LEESBURG
The Lakefront City

City of Leesburg

GROWTH MANAGEMENT PLAN
CONSERVATION ELEMENT

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A. INTRODUCTION

"We do not inherit the Earth from our fathers. We borrow it from our children."

-David Bower-

1. Purpose

As stated in Rule 9J-5.013, Florida Administrative Code (F.A.C.), the purpose of the Conservation Element is to promote the conservation, recreational enjoyment, and protection of natural resources. This Element of the Leesburg Growth Management Plan shall identify and analyze sources of surface and groundwater, wetlands, floodplains, air quality, valuable minerals, soil erosion, dominant vegetative and wildlife communities, listed vegetative and wildlife species, and the potential for conservation, recreational enjoyment, and protection of theses vital resources.

2. Environmental Setting

Leesburg is located in Lake County, Florida, approximately 40 miles northwest of Orlando. Within the City, three major natural features have strongly shaped local development patterns. These features are Lake Harris, Lake Griffin, and the Okahumpka Swamp. Lake Harris is the ninth largest lake in the State, while Lake Griffin is the fourteenth largest. The Okahumpka Swamp is a four-mile long by ¾ to 2½-mile wide wetland in Lake County. The two large lakes and significant wetlands have historically forced roads and other development into a funnel shaped pattern. Leesburg possesses spectacular natural beauty, as it is located in the "Florida Alps". Land elevations within Lake County rise to a high of 192 feet above sea level and dip to a low of 53 feet below sea level, making for a unique and diverse area.

B. INVENTORY

Although each and every natural resource existing in the City of Leesburg is a valuable component of the ecosystem, worthy of being protected and conserved, the following sections identify and describe the more significant resources of the City.

1. Surface Water

Water is one of the most abundant natural resources in the City. Part of the City's allure comes from the knowledge that a resident or visitor is seldom more than half a mile from a lake, swamp, marsh, floodplain, or other aquatic feature anywhere in the City. This section of the Conservation Element will address drainage basins, lakes, and rivers.

a. Drainage Basins

The City is divided into two major drainage basins, the western and the eastern basins. The surface of the western portion of the City drains primarily through lakes, swamps, and marshes to the Withlacoochee River and is part of the Withlacoochee River Basin. This river flows generally northwest where it discharges into the Gulf of Mexico near Yankeetown, between Citrus and Levy Counties. The portion of the basin that falls within the County consists of parts of two smaller sub-basins. These sub basins, in turn, are formed by portions of 12 still smaller sub-sub-basins called landlocked basins.

The eastern portion of the City drains primarily through lakes, swamps, and marshes to the Oklawaha River. This river is the outflow stream at the north end of Lake Griffin. The Oklawaha River merges with the substantially larger St. Johns River near Palatka and continues to flow northeast to empty into the Atlantic Ocean at Jacksonville. These surface water basins are represented in the Drainage Element of this Growth Management Plan.

b. Lakes

There are an abundance of lakes located within the City of Leesburg. These lakes, as well as other dominant water features are depicted in Map IX- 1.

The lakes that have the most effect on long range planning for the City are Lake Harris and Lake Griffin. A one-mile-wide corridor separates these two water bodies. Lake Harris and Lake Griffin, along with nearby Lake Dora, Lake Eustis, and Lake Yale, form what is known as the Harris Chain of Lakes. The majority of the numerous small lakes are located in the far east, east of County Road 44, and far west, west of U.S. Highway 27, sectors of the City.

c. Rivers

While lakes are a prevalent surface water feature, rivers are of minor significance in terms of number, size and function. The City's river drainage system is not well developed and the stream channels are shallow and narrow. In general, only those lakes which do not drain to the groundwater aquifer system will have a surface outlet, since rainfall is greater than evaporation and the lakes receive some surface and groundwater inflow. Prior to widespread population growth, streams existed only as high-water connectors between lakes and swamps. Some channels were deepened, straightened, and regulated by control structures to facilitate drainage as the area developed.

There are three stream systems flowing near the City of Leesburg, however the streams themselves do not traverse the City. The first is the Dead River, which is approximately one mile long by 130 to 150 feet wide and drains from Lake Harris to Lake Eustis. The second stream system is Haines Creek, which is a three-mile long by 30 to 110 foot wide watercourse, which drains from Lake Eustis to Lake Griffin.

The last of the three river systems is Helena Run. This stream is approximately two miles long by 50 to 150 foot wide and drains from Lake Denham into Lake Harris.

2. Groundwater

Groundwater consists of rainfall and surface water that filters into the underground drainage system. It is the principal source of water for all municipal systems as well as for most private industrial, agricultural, and domestic users within the City.

Groundwater levels change in response to five general factors. The first is infiltration from rainfall, lakes, and streams. The second is evapo-transpiration, which is a joint term for evaporation and transpiration, from the water table where water is within approximately five feet of land surface. The third factor is lateral discharge of water to lakes, springs, and streams, while the fourth is vertical discharge of water from the clastic aquifer to the underlying Floridan aquifer. The final factor is lateral submarine discharge from the Floridan aquifer directly into the Gulf of Mexico or the Atlantic Ocean. Groundwater levels also vary seasonably; they are generally higher in October and November, and are lowest in May and June.

A major feature of groundwater drainage is the network of aquifers. There are two aquifers underlying the City: the clastic and Floridan aquifers. The clastic aquifer, which is a thin layer (25 to 200 feet thick) of largely sandy material, acts as a filter bed for purifying water before it recharges the lower and much more significant Floridan aquifer. The clastic aquifer has little potential as an important source of groundwater. The Floridan aquifer, on the other hand, is approximately 2,000 feet thick and is the source of approximately 85% of municipal, industrial, irrigation, and domestic supplies for Lake County. The City's water supply is obtained from the Upper Floridan aquifer at a depth of 300-600 feet below land surface. There are two areas within the Leesburg City limits that have a high potential for groundwater recharge (greater than 12 inches per year). The larger of these two areas is located in the eastern portion of the City between Lake Griffin and Lake Harris, in the Tomato Hill area. The other area of high aquifer recharge is located in the northwestern portion of the City, along the western side of Highway 27 just north of C.R. 44C and extends north and west into Lake County. Aquifer recharge within the City of Leesburg is discussed in further detail in the Aquifer Recharge Element of this Growth Management Plan.

The City's central potable water system is comprised of four systems: the Leesburg East Treatment System; the City of Leesburg Treatment System; the Highlands Lake Treatment System; and the Royals Highlands Treatment System. Three of these systems are interconnected and one **(Royal Highlands)** currently stands alone. Combined, these four systems are comprised of five water treatment plants, fifteen public water wells, two hydrostatic tanks, four above ground storage tanks, and three ground storage tanks. Additional information on these water systems can be found in the Potable Water Element.

To ensure that wellheads are protected from contamination, the City maintains standards pertaining to wellhead protection in its Code of Ordinances. These include, but are not

limited to buffer zones around public water supply wells. To further ensure the integrity of the City's groundwater supply, the City also has provisions within its Code of Ordinances regarding the digging and sealing of abandoned wells.

In 2001, The City of Leesburg hired an engineering consultant to complete a Phase I Environmental Site Assessment (ESA) for the approximately 691.8-acre property identified as Platt Farms, Lake County Florida. The purpose of the Phase I ESA was to identify "Recognized Environmental Conditions" in connection with the subject property. The term "Recognized Environmental Conditions" refers to the likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water on the property. In conjunction with this assessment, an *Environmental FirstSearch Sites Summary Report* was completed. The sites identified in this report as experiencing contamination are included in

Table IX- 1**.**

3. Wetlands

Wetlands are defined as being transitional areas between the open waters of streams, lakes and the adjacent uplands. They are characterized by vegetation and animal life that is uniquely adapted to the natural fluctuations of wet and dry conditions. Wetlands provide many important functions such as providing vital fish and wildlife habitats, and acting as storage areas for excess surface water. They also improve water quality by performing the same function as a settling pond. Impurities enter the wetland and are filtered through the vegetation. As the water travels through the wetland, toxins and nutrients are removed, allowing the filtered clean water to exit the wetland. This protects the rivers from overloading with nutrients, which would have a negative effect on fisheries. In addition, the soil is stabilized which, in turn, prevents erosion. To conserve this resource, much of this natural, ordered system of surface water purification must be protected from intensive urban development.

Within the City, the single largest area of wetlands is the Okahumpka Swamp, a 4,500-acre freshwater marsh and hardwood swamp along the midwestern portion of the City. This single feature accounts for over one-half of all wetland acreage in the City. Smaller wetland tracts are found east, south, and west of the Leesburg Municipal Airport. Numerous linear wetland drainage ways are found throughout the eastern side of the City. The following are the three largest wetland locations in the City:

Wetland	**General Location**
Herlong Park	Between U.S. HWY 441, Lake Griffin, Shore Acres Drive, and Canal Street in the northeast portion of the City

Portion of Okahumpka Swamp	Between County Road 25A and U.S. Highway 27 in the south end of Leesburg
Unnamed parcel in the City's southeast	Located south of Dixie Avenue, east of Lake Street, and north of Lake Harris

The majority of Leesburg's wetlands are of the Lacustrine nature. A Lacustrine wetland is, by definition, lake-associated and may include freshwater marshes, aquatic beds, and lakeshores, and is generally sparsely vegetated. However, Palustrine wetlands exist within the area as well. A Palustrine system includes any non-tidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.05%. The Palustrine wetlands within Leesburg consist of hydric hammocks and hardwood swamps, with small areas of cypress, bayhead, and wet prairie. Map IX- 2 depicts wetlands within the Leesburg area, while wetland vegetative cover is represented on Map IX- 3.

