L.A. River
TMDL Elements

CREST Technical Committee

April 25, 2006

TMDL Elements

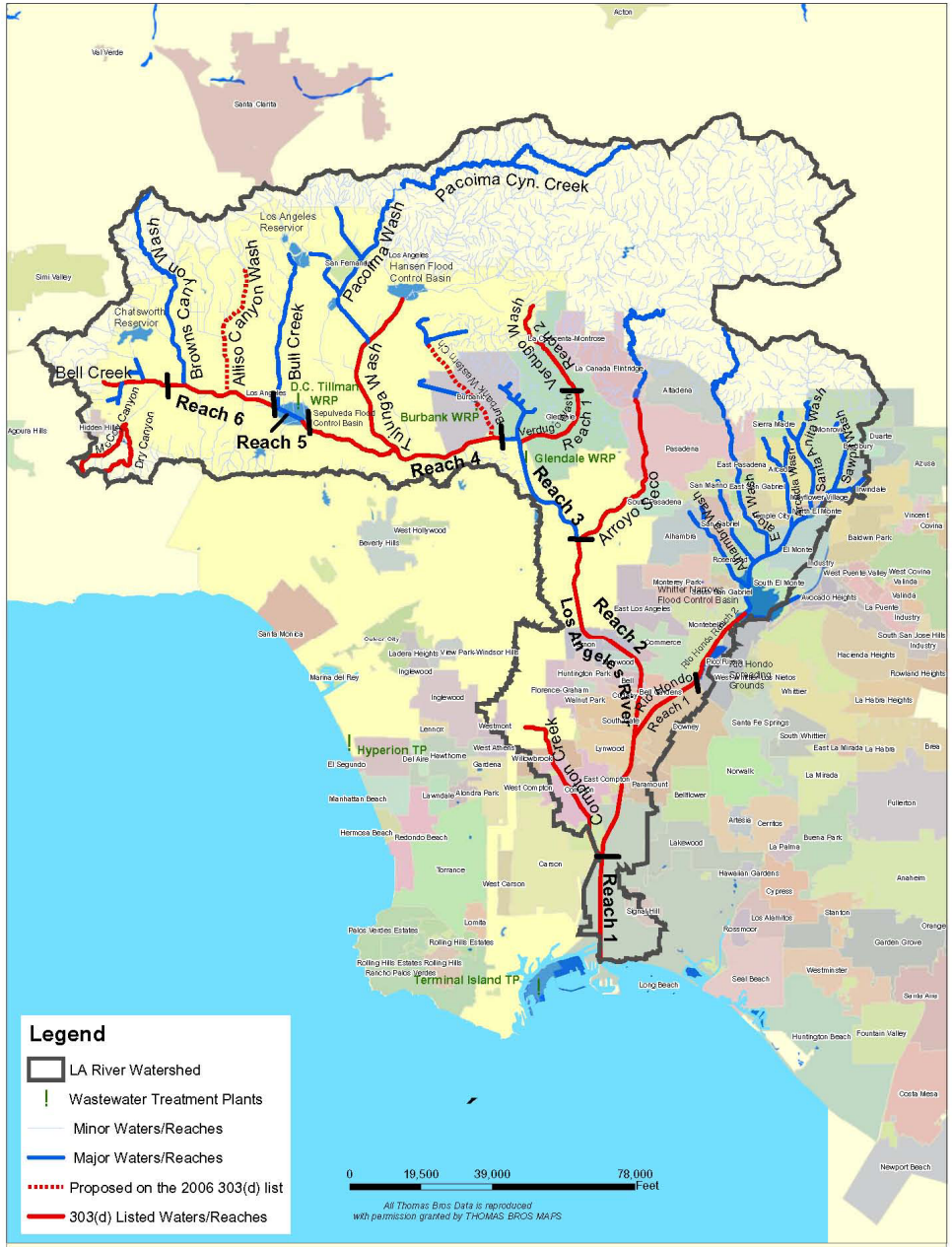
- **Step 1: Problem Statement**
- **Step 2: Numeric Targets**
- Step 3: Source Analysis
- Step 4: Linkage Analysis
- Step 5: Pollutant Allocation
- Step 6: Implementation Strategy
- Step 7: Monitoring

Step 1: Problem Identification

- **Listed Reaches**
  - 2002 303d list → 15 listed reaches/tributaries *(see map)*
  - 2 reaches not listed *(effects of treatment plant effluent)*
  - Proposed 2006 update → 2 additional listed tributaries (Aliso Canyon Wash & Burbank Western Channel)

