



**Los Angeles River Metals  
Total Maximum Daily Load  
(TMDL) Implementation Plan**

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*Stakeholder Workshop 1*

*March 25, 2009*

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**Opening Remarks**

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**Stakeholder Introductions**

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### Agenda

- Background
- Stakeholder Participation
- Metals TMDL Implementation Plan Development Process
  - Characterization
  - Potential Green Strategies
  - Development of Alternatives
  - Quantitative Nexus
- Next Steps

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### Background

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### Total Maximum Daily Load (TMDL)

A TMDL specifies the maximum amount of a specific pollutant that can enter and assimilate into a specific receiving waterbody without causing impairment to the ecosystem.



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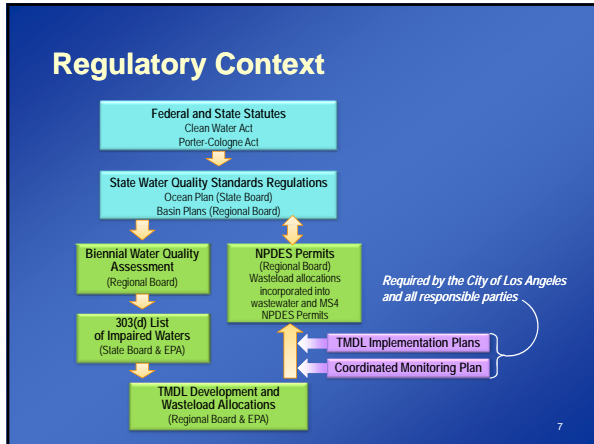
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- ### LA River Pollutants of Concern
- **Metals TMDL:**
    - Cadmium, Copper, Lead, Zinc, and Selenium
  - **Other TMDLs:**
    - Trash
    - Nutrients (no stormwater targets)
  - **303(d) List:**
    - Bacteria
    - Cyanide
    - Diazinon (pesticide)
    - Oil
    - 1,1-DCE, PCE, TCE

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- ### Los Angeles River Metals TMDL
- The Los Angeles River Metals TMDL sets a limit to the amount of metals that are allowed to enter the Los Angeles River
  - The Implementation Plan will describe how the City will reduce the amount of metals currently entering the Los Angeles River

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**Purpose**

- *Total Maximum Daily Load (TMDL) Implementation Plan*: to improve water quality and meet regulations
- *Stakeholder Workshops*: to provide input on the development of the Implementation Plan

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**Stakeholder Participation**

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**Stakeholder Participation**

- **Workshop 1: Introduction/Watershed Characterization**
- Workshop 2: Potential Green BMP Strategies (June 2009)
- Workshop 3: BMP Alternatives Plan (Sept 2009)

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### Stakeholder Participation

- Integration with other plans
  - LA River Revitalization Plan
  - City of Los Angeles Integrated Resource Plan
  - City of Los Angeles Water Quality Compliance Master Plan for Urban Runoff
  - LA County Integrated Regional Water Management Plan
  - Tujunga/Pacoima Watershed Plan
  - Others
- Opportunities for collaboration

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### Metals TMDL Implementation Plan Development Process