4. Floodplains

The hundred year floodplain is defined by the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP) as "any area likely to be flooded over a 24 hour period to a level equal to or exceeded once on an average of every 100 years". These areas are usually lowlands located adjacent to a river, stream, watercourse, ocean, or lake. Both the City of Leesburg and Lake County do, and shall continue to, participate in the NFIP administered by FEMA.

As defined within the Flood Insurance Rate Map (FIRM) and displayed graphically on Map IX- 4, there are several major areas of floodplains in Leesburg located adjacent to Lakes Griffin and Harris and in the Okahumpka Swamp. The largest is located in the western portion of the City, west of U.S. 27, north of County Road 470, and south of State Road 44. Another major area is located between US 44 on the north, the Leesburg Regional Airport on the east, Lake Harris on the south, and Sleepy Hollow Road and Sunnyside Drive on the west. In addition, there are several small and narrow linear floodplains scattered throughout the City.

The significant importance of floodplains is their value in reducing flood damage by temporarily holding stormwater and by funneling this water to larger downstream water bodies. As with wetlands, floodplains work to filter impure water, recharge groundwater, and provide plant and animal habitat. Unfortunately, encroachment on flood-prone areas can occur as a result of artificial fill associated with development activity. Encroachment reduces the floodwater holding capacity of an area, resulting in an increase in flood hazards beyond existing flood-prone areas. In order to ensure public health and safety and minimize flood hazard to public and private property, development in the floodplain must meet certain criteria.

According to the City of Leesburg' current Code of Ordinances, a building permit must be obtained before construction or development begins within any area of special flood hazard. When new construction and substantial improvements do occur in areas of special flood hazards, they shall be constructed with materials and utility equipment resistant to flood damage and shall be constructed using methods and practices that minimize flood damage. Additional requirements ensure that all new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure during a storm event. The lowest floor elevation of the structure shall be 1.5 feet above the level of the base flood elevation or one-half foot above the highest elevation of streets serving the structure site, whichever is greater. In addition, electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities must be above the base flood elevation to prevent water from entering or accumulating within their components during the conditions of flooding.

Hazardous materials can be dangerous when located in flood prone areas, as floodwaters can diffuse spills to surface waters and aquatic populations. Therefore, it is recommended that no hazardous materials or wastes be stored within the 100-year floodplain. To ensure this, the City's Code of Ordinances will require that septic systems be prohibited within 200 feet of a public water supply, unless otherwise approved by the Florida Department of Environment Protection (FDEP) or the Florida Department of Health and Rehabilitative Services (HRS).

5. Air Quality

Air quality is monitored by the FDEP's Air Pollution Inventory System. This system monitors point sources of air pollution that are stationary and usually industrial, such as asphalt plants and mining operations; and area sources, which are combined emissions of many small stationary sources, such as dry cleaning operations, in an area. According to the FDEP, within or immediately adjacent to the City of Leesburg's municipal boundary, there are nineteen (19) permitted and monitored point sources, thirteen (13) of which are active and six (6) of which are inactive, as well as two (2) that are under construction and one (1) that is unpermitted. The City also has ten (10) area sources, seven (7) of which are active, and three (3) of which are inactive, which are permitted and monitored by the FDEP. The locations of these point and area sources are identified in Map IX- 5. An inventory of these air pollution sources is provided in Table IX-2.

The quality of ambient air, which is the outside air we breathe, is monitored by the FDEP. However, there are currently no ambient air monitoring stations in Leesburg, but there is one ozone monitoring site in Clermont and one particulate matter monitoring site in the Lake County portion of the Ocala National Forest. Previously, there have been no ambient air violations in Lake County. An assessment of common pollutants is provided below.

a. <u>Ozone</u>

Ozone is considered to be a problem for highly urbanized areas. The City of Leesburg, while not highly urbanized, could still be affected by ozone in the future

through the growth of the Orlando area. Ozone is borne in the air and formed through reactions between nitrogen oxides and volatile organic compounds. The worst ozone conditions are hot, calm winded days. During this type of weather, the atmosphere becomes extremely heated causing increased reactions and levels of ozone to rise. Without wind to disperse the ozone, concentration levels in a localized area increase, leading to further pollution problems.

b. Total Suspended Particulate Matter

There are two manmade classifications of suspended particulate matter. They are traditional and non-traditional sources. Traditional sources include combustible engines, and sources produced from some industrial activities. Non-traditional sources include dirt from unpaved streets, dry topsoil from agricultural fields, and dust from construction or mining. Manmade emissions, which contribute to the overall levels of suspended particulate matter, are very minimal in relation to the naturally occurring matter. Manmade sources of this pollutant are now being controlled by new technologies such as inertial separators and wet collection devices.

The overall air quality within Leesburg is expected to remain good in the future. Fortunately, more stringent standards imposed by the EPA and new technologies are such that the generation of severe pollution problems has been curbed considerably. The foremost concern for Leesburg will be the encroachment of the Orlando Urban Area, and those pollution problems associated with highly urbanized areas.

6. Hazardous Waste

The proper management of hazardous waste is necessary to protect valuable natural resources. Hazardous wastes include batteries, paints, cleaners, pesticides, and poisons. Improper disposal of these items can have a detrimental effect on our environment. For example, chemicals pored down a drain can pollute our drinking water and contaminate wastewater treatment systems. To address this situation, the Lake County Hazardous Waste Department has established various programs, as listed below, to assist citizens with proper disposal.

A Household Chemical Collection Center is located at the Astatula Landfill on C.R. 561 in Tavares, where the County's hazardous waste is stored. In addition to this center, other locations throughout the County participate in recycling certain hazardous items. Mobile Unit collections at various locations provide a convenient method of disposing of household hazards. This service is for household hazards collection only and is free to the residents of Lake County. A specific example within the City is a collection box for used batteries, located outside the Leesburg Public Library. The County picks up the batteries for proper disposal.

In addition, the Lake County Department of Solid Waste Management offers programs for Lake County businesses. The Conditionally Exempt Small Quantity Generator (CESQG) is for small businesses that produce no more than 220 pounds or 25 gallons of chemical waste per month. Qualified businesses are urged to participate in this program, which is located at

the Household Chemical Collection Center. Disposal fees are based on bid price with the contracted vendor. The service is available every Wednesday and the first Saturday of each month and businesses must reregister to participate. In addition, the County operates the Pollution Prevention Program that also assists businesses with waste. This program gives businesses the opportunity to learn about proper waste disposal, as well as, waste reduction techniques.

The City has an interlocal agreement with Lake County Fire and Rescue to facilitate control of accidents involving hazardous wastes.

7. Commercially Valuable Minerals

Although no active mining is now occurring in the City, historically sand deposits within this area have been mined locally and used for fill material and asphalt production. In order to discourage mining activities, the City shall develop an ordinance, which discourages such activities within the City's jurisdictional limits.

The most prevalent mineral resources found within the City are peat, medium to fine sand and silt, and clayey sand. Peat deposits are found in the southwestern and north-central parts of the City. These areas are known locally as the Okahumpka Swamp and the Emeralda Island Marsh. Deposits range up to 20 feet of thickness. Locally, peat deposits have been an important resource by providing land for truck and sod farming. In the past, peat has been mined and sold commercially.

Clayey sands cover a majority of the western half of the City not in the Okahumpka Swamp, east to the marsh/sod farm next to the Leesburg Municipal Airport, and an area generally bordered by County Road 44, U.S. 441, and County Road 473 (Haines Creek Road). Clayey sand has historically been used for construction purposes or as fill material in the area, although the suitability of the material varies with the clay content. The local importance of this material is illustrated by the numerous borrow pits located throughout the area. However, due to population growth, and the resulting land development pressure, this material is no longer mined in the City. Presently, a stockpile of sand is stored on the site referred to as Wal-Mart Hill, located on Tally Road on the East side of Thomas Road. This sand was discovered through development.

The medium to fine grained sands and silts are found in the eastern section of the City in two relatively narrow ribbons of land. The first is a maximum 1.2-mile strip north of and parallel to County Road 44 between U.S. Highway 441 and County Road 473 (Haines Creek Road). The second belt is a maximum 1.8-mile area south of and parallel to U.S. Highway 441 between County Road 44 and the Dead River. A map depicting the general geologic forms within the City of Leesburg is found in the Aquifer Recharge Element.

8. Soil Erosion

Soils provide several resource functions including drainage, stormwater filtration, water storage, aquifer recharge, and ground stabilization. Map IX- 6 shows soil types within the City of Leesburg.

According to the data provided by United States Department of Agriculture, Soil Conservation Service, the dominant soils within the City of Leesburg include Everglades, Ocoee, Oklawaha Muck, which are frequently flooded, Candler and Apopka sand with varying slopes, Eureka loamy fine sand, and Urban Land Complex.

