



LOS ANGELES' WATERSHED MANAGEMENT PROGRAMS

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MUNICIPAL SEPARATE STORM SEWER (MS4) PERMIT

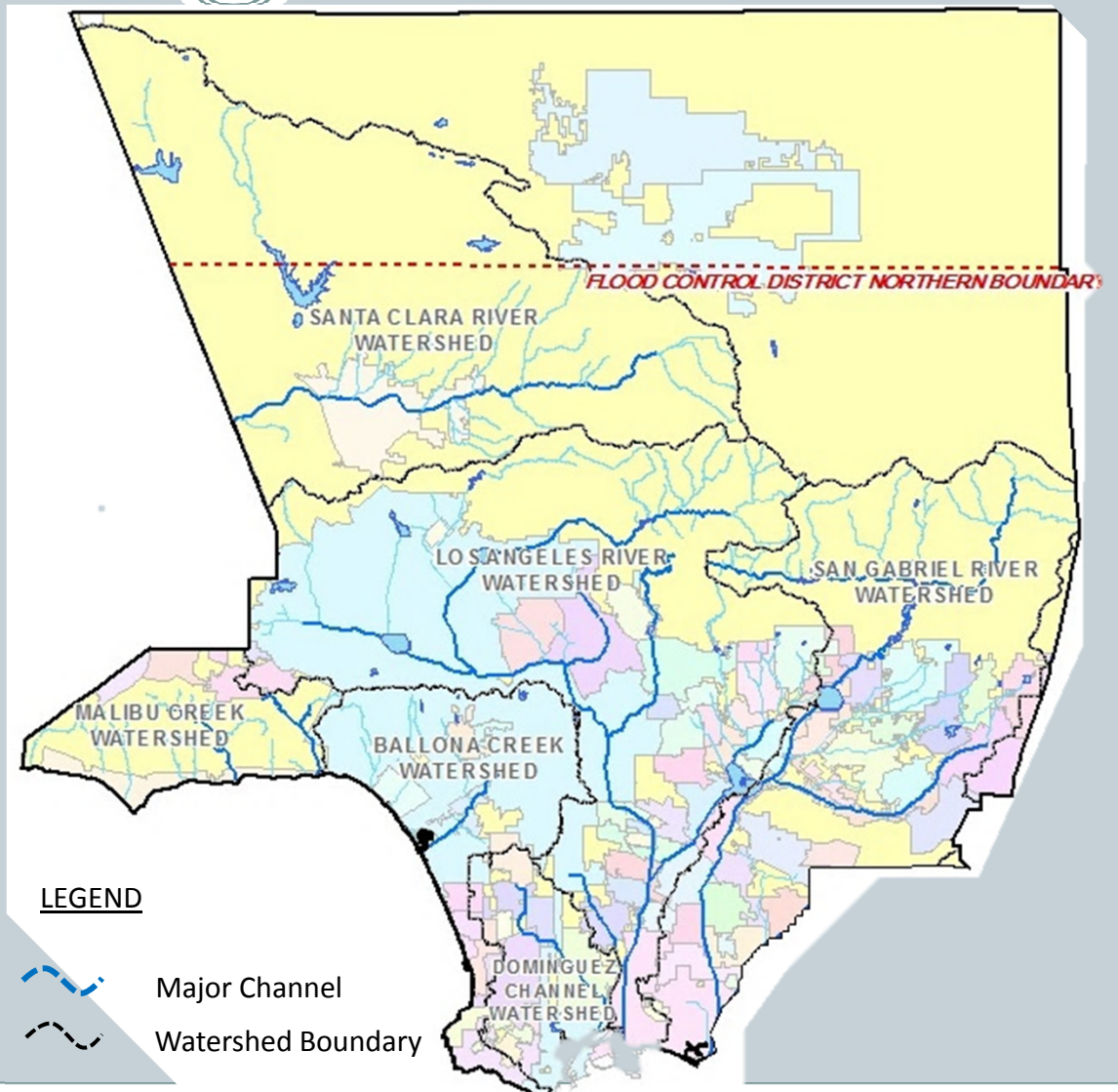
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LOS ANGELES COUNTY MS4 PERMIT

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- 33 TMDLs for trash, bacteria, metals, nutrients, legacy pollutants, etc.
- Compliance through:
 1. Numeric Limits
 2. Watershed Management Program (WMP)
 3. Enhanced Watershed Management Program (EWMP)