Table 1. LAR – Bacteria Listed Reaches and Tributaries

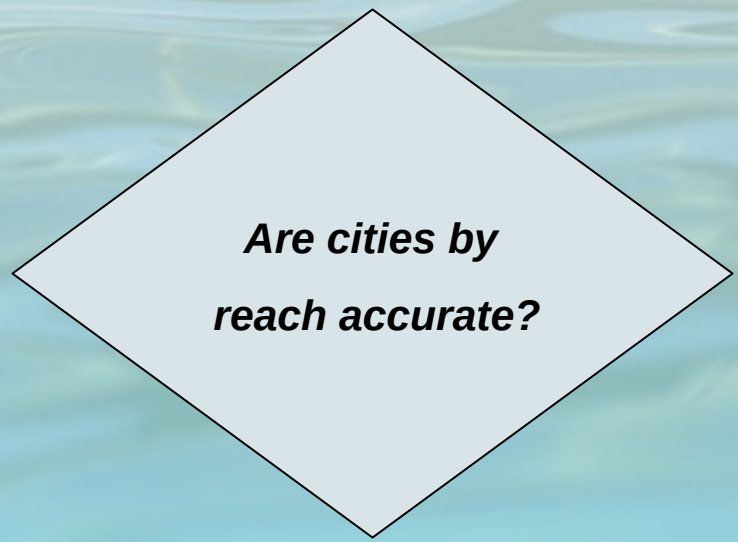
Listed on 2002 303(d)List for Bacteria	
Arroyo Seco Rch 1 (d/s Devil's Gate Dam)	coliform
Arroyo Seco Rch 2 (W. Holly Ave. to Devil's Gate)	coliform
Bell Creek	coliform
Compton Creek	coliform
Dry Canyon Creek	coliform
Los Angeles River Reach 1(u/s Carson St. to estuary)	coliform
Los Angeles River Reach 2 (Figueroa St. to u/s Carson St.)	coliform
Los Angeles River Reach 4 (Sepulveda Dam to Riverside Dr.)	coliform
Los Angeles River Reach 6 (u/s of Sepulveda Basin)	coliform
McCoy Canyon Creek	coliform
Rio Hondo Reach 1 (Santa Ana Fwy to Los Angeles River)	coliform
Rio Hondo Reach 2 (Whittier Narrows Flood Control Basin to Spreading Grounds)	coliform
Tujunga Wash (d/s Hansen Dam to Los Angeles River)	coliform
Verdugo Wash Reach 1 (LA River to Verdugo Rd)	coliform
Verdugo Wash Reach 2 (above Verdugo Road)	coliform
Proposed for the 2006 Update to the 303(d)List for Bacteria	
Aliso Canyon Wash	Bacteria Indicators
Burbank Western Channel	Fecal Coliform



Los Angeles River Watershed with City Boundary

Step 1: Problem Identification

Question for Technical Committee:
(Homework Assignment)



Refer to Table in Elements Paper

Refer to Watershed Map

Step 1: Problem Identification

- **Beneficial Uses**
  - Numerous beneficial uses in all listed reaches
  - Basin plan assigns REC-1 (or potential) to ALL of the listed reaches *(Note: access restricted in some reaches by LA County DPW)*
  - REC-1 (full body contact recreation) is the primary concern re: bacteria standards
  - Use attainability analysis was conducted in 2004 for Ballona; no changes made to beneficial uses of LAR reaches or tribs at that time

Step 1: Problem Identification

- **Questions - Beneficial Uses:**
  - *Use attainability analysis was recently conducted for Ballona and a basin plan amendment adopted (State Board Resolution No. 2005-0015); no changes made to beneficial uses of LAR reaches or tribs. Use attainability analysis of LAR conducted concurrently with Ballona?*
  - *Beneficial Use for Reach 1 ("upstream of Carson Street bridge to Estuary“) includes "Marine Habitat" and REC-1. Does this mean "Marine REC-1"? Description implies that Reach 1 stops at TOP of estuary - so why "Marine Habitat"? Bottom line - do we need to consider Marine REC-1 water quality objectives for Reach 1 (this would include enterococcus and total; no e. coli)?*

Step 1: Problem Identification

- Numeric Targets
- Preliminary Identification of Sources

Step 2: Numeric Targets

Goals:

1. Identify measurable indicators
2. Identify target values
   - *Based on WQ standards – REC-1 for L.A. River*
3. Compare existing and target conditions

Step 2: Numeric Targets (cont'd.)