Soil erosion refers to the capability of a soil to be physically moved by wind or water. According to the Lake County Soil and Water Conservation District, there are areas within the City of Leesburg that are currently experiencing soil erosion. These areas are depicted in Map IX- 7. As the map indicates, these soil types represent only a small fraction of the Leesburg Area. The two erodible soils, scattered throughout the southern portion of the City, are Apopka sand and Paolo sand, both with five to twelve percent slopes.

The invasion of development often involves the removal of native vegetation, which acts as a stabilizer, and the placement of streets, sidewalks, buildings, and parking lots over soils. As a result, stormwater, which would naturally percolate into the ground, runs off of the impermeable surfaces, carrying valuable soils with it. In order to minimize erosion and sedimentation associated with development activities, the USDA Soil Conservation Service recommends that all developers be required to utilize best management techniques for erosion control. Landscaping plans are recommended to be required for all industrial, commercial, and multi-family residential development. It is also required that all new development, other than infill of existing single-family residential lots that are served by regional systems, should include methods of stormwater retention which ensure post-development water run-off rates do not exceed pre-development runoff rates. Therefore, both Leesburg and Lake County Governments must ensure that, upon development of property containing any of these soil types, adequate provisions must be made to minimize soil erosion problems.

9. Vegetative Communities

There are three landscape associations in Central Florida. A landscape association is a group of ecological communities having distinct topographic, geologic, and hydrologic conditions and landscape position. The City lies within the sandhills/isolated or free-flowing wetlands landscape association. The sandhill/wetlands complex has the greatest topographic relief and degree of soil drainage of the three landscape associations in Central Florida. Sandhill soils are deep, well drained sands, which occur on rolling land with strong slopes. Consequently, water movement is rapid through this sandy soil. The top of the surficial water table is often six feet or more below the soil surface. Wetland associations within sandhills include both isolated wetlands and flowing-water wetlands. The sandhills/wetlands landscape association is, in turn, comprised of four habitats, which are smaller groups of ecological communities. These four habitats are described in detail below.

a. Sandhills Habitat

The sandhills habitat is the most important of the four subgroups within the landscape association. This habitat includes the sand scrub and longleaf pine/turkey oak ecological communities. A more complete listing is provided below:

Trees	Shrubs	Herbaceous Plants and Vines	Grasses and Grasslike Plants
Bluejack Oak Chapman Oak Sandlive Oak Sand Pine Longleaf Pine Turkey Oak	Dwarf Huckleberry Gopher Apple Prickly Pear	Grassleaf Golden Aster Deermoss Aster Blazing Star Butterfly Pea Elephant's Foot Partridge Pea Pineland Beggarweed Sandhill Milkweed Wild Indigo	Yellow Indiangrass Low Panicum Pinewoods Dropseed

b. Cypress Swamps Habitat

Additionally, cypress swamps habitat occurs along rivers and lake margins, and is interspersed throughout other communities such as flatwoods. Bald cypress, along lakes and stream margins, is dominant and is often the only plant found in large numbers. Pond cypress occurs in cypress heads, or domes, which are usually found in flatwoods. Plants that characterize the cypress habitat are the following:

Trees	Shrubs	Herbaceous Plants and Vines	Grasses and Grasslike Plants
Bald Cypress Blackgum Coastal Plain Willow Pond Cypress Red Maple	Common Buttonbush Southern Wax-Myrtle	Cinnamon Fern Fall-Flowering Ixia Laurel Greenbriar Pickerel Weed Royal Fern	Maidencane Narrow-Leaf Sawgrass

c. Hardwood Swamps Habitat

The hardwood swamps habitat occurs along rivers and in basins, which are either submerged or saturated part of the year. Bayhead swamps are included within this classification. The vegetation is primarily deciduous hardwood trees. Many areas may have originally been dominated by cypress, but when they were eradicated, the hardwoods became dominant. The following plants characterize the hardwood swamps habitat:

Trees	Shrubs	Herbaceous Plants and Vines
Blackgum Red Maple Sweetbay Water Ash	Buttonbush Dahoon Holly	Cinnamon Fern Lizard's Tail Royal Fern Wild Pine

d. Freshwater Marshes Habitat

The freshwater marshes habitat appears as an open expanse of grasses, sedges, rushes, and other herbaceous plants in areas where the soil is usually saturated or covered with surface water for two or more months during the year. Plants that characterize the freshwater marshes habitat are:

Grasses and Grasslike Plants	Shrubs	Herbaceous Plants
Beak Rushes Blue Maidencane Bottlebush Threeawn Bulrushes Caric Sedges Clubhead Cutgrass Common Reed Flat Sedge Rush Sawgrass Spike Rushes Umbrella Grass Wild Millet	St. John's Wort Primorose Willow Smartweed Pennywort	Arrowhead Blue Flag Cattail Fire Flag Pickerel Weed Smartweed Penny Wort

10. Dominant Animal Species within the Leesburg Area

Sandhills, cypress swamps, and freshwater marshes provide habitats for an extensive number of amphibian, bird, mammal, and reptile species. A list of species likely to exist in the Leesburg area, including their status can be found in Table IX-3.

11. Listed Plant and Animal Species within the Leesburg Area

Before a plant or animal can receive protection under the Endangered Species Act, it must first be placed on the Federal list of endangered and threatened wildlife and plants. The listing program follows a strict legal process to determine whether to list a species, depending on the degree of threat it faces.

Endangered Species are in danger of extinction when the harmful factors affecting their populations continue to operate. These are species whose numbers have already declined to such a critically low level, or whose habitats have been so seriously reduced or degraded, that without active assistance their survival in Florida is questionable.

Threatened species are likely to become endangered in the State within the foreseeable future if current trends continue. This category includes species in which almost all of the populations are decreasing because of over exploitation, habitat loss, or other factors; species whose populations have already been heavily depleted by deleterious conditions, and while not actually endangered, are in a critical state nevertheless; and, species which may still be relatively abundant but are being subjected to serious adverse pressures throughout their range.

Species of Special Concern are species that do not clearly fit into one of the foregoing categories, yet do warrant special attention. Included in this category are species that, although abundant and widespread, are especially vulnerable to exploitation of environmental changes and have experienced long-term population declines; and, species whose status in Florida has a potential impact on endangered or threatened populations of the same or other species outside the state.

On October 17, 2001, an environmental consultant conducted a Preliminary Environmental Assessment of the approximately 691 acre site known as Platt Farms, located in Sections 9 and 20, Township 20 South, Range 25 East, Lake County Florida. The Preliminary Environmental Assessment included field review for the occurrence and potential for occurrence of listed species of flora and fauna, based upon the existing vegetative communities. Since no other recent study has been done for the City of Leesburg in its entirety, the environmental assessment of Platt farms will be used as a guideline for listed species within the Leesburg area. According to the assessment, listed species observed within the area include, but by no means are limited to, the royal fern, the gopher tortoise, the American alligator, the White ibis, and the Bald eagle. Table IX-3 lists the findings of the Preliminary Environmental Assessment. Map IX-8 depicts Strategic Habitat Conservation Areas within the City of Leesburg. Listed Species mapped by the Florida Natural Areas Inventory are shown on Map IX- 9.

C. ANALYSIS

The following section provides an analysis of existing and potential problems and opportunities associated with the conservation of the natural features identified in the inventory.

1. Commercial Use of Natural Resources

There are no existing commercial uses of former mining sites, as most have been abandoned and left to revegetate. Upon revegetation, the sites are no longer considered as sand, gravel, or clay pits but as undeveloped, forested, or vacant land.

Presently, there is minimal commercial use of the lakes within the City. A few commercial fishermen in Lake County may occasionally visit the area's waters. However, due to the limited number of fishermen, their small boats, and their preferred catch of catfish, their fishing operations pose no major threat to the lakes. Additionally, a small pontoon boat originating in Lake Eustis and a larger craft originating in Lake Harris provide limited tour and charter services in the Dead River and Lake Harris section of the City. A number of factors have impeded commercial development on and along the area's water bodies. Some

of these factors include the actuality that most major roads are relatively distant from the lakes; as well as the dominant presence of wetlands along the edge of the water, the quantity of weeds along the littoral zone, the abundance of small lakes and their scattered locations, and the lake's recognized water quality problems. City and County floodplain ordinances also play a factor in the discouragement of commercial development of the lakes. According to State regulations, as identified in the City's Code of Ordinances, there shall be no commercial marinas, which are places of public rental of in-water boat slips with on-site public sale of gasoline for boat motors, in the City.

The primary commercial exploitation of natural resources is development. Through land clearing, vast amounts of upland vegetative communities have been destroyed or altered. However, these upland plant communities are more prevalent and better suited to development than wetland areas, and do not pose as many governmental regulatory problems for developers as wetland areas do.

2. Recreational Use of Natural Resources

A large portion of the recreational and leisure activities of Leesburg' residents revolves around Lake Griffin and Lake Harris, the areas two largest lakes, while the smaller remaining lakes receive minimal use. The recreational use of most of the smaller lakes is limited by their size, landlocked nature, and water quality problems, as well as stringent State regulations on constructing marinas. The most common recreational activity is fishing, followed distantly by speed boating, sailing, and water-skiing. Due to poor water quality, there are no public or commercial swimming beaches in the City.

