DESIGN PRINCIPLES

CIVILIZATION IS JUST THIS CONSTANT EFFORT TO INTRODUCE PLAN WHERE THERE HAD BEEN CLASH, AND PURPOSE INTO THE JUNGLES OF DISORDERED GROWTH. -WALTER LIPPMAN, 1914

PREFACE

Land use planning is a complex and contentious process with few easy decisions. Every alternative benefits some people and places and hurts others. It is difficult to find criteria to help clarify decisions and this is especially true for a region growing as rapidly as Central Florida. Fortunately, the Wekiva River Protection Act has set forth a series of goals and guidelines for the Wekiva River Protection Area. Yet portions of this act remain open to interpretation and require further study. For instance what defines "rural character" and what indices should be measured are needed to determine "culminate ecological degradation." Recent events have highlighted the need to better define elements of the general consensus that established the landmark Wekiva River Protection Act.

In metropolitan Orlando there is a very strong consensus that protecting the Wekiva ecosystem is central to the regional planning effort. The special qualities of the Wekiva landscape makes greater Orlando an attractive destination both to visit and live. Wekiva 2020: Conceptual Design Principles for the Wekiva River Protection Area: Seminole County, Florida is an effort to identify and articulate the landscape values and the design principles that might offer an essential source in making regional planning decisions. While environmental modeling is essential, design principles must be implemented to sustain the Wekiva landscape.

Dr. Bruce Stephenson, Rollins College Environmental Studies Department, received a Florida Greenways Seed Grant and an Environmental Studies grant from the Associated Colleges of the South to explore alternative methods and design standards for the Wekiva River Protection Area. Students, faculty, landscape architects, environmental professionals, and private developers donated their time and expertise toward this endeavor. For two terms, student classes under Dr. Stephenson explored the area, examined old maps, air photos and plans to discover the Wekiva River Protection Area’s unique "sense of place." This report is a distillation of this wide-ranging process into a series of design principles. It is conceptual in nature, offering a "springboard" for interested parties to explore design standards to meet the goals of the Wekiva Protection Act. On June 18, 1999, this report will be presented as part of a Visioning Charrette, hosted by the Rollins College Environmental Studies Department. The goal is to initiate a discussion to aid in determining the path for future study and planning in the Wekiva River Protection Area.

INTRODUCTION

By 2010, projections indicate that Seminole County’s supply of vacant land will be depleted. A large percentage of this conversion will come from rural land.

Farming and forestry historically have been a primary means of preserving open space, and "as more land is converted to homes, businesses and roads, " John Reynolds, a University of Florida land-use specialist predicts, "conflicts between competing interests will intensify." (Orlando Sentinel, May 3, 1999). Within Seminole County, the Wekiva River Protection Area faces perhaps the most intense development pressure because of its unique natural gifts and close proximity to the "High Tech" juggernaut centered around Interstate 4 and Lake Mary Boulevard. The protection area's livability and untrammeled landscape is a special quality the region's long-time residents cherish. At the same time, the protection area's unique setting is a magnet for high-end development. Yet, as history reveals, the development process can destroy the very attractions that generate growth.

The specter of suburban sprawl is not only a question of density but design. A generation ago, Seminole County was a coherent mix of natural areas, cultivated land, and identifiable communities. Suburbanization has since reconfigured the landscape offering little in terms of aesthetics or "rural character." Checkerboard subdivisions cut indiscriminately into the landscape have severed vital natural connections and obliterated distinctions between communities. While these projects met demands for spacious living and offered convenience for auto-users, homeowners' frequent trips took them past an unending string of commercial strip centers and run-on subdivisions. From the car, the landscape was little more than a blur—except for the blaring signs. Fortunately, development restrictions have spared the Wekiva River Protection Area from the most deleterious effects of suburban sprawl.

The task ahead is to mold development into a sustainable pattern that will maintain the health of the Wekiva River, the heart of the region's ecosystem, and protect the local "sense of place." The planning challenge is not only a question of infrastructure and pollution control, but entails a need to identify the essential elements that make the Wekiva landscape a unique, special place. Preserving the protection area's essential qualities must be a paramount concern in the planning framework. This report presents design principles essential to sustaining the Wekiva River Protection Area's sense of place in the next century.

Three key ideas guide the identification of critical resources for the Wekiva Landscape in this report. (1) The Wekiva landscape is an indivisible public resource that enhances and defines the region's sense of place. (2) Identifying clearly important landscape attributes is essential to designing creative and sustainable growth patterns. (3) The recommended design principles may be used to implement those provisions of the Wekiva River Protection Act that are either unclear or open to interpretation.

ESSENTIAL CONCEPTS

The essence of the Wekiva River Protection Area's special sense of place derives from the uncommon elements that form our own and visitor's memories of the area. These memorable settings are unique because we can never replicate them. Whether encountering wildlife, canoeing in clear, spring-fed rivers, or simply viewing a landscape that melds the human and natural habitat we enjoy an experience common to our ancestors. Whether it was our grandparents or the first native peoples to settle this area, there are elements of life along the Wekiva River that have remained relatively unchanged for thousands of years. Sadly, extinction is not only a question of species but of experience.

In nature we encounter experiences that stretch across generations, and the loss

of such experience bears an immeasurable cost not only to our children but to our own humanity.
What happens to a people who lose a vital resource that not only defined a place, but also provided experiences that united generations? The Wekiva's exceptional landscape resources must be identified and their values incorporated into the fabric of future planning and development.

More fundamentally, development in the Wekiva River Protection Area must avoid the typical suburban form. When entering the Wekiva River Protection Area, the merging of architecture and landscape must announce that one is encountering a special, unique place. While gated-communities manned by uniformed guards and surrounded by imposing walls are alluring for a segment of homebuyers, these projects provide little connection to the landscape and project a fortress mentality that last flourished during the Seminole Wars 150 years ago. These developments have their place, but they should not redefine the Wekiva landscape. The auto-scale, short-term market and functional efficiencies that produce suburban sameness must be balanced with a human-scale, sustainable design that will fold into the landscape.

In seeking to identify key elements for the Wekiva River Protection Area's future landscape it is important to realize that every community needs places and recurrent landscape elements that make its identity clear to everyone. These are best derived from the historic responses to the natural setting (e.g. vernacular architecture), patterns of land use (e.g. rural character) and social activity (e.g. recreation on the Wekiva River) that over time have defined the area's lifestyle and landscape. The result is inevitably sometimes very distinct and sometimes subtle, yet these special places are immediately recognized by residents and visitors alike. The Wekiva River Protection Area holds these in abundance. They include springs, cool, clear rivers, stands of ancient scrub, sand hills, recreational trails, pioneer homesteads, and hardwood hammocks. Above all, the Wekiva River Protection Area still provides a place for a rich contact with natural systems and distinctive settings.

Such elements make it possible to fit human activities beautifully into the landscape. If the Wekiva River Protection Area grows in a form responsive to this setting, residents and visitors will find added meaning, as they become aware of the presence and beauty of the landscape in their daily activities. To make this happen, design principles must dictate the direction of development. Scenic landmarks and views must be preserved and created, natural connections cannot be severed, and places must take shape that enhance and integrate into the landscape. Most importantly, ecological connections must be maintained to protect natural systems and human scale connections must be designed to create places that sustain the environment and foster community.

