North East Trees

Arroyo Seco Watershed Management & Restoration Plan

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Arroyo Seco Is A Diverse Watershed Connecting the San Gabriel Mountains to the Los Angeles River

- Runs **22 linear miles** from its beginnings in the San Gabriel Mountains to its confluence w/ the Los Angeles River
- Over those 22 miles, the Arroyo Seco **drops from an elevation of over 6,100 feet at Strawberry Peak to 320 feet** at the Confluence
- **Land area of approximately 47 square miles,** of which 32 are contained in the mountainous terrain above the Devil's Gate Dam (6% of LA River watershed).
- **Sections of four cities** - La Canada – Flintridge, Pasadena, South Pasadena, and Los Angeles (plus unincorporated Altadena) - **lie within the watershed**
- **Highly urbanized, but with many natural pockets remaining**

Context / Overview Of This Planning Effort

Guiding principle is that, all things being equal, BMPs compatible with watershed restoration are preferable to end-of-pipe solutions.

Approach based on the recognition that previous planning projects (AS Watershed Restoration Feasibility Study) identified strong projects, but did not fully prioritize them or tie them to achieving water quality standards.

- **Projects not as competitive when up for grant funding.**

Extent of water quality impairments means we will likely have to use ALL attractive BMP sites in some capacity.

- **Key question is where to start, not whether to start given existing level of understanding.**
- **More data is always helpful, but we know enough to begin.**

Key outcome is a list of projects with descriptions, intended to be picked up and implemented by multiple agencies and organizations.

- **A project "menu".**
- **Jump-starts applications for existing and future grant programs.**

Overview of Approach

Uses BOTH historical water quality data AND high-level modeling to identify high-priority projects sites.

- **Modeling used to determine how to prioritize BMP sites vs. one another, not to predict specific concentrations or model the entire watershed.**

Identifies key sub-watersheds likely to produce the most pollution, and then the key sites within these sub-watersheds.

Divides BMP sites up into regional and distributed BMPs.

- **Regional treat runoff from a large upstream area, and are thus more important.**
- **Distributed treat runoff from an individual site (i.e., large parking lot or industrial / commercial complex).**

Proposed BMP technologies tailored to conditions in the Arroyo Seco.

- **Highly permeable soils.**
- **Bacteria the key pollutant, followed by metals.**

Recommendations: Summary

Total cost of proposed projects: **$140M+**

Total number of projects: **77±**

- **High priority:** **17**
- **Watershed-wide:** **8**
- **Habitat restoration:** **15**
- **Water quality improvement:** **37**

Note: High priority projects have multiple sub-components. As an example, Lincoln Heights Interchange Projects consists of:

- BMP for Avenue 26 Storm Drain
- Wildlife corridor restoration along Arroyo Seco Channel
- Limited public access and integration with future bike path

Project Output

Water Quality

Regional BMPs – Structural BMPs that can treat runoff from a contributing upstream area.

- Infiltration trenches / basins
- Subsurface flow wetlands

Site-Specific BMPs – Structural BMPs that can treat runoff from a specific site only.

- Bioretention areas
- Cisterns

Nonstructural BMPs

- "Arroyo Backyard" program
- "Green Streets" program
- Recommendations for city standard plans and ordinances