3. Potential for Conservation and Protection of Natural Resources

Conservation uses are defined by the 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." Within the City of Leesburg, Lake Griffin, Lake Harris, and the Okahumpka Swamp are three areas, in particular, that should be maintained for conservational use to preserve them from the damaging effects of urbanization. Not only does the land surrounding Lake Harris and Lake Griffin provide vast public recreational opportunities, but the marshes that are a part of those lands help to maintain animal habitat, improve water quality, and also allow for the storage of large volumes of water during rainy periods, thus providing flood protection for surrounding communities. Okahumpka Swamp, the single largest area of wetlands in the City of Leesburg, is a freshwater marsh and hardwood swamp, which provides habitat for a wide variety of wildlife and vegetation, while acting as a filter to improve the City's air and water quality as well.

The protection of natural resources is of high priority to the City. In addition to the areas specified above, additional resources which merit special protection, include the following:

- Wellhead fields,
- 100 year floodplain,
- Wetlands, and
- Lakes

Wellhead fields should be protected to insure that the potable water supply for the City is protected from contamination. As mentioned previously, the City maintains standards pertaining to wellhead protection in its Code of Ordinances, such as the mandatory buffer around public water supply wells.

The **100-year floodplains** need to be protected to help mitigate the damaging effects of flooding. Protection of these areas is assisted through the National Flood Insurance Program and local Code of Ordinances requiring compensating storage for impacts to the floodplain.

Wetlands protection has become an important issue to Florida residents. The protection of wetlands helps to ensure that Florida ground and surface waters remain environmentally intact, as well as preserving habitat for numerous species dependent on wetlands to survive. Ordinances should be drafted to protect those wetland habitats occurring in the Leesburg area.

In addition, the City's abundance of lakes and other surface waters warrant special protection. Water quality should be monitored to ensure protection from identifiable pollution sources.

These natural resources are by no means the only protected ones. To assist in the conservation of natural resources, the City's Code of Ordinance should more strictly govern development within areas determined to be ecologically sensitive. Specifically, wetlands should be protected through transfers of density within a site from wetland areas to upland areas and surface waters should be protected through drainage enhancements as identified within the Drainage Element of this Plan.

An estimated 65 percent of the potable water supply **(groundwater resource)** is used for irrigation purposes. Realizing this, the City of Leesburg has recently developed, and is currently implementing, a reclaimed water **program which includes the use of reclaimed water resource to offset the amount of groundwater resources used to serve irrigation demands. In 2004 the city will construct the transmission main to serve reclaimed water from the Turnpike Water Reclamation Facility for irrigation purposes to** ~~system in~~ the Legacy of Leesburg PUD **and planned Arlington Ridge PUD and Golf Course**. **The city is currently in the process of upgrading the Canal Street Wastewater Treatment Facility capabilities to public access reclaimed water standards and has plans to provide 14 major irrigation customer accounts in the east and central areas of the city with reclaimed water resource by the end of 2006. The continued implementation of water reclamation activities will support groundwater aquifer recharge in the city's planning area. In approximately fifteen years (2020) the base**

recharge is anticipated to increase an additional 11.96 inches per year in some areas of the city's planning area from the application of reuse activities, as calculated by the 1995 SJRWMD East Central Florida Groundwater Model, using an updated base reclaimed water application rate of 4.717 MGD. The calculated average increase in base recharge over the entire Leesburg area by 2020 as a result of implemented use of reclaimed water is 2.32 inches per year (from 18.51 to 20.83). The total amount of additional recharge the city's reuse program will supply was calculated to be 176.82 inches per year. The anticipated aquifer recharge rates for city reclaimed water sites projected for the year 2020 associated with the implementation of the city's reclaimed water program shown in Table XI-3.

Voluntary residential and commercial water conservation will be achieved through **newly-established water utility rate structure,** the City's participation in water conservation efforts of the St. Johns River Water Management District and the Lake County Water Authority. The City's Code of Ordinances **currently** ~~**should**~~ require the installation of water-saving plumbing devices including low-flow toilets, showerheads, and faucets within new developments**, as mandated by the Florida Building Code**.

Wetlands, surface water, groundwater, as well as floodplains, soils, vegetative communities, and wildlife are all commodities that impact and benefit each and every citizen in a manner much greater than we may realize. We must recognize that these resources are finite and their future existence and integrity depends on the actions we, as citizens, take today.

4. Water Needs

The City's water system consists of five (5) water treatment plants, which serve approximately **11,618** ~~**11,407**~~ equivalent connections. Water is supplied to the five plants by fifteen (15) potable water wells and the entire system is permitted by St. Johns River Water Management District to withdrawal 7.937 million gallons per day. Presently, none of the water provided by the City of Leesburg is utilized for agricultural purposes. Future water demand based on population projections, as well as, industrial water demand is included within the Potable Water Element of this Growth Management Plan.

Table IX- 1: Environmental FirstSearch Sites Summary Report

Data Base Type	Site Name	Address	Status
Emergency Response Notification System	Highway Related	Ogden Martin Incinerator 3830 Okahumpka, FL 34762	None Given
Underground Storage Tanks	B.E. Works	Intersection of Highway 44 & 33 Okahumpka, FL 34762	Closed
Leaking Underground Storage Tanks	Florida Department of Transportation	Exit 85 MP 242 Leesburg, FL 34762	None Given
Underground Storage	Florida Department	Exit 85 MP 242	Closed

Tanks	of Transportation	Leesburg, FL 34762	
Emergency Response Notification System	Gordon S Company	Fern Drive Leesburg, FL 34762	Fixed Facility
Leaking Underground Storage Tanks	Hall Grocery	72443 CR 33 Okahumpka, FL 34762	None Given
Underground Storage Tanks	Hall Grocery	72443 CR 33 Okahumpka, FL 34762	Closed
Emergency Response Notification System	Hawthorn at Leesburg	Retirement Home Leesburg, FL 34762	None Given
Underground Storage Tanks	USE	72443 CR 33 Okahumpka, FL 34762	Closed
Underground Storage Tanks	Starl Warfield	SR 48 Okahumpka, FL 34762	Closed

Source: Andreyev Engineering, 2001.

Table IX- 2: Inventory of Permitted Point and Area Sources of Air Pollution in Leesburg

Map #	Facility Name	Facility Address
Point Sources		
Active		
1	Cutrale Citrus Juices USA Inc.	11 Cloud Street & Highway 441
2	Southdown/FL Mining & Materials	1300 S. Lucas Street
3	Rinker Materials Corporation	27111 CR 33
4	WAPI Acquisition Corporation	1107 North Thomas Road
5	Beyers Funeral Home	1123 West Main Street
6	Florida Rock Industries	1330 North Thomas
7	KLM Industries, Inc	2600 Industrial Street
8	Leesburg Concrete, Inc.	2008 Griffin Road
9	DAB Contractors	1233 Commerce Street
10	Covanta Lake, Inc	3830 Roger's Industrial Park Road, Okahumpka
11	Asphalt Production	110 C.R. 470, Okahumpka
Inactive		
12	Leesburg General Hospital	600 East Dixie Avenue
13	Florida Rock Industries	406 North 13th Street
14	Leesburg Tire & Battery	1201 West Main Street
15	Lynn Precast, Inc	1233 North Commerce Street
16	E.L. Williams, Inc.	1500 West Main Street
17	Barham Industries	2206 West Griffin Road
Under Construction		
18	Hillcrest Crematory	1901 CR 25A
19	George J. Clemons Beverage Body & Trailer Service	2990 South Street
Unpermitted		
20	Regal Marine Industries	Regal Marine Industries

Map #	Facility Name	Facility Address
Area Sources		
Active		
21	Southside Cleaners	1321 South 14th Street
22	Johnson's Cleaners	101 West North Blvd.
23	Middlesex Asphalt, L.L.C.	1335 Thomas Avenue
24	Elite Dry Cleaners	1421 West Main Street
25	Trinity Equipment Manufacturing (TEMCO Plant #448)	31643 Executive Blvd.
26	Monaco Coach Corporation	3701 West Main Street
27	Fulmer's Dry Cleaners	716 North 14th Street
Inactive		
28	Long's Dry Cleaners	2115-A North Citrus Blvd.
29	Donna's Cleaners	1421 West Main Street
30	Fulmer's Dry Cleaners	716 North 14th Street

Source: FDEP Orlando Air Resources Division, June 2002.

