

Sacramento Stormwater Quality Partnership Mercury Programs

Monitoring, Modeling and Control Strategies

March 6, 2012 – Central Valley Regional Water Quality Control Board Methylmercury TAC Workshop

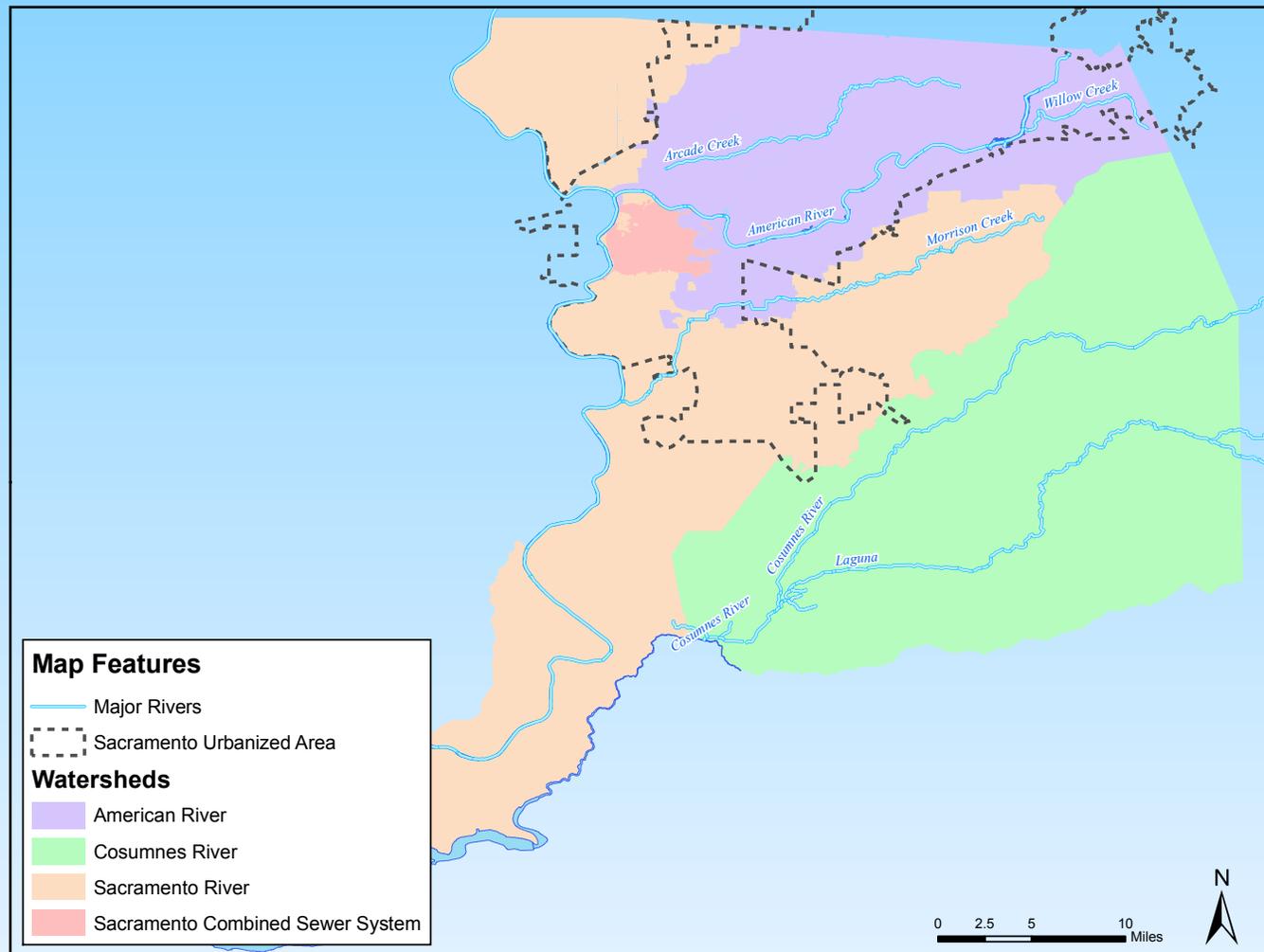
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Partnership, Permit and Programs

- Seven member agencies are co-Permittees
- First NPDES permit 1991; most recent renewal 2008
- Stormwater Quality Improvement Plan (SQIP)
- “Joint” monitoring, target pollutant and other technical activities (i.e. regional development standards)

