

## Abstract

### LID Retrofit Pilot Project Captures Roof Runoff in Urbanized Los Angeles

First identified in the Ballona Creek Watershed Stormwater Best Management Practice (BMP) Strategy and Implementation Project Report, the City of Los Angeles, Bureau of Sanitation successfully completed the implementation of the Pilot Downspout Disconnection Project as part of the Rainwater Harvesting Program to disconnect directly connected impervious areas, improve water quality, and reduce stormwater runoff from residential and commercial properties. This project gave commercial site owners a unique opportunity to manage stormwater runoff and reduce the volume of water discharging from their property. Six commercial sites were retrofitted with seven bioretention flow-through planter boxes. These sites included a City Council District office, school, retail shop, and several community churches. This approach was an attempt to reach out to the local community and provide successful Low Impact Development (LID) models of how to capture and manage stormwater runoff from rooftops for future citywide implementation.

To ensure the goals of the Pilot Downspout Disconnection Project were accomplished, a detailed review of the existing site conditions was conducted to assess potential planter sites. Once all feasible project locations were identified, field measurements were taken to determine the roof drainage area connected to the downspout. Planter boxes were appropriately sized according to the roof drainage area to handle a 0.75-inch rain event. Additional City design requirements included:

- Use of 5-gallon California native plants (Wild Lilac and Popcorn California Lilacs) every 24-inches;
- A minimum 9-inch deep reservoir at the top of the planter;
- A 3-inch thick layer of mulch;
- A minimum 18-inches of planting material;
- Use of planting material consisting of 50% sand and 50% compost;
- A minimum 12-inches of clean gravel at the bottom of the planter;
- A minimum width of 24-inches, not including the width of the blocks;
- Providing a sizing factor (surface area of the planter to surface area of the contributing impervious area) of at least 0.04; and
- Sizing all underdrain pipes to meet the capacity and discharge rates of the inflow.

The composition of these materials provides a variety of natural physical, biological, and chemical processes to improve stormwater water quality runoff. Following construction, field observations were conducted during a storm event. Influent and effluent from the BMP was collected and evaluated and based on field observations it was concluded that the planter boxes reduce stormwater flow discharge rates, volume, and temperature while simultaneously improving water quality.

It is proposed that this abstract be joined with Catherine Tyrrell's stormwater harvesting abstract for an hour long session.