Table XI-3: **Projected Ten-Year (2020) Reclaimed Water Usage Impact on Aquifer Recharge**

Row	Column	1995 Recharge (in/year)	Leesburg's Total **Additional Recharge from Reuse Activities (in/yr)	Updated Recharge (2020 Projection) (in/yr)
41	25	18.151	0.020	18.171
41	26	16.482	1.140	17.622
41	27	14.388	1.140	15.528
41	28	16.482	0.020	16.502
41	29	20.201	3.140	23.341
42	24	14.388	0.020	14.408
42	25	14.388	0.020	14.408
42	29	20.201	0.020	20.221
42	30	14.388	0.020	14.408
42	31	20.201	0.590	20.791
42	32	14.388	0.020	14.408

43	17	14.388	0.540	14.928
43	19	16.482	0.020	16.502
Row	**Column**	**1995 Recharge (in/year)**	**Leesburg's Total **Additional Recharge from Reuse Activities (in/yr)**	**Updated Recharge (2020 Projection) (in/yr)**
43	20	20.201	0.020	20.221
43	21	23.858	0.020	23.878
43	22	20.201	0.020	20.221
43	23	21.471	0.020	21.491
44	17	20.201	5.070	25.271
44	18	18.151	0.090	18.241
44	19	14.388	11.960	26.348
44	20	20.201	0.890	21.091
44	21	14.388	2.410	16.798
45	16	20.201	2.240	22.441
52	10	23.140	2.721	25.861
52	11	24.769	1.633	26.402
52	20	18.059	0.123	18.182
52	21	20.582	0.490	21.072
52	22	11.690	0.613	12.303
53	9	15.790	1.633	17.423
53	10	23.140	4.354	27.494
53	11	15.790	4.354	20.144
53	12	26.530	1.633	28.163
53	18	22.421	1.158	23.579
53	19	20.582	1.158	21.740
53	20	19.570	1.225	20.795
53	21	22.758	3.063	25.821
53	22	22.758	1.225	23.983
54	9	6.018	4.354	10.372
54	10	6.018	4.354	10.372
54	11	15.790	4.354	20.144
54	12	23.140	4.354	27.494
54	13	20.582	1.633	22.215
54	17	23.039	1.158	24.197
54	18	23.161	2.316	25.477
54	19	22.758	3.474	26.232
54	20	19.570	2.451	22.021

54	21	23.341	2.451	25.792
54	22	23.341	0.613	23.954
Row	**Column**	**1995 Recharge (in/year)**	**Leesburg's Total **Additional Recharge from Reuse Activities (in/yr)**	**Updated Recharge (2020 Projection) (in/yr)**
55	9	6.018	4.354	10.372
55	10	15.790	4.354	20.144
55	11	6.018	4.354	10.372
55	12	26.530	4.354	30.884
55	13	19.570	4.354	23.924
55	14	20.582	0.544	21.126
55	16	22.421	0.695	23.116
55	17	22.758	4.631	27.389
55	18	20.582	4.631	25.533
55	21	23.341	0.404	23.745
56	9	15.790	4.354	20.144
56	10	6.018	4.354	10.372
56	11	6.018	4.354	10.372
56	12	20.498	4.354	24.852
56	13	11.690	1.089	12.779
56	16	22.618	0.463	23.081
56	17	22.758	2.316	25.606
56	18	19.570	1.158	21.952
56	21	23.341	2.706	26.047
57	9	6.018	4.354	10.372
57	10	15.790	4.354	20.144
57	11	6.018	4.354	10.372
57	12	24.769	2.721	27.490
58	9	27.690	4.354	32.044
58	10	20.498	4.354	24.852
58	11	25.842	4.354	30.196
58	12	23.140	0.544	23.684
59	10	15.790	1.089	16.879
59	11	25.842	2.177	28.019
Total Recharge From Reuse in 2020:			**176.82**	
Average Recharge		**18.512**	**2.296**	**20.835**

Above recharge values were calculated by Andreyev Engineering Inc. (AEI) using SJRWMD 1995 ECF Groundwater Model and reuse data obtained from Boyle Engineering, Inc. for City Center and East Service Area, and from AEI's 2003 City of Leesburg Reuse Master Plan, South service area reuse estimates.

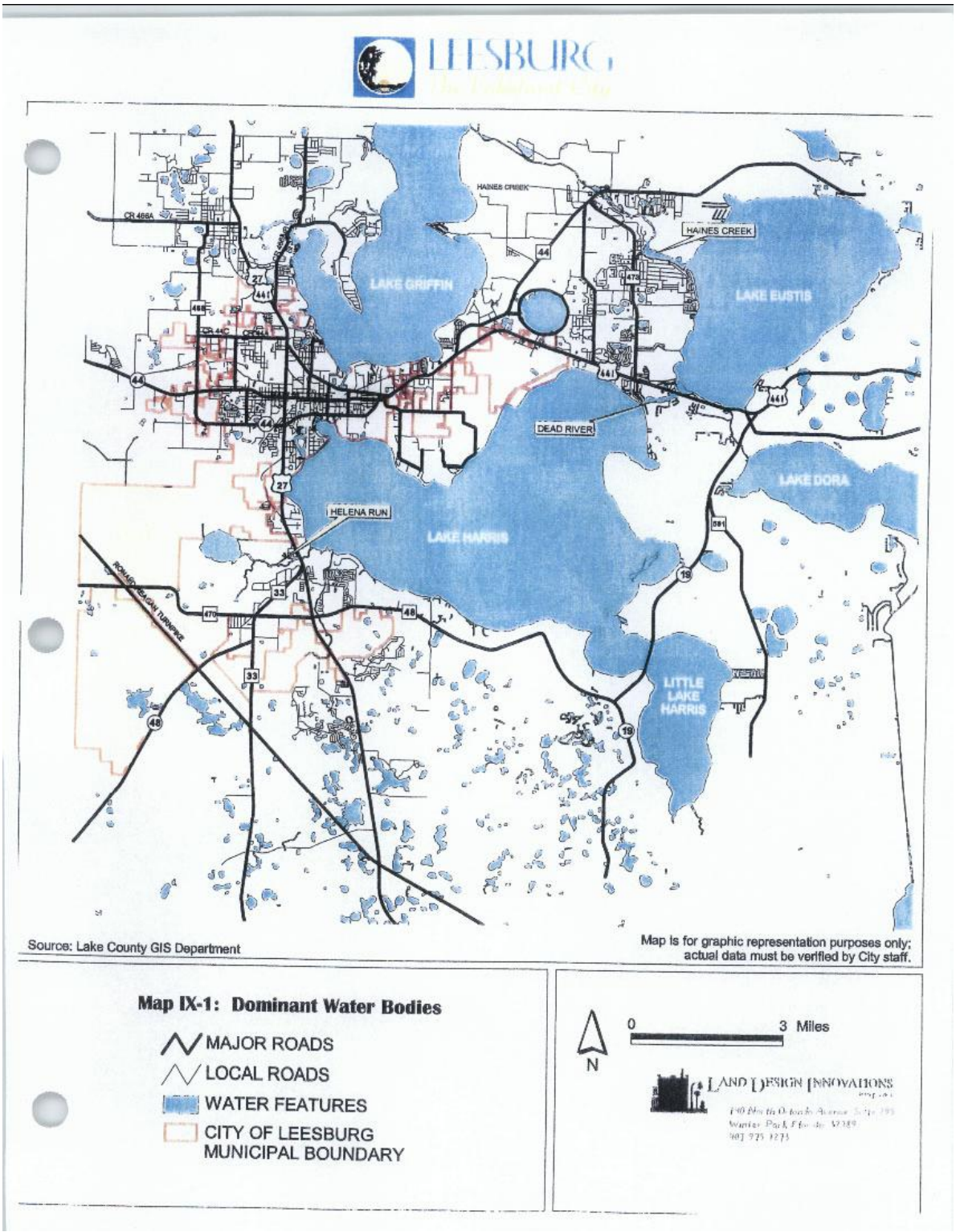
Table IX- 4 ~~3~~: Listed Plant and Animal Species in Lake County and Expected Occurrence on Platt Farms Property.

Species Type and Common Name	Florida Fish and Wildlife Conservation Commission	Probability of Presence or Occurrence
Amphibians		
Florida Gopher Frog	Species of Special Concern	High
Reptiles		
American Alligator	Species of Special Concern	Observed Onsite
Eastern Indigo Snake	Threatened	Moderate
Gopher Tortoise	Species of Special Concern	Observed Onsite
Florida Pine Snake	Species of Special Concern	Moderate
Birds		
Limpkin	Species of Special Concern	High
Little Blue Heron	Species of Special Concern	Observed Onsite
Snowy Egret	Species of Special Concern	High
Tricolored Heron	Species of Special Concern	High
White Ibis	Species of Special Concern	Observed Onsite
Southeastern American Kestrel	Threatened	High
Florida Sandhill Crane	Threatened	High
Bald Eagle	Threatened	Observed Onsite
Wood Stork	Endangered	High
Burrowing Owl	Species of Special Concern	High
Mammals		
Sherman's Fox Squirrel	Species of Special Concern	High
Florida Black Bear	Threatened	High
Species Type and Common Name	**Florida Department of Agriculture**	**Probability of Presence or Occurrence**
Plants		
Long Strap Fern	Endangered	Low