MAKING IT HAPPEN

Climate, nature, and an outdoor lifestyle have attracted a great influx of people and money to Central Florida. These parties often want to maintain this region's quality of life much as older residents do, and they often expect regulations toward this end. We are one of the few regions in the nation that can protect a major ecosystem that lies near the center of a rapidly expanding metropolis. This opportunity comes from citizens who hold the Wekiva in sacred trust, the unusual strength and accountability of our planning institutions, the generous sums (in relation to other states) allocated for land preservation, and the Wekiva River Protection Act. The metropolitan area will undoubtedly grow and the Wekiva landscape will be altered. Fortunately, losses can be minimized while opportunities to enhance the Wekiva River Protection Area's best qualities can move forward if the public and private sectors establish a vision and the

principles to implement it. Then, residents and visitors alike will not only experience a special quality of life, but investments will be made to ensure the region’s long-term ecological and economic health.

GOALS

(1) Protect the water quantity, water quality, and hydrology of the Wekiva River System

(2) Protect habitat within the Wekiva River Protection Area for endangered species.

(3) Prohibit development that is not low-density residential in nature, unless that development has less impacts on natural resources than low-density residential development.

(4) Restrict intensity of development adjacent to publicly owned lands to prevent adverse impacts to such lands.

(5) Encourage clustering of residential development when it promotes protection of environmentally sensitive areas, ensuring that residential development in the aggregate shall be of a rural density and character.

(6) The density of development permitted on parcels of property adjacent to the Wekiva River System be concentrated on those portions of the parcels which are the farthest from the surface waters and wetlands of the Wekiva River System.

DESIGN PRINCIPLES

(1) Harmonize growth patterns with regional ecosystems.

(2) Maintain ecological integrity of rural forests.

(3) Maintain an interconnected system of green corridors.

(4) Minimize conflict between conservation and recreation on the Seminole-Wekiva trail

(5) Establish edges to development and utilize vernacular architecture to maintain rural character.

(6) Cluster development to create greenway-oriented communities in the form of a rural village.

HARMONIZE GROWTH PATTERNS WITH REGIONAL ECOSYSTEMS

Let us ask the land where are the best sites. -Ian McHarg, 1969

The beauty of the landscape within the Wekiva River Protection Area can be maintained with good design. Unfortunately, landscape qualities and features are often taken for granted until they are lost in a cacophony of haphazard, poorly planned growth. Low-density subdivisions, even at one unit per acre, can destroy the character and ecology of a rural landscape. Without new design guidelines, the Wekiva River Protection Area may transpose into "Ruburbia, " a term coined by Leo Marx, an MIT professor.

Ruburbia is the agriculturally least productive rural areas beyond the suburbs. For migrants to such places, the chief attraction is that of jobs in the new high-tech industries. Single-family houses on relatively large plots of land

close to open space and outdoor recreation also satisfy the needs of prospective workers in the new industries, the self-employed, and the retired. These areas also offer escape from crime and racial conflict, and other discomforts (smog, noise, and traffic congestion), as well as escape from high rents and high taxes that now typify many cities and suburbs. A striking feature of ruburbia is the highly dispersed, decentralized, noncommunal pattern of settlement itself. The result is a new kind of decentralized pattern whose built core may consist of nothing more than a commercial strip, a few service roads located near a freeway interchange, and a randomly located church or school. The absence of an organized community means reliance on private water supplies and waste disposal system. The result is environmental degradation and the careless, wasteful use of land and other resources.

Fortunately the Wekiva Protection Act has set the guidelines to protect vital natural systems and maintain the distinction of the Wekiva landscape. Design standards to protect the riparian corridor already exist, but protecting the integrity of the wilderness corridor remains problematic. The corridor is centered on the Wekiva River, linking Wekiva State Park and the Ocala National Forest. Along this 20-mile greenway there are six preserves, totaling over 31,000 acres and the state hopes to add another 28,000 acres. Outside of public-owned land, sections of the corridor's sprawling mosaic of riparian habitat, wetlands and upland forest face development pressures that could imperil species such as the gray fox, bobcat, Sherman Fox Squirrel and the Florida Black Bear.

The black bear is of special concern. The bear requires a very large range and this corridor extension could benefit them. Wildlife corridors provide two major benefits for biological conservation: 1) they act as a dwelling habitat for plants and animals; 2) they serve as a conduit for movement. As a conduit, a greenway can serve several functions. It permits daily and seasonal movement of animals. This is especially important for large predators such as the black bear, because their large body size and food requirements require a wide foraging area. The corridor also facilitates dispersal, which reduces the chances of harmful mating between close relatives and allows genes to travel from one population to another. Considering the unexpected disturbances (e.g. fire) that occur in a landscape, corridors offer animals a chance to move from one habitat to another.

The discipline of landscape ecology offers the best means to enhance ecological integrity in the midst of human-modified landscapes. Central to landscape ecology is the concept of connection—linking a diversity of sites to enhance ecological integrity. Fortunately, a number of studies have already laid the basic groundwork for this endeavor. The Florida Department of Environmental Protection's Wekiva Basin Geopark Unit Management Plan (1998) and the Friends of the Wekiva River's The Wekiva River Basin: A Resource Revisited (1992) provide excellent overviews of the Wekiva Geopark and basin. Closing the Gaps in Florida's Wildlife Habitat Conservation Systems (1994) maps regionally significant habitat within the Wekiva River Protection Area and the Seminole Wekiva Small Area Study also maps a number of ecological parameters.

The goals of the Wekiva Protection Act can be attained if development is limited in the regionally significant habitat. Establishing a density transfer plan is one planning tool to achieve this goal. Regionally significant habitat would serve as a transfer zone while land east of a line running southwest from Berrington Estates to the Seminole Soccer fields and land adjacent to the Wekiva Seminole Trail would be the receiving zone. The demarcation for the receiving zone is based on a line of ecologically fragmented lands and degraded habitat

that is best oriented for sustainable development.

The transfer zone would allow densities much lower than one unit per acre, while the receiving zone would allow higher densities. The aggregate units allowed would be no greater than the number allowed under existing zoning and future land use designations. The allowable number should follow Seminole County policy and be based on net densities in which wetlands, community roads, and easements are excluded. Within the transfer zone, development should be clustered in a greenway-oriented community, which follows the form of a rural village to foster sustainability.

Another solution would be to require clustering and establishing buffers within the regionally significant habitat. Randall Arendt's Conservation Design for Subdivisions (Island Press, 1996) provides a practical framework for this endeavor. Special care should be made to preserve the connections between wetland and upland habitat. Incentives for clustering should also be established in the areas outside of the regionally significant habitats, with criteria weighted criteria more heavily for the land west of the aforementioned fragmentation line.

MAINTAIN ECOLOGICAL INTEGRITY OF RURAL FORESTS

Native central Florida habitats play a critical role in the interconnected Florida ecosystem. The Wekiva River Protection Area is a mosaic of rich and unique habitats. Some of these habitats are endemic, unique to Florida, and play a key role in ecosystem health. For instance, scrub habitat houses 40-60 percent of Florida's endemic species (Ecosystems of Florida, 1990). These species are essential to ecosystem health and therefore make conservation critical.

