City of Apopka

Comprehensive Plan 2030

Conservation Element

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CONSERVATION ELEMENT

TABLE OF CONTENTS

TABLES

FIGURES

MAPS

CONSERVATION ELEMENT

INTRODUCTION

The Conservation Element is designed to identify environmentally sensitive areas, areas which can support little or no urban development, and to provide development guidelines to protect these areas.

This element was prepared in accordance with the Local Government Comprehensive Planning and Land Development Regulation Act, Chapter 163, Florida Statutes, and Rule 9J-5, F.A.C. The natural resources which are described and analyzed include air, groundwater, surface water, wetland communities, flood plains and endangered wildlife and plants. There are no known fisheries in the City and Apopka is an inland City; therefore, fisheries and marine habitats are not discussed in this element. The data collection for this element was based on the review of existing documentation.

INVENTORY OF NATURAL RESOURCES

SURFACE WATER

There are two major drainage basins in Apopka. These basins are generally on either side of US 441, which runs along a high sandy ridge between the Oklawaha Drainage Basin and the Wekiva River Drainage Basin. Each contains several sub-basins which are connected during floods. In addition, numerous local, landlocked drainage basins exist that are not connected by surface flow with any of the major basins. Each local basin contains its own small lake, depression or sink-hole. Many boundaries between local basins have been altered by development; however, most basins have retained their identity. The location of the drainage basins may be seen in the Stormwater Management Sub-Element of the Infrastructure Element.

There are approximately 72 small lakes located completely or partially within the City limits of Apopka. These lakes cover a surface area of approximately 700 acres and are depressional and primarily fed by surface water runoff. The lakes within the City are relatively small and shallow. Surface water quality is regulated by FDEP, Rule 17-3 FAC. If the Florida Department of Environmental Protection (FDEP), St. Johns River Water Management District (SJRWMD) or the Orange County Environmental Protection Department should determine surface water quality within Apopka to be below applicable standards, the City cooperates with these agencies to develop management and restoration plans.

GROUNDWATER

The Floridan aquifer is the primary source of potable water for

Apopka. Principally, the water in the aquifer is derived from rainfall, which averages 48.88 inches annually. This aquifer has a thickness of up to 2,000 feet in some areas and occurs 100 to 200 feet below the land surface. A secondary surficial aquifer is also present at depths of 60 to 150 feet below the land surface with the primary function of storing water before its infiltration into the Floridan aquifer.

Groundwater recharge occurs as rain percolates into the ground and through the semi-permeable limestone confining beds. Soils, slope, and land use all affect the degree of aquifer recharge. Course, sandy soils promote percolation of water to the aquifer, while clay-like soils inhibit percolation. The soils in the Apopka area are primarily sandy and well drained. Land uses that allow for large amounts of impervious surfaces impede the percolation of water to the aquifer. The Aquifer Recharge Sub-Element further discusses recharge conditions within the City.

WETLANDS

There are approximately 500 acres of wetlands within the City of Apopka (see **Map 5-1)**. These wetlands are isolated and are scattered throughout the City. The SJRWMD has regulatory authority over isolated wetlands. SJRWMD designates wetlands through the use of three criteria: Hydrologic conditions, a vegetative index and a soil index. Hydrological conditions are the most accurate indicators of wetland areas; however, this information is usually not readily available. The Soil Conservation Service has designated certain soils to be hydric. Hydric soils support wetland vegetation. The SJRWMD has compiled a vegetative index that includes plant species indicative of wetland habitats.

The wetland system in the northwest area of the City includes Lake Merril, Lake Wolf and Lake Cora. The remaining wetlands and the surrounding uplands have remained in their natural state. In this northwest area the wetland has been identified as a freshwater marsh and is adjacent to a variety of upland communities including grasslands, scrub and hardwood forests.

The wetlands in the southwest portion of the City are associated with Marshall Lake, Upper and Lower Lake Doe and Lake Witherington. There is very little development located in the area of these wetlands; however, with the completion of the SR 429 Western Expressway development pressures in this area are increasing. The larger southern portion of this wetland has undisturbed uplands to both the east and west. This wetland system would make an excellent managed conservation area, as it offers both marsh and forested wetland varieties and is adjoined by grass and scrubland type uplands as well as a hardwood forest.

COMMERCIALLY VALUABLE MINERALS

Mining for peat and sand are the only two commercially valuable minerals found within the City of Apopka. There is one active peat mine operating within the City at the present time.

FLOODPLAINS

Flood plains may be divided into floodways and special flood hazard areas. The floodway portion of the floodplain is the most critical area, as this cross-sectional area carries the flood flows. Undisturbed floodplains are a valuable ecological resource and can provide a rich diversity of vegetation and wildlife. They also serve an important function in filtering stormwater runoff and aid in aquifer recharge. When natural flood plains are maintained and managed as parks or open space, they provide recreational and wildlife habitat preservation opportunities. Apopka includes measures within its Land Development Code delineating criteria for the preservation of the natural floodplain.

Flood-prone areas are shown on **Map 5-2**. The City instituted a floodplain management program and became eligible to participate in the National Flood Insurance Program (NFIP) Community Rating System (CRS) in 1987. Under this program, residents in the City purchase flood insurance through the federal government and the City is eligible for federal disaster assistance. As participants in the NFIP CRS, the City is required to enforce 100-year floodplain elevations for new developments in identified special flood hazard areas. Should development be permitted in special flood hazard areas, regulations require compensating stormwater storage and finished floor elevations at least one foot above flood elevation.

SOILS

Soils provide several resource functions including drainage, stormwater filtration, water storage, aquifer recharge, and ground stabilization. For planning purposes, soil conditions refer to those characteristics of the land having special relevance and importance to urban development. The predominant soils in Apopka and its surrounding planning area are predominantly of the Lakeland-Blanton association, characterized by nearly level to strongly sloped, well drained to somewhat excessively drained sandy soils interspersed with many lakes and ponds. Small areas of more poorly drained or hydric soils are found in the flat areas scattered throughout Apopka, usually bordering lakes and ponds. There is little surface drainage pattern in the Lakeland-Blanton association since most drainage is through the porous soil.

Although Lakeland-Blanton soils association is predominant, there are four additional categories of soils within the area that impact future land use potential. These categories include soils suitable for urban development, soils with slope of eight percent or

greater, soils with high water table and soils limitations due to flood hazard and muck deposits. Soils with high water table and muck deposits often are associated with wetland vegetation and animal species, which are protected through various regulatory measures. Soils with steep slopes seldom prevent development as engineering practices can alleviate this problem. **Map 5-3** depicts the soil types in the City.

VEGETATIVE AND WILDLIFE COMMUNITIES

Native vegetation that exists on less urban or undeveloped lands within Apopka can be classified into two broad categories - uplands and wetlands. The two categories are further classified into several sub-categories. The uplands can be classified into forested uplands and non-forested uplands, wetlands can be classified into mixed wetland hardwoods, cypress, wetland forested mixed, freshwater marshes, wet prairies and emergent aquatic vegetation.

There is no data currently available on the location of specific plant and animal species within the City of Apopka. The City has not conducted a study to determine whether species that are endangered, threatened, rare or species of special concern are located within its limits. Coordination with the Florida Fish and Wildlife Conservation Commission (FFWCC), SJRWMD and the Florida Department of Forestry are required to determine precise data.

The SJRWMD 2004 Land Cover/Land Use classification identifies generalized locations of the vegetative communities mentioned above, some of which are located within the City of Apopka. The SJRWMD derived this classification system from the Florida Land Use and Cover Classification System (FLUCCS). **Map 5-4** shows the general ranges of these communities. The vegetative communities existing in the City of Apopka and are described below.

UPLANDS COMMUNITIES

Apopka has a wide variety of undisturbed uplands. These uplands serve as wildlife habitats and may act as buffers surrounding wetlands. They may also provide habitats for endangered or threatened species of animals and plants. Upland communities that provide these wetland buffers and habitats for dwindling species are more susceptible to development pressures than wetlands, as they are not given the special protection given to wetlands by state and federal agencies.

Following is an inventory of the upland communities found in Apopka as identified in the Florida Natural Areas Inventory.

Pine Flatwood - These forested uplands are dominated by Longleaf or Slash Pine and generally occurs on nearly level land. During the rainy season (June - September) water may be found on the surface.

The soils tend to be fairly dry at other times. This community is recognized by the scattering of pines with an understory of grasses and saw palmetto, often surrounding small isolated wetlands. Fire acts as a controlling mechanism in these areas and, without it, these flatwoods would progress to hardwood communities. Tree species found in this area include longleaf pine and slash pines. Other vegetation includes saw palmetto, wax myrtle, ground blueberry, gallberry, shining sumac, deer tongue, creeping beggarweed, gay feather, low particular topsided indiangrass, chakly bluestem and creeping bluestem. Wildlife species found in this community include gray squirrel, cotton rat, cottontail rabbit, raccoon, Sherman's fox squirrel, brown headed nuthatch, yellow rat snake, pygmy rattle snake, eastern diamondback rattlesnake, black racer and red bellied woodpecker.

Sand Pine Scrub - This community occurs in excessively well-drained sands with a land contour that is level to strongly sloping. This is a fire-based community and tends to burn every 20 to 40 years. Many endangered species live in this warm, dry community including the Florida scrub jay, sand skink and Florida mouse. Trees found in this area include sand pines with an understory of myrtle oak, chapman oak and sand live oak. Other vegetation includes dwarf huckleberry, gopher apple, prickly pear, grassleaf goldmaster, deermoss, yellow indiangrass and low panicum. Wildlife species found in this community include Florida scrub jay, Florida mouse, gopher tortoise, fox squirrels, pocket gopher, black racer, deer, sand skink and Bachman's sparrow.

Mesic Hardwood - This habitat supports a variety of vegetation and animal species and is dominated by a crown closure of upland hardwood species. The habitat occurs in a variety of conditions from strongly sloping to completely level. Trees found in this community include laurel oak, live oak, red maple, red bay, flowering dogwood, water oak, magnolia, sweetbay and sweetgum. Other vegetation includes American beautyberry, wax myrtle, saw palmetto, low panicum, common greenbriar, blackberry and maidencane. Wildlife species typically found in this community include southern flying squirrel, spadefoot toad, raccoons, opossums, great crested fly catcher, skunks, hognose snake, eastern diamondback rattlesnake, bobcats, deer and foxes.

Grassland/Shrubland - These communities consist of prairie grasses, which occur along the margins of wetland zones and often act as transitional zones between wetlands and uplands. Typical vegetation found in these uplands includes sedges, wax myrtle and gallberry. Wildlife found in this community includes cotton rat, cottontail rabbit, redtailed hawk, yellow rat snake, Bachman's sparrow and the Florida mouse.

