



STORMWATER DATA PROJECT & 2017 WHITEPAPER

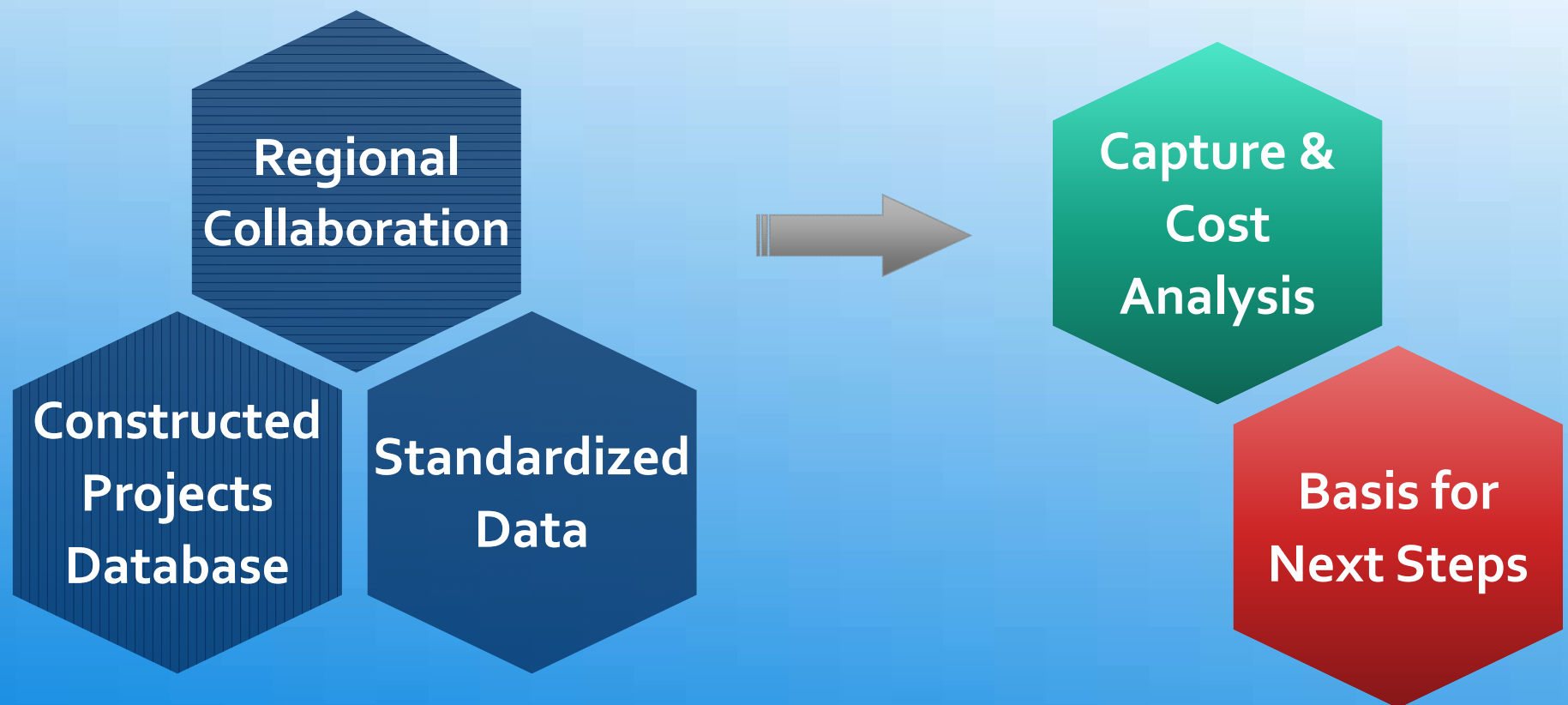
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October 11, 2017

PURPOSE | 2017 WHITEPAPER

- ▶ Present stormwater project performance data, identify data gaps and challenges, and highlight lessons learned to inform stormwater discussions

