

A close-up, low-angle shot of a weathered wooden park bench. The bench is made of dark brown wooden slats and has a black metal frame. In the background, a butterfly with orange and black wings is visible, perched on a green leaf. The background is softly blurred, showing more greenery and another bench. The overall scene is bright and natural, suggesting a park or outdoor setting.

# Green Infrastructure

## What is Green Infrastructure?

Green infrastructure refers to a planned and managed system of green spaces, greenways and natural lands that offer benefits of water conservation, filtration and absorption as well as air particle removal and heat relief. Natural spaces also contribute to the health and quality of life of our communities.

Counties are using management of natural resources to enhance water quality, abate flooding, lower heat in urban centers, lessen the impacts of climate change and build more resilient communities.



## What Do Green Spaces Do?

### Counter Pollution

Investing in green infrastructure allows nature to restore naturally functioning ecosystems impaired by development, erosion and storm events. These systems keep pollution under control through natural filters that trap sediments, toxins and excess nutrients resulting in cleaner air and water. Restoring natural systems saves money on controlling water quality.

### Increase Community Resiliency

Conserving valuable wetlands, riparian zones, community trees and forests helps address climatic changes and improves resiliency during floods and storm events. A loss of natural spaces increases the risk of natural disaster damages that may cost billions of dollars to recover.

### Save Energy

Protecting green spaces permits nature to help remove pollutants before they get to a treatment plant. Landscaping elements provide relief from heat island effects in densely populated areas. Trees located near residential buildings also insulate and shade homes, lowering energy bills.



## Encourage Exercise and Activity

The construction of parks, trails and other green spaces encourages people to spend more time outside and exercising. Families spend more time actively playing with children where there is a safe public park or playground nearby.

## Create Safer Communities

Green infrastructure creates community cohesion by assisting people to feel a local sense of place and encourages friendliness with neighbors. This results in more community trust and lower crime in an area. Studies have also linked green spaces to improved concentration skills and stress relief.



## Improve Land and Property Values

A green area attracts buyers and retains current homeowners in our communities. Property values increase when there is landscaping and tree coverage and energy savings from shade and insulation attract new residents.

## What Tools are Available for My County?

Forest Service's iTree toolkit to examine tree cover

[www.itreetools.org/](http://www.itreetools.org/)

EPA's Portal for Managing Wet Weather with Green Infrastructure

[http://cfpub.epa.gov/npdes/home.cfm?program\\_id=298](http://cfpub.epa.gov/npdes/home.cfm?program_id=298)

Water Environment Research Foundation's Rainwater Toolbox

[www.werf.org/livablecommunities/toolbox.htm](http://www.werf.org/livablecommunities/toolbox.htm)

Conservation Fund Training and Tools for Green Infrastructure

[www.greeninfrastructure.net/](http://www.greeninfrastructure.net/)



## County Green Infrastructure in Action

### Alachua County, Florida

The citizens of Alachua County, Florida expressed grave concern over the loss of forests, farms and natural areas to suburbanization. The county also experienced a series of extreme weather events impacting a number of recently developed areas. Predictions for the county's future suggested even greater extremes in weather, temperatures and water levels. Planning strategists advised Alachua County that the best local return on investment would be to safeguard the wetlands and floodplains that protect the county's homes and businesses. The county partnered with local residents to develop a three pronged program to maintain green spaces, wetlands and floodplains and utilize these resources as infrastructure. The three major elements are: an updated Comprehensive Plan, Alachua County Forever and an improved governing structure.

In May of 2005, the new comprehensive plan went into effect. The plan's architects embedded policies requiring and incentivizing green infrastructure on both private and public property. They also compelled developers to design with deference to green resources. The county identified specific natural resources in six main categories: wetlands, surface water, floodplains, listed-species habitat, significant geologic features and, most importantly, strategic ecosystems. Residents also overwhelmingly approved creating a dedicated fund for land acquisition called Alachua County Forever (ACF). The county uses ACF to acquire, protect and manage environmentally significant lands. These areas provide protection against weather events as well as filtration, shade, air quality improvement and recreation.

The key to Alachua County's success is the innovative engagement of county residents. The county's governance structure endorses collaboration, systems thinking and performance management while encouraging public involvement. Alachua County fosters this involvement by integrating input from the various reviews of each project. Every group looks for different elements vital to success such as the impact of the project on the environment or benefits for the local economy. The county updates all green infrastructure activities on multiple websites. The Alachua County Forever website posts projects, acquisition lists, meeting minutes, agendas and links to similar sites. The involvement of multiple parties gives each project a robust examination.

Since Alachua County began these green infrastructure and conservation efforts, they have protected over 15,000 acres of land at a present worth of over \$60 million. The county's revised code led to wetland loss of less than 1/20 of an acre of wetland while 185 acres of wetland impacts have been avoided in new approved development. Alachua County credits this strong improvement of sustainable infrastructure to cooperation among individuals and utilization of effective resource management.

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