WETLANDS COMMUNITIES

Wetlands provide a habitat for many varieties of plants and animals

including several threatened and endangered species. Wetlands also aid in the protection of water quality. Pollutants in stormwater are often washed into wetlands, which can trap nutrients before the water is discharged into lakes and streams. Wetlands store water during floods and then slowly release it during dry periods. The vegetation in wetlands can also help prevent erosion along surface water shorelines. Wetlands and the wildlife habitats they provide are also of aesthetic value to the City and add to its quality of life. . The description of each, including dominant species is included in **Table 5-1**.

TABLE 5-1: WETLAND COMMUNITIES

COMMUNITY	CHARACTER	VEGETATION	WILDLIFE
Pond Pine	Crown closure of Pine trees	Pond Pine Slash Pine Palmetto	Pinewood Tree Frog, Red Shouldered Hawk, raccoon, opossum, deer
Freshwater Hardwood Swamp	Forested Wetland	Red Maple, Water Hickory Tupelo, Sweet Gums and Bays, Wax Myrtle, Sawgrass	American Alligator, Striped Mud Turtle, Florida Black Bear, Great Egret, Red Tailed hawk
Bayheads	Forested Wetland	Sweethead Loblolly Bays, Pond Cypress, Pines, Wax Myrtle, Dahoon	American Alligator, Florida Brown Snake, King Snake, armadillo, raccoon, Florida Black Bear, Red Shouldered Hawk
Freshwater	Marshes with sedges and rushes	Sawgrass, Cattail Waterlillies Flat Sedge, Wood Duck, Marsh Hawk Water Hyacinth	Frogs, alligator, turtles, Florida Black Bear, bobcat,
Mixed Wetland Wetlands and Bayheads	Conifer/ Hardwood Freshwater Hardwood Forest	Pond Pine, Myrtle	See Pond Pine, Maple, Bays,
*Cabbage Palm	Smaller wetlands near lakes	Scattered Pines Cabbage Palms, Palmetto and Grasses (herbaceous plants)	
*Cypress	Inundated wetlands or a forested Border along creeks and lakes or occur in depressions as circular domes or linear srands	Dominated by either bald cypress or pond cypress	
*Wet Prairie	Soil saturated during rainy season	Open grasses, sedges Flatwoods or Hammocks	Many wildlife species
*Freshwater Marsh	Lake Apopka Area	Grasses, sedges and rushes (herbaceous plants)	

SOURCE: Seminole County, Florida, Wetland Field Guide, June 17, 1986
Florida Division of State Planning, The Florida Land Use and Cover Classification System: A Technical Report, April 1976
*SJRWMD – GIS Data Download Table, Land Use/Land Cover, 2004

ENDANGERED AND THREATENED SPECIES AND SPECIES OF SPECIAL CONCERN

The City has a number of undisturbed uplands and wetlands which are suitable for listed species of flora and fauna; however, the City has not conducted a study to determine whether listed species are located within its limits. Coordination with the Florida Fish and Wildlife Conservation Commission (FFWCC), SJRWMD and the Florida Department of Forestry are required to determine precise data. A listing of endangered or threatened species and species of special concern having potential habitats in Apopka is provided in **Table 5-2**.

TABLE 5-2: LISTED SPECIES

Common Name	Species	Habitat	USFWS	FGFWFC
INVERTEBRATES				
Jumping Spider	Phidippus xerus	Sand Pine Scrub		
McCrone's burrowing wolf spider	Geolycosa xera	Sand Pine Scrub		
Red Widow Spider	Latrodechus bishopi	Sand Pine Scrub		
Scarab beetle (Horn)	Aphodius aegrotus	Sand Pine		
Scarab beetle (Haldeman)	Aphodius laevigatus	Sand Pine		
Scarab beetle (Linell)	Diplotaxis rufa	Unknown		
Scarab beetle (LeConte)	Hypotrichia spissipes	Deep Sand		
Scarab beetle (Howden)	Peltotrupes profundus	Deep Sand		
AMPHIBIANS				
Florida Gopher Frog	Rana areolia aesopus	Sand Pine Scrub	4R2	SSC
Striped Newt	Notophthalmus perstriatus	Pine Flatwoods		
BIRDS				
Audubon's Crested Caracara	Polyborus plancus audubonii	Prairie	T	T
Bachman's Sparrow	Aimophila aestivalis	Open Pinelands	UR2	
Cooper's Hawk	Accipiter cooperii	Mesic Hardwood Hammock		
Florida Scrubjay	Aphelocoma coeurlescens	Sand Pine Scrub	T	T
Glossy Ibis	Plegadis falcinellus	Freshwater Marsh		
Great Egret	Casmerodius	Various Wetlands		

Common Name	Species	Habitat	USFWS	FGFWFC
	albus			
Least Bittern	Ixobrychus exilis	Freshwater Marsh		
Limpkin	Aramus guarauha	Various Wetlands		SSC
Little Blue Heron	Egretta caerufea	Various Wetlands		SSC
Louisiana Heron	Egretta tricolor	Estuarion		SSC
Merlin	Falco columbarius	Various Wetlands		
Night Heron, Black-crowned	Nycticorax nycticorax	Shallow Water		
Night Heron, Yellow-crowned	Nycticorax violaceus	Live Oak, Pine Groves		
Ospray	Pandion haliaetus	Hardwood Swamp		
Sandhill Crane	Grus canadensis	Prairie		T
Short Tail Hawk	Buteo brachyious	Ripanian Hardwood/ Prairie		
Snail Kite	Rostrhamus sociabilis	Freshwater March	E	E
Snowy Egret	Egretta thula	Various Wetlands		SSC
Southeastern American Kestrel	Falco sparverius paulus	Pine Flatwoods	UR2	T
Swallow-tailed Kite	Elanoides forficatus	Hardwood Swamp	UR5	
White Ibis	Exdocimus albus	Freshwater Marsh		
Wood Stork	Mycteria americana	Freshwater Marsh	E	E
Woodpecker, Hairy	Picoides villosus	Various		
Woodpecker, Ivory Billed	Campephilus principalis	Hardwood Forest	E	E
Woodpecker, Red Cockaded	Picoides borealis	Pinelands, Mature	E	T
MAMMALS				
Big Brown Bat	Eptesicus fuscus	Various		
Florida Black Bear	Ursus americanus Ursus floridanus	Swampland	UR2	T
Florida Weasel	Mustela frenate peninsulae	Various	UR2	
Florida Mouse	Peromyscus floridanus	Sand Pine Scrub, Flatwoods	UR2	SSC

Common Name	Species	Habitat	USFWS	FGFWFC
Hoary Bat	Lasiurus cinereus	Forest		
Roundtailed Muskrat	Neofiber alleni	Marshland	UR2	
Sherman's Fox Squirrel	Sciurus niger shermani	Sandhill Pines	UR2	SSC
Southeastern Big-eared Bat	Plecotus rafinesquii	Forest	UR2	
Southeastern Shrew	Sorex longirostris long.	Swamp Forest		
REPTILES				
American Alligator	Alligator mississippiensis	Various Wetlands	T	SSC
Eastern Indigo Snake	Pryhrarchon corais coupen	Pine Flatwoods/Mesic Hammocks	T	T
Florida Pine Snake	Pituophis melanoleucus mugitis	Scrub, Sand Pine	UR2	SSC
Gopher Tortoise	Gopherus polyphemus	Sand Pine Scrub	UR2	SSC
Mole Snake	Lampropeltis calligaster	Pine Flatwoods		
Short-tailed Snake	Stilosoma extenuatum	Scrub, Sand Pine	UR2	T
PLANTS				
Butterfly Pea	Clitoria fragrans	Sandy Scrub	UR2	
Curtis Milkweed	Asclepias curtissii	Sandy Scrub		T
Double Spleenwort	Asplenium plenum	Wet Pinelands	UR2	T
Dwarf Redbay, Redbay Persea	Persea borbonia var. humilis	Sand Pine Scrub	UR5	
Florida Bonamia	Bonamia grandiflora	Sandy Scrub	T	E
Florida Jointtail	Coelorachis tubersubsia	Marshes	UR2	E
Florida Bonamia	Bonamia grandflora	Sandy Scrub	T	E
Florida Willow	Salix floridana	Hardwood Swamp	UR2	T
Foxglove, Carter's Large Purple	Agalinis pupurea var. cart.	Moist Pineland	UR2	
Foxglove, Narrow-leaved	Agalinis stenophylla	Pinelands	UR2	

False				
Spoon-flower	Peltandra sagittifolia	Wetlands		
Water Sundew	Drosera intermedia	Bog/Stream		T

SOURCE: Guide to Listed Species in the East Central Florida Region - East Central Florida Regional Planning Council Special Projects Section, by Michael J. Gillbrook and Elizabeth Gisondi, November 1989.

HAZARDOUS WASTE

Hazardous wastes are corrosive, toxic, flammable, or reactive substances that may harm public health and the environment. There are no known commercial hazardous waste generators within the City of Apopka. For industrial operations located in Orange County, the FDEP keeps a listing of all hazardous materials, amounts, storage methods and disposal methods for small industrial operations within the county.

There are no hazardous waste disposal facilities in the City or in Orange County. Household hazardous waste may be dropped off by county residents at the Orange County landfill. The county also provides collection of household hazardous wastes at community pick-up stations four times a year. After the waste is dropped off at the landfill, a private contractor separates out recyclables. The remaining hazardous waste is then transported to an out-of-state waste disposal facility.

AIR QUALITY

While there is no specific data available relating to air quality in the City of Apopka, the air quality in the Orlando area is considered good. A description of the Air Quality Index is shown in **Figure 5-1**. The Air Quality Index monitoring report for Orlando from 2000-2006 is listed in **Table 5-3**.

TABLE 5-3: AIR QUALITY INDEX, ORLANDO 2000-2006

AQI Level	Year and Number of Days						
	2000	2001	2002	2003	2004	2005	2006
Good (0-50)	252	283	300	309	308	289	293
Moderate (51-100)	111	79	64	56	58	70	71
Unhealthy for Sensitive Groups (101-150)	3	3	1	0	0	6	1

Source: Air Monitoring Report 2006, Department of Environmental Protection, Division of Air Resource Management, Apopka Community Development Department, 2009

FIGURE 5-1: AIR QUALITY INDEX

Air Quality	Air Quality Index (AQI) AQI=100 corresponds to EPA's air quality standard	What does it mean?
Good	0 to 50	No health impacts are expected when air quality is in this range.
Moderate	51 to 100	Unusually sensitive people should consider limiting prolonged outdoor exertion.
Unhealthy for Sensitive Groups	101 to 150	Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
Unhealthy	151 to 200	Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion; everyone else, especially children should limit prolonged outdoor exertion.
Very Unhealthy	201 to 300	Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children should limit prolonged outdoor exertion.

