



WATER

INTERRELATED ACTIONS



Urban Nature



Buildings & Neighborhoods



Energy

Water is vital to all human activity. However, many people do not realize how little fresh water is available. California is a generally dry state and suffers continuous water supply shortages. Without the massive water transportation system that is in place, life in Southern California as we know it would be impossible.

Water conservation is vital for a sustainable city to maintain a reliable source of fresh water for daily use. Often, water is wasted, which is unnecessary as well as expensive. Simple conservation, as well as a move to more water efficient appliances and landscaping can significantly reduce water use, save money and help ensure a reliable water supply now and in the future. The Long Beach Water Department (LBWD) and the Board of Water Commissioners has jurisdiction over all water use, sale, and distribution, providing a reliable supply of quality potable water through economical and environmentally responsible planning and actions.

Responsible management of stormwater runoff is also important to a sustainable city. Capturing rainwater and urban runoff and reusing it for irrigation and other outdoor uses helps reduce the demand for potable water. Increasing permeability of hardscape and increasing open space helps reduce runoff by allowing rainwater to percolate back into the ground, thereby contributing to replenishing the aquifers.

Protecting and improving our rivers and oceans is also important to sustainability. Improving water quality by reducing pollution helps create healthier habitats as well as inviting areas for recreational activities.

The initiatives, goals and actions in this section will reduce water consumption while promoting a conservationist ethic and protecting and improving our rivers and oceans. The actions in this plan are interrelated, and the goals that follow will contribute to the goals in the urban nature and buildings and neighborhoods sections. The City of Long Beach recognizes that in order to build a sustainable city, the City and community must work together to reduce water use and stormwater runoff and protect and enhance our waterways.

SUSTAINABILITY GOALS

1. Reduce per capita use of potable water, exceeding the State mandate to achieve a demand reduction of 20% in per capita water use by the year 2020.
2. Through a pilot program, facilitate the installation of rain catchment systems at 5 City facilities by 2012.
3. Facilitate the development of 50 green roofs communitywide by 2016.

Together, we can conserve water, heal our watersheds and restore our waterways

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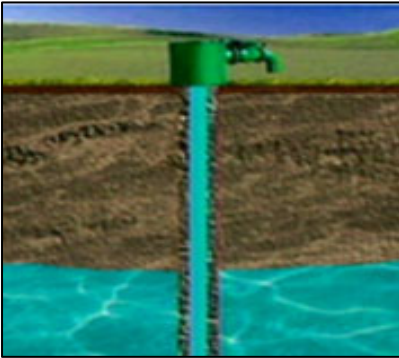


A HISTORY OF LEADERSHIP



LARGEST DESALINATION RESEARCH PROJECT IN THE U.S.

Long Beach Water Department (LBWD), the L.A. Department of Water & Power and the United States Bureau of Reclamation, have constructed a 300,000 gallon-per-day prototype desalination facility, the largest seawater desalination research and development facility of its kind in the U.S. In addition, LBWD and the Bureau have designed and constructed an "Under Ocean Floor Seawater Intake and Discharge Demonstration System", the first of its kind in the U.S., to demonstrate that desalination intake and discharge systems can be both effective and environmentally responsible.



MANGEMENT OF LOCAL GROUNDWATER BASIN

The Long Beach Conjunctive Use Project, a significant water supply reliability project, is an innovative and environmentally responsive water storage project that allows LBWD to better utilize the groundwater basin beneath the City of Long Beach, strengthening the City's water supply reliability while maintaining water rate affordability. The project increases LBWD's groundwater production capability and improves the performance of the saltwater barrier.



EXPANDED USE OF RECYCLED WATER

The Long Beach Water Department has built one of the most expansive systems for distributing recycled water of any utility its size; reducing the City's need for potable water by over 10%. The Recycled Water System Expansion Project is being developed in four critical, deliberate phases, and is primarily intended to connect the recycled water system to new customers, as well as increase the reliability of the distribution system through the completion of looped transmission corridors.



WATER CONSERVATION

The amount of water imported into southern California has been permanently reduced. Using the remaining water wisely must become one of our highest priorities. Over the years, Long Beach has sustained one of the most effective water conservation programs in California; although the City's population has increased 28-percent over the last 25 years, its demand for potable water has decreased 17-percent.



WATER QUALITY PROTECTION

Engineered, structural treatment devices, also known as Best Management Practices, selected specifically because of their pollutant removal capabilities are used as control measures to treat runoff. This is a 3-Stage "Treatment train." The first stage is the trash and debris excluder, strategically placed in the catch basin inlet. The second stage is the filter baskets set inside the catch basin designed to capture oils, grease, pesticides, sediment and bacteria. The third and final stage, the catch basin outfall pipe screen, is designed to capture in the at the end-of-pipe what may have bypassed the first and second stages.

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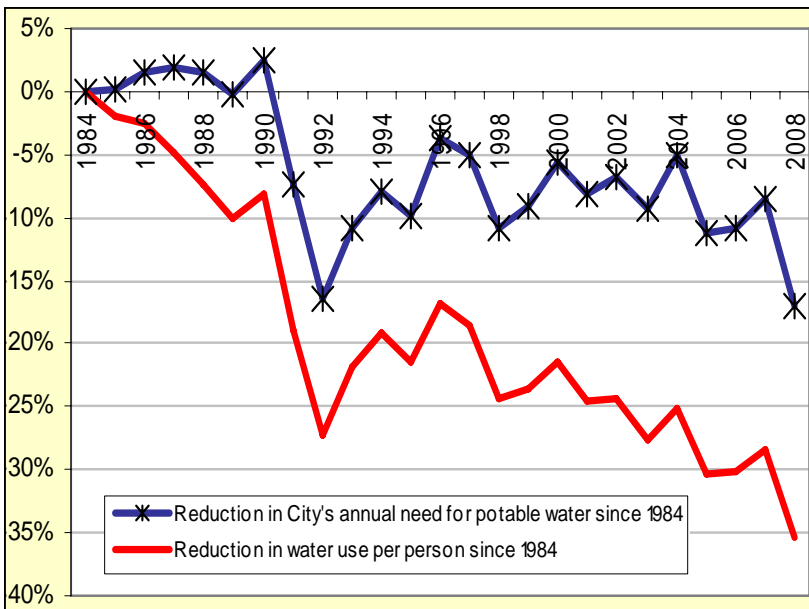