Within the Wekiva River Protection Area, habitats such as scrub, sandhill, pine flatwoods, and hydric hammock are indicators of the area's ecological heath and its ability to sustain life. Pine flatwoods provide habitat for many rare, threatened, or endangered animals such as the Red Cockaded Woodpecker, Sherman Fox Squirrel, and the Florida Black Bear. These animals as well as the Florida Scrub Jay, Florida Mouse, and Florida Gopher Tortoise can be found in scrub or sandhill communities (Ecosystems of Florida). In order to maintain ecological integrity, management practices should encourage controlled burns and removal of exotics. Preserving habitats is not enough; good resource management practices must be implemented.

Fire has played a key role in the evolution and maintenance of many Florida habitats such as pine flatwoods, scrub, and sandhill. The absence of fire, usually caused by suppression, leads to the dominance of hardwood tree species, which exclude, through shading, species of origin to the habitat (Florida: The Natural Wonders, 1997). Simply, lack of fire leads to a loss of habitat for Sherman Fox Squirrels and Florida Gopher Tortoises and an overall loss of biodiversity in both plants and animals. Without fire, Gopher Tortoises lose their food source because Wiregrass depends on fire for germination. Gopher Tortoises also require bare patches of sand (which are maintained by frequent fire) to dig their burrows. Without these burrows, over 300 different species, including rare, threatened, and endangered species, will lose a vital part of their habitat.

Sandhill communities exemplify a fire-resistant habitat, which has species that have adapted to and depend on frequent fires. Sandhill in a sense encourages fire because the Longleaf Pine acts as a "natural lightning rod" and the Wiregrass and accumulated leaf litter act as a fuel. "Cool" fires sweep through the habitat, clearing out the fuel and rarely reaching over two feet in height. These fires occur naturally every three to five years, each interval resulting

in slight differences among the Sandhill communities. The key, principal plant species that comprise a Sandhill are Longleaf Pine, Wiregrass, and Turkey Oak. With frequent fire, Turkey Oaks keep a low canopy, providing adequate shade to seedlings while letting enough sunlight through to propagate Wiregrass. Longleaf Pines are fire resistant and depend on fire to create bare sandy patches which seeds require for germination. Without these ground-clearing fires the seeds are unable to penetrate the earth. Once mature, the Longleaf Pine grows a thick scaly bark that protects the trunk from excessive heat. Wiregrass is rarely found in non-fire dependent communities and there is suspicion that fire stimulates germination of Wiregrass seeds. Without the fires, litter accumulates on the soil hindering seed germination and Wiregrass growth. However, the most dangerous consequence of fire suppression is the increased fire danger to the habitat and surrounding residential developments.

The elimination of habitat connectivity due to human development requires prescribed burns to mimic the forests natural fire regimes. Prescribed burns are especially important in fire resilient communities (e.g. scrub), burning fuel accumulation that if, unchecked could produced catastrophic wildfires that consume all vegetation in the landscape. These uncontrollable wildfires may also rage through residential areas destroying homes and even taking human lives. During the summer of 1998, fire suppression helped produce wildfires that charred 500,000 acres and destroyed 126 homes. High temperatures and months of drought coupled with dense thick fuel accumulation (due to fire suppression) resulted in catastrophic wildfires. These forestlands suppressed from their normal fire regimes due, in part, to human use and habitat fragmentation could take years to recover.

Prescribed burning in the forests of the Wekiva GEOpark, however, protected nearby residential and urban areas from the devastating effects of the wildfires. Fires that did occur in the GEOpark were easily managed and contained due to the reduced fuel loads from prescribed burning. In the Wekiva River Protection Area, fire is the best management tool to preserve the ecological integrity of rural forests.

Sandhill that has been "fire suppressed" Recently burned sandhill, March 1998
Now dominated by Laurel, Live and water Oak.

CREATE AN INTERCONNECTED NETWORK OF GREEN CORRIDORS

We must plan and manage Florida's Green Infrastructure in the same manner we carefully plan the infrastructure our communities need to support the people who live there-- the roads, water, and electricity. - Florida Greenways Commission Report to the Governor, 1995

Regionally significant habitat should be protected from encroaching development with a 100-foot buffer. A corridor of this width would create an "absorption zone" for exotic species and reduce the impacts of development (Ecology of Greenways). Another study justifies a 100-foot wooded buffer between natural areas and "residential developments where a moderate amount of lawn fertilizer is used…" (Conservation Design for Subdivisions). According to Arendt, "true conservation subdivisions are designed with buffers at least 100 feet wide because the preponderant opinion in the scientific and planning communities is

that this is the minimum width necessary if basic environmental goals are to be met" (14). The identification of buffers should be part of the preliminary, conceptual plan for any project within regionally significant habitat, and part of the site plan review process.

A series of green corridors should connect the regionally significant habitat. Ideally this system would incorporate wetland-upland connections, and where feasible create a trail on the outer edge. These greenways would act as conduits for the movement of water, plants, animals, and people. The potential still exists to connect smaller less functional "patches of habitat" with regionally significant habitat to maintain ecological productivity, while providing human pathways.

"Connection" is the key element of greenway design. In addition to connecting natural habitats, greenways linking human communities to Nature are essential for instilling an environmental ethic in local citizens. Unfortunately, this function has been missing from the contemporary environmental movement, which has been based largely on more formal education and on more direct forms of interventions such as advocacy, lobbying, and ecological planning. By providing informal opportunities for people to experience nature "close to home" on a regular basis, greenways…may have an important and long-lasting effect on society’s environmental consciousness (Ecology of Greenways, 17)

The alignment for these corridors and their width should respond to local ecological conditions and barriers such as Highway 46. When animals (and people) attempt to cross roads, they risk injury or death. Central Florida has the highest fatality rate in the nation for pedestrians and bicyclists, while road kills the leading known cause of death for large mammals, with the exception white-tailed deer (Ecology of Greenways). The viability of these corridors will depend in a large part on the quality of the highway crossings.

Corridor widths could extend to 250 feet with a gradual vegetation decrease on the outer edges in conjunction, where possible, with a trail system. Part of the corridor could include a native landscape requirement (as part of a native landscape code for the Wekiva River Protection Area) with adjacent private properties. Preserving these corridors would require clustering development, which will most likely require developer-incentives, public-private partnerships, and obtaining Forever Florida Funding. However, clustering can remain "density-neutral" and offer developers the following benefits:

(1) Smoother review by technical staffs
(2) Reduction on infrastructure costs to the extent that single-family house lots can be narrowed or street and utility lines shortened.
(3) Reduction of costs in meeting environmental regulations to prevent degradation of groundwater.
(4) Provision of a park-like setting with a variety of recreational and natural areas
(5) Trail connection to natural amenities and parks
(6) Provision of "scenic lots" which offer views of wetlands and forested areas

MINIMIZE CONFLICT BETWEEN CONSERVATION AND RECREATION ON THE SEMINOLE-WEKIVA TRAIL

The proposed Wekiva-Seminole trail will require a design that minimizes conflict between recreation and conservation. Within the Wekiva River Protection Area, the trail will run on an east-west route through a mix of rural land and low-density subdivisions. The trail will pass through some of Central Florida's most scenic natural areas before the abandoned rail corridor terminates near the

Wekiva River, just north of the Plantation Nature Preserve.
To the west of where the corridor is bisected at a sharp angle by Markham Woods Road, the surrounding land is almost primeval.