Source: Florida Department of Environmental Protection, Air Quality Index, "A Guide to Air Quality and Your Health," August 1993

ANALYSIS OF NATURAL RESOURCES

This section will analyze the condition of natural resources in the City and how the management of these resources relates to the sustainability or growth of the community.

SURFACE WATER

Specific data on surface water quality is not available for lakes within Apopka. However, it is known that pesticide use, stormwater runoff and siltation due to soil erosion contribute to the degradation of the City's surface waters. Sources of surface water pollution are divided into two categories and are described as follows:

Point Source Discharges

Point sources generally have a human-made discharge point such as a pipe or channel and are discharged into water bodies at discrete points. A point source permitting program has been implemented for domestic and industrial wastewater facilities that discharge either to surface or ground water. The FDEP maintains a listing of these permitted point source pollution discharges to surface waters. This list allows maintenance of a fairly complete inventory of all surface water pollution sources in and around the City of Apopka.

Non-point Source Discharges

Non-point pollution is generally associated with run-off water from the surface, which carries with it sediment, organic material, nutrients and toxins into receiving waters. Non-point source pollution is difficult to monitor because of the diffuse and intermittent nature of discharges. The fact that most non-point pollution occurs during the first flush of rainfall following a storm event adds to the difficulty of non-point source monitoring. The non-point source discharges in the City of Apopka are from both urban and rural/agricultural land uses.

Apopka is known as the "Indoor Foliage Capital of the World". There are hundreds of nurseries in the Apopka area. It is a vital part of the Orange County economy and of the City of Apopka as well, with 15 nurseries operating within its municipal boundaries. A decrease in the number of foliage operations has occurred due to development; however, the remaining businesses may pose a problem if runoff from their use of chemical fertilizers, fungicides and pesticides enters the areas surface waters. To date, there has been no indication that the permitted application rates have caused any surface water pollution problems. Nonetheless, because the potential is present, the City will continue to cooperate with the Florida Department of Agriculture and Consumer Services, the FDEP,

the SJRWMD, and other pertinent agencies to monitor surface and groundwater conditions near these foliage operations.

Soil erosion in the City is not considered a problem although forms of wind and water erosion do occur throughout the area under severe storm occurrences. Erosion is evident in the agricultural land near the southwest corner of the City; however, the St. John's River Water Management District (SJRWMD) has formed agreements with local farmers for stormwater management and soil erosion control. Citrus growers in the area have begun to plant grass between rows of trees, which has decreased the incidence of both wind and water erosion.

The most serious erosion problem occurs with unprotected soils on construction sites. Because land about to be developed is usually stripped of all vegetation, the property becomes a target for the forces of wind and water. This can be alleviated through more sensitive land development measures including the required retention of natural vegetation.

Surface Water Management Programs

Lake Apopka SWIM Plan. The Lake Apopka Surface Water Improvement and Management (SWIM) Plan, as coordinated by the SJRWMD, has completed construction of the first phase of a marsh flow-way project that will filter suspended solids and phosphorus from Lake Apopka. This project will be expanded to 3,400 acres and will filter the total volume of Lake Apopka twice annually. The 1996 Lake Apopka Restoration Act included authorization for SJRWMD to set a criterion to be used in limiting phosphorous discharges to the lake and provided funding to initiate a mandated buyout on the North shore of Lake Apopka. The district adopted a phosphorus criterion by rule in 1996 and completed it's buyout of the muck farms in 1999. Mass harvesting of rough fish is being used as a supplementary restoration technique for phosphorus removal and bio-manipulation.

Florida's Non-Point Source Management Program. The FDEP, the SJRWMD, Department of Agriculture and Consumer Services, Department of Health and local governments implement Florida's Non-point Source Management Program. The goal of the program is to mitigate non-point source pollution from new land use activities and to reduce pollution from existing activities. The Non-point Source Management Section administers the following programs:

- State Stormwater Management Program Coordination
- State Nonpoint Source Management Program
- Clean Lakes Program

WETLAND AND UPLAND HABITATS

One of the most important aspects of both wetland and upland communities is the wildlife they support. Of special concern are wildlife species designated as endangered or threatened by the FFWCC. When portions of ecological communities are altered, vegetative links between wildlife areas are often destroyed. The destruction of these links, or wildlife corridors, is detrimental to wildlife as movement is often needed for feeding and breeding purposes, as well as a means for evacuation from danger. Because these vegetative communities often cross jurisdictional lines, development approvals in environmentally sensitive areas should be coordinated with all permitting agencies and surrounding jurisdictions.

Orange County has identified lands in the northwest section of the Apopka planning area that it feels could be significant conservation lands and which merit protection (Orange County CARL Committee Study, July 1991). An evaluation matrix was used to prioritize land suitable for acquisition by Orange County. Each site was scored based on the ranking criteria for several parameters. In addition, each parameter was assigned a weighting factor indicating the relative importance of each parameter in the overall ranking system.

The City has identified upland and wetland vegetative communities within its municipal boundaries and has a general idea of what species may be present in these communities; however, this information is somewhat generalized and is not site-specific to Apopka. Recognizing that all wetlands are environmentally sensitive areas the City and has assigned a conservation land use designation to all existing wetlands within the City limits.

The City maintains the quality and quantity of wetlands in its jurisdiction through the encouragement of techniques such as conservation easements and transfer of development rights. In addition, the City has included in its Land Development Code provisions for upland buffer zones for habitat protection and to provide foraging areas for wetland species. In order to protect endangered or threatened species and species of special concern, development proposals of 10 acres or more are required to submit a survey that identifies areas exhibiting the attributes which are indicative of sites that should be able to sustain identified species.

The criteria for ranking the habitats is based on the Orange County Endangered, Threatened and Species of Special Concern Habitat Evaluation Criteria, which applies a numerical system assigned to identify the degree of each characteristic present at a site (see **Table 5-4**).

TABLE 5-4: ENDANGERED THREATENED AND SPECIES OF SPECIAL CONCERN HABITAT EVALUATION CRITERIA

Unit Values	Rank	VEGETATIVE COMMUNITIES
15	1	Community not rare, sensitive, threatened, or endangered and not containing or likely to contain threatened or endangered species
30	2	Community not rare, sensitive, threatened, or endangered but containing or likely to contain listed plant species
45	3	Community rare, sensitive, threatened, or endangered and not containing or likely to contain listed plant species
60	4	Community rare, sensitive, threatened, or endangered and containing or likely to contain listed plant species
		ANIMAL SPECIES
20	1	Habitat contains or is likely to contain no listed species
40	2	Habitat contains or is likely to contain species of special concern
60	3	Habitat contains or is likely to contain threatened and/or endangered species
		VULNERABILITY (DEVELOPMENT PRESSURE)
9	1	Site currently protected from development
18	2	Site not protected but unlikely to be developed
27	3	Site not protected and development imminent.
36	4	Site not protected but there are no known applications for development
		MANAGEABILITY FEASIBILITY/POTENTIAL
6	1	Site could be managed properly but moderate management problems would exist
12	2	Site would have minimal management constraints
		ECOLOGICAL VIABILITY
16	1	Low potential for viability of featured attribute(s
32	2	Moderate potential for viability of featured attribute(s)
48	3	High potential for viability of featured attribute(s)
		ADJACENCY TO EXISTING PUBLICLY OWNED CONSERVATION LANDS
0	0	Site non-adjacent
36	1	Site adjacent
		HISTORICAL/ARCHAEOLOGICAL VALUE
0	0	Site contains no historic, archaeological sites
30	1	Site contains historic, archaeological sites; moderate to low significance
60	2	Site contains historic, archaeological sites; moderate to high significance
		AQUIFER RECHARGE POTENTIAL
0	0	Aquifer recharge potential; low to none (soils poorly/very poorly)
30	1	Aquifer recharge potential; moderate (soils moderately well drained)
60	2	Aquifer recharge potential; high (soils excessively well drained)
		SCENIC VALUE
0	0	Scenic values not significantly unique
36	1	Scenic values; significantly unique, endangered.
		DEGREE OF DISTURBANCE
8	1	Site highly disturbed
16	2	Site moderately disturbed
24	3	Site relatively undisturbed
		WILDLIFE CORRIDOR POTENTIAL
0	0	Site not within or adjacent to a wildlife corridor
30	1	Site within or adjacent to a wildlife corridor but not a vital component of corridor
60	2	Site a vital component of an identified wildlife corridor

Where an endangered or threatened species or species of special

concern is present and the site achieves a high enough rating of 169 or higher, the City requires preservation of the specific areas that are large enough to sustain a viable population of the identified species. If the site rates less than 169; and endangered, threatened or species of special concern are present, mitigation measures or relocation of the identified species is permitted. The City will work with the FFWCC to develop regulations that will identify all measures necessary to ensure the habitat will sustain a viable population for any listed species which may be found in the Apopka ecosystem.

USE OF NATURAL RESOURCES

Commercial Use

Mining for peat and sand are the only two commercial uses of natural resources within the City of Apopka. There are no other known commercial uses of surface water or vegetative communities within the City. The only peat mine in the City was permitted under the Orange County Conservation Ordinance after it was determined that the wetland was degenerating. The mining company has agreed to restore the wetland. The Florida Department of Environmental Protection (FDEP) regulates the reclamation requirements for mining through Chapter 16C-39, FAC, and the City requires that these standards be met.

Recreational Use

Currently, there are no managed recreational uses of lakes, vegetative communities, wildlife or freshwater fisheries within the City of Apopka. Some of the lakes in the City are used for boating and fishing; however, there is no public boat ramp access to any of the lakes, which are all quite shallow. The City provides two waterfront parks -one along the shore of Dream Lake and the other at Buchan Pond (Wells Street). Both parks are used for passive recreation and shoreline fishing. According to the Florida Fish and Wildlife Conservation Commission (FWCC), recreational fishing pressure within Apopka is minimal, with the greatest recreational effort occurring between January and March.

Conservation Use

Conservation uses are defined by the Florida Department of Community Affairs as being “activities or conditions within land areas designated for the purpose of conserving or protecting natural resources or environmental quality, including areas designated for such purposes as flood control, protection of quality or quantity of groundwater or surface water, floodplain management, commercially or recreationally valuable fish and shellfish, or protection of vegetative communities or wildlife habitats.” The Future Land Use Map shows that over 280 acres of publicly owned conservation areas are located in Apopka.

HAZARDOUS WASTE

The FDEP Hazardous Waste Section and the Orange County Environmental Protection Division are responsible for hazardous waste regulation and compliance in Apopka. The county's primary responsibility is to monitor businesses and industries classified as small quantity generators or as conditionally exempt generators, while FDEP concentrates its efforts on large quantity generators. There are no known commercial producers of hazardous waste within the City of Apopka.

