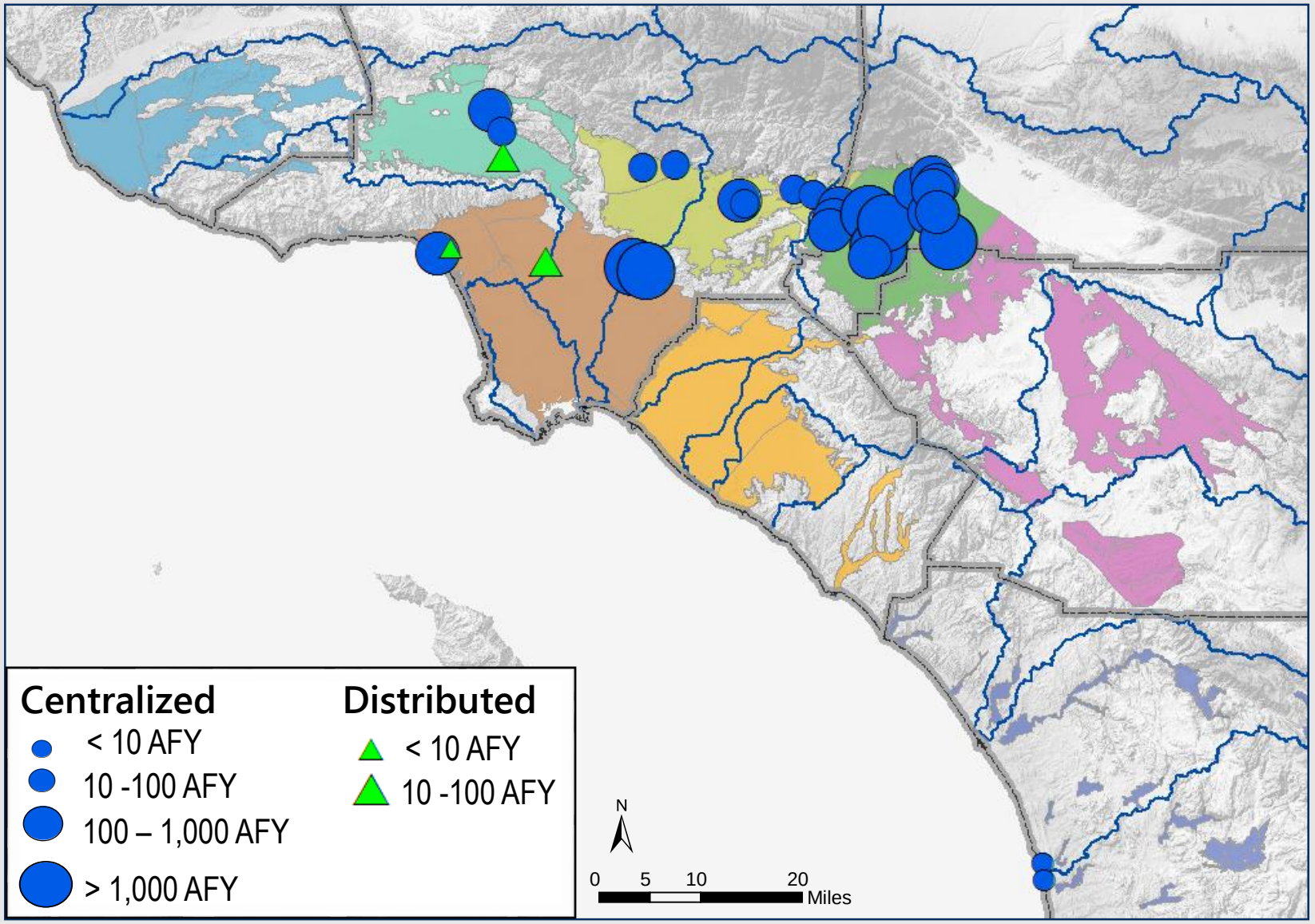
Average Stormwater Captured

13,400 AFY

