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Sprawl Debate: LID May Be 'Smart Growth's Worst Nightmare'

Purcellville. Sprawl polarizes. While voices on one side protest the runaway consumption of natural resources for the sake of urban and suburban expansion, opposing voices shout to protect what they see as fundamental individual and property-development rights necessary for economic growth.

Into the middle of the shouting match walks Larry Coffman, an official with the Department of Environmental Resources in Prince George's County, Maryland, a locale that has dealt with decades of rapid growth.

Under his arm, Coffman carries a book: the Low Impact Development (LID) design manual. Its pages are filled with techniques that can apparently lessen, even eliminate, the adverse effects of development on the "natural hydrologic regime," loosely translated as the way water moves through the environment.

The techniques in the manual, he says, "fly in the face of conventional thinking on stormwater management," which holds that runoff should be channeled as quickly as possible away from buildings and roads into closed gutters and drains, eventually winding up in collection ponds or waterways.

Low Impact Development requires a 180-degree turn away from this thinking, Coffman says. His technologies seek to slow the flow of stormwater runoff using a variety of tactics so that it can evaporate, soak into the soil, and recharge groundwater - while harmful pollutants are naturally filtered.

IN NEW residential developments, builders using LID principles would move as little dirt as is practical, so the land's original drainage is minimally altered. Gently graded slopes are created to move stormwater runoff into grass swales, where the water can temporarily collect, then disappear. Other slopes funnel runoff into rain gardens, the best of which use a variety of plants native to the local landscape, to retain water. Since roads prevent the passage of water to the soil beneath them, streets aren't as wide as usual. There are no storm drains or collection ponds.

Suitable not only for expanding suburbs, different LID technologies can fit different landscapes. Many LID technologies, Coffman says, excel when retrofitted to urban development, which was often built without any thought to stormwater management and pollution control.

Urban LID techniques include rain gutters that do not flow into each other, but instead fill collection barrels and cisterns. The captured runoff can be used to reduce dependence on municipal graywater, or to quench rooftop gardens, themselves valuable tools in LID runoff and pollution control.

Coffman explains that one of his earliest LID technologies, the bioretention cell, has evolved into one of his best. Though feasible almost anywhere, a common use of these cells is in retail parking lots, where large amounts of automobile leakage are picked up and transported by precipitation. Instead of heading into storm drains, then to ponds, rivers, and streams, stormwater can be directed to islands of greenspace, where varied layers of soil and sand beneath the surface capture a large percentage of petroleum pollution as runoff sinks.

He tells of the way LID technologies have been applied to highway medians in suburban Maryland, an aquarium parking lot in Tampa, inner-city rooftops in Philadelphia. He tells of LID projects in the Great Lakes states, around Puget Sound, even in Australia and New Zealand.

"I find it amazing how creative people can tailor LID to meet their needs," Coffman says.

WHILE GAINING acceptance from contractors and zoning officials will require major funding for LID to take off in the near-term, Coffman claims that LID eventually can be cost-effective.

Because it eliminates the need for most drainage ponds and storm gutters, each of which entails high maintenance costs down the line, and reduces the overall amount of pricey paved surfaces, LID is cost-competitive with conventional development.

While LID seeks to promote environmental responsibility, many environmentalists are wary, fearing that LID may give developers a way to circumvent tightened zoning standards or Smart Growth policies.

"Oh, I am possibly Smart Growth's worst nightmare," Coffman says. "Smart Growth is based on limiting the environmental impacts of construction by permanently declaring certain land off limitsBut LID minimizes development's basic environmental impacts," perhaps rendering Smart Growth policies unnecessary.

Coffman asks the skeptics what good it does to protect tracts of land if conventional development can foul the environment right up to the tract's edge, along with the water running underneath it. He says it is up to every community to define its own greenspace priorities, and where it wants development to expand.

"Look," he tells them. "Development is never going to stop, because no politician has the guts to stand up to itThe very basis of LID is the conservation of scarce natural resources. It's really the best option we've got."

Tim Zink is an editor of Blue Ridge Press, which publishes on Southern environmental issues.

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