Water Quality Objectives

Beneficial Use	Indicator	Geometric Mean Objective (per 100ml)	Single Sample Objective (per 100ml)
REC-1 Fresh Water Contact Recreation	Fecal coliform	200	400 (Not more than 10% of samples to exceed 400 mpn/100 ml in 30-day period)
	E. Coli	126	235

Geomean calculation:

- 30-day geometric mean can not be exceeded at any time;
- Calculated as the 30th root of the product of 30 numbers (the most recent 30 day results).
- For weekly sampling, the 30 numbers are obtained by assigning the weekly test result to the remaining days of the week. If more samples are tested within the same week, each test result will supersede the previous result and be assigned to the remaining days of the week until the next sample is collected. This rolling 30-day geometric mean must be calculated for each day, regardless of whether a weekly or daily schedule is selected (SMBB Bacteria TMDL Implementation Plan).

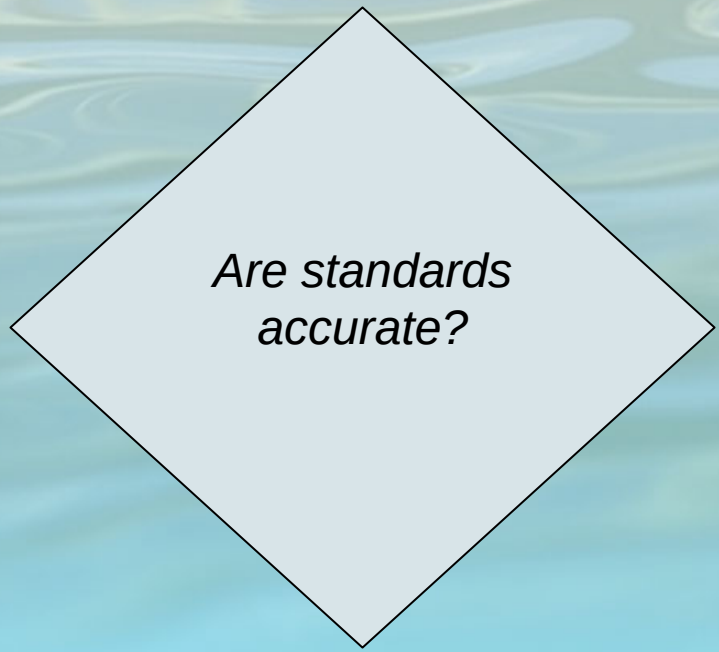
Step 2: Numeric Targets (cont'd.)

Site Specific Objective – High Flow Suspension

- ***Suspension of REC-1 and REC-2 beneficial uses and the associated bacteriological objectives***
- ***Applies to engineered channels***
- ***Days with rainfall greater than or equal to ½ inch and the 24 hours following the end of the ½-inch or greater rain event***
- ***Measured at the nearest local rain gauge, using local Doppler radar, or using widely accepted rainfall estimation methods***

Step 2: Numeric Targets

Question for Technical Committee:



Step 2: Numeric Targets (cont'd.)

Determination of exceedances with the use of a reference watershed:

- Single sample maximum targets for winter dry weather and year-round wet weather are allowed a certain number of exceedances when using the reference watershed approach.
- Allowable number of exceedance days at each monitoring site must be no greater than the number of historical exceedance days determined at a reference watershed that has been selected as being representative of natural background water quality runoff from undeveloped areas.
- The reference watershed approach accounts for the fact that the bacterial indicators used for water quality objectives are not human specific, and can be produced by natural sources.

Step 2: Numeric Targets (cont'd.)

- **Alternative 1 - Reference Watershed Approach**
  - Used for SMMB Beaches, Malibu Creek (indirectly) and Ballona Bacteria TMDLs (Arroyo Sequit Canyon watershed and monitoring site at Leo Carrillo Beach)
  - Will require identification of a suitable reference watershed for L.A. River
- **Alternative 2 - Modeling**
  - Determine pollutant loading capacity, link loading and targets, and estimate necessary pollutant reductions
  - Used for L.A. River Metals and Nutrients TMDLs; has been applied to simulate bacteria concentrations in L.A. River
  - Additional work required to make model suitable for determining bacteria assimilative capacity and load allocations (original modeling work calibrated using "snap-shot" data; represent only a few days of the historic record)

Step 2: Numeric Targets

Question for Technical Committee:

Do we join SCCWRP efforts to find reference watersheds in s. California or find our own reference watershed in LA region?

Step 3: Source Analysis

Step 4: Linkage Analysis

Step 5: Pollutant Allocation

Step 6: Implementation Strategy

Step 7: Monitoring