Sun City Center
Analysis of Regional Connectivity, Restoration, and Golf Course Adaptive Reuse Opportunities

Work completed by:
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Project Overview

Hillsborough County
• Project Goals and Objectives
• Regional Suitability Analysis
• Regional Conflict Analysis and Future Land Use Plan

Sun City Center
• Hydrologic Analysis
• Connectivity Analysis
• Stormwater Analysis
• Golf Course Conceptual Master Plan for Adaptive Reuse
Hillsborough County
Regional Suitability Analysis
Suitability Analysis

- Character Research
- Goals and Objectives
Urban Suitability

Goal 1 Identify lands suitable for residential land use
   Objective 1.1 Identify lands physically suitable for residential land use
   Objective 1.2 Identify lands economically suitable for residential land use
   Objective 1.3 Identify lands historically and culturally suitable for residential land use

Goal 2 Identify land suitable for commercial land use
   Objective 2.1 Identify lands physically suitable for commercial land use
   Objective 2.2 Identify lands economically suitable for commercial land use
   Objective 2.3 Identify lands historically and culturally suitable for commercial land use

Goal 3 Identify lands suitable for industrial land use
   Objective 3.1 Identify lands physically suitable for industrial land use
   Objective 3.2 Identify lands economically suitable for industrial land use
   Objective 3.3 Identify lands historically and culturally suitable for industrial land use

Goal 4 Identify lands suitable for recreational land use
   Objective 4.1 Identify lands physically suitable for active recreational land use
   Objective 4.2 Identify lands economically suitable for active recreational land use
   Objective 4.3 Identify lands historically suitable for active recreational land use
   Objective 4.4 Identify lands culturally suitable for active recreational land use
Urban Suitability
Agricultural Suitability

Goal 1 Identify land suitable for arable crops
   Objective 1.1 Identify suitable land for arable crop production
   Objective 1.2 Find soils suitable for crop production
   Objective 1.3 Identify economically suitable land for arable crop production

Goal 2 Identify land suitable for livestock production
   Objective 2.1 Identify lands physically suitable for low intensity livestock
   Objective 2.2 Identify lands suitable for confined animal production

Goal 3 Identify land suitable for nurseries
   Objective 3.1 Identify lands physically suitable for nursery production
   Objective 3.2 Identify areas connected to transportation routes
   Objective 3.3 Find land with suitable natural systems

Goal 4 Identify land suitable for citrus
   Objective 4.1 Identify suitable land for citrus production
   Objective 4.2 Identify soils suitable for citrus production
   Objective 4.3 Identify economically suitable land for citrus production
Agricultural Suitability
Conservation Suitability

Goal 1 Identify areas for biodiversity protection
  Objective 1.1 Identify land with biodiversity hotspots
  Objective 1.2 Identify most suitable land for state listed species

Goal 2 Identify areas important for landscape scale protection
  Objective 2.1 Identify land with historic natural land cover using historic VCOM data that could potentially be restored
  Objective 2.2 Identify land suitable for conservation buffers
  Objective 2.3 Identify areas with high landscape integrity
  Objective 2.4 Identify areas important to ecological greenways

Goal 3 Identify areas important for surface water resource protection
  Objective 3.1 Identify degraded and historic wetlands that could be restored
  Objective 3.2 Identify high quality wetlands to be protected
  Objective 3.3 Identify land important for conserving high quality floodplains
  Objective 3.4 Identify open water bodies

Goal 4 Identify areas important for groundwater aquifer recharge resource protection

Goal 5 Identify most suitable land for resource-based recreation
  Objective 5.1 Identify suitability based on location
  Objective 5.2 Identify suitability based on physical data
Conservation Suitability
Suitability → Conflict Analysis

- Each group’s suitability range (1 to 9) is re-grouped into values of 1, 2, or 3.

  ![Suitability Range](image)

- The groups are combined:
  \[(\text{Agriculture} \times 100) + (\text{Conservation} \times 10) + (\text{Urban})\]
Future Land Use Plan for Hillsborough County

• Identify priority lands for agriculture, urban, conservation, and infill/redevelopment

• Allocate 1.3 million new people (40% of the new population should be allocated to infill development)

• Two groups:
  • Business as Usual Scenario (5 people/acre requiring 260,000 acres of greenfield and infill development)
  • Higher Density Scenario (7.5 people/acre requiring 175,000 acres of greenfield and infill development)
Business as Usual Scenario

Criteria:
1. Biodiversity priorities
2. Conservation buffer
High Density Scenario

Criteria:
1. Coastline
2. Density of current urban
3. Conservation connection
4. Protection of most valuable agriculture and conservation
Sun City Center
Regional Hydrologic Analysis

Daniel Gil and Jeffrey Haviland
Goal

To protect and restore water quality and hydrologic function related to the impact of Sun City Center on the Little Manatee River and Tampa Bay.
Sun City Center & Surrounding Watersheds

Within the Alafia River major watershed
Objective 1

Identify watersheds affected by Sun City Center and identify waterbodies and wetlands that are connected to the Little Manatee River and Tampa Bay.
Objective 1

