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7/21/2008

Protection of Annexed Wetlands, Strategic Ecosystems, and Green Infrastructure

Gainesville Community Development Committee Presentation

July 24, 2008

Presentation Outline

- Green Infrastructure Investment Portfolio
- Environmental impact of annexation policies and practices
- Greenbelt Development vs. Redevelopment
- Wetland and Surface Water Protection
- Strategic Ecosystem Protection

Green Infrastructure is a framework for recognizing the valuable services that nature provides for people

NACO

Alachua County
Green Infrastructure Investment Program

National Association of Counties
2008 "Best in Category" Achievement Award
Planning Category

Green Infrastructure

- County has been tracking green infrastructure investments since adoption of new land development code (2006)
- County has been mapping these resources to improve synergy between public and private conservation areas (Alachua County Forever lands and site plan approvals for open space including "green" stormwater basins)

Results for 2006-2008

Approved 76 site plans, 2,097 acres*:

- 1,816 ac of residential, 281 ac of non-residential
- 901 acres of green infrastructure set-aside (43%)
- 967 acres of pervious developed areas
- 229 acres (11%) of impervious area
- 67% tree canopy retained
- 540 acres of conservation areas (89% protected)
  - 321 acres of strategic ecosystems
  - 151 acres of listed species habitat
  - 185 acres of wetlands preserved
  - < 1/20th acre of wetlands impacted

*Results from March 2006 – June 2008

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Green Infrastructure and Climate Change

"The most important local climate change adaption strategy for Alachua County is protecting wetlands and floodplains"

Dr Sam Brody
Climate Change Planning Expert
Texas A&M University
Presentation to Energy Conservation Strategies Commission
November 19, 2007

Comparison of Two Recent City Applications to Development in County since 2006

Developments	Total area	Strategic Ecosystems	Wetlands
Gainesville: Plum Creek & Hatchet Creek	2,252 acres	2,154 acres	718 acres
Unincorporated Alachua County: Total Approved since March 2008 (as of 6/08)	2,097 acres	337 acres (321 ac protected)	185 acres (185 ac protected)

Green Infrastructure within City

- Recommendation of County Staff:
  - –Track green infrastructure with new development (open space, pervious area, tree canopy, habitat and SE protected)
  - – Coordinate with county tracking process.
  - –Use GIS to provide visual representation of infrastructure (good planning tool and assists with identifying areas for protection)
  - –Promote green building and LID techniques

Move for Mark.

Environmental Safeguards Comparison

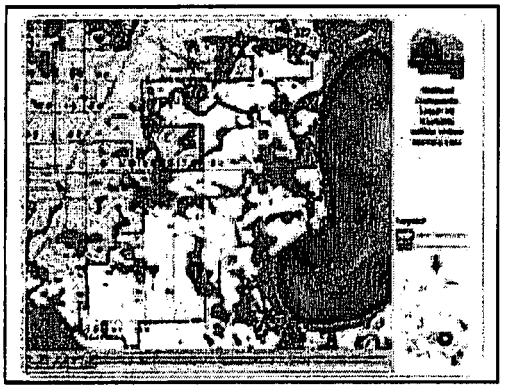
Issue	Gainesville	Alachua County
Focus of safeguards	Promoting Infill & Redevelopment	Protecting Greenbelts & Open Spaces
Wetland protection	Minimization & avoidance; Mitigation	Avoidance; Minimization; Mitigation
Wetland buffers	35' min, 50' avg.	50' min, 75' avg.
Creek buffers*	35' min. up to 150' (Practice is 35' buffer)	75' avg. up to 150' (Practice is 75' avg.)
Stormwater facilities allowed in buffers	Yes	No
Typical stormwater conveyance system	Curb & gutter	Swales (rural areas)
Upland protection	Up to 10% more of site for Significant Ecological Communities;	Up to 25% for habitat; 50% of uplands for Strategic Ecosystems

