

**Potential Approach to
Wet Weather WLA Development
for the LA River Watershed
Bacteria TMDL**

**Joint Steering Committee/WT Group
April 24, 2009**

Overview

- Why WLAs?
- Options
- Volume-based Approach
- Source-specific Allocations
- % Reductions
- Next steps

Wasteload Allocations

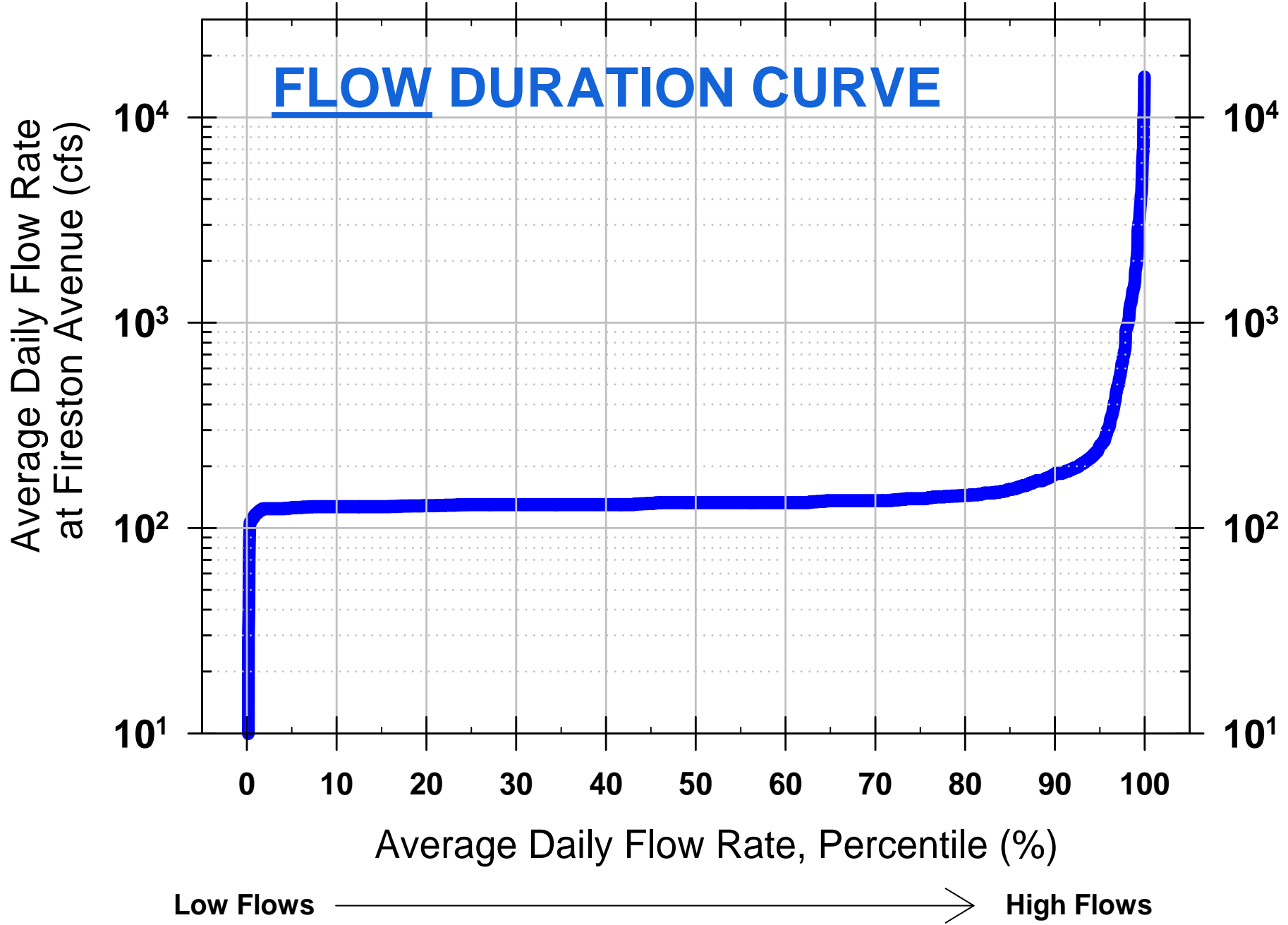
- All TMDLs have WLAs
- In Region 4, most Bacteria TMDLs have utilized in-stream WLAs based on allowable exceedances
- Dry weather WLAs for LA River expressed as MPN/day allowable from Permitted sources
- For wet weather, could also develop load-based WLAs
 - Consistent with dry weather
 - But wet weather WLAs are not directly measurable for compliance
 - Need a simple approach
 - **Approach to implementation of WLAs most important**