Water Initiative 1:

Ensure a sustainable water supply through conservation and reduced dependence on imported water

SUSTAINABILITY GOALS

Reduce per capita use of potable water, exceeding the State mandate to achieve a demand reduction of 20% in per capita water use by the year 2020



STATISTICS

- In the last 25 years, the City's population has increased 28%, but demand for potable water has decreased 17% overall; demand per person has declined 35%.
- During that same period, the City's reliance on imported water declined from 70% to just 46% of total demand.
- Long Beach uses an average of 60,000,000 gallons of potable water every day.
- Long Beach water usage, year-to-date in Spring 2009, is trending 14% lower than its own 10-year average water usage.
- The average single-family home uses 50% of its water outdoors.
- There are 915 miles of water lines and 765 miles of sewer lines in the City.

ACTIONS

1. Make it illegal and socially unacceptable to waste water in Long Beach
2. Reduce amount of water used for landscape irrigation by improving irrigation systems and by replacing grass lawns with landscapes that are more drought-tolerant, enhance the environment, require less maintenance, and reduce the amount and pollution load of urban runoff into the Long Beach coastal zone
3. Further reduce demand for potable water by converting industrial and irrigation demands to recycled water wherever practical and cost-effective
4. Continue research and development of cost-effective and environmentally responsible seawater desalination as an alternative, sustainable supply of potable water
5. Continue to improve management and yield of groundwater basin that Long Beach relies on for approximately 50% of its potable water
6. Update landscaping standards to require drought-tolerant and native landscaping to reduce water consumption

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Water Initiative 2:

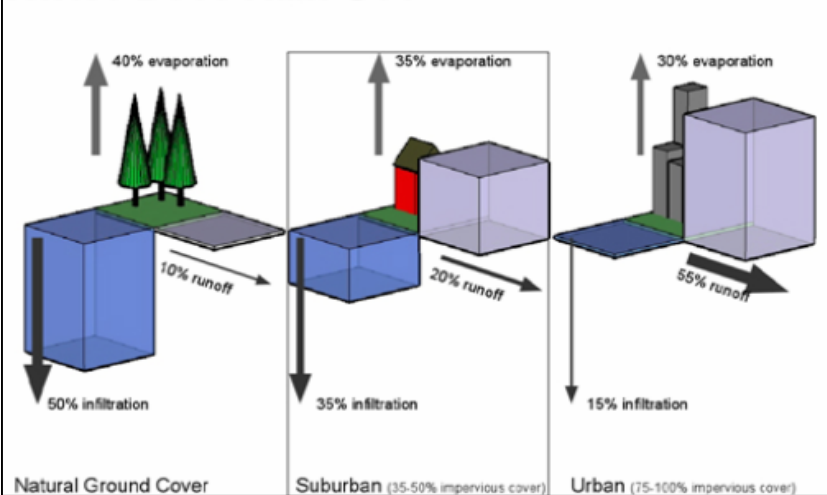
Implement low impact development strategies to reduce runoff and pollution at the source and increase the beneficial use of rainwater

SUSTAINABILITY GOALS

Through a pilot program, facilitate the installation of rain catchment systems at 5 City facilities by 2012

Facilitate the development of 50 green roofs communitywide by 2016

Where Does Rain Go?



STATISTICS

- 151 storm drains have been outfitted with 'Treatment Train' technology that provides 3 levels of defense for stormwater, debris and bacteria
- In FY 2008, the City swept 163,298 curbed-miles, which collected 10,617 tons of trash and debris
- The City has 181 miles of stormwater conveyance pipes, 23 pump stations, 3,872 catch basin, 5.5 miles of open channel.
- In FY 08, the Long Beach Storm Water Management Plan was implemented at an estimated cost of \$26,863,474

ACTIONS

1. Aggressively pursue strategies to keep trash off our beaches and pollution out of our ocean
2. Continue to manage urban and stormwater runoff by installing emerging treatment technologies into the storm drain system
3. Continue to work with upstream cities in the Los Angeles River Watershed to implement stormwater best management practices (BMPs) in the watershed to reduce pollutant loadings
4. Pursue legislation and secure funding to mitigate surface water and ground water pollution
5. Participate in and promote beach, neighborhood and community and business corridor cleanups in order to keep our watersheds and beaches clean
6. Encourage the use of development techniques to direct rooftop runoff to pervious areas such as yards, garden beds, vegetated/soft bottom open channels, or on-site structural BMPs for capture, treatment and reuse
7. Design streets to direct rainwater runoff to landscaped areas
8. Utilize and/or replace non pervious surfaces with permeable materials (e.g., sidewalks, driveways, outdoor patios, and parking lots)
9. Continue to pursue the breakwater reconnaissance study
10. Update development standards to require low impact development strategies such as detention basins, infiltration basins, infiltration trenches, conservation of natural areas, permeable pavements, treatment wetlands, bioswales, curb cuts, green roofs, rain gardens, and other pre/post construction BMPs.
11. Expand Stormwater Management Education and Outreach programs and materials from site specific issues to a watershed-based program and develop public-private educational partnerships to promote behavioral change