

SMC REGIONAL STORMWATER MONITORING COMPARISON AND EVALUATION

OVERVIEW OF MONITORING PROGRAMS

COUNTY OF RIVERSIDE

May 15, 2012

MS4 Permit



- RWQCBs: Colorado River Basin Santa Ana San Diego
- Term: 2008-2013 2010-2015 2010-2015
- Most monitoring plan details prescribed in permit

Description	# sites	# storm events	# dry events
Receiving Water	9 ¹	2-3	2
MS4 outfall (Mass Emission)	14	2-3	2-4

Monitoring Year: July 1st – June 30th

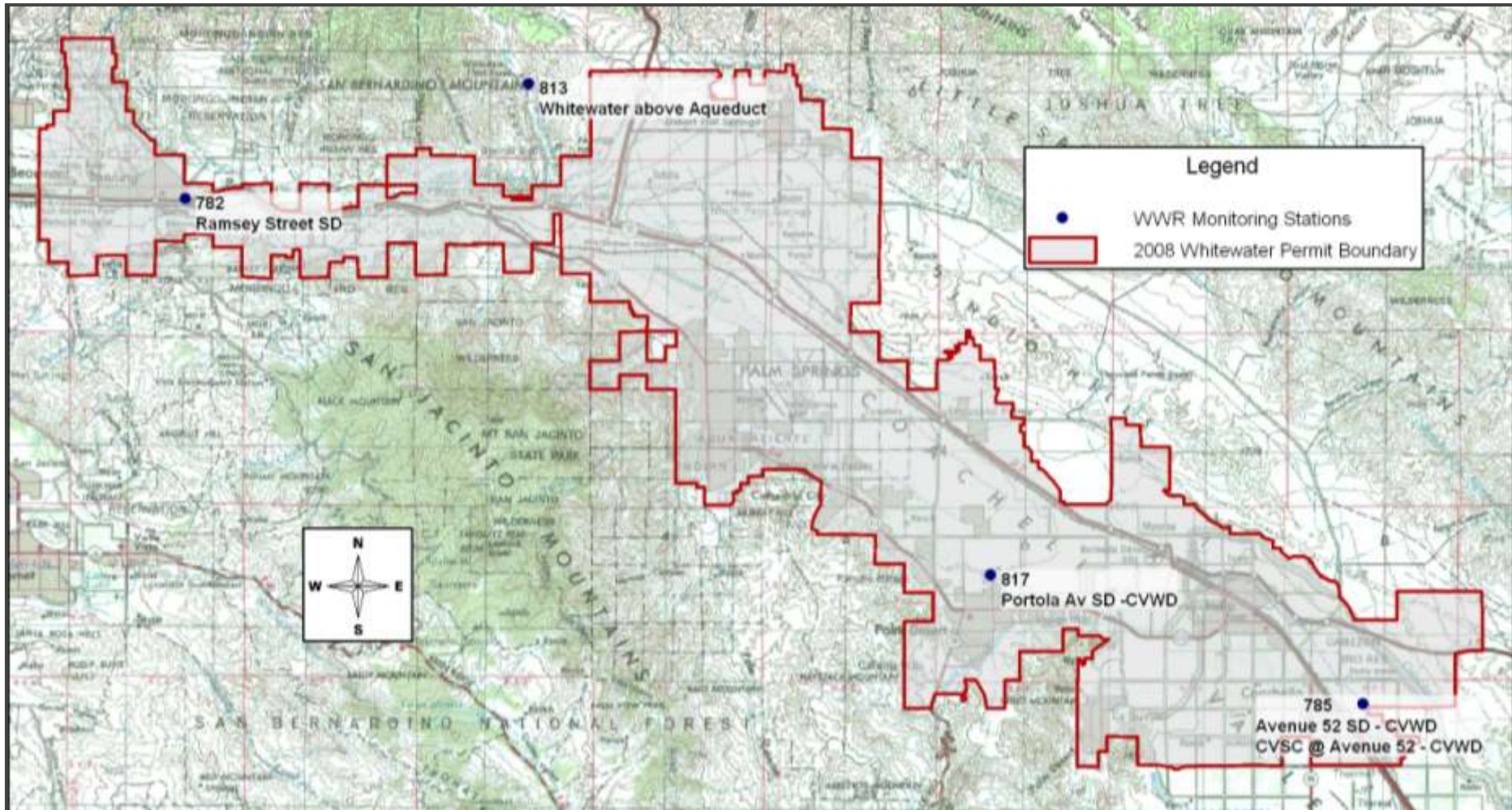
¹ 2 sites are storm only, 2 sites are dry only