Options for Wet WLAs

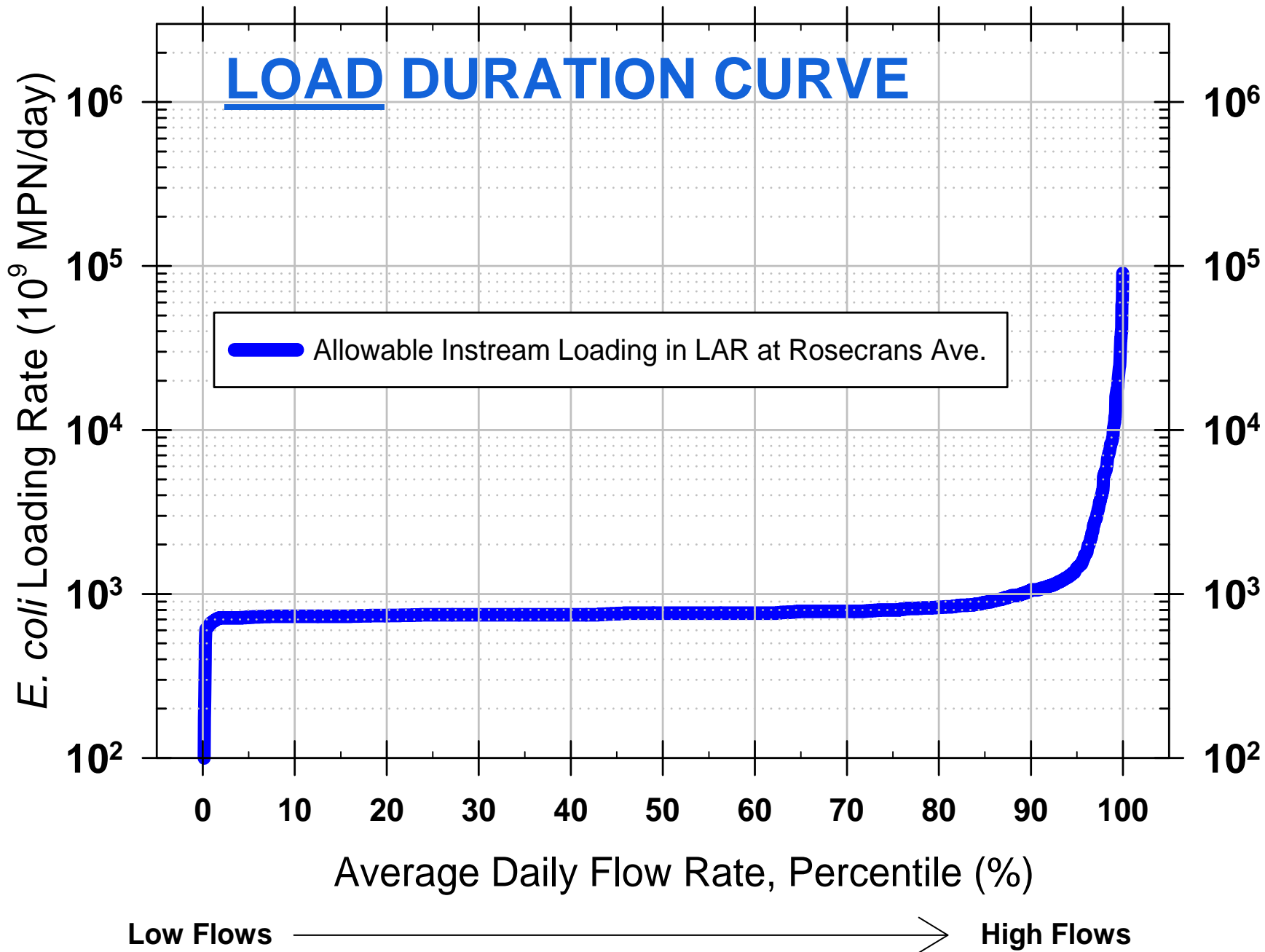
Approach	Type	In-stream or End-of-pipe?	Units
Exceedance Days	Concentration-Based	In-stream	Days
Effluent Limitation	Concentration-Based	End-of-pipe	MPN/100mL
Allowable Load	Load-based	End-of-pipe	MPN/storm