Within 25 yards of the abandoned rail bed, in the quarter mile stretch between Markham Woods Road and the Wekiva River habitats include hardwood hammock, remnant Sandhill, pine flatwoods, and hydric hammock. Native species include:

Quercus laurifolia (Laurel Oak)
Quercus virginiana (Virginia Live Oak)
Quercus laevis (Turkey Oak)
Quercus nigra (Water Oak)
Carya sp. (Hickory)
Sabal Palmetto (Cabbage Palm)
Pinus elliottii (Slash Pine)
Pinus palustris (Longleaf Pine)
Pinus taeda (Loblolly Pine)
Myrica cerifera (Wax Myrtle)
Prunus carolinianan (Carolina Cherry)
Liquidumbar styraciflua (Sweet Gum)
Melia spp. (Chinaberry [non-native])
Rhus spp. (Winged Sumac)
Vitus spp. (Wild Grape)
Callicarpa americana (Beauty Berry)
Acer rubrum (Red Maple)
Juniperus silicicola (Red Cedar)
Rhapidophyllum hystrix (Needle Palm)
Taxodium spp. (Cypress)
Toxicodendron radicans (Poison Ivy)
Osmunda cinnamome (Cinnamon Fern)
Woodwardia areolata (Netted Chain Fern)

Bike traffic should be strongly discouraged west of Markham Woods Road, although a hiking trail should proceed through the sensitive hydric hammock forest that ends at the Wekiva. Signs and barriers will be needed to discourage bicyclists from entering this area unless they "walk their bikes." Improving the quarter-mile trail along the abandoned railway bed can be accomplished with minimal environmental disruption. This short stretch should remain unpaved and be kept as narrow as possible, no more than four feet wide. Mulch and natural materials should be placed over the sandy soil that tops the existing corridor. Signs are needed where users may tend to exit the trail. Some spots may require a barrier such as a few stacked logs to provide an additional hint to stay on the trail. Where there is access to private property, fencing or an appropriate buffer should accompany a "No Trespassing" sign. These potential "off-trail" situations could be avoided with additional plantings. As the trail drops off to the river, a fence might be necessary for safety. If that is too expensive, then logs could be placed along the edge of the trail and more vegetation planted to discourage wandering.

At the trails' terminus on the Wekiva River, there is the opportunity for a scenic overlook with minimal environmental disruption. The construction should be a simple design that does not provide points of access to the river. Warning signs as well as educational signs should be posted giving background information on the Wekiva River and the need to preserve its health. The effects of recreation in an unpaved area can include the loss of vegetation from trampling, compaction, and reduced soil permeability as well as subsequent increases in runoff, erosion, and sedimentation. Trampling can crush, bruise,

shear off, and uproot vegetation. Such abuse selects for tolerant species that can thrive due to the reduced competition. The presence of humans may also disturb animals using this corridor. Recreation use can disturb animals in four ways: harvest (perdition), habitat modification, presence of pollutants, and direct disturbance. The immediate response to these effects can only be one of two: death or change in behavior. If the behavior change is made, alterations in the abundance, distribution, demographics, species composition and interactions can occur (Ecology of Greenways). Since this area is adjacent to Wekiva State Park and frequented by black bears special care should be taken to maintain the integrity of the surrounding natural habitat, especially near the Wekiva.

EDUCATIONAL OPPORTUNITIES

Education and interpretation could help influence visitor behavior. Signs and displays should be placed abundantly in key areas to make trail users aware of the links between inappropriate behavior and specific ecological problems. Interpretative displays will both enhance visitor enjoyment and, by explaining the fragility of the site, increase the likelihood that the visitors will stay off areas sensitive to trampling. Trailhead bulletin boards as well as the provision of a kiosk at the terminus of the bikeway could be used to post messages or distribute educational brochures.

The bikeway terminus would be an ideal spot for a small kiosk to introduce trail-users to the local environment. It could enclose artifacts, pictures, stuffed specimens, skeletons, or shells of resident species. The ecological management of the GEOpark could also be described in simple, understandable terms. Finally, and perhaps most importantly, a link could made between this site and the Plantation Nature Preserve which lies immediately to the south.

ESTABLISH EDGES TO DEVELOPMENT AND UTILIZE VERNACULAR ARCHITECTURE TO MAINTAIN RURAL CHARACTER

The quality of the landscape reflects the health of a society. –Frederick Law Olmsted, 1892

In our mind’s eye we can picture what our state looks like. We have a mental map of its edges, the location of bays, large lakes, and the bridges by which we enter and leave many regions. We also hold a mental map our neighborhood. There is only one reason why we do not have an equally clear image of the edges and shape of the Wekiva River Protection Area. That one reason is suburban sprawl. The phrase brings to mind an unpleasant picture. We characterize it as sprawling because that is how its appears to us from any vantage point.

In the Wekiva River Protection Area, a strong sense of clarity should exist between surrounding development and the sense of transition we still feel as we move from suburb to agricultural land to the forested confines of the riparian corridors. When we know where the edges are we come to anticipate them, remember them and create our sense of place from them. Their absence in the Wekiva River Protection Area eliminates the benefits of the area’s bounded growth, a place that still allows us to enjoy the contrasting experiences of city and country to a much greater degree than the state’s other metropolitan areas.

Clustering development to protect regionally significant habitats and preserving green corridors will establish edges that will help keep the landscape clearly

sensible and intact. Yet, without any design guidelines, cluster development can still present a suburban form that devalues the unique Wekiva landscape. Within the Wekiva River Protection Area, one of the most significant goals outlined in the Wekiva Protection Act involves the maintenance of rural character. Utilizing vernacular architecture within subdivision design would help preserve the natural integrity of the landscape. Vernacular architecture offers a sense of an environmental home; a home that works with nature, not against it, emphasizing the culture of the area and the history of the place. By utilizing historical techniques, decorative features (shapes, textures, etc.), and systems of orientation that utilize regional materials, architecture can meld with the landscape. (American Vernacular Design, 1988).

Central Florida's landscape is a mixture of subtropical and temperate ecosystems that requires adaptation to a lush setting and a hot, humid climate. Building with local materials, such as limestone or stucco, will blend homes with the environment. Accenting colors and textures to the tone of the landscape will enhance this effect. The hot climate of Central Florida requires shaded airy spaces, such as verandas and courtyards. Deep porches are another feature which create shade and take advantage of cooling breezes (Places of the Soul 1990.) Window design, such as the use of shutters in historic Key West, can keep the hot sun from warming the inside of homes. The high humidity and nighttime versus daytime temperature variations require the use of materials that remain cool during the day. For this, tin roofing is one possible option. Tin roofing helps to maintain cooler indoor temperatures under the intense Florida sun.

The placement and orientation of a house influences the amount of sunlight and heat it receives. It is most beneficial to receive southern exposure at the front of the house to minimize direct sunlight during the simmer months and to maximize the sunlight received on the porch and in the front rooms during the winter months. This decreases the amount of electricity used for heating and cooling the home, making it more environmentally friendly.

