



# Green Infrastructure & Stormwater Management CASE STUDY

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## Elmer Avenue Neighborhood Retrofit Demonstration Project

**Location:** 7700 block of Elmer Avenue, Los Angeles, CA

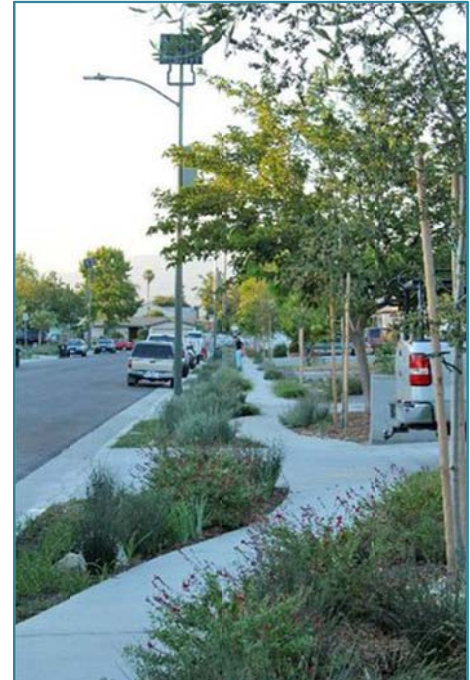
**Client:** City of Los Angeles and the Residents for Elmer Avenue

**Design Firm(s):** Guy Stivers, Guy Stivers & Associates, Inc.; Patricia Araiza, City of Los Angeles Bureau of Street Services

**Landscape architect/Project contact:** Edward Belden, Los Angeles and San Gabriel Rivers Watershed Council

**Email:** [edward@lasgrwc.org](mailto:edward@lasgrwc.org)

**ASLA Chapter:** California



### Project Specifications

**Project Description:** As a part of the Los Angeles Basin Water Augmentation Study and supported by multiple partners, the Elmer Avenue Neighborhood Retrofit Demonstration Project is intended to improve local water supply and water quality. This community enhancement project redesigned a residential block of 24 homes to manage stormwater from approximately 40 acres. Elmer Avenue demonstrates a variety of strategies from rain barrels and permeable pavers, climate appropriate landscapes and bioswales, and solar street lights on public and private property. The resulting multiple benefits include reduced flooding, improved water quality, increased groundwater supplies, added green space, and engaged residents.

### Project Type:

Other (please specify)

A retrofit of an existing property

**Design features:** Rain garden, bioswale, rain barrels, downspout removal, porous pavers, curb cuts, and two sub-surface infiltration galleries with a 113,650 gallon capacity.

**This project was designed to meet the following specific requirements or mandates:** To meet funding criteria, designed to reduce flooding and water pollution, increase local

groundwater supplies, add neighborhood green space, and engage residents.



**Impervious area managed:** greater than 5 acres

**Amount of existing green space/open space conserved or preserved for managing stormwater on site:**

Approximately 1,728 sq/ft of green space was added to this neighborhood street using bioswales. Residents planted 23 native trees adjacent to sidewalks and southern California native and climate appropriate plants that support wildlife habitat were also planted.

**The regulatory environment and regulator was** supportive of the project.

**Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements?** Yes, to all of the above.

## Cost & Jobs Analysis

**Estimated Cost of Stormwater Project:** \$1,000,000-\$5,000,000 (Public funding: Federal, state, regional, local)

**Related Information:** ~\$2.7 million project total, approximately \$1.8 million construction total, approximately \$200,000 construction landscape on private property, approximately \$200,000 construction of landscape elements in public right-of-way

**Was a green vs. grey cost analysis performed?** Yes, it is in progress.

**Cost impact of conserving green/open space to the overall costs of the site design/development project:** The addition of green space to the neighborhood required the added cost of a drip irrigation system needed to establish plantings.

**Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)?** Significantly reduced costs (10% or greater savings). There isn't an existing stormwater system for this neighborhood. This project reduces life cycle costs when taking into account the imported water and energy needed to replenish local groundwater supplies.

**Number of jobs created:** 25 FTE estimated

**Job hours devoted to project:**

Planning and Design: 8,000 hours estimated

Construction: 8,000 hours estimated

Annual Maintenance: 800 hours estimated

Other: Monitoring: 2,000 hours estimated

## Performance Measures

**Stormwater reduction performance analysis:**

Captures, treats, and retains 80-90% of a 2-year storm event from approximately 40 acres. Provides 16 acre feet of groundwater recharge annually. Reduces peak flows and pollutant loads to the Los Angeles River.

**Community & economic benefits that have resulted from the project:**

- Native and drought tolerant front landscapes enhance neighborhood and reduce potable water use by homeowners
- 23 native trees sequester carbon and provide shading and cooling, reducing building energy use
- Increased property values

## Project Recognition

County of Los Angeles Green Leadership Award; CASQA, Best BMP Implementation Project

## Additional Information

**Links to images:**

LASGRWC.org - Urban Stormwater Program: Elmer Avenue Retrofit Description

<http://lasgrwc2.org/programsandprojects/was.aspx?search=elmer>

LASGRWC.org - Urban Stormwater Program: Elmer Avenue Retrofit Photos

<http://lasgrwc2.org/dataandreference/media.aspx?search=60>

Project Partners: City of Los Angeles Department of Water and Power, City of Los Angeles Watershed Protection Division, City of Santa Monica Environmental Programs Division, County of Los Angeles Department of Public Works

Grant Funding: CALFED and SWRCB Prop 13 and DWR Prop 50, LA Regional Water Quality Control Board, Metropolitan Water District of Southern California, Pomona College, TreePeople, UC Riverside, United States Bureau of Reclamation, Urban Semillas, Water Replenishment District of Southern California

The monitoring program is focused on five key management questions: 1. What effect do the BMPs have on water quality? 2. What effect do the BMPs have on water supply? 3. What are the O&M needs of the BMPs? 4. How has the project affected the resident's relationship to watershed health? 5. What are the additional benefits of the project?