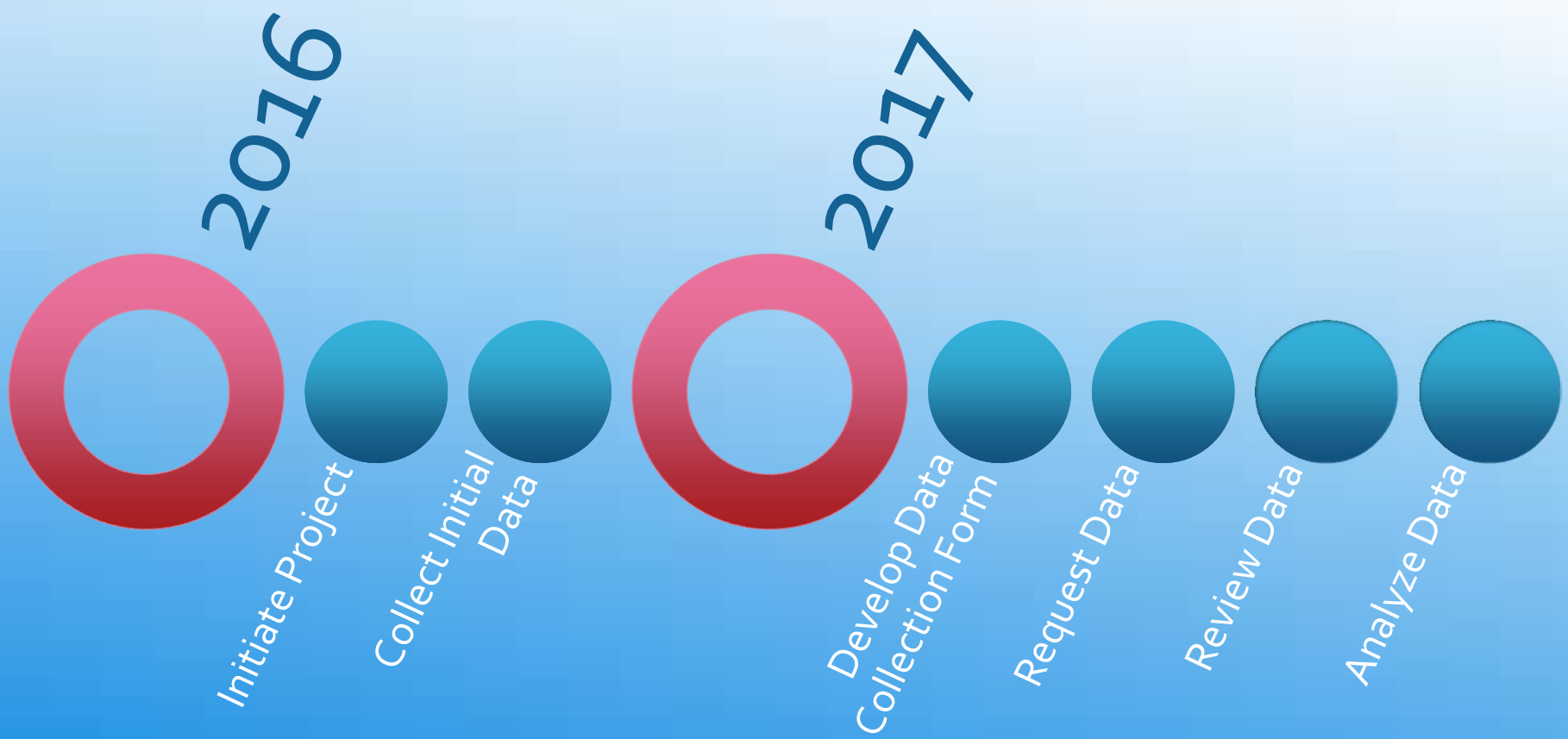


BACKGROUND | 2012 WHITEPAPER

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



APPROACH | WHITEPAPER DEVELOPMENT



NEXT STEPS | 2017 WHITEPAPER

▶ Schedule

- ▶ Mid October » Release of draft 2017 Whitepaper
 - ▶ *Last chance to submit actual stormwater data!*
 - ▶ *Welcome reviewers from all sectors!*
- ▶ Early 2018 » Finalize 2017 Whitepaper



STORMWATER DATA PROJECT

SCWC 2017 Stormwater Workshop

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) _____

2.2 Actual Measured Stormwater Capture ⁽²⁾

Year	Year	Year	Year	Year	Year	Year

2.3 Recharge (AFY) _____

2.4 On/off-site Use (AFY) _____

2.4 Other (AFY), please describe in notes _____

2.5 Available Data (Please send with email, include units) _____

2.5 Notes _____

⁽²⁾ 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)							
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
\$0	

