

# City of Santa Monica Urban Watershed Management Program

## Low Impact Development Strategies:

### Sub-Watershed Runoff Quality Improvement Projects

Montana Avenue/Ocean Avenue and Wilshire Boulevard/Ocean Avenue



← [Continuous Deflective Separation Unit: during installation, primary treatment to remove gross pollutants]



← [Diversion Structure: during construction, drop or sump box receives runoff from the main storm drain line and diverts it for primary treatment]

[Pump Vault: moves runoff from main storm drain line to the sanitary sewer line] →



[Wet Well Chamber: receives runoff from initial screening before being pumped for advanced treatment] →



Opened in the spring 2007 and early 2008, the Montana Ave. and Wilshire Blvd. Sub-Watershed Runoff Quality Improvement Projects (Projects) treat to the maximum extent practicable urban runoff from the north-central portions of the City of Santa Monica, which run from the west to east borders. Other goals include improving and preserving water quality entering the Bay, and protecting beneficial uses of our coastal waters. Runoff from these sub-watersheds flow directly to the Bay, the outlets being in the Santa Monica beach.

The Projects incorporate within a built-out urbanized area Low Impact Development and Smart Growth strategies to harvest dry and wet weather urban runoff from the City's Montana and Wilshire Sub-Watersheds (hydrology basins) for treatment through two similar Best Management Practices (BMPs) treatment trains. After state-of-the-art treatment, the runoff returns to the Santa Monica Bay, but without much of the pollution, i.e. heavy metals, organic chemicals, trash, debris, oil and grease and pathogens.

The Projects are located at the intersections of Montana and Ocean Avenues, and Wilshire Blvd. and Ocean Ave. under parts of Palisades Park and the shoulders of these roads. All features of the systems are underground, though there are surface metal covers for access to the monitoring ports for water sampling, to treatment devices for maintenance, and to pump vaults. Most of the systems operate using gravity flow; the last part requires electricity to pump the water into the sanitary sewer for final treatment.

Runoff is diverted out of the main Montana and Wilshire storm drain lines through a **drop box** (PHOTO top right - under construction). Runoff drops into this depressed vault, and a pipe at the bottom allows dry weather runoff to flow into the **Continuous Deflective Separation (CDS) unit** (PHOTO top left - under construction). The CDS screens and settles out floatables, sediment, and oil and grease, i.e. gross pollutants. After the CDS unit, dry weather runoff, which still contains soluble pollutants (i.e. heavy metals, organic chemicals), flows into a **wet well vault** (PHOTO bottom right), which periodically pumps water out of this vault and into the **pump vaults** (PHOTO bottom left). This last vault sends the runoff into the sanitary sewer for advanced treatment at the City of Los Angeles' Hyperion wastewater treatment facility. During rain events, most storm water is treated by the CDS units only.



# 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!

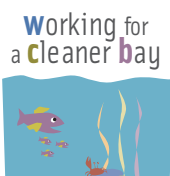


## Putting the LID on Urban Runoff, the Santa Monica Way

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](http://sustainable-sm.org)**



### Urban Runoff & Watershed Management Program

City of Santa Monica Office of Sustainability and the Environment  
200 Santa Monica Pier, Santa Monica, California 90401

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