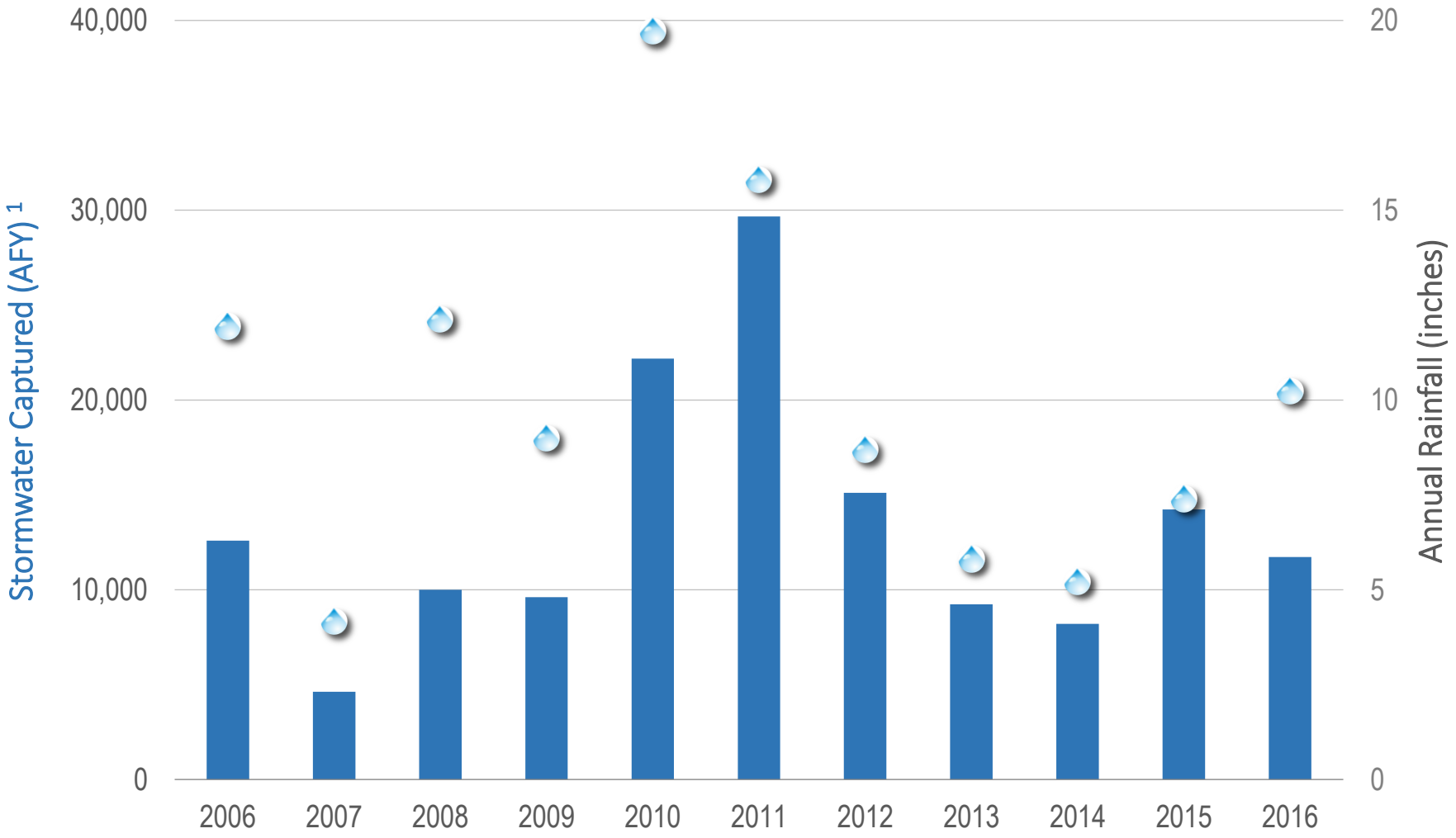


WY 2006-16 From 32 Projects

LOCATION | ACROSS SOUTHERN CALIFORNIA