Wasteload Allocations

2001-2008: Los Angeles River near Rosecrans Ave.



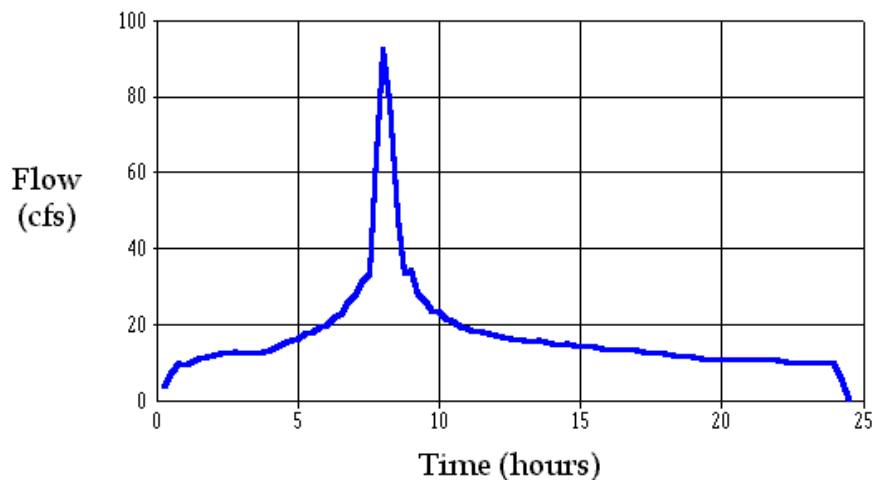
2001-2008: Los Angeles River at Rosecrans Ave.



Volume-based Approach

- Storms generate different amounts of runoff from Watershed
 - 1. Allowable load (TMDL) depends on volume of runoff
 - 2. Not feasible to select a single “daily value” for TMDL
 - 3. Use equation to express TMDL and WLAs

Watershed Hydrograph



For a given storm:
TMDL = Total Storm Volume
× 235MPN/100mL
× Conversion factor
(Units=MPN)

From TMDLs to Allocations

- Variety of Permitted sources discharge during wet weather (WLAs)
 - Municipal wastewater
 - Industrial wastewater
 - MS4s
 - Construction sites
 - Industrial stormwater sites
- In addition, non-point sources (LAs) influence water quality
 - Open space
- Simple approach to “slicing up the pie”
 - Watershed area covered by each source type
 - Each source allowed to discharge same amount per unit area

From TMDLs to WLAs

- WLAs and LAs for different source types (e.g., industrial stormwater) based on area covered

For a given storm:

TMDL = Total Storm Volume

x 235MPN/100mL

x Conversion factor

(Units=MPN)