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### Implementation Plan Development Process

```
graph TD; A[Characterization] --> B[Potential Green Strategies]; B --> C[Development and Refinement of Alternatives]; C --> D[Quantitative Nexus]; D --> E[TMDL-specific Implementation Plans];
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### Implementation Plan Due Dates

- Draft Metals TMDL Implementation Plan due to Regional Board: January 11, 2010
- Final Metals TMDL Implementation Plan due to Regional Board: July 11, 2010

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### Compliance Timeline

*Deadlines:* Percent of Drainage Area that must meet Waste Load Allocation (WLA) by date shown

The diagram shows a horizontal timeline with four diamond-shaped markers for the years 2012, 2020, 2024, and 2028. Above the timeline, labeled 'Dry Weather', are percentages: 50% at 2012, 75% at 2020, 100% at 2024, and 100% at 2028. Below the timeline, labeled 'Wet Weather', are percentages: 25% at 2012, 50% at 2024, and 100% at 2028.

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### Step 1: Characterization

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graph TD; A[Characterization] --> B[Potential Green Strategies]; B --> C[Development and Refinement of Alternatives]; C --> D[Quantitative Nexus]; D --> E[TMDL-specific Implementation Plans];
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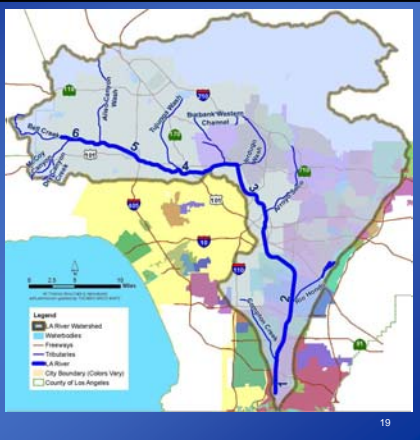
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### Los Angeles River Watershed

- LA River is 55 miles long
- LAR Watershed is 834 square miles (534,700 acres)
- City of Los Angeles is 33% of the watershed area (45% of urban area)



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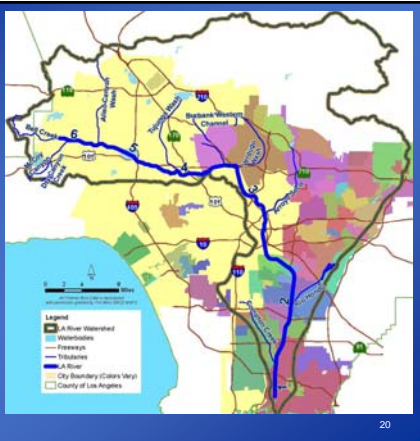
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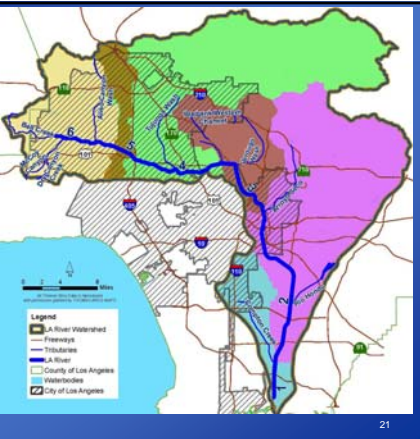
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### Reaches of the Los Angeles River

- The TMDL subdivides the LA River into six reaches



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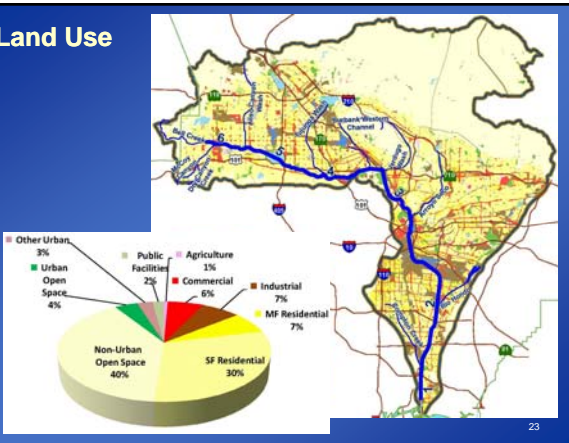
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### Land Use



Land Use Type	Percentage
Non-Urban Open Space	40%
SF Residential	30%
MF Residential	7%
Industrial	7%
Commercial	6%
Agriculture	1%
Public Facilities	2%