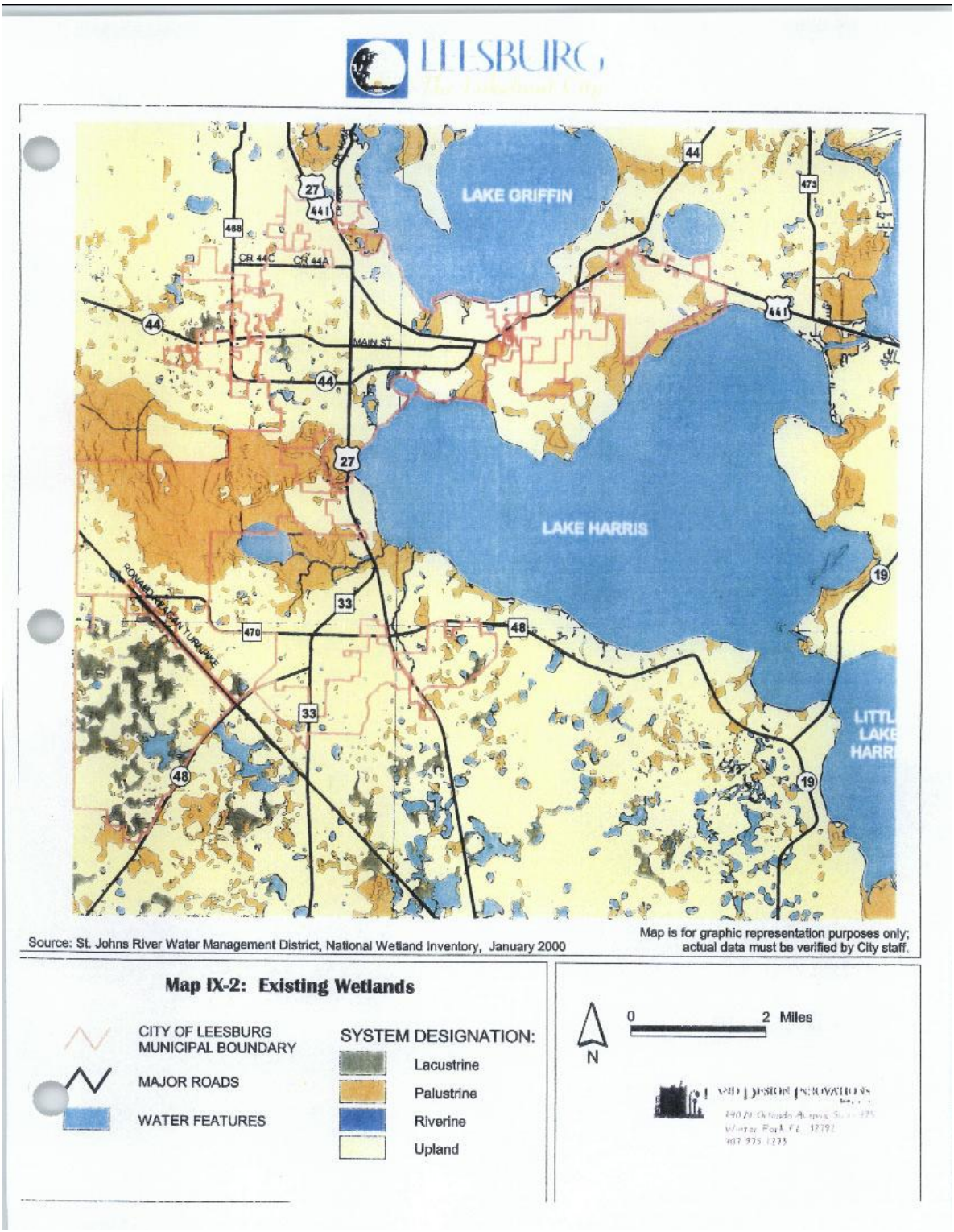
Rosebud Orchid	Threatened	Low
Species Type and Common Name	**Florida Department of Agriculture**	**Probability of Presence or Occurrence**
Water Sundew	Threatened	High
Butterfly Orchid	Commercially Exploited	Moderate
Slender Naiad	Threatened	High
Fall-Flowering Pleat-Leaf	Endangered	Low
Cinnamon Fern	Commercially Exploited	High
Royal Fern	Commercially Exploited	Observed
Plume Polypoda Fern	Endangered	Low
Swamp Plume Polypoda Fern	Endangered	Low
Yellow-Fringed Orchid	Threatened	Low
Southern Tubercled Orchid	Threatened	Low
Snowy Orchid	Threatened	Low
Needle Palm	Commercially Exploited	Low
Florida Willow	Endangered	Moderate
Leafless Beak Orchid	Threatened	High