3.6 External Funding Received (\$) _____

3.7 Funding agencies, partners, or grants (name) _____

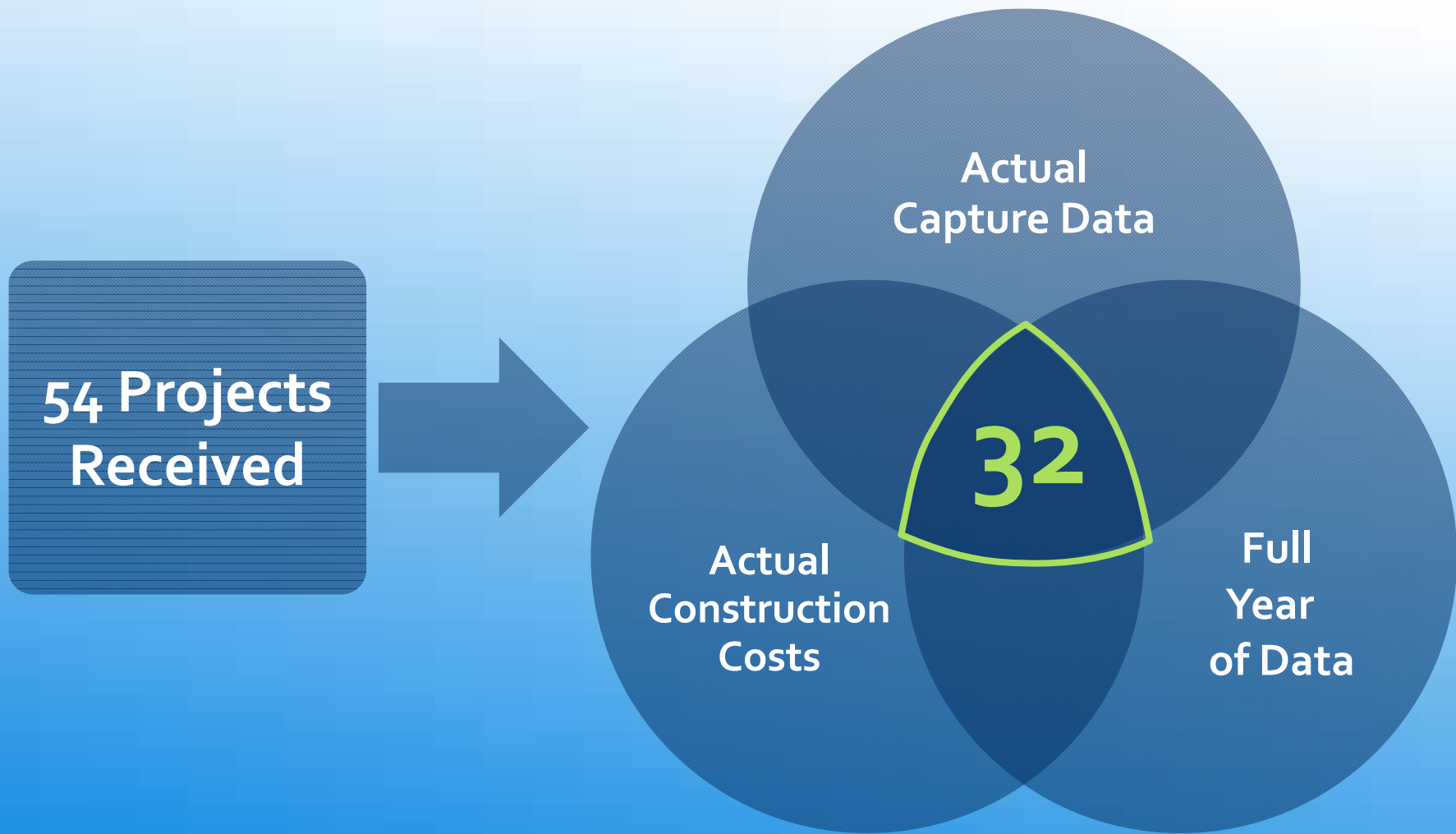
3.8 Notes _____

⁽²⁾ Cost components do not need to add up to total overall cost

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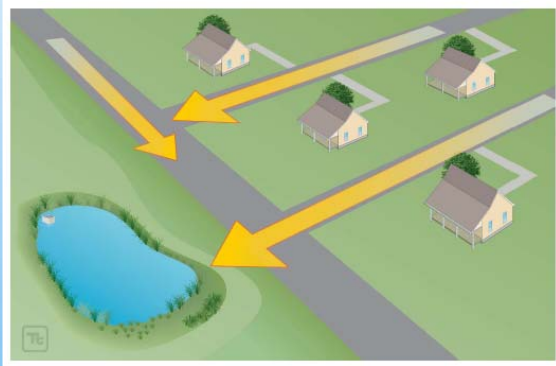
DATA REVIEW | ASSESSED DATA