Urban Open Space	4%
Other Urban	3%

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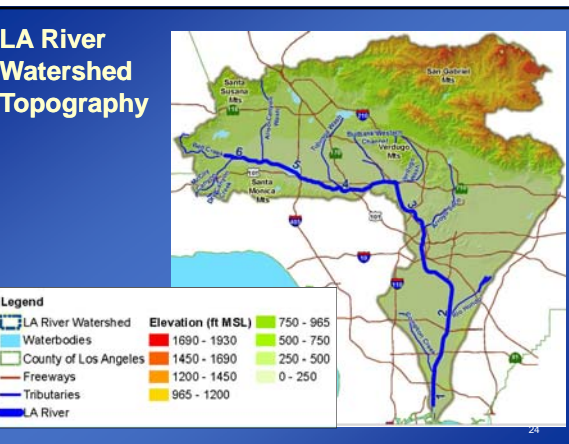
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### LA River Watershed Topography



Symbol	Description
Blue outline	LA River Watershed
Blue	Waterbodies
Green outline	County of Los Angeles
Red	Freeways
Blue	Tributaries
Thick blue	LA River

Elevation (ft MSL)	Color
1690 - 1930	Red
1450 - 1690	Orange
1200 - 1450	Yellow
965 - 1200	Light Green
750 - 965	Light Green
500 - 750	Light Green
250 - 500	Light Green
0 - 250	Light Green

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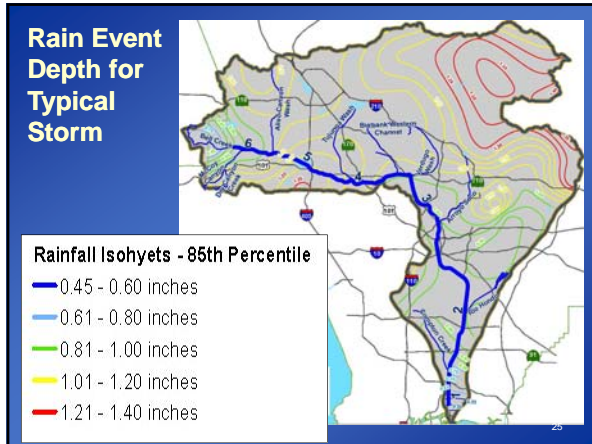
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- ### Watershed Water Quality
- Compile available water quality monitoring data
    - City of LA Status and Trends
    - LA County Monitoring Data
    - Water Reclamation Facilities
    - SCCWRP studies
    - Southern California Marine Institute
  - Analyze existing monitoring data for all pollutants of concern
    - Identify trends
    - Compare to TMDL
  - Prioritizing pollutant loading areas of concern

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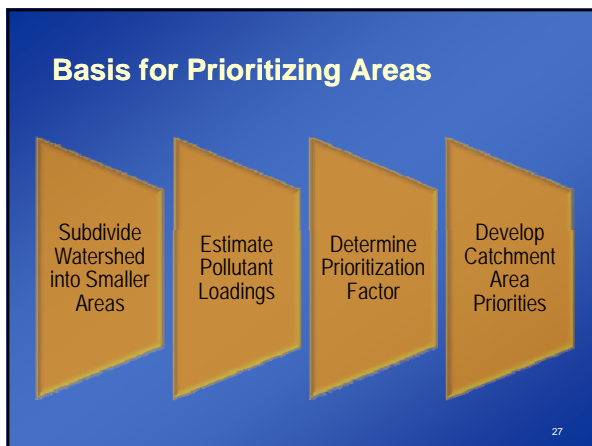
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**Subdivide Watershed into Smaller Catchments**



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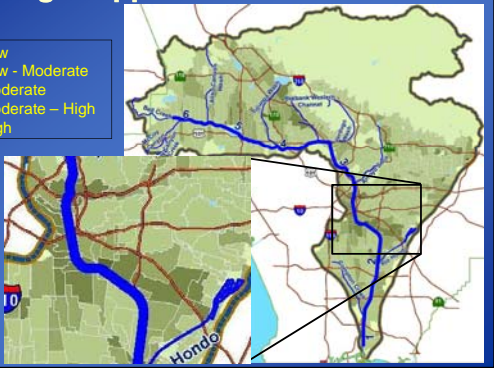
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**Estimating Storm Event Pollutant Loading: Copper**

- Low
- Low - Moderate
- Moderate
- Moderate - High
- High



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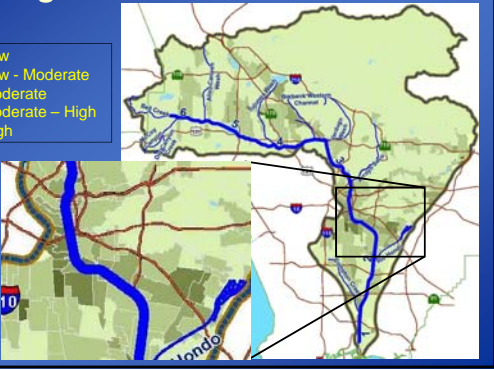
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**Estimating Storm Event Pollutant Loading: Zinc**

- Low
- Low - Moderate
- Moderate
- Moderate - High
- High



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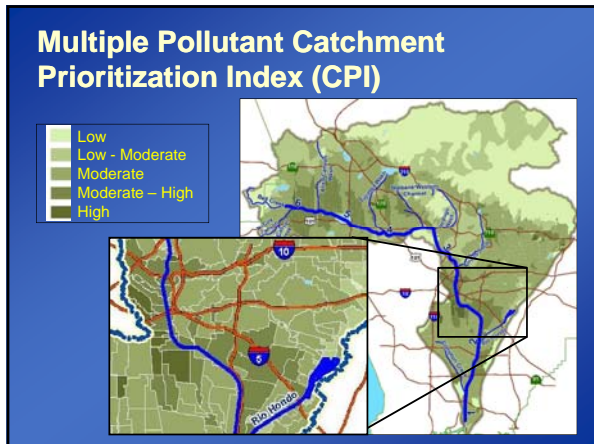
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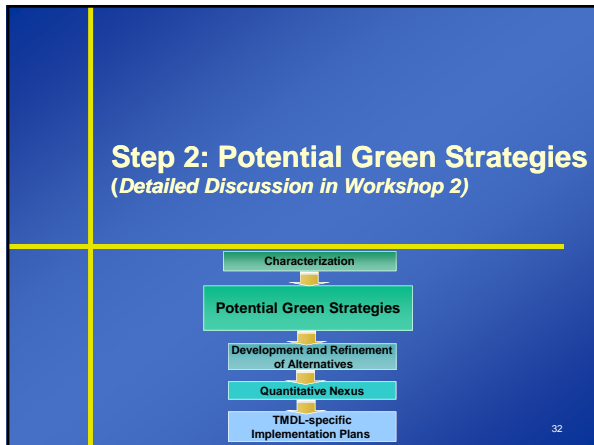
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- ### Potential Green Strategies
- Non-structural / Institutional BMPs
  - Structural BMPs
    - Distributed
    - Regional/Sub-regional
- The number 33 is visible in the bottom right corner of the slide.

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## Potential Green Strategies