Water quality monitoring program

Habitat Restoration

Channel removal / stream restoration projects

- Lower Arroyo Park
- Central Arroyo Park
- South Pasadena

Site-specific terrestrial habitat restoration projects

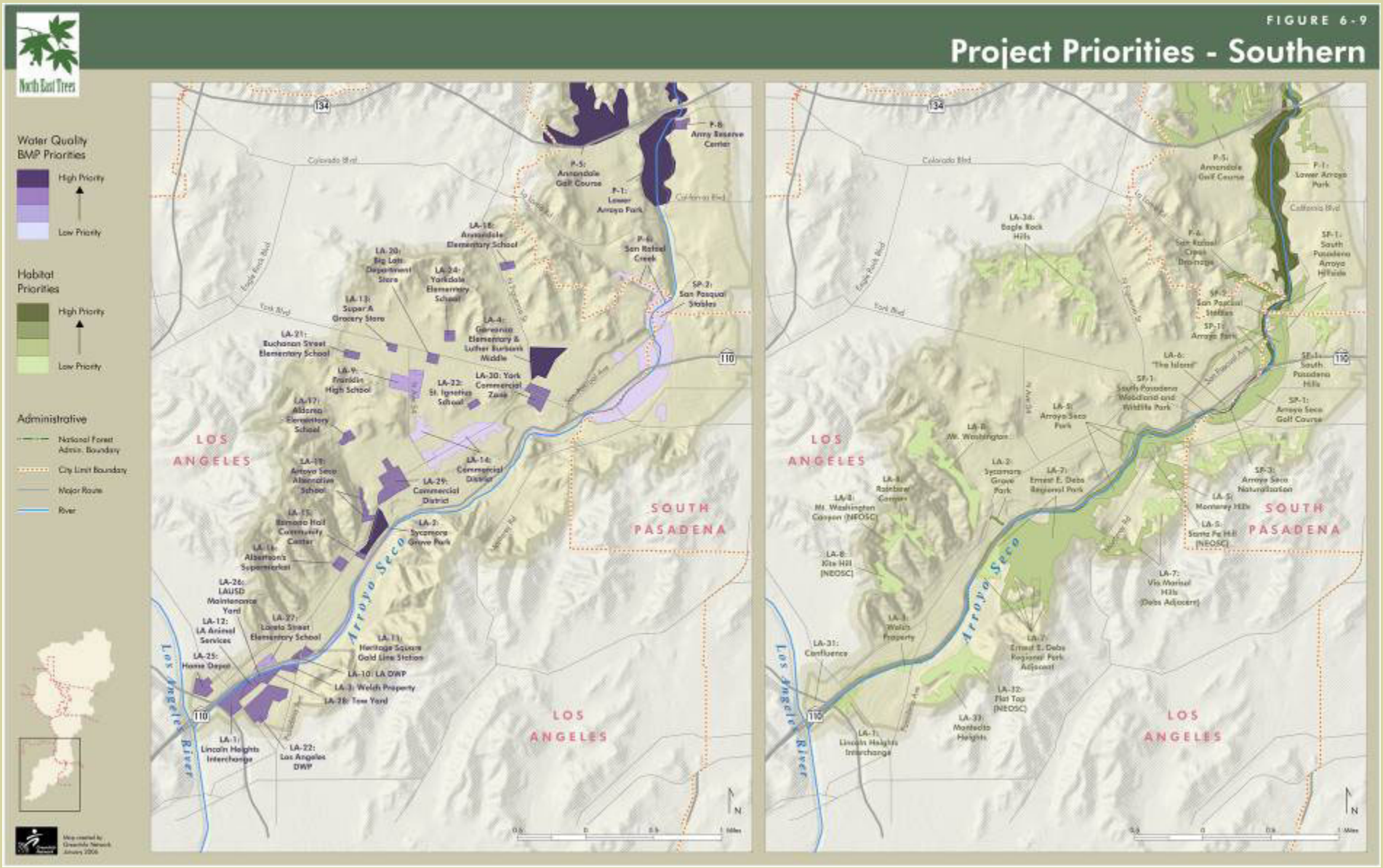
Habitat connectivity improvement

- Aquatic and terrestrial

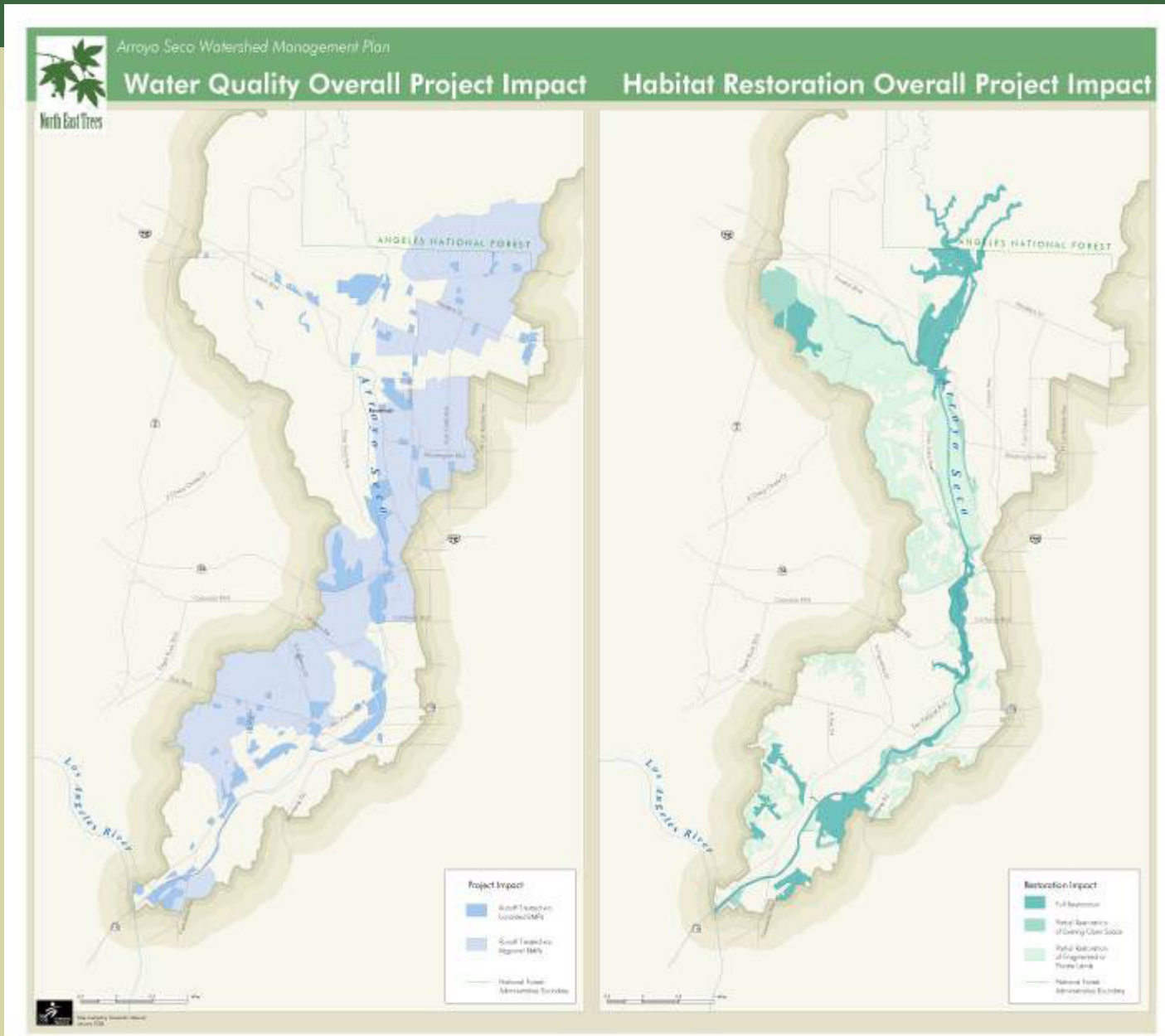
Watershed-wide initiatives

- Backyard landscaping (part of "Arroyo Backyard" program)
- Volunteer indicator species monitoring

Project Maps - Southern



Overall Impact of Plan Under Full Implementation



Project Example: Garvanza Park / LAUSD Schools
(Project LA-4)

WATER QUALITY DETAILS

Tributary area:	400+ acres
Project area:	10 acres
BMP Type:	Infiltration
Score (out of 5):	4.2
Rank (out of 47):	8
Los Angeles Rank (out of 26):	2
Total Cost:	$1.5M - $6M