Site selection

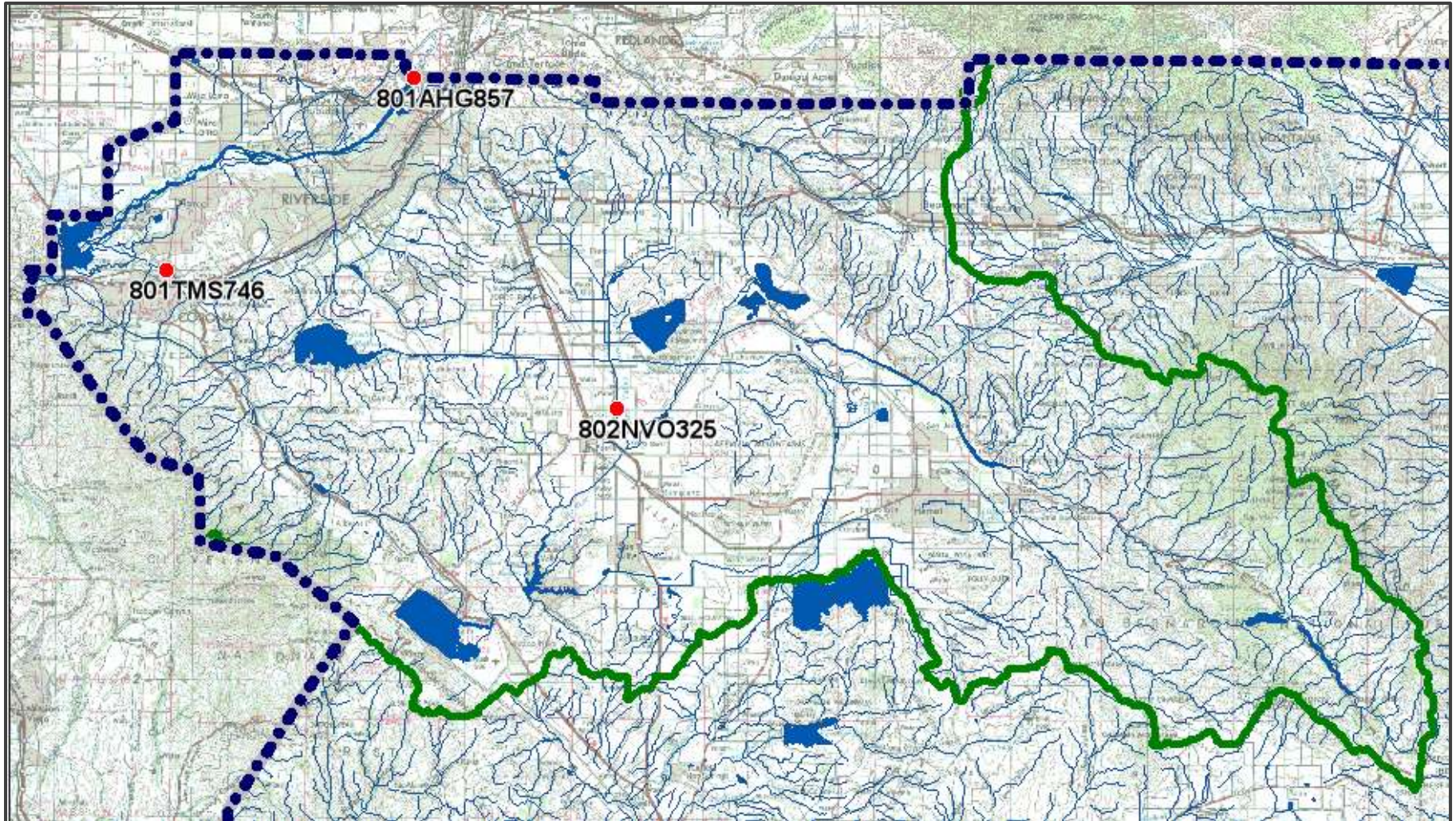


- Receiving Water stations
 - Permit-specified
 - Calculate loads from tributary watershed, cumulative impact of MS4 inputs, trends
- MS4 Outfalls/Mass Emission Stations
 - Representative of urban land uses
 - Permit-specified, selected by Permittees
 - Selection a balance of
 - Land-use representative of Urban land uses
 - Avoid non-MS4, non-Permittee contributions
 - Ability to measure flow, safety
 - Estimate loads, EMC, trends, MS4 contribution to WQ exceedances