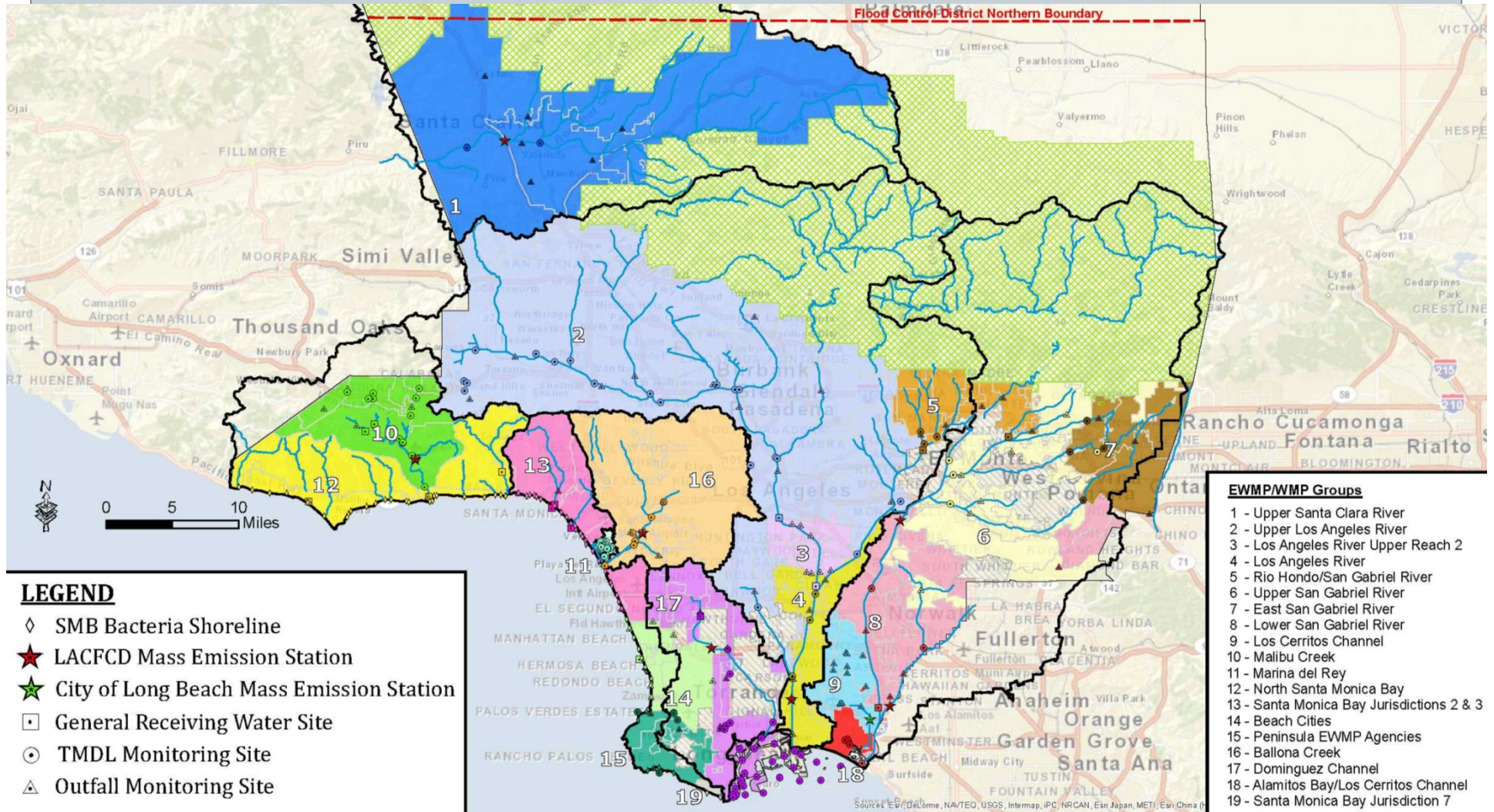
COMPLIANCE OPTION COMPARISON

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Program Element	Numerics	WMP Plan	EWMP Plan
• Identification of water quality priorities and BMPs to meet TMDLs		✓	✓
• Watershed modeling to demonstrate meeting water quality standards		✓	✓
• Plan is updated every two years		✓	✓
• Permittee in compliance as long as Program is being implemented		✓	✓
• Develop regional multi-benefit stormwater capture BMPs			✓
• Compliance demonstration through monitoring	✓	✓	✓

WATERSHED GROUPS

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COORDINATED INTEGRATED MONITORING PROGRAM (CIMP)

