

Green Infrastructure

Confronted with nuisance flooding, compromised water quality, and high costs for conventional infrastructure, cities across the US have turned to nature-based solutions. Cities like Philadelphia, Austin and Portland use green infrastructure to achieve a cleaner, safer environment. In New Orleans, the Sewerage and Water Board has committed \$500,000 annual investment in green infrastructure for the next five years, and the comprehensive zoning ordinance encourages the approach on commercial developments.



A storwater lot in Hollygrove collects runoff and allows it to enter the soil, courtesy Dana Brown & Associates.

Sometimes referred to as low impact development, green infrastructure describes systems that store, absorb, or filter water, typically with hardy native plants. Like other forms of infrastructure, these systems are professionally designed and installed, tailored to a specific site, and require routine maintenance. Unlike conventional drainage, however, green infrastructure provides aesthetic, recreational, and environmental co-benefits.

By virtue of the city's unique geography, climate, and soils, New Orleans cannot rely solely on green infrastructure. Nor can the city afford to ignore the contribution green infrastructure makes to safety and sustainability.

Examples of green infrastructure

- > **Rain gardens** are concave areas planted with water-loving vegetation that receive and absorb rainwater. Special soils increase the ability to absorb runoff.
- > **Rain barrels and cisterns** store rainwater gathered from roofs and downspouts for subsequent nonpotable use, such as watering plants.
- > **Bioswales** are concave channels that move runoff away from buildings and filter it with native plants.
- > **Permeable surfaces** include porous concrete and pavers that allow rainwater to penetrate into gravel or soil below, thereby reducing runoff.
- > **French drains** carry rainwater away from structures using perforated pipes in gravel lined channels, allowing water to drain into the soil.

Benefits of green infrastructure

- > **Less flooding** results when more rainwater is stored and absorbed where it lands, alleviating pressure on the city's drainage system.
- > **Less subsidence** results when rainwater is allowed to keep organic soils moist; overreliance on pumped drainage, however, accelerates subsidence and the damage to streets and buildings.
- > **Cleaner water** for swimming and fishing results when stormwater runoff is naturally filtered before entering local waterways like Bayou St. John and Lake Pontchartrain. Note that stormwater entering catch basins is not treated before being drained to waterways, so green infrastructure helps the city comply with Clean Water Act regulations.
- > **Energy savings** from decreased reliance on pumps makes the city drainage system more efficient and less polluting.
- > **Job creation** in the design, construction and maintenance of green infrastructure provides local work for multiple education and skill levels.