AIR QUALITY

Orange County regulates air quality pursuant to the "Orange County Air Quality Rules" (Article III, Air Quality Control, Orange County Code). The article lists which emissions are prohibited and which uses require permits, which the County's Environmental Protection Officer is authorized to issue

POTABLE WATER SOURCES AND DEMAND

The evaluation of necessary systems to meet domestic and commercial consumptive demand is based upon the entire system's ability to meet peak hour flow. Presently, the ability of the City's system to meet the consumptive demand is controlled by the maximum permitted pumping capacity as limited by the City's Consumptive Use Permit (CUP) from the SJRWMD. The following is summary of the existing and future potable water demands. For further details refer to the Potable Water Element.

Existing Demand Surpluses and Deficiencies

In 2008, the City's central water system withdrew 7.18 million gallons per day (mgd) on an average annual daily withdrawal basis. The system has a permitted allocation of 7.307 mgd average annual daily withdrawals. Therefore, there was surplus capacity available for additional connections in 2008. The City's central potable water system has adequate capacity to serve all of the existing residential and non-residential units that are currently connected and serve some additional new development.

Future Demand Capacity

Future water demand was forecast based on City population projections. In 2009, the central water system treated an average of 7.565 mgd of potable water. Based on 2009 water usage and the estimated central service area population of 52,567, potable water usage was 144 gallons (gpcd) for residential and non-residential uses. The maximum daily potable water demand for 2030 is projected to be 18.279 mgd. The maximum allocated withdrawal for the system

is 13.158 mgd. The City is currently applying for a modification to the CUP in order to meet the projected demands.
The City will continue to coordinate updates of its Water Supply Facilities Work Plan with the SJRWMD to ensure that it is consistent with the most recently adopted SJRWMD district water supply plan. The updates to the Work Plan will address water supply sources and related facilities necessary to meet the existing and projected demand within the City's utility service area.

Water Conservation

The City of Apopka employs a number of water conservation measures. Through the City's landscape ordinance, water conservation restrictions have been established for both potable and reclaimed water users. The ordinance includes the following provisions:

- Landscape irrigation is restricted to a maximum of two days per week. No irrigation is allowed between the hours of 10 a.m. and 4 p.m.

- Addresses ending with an odd number must only irrigate on Wednesday and Saturday.

- Addresses ending with an even number must only irrigate on Thursday and Sunday.

A violation of the irrigation restrictions results in a $50 dollar fine after the first offense. Subsequent violations result in even higher fines. After 4 offenses, the fine is $500 for each subsequent violation.

In May 2008, the City amended its Landscape Ordinance (2069) to include water-wise irrigation practices and the application of Florida friendly landscape practices. Among the features of this ordinance are the following:

- Restricts high volume irrigation (>5 gpm/spray head) to 50% of the landscaped area or one-half acre whichever is smaller for residential properties.

- Restricts medium volume irrigation (0.5 to 5 gpm/spray head) to 25 percent of the landscaped area. The irrigation area can be increased to 75 percent if no high volume irrigation is present.

- Allows 100 percent coverage for low volume (< 0.33 gpm/emitter) systems. The minimum coverage is 25 percent of the landscaped area.

- Restricts use of low drought tolerance turf grass to 50 percent of the green space area or one-half acre, whichever is smaller.

- Does not limit the use of drought tolerant turf like bahia grass.

- Provides for financial incentives to encourage home owners to upgrade their irrigation systems to conserve water.

The City's rate structures for both potable water and reclaimed water are increasing block rates. The rate structures are designed to encourage wise use of water.

The City provides water conservation education to the public through the city website, utility billing mailings, newspaper articles, brochures, flyers, door hangers, and high user letters with tips on conserving water and proper irrigation maintenance. The city also provides speakers, displays, handouts, and activities for school events, City events, Home Owner Associations, builders, and to any group or individual that requests the information. The City is planning to purchase water conservation kits to use as an education tool at schools and other city events.

All new development projects within the City of Apopka are required to have a dual water system. Water for indoor uses and fire protection is provided by the potable water system. Water for outdoor uses is provided by the reclaimed water system.

WEKIVA RIVER PROTECTION AREA ACT

The state has designated the Wekiva River as a Wild and Scenic River and enacted the Wekiva River Protection Act in 2004 to protect the river and its surrounding habitats. A small area of the northeastern portion of Apopka, east of County Road 435, lies within the Wekiva River Protection Area as designated by the Act. None of the waterways within the Wekiva River system lie within the City limits, as the Wekiva Springs State Park surrounds the river system in the Apopka area.

Development in the protection area is limited to a low density residential subdivision, Wekiva Glen, Wekiva Park, Parkview at Wekiva Park, Wekiva Preserve (a portion), and the Orange County Administration Building. Wekiva Park/Parkview was approved as a Planned Unit Development (PUD) and includes an existing retail neighborhood commercial center at the Northeast corner of Rock Springs Road and Welch Road. The remaining PUD property is vacant.

Section 369.305(1)(a) of the Wekiva River Protection Act mandates that the local comprehensive plans of counties in the protection area shall be reviewed to ensure they contain goals, objectives and policies that address the protection of the following:

1. Water quality and quantity and the hydrology of the Wekiva River System;

2. Wetlands associated within the Wekiva River Protection Area;

3. Aquatic and wetland dependent wildlife species associated with the Wekiva River System;

4. Habitat within the Wekiva River Protection Area of species designated pursuant to rules 39-27.003, 39-27.004, and 39-27.005, Florida Administrative Code; and

5. Native vegetation within the Wekiva River Protection Area.

Section 369.305(1)(b) requires the local plans to also include:

1. Provisions to ensure the preservation of sufficient habitat for feeding, nesting, roosting, and resting so as to maintain viable populations of species designated pursuant to Rules 39-27.003, 39-27.004, and 39-27.005, F.A.C., within the Wekiva River Protection Area.

2. Restrictions on the clearing of native vegetation within the 100-year floodplain.

3. Prohibition of development that is not low density residential in nature unless that development has less impact on the natural system than low density residential.

4. Provisions for setback along the Wekiva River for areas that do not fall within the protection zones established pursuant to s. 373.415, F.S.

5. Restrictions on intensity of development adjacent to publicly owned lands to prevent adverse impacts to such lands.

6. Restrictions on filling and alteration of wetlands in the Wekiva River Protection Area.

7. Provisions encouraging clustering of residential development when it promotes the protection of environmentally sensitive areas, and ensuring that residential development in the aggregate shall be of rural density and character.

The Act also states that local land development codes “...shall also include restrictions on the location of septic tanks and drainfields in the 100-year floodplain and discharges of stormwater to the Wekiva River System.”

In order to meet these requirements within the Wekiva River Protection Area the City of Apopka shall:

1. Restrict development to residential land uses of two dwelling units per acre or less.

2. Prohibit the use of septic tanks.

3. Not permit clearing and alteration of the 100-year flood plain or wetland areas.

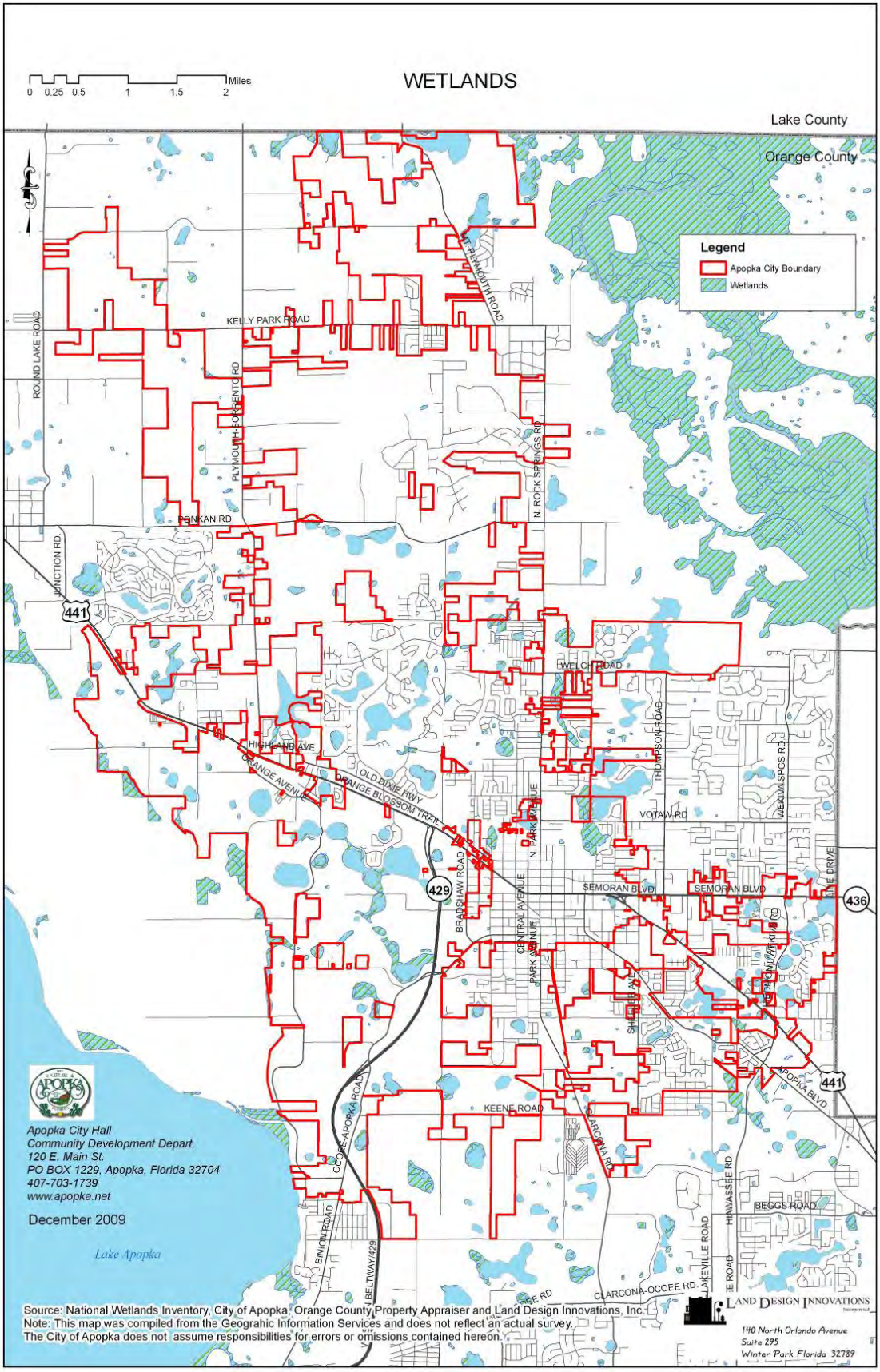
4. Provide for transfer of one quarter of the development rights for wetland properties and properties within the 100 year floodplain. For properties which are entirely wetland or 100 year flood plain, the City shall allow the transfer of one quarter of the development rights to designated receiving zones.

