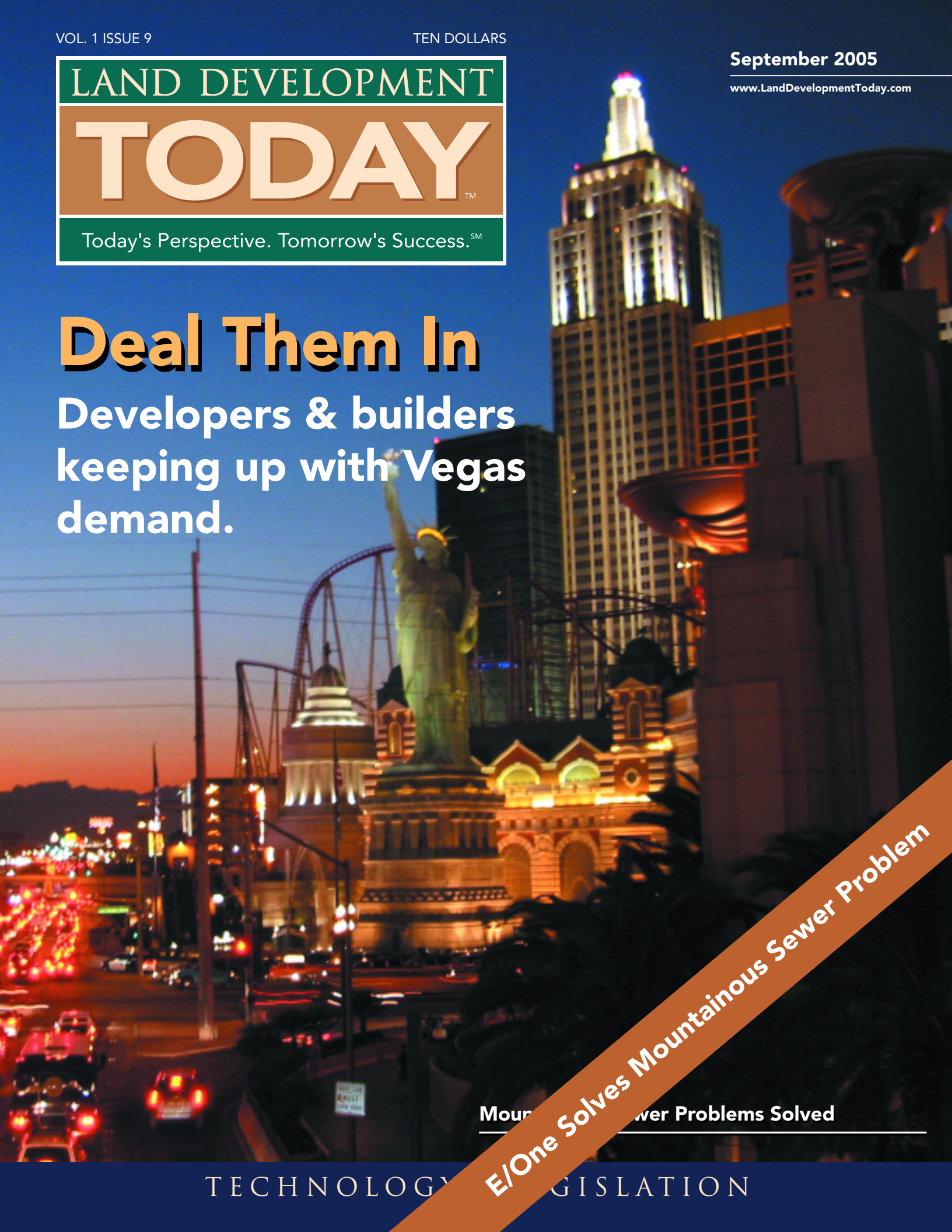


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Mountain Sewer Problems Solved

