

CASQA 2010 Conference Abstract

Hidden Treasure of Garvanza – Facility to Capture, Treat, Infiltrate, and Reuse Stormwater

Stormwater and urban runoff carries numerous pollutants of concern to receiving water bodies. The main approach to reducing runoff pollution from developed areas is to implement structural treatment control Best Management Practices (BMPs) to capture, treat, infiltrate, and/or reuse the “first flush” runoff. In doing so will reduce stormwater runoff volumes, improve water quality, and assist with the compliance of Total Maximum Daily Load (TMDL) standards. Infiltrating runoff will also provide water conservation benefits by replenishing the local groundwater basin.

The Garvanza Park BMP Project was identified and developed as part of the Arroyo Seco Watershed Management Plan. The project's goal is to enhance the water quality of the Los Angeles River and serve as an applied example for future applications within the Los Angeles Region. The 5.59 acre developed park serves the Highland Park community of the City of Los Angeles. The neighborhood is highly urbanized and is one of the most densely developed areas of the watershed. Runoff from these urbanized areas is known to carry pollutants of concern such as bacteria, metals, oil and grease, and trash into waterways impairing the quality of receiving water bodies.

To determine the feasibility of using Garvanza Park for a multiuse project a soils investigation was performed to determine the project site's ability to construct and infiltrate captured stormwater runoff. After percolation test results deemed the project site appropriate, a hydrology study determined the peak flow discharge rates and water quality volumes generated from various rainfall return frequencies. Then annual pollutant loads were assessed to determine the watershed's pollutants of concern. This information was used to appropriately select BMPs that target these specific pollutants of concern and have medium to high pollutant removal efficiencies. Based on the results of the hydrology study and the watershed's expected annual pollutant loads, numerous BMP technologies were evaluated to configure a BMP treatment train capable of achieving the project goals.

Hydraulic analyses for the existing condition and with the incorporation of an offline BMP treatment train demonstrated the feasibility of implementing a successful water quality improvement project. The project is currently under construction and upon completion will be able to capture, treat, infiltrate, and reuse stormwater runoff generated from a 0.75-inch 24-hour storm event. The project's treatment of dry- and wet-weather runoff will result in a reduction of annual pollutant loads from the Garvanza Park Watershed by approximately 85%.