The vernacular architecture of the Wekiva River Protection Area could also utilize the forms of coastal architecture utilized in traditional towns. The coastal architecture design is a mixture between the Acadian and Low-Country styles, with a look that is based on French and Caribbean influences. The creation of these styles was a direct response to the climatic and environmental conditions similar to Central Florida. The basic characteristics of this type of design are:

- Deep, two story porches that take advantage of cool breezes and create outdoor living space.
- High ceilings with vertical proportions to column bays and wall openings, which create well, lighted, open spaces.
- French doors and full-length windows with tall shutters that can be raised in order to shade open windows.
- First floor raised above the ground in order to allow more air circulation to cool the house.

In combination, these styles provide a stately yet informal style. The structure's height and natural lines would also blend with the forested ecosystems of the Protection Area. A variety of coordinating styles can be integrated into the landscape including cottages, bungalows, and two-storied gallery houses. (Larger houses should be built with a series of elements, such as a main-body and side wings.)

Other forms of suitable vernacular architecture exist. When clustered in the

form of a rural village, these distinct styles will keep the Wekiva River Protection Area’s sense of place. Design guidelines should include the following:

1. Height
2. Bulk
3. Rhythms of facades
4. Proportion of openings (i.e. window to wall relationships)
5. Roof treatment
6. Natural materials, colors, and textures.
7. General architectural character:
a) horizontal or vertical emphasis
b) scale
c) Stylistic features and themes (e.g. porches, colonnades, pediments, cupolas, corines,
detail, and ornament
8. Relation to street
9. Except where there are physical constraints, garages should be located on the rear of the
lot.
10. Native landscaping

CLUSTER DEVELOPMENT INTO A GREENWAY-ORIENTED COMMUNITY IN THE FORM OF A RURAL VILLAGE

In the New England Village we find an early empirical anticipation of the pattern for a dynamically balanced environment, urban and rural, that we must eventually create in terms of our culture, for a whole civilization. -Lewis Mumford, 1961

The village is a traditional American form, a sustainable blend of humans and Nature. Until 1900, the village green and the town square were the defining points of civic life for a majority of Americans. The image of the village and small town is common to us all, and their vernacular forms still have wide appeal. Mt. Dora and Winter Park exemplify the tradition of citizens honoring the civic realm and building places that held their charm and their value.

In the last decade, the revival of traditional town planning has reintroduced us to our urban traditions. From the implementation of zoning and design codes to protect the countryside in Lancaster County, Pennsylvania to the construction of Seaside, Haille Plantation Village, and Celebration, town planners and developers have united to produce a more sustainable form (That Small Town Feeling: Architecture and Community in Florida, 1998). Their model is hardly new, rather it is an imprint of our historical consciousness that Florida’s first planners envisioned as the ideal settlement pattern (Stephenson, Visions of Eden, 1997).

In 1919, John Nolen, America's premier planner, wrote New Ideals in the Planning of Cities, Towns, and Villages. Nolen wanted to direct the flow of suburban population into linked groupings of towns and rural villages separated by nature preserves and the working, rural landscape. Nolen's work has provided the inspiration for many "new urbanist" projects, but outside of Portland, Oregon this traditional view of regionalism has not taken hold. However, given the Wekiva River Protection Area's special standing Nolen's vision could be a model

to cluster development into rural villages while local governments could prioritize natural land acquisition sites to meet the new Florida Forever funding system.

Nolen's work provided the template for the Winter Springs Town Center Plan, which is Central Florida's only planned project to receive state funding to incorporate development into an interconnected system of trails, natural lands, and parks. While this project is out of scale for the Wekiva River Protection Area within Seminole County, the methodology used in this project is easily transferable to the village scale. It was from this premise that Rollins students redesigned a standard one unit per acre suburban development into a conceptual rural village.

Definitions of the village in current use among planners emphasize certain common elements: a compact form, a mix of residential and commercial uses, a well-defined edge, and a pedestrian orientation. A village, as opposed to the smaller hamlet, seems best suited to the Las Bocas site because of its proximity to the Seminole-Wekiva Trail, and the stream of "careless consumers" it will generate.

Trails inevitably spark economic growth, as exemplified by Dunedin’s transformation. In 1990, occupancy rates in this dying town center had dropped below 50 percent, but when the Pinellas Trail opened, hundreds of people found Dunedin an ideal place to stop off. By 1995, the downtown had reached full occupancy, and it has since expanded but at a pedestrian-oriented scale. In Seminole County, the opening of the 3-mile section of the Cross-Seminole Trail hints at a similar transformation. In its first year the trail attracted 140,000 riders, and downtown Oviedo is experiencing the first signs of revitalization from the trail’s presence (Orlando Sentinel, June 5, 1999). Eventually, the connection of the Seminole-Wekiva Trail with the Cross Seminole Trail (and perhaps Orange County's trail system) will add a more sustainable element into local infrastructure. Another model of sustainability, the greenway-oriented community, could be introduced to enhance rural character if it is designed along the lines of the rural village, "the perfect unison of man and nature," Lewis Mumford concluded in The Culture of Cities (1961).

RURAL VILLAGE-CONCEPTUAL MODEL
LAS BOCAS is an 80-acre site located north of Markham Woods road, adjacent to the Cross-Seminole Trail, and directly east of the soccer fields. It is bounded on the west by a potential green corridor.

SITE CHARACTERISTICS

SOILS-AQUIFER RECHARGE
According to the Seminole County Wekiva Special Area Study, the drainage at this site is classified as "poor to moderate" (0-4 inches per year) with a mix of astatula apopka and mineral soils on the flatwoods and in sloughs and depressions (Exhibit 5-2, 5-5).

LAKES
Two lakes are found on the site. One is located on the northern border of the property. This lake fluctuates in depth from wet to dry seasons. On the western edge of the property is another lake, which extends north joining a depressed area in the northwest quadrant. This low-lying area contains moist soil and is inundated during the wet season.

SCRUBBY FLATWOODS / PINE FLATWOODS / WET PRAIRIE

In the northwest corner of the property is a heavily forested area consisting of pine flatwoods and scrubby flatwoods. The site needs extensive burning in order to restore it to its natural habitat. Flatwoods are critical to preservation because these habitats are fairly resistant to exotics except when activities such as bulldozing of roads, disturb the soil making them more susceptible to exotics.

A. SCRUBBY FLATWOODS

Scrubby flatwoods is a transition habitat between scrub and pine flatwoods. This habitat is nearly endemic to the state of Florida. Critical species found in this habitat include gopher tortoises, Florida scrub jay and Florida mouse, all threatened species. Endemic flora found within scrubby flatwoods include scrub oak, scrub palmetto, and pennyroyal. The occurrence of this habitat is rare and remaining lands should be preserved.

B. PINE FLATWOODS

Pine flatwoods is a common habitat found throughout the state of Florida. Characteristic flora in this habitat includes saw palmetto and wire grass with an open canopy of long-leaf pine, slash pine, and pond pine.

C. WET PRAIRIE / EPHEMERAL POND

Wet prairies have the shortest hydroperiods of any marsh in Florida. Wet prairies are included in the category of marshes. Subtropical location, fluctuating water levels, recurring fires, and hard water characterize Marshes. Wet prairies are the most species-rich of Florida’s marshes. Common vegetation includes maidencane, cordgrass, and beakrush.