Affected watersheds
Objective 1

Water bodies and wetlands connected to the relevant surface water network
Objective 1

Water bodies and wetlands connected to the relevant surface water network
Objective 1

Water bodies and wetlands connected to the relevant surface water network
Objective 2

Identify lands for protecting high quality floodplains and wetlands
Objective 2

High priority wetlands

FNAI | CLIP - Florida Natural Areas Inventory’s Critical Lands and Waters Identification Project (CLIP 4.0 Database)
Objective 2

High priority floodplains

CLIP 4.0 Database
Objective 2

High priority floodplains

CLIP 4.0 Database
Objective 2

High priority floodplains

CLIP 4.0 Database
Objective 3

Identify lands that are high priority for restoring water quality and hydrologic function
Objective 3

High priority lands for restoration

CLIP 4.0 Database

FDEP | FLUCCS Florida Land Use and Land Cover, Statewide
(FLUCCS Dataset)

NRCS USDA SOILS Dataset
Objective 3

High priority lands for restoration

CLIP 4.0 Database
FLUCCS Dataset
NRCS USDA SOILS Dataset
Objective 3

High priority lands for restoration

CLIP 4.0 Database
FDEP FLUCCS Florida Land Use and Land Cover, Statewide (FLUCCS Dataset)
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CLIP 4.0 Database
FLUCCS Dataset
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Objective 3

High priority lands for restoration

CLIP 4.0 Database
FLUCCS Dataset
NRCS USDA SOILS Dataset
Low Impact Design (LID): Systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat to improve the quality of water in the habitats, watersheds and aquifer recharge.

A: Capture First Flush into Bioswales and Improved Pond Banks (LID)

B: Create better Sheet flow from Sun City Center and Remove Canals Creating a Natural System with Better Filtration

C: Restoring and or Improving Cypress Creek as it enters Little Manatee River
Recommendations

A: Capture first flush into bioswales and improved pond banks (LID)
Recommendations

B: Create better sheet flow from Sun City Center and remove canals creating a natural system with better filtration
Paynes Prairie Wetlands Preserve
Recommendations

C: Restoring and or improving Cypress Creek as it enters Little Manatee River
Conclusions

Through Low Impact Design (LID) and the restoration/improvements of wetlands:

A: Wildlife habitat improvement

B: On-site standing water quality and aesthetics

C: Improving the water quality and increasing aquifer recharge within the watersheds, Little Manatee River, and Tampa Bay.
Sun City Center
Regional Connectivity Analysis

Laura Collazos and Jennifer Brunner
Introduction and Overview

Part A

Conduct a regional analysis to identify recreational and ecological corridor connections to areas outside of Sun City Center, which could be created, enhanced or protected to increase regional connectivity.

Part B

Identify specific programmatic or design recommendations for each major corridor, which can be used to improve recreational and/or ecological services. An example is the connection between the Little Manatee River State Park and Sun City Center, including how to provide a connection and how that connection would be designed.
Activity Nodes Map

- Commercial Areas
- Medical Areas
- Markets
- Medical Facilities
- Theaters
- Churches
- Libraries
- Government Facilities
- Recreational Areas
Recreational Suitability Map
Proposed Florida Ecological Greenway Network (FEGN) Priorities

Legend
- Sun City Boundary
- Other Existing Trails
- Florida Land Trail Opportunities
- Roads
- Rivers and Creeks
- Existing Parks
- ELAPP Not Acquired
- Florida Managed Areas

Recreational Suitability Value
- High: 8.9825
- Low: 1.005

Miles
0 1 2 4

Bull Frog
Balm scrub
Dug Creek
Little Manatee
Natural Community Types around Sun City Center
Pine Flatwoods and Dry Prairie

Flat pine woodland or shrubland

Sandy (dry) or limestone (wet) substrate
Upland / Mesic Hammock

Flatland with sand/organic soil

Closed evergreen canopy
Hydric Hammock

Lowland with clay/organic soil over limestone; stays wetter

Dense tree canopy
**Scrub**

Upland with deep sand substrate

Dense shrubs without pine canopy
Forested Freshwater Wetlands
Floodplains or depressions dominated by trees adapted to wet conditions

Includes types of:
• Cypress swamps
• Hardwood swamps
Wet Prairie / Marsh

Wet soils or standing water

Dominated by grasses, sedges, shrubs and aquatics
Proposed Connections
Final Analysis Map

- Ecological Corridors
- Phase 1 Recreational Trails
- Phase 2 Recreational Trails
- Phase 3 Recreational Trails
Proposed Trails + Corridors

- Ecological Corridors
- Phase 1 Recreational Trails
- Phase 2 Recreational Trails
- Phase 3 Recreational Trails
Section Views and Site Plans of Trail
Trail Types

5 Types of Trails Proposed

- Boardwalk Recreational Trail
- Recreational Trail and Ecological Corridor Together
- Ecological Corridor Only
- Paved Recreational Trail (Multi-Use)
- Road Crossings
Need for Recreational Trails
Promotes an active lifestyle with alternative modes of transportation
Revitalizes the economy through an improved circulation system
May connect people to nature through more ecological exposure
Enhances sense of community through a cohesive design
Need for Ecological Corridors

