WATER FOR THE PEOPLE

Approachable conservation at a Southern California demonstration facility

By Liane Veenema

California experienced a record dry year in 2013. Many cities received only half the precipitation of their previous driest years. Los Angeles received 3.6 in. of rain—24% of the average yearly rainfall for the city of 13 million, and just 0.18 in. more than the historically driest U.S. city: Yuma, Ariz., population 100,000. The exceptional drought continues for a third year into 2014, with the snowpack in the Sierras approximately 30% of the normal amount and reservoirs statewide approximately 40% full.

With water restrictions already in effect and a hot, dry summer still to come, the drought has sharply raised Californians' awareness of water issues. According to a recent survey by the Public Policy Institute of California, "A record-high share of Californians say the supply of water is a big problem in their part of the state, and nearly all residents say they have reduced their water use in response to the drought."

The Chino Basin Water Conservation District (CBWCD), located in Montclair, Calif., is playing a major role in providing the resources and education that people and businesses need to conserve water. Originally formed by farmers and concerned citizens as a water protection agency in 1931, this governmental special district in Southern California encompasses roughly 112 sq miles and serves 431,000 people in the Inland Empire. The district's mission is to protect the underlying Chino Groundwater Basin and educate the public about water conservation and groundwater protection. The district accomplishes this by maintaining eight percolation basins in the area and providing learning materials, demonstration facilities, water audits, educational workshops, field trips and more to the public.

District Efforts

Timed perfectly to coincide with the increased public awareness of water issues, CBWCD recently completed a significant upgrade of its 5-acre Water Conservation Center Campus in Montclair, with an emphasis on residential-scale demonstrations and education about storm water capture, small-scale percolation strategies, water-efficient development and water-wise landscaping. The strategies implemented in the project are designed to minimize the water used on site and capture and percolate 100% of the runoff of an average winter storm.

"We partnered with the district to design a campus that educates the public through active and passive means," said Jeffrey Veenema of the Claremont Environmental Design Group, architects for the project. "The high-tech classrooms, educational exhibit in the lobby and the public design room provide for guided learning, while the site and building are designed to educate the public about water conservation from the moment of arrival."

Education begins right away as the

Clockwise from top left: A school tour group looks at a CBWCD percolation basin; a CBWCD adult education workshop; a full swale after a downpour on the CBWCD property; and educational signage outside the rain scupper.

public encounters four different examples of low impact development pavement strategies in the parking lot: pervious concrete, pervious asphalt, pervious pavers and integrated bioretention collection areas. Each of the pervious pavements overlay 18 to 24 in. of engineered gravel storage and are arranged to provide development professionals and the public with a comparison between the differing materials in details, aesthetics and function over time. The parking lot is a good example of CBWCD's multifaceted approach to education and outreach. The lot serves as the site of a storm water percolation demonstration activity for fifth-graders during the district's annual Earth Day event, a discussion and demonstration topic on guided public tours, a daily learning opportunity with permanent explanatory signage, and an outreach opportunity through documentation and practical implementation information provided to the local construction and development communities.

Education continues in the 1,200-sq-ft lobby exhibit, which covers topics ranging from the history of the local water to water issues in California, to water-wise landscaping and personal responsibility to conserve water. This exhibit provides information at many different learning levels and interactive learning opportunities for both adults and children. The exhibit is designed to inspire visitors to be active and educated participants in the California water discussion and in local conservation efforts. It serves as the link between visitors' general passive understanding of water issues—which is important—and their ability to take actions to conserve and preserve water.

"People know that conserving water is important and they generally want to do the right thing, but they often don't know how," said Eunice Ulloa, general manager of CBWCD. "Most people don't realize that their landscapes are typically 60% of their water use. When they learn that, they want to change, and we're here to show them how. Our classes and our residential model gardens give them the tools they need, and show them how to do effective, water-wise landscaping beautifully."

Bringing the Ideas Home

CBWCD's 1.5-acre demonstration garden is designed to boil down the large concepts of water conservation into an

easily digestible form for the residential homeowner. The garden holds many examples so visitors can see what a rain barrel, bioswale, permeable pathway and other permeable surfaces might look like in their own landscapes. Accompanying these strategies is detailed signage to educate the public about the storm water mitigation approach and how people can apply that strategy on their own properties.

Throughout the garden, steel sculptural frames that evoke house façades provide artistic interest and a sense of scale for plants, swales and rain barrels. The garden demonstrates a distributed collection approach that closely mirrors a residential landscape and allows the public to see the connection between the area of tributary impervious surface and its impact on the collection size and strategy in a way that they can take back to their own homes. The distributed approach to collection and percolation also limits earthwork, fits bioretention basins into underutilized areas, and allows the basins to be constructed with a standard backhoe or even by hand, thus reducing the cost and optimizing retention volumes and percolation potential for smaller-scale sites.

For those residents who want additional practical help, CBWCD holds workshops about water-wise landscaping, efficient irrigation, and good maintenance and composting practices.

Effective education mixes inspiration with implementation. When the public is inspired to act by something like a drought, it needs the tools and know-how to take effective steps. The real goal for every organization with a long-term view, however, is to take the pressure of immediacy in an emergency and translate it into long-term implementation and personal responsibility. The Water Conservation Center is an investment in this long-term vision, and its aim is to provide resources and inspiration to the community for years to come. SWS

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