Urban Drainages



Target Pollutant Program

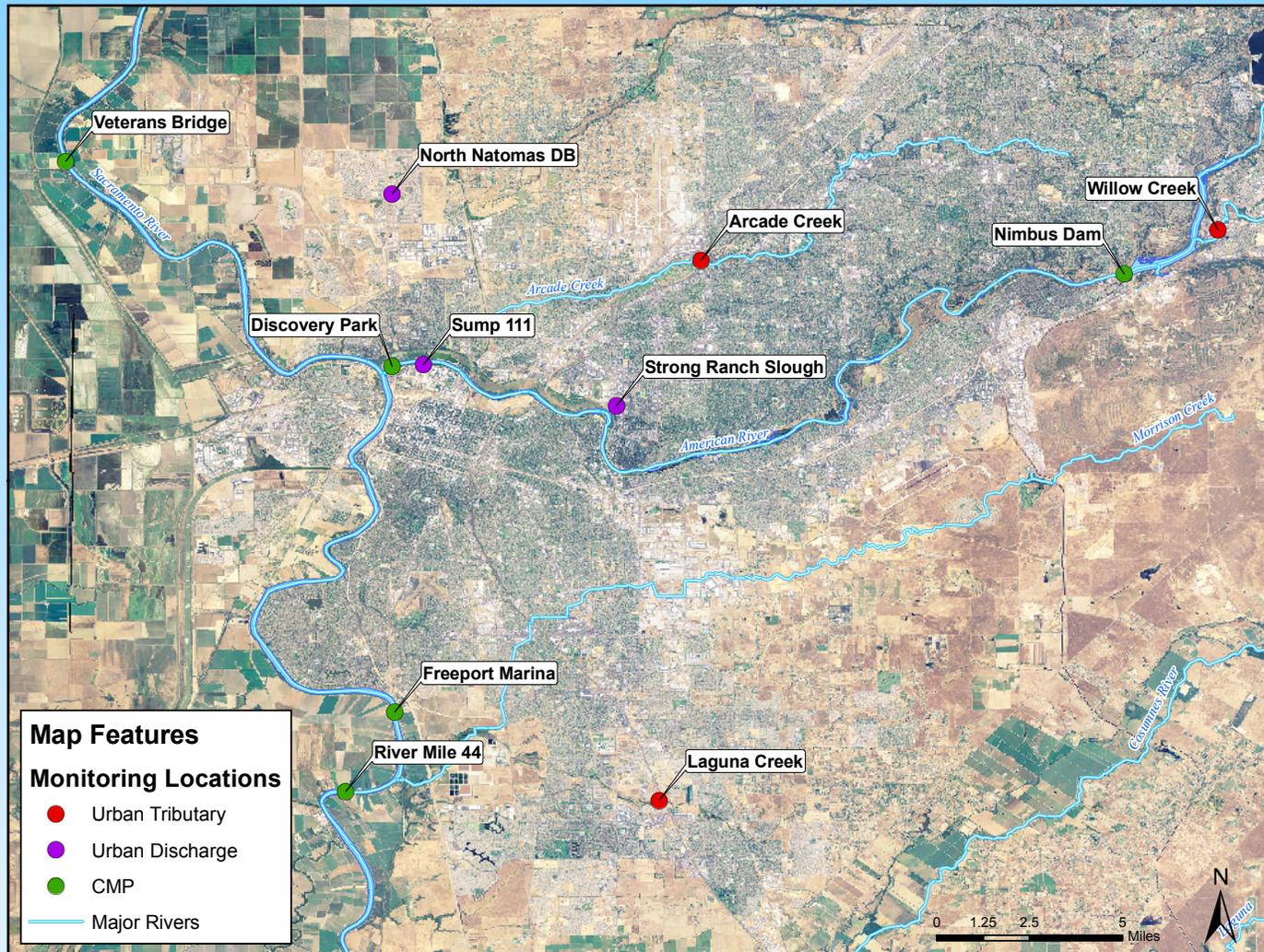
- Identify and prioritize constituents of concern to Program
- Monitoring data analysis, regulatory programs and controllability
- Develop target pollutant strategies
- Iterative approach implementing strategies and testing outcomes
- Mercury control plan (2004) – sediment control, source control, outreach

Monitoring and Analytical Methods

- Urban runoff
- Urban tributary
- River
- Structural control studies
- EPA 1669 and 1638 equivalent since mid-1990s
- Methylmercury since 2002
- Hg wet deposition study in 2000