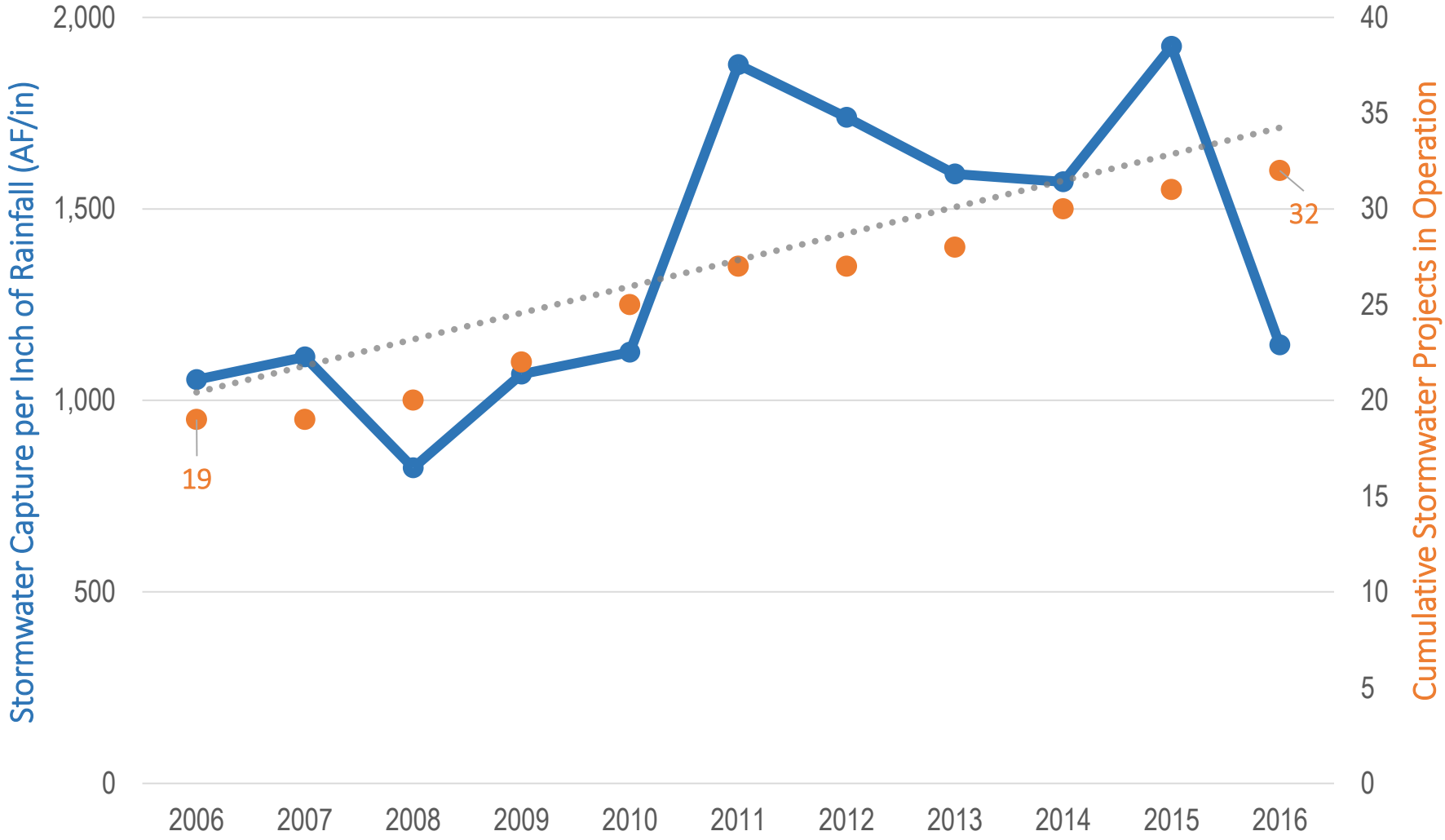


ANALYSIS | ANNUAL CAPTURE & RAINFALL