5. Include in its Land Development Code that at least two development alternatives be submitted for review in the Wekiva River Protection Area. One shall utilize cluster development concepts.

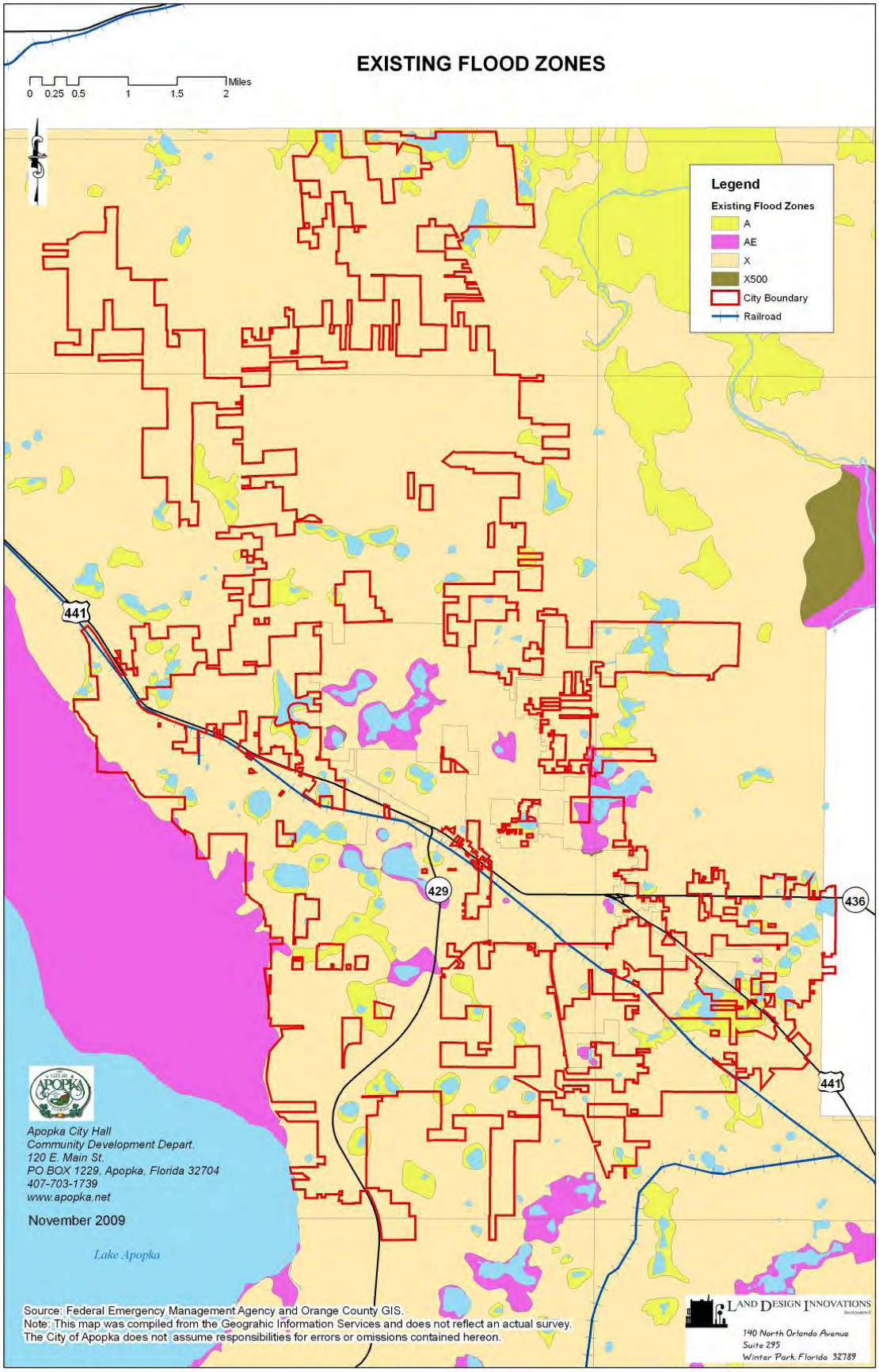
6. Require habitat surveys and protection methods for any habitat of species pursuant to Rules 39-27.003, 39-27.004 and 39-27.005, Florida Administrative Code.

The requirements of the Wekiva River Protection Act which relate to setbacks from the river’s edge and protection zones do not apply to development in Apopka.