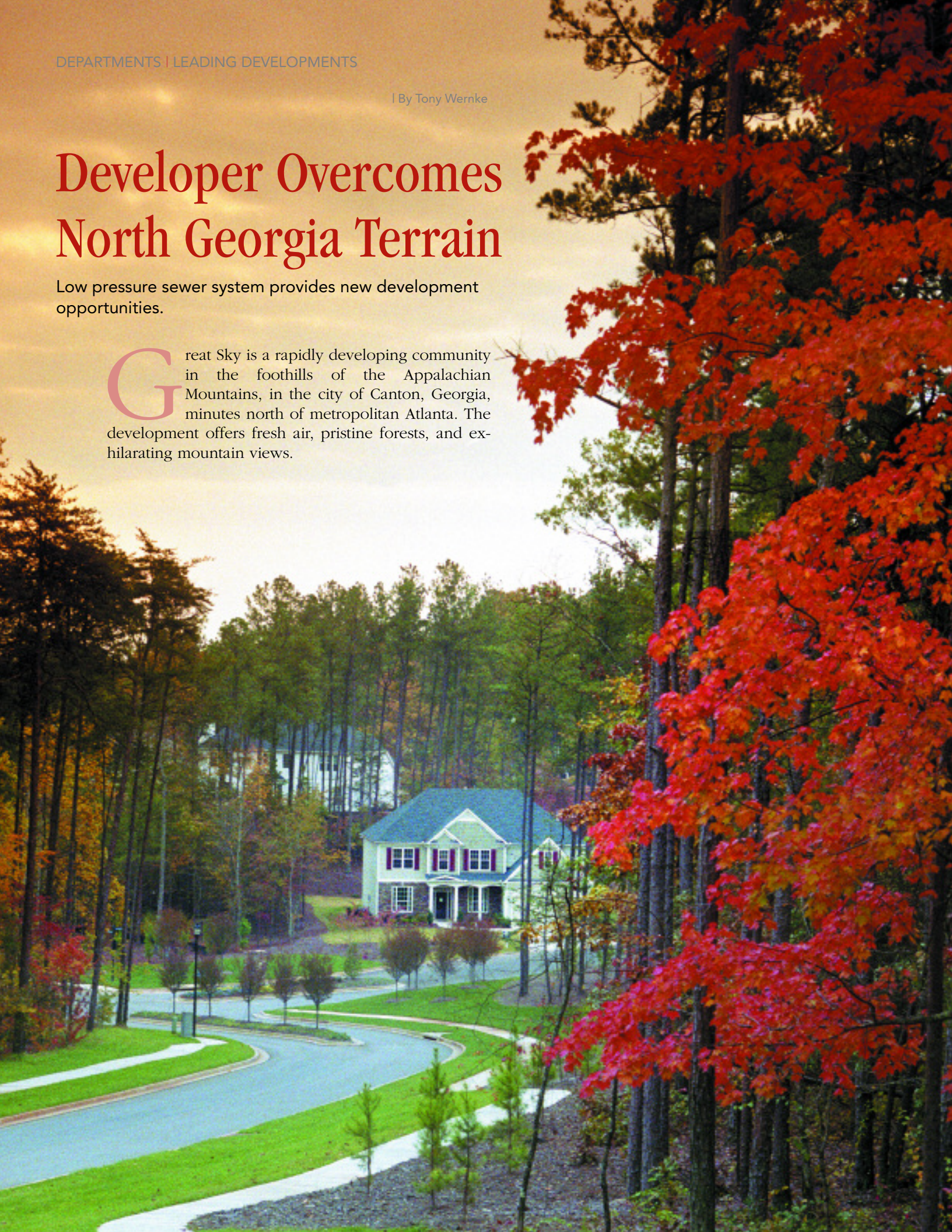
E/One Solves Mountainous Sewer Problem

| By Tony Wernke

Developer Overcomes North Georgia Terrain

Low pressure sewer system provides new development opportunities.

Great Sky is a rapidly developing community in the foothills of the Appalachian Mountains, in the city of Canton, Georgia, minutes north of metropolitan Atlanta. The development offers fresh air, pristine forests, and exhilarating mountain views.



Nearly 300 acres are devoted to open space and recreation, including greenbelts, sidewalks, and wooded trails. A recreation center features three swimming pools, a tennis center, and other recreational amenities. In addition, the city of Canton has begun construction of a large water reservoir that will supply water to the city and Great Sky community, and will also provide valuable recreational opportunities to its residents.

The Problems

While homeowners will readily pay a premium for these qualities and amenities, the development of such areas often requires expensive and time-consuming infrastructure solutions. In the case of Great Sky, the steep terrain posed particular development challenges for the sewer system, and the reservoir complicated the environmental requirements.