WLA = TMDL

x % of drainage area

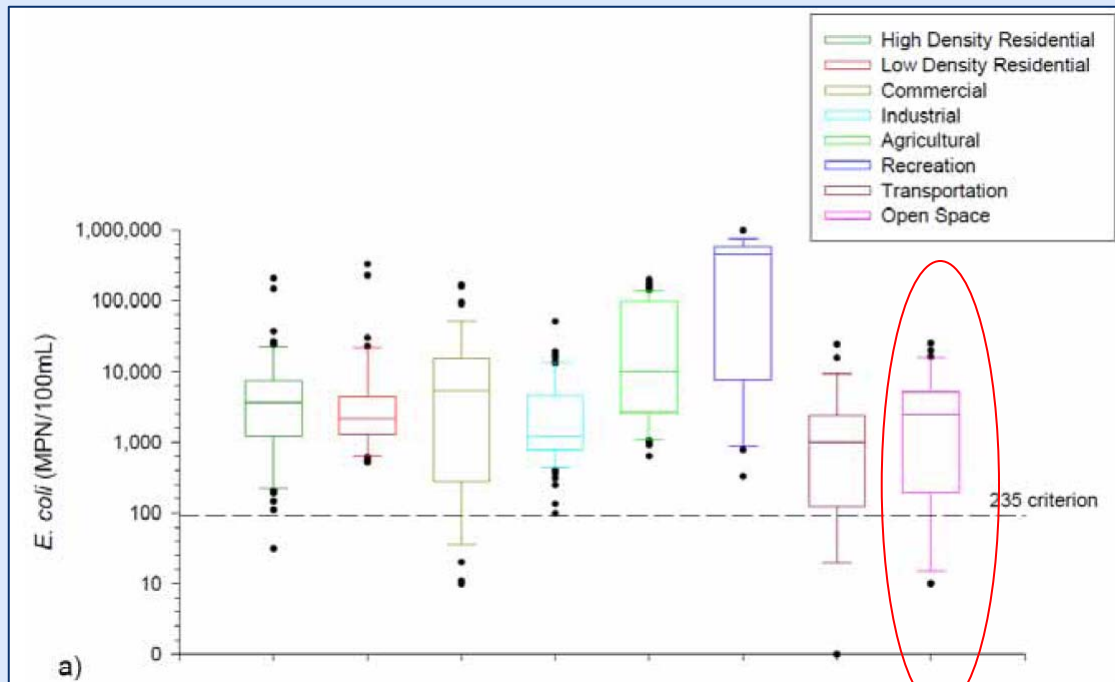
(Units=MPN)

Considerations for Allocations

- Important to use up-to-date information for source-specific coverage areas
- Whether or not to generate TMDLs/Allocations for each LA River reach (as opposed to watershed wide)
- Jurisdictional areas
- Approach for open space

Open vs. Reference

OPEN SPACE



(no significant difference among land uses except horse recreation)

REFERENCE

Statistic	<i>E. coli</i> Single Samples
% WQO Exceedance	20%
Number of Exceedance Days²	15
Number of Data Points	71
Number > WQO	14
Mean (MPN/100mL)	361
Geomean (MPN/100mL)	65
Minimum (MPN/100mL)	10
10 th Percentile (MPN/100mL)	10
25 th Percentile (MPN/100mL)	10
50 th Percentile (MPN/100mL)	59
75 th Percentile (MPN/100mL)	164
90 th Percentile (MPN/100mL)	870
Maximum (MPN/100mL)	6,815

