

# GREENING ATLANTA



## Green infrastructure aids Atlanta community plagued by flooding

By Jessica Walker

Thanks to green infrastructure, residents in southeast Atlanta communities are seeing a decrease in flooding issues that have plagued them for more than a decade. In the summer of 2012, two significant rain-fall events caused major flooding in the combined sewer watershed, prompting a fast-tracked response from Atlanta Mayor Kasim Reed and Department of Watershed Management leadership.

The Southeast Atlanta Green Infrastructure Initiative utilizes a holistic approach to flood mitigation through

short- and long-term projects and one of the largest permeable paver programs in the country.

### In the Beginning

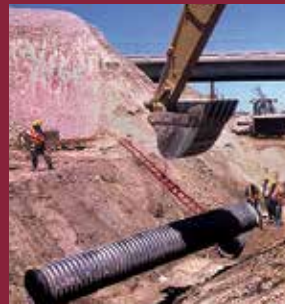
Phase I of the initiative included repurposing and building new areas in Atlanta neighborhoods—Peoplestown, Mechanicsville and Summerhill—to alleviate flooding. These communities represent approximately 10% of Atlanta with combined sewers, through which storm water and sewage travel. The combined sewer system, coupled with



Permeable pavers at work during a rain event.

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low-lying geographic locations, resulted in significant flooding.

Soon after the rainfall events of July 2012, the Department of Watershed Management completed several short-term projects. Rain gardens, which store storm water with a mixture of soil and compost, were installed in locations throughout the neighborhoods to divert and treat storm water runoff.

Vegetative bioswales and detention ponds also were installed in place of impervious pavement. Like rain gardens, bioswales are alternatives to traditional grey infrastructure and temporarily store runoff and increase ground infiltration. When combined, these short-term projects decrease flow into the sewer system by 500,000 gal.

### A New Ordinance

In 2013, the city of Atlanta adopted the amended Post-Development Stormwater Ordinance, one of the most far-reaching storm water management ordinances in the country. The ordinance highlights the Department of Watershed Management's commitment to implementing green infrastructure requirements for new projects and redevelopment to reduce flooding caused by storm water runoff, improving water quality and protecting Atlanta's waterways. To date, the city has permitted almost 2,000 construction projects across the city that utilize green infrastructure, equating to the removal of approximately 350 million gal of polluted runoff from streams and combined sewer infrastructure, annually.

The ordinance addresses the strategy of using natural ways to reduce storm water runoff, while greening the city even more to further support

Reed's goal of making Atlanta a top-tier city for sustainability.

## Permeable Phase

One of the city's most significant green infrastructure projects includes the permeable pavers in Phase II of the Southeast Atlanta Green Infrastructure Initiative. Permeable pavers are designed to intercept, detain and release storm water that falls on roadways and adjacent sidewalks. At completion of the \$15 million project, almost 20 streets totaling almost 6 miles in southeast Atlanta will be fitted with permeable pavers, providing 7 million gal of storm water relief.

Permeable pavement provides the structural support of traditional pavement, but allows storm water to drain directly through the surface into the underlying stone base and soils. During a rain event, storm water flows through the porous surface, drains into the crushed stone sub-base beneath the pavement and remains stored until storm water can infiltrate into the soil or outlet through the underdrain.

To further aid flood relief, the city of Atlanta constructed an award-winning 6-million-gal storage vault under the Turner Field media parking lot in 2014 within four months during the baseball off season. Designed to manage a 25-year, four-hour storm event, the \$19 million vault provides much-needed storage during heavy rainfall events and received a Construction Excellence Award from the Construction Management Association of America.

Three wet ponds currently are in design to provide additional relief to the Peoplestown, Summerhill and Mechanicsville neighborhoods and to serve as an amenity for the community. The green space development includes streams, waterfalls and bioretention areas with walking trails for residents. Storm water in the area would be diverted to the ponds, providing 2 million gal of storm water relief.

In addition to the ponds, a second storage vault will provide 8 million gal of capacity relief and more green space for the neighborhoods.

## Value Added

For the city of Atlanta, green infrastructure is vital not only for its storm water management benefits, but also for the value it adds to communities. In addition to flood protection and improved water quality, green infrastructure promotes sustainable practices by reducing energy consumption. Under Department of Watershed Management leadership,

current and future green infrastructure projects are helping to move toward Reed's goal to make Atlanta a sustainable and thriving green city. **SWS**

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