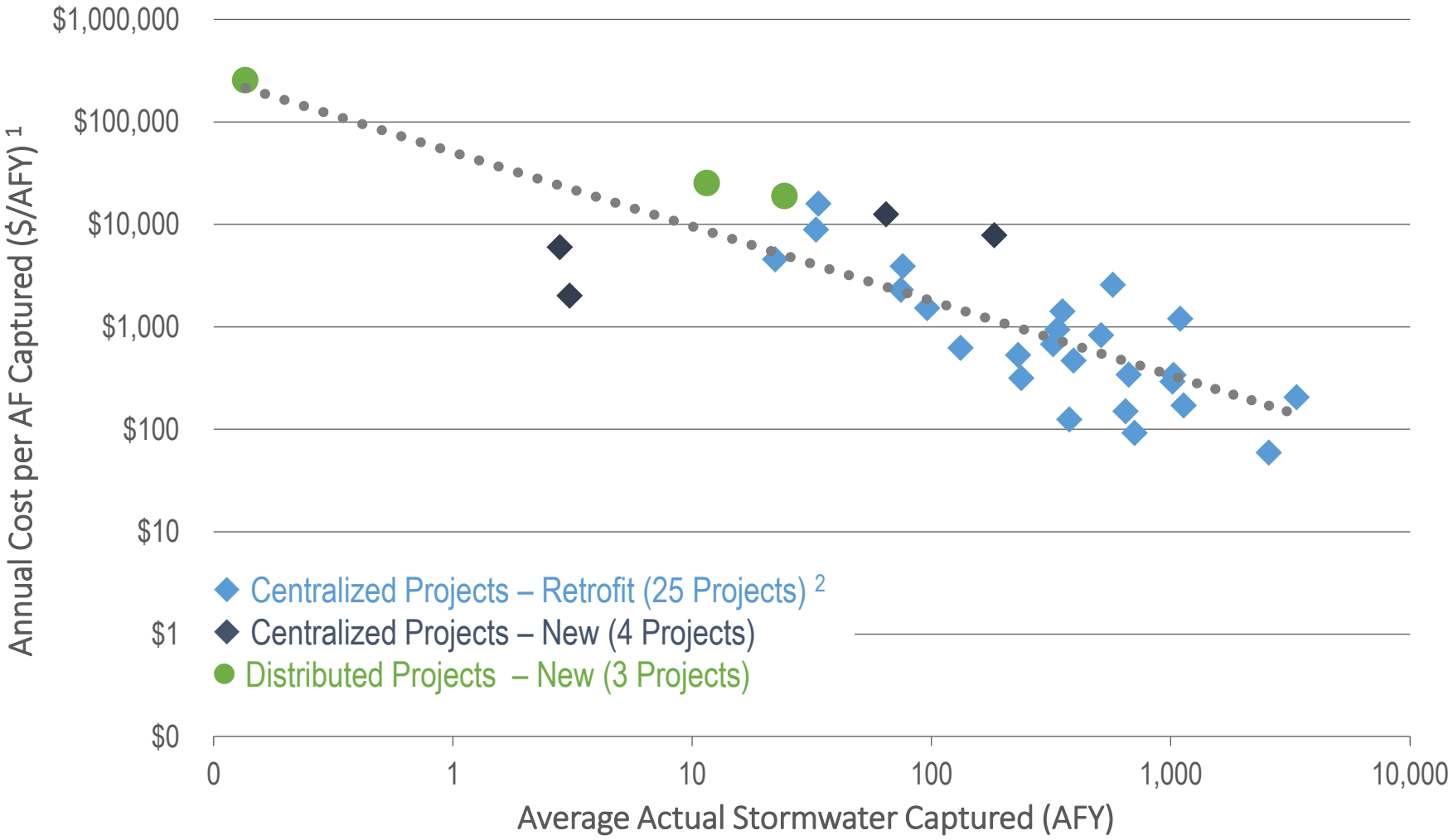


[1]Total annual stormwater captured by the 32 projects.