Source: Andreyev Engineering, Inc., 2002

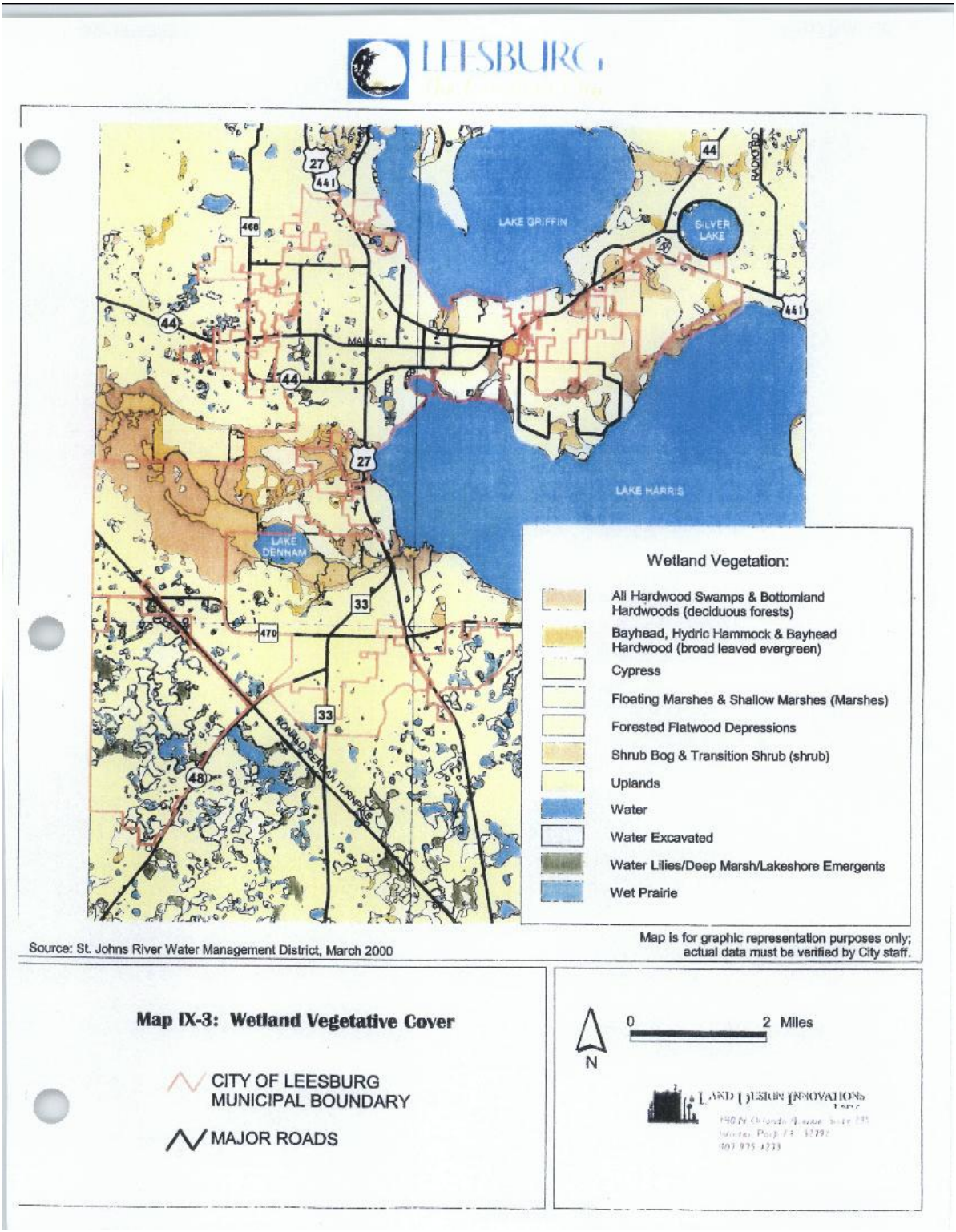
Map IX- 1: Dominant Water Bodies



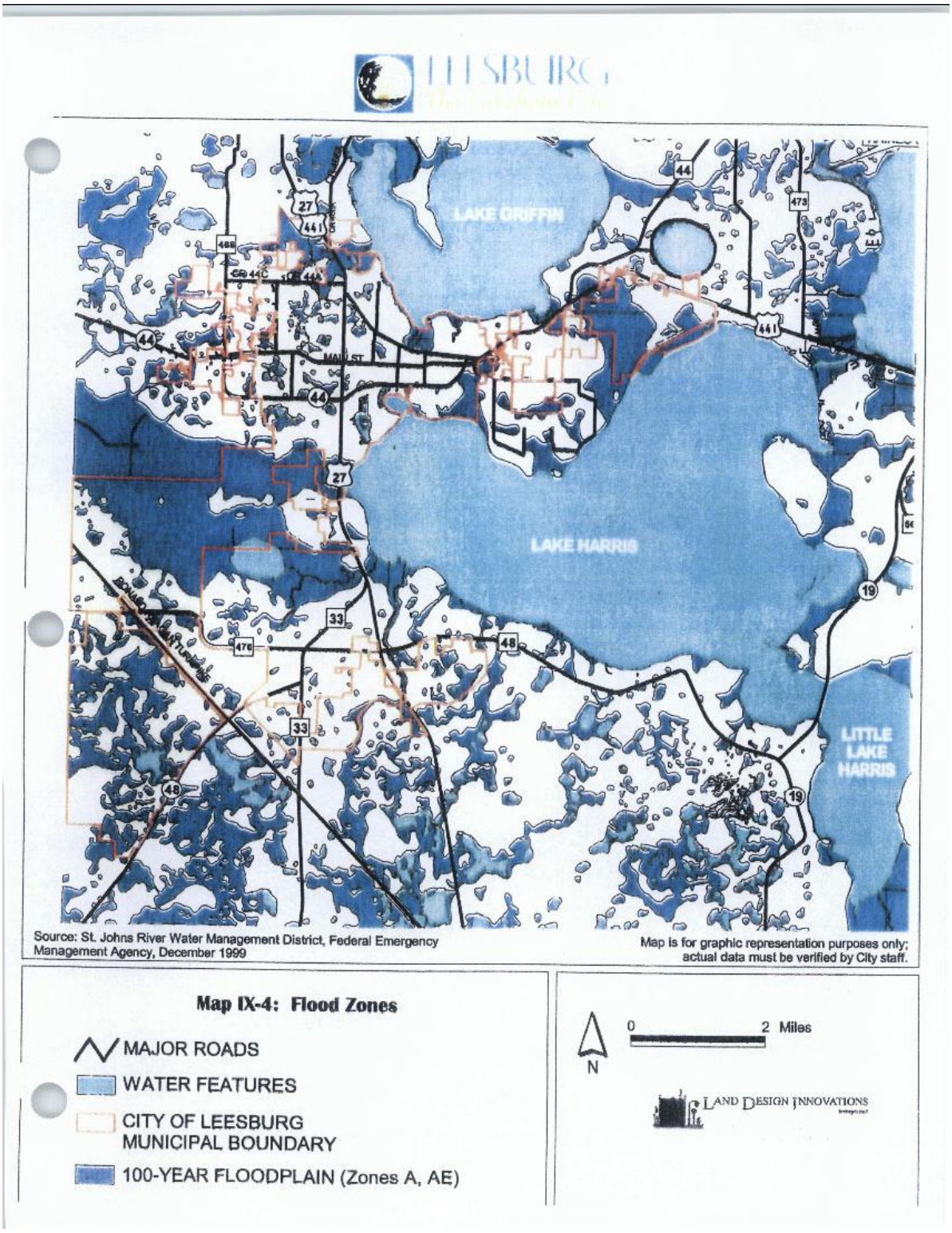
Map IX- 2: Existing Wetlands



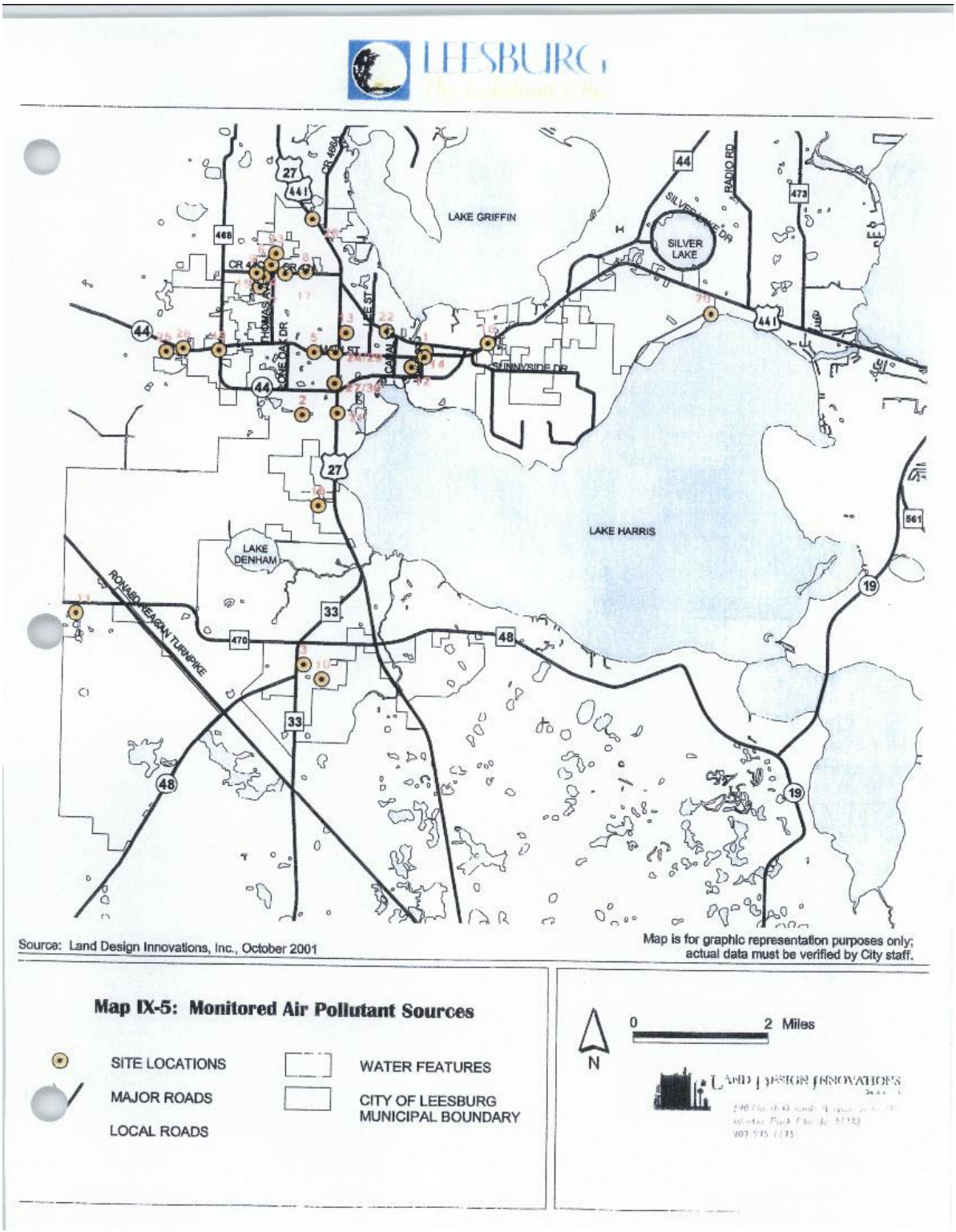