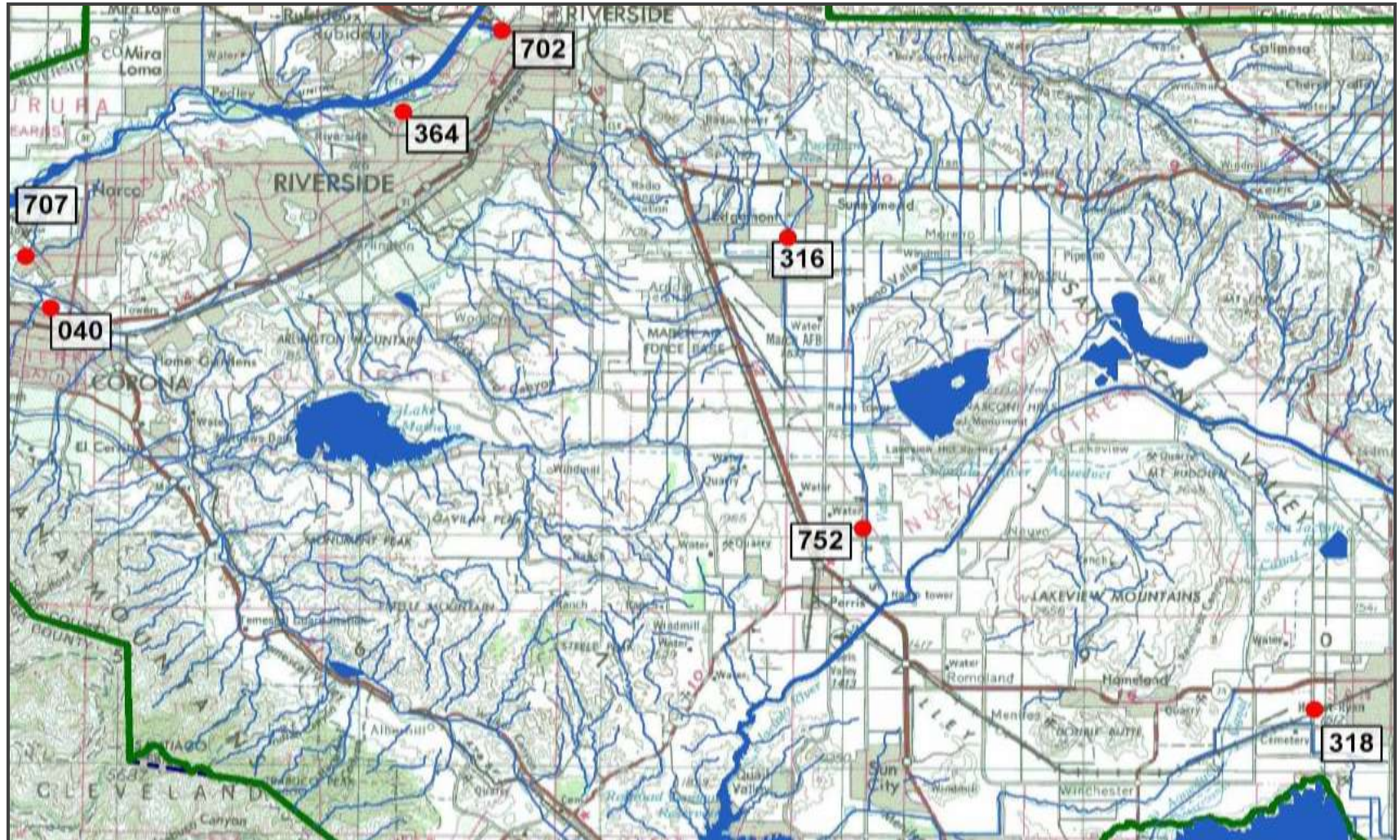
WWR Monitoring sites



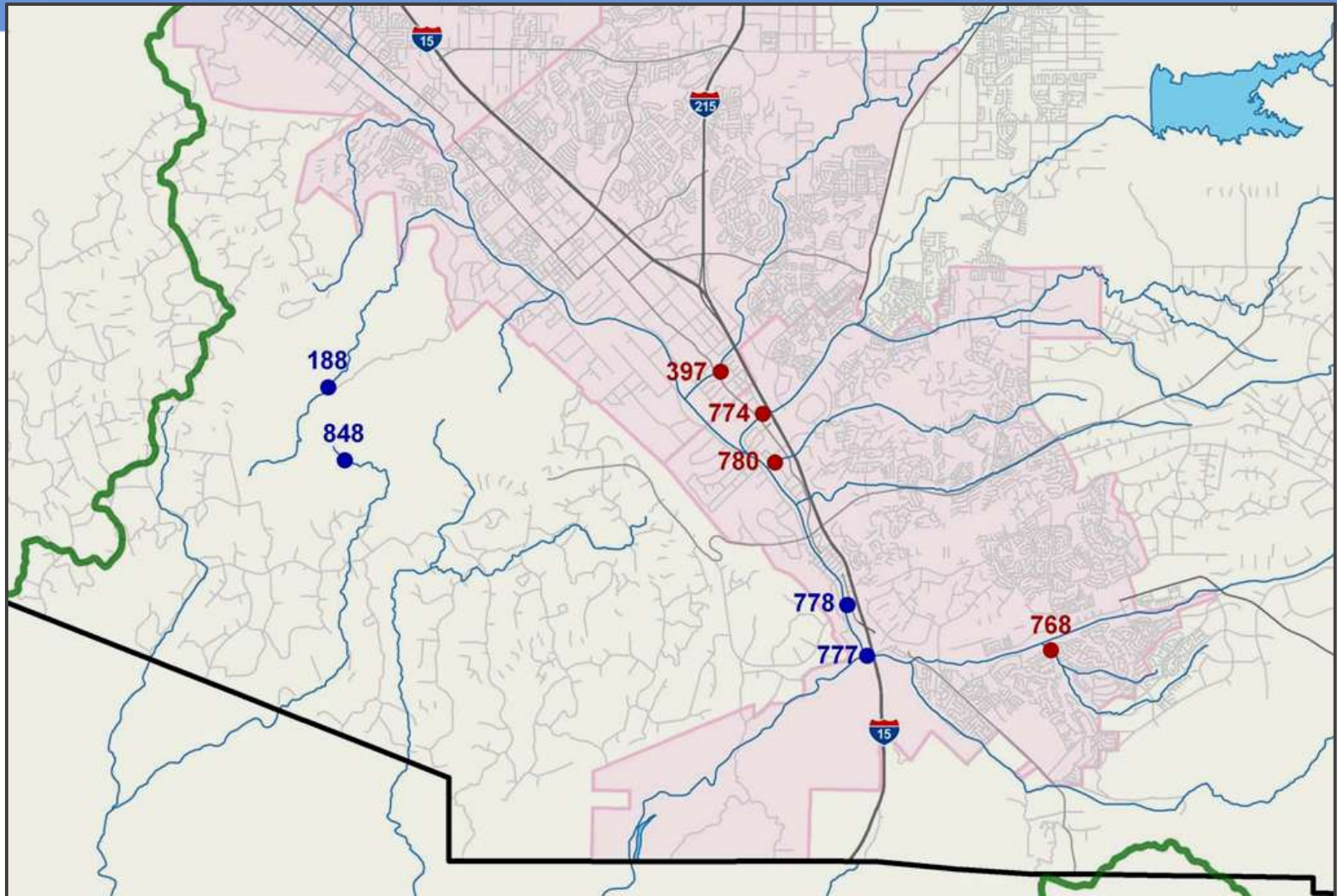
SAR Monitoring sites



SAR Monitoring sites



SMR Monitoring sites



RW Sampling



- SAR, SMR: Time-paced, flow-composited at lab
 - ▣ Sample first 3 hrs of storm flow (“incipient flow”)
 - ▣ Auto-samplers used (Sigma, ISCO)
 - ▣ SMR: 10 x 1/2-gal glass bottles per event per site
 - ▣ SAR: 20 x 1-L poly wedge bottles per event per site
 - ▣ Single grab samples for bacteria, VOCs, Toxicity, O&G, TPH
- WWR: Grab (daylight hours only)
- Field: pH, DO, conductivity, turbidity, temperature

Event summary



- “Wheels out”/”Stand down” decision based on QPS & AMC conditions
- Up to 5 field teams of 2 persons each, 1 person storm control
- Site visit 1 (< 24 hrs pre-event): Auto-sampler install at select stations
- Team Briefing (set reporting/wheels out time)
 - ▣ “Wheels out” usually set at rain onset; WWR: Night-time restrictions
- Site visit 2 (actual event sampling): grabs, check auto-samplers; recover composite bottles
- Deliver bacteria samples to lab within 4 hrs of sampling
- Deliver remaining samples to lab (if not delivered w/ bacteria samples)
- Site visit 3 (if needed): recover auto-sampling equipment
- Post event: Paperwork QA (Field data sheets, COCs, debrief)