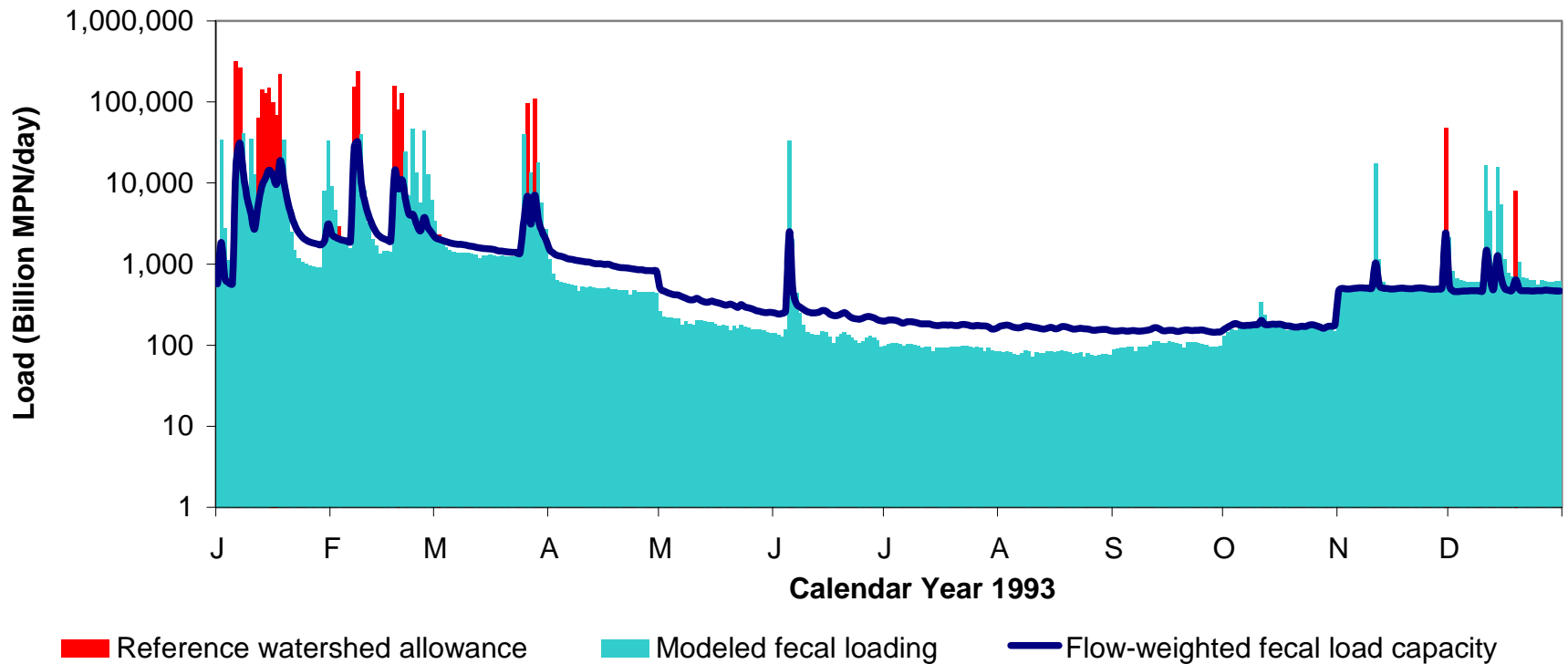
Assessment of % Reductions Required

Additional modeling...(?)

- Wasteload allocations not very informative with respect to current vs. required conditions
- Possible to use wet weather model to provide an analysis of % reduction required to meet TMDL and WLAs
- Similar to approach used in Malibu Creek

Load versus capacity

Figure 4-7. Modeled loads and loading capacity for fecal coliform bacteria in Malibu Lagoon during critical wet-year (1993)