32 Projects with Complete Data

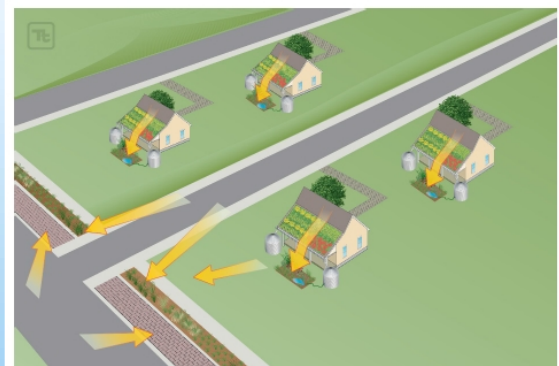


DATA SET | 32 PROJECTS ANALYZED

29 Centralized



3 Distributed



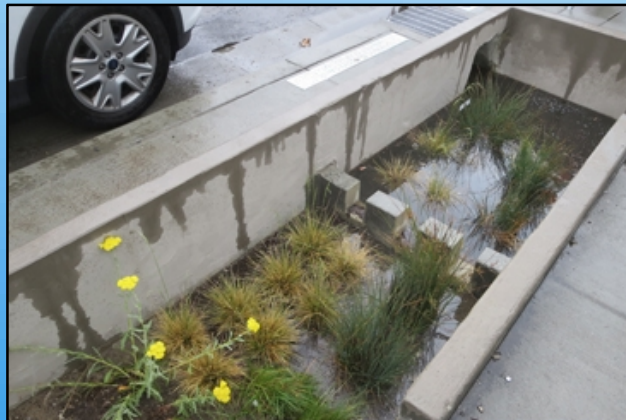
25 Retrofit/Rehabilitation



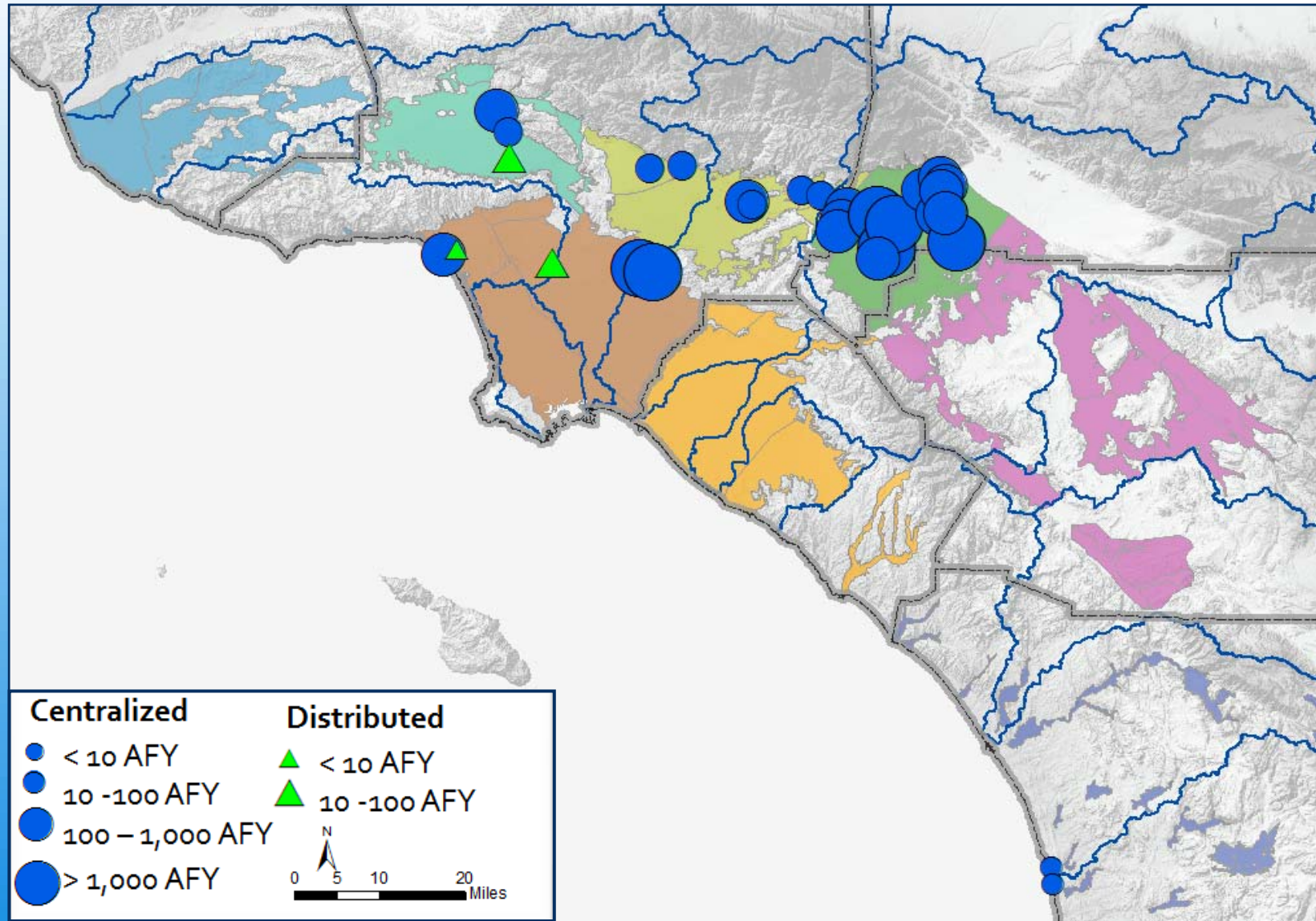
4 New



3 New



LOCATION | ACROSS SOUTHERN CALIFORNIA



DATA SET | PROJECT SIZE SUMMARY

Type/Size*	New	Retrofit Spreading Grounds
Centralized		
> 1,000 AFY		9
100 – 1,000 AFY	1	13
10 - 100 AFY	1	2
< 10 AFY	2	1
Distributed		
10 - 100 AFY	2	
< 10 AFY	1	

*Based on Planned Annual Average Captured

DATA SET | CAPITAL COST SUMMARY

Type/Size	New	Retrofit* Spreading Grounds
Centralized		
> \$10 million	1	2
\$1 – \$10 million	1	18
< \$1 million	2	5
Distributed		
\$1 – \$10 million	2	
< \$1 million	1	

*Based on cost of the retrofit only (not total spreading ground cost)