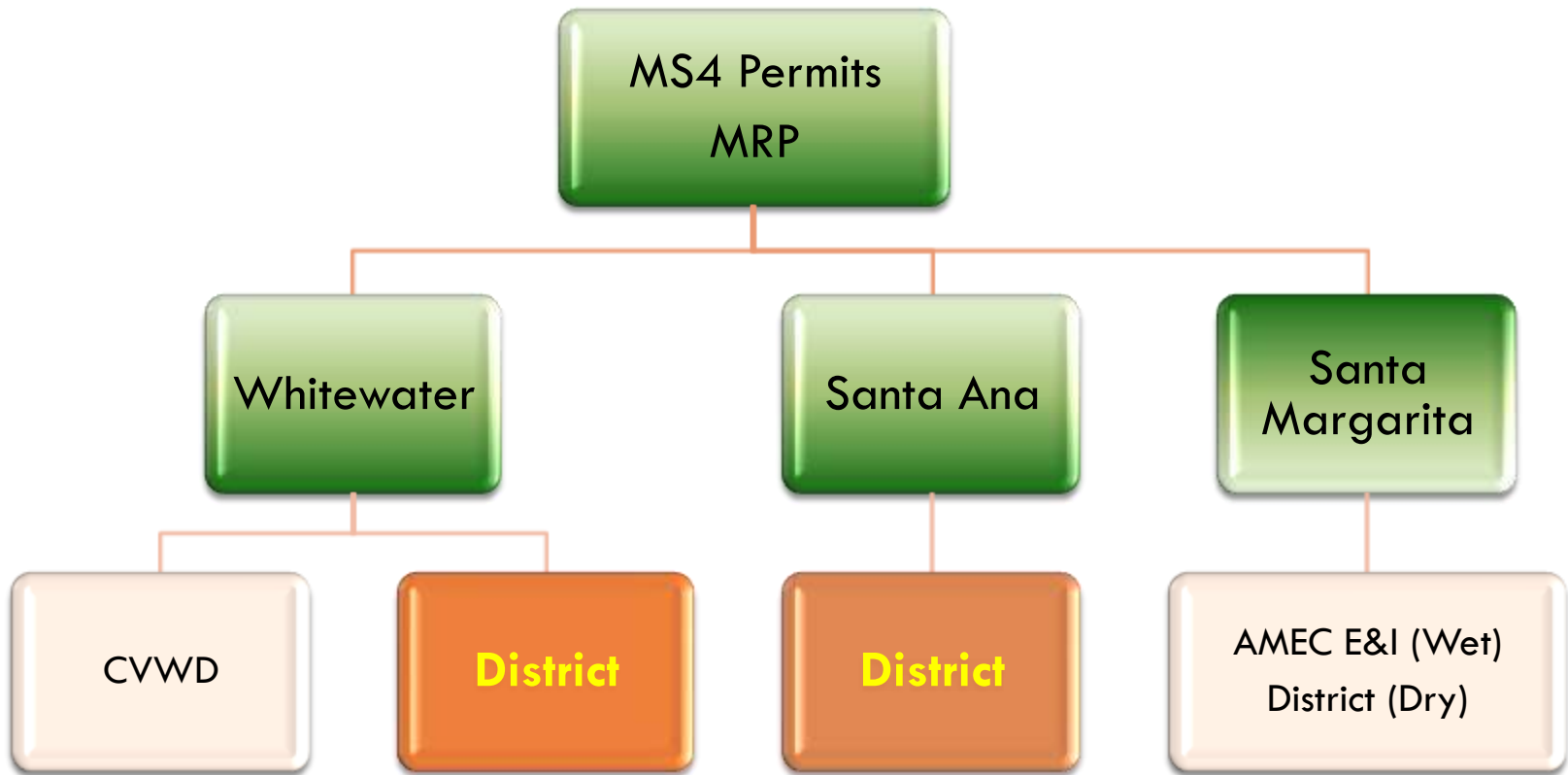
Program Highlights



3 Regional Boards – 3 Monitoring Programs

- Total 6 “Projects” – 2 per watershed
 - Permit monitoring only; does not include TMDL, grant & special projects such as SMC & LID BMP
- Up to 5 Sampling Teams
 - WWR: CVWD (Valley sites); RCFC (Banning, WW-Trout)
 - SAR: Receiving Waters; West CORE & East CORE
 - SMR: Wet Weather (Consultant)
Dry Weather (District)

Program Highlights



Program Highlights



3 Regional Boards – 3 Monitoring Programs

- Common to all programs:
 - ▣ Weather tracking, mobilization procedures, paperwork
- Heavy pre-season preparation:
 - ▣ Analyte & bottle lists reviewed at beginning of fiscal year & coordinated with lab.
 - ▣ Field sampler training held pre-wet season (field QA & safety)
 - ▣ Dry weather sampling event held as wet-weather simulation in conjunction with District Storm Patrol exercises (mock flood patrols, 24-hr Storm Center)
 - ▣ All teams have an experienced sampler: “lead” sampler