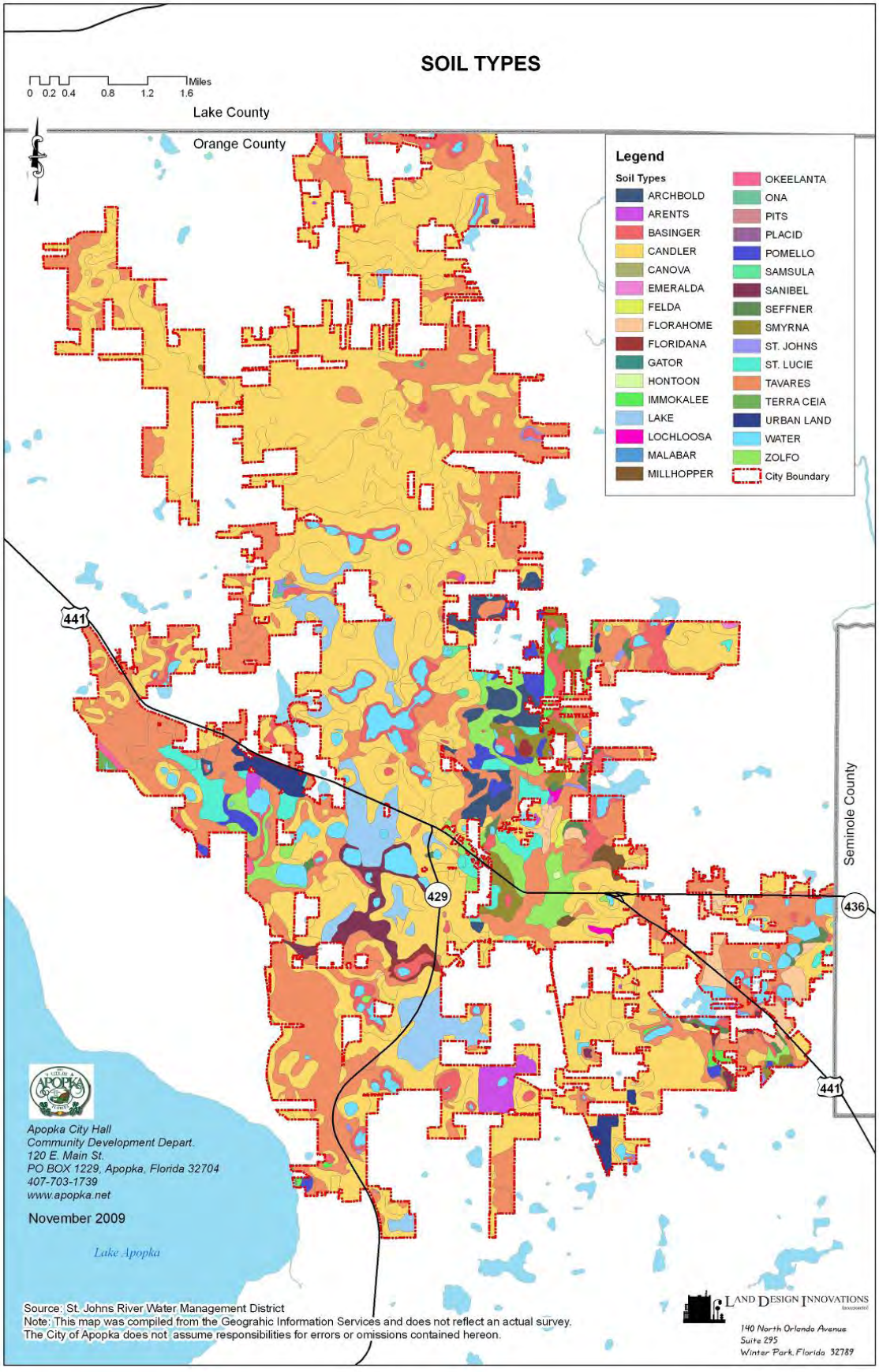
MAP 5-1: WETLANDS



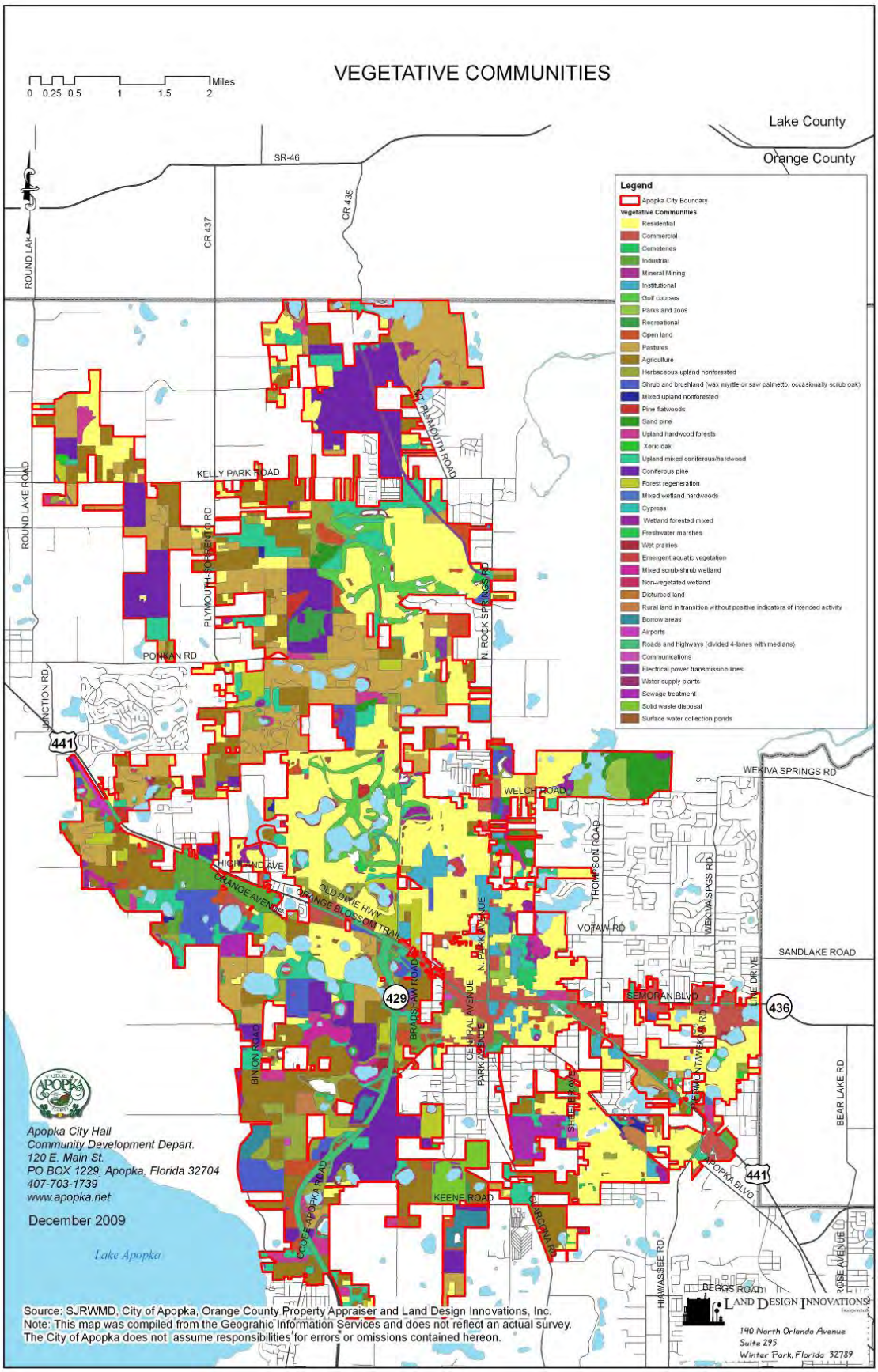
MAP 5-2: FLOOD ZONES



MAP 5-3: SOIL TYPES



MAP 5-4: VEGETATIVE COMMUNITIES



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CONSERVATION ELEMENT

GOALS, OBJECTIVES, AND POLICIES

GOAL

Protect the natural resources of the City of Apopka and guide development to areas that can sustain urban development.

Objective 1

The City of Apopka, in cooperation with Orange County and the St. Johns River Water Management District (SJRWMD), shall ensure that the quality of surface water will meet state standards as detailed in rules 62-302.300 - 62-302.530 and 62-520.420, Florida Administrative Code (F.A.C.).

Policy 1.1

The City of Apopka shall continue to require that stormwater treatment facilities be designed so that the quality of the stormwater runoff will not degrade the receiving water quality below the minimum conditions necessary to assure the suitability of the water body for the designated use in accordance with the classifications established in Section 62-302.400 F.A.C.

Policy 1.2

Any person wishing to perform any clearing operation shall be required to obtain a permit from the City. A permit will be granted only if the applicant presents a soil erosion plan indicating surface water quality will not be degraded by such actions. Each applicant adjacent to water bodies must address and submit a plan pursuant to requirements established in the City’s Land Development Code.

Policy 1.3

The City of Apopka shall continue its street sweeping program to control the transport of sediments and other materials by stormwater runoff.

Objective 2

The City of Apopka, in cooperation with Orange County and SJRWMD shall ensure that the quality of ground water will meet standards as detailed in Rule 62-550.330, F.A.C., as amended.

Policy 2.1

The City of Apopka shall continue to protect its potable water wellfields by enforcing a wellhead protection zone within a 500' radius of a wellhead, in which potentially high risk land uses such as, but not limited to, industrial and manufacturing which use or store hazardous materials as defined by the U.S. Resource Conservation and Recovery Act and implemented by EPA are prohibited, consistent with Rule 62-521, F.A.C., as amended.

Objective 3

The City of Apopka shall protect its natural resources including wetlands as defined by rules 40C-4 and 62-302, F.A.C., floodplain storage, and identified threatened and endangered species and species of special concern as defined in the Future Land Use Element.

Policy 3.1

The City of Apopka shall protect habitat for semi-aquatic or water-dependent terrestrial species of wildlife through the maintenance of native upland vegetation consistent with SJRWMD policy.

Policy 3.2

Activities which destroy or degrade the functions of a wetland shall be required to mitigate the adverse effects within the same watershed, through demonstrably successful creation or preservation of wetland whose functional values are equal or greater to those lost, pursuant to SJRWMD and FDEP regulations.

Policy 3.3

New developments shall identify jurisdictional wetland boundary areas and such areas shall be so designated and assigned a Conservation Land Use. Those areas designated in the development plan as wetland areas shall be updated in the Future Land Use Map upon each large scale Comprehensive Plan Amendment.

Policy 3.4

The City of Apopka shall continue to review land uses within environmentally sensitive areas and areas adjacent to wetlands in order to determine incompatibility.

Policy 3.5

Except as expressly provided by this plan, no development activity shall be undertaken in or directly adjacent to any environmentally sensitive areas. Wetland and shoreline setbacks shall continue to be regulated in the Apopka Land Development Code.

Policy 3.6

The City shall continue to require confirmation from the SJRWMD of stated wetland boundaries, as well as any authorization of any proposed encroachment prior to authorization of construction for any approved development plan.

Policy 3.7

Environmentally sensitive lands, per 9J-5, Florida Administrative Code and Chapter 163, Florida Statutes, for the purposes of this comprehensive plan shall mean Class I Conservation Areas as defined in Conservation Policy 3.9.

Policy 3.8

The City of Apopka shall continue to adopt regulations which protect and conserve wetlands. Such regulations shall include criteria for identifying the significance of wetlands.

1. Class I Conservation Areas shall mean those wetland areas which meet at least one of the following criteria:

    a. Any wetland of any size that has a hydrological connection to natural surface water bodies or the Floridan aquifer; or

    b. Any wetland of any size that is within a lake littoral zone; or

    c. Any large isolated uninterrupted wetlands forty (40) acres or larger; or

    d. Any wetland of any size that provides critical habitat for federal and/or state listed threatened or endangered species.

2. Class II Conservation Areas shall mean those wetland areas which meet any of the following criteria:

    a. Consist of isolated wetlands or formerly isolated wetlands which by way of man’s activities have been

directly connected to other surface water drainage; and are greater than or equal to five (5) acres; or

b. Are less than 40 acres and do not otherwise qualify as a Class I conservation area.

3. Class III Conservation Areas shall mean those wetland areas which meet all of the following criteria:

a. Isolated wetlands less than five (5) acres; and

b. Do not otherwise qualify as a Class I or Class II conservation area.

The regulations shall also identify is and to what extent the conservation area is allowed to be altered and the mitigation requirements for unavoidable loss.

Policy 3.9

Conservation areas as defined by Policy 3.8 and their functions shall be protected and conserved by restricting direct and indirect development impacts according to Policies 3.9 and 3.10, designation as conservation land use, open space requirements and the following:

A. General

1. It is the policy of the City of Apopka to avoid or minimize development impacts on wetlands; to direct incompatible land uses away from wetlands; to require wetland buffers; to allow wetland losses only where all practical engineering measures have been applied to avoid such losses; and to allow for effective mitigation.

2. All development shall comply with wetland protection requirements of the federal, state and regional agencies having regulatory authority. This Plan provides supplemental conservation and protection measures for wetlands pursuant to the direction of Chapter 163, Pt. II, F.S. and Rule 9J-5, F.A.C. Provisions in this Plan shall not conflict with other agency regulations.

3. Land use planning and site design shall support development patterns that avoid or minimize the impact of development on wetlands.

4. In order to properly identify and delineate wetlands prior to development, the City of Apopka shall rely on the delineation of wetlands and

surface waters by the SJRWMD. This delineation shall be reproduced on construction plans which are submitted for review by the City. For other review purposes which do not specifically permit development (e.g. rezonings, etc.) the extent of onsite wetlands shall be estimated and no delineation is required unless specifically required by the City.

5. In no instance shall these wetland policies be construed to allow development that is otherwise prohibited by the Comprehensive Plan.

6. The removal, alteration or encroachment within a Class I conservation area shall only be allowed in cases where no other feasible or practical alternatives exist that will permit a reasonable use of the land or where there is an overriding public benefit. The protection, preservation and continuing viability of Class I conservation areas shall be the prime objective and the basis for review of all proposed alterations, modifications, or removal of these areas.

7. Removal, encroachment or alteration for Class II conservation area should be presumed to be allowed unless removal, encroachment or alteration is contrary to the public interest. Removal, encroachment or lateration may be allowed in Class III conservation areas.

8. The Conservation designation on the Future Land Use Map shall serve as a conceptual indicator of conservation and wetland areas. The precise delineation of these areas shall be determined through site specific studies and field determinations which assess the extent of wetland vegetation. If an area designated as Conservation on the Future Land Use Map is determined to be a developable area, the Future Land Use Map designation shall be as shown.

B. Land Use

1. Existing uses in wetlands may continue, but shall not be expanded unless they are explicitly allowed, permitted or exempted by the SJRWMD regulations and Conservation Policies 3.9 and 3.10. Existing silviculture in wetlands shall be consistent with “Silviculture Best Management Practices” published by the Florida Department of Agriculture, 1998.

2. New development allowed under Comprehensive Plan Future Land Use Map designations and which will have no significant impact on the net wetland functions will be allowed, including:

   - Water dependent uses as defined by 9J-5.003(137) F.A.C. Walking trails or elevated wooden boardwalks designed to minimize disturbance to the wetland system shall be allowed to provide limited access for purposes of passive recreation or access to other portions of the site or adjacent waters which are otherwise inaccessible.

   - Insect control structures.

   - Temporary impacts associated with the installation of cables, conduits and pipelines that transmit electricity, communication signals, potable water, raw water, reclaimed water, domestic wastewater, propane gas or natural gas.

   - Minor activities by FDOT, the City of Apopka, and Orange County within existing ROW or easements, subject to permitting by the City. Exemptions listed in 40D-4.051, together with projects described in SJRWMD 40D-4.054, 40D-40.040, and 40D-400.

   - Environmental restoration, enhancement, and research uses.

   - Uses allowed under the future land use designation that require the dredging and filling of less than 100 square feet of wetlands.

3. Other new development shall not be allowed in wetlands, i.e., development shall occur outside of the wetland (including its upland buffer as specified below) unless explicitly permitted by the SJRWMD standards and Conservation Policies 3.9 and 3.10. When one or more contiguous lots or parcels of record under common ownership or control as of the date of adoption of this Comprehensive Plan policy are evaluated under these allowances or exemptions, the lots or parcels shall be aggregated and evaluated as a single lot or parcel.