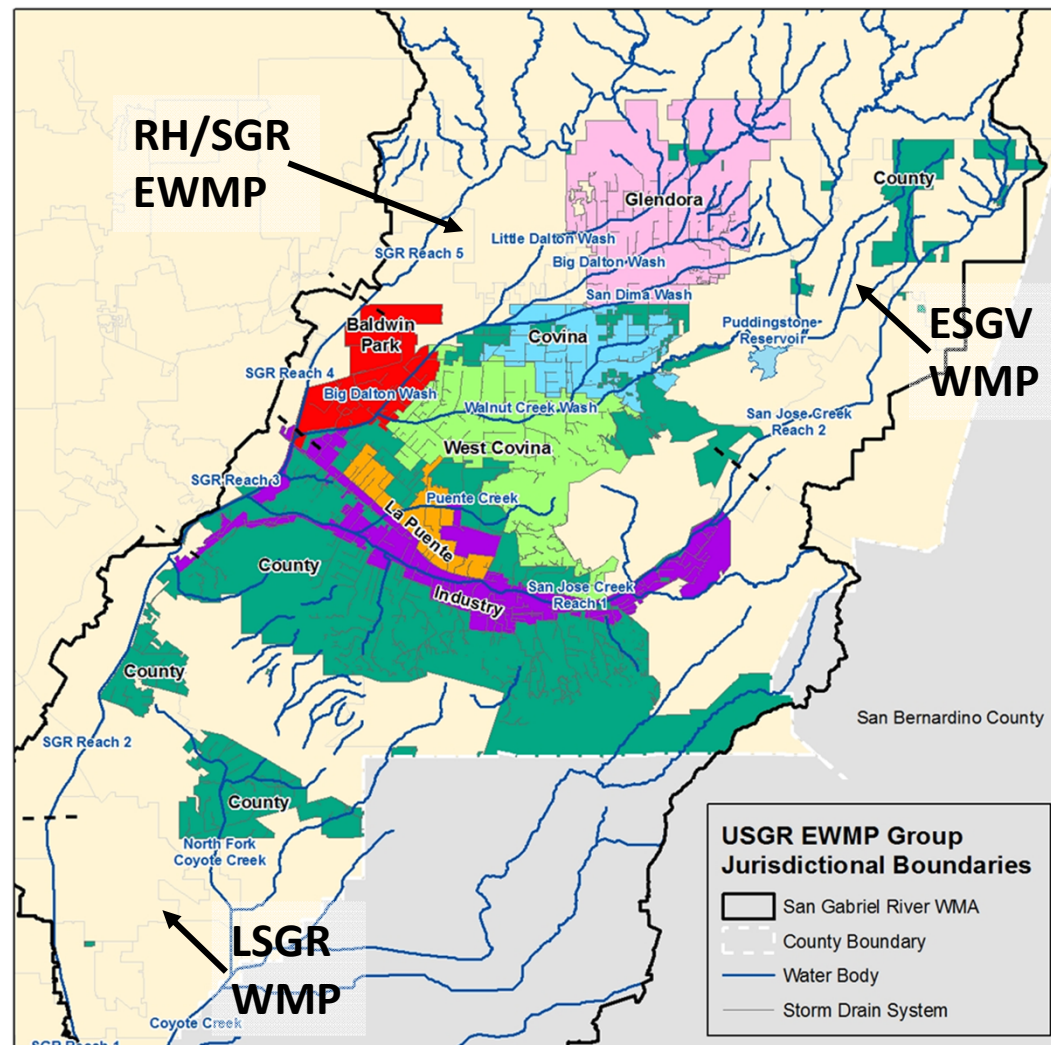
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ENHANCED WATERSHED MANAGEMENT PROGRAM (EWMP) EXAMPLE

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Upper San Gabriel River Group



WATER QUALITY PRIORITIES

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Governing Pollutants– Zinc and Bacteria

Highest
(1)

- **Total Maximum Daily Loads**

- Zinc – San Gabriel River Metals TMDL
- Nutrients & Legacy Pollutants – Puddingstone Reservoir (LA Area Lakes TMDL)

High(2)

- **Impaired on 303(d) list**

- Bacteria (San Gabriel River Bacteria TMDL)