Current Monitoring Locations

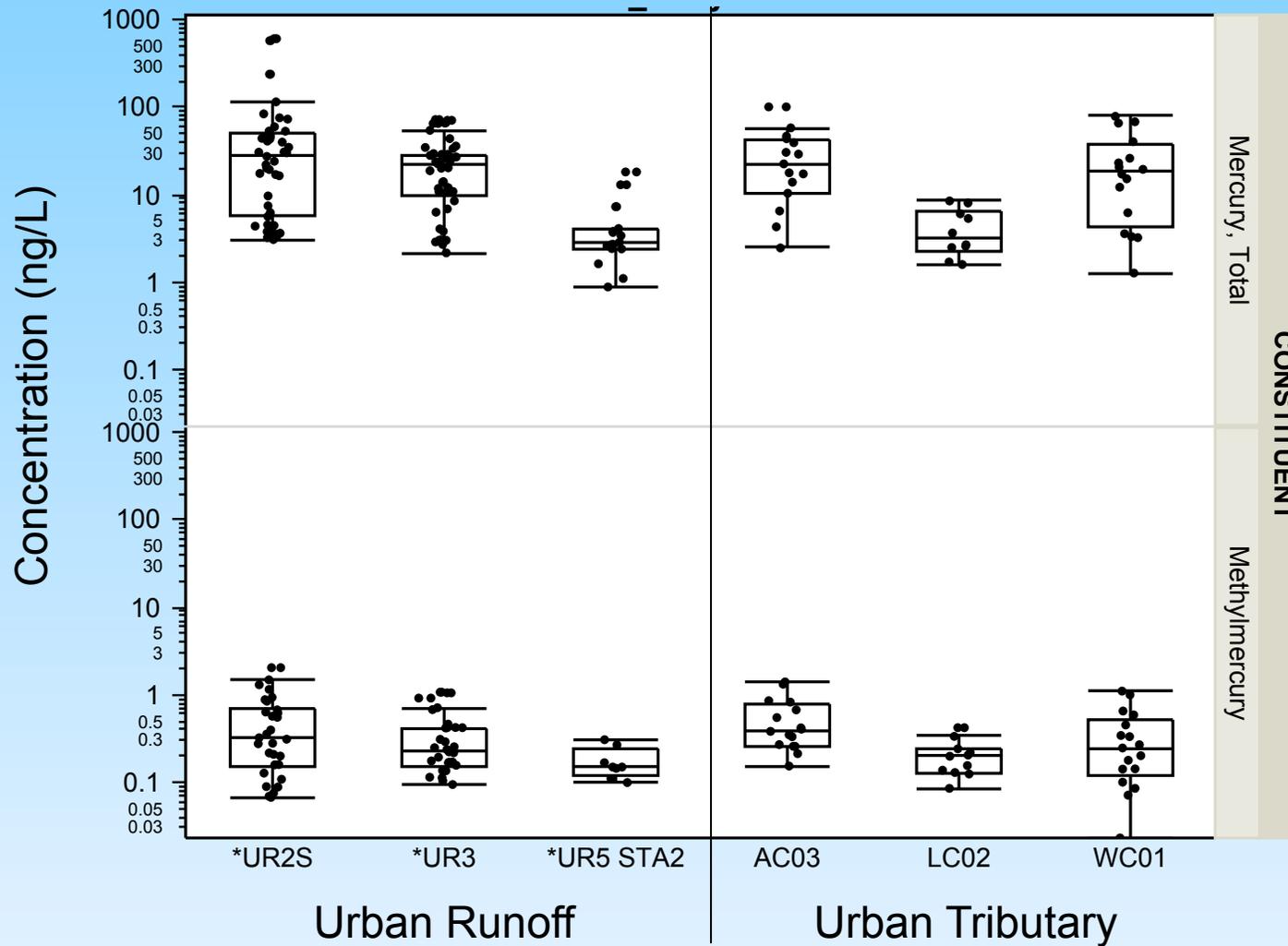


RM44 – SRCSD only

Trend and Data Analysis

- Urban runoff data variability within an event and between events
- Long term effectiveness evaluation approaches
- New development areas and structural controls

1996-2011 NPDES Reporting



Land Development Comparison 1996-2009 NPDES Reporting

Table 7. Comparison of Constituent Median Concentrations between Urban Runoff Discharge Characterization Sites

Constituent	Old Development [1]		New Development [2]	
	Median	n	Median	n
Mercury, Total (ng/L)	19.8	113	3.7	11
Methylmercury (ng/L)	0.22	68	0.15	10
Solids, Total Suspended (mg/L)	63	135	6	9

Notes:

[1] Old development includes data from Sump 111, Sump 104, and Strong Ranch Slough

[2] New development includes data from the North Natomas Wet Detention Basin No. 4 effectiveness study

Analytical Modeling

- Estimating loads for intermittent and highly variable discharges
- Multi-variate regressions
- Land use runoff volumes
- Continuous simulation of 30 year climate record
- New development areas
- Update frequency

Watershed Modeling

- Based on Center for Watershed Protection Watershed Treatment Model (WTM)
- Conceptual model of loads removed in watershed
- Structural and non-structural control effectiveness
- Partnership data on completed activities
- Inventory of control strategies

Delta Methylmercury TMDL Phase 1 Control Study

- Ongoing monitoring programs for additional characterization
- Low impact development (LID) performance for new development and potential retrofit
- Watershed treatment model improvements and methylmercury considerations
- Mercury strategy and overall program effectiveness assessment (PEA)

Questions to TAC

- Urban runoff data gap
- Cost-benefit feasibility – criteria
- Evaluation of the control measures/management practices w/ non-quantifiable results (i.e. outreach)
- Load allocation – dry year/wet year credit banking

City of Sacramento Combined Sewer System

- City of Sacramento only
- Core area combined system flows up to 60 mgd treated at SRWTP
- Inline and facility storage facilities
- Primary treatment discharge events typically 1-5 times per year
- Mercury and methylmercury baseline monitoring
- Stormwater and POTW elements

City of Sacramento CSS Volume Destination