4. When wetlands are identified on a site and mitigation is not approved, new development (other than listed in 2. above) shall be clustered away from the wetlands on upland portions of a

development site. Development densities and/or intensities may not be transferred out of the undeveloped wetland areas.

5. If the extent of wetlands on an individual development parcel would prevent the use of the parcel as allowed by the Future Land Use Map designation then the following densities and intensities shall be allowed:

   - For wetland areas less than 20 acres, a single family residence that is not part of a larger plan of common development proposed by the applicant, including associated residential improvement such as a driveway, garage and an on-site sewage disposal system, not to exceed 6,000 square feet. Structures must be elevated when possible to minimize wetland impacts.

   - For wetland areas exceeding 20 acres, residential uses at a density of one dwelling unit per twenty acres.

   - Non-residential uses allowed by the future land use category when elevated above the wetland on pilings and having less than 1,000 square feet of floor space per acre.

C. Buffers

1. Upland buffers are considered an integral component of a functioning wetland and shall be afforded the same types and levels of protection as the wetland itself. Buffers shall be an average minimum width of 25 feet beyond the perimeter of the wetland with a minimum width of 15 feet, excepting the point where permitted water conveyance facilities connect to the wetland. Buffers shall not be developed, cleared, or landscaped in any fashion that would decrease their effectiveness in supporting wetland functions. Encroachment into the wetland buffers for the purpose of hydrologic connection of drainage systems and creation of mitigation areas shall require no further buffering compensation. Additionally, all structures shall be setback 50 feet from the wetland’s edge.

2. The City of Apopka may require that upland buffers be extended beyond 25 feet if necessary to connect isolated wetlands with other protected wetlands existing within 100 feet, depending on the

existence of listed species and habitat valuation. Greenways will be created when possible.

D. Mitigation:

The purpose of mitigation is to offset environmental impacts. Mitigation activities approved by a federal, state or regional agency are supported by the City of Apopka. However, the issuance of a permit by any other agency, with or without mitigation, does not exempt the development from the requirements and restrictions of Conservation Policies 3.9 and 3.10 and other requirements of the Comprehensive Plan. Development in wetlands must be consistent with this plan to proceed.

E. Implementation:

1. The City of Apopka shall maintain a generalized wetlands map as part of this Plan. This map shall be based on the Florida Land Use Cover and Forms Classification System (FLUCFCS) Geographic Information System mapping by SJRWMD.

2. Wetlands that exist on a proposed development parcel shall be shown by the landowner/developer as a part of the construction plans submitted to the City for review of the proposed project. Additionally, this map must show the delineation of the upland buffer for projects which do not require a SJRWMD permit. For projects requiring a SJRWMD permit, the City shall require as a condition of development approval that wetland buffers shall be protected.

3. New lots shall not be created and/or platted that do not contain sufficient buildable upland areas in order to provide a reasonable use for the lot under the requirements of the Comprehensive Plan.

Policy 3.10

Exceptions to Policy 3.9 above:

A. Isolated wetlands

1. Development may incorporate isolated wetlands into stormwater management systems, provided that the stormwater runoff is pre-treated prior to entering any of the wetland, so that the wetland is used for nutrient and volume attenuation. The City of Apopka shall encourage designs which maintain the existing natural wetlands community, except where

permitting agencies agree that the imposition of conditions which favor a different plant community are more desirable for the purpose of providing habitat, improving water quality or enhancing other wetland values.

2. Any proposed encroachment shall require an environmental assessment by a professional biologist rendering an opinion as to whether the wetland has significant wildlife values based on the following factors:

   a) The extent to which the isolated wetland acts in concert with the broader regional landscape to provide both food web support and habitat for wildlife;

   b) The potential cumulative impacts to isolated wetland wildlife functions are a regional level;

   c) Individual wetland features that are important to wildlife;

   d) Whether the isolated wetland is used by endangered or threatened species or species of special concern; and

   e) The degree to which adjacent existing or planning development will affect the use of the wetland by wildlife.

   If the biological evaluation indicates that the isolated wetland has significant and sustainable wildlife values, the wetland shall be afforded the same level of protection as all other wetlands. However, if the report indicated no significant and sustainable values, then the underlying land use category may be applied. This does not preclude the application of any regulatory requirements of other federal, state or regional agencies.

B. Buffers

Buffer widths shall be a minimum of 15 feet excepting permitted water conveyance facilities, and may only be adjusted downward to below a minimum average of 25 feet on a case-by-case basis if the following conditions are present:

1. The developable portion of existing lots of record as of the date of adoption of this plan does not

have sufficient size or dimensions to allow for a reasonable use of the property based on the designated land use category. In this instance, the remaining buffer shall be enhanced with native species to minimize development impacts.

2. The proposed development shall provide mitigation for reduction in standard by enhancing the functioning value of the wetland buffer area.

C. Degraded Wetlands

If the SJRWMD indicated that a wetland (or a portion thereof) is severely degraded and has minimal restoration potential and that beneficial restoration or enhancement mitigation of another wetland would be achieved as a result of mitigation that allows some development in this degraded wetland (or portion thereof) then the underlying land use category shall apply. Mitigation shall be permitted with the first priority being mitigation on-site, the second priority being mitigation within the City limits, and the third priority being mitigation within Orange County under a City/County interlocal agreement.

D. Road Crossings

Road crossings shall be allowed to access developable portions of the development parcel or if shown to be in the overriding public interest (e.g., as necessary local, collector or arterial road linkage.) When allowed, road crossings shall occur at the narrowest practical point given the constraints of safe roadway design and shall provide for hydrologic connectivity and aquatic species movement.

Policy 3.11

The City of Apopka shall coordinate with the Army Corps of Engineers, the Florida Department of Environmental Protection, and the St. Johns River Water Management District to identify and regulate wetland areas under their jurisdiction.

Policy 3.12

The City of Apopka shall protect identified wetland areas and existing wildlife habitat through the control and maintenance of invasive non-native (exotic) plants on City-owned environmentally sensitive lands.

Policy 3.13

The City of Apopka shall continue to seek out innovative partnerships and opportunities to preserve and conserve its natural resources in a balanced approach that ensures multiple and compatible uses of those lands while providing just compensation to the landowner.

Policy 3.14

The City of Apopka shall revise, adopt, and implement land development codes to require site plan review where a development project is directly contiguous to wetlands or involves disturbances of wetlands so as to ensure that no wetland is disturbed except in accordance with the following standards:

a. No wetland may be disturbed unless the City Council makes a finding (supported by the site plan application and documentation) that no reasonable alternative (such as clustering development on upland portions of the site) is available to avoid a taking, a that the nature and degree of disturbance is the minimum possible to achieve development that is otherwise compliant with the goals, objectives, and policies of the Plan.

b. All rules of the FDEP and SJRWMD for jurisdictional wetlands shall be met.

c. Pre-development/pre-disturbance water flow and quality shall be maintained.

Policy 3.15

The City of Apopka shall cooperate with the Florida Department of Environmental Protection, St. Johns River Water Management District, East Central Florida Regional Planning Council, and Army Corps of Engineers to improve compliance with federal and state dredge and fill permitting process.

Policy 3.16

The City of Apopka will prohibit stormwater discharge from development from discharging into wetlands, sinkholes, bays or rivers without sufficient prior treatment that will protect existing water quality.

Policy 3.17

The City of Apopka shall utilize the best available data to identify and protect recharge areas and sensitive upland habitats, including wetlands, Longleaf Pine, Sand Hill, Sand

Pine, and Xeric Oak Scrub. These provisions shall apply to all land use amendments.

Objective 4

Where listed species are found, the City of Apopka shall maintain necessary habitat for the protection of such species, either through preservation, mitigation or relocation.

Policy 4.1

Development habitat studies, based on the evaluation criteria found in **Table 5-1** in the Conservation Element support documentation shall be required for all developments of more than 10 acres. Where listed species are found:

a. and the site achieves a rating of 169 or higher, an area which will sustain a viable population of the species shall be preserved;

b. And the site achieves a rating of less than 169, mitigation measures which ensure an area which will sustain a viable population of the species present shall be preserved, or the species may be relocated to an area which will sustain a viable population of the species inhabiting the site.

Policy 4.2

If the habitat survey indicates the presence of listed species, the Florida Fish & Wildlife Conservation Commission (FFWCC) will be notified and allowed 15 days to submit comments or recommendations.

Policy 4.3

The city shall verify and update accordingly on an annual basis the specific listing of potential listed species and habitat as changes occur.

Policy 4.4

The City of Apopka shall coordinate with the Florida Fish & Wildlife Conservation Commission (FFWCC) on an as needed basis for technical assistance to ensure protection regulations for listed species are concurrent with updated laws.

Policy 4.5
The City of Apopka will use the best available data from the Florida Fish & Wildlife Conservation Commission (FFWCC) to protect and identify sensitive upland habitats.

Objective 5

The natural functions of the 100-year floodplain will be protected in order to ensure the natural flood storage and carrying capacity.

Policy 5.1

Floodplains, as designated on the Future Land Use Map, shall be protected as conservation land uses, or as:

a. Recreation land uses, provided the use does not interfere with the aquifer recharge or flood storage capacity;

b. Residential very low suburban, residential low suburban, residential low and residential low-medium land use classifications provided the use does not interfere with the aquifer recharge capacity or flood storage capacity.

Policy 5.2

The City of Apopka shall continue to require compensating storage for all flood water displaced by development below the elevation of the base 100-year flood.

Policy 5.3

The City of Apopka shall continue to require the finished floor of all inhabitable structures be located 1-foot above the base 100-year flood elevation.

Policy 5.4

The City of Apopka shall require where feasible the use of floodplains as conservation, open space and recreation in order to preserve the natural flood plain and vegetation.

Objective 6

The City of Apopka shall promote air quality which meets or exceeds minimum air quality standards as set forth in the Clean Air Act and Title 40 of the Code of Federal Regulations.

Policy 6.1

The City of Apopka shall require the planting of native species of trees and vegetation to reduce the amount of CO_2 in the air.

Policy 6.2

The City of Apopka shall continue to include within the Apopka Land Development Regulations requirements which reduce the

potential for automobile emissions, such as requirements for bike and pedestrian facilities that offer alternatives to the use of vehicles.

Policy 6.3

The City shall participate in public information programs that educate citizens and business owners about ways to reduce air pollution.

Objective 7

The City of Apopka shall conserve potable water resources to ensure adequate supplies for future through the following policies:

Policy 7.1

The City of Apopka shall cooperate with SJRWMD to educate and notify City water customers of water restrictions imposed during SJRWMD declared water shortages. The city shall notify SJRWMD of any known violations of water restrictions.

Policy 7.2

The City of Apopka shall continue to enforce state laws requiring low volume plumbing fixtures for new construction through building permits.