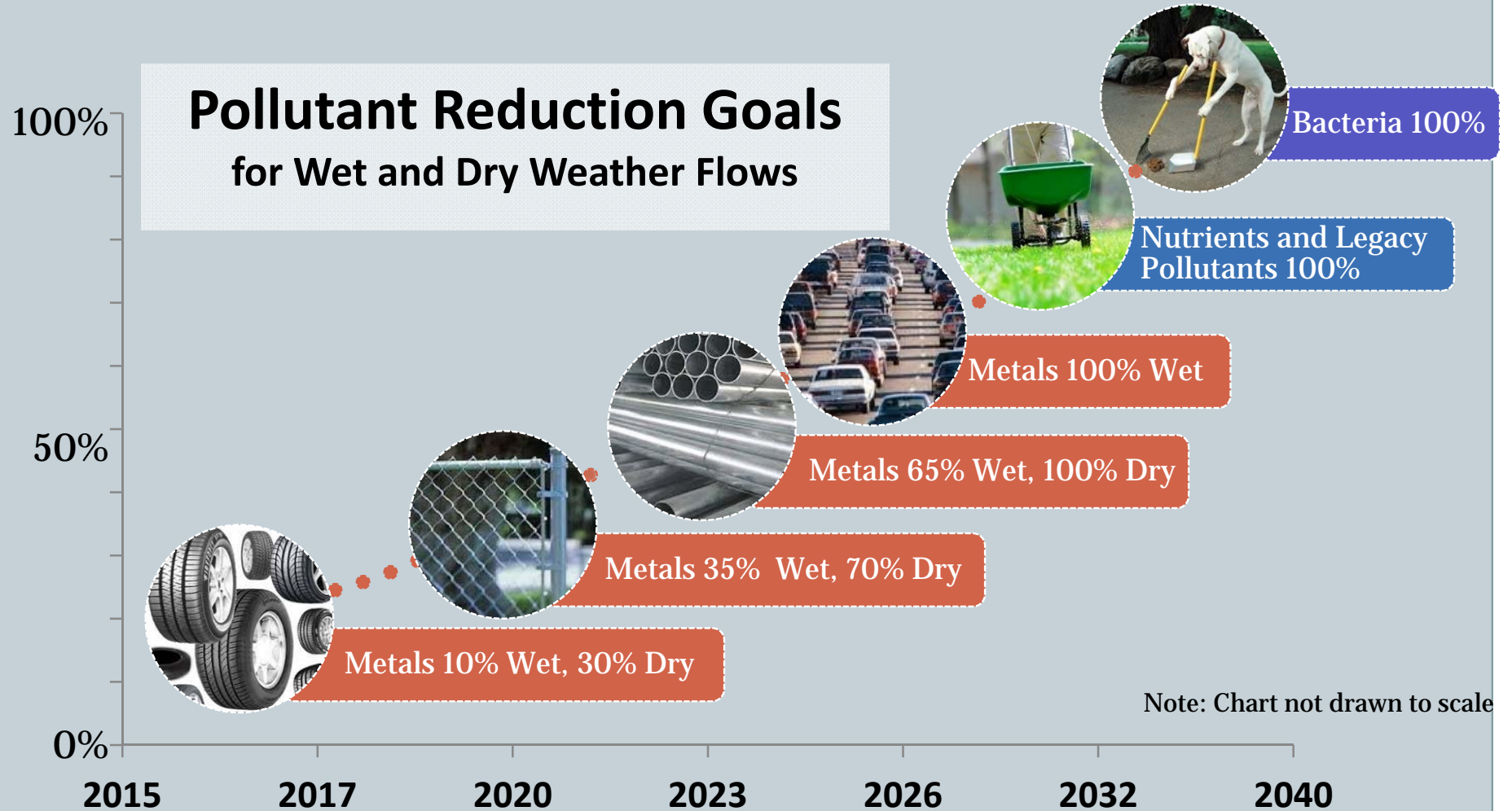
Medium
(3)

- **Exceedances found during EWMP data analysis**

- Salts, other metals, and pollutants without exceedances in last 5 years

IMPLEMENTATION SCHEDULE

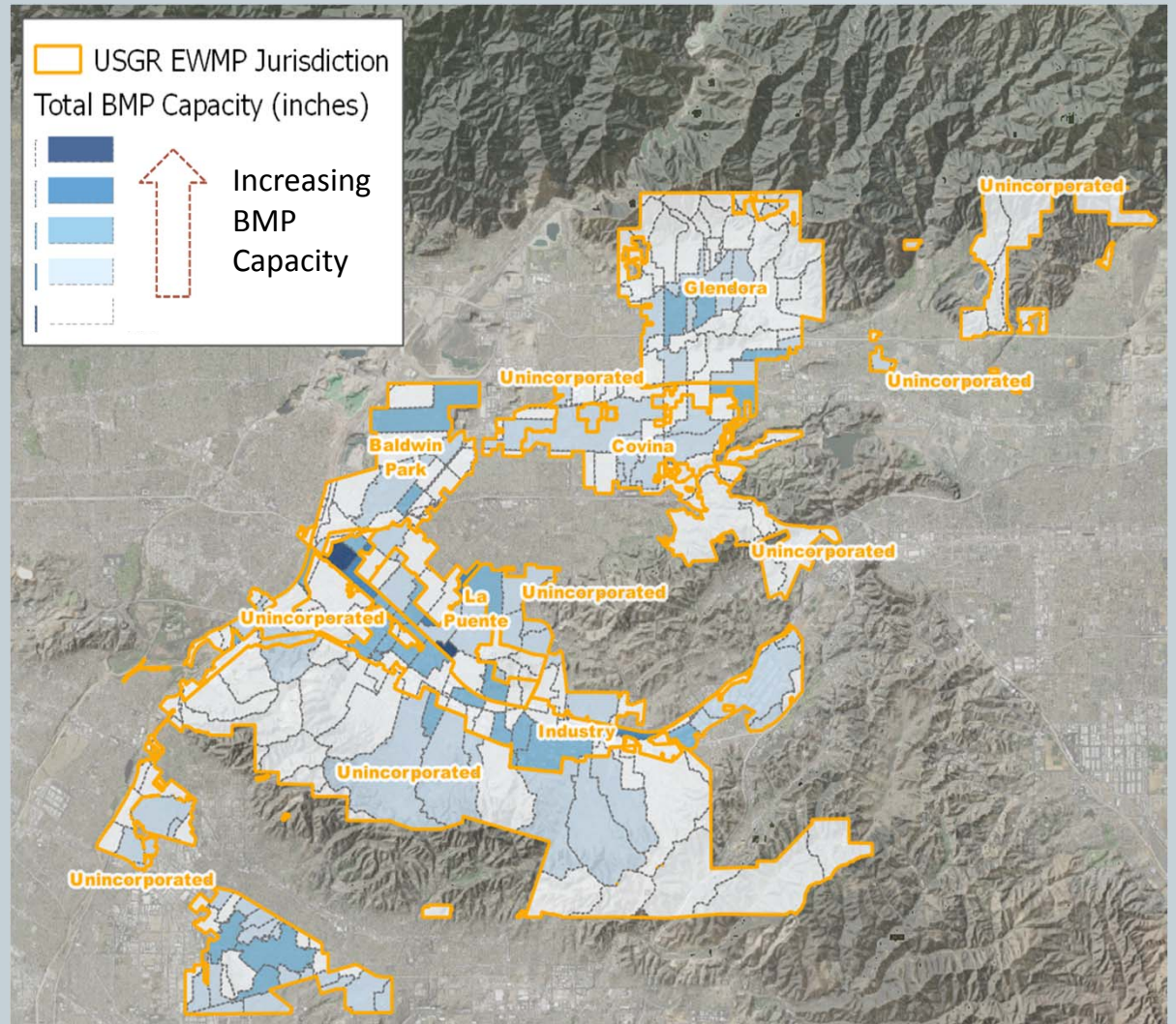
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WATERSHED MANAGEMENT MODELING ANALYSIS