### ■ Examples of Non-Structural / Institutional BMPs:

- Development and Redevelopment Design Standards
- Downspout Redirect Program
- Product Substitution (e.g. copper brake pads)
- Enhanced street sweeping and catch basin cleaning
- Education: recycling used oil, proper car washing, restaurant trash handling, etc.

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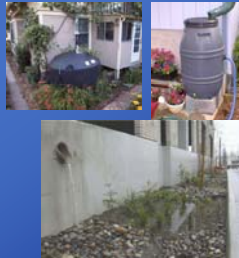
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## Potential Green Strategies

### ■ Examples of Distributed Structural BMPs:

- Cisterns
- Bioretention
- Permeable Paving
- Gross Solids Removal Devices
- Drain Inlet Inserts and Filters
- Street and Parking Lot Biofiltration Retrofits



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## Potential Green Strategies

### ■ Examples of Regional/ Subregional BMPs:

- Detention
- Infiltration
- Natural Treatment Systems (e.g. wetlands)
- Treatment Facilities



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### Step 3: Development of Alternatives *(Detailed Discussion in Workshop 3)*

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graph TD; A[Characterization] --> B[Potential Green Strategies]; B --> C[Development and Refinement of Alternatives]; C --> D[Quantitative Nexus]; D --> E[TMDL-specific Implementation Plans];
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### Step 3: Development of Alternatives

- BMP Selection and Prioritization based on:
  - Performance (load and volume reduction)
  - Implementability
  - Other benefits/constraints
  - Cost

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### Step 4: Quantitative Nexus *(Detailed Discussion in Workshop 3)*

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**Step 4: Quantitative Analysis**

- Quantify pollutant reductions expected under the BMP Alternatives Plan
- Consider ongoing studies by City, County, and Others
- Evaluate potential for compliance with TMDL (Target Concentrations)

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**Next Steps**

- Next Stakeholder Workshop will be in June 2009
  - Topic: Potential Green Strategies

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**Contacts**

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[Seth.Carr@lacity.org](mailto:Seth.Carr@lacity.org), 213-485-3961

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