



Green Infrastructure & Stormwater Management CASE STUDY

Sustainable Water Resource Management Plan for Winter Haven and the Peace Creek Watershed

Location: Winter Haven, FL

Client: City of Winter Haven, Florida

Design Firm(s): PBSJ/Atkins

Landscape architect/Project contact: Tom Singleton, PBSJ/Atkins

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ASLA Chapter: None

Project Specifications

Project Description: The City of Winter Haven is located within the larger Peace Creek Watershed. Winter Haven has 50 lakes, many of which are chronically low or with declining water quality. The Sustainable Water Resource Management Plan gives direction in how to use our natural infrastructure (lakes, aquifers, wetlands and high infiltration soils) in increasing water supply for both people and natural systems. It advocates the restoration of wetlands for water storage and treatment and raingardens and Low Impact Development technology to percolate water in the sandy ridge areas. This plan provides the basis to use LID and wetland restoration in a way that many communities may not envision.

Project Type:

Overall integrated water management plan using green infrastructure as a basis.

Part of a new development

Design features: All of the above, including a recommendation that 7,500 acres of wetlands be restored. The plan describes any technology that percolates stormwater to the aquifer as a 'stormwater infiltration area'.

This project was designed to meet the following specific requirements or mandates: This was simply a local initiative to meet long term water resource needs in a unique geographic and geologic setting

Impervious area managed: greater than 5 acres

Amount of existing green space/open space conserved or preserved for managing stormwater on site: greater than 5 acres. This plan covers a 150,000 acre watershed area that is 4 times larger than the City of Winter Haven. The consensus is that managing green infrastructure on a watershed scale is more important than managing water on a municipal scale.

The regulatory environment and regulator was supportive of the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements? No.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$50,000-\$100,000 (Public funding: Local)

Related Information: The City paid approximately \$85,000 in consulting fees to help develop the plan.

Was a green vs. grey cost analysis performed? No

Cost impact of conserving green/open space to the overall costs of the site design/development project: Using green infrastructure while it is available is assumed to be much less costly than 'engineered' infrastructure in the future.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Using green infrastructure while it is available is assumed to be much less costly than 'engineered' infrastructure in the future.

Number of jobs created: 0 so far

Job hours devoted to project:

Planning and Design: Two years worth of effort in the community

Construction: Not available

Annual Maintenance: Not available

Performance Measures

Stormwater reduction performance analysis:

The plan estimates that 27 billion gallons of water can be stored by implementation, comparable to 2 large reservoir systems.

Community & economic benefits that have resulted from the project: This plan gives Winter Haven an entirely new way to think about water and its value to our community. It also provides direction to the city as to how best meet EPA's numeric nutrient criteria and TMDLs.

Percolating water into the ground not only provides treatment, but also provides future water supply to many Floridians. Restoring wetlands not only provides storage, flood attenuation and treatment, but they can also be designed as new 'nature parks' which have received significant support by the community and future development as amenities.

Project Recognition

Additional Information

Links to images: http://www.mywinterhaven.com/natural_resources.htm

The Sustainable Water Resource Management Plan is thought to be a unique local approach in that it uses local land use planning to preserve green infrastructure and suggests using LID, stormwater infiltration and wetland restoration to encourage future growth and development. The premise behind the plan is that if the watershed were to grow and develop according to today's standards, water resources would continue to decline. The plan can be viewed on the City's website at: http://www.mywinterhaven.com/natural_resources.htm.