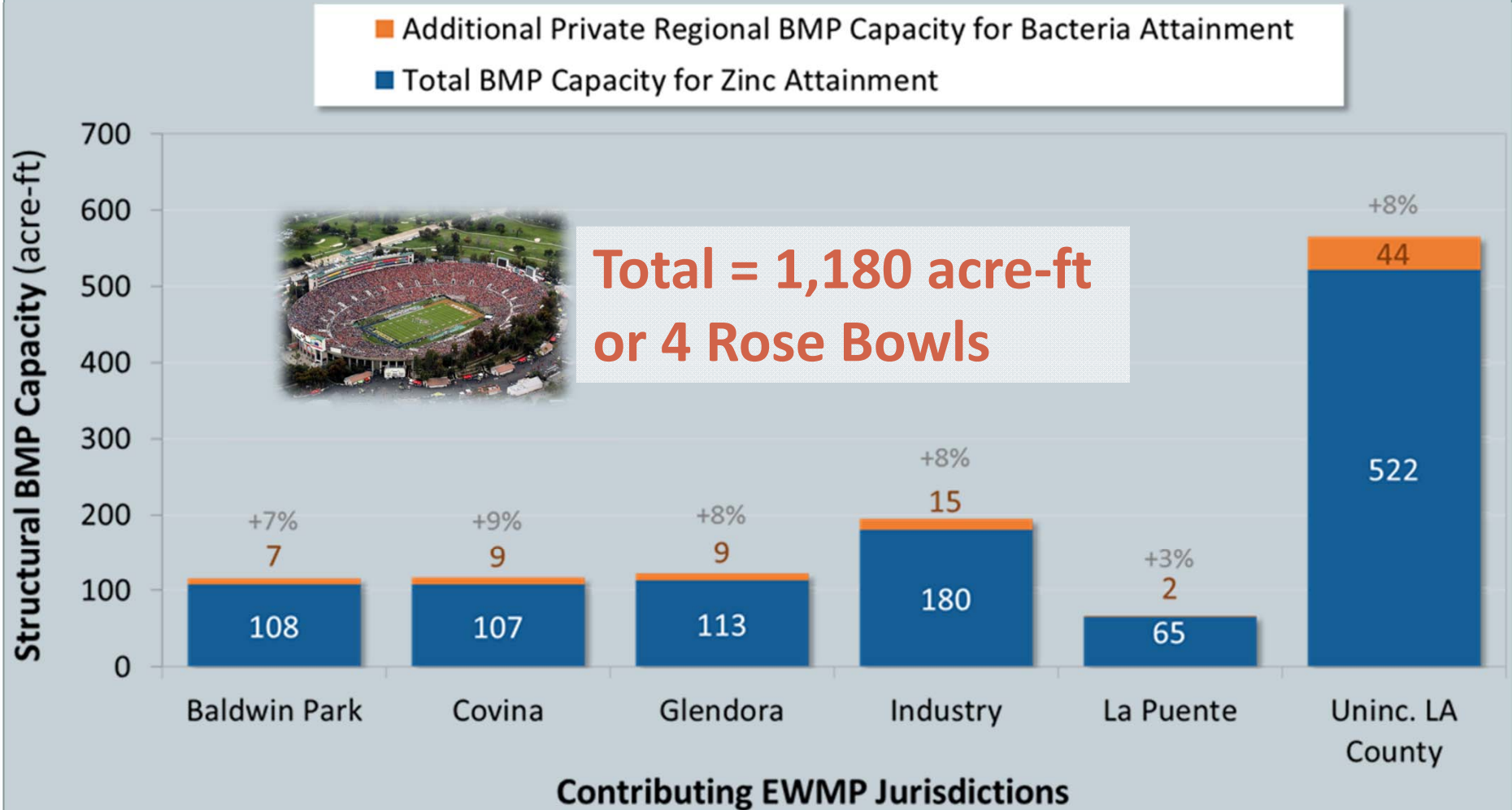
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- EWMPs provide a “recipe for compliance”
- Pollutant loading, soil infiltration, and BMP cost effectiveness were analyzed.
- Model result shows BMPs in acre-feet needed to achieve water quality standards.