ANALYSIS | INCREASING CAPTURE ABILITY



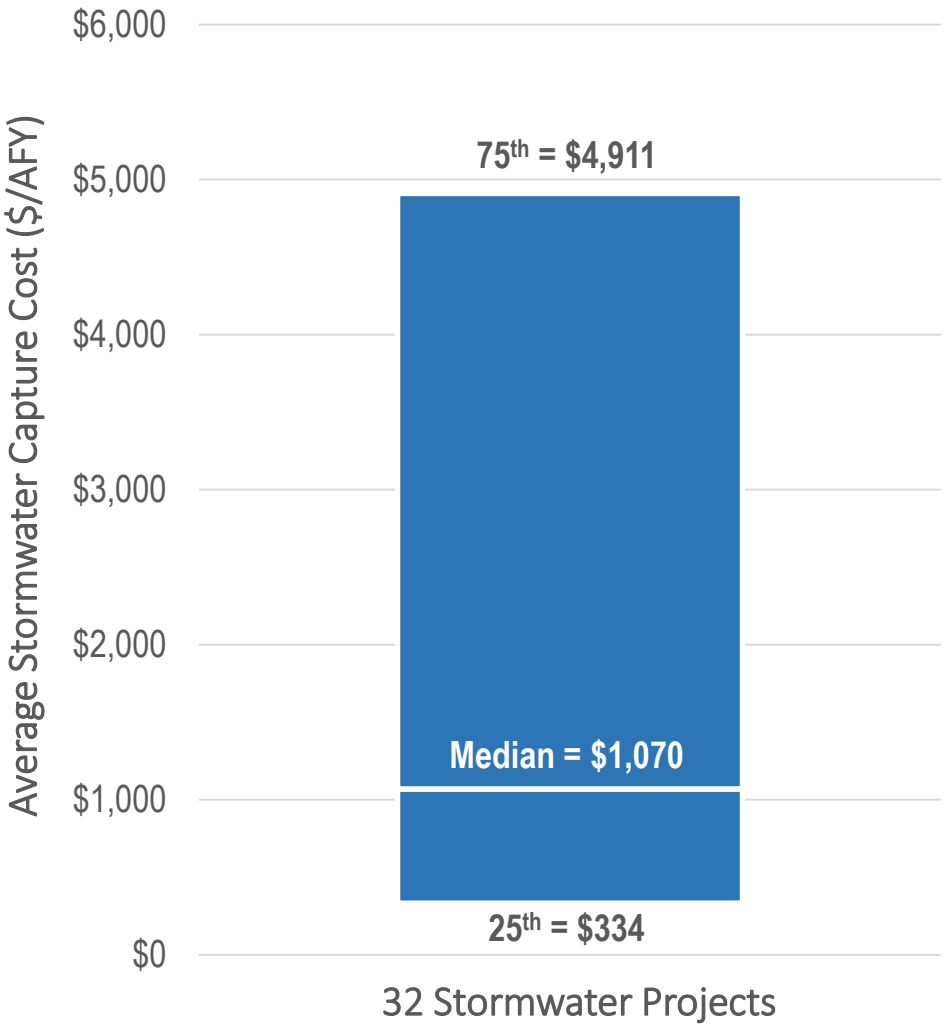
ANALYSIS | STORMWATER UNIT COST



[1]Capital costs amortized over 30 years

[2]Includes capture by the entire spreading grounds (does not isolate the marginal capture of the retrofit)

ANALYSIS | RANGE OF CAPTURE COSTS



Median Unit Stormwater Cost

Centralized Retrofit = $600/AF

Centralized New = $6,900/AF

Distributed = $25,000/AF

SUMMARY | KEY INSIGHTS & FINDINGS

- **Retrofit Projects** tend to be more cost effective than new projects
- **Distributed Projects** are usually designed for multiple benefits, a key one being water supply
- **Good Monitoring** is essential

DATA CHALLENGES | COMMON PROBLEMS

Actual Flow Data

- No monitoring
- Technical difficulties
- Difficult to isolate benefits from retrofit projects

Actual Cost Data

- Difficult to isolate stormwater costs
- O&M costs are averaged over time
- Historical costs difficult to obtain

NEXT STEPS | FUTURE OPPORTUNITIES

- SCWC Whitepaper on **stormwater project implementation and funding** challenges
- Study the **relationship between stormwater capture and water supply** yield
- Explore **opportunities for multiple agencies to partner** on stormwater projects
- Continue regional **collaboration on stormwater data and monitoring**

ACKNOWLEDGEMENTS | THANK YOU

- **Data Submission**
  - IEUA, OCFCD, EMWD, LACFCD, LADWP, LASAN, San Elijo JPA, Cities of Santa Monica and Torrance, County of Ventura
- **Working Group**
  - HATCH – Pavitra Rammohan
  - IEUA – Andy Campbell
  - MWD – Matthew Hacker and Miluska Propersi
  - SCWC – Rich Atwater

Questions?

SCWC socalwater.org/stormwater

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