DATA SET | PRIMARY PROJECT BENEFITS



Water Supply
27 projects

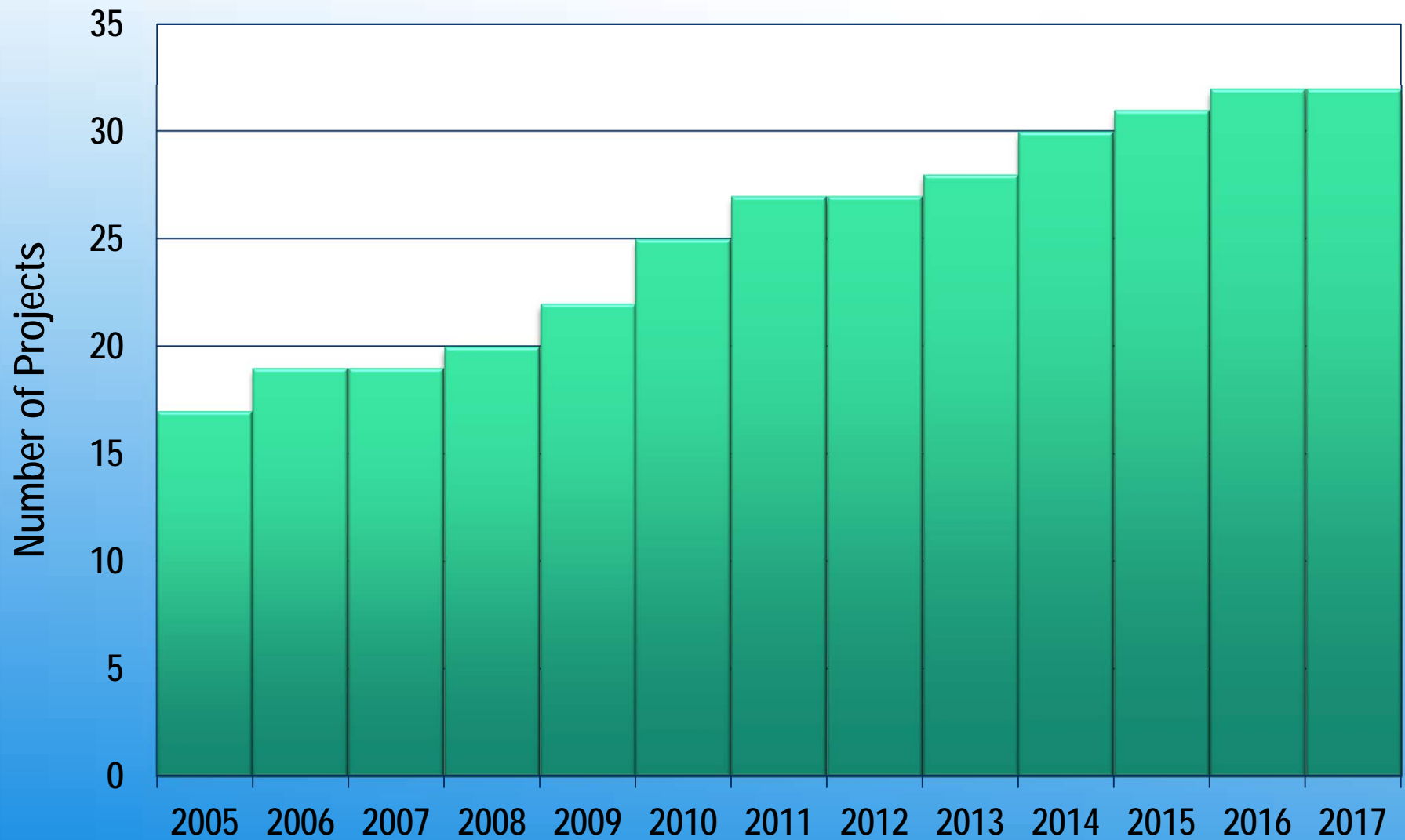


Flood Risk Mitigation
2 projects

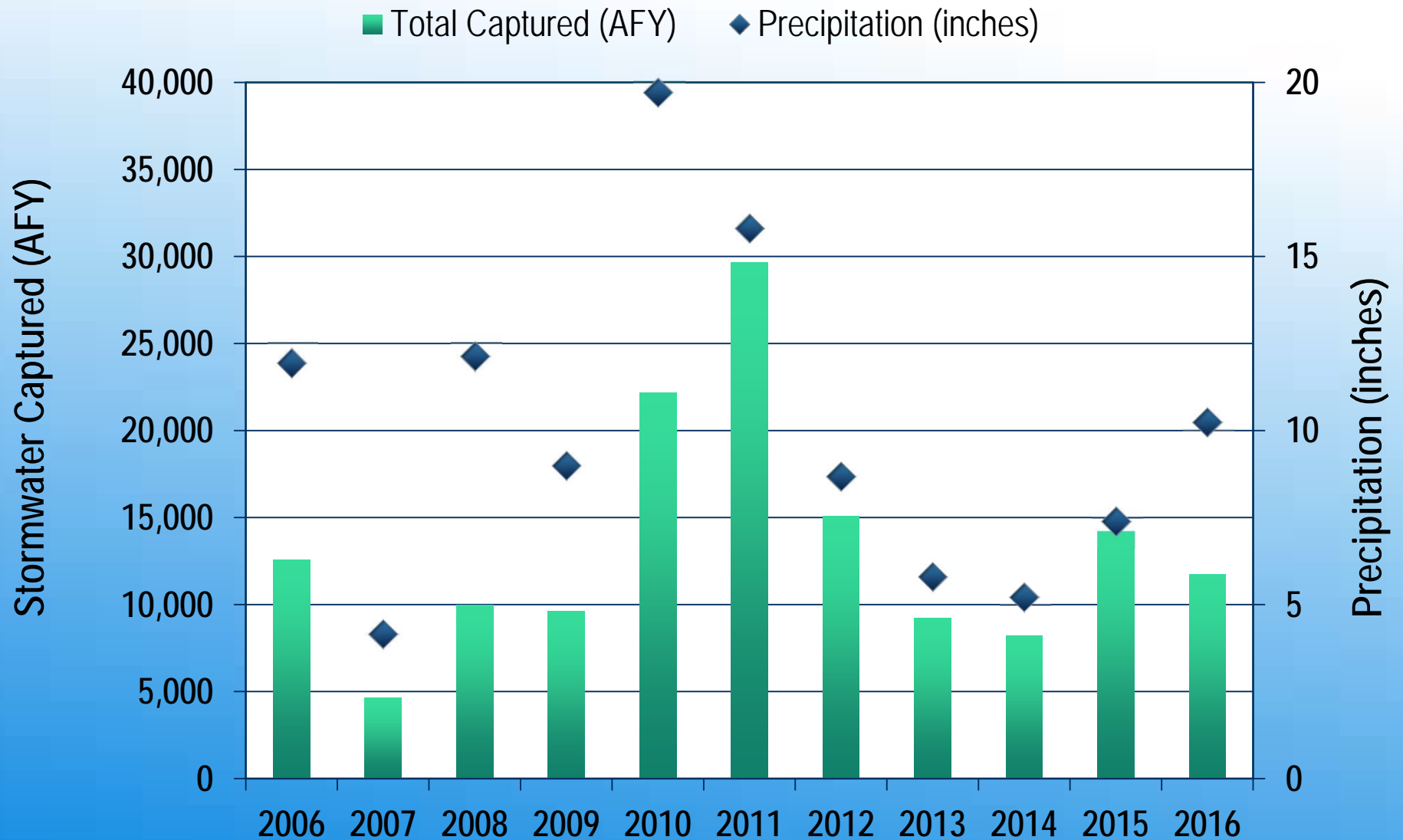
Water Quality
3 projects



DATA SET | PROJECT COMPLETION