BMP CAPACITY SUMMARY FOR EXAMPLE WATERSHED

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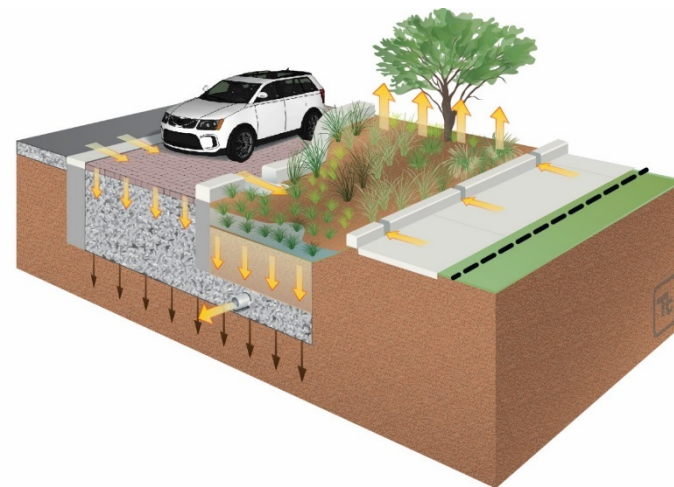
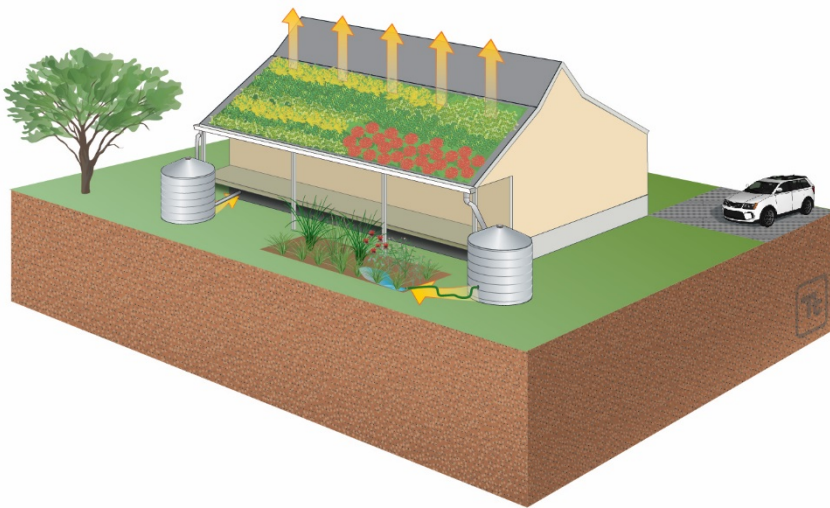
TYPES OF CONTROL MEASURES

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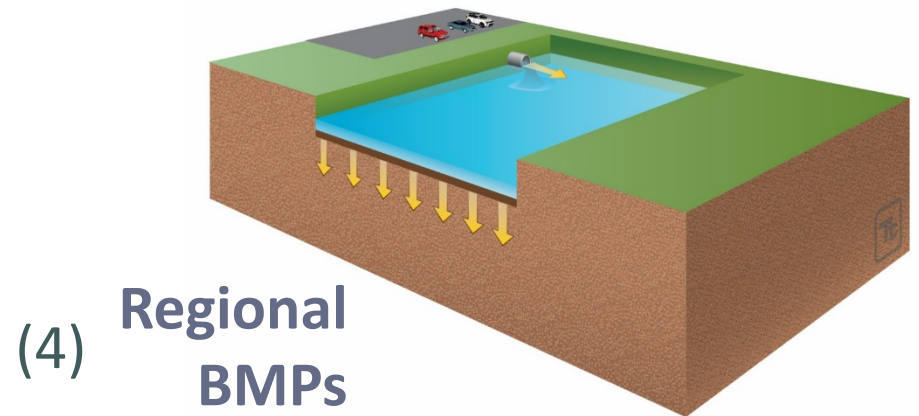
Four primary categories of BMPs:

(1) **Institutional BMPs**
e.g., Enhanced sweeping

(3) **Low Impact Development**



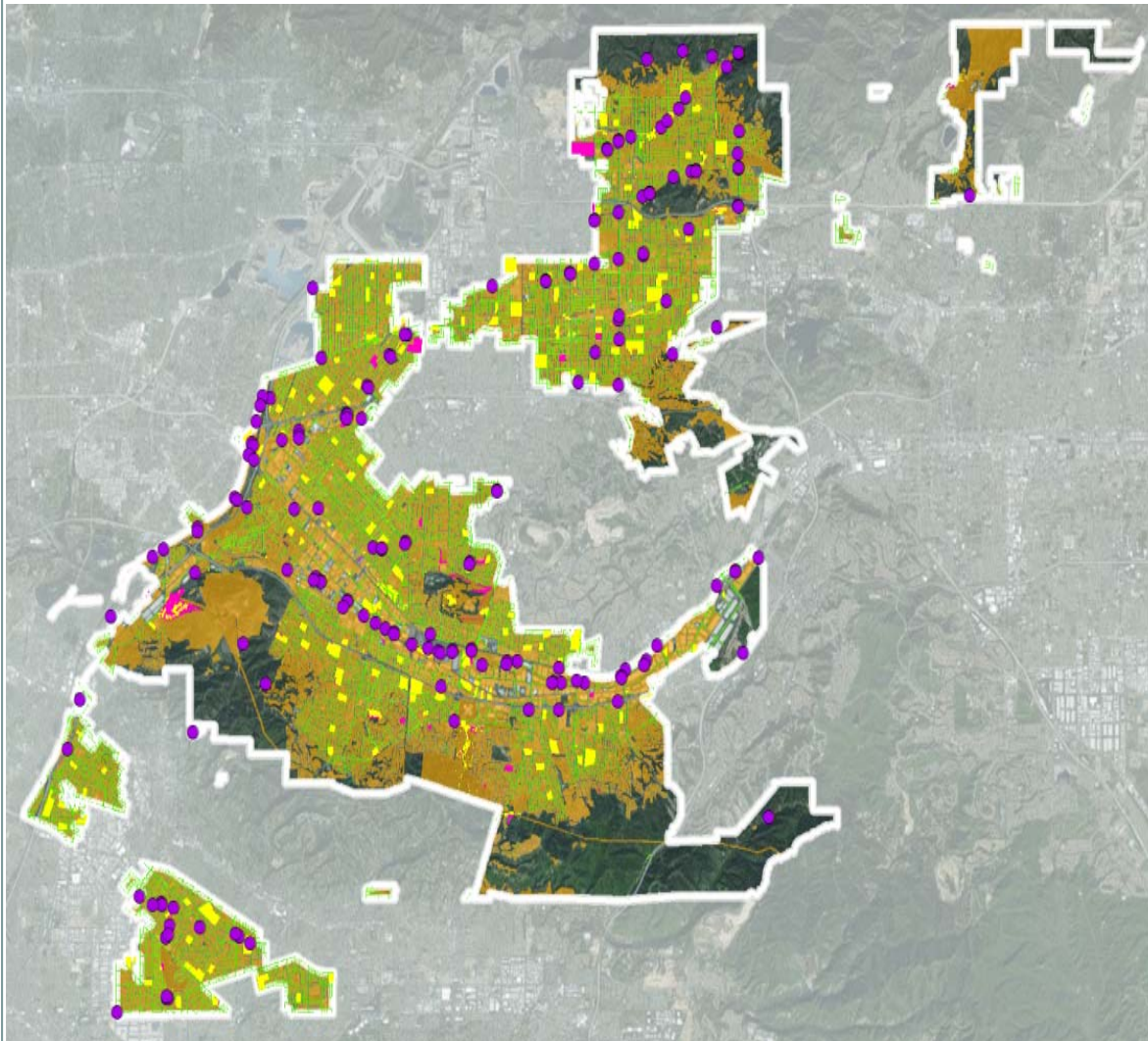
(2) **Green Streets**



(4) **Regional BMPs**

POLLUTANT REDUCTION STRATEGIES

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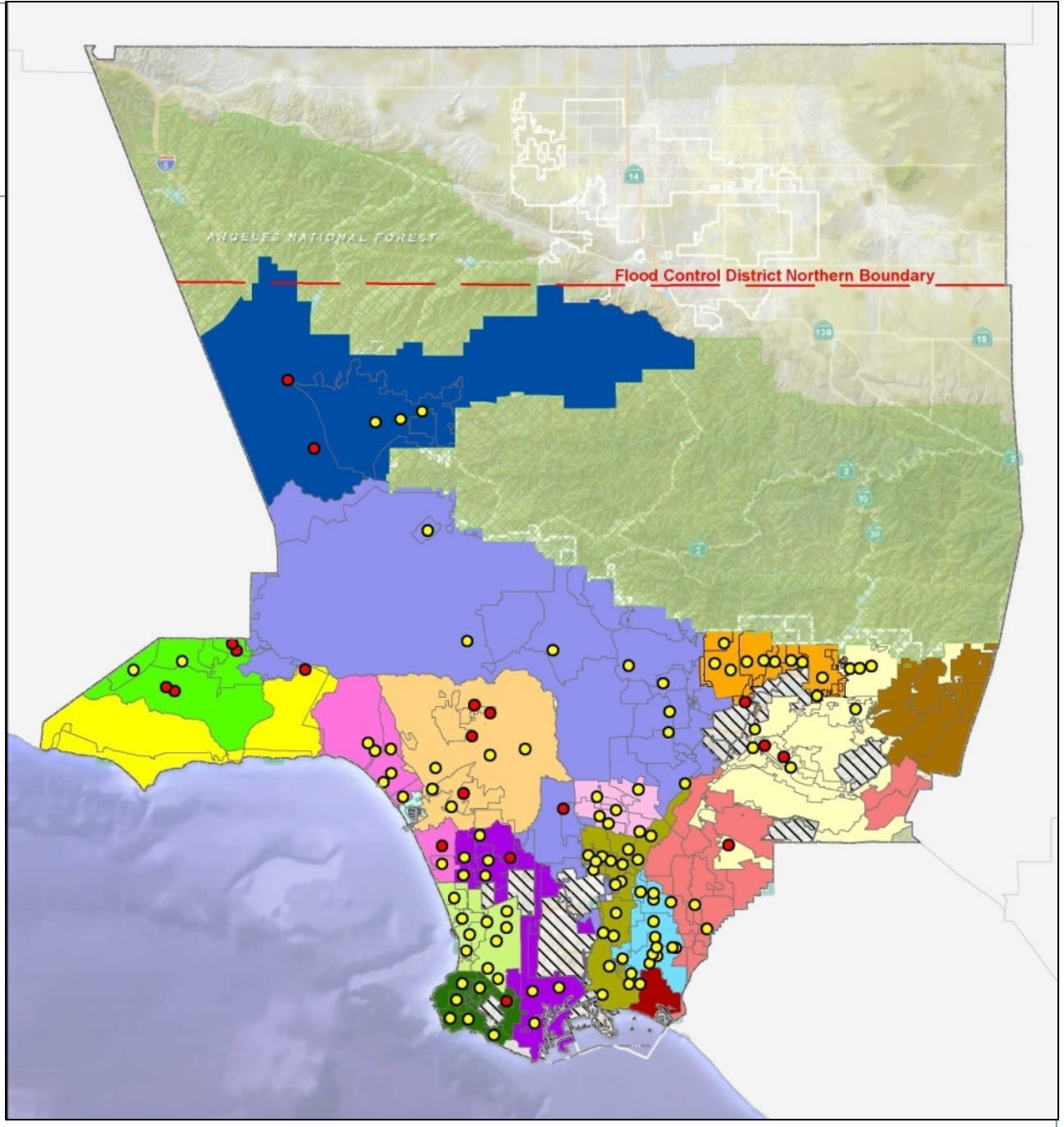


- MCMs & Enhanced MCMs
- LID Incentive Programs – 3%
- Redevelopment/
Residential LID – 2%
- LID on Public Parcels – 8%
- Regional Projects – 36%
- Green Streets – 22%
- Projects on Currently
Unavailable Parcels* – 28%

*Locations shown are
for illustration
purpose only

PRIORITY PROJECT LOCATIONS

- 8 to 10 Priority Projects per group
- Range 4 to 45 acre-foot capacity
- Programmatic Environmental Impact Report completed



EXAMPLE REGIONAL PROJECT

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Kahler Russell Park

Jurisdiction/Owner: Covina

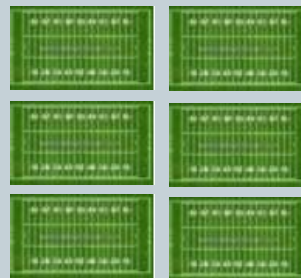
Site Area	17 acres
Drainage Area	1,040 acres
Jurisdictions in	County (44%)
Drainage Area	Covina (41%)
	Glendora (15%)
Design Volume	36.6 ac-ft

Project Cost

Planning & Design	\$4,963,000
Construction	\$14,178,000
Contingency	\$3,545,000
Total Project	\$22,686,000

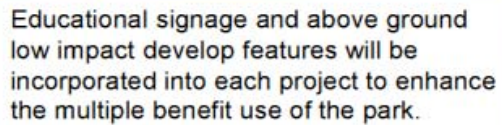


BMP Volume Equivalent



6 Football Fields
Covered With 5 Feet
of Water

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ROOSEVELT PARK REGIONAL BMP

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Capacity 8.4 acre-feet
Drainage Area 190.5 acre

Priority:

- ✓ Capture 85th Percentile 24-hour storm
- ✓ Multi-use Benefits to the communities

Current Status:

- ✓ Seeking Grant Funding
- ✓ 30% Design Plan



Example: During Construction



After

GREEN STREETS

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- Green streets make up about 22% of total BMP capacity
- Detailed analysis identified 1,900+ miles of suitable curb length
- About 70% of developed areas drain to street opportunities

CONCLUSION

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- Permittees have spent \$15M over the last 2 years in developing various watershed management group plans
Permittees will be spending over \$10M/year in monitoring costs beginning this fall.
- Collectively, it is estimated that \$20B over 20 years is needed to implement the 19 WMP/EWMP group plans.
- However, Plans and costs will be refined every two years based on:
 - Monitoring data
 - BMP effectiveness data
 - Special Studies

An aerial photograph of a coastal city, likely Long Beach, California. The image shows a large sandy beach in the foreground, a long pier extending into the ocean, and a dense residential area with many houses. In the background, there is a harbor with many sailboats and a bridge. The text "Questions?" is overlaid in large yellow letters.

Questions?

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