

City of Santa Monica Urban Watershed Management Program

Low Impact Development Strategies:

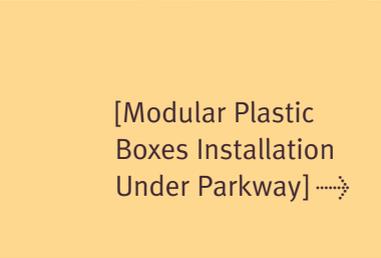
San Vicente Boulevard at Ocean Avenue



← [Street and Parkway Before Installation]



← [Catch Basin Insert Installation and Parkway After Construction]



[Modular Plastic Boxes Installation Under Parkway] →



[Catch Basin with Insert During Rain Simulation. Grate removed to see insert] →



The San Vicente/Ocean Avenue project incorporates Low Impact Development strategies with Best Management Practices (BMPs) to harvest urban runoff either for treatment via infiltration (soil ecology does a wonderful job in neutralizing low-level or background concentrations of pollutants) or for reuse in landscape irrigation or indoor flushing.

The city obtained a grant from the Metropolitan Water District of Southern California's Innovative Supply Program to demonstrate a new BMP strategy: harvest runoff from street gutters, filter it, and then store in an underground zone for infiltration under the parkway. Completed in 2006, this strategy demonstrates how runoff can be harvested anywhere there is a street gutter and parkway (landscaped strip between the street and sidewalk), which is ubiquitous in any urbanized area. The goal of the project is to demonstrate the feasibility of using runoff to recharge groundwater for future extraction or store the runoff in cisterns for direct reuse, and reduce dependence on imported water.

Photos show the site before and after the project. Note the beauty of the BMP strategy – all the infiltration or storage work is below ground. The storage chamber uses snap-together **rain boxes** (PHOTO bottom left). The boxes and similar equivalent plastic products are 95% void and can hold more runoff than if rock were used instead of plastic devices. A **catch basin with an insert** (PHOTO bottom right and top right) receives the runoff and filters for trash and some solubles, including bacteria, before the water continues into the storage zone. (Inserts from different vendors can be varied to test pollutant removal effectiveness.) The city simulated a rain event using runoff from its Santa Monica Urban Runoff Recycling Facility and sampled the influent and effluent for treatment effectiveness (PHOTO bottom right).



Planning for a Cleaner Bay

Urban runoff flowing through storm drains is the single greatest source of pollution to the beaches and near shore waters of the Santa Monica Bay. Unlike sewage and discharges from industrial sources, urban runoff is not generally adequately treated before it reaches the bay and our beaches.

The City of Santa Monica passed an ordinance that is designed to reduce the amount of urban runoff pollution that reaches our storm drain system and the Santa Monica Bay. The ordinance requires a reduction in urban runoff flowing off of all impermeable surfaces from newly developed or retrofitted parcels within the city.

Reducing the amounts of urban runoff and of pollutants contained in the runoff is essential for the health and safety of our community. A cleaner bay means a healthier marine ecosystem and improved quality of life for residents, and increases Santa Monica's appeal to visitors and businesses.

By implementing post-construction Best Management Practices (BMPs) and making these strategies part of our daily lives, we can make a genuine difference - and clean the bay!



Putting the LID on Urban Runoff, the Santa Monica Way

In the city's efforts to reduce runoff pollution through the use of BMPs, we can manage, use and redevelop our lands in a more sustainable manner through the use of Low Impact Development (LID) and smart growth design strategies, and BMPs. LID is an economically and environmentally responsible strategy to site development which still allows land development, but in a long-term cost-saving manner that also mitigates potential environmental impacts. Whether employed at a single-family home or large commercial or public project, LID integrates land planning, and site design practices and techniques to mitigate development impacts to land, water and air, to conserve and protect natural resources and ecosystems, and to reduce infrastructure costs, e.g., storm drain systems.

This strategy views each development project as a small micro-watershed, part of the greater watershed or drainage basin of a particular area. The strategy promotes the concept of "start at the source," that is, to keep as much precipitation on each parcel to minimize the amount of runoff or waste water leaving a site. In the end, watershed management must include the individual and each parcel, and LID approaches should be used in planning and designing phases. The results of these strategies will be to maximize onsite rainwater and runoff harvesting, retention and use, and to minimize runoff pollution in reaching the bay.

For more information contact **310-458-8223** or visit **sustainable-sm.org**



Urban Runoff & Watershed Management Program

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