Policy 7.3

The City of Apopka shall require the use of native drought resistant plants to meet 75% of City landscaping projects.

Policy 7.4

The City shall encourage the use of native, water-conserving plant materials and a low-impact irrigation system to meet 50% of proposed landscaping requirements. Selection of plant species shall be made based upon Florida Friendly landscape concepts outlined in the UF/IFAS Florida Yards and Neighborhoods Handbook and as identified in its Florida Friendly Plant List.

Policy 7.5

The City of Apopka shall continue implementation of the Water Conservation Plan.

Policy 7.6

The City of Apopka shall update the master plan for the reclaimed water distribution system every five years.

Policy 7.7

The City of Apopka shall continue to require the construction of dual water systems in future developments which lie within the City's reclaimed water service area.

Policy 7.8

The City shall maintain a Water Supply Facilities Work Plan that is consistent with the most recently adopted SJRWMD district water supply plan to address water supply sources and related facilities necessary to meet the existing and projected demand within the City's utility service area.

Objective 8

The City of Apopka shall require development which destroys native trees to replace cleared trees with similar species and maturity levels on a one to one ratio within practical limitations, for all areas of the City.

Policy 8.1

The City of Apopka shall adopt regulations which set minimum standards for preservation of native vegetation.

Policy 8.2

The City of Apopka shall prohibit the clearing of native vegetation within the 100 year floodplain unless replanting shall be at a one to one ratio and clearing is necessary to provide compensating storage.

Policy 8.3

The City shall require the use of site appropriate, drought resistant plant material based upon appropriate hardiness zone, soil type and moisture conditions, exposure to sun, and mature plant size for public landscaping projects. The use of native vegetation shall be encouraged.

Policy 8.4

The City shall require the use of Florida Friendly landscaping practices and waterwise irrigation standards to promote efficient water use. Selection of plants species shall be made based upon Florida Friendly landscape concepts outlined in the UF/IFAS Florida Yards and Neighborhoods handbook and as identified in its Florida Friendly Plant List. The use of native vegetation shall be encouraged.

Objective 9

The City of Apopka shall regulate the operation, maintenance and reclamation of mining facilities to ensure protection of natural resources.

Policy 9.1

Mining shall be permitted, when complete reclamation is ensured, in industrial and agricultural land use classifications, and in residential land use classifications where:

1. It is confined to vacant properties of 100 acres or more; or

2. Residential units equal 20 or less measured within a quarter mile radius from the site to be mined; or in conservation land use classifications when necessary to restore a degenerated wetland.

Policy 9.2

Mining shall be defined as the removal of resources from their location, so as to make them more suitable for commercial, industrial, or construction use, but not including excavation for the sole purpose of aiding on-site farming or on-site construction, or the process of prospecting or investigating for resources

Policy 9.3

Peat mining shall be permitted only if it shall be beneficial to the lake or wetland ecosystem. If it is beneficial to the natural system, it shall be considered compatible with any land use.

Policy 9.4

Any party wishing to extract mineral resources shall be required to submit a reclamation plan and proof of financial responsibility. Reclamation plans must be determined to be consistent with the reclamation standards outlined in Rule 62C-39, F.A.C., as amended.

Objective 10

The City of Apopka shall maintain the Wekiva River Hydrologic Basin standards and design criteria as adopted in Rule 40C-4.091, F.A.C. within the Wekiva River Protection Area.

Policy 10.1

All new development within the Wekiva River Protection Area shall be very low suburban residential density of two units per acre or less in nature, unless a proposed development would have less impact on natural resources.

Policy 10.2

All hundred year floodplains within the Wekiva River Protection Area shall be designated as conservation areas on the Future Land Use Map. These areas shall be eligible for on-site transfer of development rights.

Policy 10.3

The alteration or filling of wetlands within the Wekiva River Protection Area shall be prohibited.

Policy 10.4

The use of septic tanks for new developments may be undertaken on an interim base, not to exceed five years, in cases where central sewer improvements necessary to serve the proposed development are scheduled for construction in the adopted Capital Improvements Program within that five year time-frame. The approval for and conditions of the use of septic tanks on an interim basis shall be at the sole discretion of the City.

Policy 10.5

The City shall permit development within the Wekiva River Protection Area to be clustered.

Policy 10.6

The subdivisions of land which interfere with the required setbacks of protection zones pursuant to Section 373.415, F.S. shall be prohibited.

Policy 10.7

Lands within the Wekiva River Protection Area shall be evaluated for transfer of development right eligibility.

Policy 10.8

The City of Apopka shall continue to require all new development to retain minimum of ½ inch of run-off from the entire project site. However, retaining 3 inches of runoff from the directly connected impervious area within the project site shall be required unless it is demonstrated that post-development recharge is equal or greater than pre-development recharge as stipulated in Section 40C-41, FAC.

Policy 10.9

Septic tanks shall be prohibited within the Wekiva River Protection Area.

Policy 10.10

The density/intensity of any development on parcels of property adjacent to the waterways or wetlands of the Wekiva River System shall be concentrated on those parcels farthest from waterways, wetlands or public lands.

Objective 11

The City of Apopka shall protect the health, safety, and welfare of the public from the harmful effects of hazardous wastes by cooperating with the Florida Department of Environmental Protection (FDEP) and Orange County Environmental Protection Department (OCEPD) in the regulation and disposal of hazardous wastes.

Policy 11.1

The City of Apopka shall continue to coordinate with Orange County in its emergency response plan to handle accidents involving hazardous wastes.

Policy 11.2

The City of Apopka shall promote the recycling of hazardous wastes by publishing a list of approved recyclers.

Policy 11.3

The City of Apopka shall coordinate with the Orange County Environmental Protection Department to hold household hazardous waste round-up programs in the Apopka area.

Policy 11.4

The City of Apopka Land Development Regulations shall require evidence of compliance with Orange County Small Quantity Generator Notification Program prior to issuance of an occupational license.

Policy 11.5

The City of Apopka shall distribute educational material, provided by FDEP, on household hazardous wastes to all city solid waste customers.

Policy 11.6

The City of Apopka shall continue to coordinate with Orange County Environmental Protection Department to hold household hazardous waste round-up programs in the Apopka area.

Objective 12

The City of Apopka shall protect the most sensitive resources within high recharge areas including the principal areas of ground water contribution and recharge, sinkholes, depressions and stream-to-sink features, and the area immediately adjacent to the spring and the spring run.

Policy 12.1

The City of Apopka will utilize, when possible, acquisition funding programs such as the Florida Forever Program, Florida Community Trust, Rural and Family Lands Protection Program and others to acquire fee simple or less-than-fee ownership through conservation easements on land within the delineated high recharge area that has been identified as a critical or sensitive resource.

Policy 12.2

The City of Apopka will utilize, when feasible, innovative approaches to protect sensitive resources, such as the transfer of development rights, performance zoning, open space zoning, on-site density transfer and other techniques to maximize the establishment of open space areas.

Policy 12.3

All new development proposals which are 10 acres or greater in site area shall be required to include a habitat analysis on the sensitive natural habitats that include Longleaf Pine, Sand Hill, Sand Pine, and Xeric Oak Scrub.

Policy 12.4

The use of landscaping best management practices as described in Guidelines for Model Ordinance Language for Protection of Water Quality and Quality Using Florida Friendly Lawns and Landscapes. (Florida Department of Environmental Protection, September 2, 2003) shall be required for all new developments.

Policy 12.5

The City will establish guidelines for managing existing and future lawns and landscapes at all City facilities using the educational guidelines contained in the University of Florida Extension's Florida Yards and Neighborhoods Program, Environmental Landscape Management (ELM) principles and Best Management Practices. Such guidelines shall include practices that are designed to reduce nitrate infiltration into ground and surface water.

Policy 12.6

All new golf courses siting, design, construction, and management shall implement the prevention, management, and monitoring practices, detailed in the golf course siting, design, and management chapter of the Protecting Florida's Springs Manual - Land Use Planning Strategies and Best Management Practices (November 2002.) These practices are derived from the Audubon International Signature program.

Policy 12.7

The City shall coordinate with the SJRWMD, Orange County and other appropriate agencies to develop and maintain programs to educate and encourage homeowners and private land owners to use best management practices to protect natural habitat and to protect water quality, especially on land within the mapped recharge areas of first magnitude springs.

Objective 13

The City of Apopka shall coordinate with the SJRWMD, Orange County and other appropriate agencies to establish programs to educate the public and community leaders about the importance of the high recharge area in Apopka and how to better protect them.

Policy 13.1

The City shall coordinate with Orange County Public Schools to assist with the development of environmental educational programs regarding springsheds.

Policy 13.2

The City shall make available to local residential, agricultural, and commercial land owners and developers, information related to best management practices that minimize the use of water, fertilizers, herbicides and pesticides, and that reduce erosion.

Policy 13.3

The City of Apopka will use the best available data from St. Johns River Water Management District to identify and protect sensitive resources and identified recharge areas.

Objective 14

Preserve and conserve through acquisition and management a minimum of percentage of most effective recharge areas, karst features, and sensitive natural habitats including Longleaf Pine, Sand Hill, Sand Pine, and Xeric Oak Scrub.

Policy 14.1

The City will investigate establishing an agreement with a non-profit land conservation trust for the purpose of preserving environmentally sensitive lands.

Policy 14.2

The City shall continue to support and seek acquisition of environmentally sensitive land through joint City/County and State partnerships.

Policy 14.3

The City shall coordinate with appropriate state and regional land acquisition and wildlife agencies to identify natural area greenways and wildlife corridors that will link existing public parks and preserves areas for the purposes of aquifer recharge, conservation and habitat preservation.

Objective 15

The City of Apopka shall increase its efforts toward sustainable development by developing strategies to reduce greenhouse gas emissions and to implement energy-efficiency measures in public and commercial buildings, where feasible.

Policy 15.1

The City shall promote awareness of environmental issues related to the built environment by developing environmental

education content for the City's website, including "Green Building" benefits and highlighting sustainable initiatives of the City.

Policy 15.2

The City shall encourage the development community to obtain green certifications under the United States Green Building Council, Florida Green Building Coalition, Florida Yards and Neighborhoods Program, Energy Star and Florida Water Star™ programs by providing incentives that make these certifications advantageous.

Policy 15.3

The City shall consider design and construction of new public facilities based on the principles promoted by the Leadership in Energy and Environmental Design (LEED), Energy Star and Florida Water Star™ programs, as appropriate and financially feasible.

Policy 15.4

The City shall periodically conduct audits of every City facility to determine electric power usage and the potential for energy and cost savings in lighting, heating and cooling of air and water, equipment power usage, and potential alternative/renewable electric power generation sources. The City may create a central database, or other appropriate system, to track electric and other utility costs.