DEGRADED PASTURES / ORANGE GROVES

A majority of the site is comprised of degraded pastures and abandoned orange groves. A portion of this area is currently growing exotic landscape plants. These areas are upland and are best suited for development due to their loss of ecological integrity. Intensive grazing and agriculture has degraded these lands. Dispersed throughout the site are wildflowers.

SITE DESIGN

Greenway-oriented communities require 40 to 50 percent of buildable land to remain as undivided, permanent open space. This design is achieved by clustering homes, reducing lots sizes, and providing an interconnected system of green spaces including village greens, parks, trails, and natural lands. In the design process the most important step is to identify land for preservation. This land becomes common, public land for all residents; therefore lots are smaller but extra land is gained through open space.

GREENSPACE SYSTEM

PRIMARY CONSERVATION AREAS

The primary conservation areas are any unbuildable lands that include wetlands, floodplains, and steep slopes. Wetlands are the only primary conservation areas found on the site. There are three wetland areas on the site. The two largest are located along the borders of both lakes, the third wetland is located on the site’s northeast corner. These three parcels are deducted from the total parcel acreage and kept natural.

SECONDARY CONSERVATION AREAS

The secondary conservation areas were initially identified by providing a

50-foot green buffer alongside wetland soils classified as "very poorly drained" in the medium-intensity county soil survey of the USDA Natural Resource Conservation Service. All areas identified as primary conservation areas contain an extra 50-foot buffer.

The entire northwest corner of the property is conserved in order to preserve the amenity of open space in the development. This portion of the property has the potential of housing a variety of endemic species. Many of these species are listed in the site characteristics' page.

1. Buffers

The north, east, and southern borders of the property are supplemented with a 25-foot buffer. Since many of the interior homes on the site contain lake/wooded frontage it is necessary to provide natural views for homeowners on the property's border. On-site trees along this buffer should be preserved and a native species-planting program should be enacted for the bare spots along the buffer. The greenbelt will also buffer separate homes from future development along the borders of the property. This buffer could incorporate a trail system that is connected to internal trails and the Cross-Seminole Trail.

Buffers surrounding subdivisions have social, ecological, economic, and environmental advantages. Socially, the buffers provide public places for homebuyers to use as recreation and as natural parks. The buffers also filter stormwater and provide an amenity which enhances property values.

Retention-Village Green

15 percent of the site is marked for retention. The village green located at the center of town serves as a dry retention area. The green should have shade trees along the perimeter with a sidewalk. Adjacent to the green lie smaller lots that would house designed to blend with the village center.

NEIGHBORHOOD GREENS

Each neighborhood in the village is strategically placed less than a two-minute walk from greenspace. A series of linear parks run through the neighborhoods to link open natural areas. This system provides space for passive recreation, potential playgrounds, and a greenbelt connection on the site. The site's southeastern corner mixes open space and retention to buffer the property edge.

D. PARKS

Lake Park

Lake Park is located on the southwest corner of the property. This park is situated on the highest point of the property thus providing the best view on site. The park measures approximately 300 x 200 feet. This park will serve residents and trail users, and could provide a public meeting area. A wildflower-seeding program should be implemented to maintain the on-site wildflowers near the lake. The western border of the lake is a wetland, thereby ensuring its preservation and guaranteeing the scenic view.

Forest Park

Forest Park is located in the northwestern quadrant of the property. This area contains the scrubby flatwoods, pine flatwoods, and wet prairie. If a fire restoration program were enacted in this area it would greatly enhance the native habitat

Las Bocas Park

The Las Bocas Park is located in the northeast quadrant. This linear park measures 350 x 75 feet at its widest and longest points. It serves as a community meeting area for children and residents. The park links the adjoining wetland with the greenspace system.

II. LOCATION OF HOME SITES

Development is clustered on the degraded lands of the central portion of the property. The architectural design of all homes on the property must be of vernacular design. Each home must be unique but at the same time its style must fit with the natural, rural character of the area.

VIEW LOTS

The largest lots, 70 x 100 feet, are located on the western portion of the property and many of them are considered "view lots." View lots are important marketing commodities due to the high demand for views of natural open space. These lots are located near natural areas and are more secluded than other lots. The majority of these lots are located along the buffer areas of the wetlands providing views of forested land. Remaining lots back-up to the border of the property where it is recommended to plant a 25-foot buffer of native vegetation to enhance views.

NEIGHBORHOOD LOTS

The 60 x 100-foot neighborhood lots are located on the eastern portion of the property and the northern mid-section. Most of these homes contain alleys and all of them are less then two minutes walking from the town center and natural areas. The lots located on the eastern side of the town center follow the site’s natural topography.

VILLAGE LOTS

Smaller 40 x 100 foot lots are concentrated near the commercial area of the property. These lots are within walking distance from the village green and from the Seminole-Wekiva Trail. These lots are designed in the style of the rural village found in Haille Plantation in Gainesville, Florida.

STREET / TRAIL ALIGNMENT

STREETS

The streets measure 25 feet in width, with an additional 20 feet allocated for sidewalks, utilities, and street trees. Streets are equipped with sidewalks and/or medians for comfortable pedestrian use. To enhance rural character, roads should be lined with native oaks. On the northern property edge, where the road border conservation areas the trees planted should include maples and cypress, which act as native filters to the adjacent wetland. On-street parallel parking would calm traffic and limit driveway paving.

The road that runs along the village green is only 25 feet in width because the sidewalk and trees are located on the green. Due to the importance of this road it is recommended that the road be bricked, slowing traffic and increasing the aesthetics. The site has two entrances. The main entrance will be off Markham Woods Road and will be centrally located with the town center. This entry point allows visitors to see the linear greenspace running the length of the property. The second entrance is located on the southeastern portion of the property, along an existing road. A 20 x 50-foot green is located at the entrance to provide a focal point, retention area, and traffic-calming device. Bricked areas are recommended at entrances and crosswalks in order to slow traffic and increase aesthetics. Focal points are recommended at major intersections and dead ends to provide destination visuals for both pedestrians and motorists.

ALLEYS

A portion of the homes on the site will have alleys along the back. They will be approximately 15 feet. in width. These alleys will provide rear entrances for the 40 x 100 and 60 x 100 foot lots. The alleys allow garages and cars to be located in the rear to enhance the communal aesthetic.

TRAILS

One of the village's great amenities is the Seminole-Wekiva Trail, which runs along the southern edge of the property. An extension to this trail will run along the edge of the western lake into the preserve and connect to the Seminole-Wekiva Trail near the Village Center. Another local trail could extend to a boardwalk running along the wet prairie.

IV. VILLAGE CENTER

The village center should mix commercial, residential and civic uses in a seamless design that minimizes distinctions between residential and non-residential uses. In contrast to the typical suburban commercial uses, the four 50 x 100 foot lots would serve a "neighborhood support function" and be located adjacent to the Cross Seminole. The commercial uses would support sustainability, orientation to pedestrians, trail-users, and local needs. Central to this design is the effort to replace auto trips and reduce the length of trip travel. Further study should determine a "sustainability index" to determine the benefits of capturing local trips and limiting trip lengths.