Connects areas of ecological importance
Enhances wildlife habitat
Helps protect wildlife and vegetation
Wetland Boardwalk
Recreational Trail
Site Plan
Wetland Boardwalk Recreational Trail Site Plan

3 entries in convenient locations.
1 spur overlook
3 minor overlook/seating areas
Recreational Trail and Ecological Corridor along Cypress Creek Site Plan
Recreational Trail and Ecological Corridor Along Cypress Creek Site Plan

Cypress Creek has plenty of buffer room against the golf courses to allow for a generous eco corridor and recreational trail in most sections.
Recreational Trail and Ecological Corridor Along Cypress Creek Section

Cypress Creek ecological corridor and recreational trail - co-located

335’ maximum width
Ecological Corridor Only

Should encompass the 100 year floodplain and take into account edge effects.

Should be 300’ minimum
Paved Recreational Trail (Multi-Use) and Crossings
Paved Recreation Trail (Multi-Use)

Right of Way Areas (60’ - 30’ wide)
Paved Recreation Trail (Single-Use)

Right of Way Areas (29’ - 24’ wide)
Road Crossing (Rec and Eco Crossing along Cypress Creek)
Road Crossing (Rec and Eco Crossing along Dug Creek)
Wildlife Crossings

Provide a minimum 3’ wide corridor on both edges for small, terrestrial wildlife.

Provide a minimum 5’ wide riparian corridor for aquatic wildlife.
Sun City Center
Stormwater Improvements

James Mahoney and Andrea Penuela
Major Issues

1. Inefficient stormwater structures
2. Short residence time
3. Residential nutrient inputs
4. Lack of littoral planting
1. Inefficient Stormwater Structures
2. Short Residence Time
3. Residential Nutrient Inputs
4. Lack of Littoral Zone
Best Practices
Florida Friendly Yards

Principles

1. Right Plant, Right Place
2. Water Efficiently
3. Fertilize Appropriately
4. Mulch
5. Attract Wildlife
6. Manage Yard Pests Responsibly
7. Recycle
8. Manage Stormwater Runoff
9. Protect the Waterfront
Rain Gardens

Benefits

1. Filters out additional pollutants before they enter the water system
2. Slow down water during a storm surge
3. Provide aesthetic appeal
Bioswales

Benefits

1. Collect water and move it to stormwater basins

2. Reduce speed of water, allowing for treatment and infiltration

3. Aesthetic value
Littoral Zone

Benefits

1. Consume nutrients
2. Prevent erosion
3. Promote native species
4. Aesthetic

http://plants.ifas.ufl.edu
Sun City Center
Improvements
Existing Conditions
Existing Conditions

Areas identified with high inputs of pollutants:

- Lawn runoff
- Storm drains
Improved Condition

Water quality has been enhanced through rain gardens and bioswales which treat water before it enters the stormwater basins.

Basins have been modified to reduce speed of water and provide longer residence time.
Existing Condition

Nutrients from lawn drain directly into stormwater basin with no previous treatment

This leads to lower quality water and algae blooms
Improved Condition

Adding rain garden provides treatment for runoff from lawns improving water quality and health for stormwater basin then leading into the natural ecosystem.

Rain gardens also provide aesthetic improvements and can be an asset to homeowners.
Sun City Center

Schematic Design

Chris Zito, Jo Tolentino, Shelby Harden, Chris Chovanec, Elliot Capers, and Christy Slaney
Concept Plan

Active Recreation
Community Gardens
Conservation
Passive Rec.
Master Plan
Areas 1+6 (C. Zito + Jojo)
Amphitheater, BR Facility + Exercise Circuit
Community Garden, RV Parking + Bridge
Canoe Launch, Frisbee Golf + Wildflower Walk
Area 3 (Chris Chovanec)
Entry Features
Bathroom Facility
Flower Garden
Accent Bridge

ENTRY FEATURE
BATHROOM STRUCTURE
FLOWER GARDEN
ACCENT BRIDGE
COMMUNITY GARDEN
WILDFLOWER FIELD
GOLF CART PARKING
SHAPED HAMMOCK
RAIN GARDEN
ZEN GARDEN
TOPIARY GARDEN
Wild Flower Fields
Golf Cart Parking
Rain Gardens
Zen Garden
Topiary Garden
Area 4 (Elliot)
Golf Cart Parking
Frisbee Golf and Putt Putt Golf Course
Wildflower Area
Walking Loop & Exercise Circuit
Shrub Areas
Boardwalk & Overlook Docks
Canopy Entrance Feature
Area 4+5
(Cristy)
Area 2 (Shelby)

A - Multiuse Trail
B - Pedestrian Nature Loops
C - Canopy Grove
D - Rain Gardens + Wetlands
E - Open Lawn
F - Pavilion + Waterfront Outlook
G - Wetland Boardwalk
H - Dog Park
I - Family Play Area