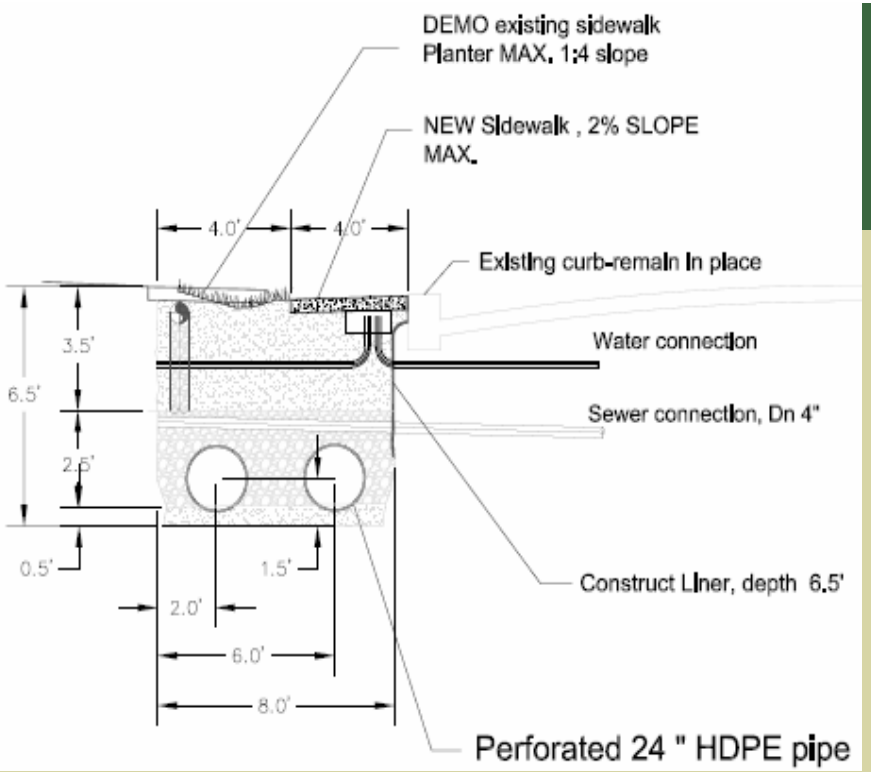
Project Example: Green Streets Initiative

Overall Goal

Build SW treatment into street parkway design, while enhancing streetscape with native plantings.

Approach

1. **Demo existing parkway from curb to private property line (10' standard)**
2. **Install bioretention areas with subsurface pipe storage in parkway and under meandering sidewalk.**
3. **Install trench drains in driveways, conveying all private property runoff into parkway units.**
4. **Landscape with native trees and plants**



Statistics

- **Each unit can hold approximately 600 CF of stormwater.**
- **Volume sufficient to contain SUSMP runoff from 2-3 standard residential lots.**
- **Entire neighborhood complies with SUSMP with a unit every 2-3 lots.**
- **Approx cost: $15,000 / unit**