Both Rural By Design (1994) and Reinventing the Village (1990) contain model village commercial zoning ordinances. It is recommended that commercial uses be limited to

1. Neighborhood Support—uses that would enhance the quality of neighborhood life and be supported by local residents: day care center, neighborhood market or refreshment center, farmers market produce, and bicycle shop.
2. Specialized Retail—antique store, bookstore, and flower store
3. Civic Uses—environmental education center, branch library.

The village green and commercial lots will work together to form a public meeting
place, an "outdoor living room" for all residents and trail users alike. Businesses must be of low intensity and fit into the architectural fabric. Parking for the commercial lots are located to the west and east of the shops just south of the village lots. The village center would be no more than a five to ten-minute walk from every home in the community. A five-minute walk covers 1400 –1500 feet, and no home in this site design is located more than 1500 feet from the village center.

V. MARKETABILITY

In recent years, the intrinsic value of natural open space has become more apparent in the marketplace. A1995 survey of homebuyers in Sunbelt states revealed that access to open, natural lands and trails was the most desired amenity. Homebuyers also show a preference for homes that look out onto open space, rather than homes where the only view is the neighbor's window. While

homebuyers want their privacy, they also desire options that will provide connection to their neighbors and the surrounding community (Arendt 1996).

A greenway-oriented-community also has economic advantages to conventional developments. A study of Seattle's Burke-Gilman Trail found that homes along within a quarter mile of the trail sold for 6 percent more than other homes of equal size (Greenways: A Guide to Planning, Design, and Development, 1993). A study conducted by the Center for Rural Massachusetts compared the appreciation of homes in a conventional subdivision as compared with a clustered development with 50 percent of the land dedicated as open space. Over a 21-year period, the study found that although these two developments provided very similar housing stock, properties in the open space development increased 12.7 percent more, at an average value of $17,100 (Arendt, 1996).

ANTICIPATED OUTCOMES OF GREENWAY-ORIENTED DEVELOPMENT:

Stimulation of recreational opportunities in the Wekiva River Basin by incorporating greenways, trails and the protection of natural areas into development plans.

Stable and increasing property values due to the marketability of environmentally sensitive neighborhoods and proximity to natural areas and trails.

Promotion of a new spirit of cooperation between local environmental groups and developers in the form of ecologically sound planning and design options, subsequently decreasing the impact of development on the biological and physical attributes of the Wekiva River Protection Area.

Cooperation between those parties in the initial planning stages of area projects would lessen the occurrence of lawsuits and/or taxpayer-funded restoration projects.

BESIDES ECOLOGICAL MODELING ANTICIPATED AREAS OF ADDITIONAL RESEARCH:

Studies to analyze property values, and tax revenues for greenway-oriented communities.

Studies to create and analyze sustainability indicators for greenway-oriented communities.

Additional points will be addressed during the charrette.

Visioning Charrette
June 18, 1999
10:00am - 2:00pm

Introduction - Bruce Stephenson

First Question Answered by Participants: What is your vision of the Wekiva Protection Area? Who is the visionary that inspired you?

Responses

A wilderness like area with clean water and a place to escape the madness.

An area with a commitment to monitor the ecosystems, long term environmental monitoring.

An area planned with some access to the river, combined with residential development without tearing down trees and limited development of commercial

buildings.
An area where development would be limited to suburban nature, should have minimal impacts on the environment, and protect the river as well as balance natural resources.
One piece, restored and enhanced and preserved area. Place of calm
Environment truly integrates indicators so that correct judgement is used.
Need to preserve habitats, and don't impact the black bears. Need to have native plant species.
Natural area with real wilderness …solitude with creatures that exist. Limited rural character within residential neighborhoods.
There is a very delicate balance between urban development and suburban neighborhoods. Do not pollute or erode the natural area. Urban development should be focused on high ground in very sensitive ways.
Unspoiled portion of Wekiva River. Wants to be a part of unspoiled nature.
From Key West. Learned about nature first-hand. Wekiva area has black bears that need to be preserved. Implement rules to balance practicality. Florida as it was, need to keep it that way.
Spent 25 years in Wekiva River basin doing research, etc. Vision for Wekiva is in the form of a question…Have all of major linkages between natural basins, protection needs, and communities needs been sufficiently addressed of Basin for future environmental aspects?
See area stay with limited amount of development. Protect it.
Have inter-agency coordination to work together.
Area should remain rural development with a lot of natural area.
Greenspace and open area to provide for wildlife corridors and appreciate practical issues for land use …act now.
Wekiva needs to remain a place where wild things remain wild. Support visions of Wekiva River Protection Act. Maintain rural character that serves to protect area. Feels we are losing battle to protect environment.
Dream - Bridge over river 10 miles long to protect bears. Vision - corridors are good for protecting environment.
See urban area transitioned into Wekiva area without damage to river. Clean water, abundant wildlife and beautiful trees.
Create a unique area to protect sensitive area, overall approach to protect wildlife.
From north FL, here to learn from everyone. Done off-road biking in Wekiva.
Wants to preserve what is existing and have least amount of impact. Need sensible growth.
Spent millions of dollars to dredge Wekiva River. People are more important than Wekiva.

Wants to turn things around about how we think about the Wekiva. Have everyone turn it back to God to let it run itself. Shouldn't turn it up for profit.
Keep human impact minimal.
Here to learn.
Here to observe.

Wekiva Presentation - Bruce Stephenson

Lunch

CHARRETTE -Michael Design Associates

Introduction - Forest Michael and Jennifer Gaines

The Second Question Answered by Participants: What type of development do you envision for the Wekiva Protection Area? What is your vision for ecological

preservation in the Wekiva Protection Area?

Responses

Limited development in the Protection Area, cluster type neo-traditional.

Keeping development in clearly defined areas, previously determined to be somewhat unsuitable for wildlife. Leave remaining area for ecological preservation.

Connected town centers – connected by greenways – all have day care centers, libraries small, architecturally pleasing stores, maybe a restaurant, in the center with clustered homes surrounding the center. Overall large-scale densities should be honored.

Compact neo-traditional within a matrix of environmental resources. Vast large areas of all representative communities with long term ecological principles. Habitat for upland species.

Development of key environmental indicators that are used in the development of design standards (i.e. key indicator species identification and critical habitat areas for designation and incorporation of habitat corridors with the built environment.

A true rural development pattern (which is not defined in comprehensive plan) that incorporates environmental values and constraints.

Limited development. Rural pattern. Preserve the natural ecology, level of biodiversity increased or restored from the present day.

Cluster/high density development "village concepts". Preserve it.

Rural residential development on very large lots or small clustered residential areas surrounded by natural areas. That ecological protection focuses on the connectivity of the environmental systems. That ecologically sensitive areas important to the protection of the Wekiva River and important to the protection of the Wekiva River and plant and animal species be preserved.

A limited development of cluster areas within wildlife corridors. The main/only focus being preservation of wildlife habitat.

Retain rural character and transition into appropriate densities while utilizing LTER for ecology and biodiversity. Model the ecological long term monitoring after the Phoenix/NSF LTER study and plan from it.

Clustered/discrete development area with rural vernacular for design controls.

No density increases (net) over current numbers. Don’t’ forget affordable housing – this can’t become a country club environmental preserve. Ecological considerations have to drive development location density intensity (a) fire ecology based (b) black bear habitat needs/roadway crossovers. Less than 1 unit per acre with open space. Development impact fees for entire basin area (Seminole and Lake Counties) including infrastructure and land acquisition.