Wetlands and Wetland Protection

The East Gainesville Example

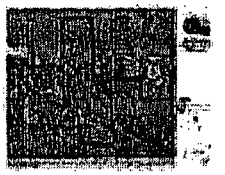
Process of Wetland Delineation

- Use composite wetland GIS layers for general planning purposes to estimate potential wetlands on site (a.k.a. desktop analysis)
- Not intended for onsite delineation of parcels
- Ground-truth site for wetlands
- Use State standards to delineate wetland line

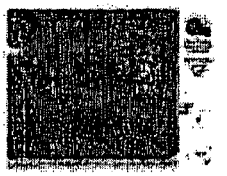


Eastside Activity Example

Composite Wetland Map



Delineated Wetland



Limitations of Wetland Mitigation

- High water table
- Sheet flow movement of water
- Extensive floodplains (~1,800 acres; ~650 acres on State lands)
- Impaired streams (need to protect with natural buffers) – Hatchet & Little Hatchet Creek
- Poorly drained soils
- Downstream surface water impacts
- Potential Aquifer impacts
- Loss of pervious area for recharge

Wetlands annexed by City of Gainesville

- Recommendation of County Staff:
  - –Support county protection standards and encourage Low Impact Development (UD) standards for undeveloped areas, wetlands linked to creek, streams, and lakes, or within Strategic Systems.
  - –Maintain city standards for redevelopment areas, areas with existing buffer impacts or lack of buffers, or areas of high or medium density residential or other intensive land use.

Strategic Ecosystems

Swamp in Lochloosa Forest Strategic Ecosystem

What was the basis for the Strategic Ecosystem designation?

- 1991 Alachua County Comp Plan: adopted as Significant Natural Upland Communities based upon 1987 KBN Report.
- 2001 Comp Plan settlement: Use updated KBN/Golder Report (1996) for designation of Strategic Ecosystem mapped areas.
- 47 Strategic Ecosystems designated based on:
  - Water Resources, Landscape Ecology & Vegetation.
- Designation criteria considered potential for restoration and management

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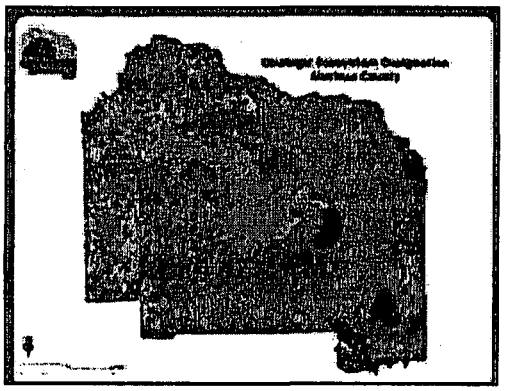