Because of the terrain and the environmental considerations, traditional sewer solutions were not practical. Gravity systems would require costly and damaging excavations, and would need a series of hard-to-maintain lift stations to deal with the hills. Such systems are also prone to waste water infiltration. In short, a gravity system was too expensive, unsightly, and high-maintenance.

Septic systems would pose a different set of problems. At Great Sky, where homes are sited near the public reservoir, in an environmentally sensitive area, septic systems were not an option. An aging and failing septic system would increase public health costs and decrease real estate values.

"We saw right away that a gravity system at Great Sky was unfeasible," said Bob McCullough, Fairgreen

Development Director, who has developed 600 of the 2,200 sites planned for the community. "We also knew that homes without sewer systems were more difficult to sell, so septic systems were out."

The Solution

A low-pressure sewer (LPS) system provided multiple benefits for overcoming these types of development obstacles.

Since gravity is replaced by the power of decentralized pumps, sewer systems need not run downhill or require large-diameter pipes, deep trenches, multiple booster stations — or their associated costs. LPS installation requires only a shallow trench and small 2- to 4-inch diameter piping, unlike conventional gravity central sewers, which use 24-inch pipes and require deep excavation.

"We chose to use the Environment One (E/One) LPS system because it is not destructive to the landscape's natural or built features and requires less maintenance," said McCullough. "We required a low-cost system alternative that would preserve the most important quality of life characteristics, including recreational features and waterfront development," he added. "Because we had worked with E/One on previous projects, we turned to them to assure this development's success."

Specifics

At the heart of the E/One LPS system is the grinder pump, which can be installed inside or outside the home. The grinder pump, smaller than a washing machine, grinds waste water into fine slurry and pumps it under pressure in small diameter pipes directly into a sanitary sewer collec-

tion system to be treated at a waste water treatment plant.

"The system adapts to almost any type of terrain — even steep slopes," said McCullough. "It can even pump the waste water uphill to the sewer collection system, a feat that is impossible with gravity style sewer systems."

Environmentally Safe — Aesthetically Pleasing

Environmental and aesthetic considerations were a major part of the decision to use an LPS system. Because the system is closed, it is immune to water infiltration, which can lead to waste water problems. Plus, the LPS system does not require the use of large unsightly manhole covers near homes or hiking trails, as a gravity system does — a major factor considering the existence of a public recreational area such as a reservoir.

"The LPS system is significantly kinder to the terrain and that was one of the big factors out here — keeping the beauty of the place," McCullough said. "It allows us to offer the best environmental quality of life in a most attractive new community."

Financially Advantageous

In the case of Great Sky, twenty or more lift stations would have been needed to operate a gravity sewer system. However, only three were required for the LPS system. In addition, the cost of installing an LPS system can be back-end loaded. The biggest outlay — perhaps 40- to 50 percent of the cost — can be deferred until a lot is sold.

Shallow trenching lowers excavation costs, infrastructure investment, and labor and materials costs when com-



This E|One illustration shows that its low-pressure solution will work in multiple soil types.

pared to gravity systems. This also means reduced carrying costs, reduced commitment and municipal fees, and lowered performance bond premiums. In addition, final pump installation can be scheduled after each home is sold.

Planning and Design Flexibility

Great Sky also benefits from the great planning flexibility afforded by the LPS system. Homes can be placed on the most scenic or cost-effective area of each parcel, without the limitations of gravity system trenching or elevation requirements. Each pump can be placed near the home or wherever the best location is determined to be.

“In our experience, the E/One grinder pump has provided superior or comparable service, regardless of the size, shape, or contour of the property,” said McCullough. “We can deliver higher quality locations for our customers while developing each parcel economically.”

Feedback from Great Sky homeowners has been overwhelmingly positive. Most homeowners never know the

system is operating. The pump itself is self-contained and engineered to perform under a wide range of flow conditions and posts an impressive national average of 8 to 10 years between service calls.

“Property owners like the fact that the pump is easily camouflaged by planting flowers and other landscape plants around the lid,” said McCullough. “And the fact that they are low maintenance bolsters our reputation as a developer with long-term quality goals.”

Over the next few years, Fairgreen Development will offer the advantages of the Great Sky community to many more homeowners. As the Great Sky development unfolds, the LPS system will be utilized throughout to maintain the aesthetic character of the site, keep costs low, and provide a high quality experience for the homeowner. **LOT**

About the author: Tony Wernke is the Publisher of Land Development Today.