Cluster developments encouraging connected greenways for wildlife to migrate and survive.

Development should be compact multiuse (i.e. residential/commercial with greenways and trail linking residential, schools commercial and existing communities) while protecting and preserving the natural environment.

Ecological preservation should be the first priority above and beyond any future manmade growth development. Replacement of exotic species with native plants is also of high priority.

Rural with no more beltways/expressways north of 441 and west of I-4.

A clustering within subdivisions that provides protection of environmentally sensitive area while not increasing total aggregate density. Same as above with additional regulations regarding preservation of trees and other natural features.

Selective areas of clustered development and maintenance of undisturbed open space in the most critical and environmentally sensitive areas.

Rural 1 unit per 5 – 20 acres. Follow the hydrological cycle (aquifer spring,

runoff rain, river) the sources are often out of sight/ out of mind. Recharge. The road wash becomes water in a ditch which joins spring water and becomes the river. If we treated water like an indicator species, we would take better care of it all.
Rural low density residential (less than 1unit /acre in the aggregate), clustered with greenway corridors and open space with a comprehensive development plan that integrates all individual parcels. Purchase all significant habitat for listed species, wildlife corridors, water quality protection (recharge areas). Significant land acquisitions!
Planned development, which focuses the community on spatial and natural resource protection with designed user-incentives for stewardship.
Preservation that adequately accommodates the Basins protection needs within a region context for undisturbed habitat buffer with spatial buffers.

THE ABOVE INFORMATION WAS SUMMARIZED AND PLACED INTO THE FOLLOWING CATEGORIES:

INTEGRATED RURAL DEVELOPMENT PATERN

Clustering
Neo-traditional compact
Village not strip
Connected town centers
Town centers connections to natural areas
Preserve natural mix - human needs in sustainability
Affordable housing
Design control
Integrated clusters
Preserve the rural character

TOOLS

Land acquisition
User incentives for stewardship
One unit per acre
One unit per 20 acres
Impact fees for infrastructure
Incentives for design and habitat protection
Minimize development

RURAL TRANSITIONAL LANDSCAPE

Rural - no beltways
Rural = environmental constraints
River protection habitat
Rural development patterns
Compact development
Providing linkages between greenways and trails
Rural ecology
Maintain undisturbed open space
Develop around wildlife through corridors
Model ecology

COMPREHENSIVE ECOSYSTEM MANAGEMENT

Black bear protection
Ecological restoration top priority
Key species identification
Clearly identified environmental areas
Wildlife migration
Wildlife corridors

NATURAL LANDSCAPE

Use key indicator species
Monitor
Develop key habitat indicators
Increase biodiversity
Focus on natural ecosystems
Water quality protection

The Responses were Quickly Categorized on the Wall

The Third Question Answered by Participants:
Prioritize your criteria to establish a sustainable development pattern within the Wekiva Protection Area.

After discussion, the question was changed to: Prioritize criteria to ensure that the development pattern is consistent with maintaining ecological integrity within the Wekiva Protection Area?
Responses
  Consider provisions of the Wekiva River Protection Act (maint. Rural char.; protect listed species habitat and native vegetation)
Maintain rural character (consider existing patterns and improve cluster; <1 unit per acre in Seminole Co., cluster of integrated village concept; 1 unit per 20/40 acres Lake County; greenspace; integrate individual parcels)
Utilize land acquisition as a tool in establishing locations of potential development sites. Involve landowners and developers in conservation/development process.
  Develop and maintain an adequate information base of the WPA natural systems and functions.
Provide a vehicle for dispersal of information.
Formalize incentive for long term preservation
  Land use restrictions which would require clustered multiuse development in harmony with the natural systems while providing linkages with existing development and habitat. Protect water quality by using all new technology available to preserve the natural environment.
  Determine ecological boundaries of sustainability (as well as a monitoring program) to ensure that development within the Wekiva River Protection will at some point reach a build-out stage.
Or - Establish a point in which no further development can occur in the protection area.
  Ensuring comprehensive ecosystem management of the Wekiva Protection Area by utilizing a cluster village development pattern while retaining the rural transitional landscape.
  Clearly defined urban edge- no transitional zones = plan The villages as towns before the invention of the automobile.
  Establish keystone species/habitat needs.
Identify most critical habitat areas – coordinate local/state land acquisition programs.
Establish protection buffers around habitat areas.
Define/locate rural transition landscapes through open space and greenway/wildlife corridors and est. appropriate impact fees.

Locate one or more rural villages/self-contained mix of uses
Building moratorium
Develop clear definitions that will close loopholes
Buyout of grand-fathered land deals/densities
Regional hydrological and biological studies
Create 100-year regional development plan using studies, public input and old Wekiva Protection Act.
Get intergovernmental commitment on definition of "rural"
The ecological integrity needs to be evaluated. Steps 1.) Ecosystem assessment of Protection Area. 2.) Evaluate environmental policy and collectively decide what needs to be done.
3.) Using patch modeling and ground-truthed data determine transition areas high quality, 4.) Develop consistent comp. Plans that address rural village incentives and increased protection.
Development of environmental indicators based on current and previous assessment of the basin, to establish critical habitat areas to be incorporated into proposed developments.
Develop a more specific definition of "rural character" as it relates to the intensity of development to be allowed within the WRPA.
Review and adjust design standards to assure that these standards implement the criteria for protecting rural/ecological integrity of WRPA.
Protect existing conservation lands.
Protect the black bear habitat.
Corridors that connect all villages.
Rural landscapes with defined densities and landscape controls – limited impervious surfaces.
Incentives include permitting, tax incentives, impacts fees to deter.
Rural villages to conform with large scale plan.
Acquire more sensitive lands within the WPA to preserve an integrated system of wildlife corridors and preserve habitat.
Limit intensity of development particularly adjacent with sensitive areas to minimize impact and preserve rural character of residential development.
Limit traffic flow and design them around areas and design traffic patterns around natural areas rather than through them.
Create enforceable design standards acquiring presentation of trees and other natural features.
Compare data (valid scientific data) of the influences on the WPA.
Land acquisition/undisturbed open space
Clustered development.
Determine what areas need to be preserved.
Determine which areas could have development.
Establish appropriate densities for the land that can be developed
Determine development standards.
Can’t establish standards to do something without clearly defining what want done (ecological integrity)
Establish a hierarchy of greenways linking the WPA (riparian corridors – wildlife corridors – trails). Tie this into acquisition strategy for local regional state funds.

CLOSING - Bruce Stephenson

Jeff Jones, ECFRPC

Wants to understand the pressures that occur. ECRPC received letters of qualifications from 11 teams and will be selecting one team this coming week.

The goal of this RFQ/Project is to end up with a model that every member in all agencies can use at your desk of what the primary macro changes, etc. Phasing provides for allocation of the model. Will look at several different ways to develop, etc. Natural resource values.
To develop a metropolitan consensus for the Wekiva River Protection Area.

THE CLOSING QUESTION:
Will the Wekiva GeoPark be a Central Park or a wildlife preserve?

Wekiva 2020 Visioning Charrette
ROLLINS COLLEGE
DATE: June 18, 1999

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