DATA ANALYSIS | CAPTURE & PRECIPITATION



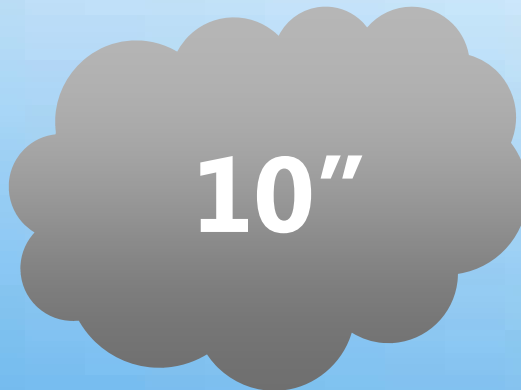
DATA SET | SUMMARY

Average
Stormwater
Captured



WY 2006-16
From 32 projects

Average
Rainfall



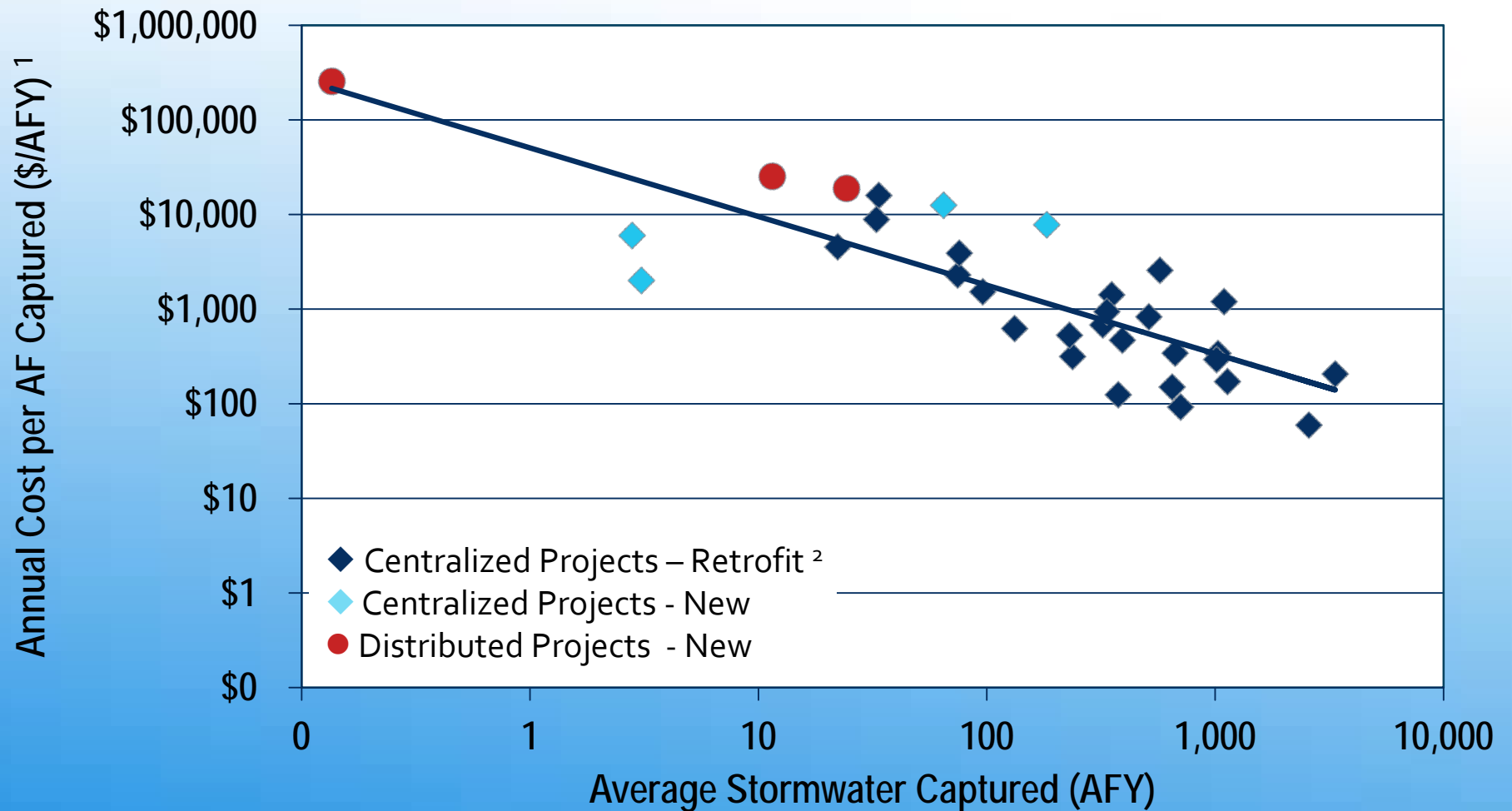
WY 2006-16 Below
Long-term
Average of 15.2"

