COLORADO NPS CONNECTION

Summer 2007

Field trip highlights concrete examples of LID

By Laurie DiBattista, Colorado NPS Connection associate editor

The tour bus was full as it pulled out of the Urban Drainage & Flood Control District parking lot on a June morning, this spring, that threatened rain.

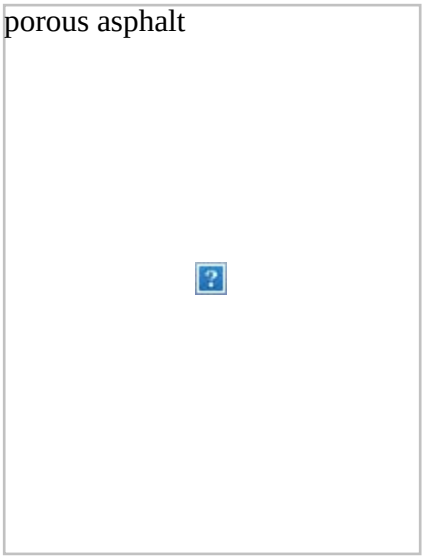
The weather seemed fitting. The 47 participants would learn about the stormwater management benefits of six-low impact development (LID) projects in the metro Denver area.

The annual Colorado Association of Stormwater and Floodplain Managers (CASFM) field trip was organized and led by Michelle DeLaria, CASFM stormwater quality committee chair, and Ken MacKenzie, master planning project engineer with Urban Drainage.

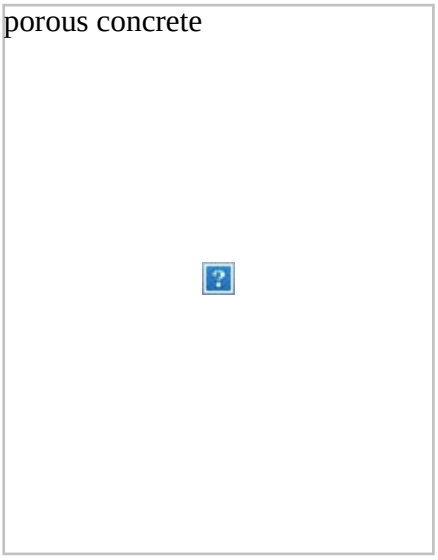
First stop was a Wal-Mart Supercenter experimental store, in Aurora, on Tower Road. It's one of two stores the retail giant opened in 2005 to monitor, over a three-year period, the potential benefits of implementing sustainable practices at other Wal-Marts across the country.

At the Aurora store parking lot, participants heard about experiments with pervious concrete, porous asphalt and bioswales. Adjacent areas of porous asphalt and pervious concrete make it easy to compare the two materials, both of which allow water to percolate into the groundwater system rather than run off.

"Both perform well once the water is through the surface" but the percolation rate of the pervious concrete is about three times greater than that of the porous asphalt, said Kevin Roberson, a vice president and project manager of the engineering and land planning firm Kimley-Horn and Associates Inc.



Kevin Roberson shows LID tour participants how water infiltrates porous asphalt at the Wal-Mart



Kevin Roberson demonstrates that water infiltrates more quickly into the parking lot's pervious concrete

Printer-friendly version

Past Issues

Newsletter Index

Do you have a story idea? Click Here

Front Page

<<Previous Story
Next Story>>

Supercenter experimental parking lot section.
in Aurora.

A lesson learned by Kimley-Horn: Check to see what materials landscape architects plan to use in bioswales. The mulch that was applied at the Wal-Mart parking lot site floats when the water rises, and tends to clog the parking lot's drainage grates, Roberson noted

The tour moved on to Commerce City for a quick view of porous gravel pavement at an industrial site at 47th Avenue and Ivy Street. According, MacKenzie, a tour leader, the business manager reports that the material is well suited for the purpose, which is to store heavy equipment.

Next stop was the Safeway parking lot at 14th Avenue and Krameria Street to view another example of pervious concrete pavement. "Generally, the surface has held up very well," said Randall Phelps, Kimley-Horn project manager. And, there have been economic benefits for the business. "To meet the city's water quality criteria, the store would have had one parking row less if it didn't use a porous material to comply," he said.

Later in the day, Kevin Lewis, project manager at the City and County of Denver Department of Public Works, explained the porous landscape detention design used in the Pepsi Center's parking lot.

Next stop: Wenk Associates, a Denver-based planning and landscape architecture firm. When Wenk needed parking spaces for associates at its Elati Street office, interlocking concrete block pavement was decided upon. Reviews have been positive. Upkeep generally requires that the underlying pea gravel be vacuumed when it reaches the surface and clogs drainage.

Modular pavers

LID tour group checks out modular concrete interlocking block pavement at Wenk Associates.

Last but not least on the LID tour was the Environmental Protection Agency Region 8's new, state-of-the-art headquarters on Wynkoop Street in LoDo.

While waiting for the group to pass through security screening, some participants commented on the day's LID examples.

"If we go out and see and experience these things, hopefully we'll bring them to the table when discussing plans," said Joe Chaplin, stormwater quality specialist for the city of Loveland, who was on his fourth CASFM field trip.

Pam Acre, stormwater coordinator for the city of Northglenn, said, "Northglenn is 98 percent built out. Redevelopment will be a challenge, and we were able to get some creative ideas from today's tour."

Then, after first seeing where the EPA building's green roof drains in the underground parking area, the group was led to the top of the nine-story building where six sedum species grow in rows of 2-foot by 4-foot modular trays, which can be moved in case roof repairs are needed.

Initial data show that the approximately 40,000 plants covering about 20,000

square feet are doing their job.

Green roof installation at EPA Region 8 headquarters

"Preliminary estimations are that infiltration is occurring at an incredible rate of 95 percent or more of the rainfall that's hitting the roof," according to Greg Davis, an EPA Region 8 stormwater coordinator.

An LID photo database can be accessed by clicking on Stormwater Quality at www.casfm.org.

<<Previous Story
Next Story>>