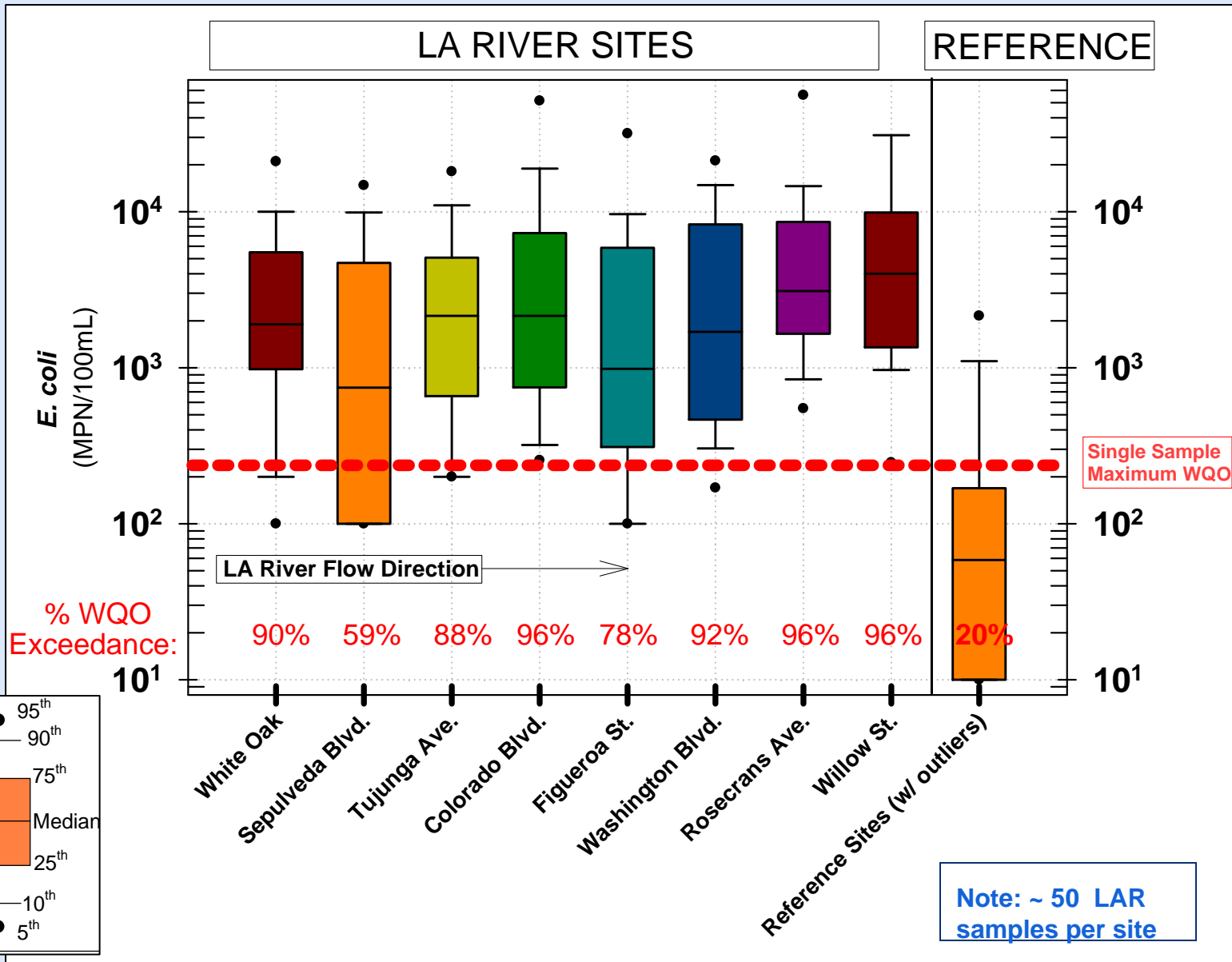
% Reduction Needed...

Watershed Compliance Point	Existing Annual Load	Annual wet-day Load	Adjusted wet-day load (- 17 days)	Required reduction of wet-day loadings	Percent reduction required to meet criteria
Upper Malibu Creek	2,226,010	2,207,642	560,413	346,755	62%
Middle Malibu Creek	3,534,204	3,501,821	928,385	633,738	68%
Lower Malibu Creek	3,602,402	3,564,387	961,166	618,976	64%

Conclusions

- Need simple approach to develop WLAs
- Might be desirable to estimate % reductions
- Development of model may be useful for implementation planning
- Next Steps:
 - Feedback from stakeholders
 - Coordinate with EPA
 - Evaluate approaches to compliance monitoring

Wet Weather (*E. coli*)



Questions?