Average
Construction Cost



\$132 million
in 2017\$

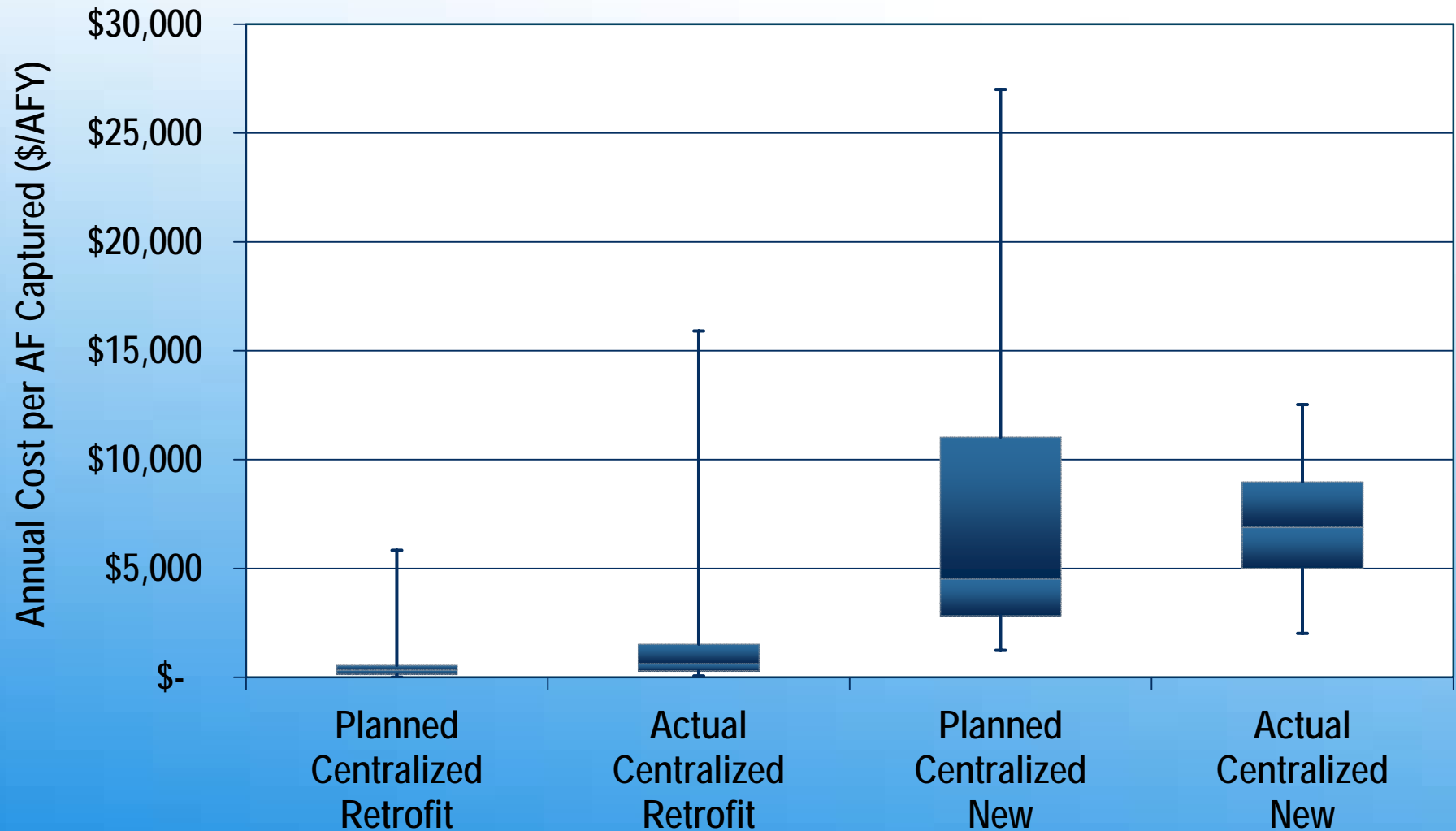
DATA ANALYSIS | CAPTURE VERSUS COST



¹Capital costs amortized over 30 years

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

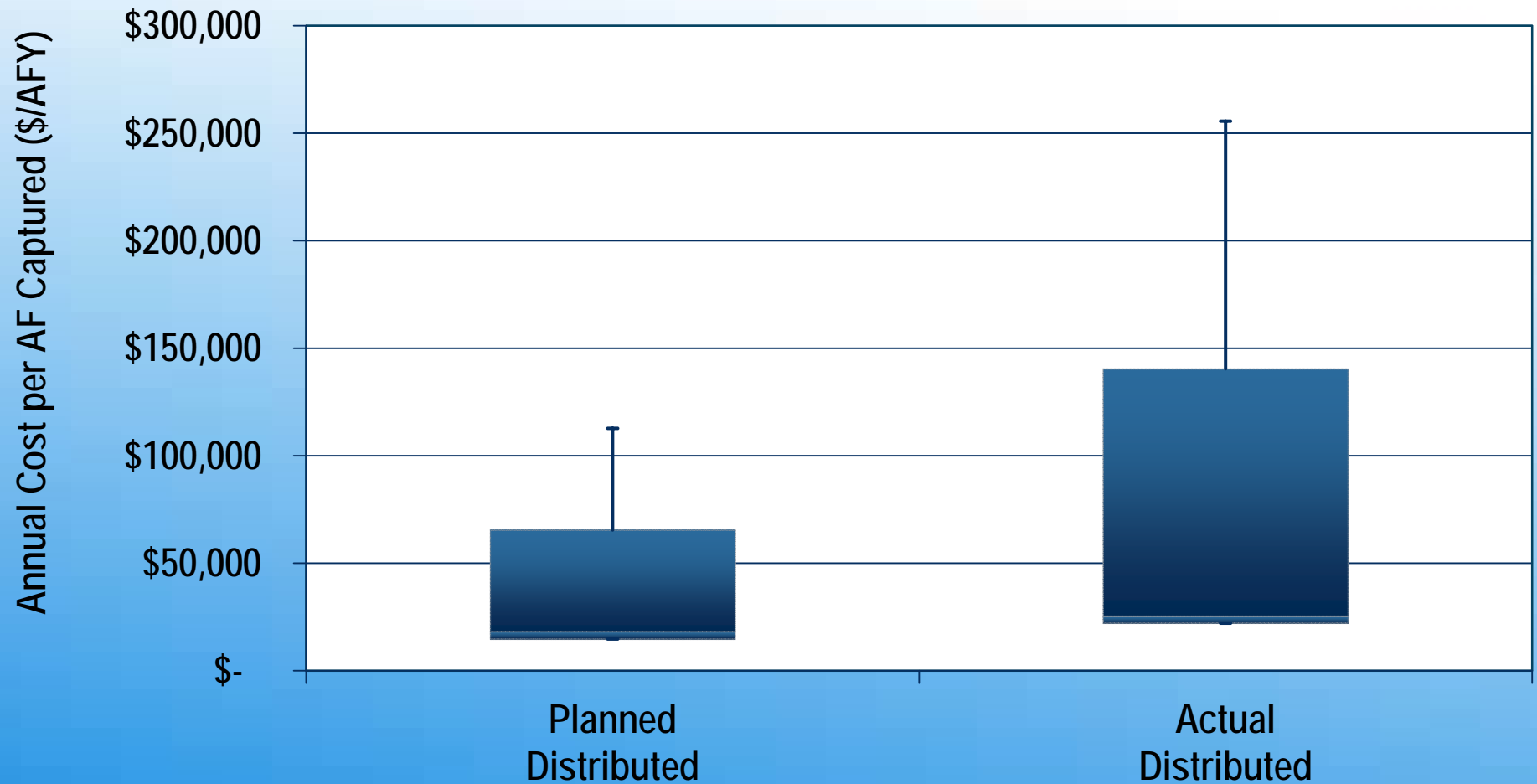
DATA ANALYSIS | CENTRALIZED PROJECTS



¹Capital costs amortized over 30 years

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

DATA ANALYSIS | DISTRIBUTED PROJECTS



¹Capital costs amortized over 30 years

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

SUMMARY | DATA ANALYSIS

- ▶ **Retrofit Projects** tend to be more cost effective than new projects
- ▶ **Distributed Projects** primary purpose may not be water supply but have opportunities for partnerships
- ▶ **Monitoring** is essential

ACKNOWLEDGEMENTS | THANK YOU

▶ Data Submission

- ▶ IEUA, LACFCD, LADWP, OCFCD, EMWD, San Elijo JPA, County of Ventura, Cities of Santa Monica and Torrance

▶ Working Group

- ▶ IEUA – Andy Campbell
- ▶ HATCH – Pavitra Rammohan
- ▶ MWD – Matthew Hacker, Stacie Takeguchi
- ▶ SCWC – Rich Atwater

Questions?



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