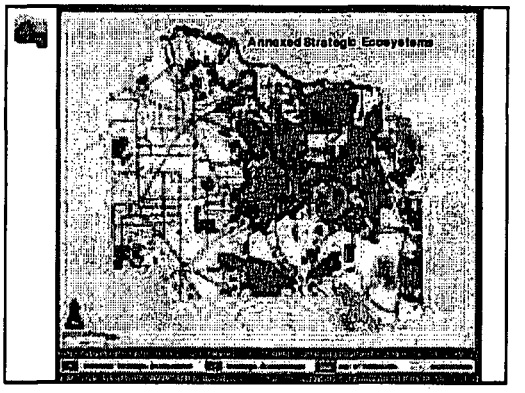

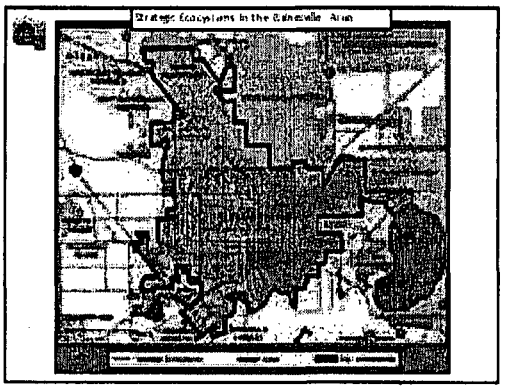

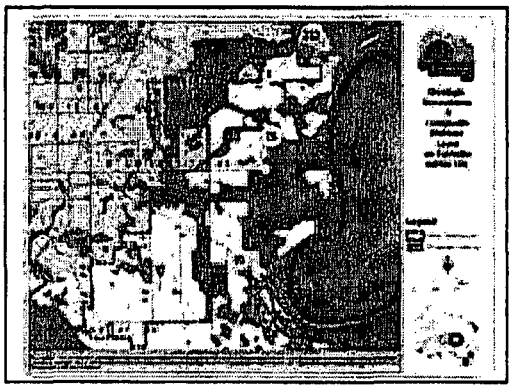

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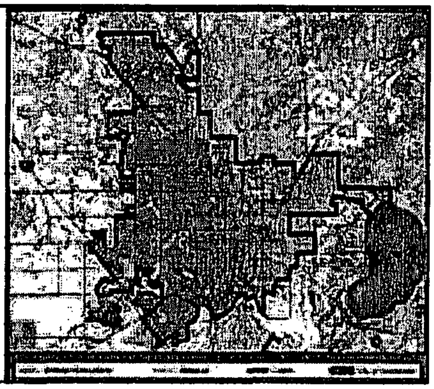
Summary of current status of Strategic Ecosystems

- 9,760 acres of Strategic Ecosystems are now in the City of Gainesville
- 45% of the wetlands in Gainesville are located within these strategic ecosystem areas (3,955 of 8,804 acres)



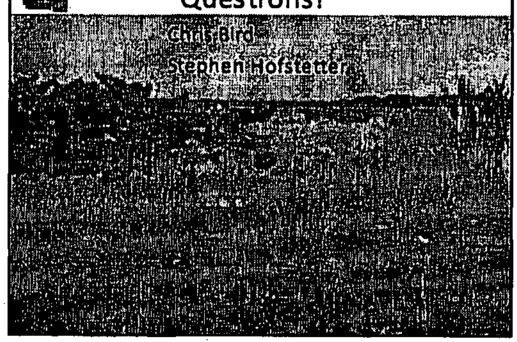
The Plum Creek Development Example

- Outcome of Comp Plan Amendment
  - 1,778 acre undeveloped site
  - All wetlands protected (636 Acres)
  - County 75' buffer averages used
  - 90% floodplain
  - 40 – 50% of uplands protected (similar SE policies)
  - LID and other innovative designs to limit impacts
  - Residential and non-residential uses
  - Clustered design (total of 1,890 possible units)

Strategic Ecosystems within City Limits

- Recommendation of County Staff:
  - SE annexed that are part of greenbelt and currently undeveloped: adopt County approach
  - SE annexed within more dense urban areas or with existing intensive land use, consider hybrid approach with similar protection standards but more intensive development approach.

Questions?



Additional Information

Current Status of Strategic Ecosystems

Categories	All of Alachua County	Unincorporated Alachua County	Gainesville	Total w/in other municipalities
Total land area*	620,473 acres	502,332	38,310	79,831
Total Upland area	453,661	348,721	29,506	75,434
Total Wetland area	166,812	153,611	8,804	4,397
Area in 100-year floodplain	185,344	170,482	9,929	5,433
Total strategic ecosystem (SE) area	165,357 (100%)	149,520 (90.42%)	9,760 (5.90%)	6,078 (3.68%)
% of jurisdiction in strategic ecosystems	26.60%	32.82%	25.48%	5.09% (HS)-24.71% (Waldo)
% of SE that are wetlands	60.04%	59.95%	59.49% (5,805 ac)	16% - 83%
% of wetlands in jurisdiction within SE	39%	39%	48%	39%

*Acreage areas are estimated based on best available GIS data as of September 5, 2007

Area within Eastside Urban Service Line (USL) based on GIS layers

- 7,365 ac total within Eastside USL
- 5,418 ac privately(?) owned (1,947 ac state lands)
- 1,300 - 2,300 ac of wetlands (NWI -Composite layer) ~ 15% - 31%
- 3,118 – 4,118 ac of uplands ~ 58% – 76%

(In comparison, 27% of land in Alachua County is identified as wetlands)