Map IX- 3: Wetland Vegetative Cover



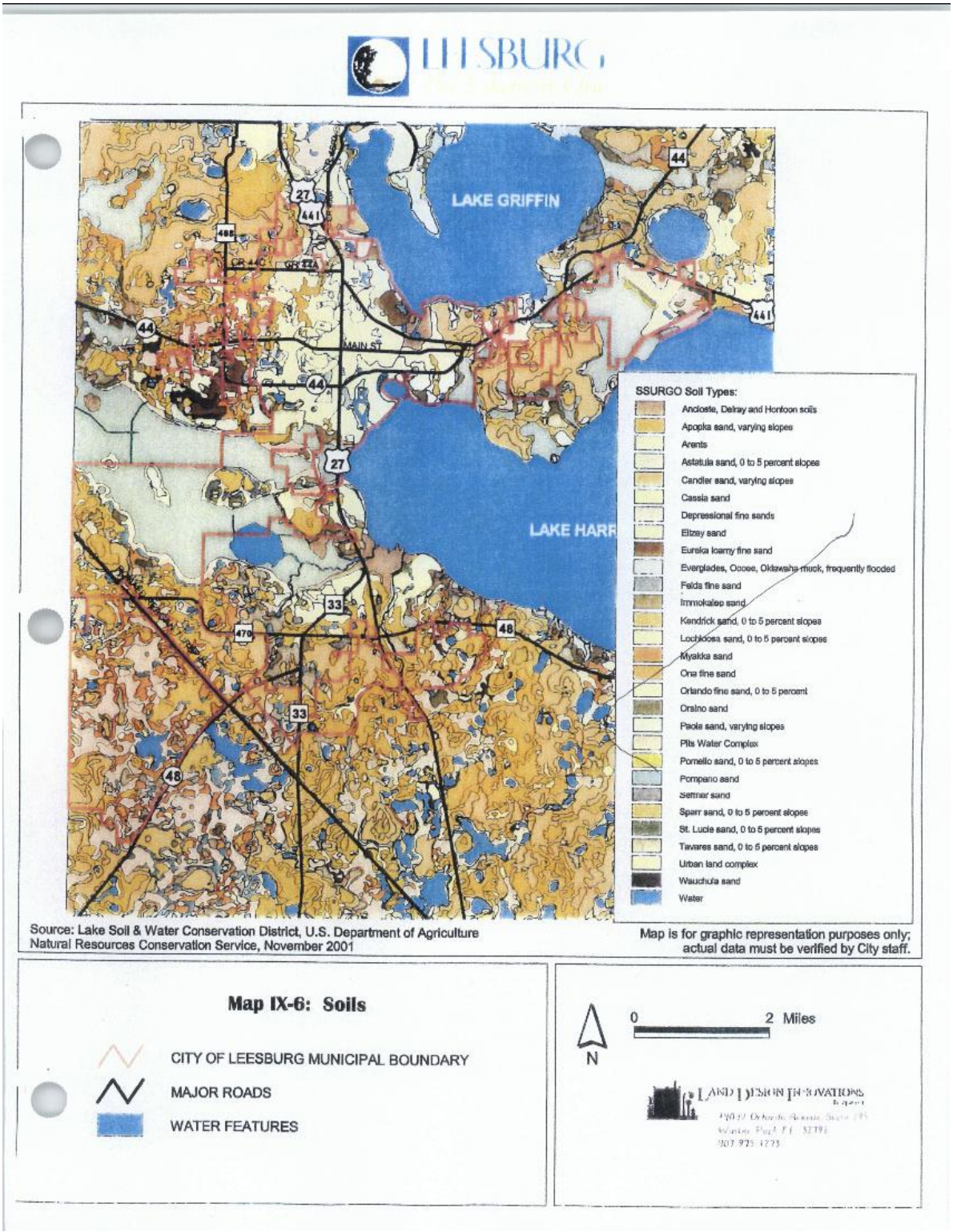
Map IX- 4: Flood Zones



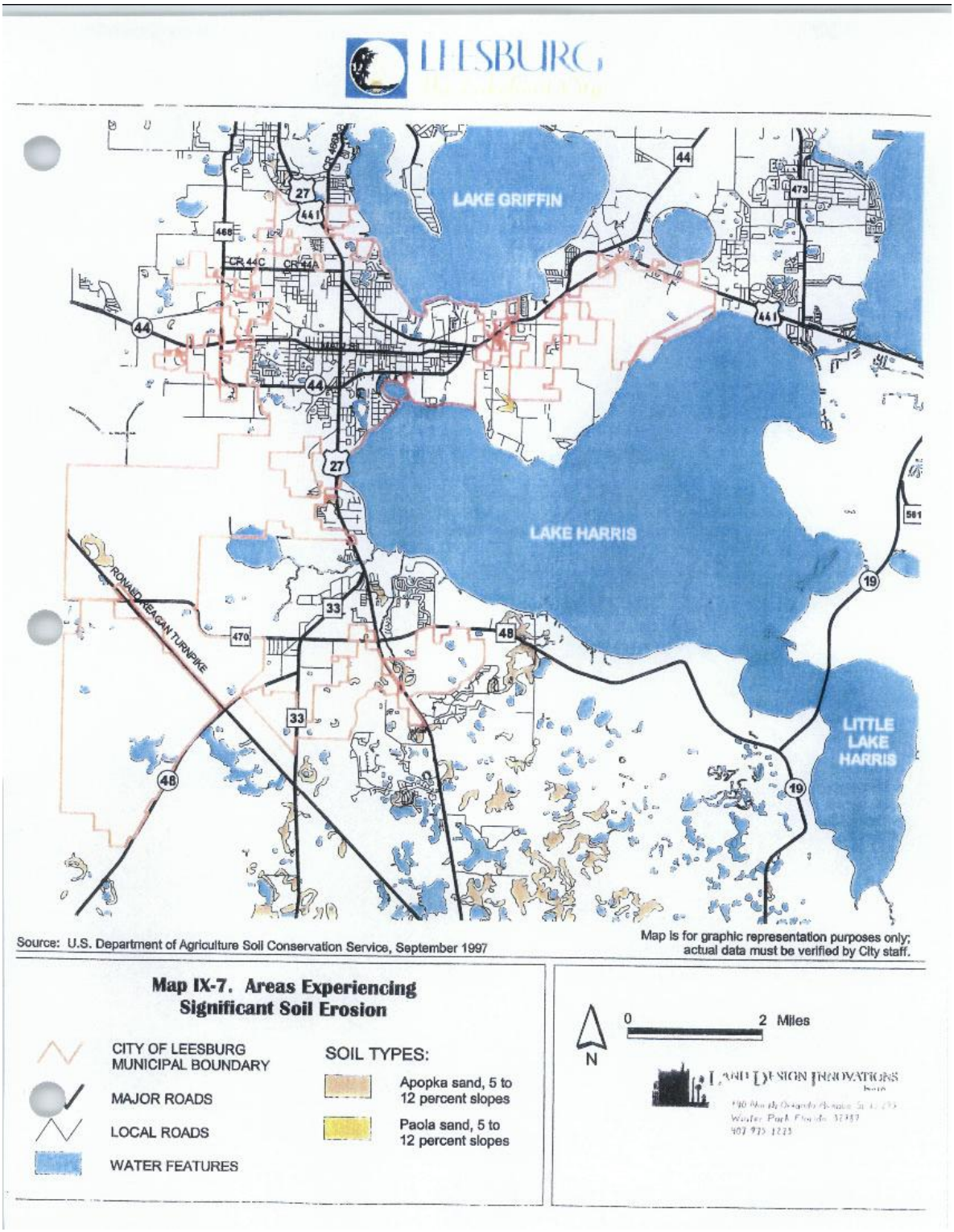
Map IX- 5: Monitored Air Pollutant Sources



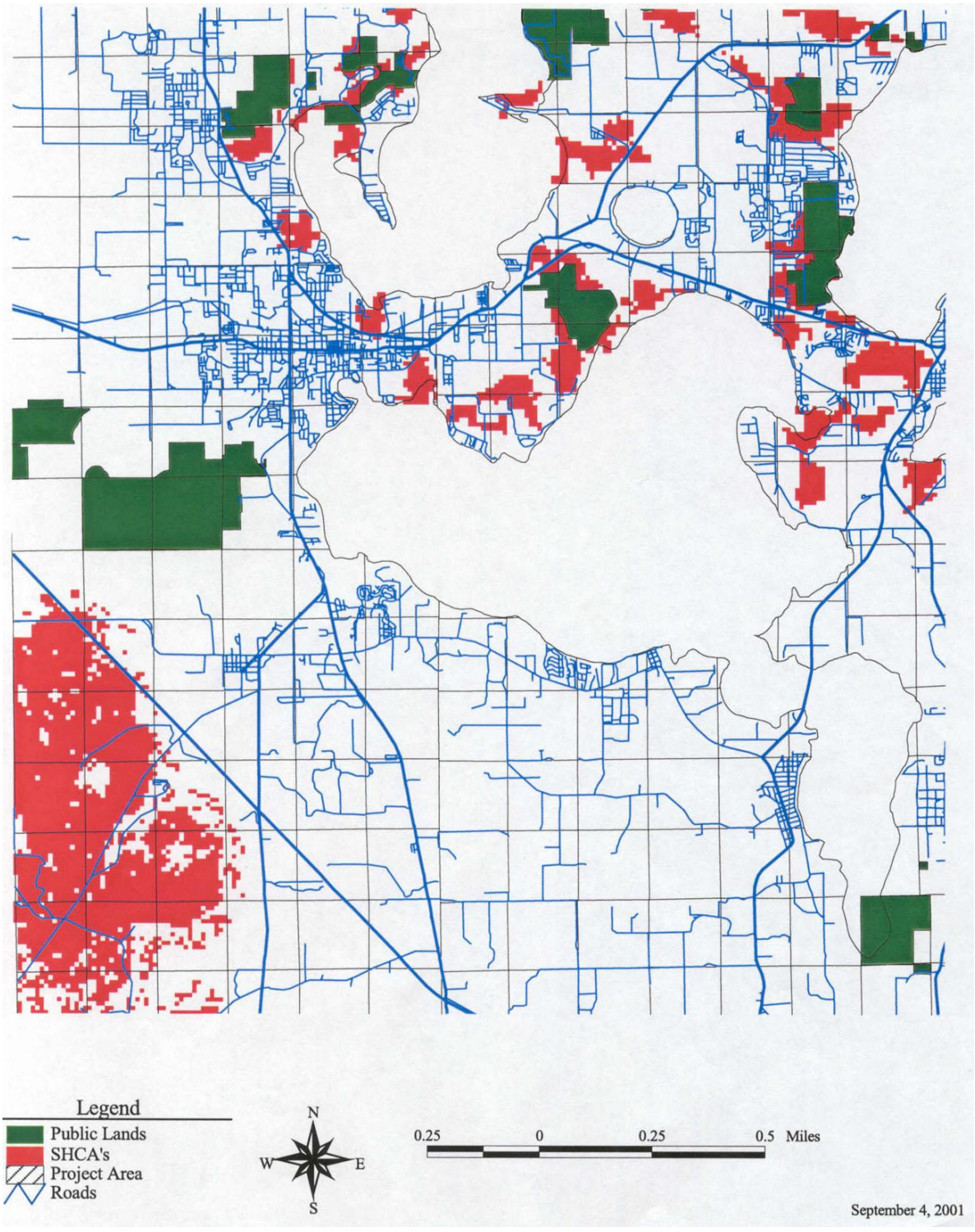
Map IX- 6: Soil Types



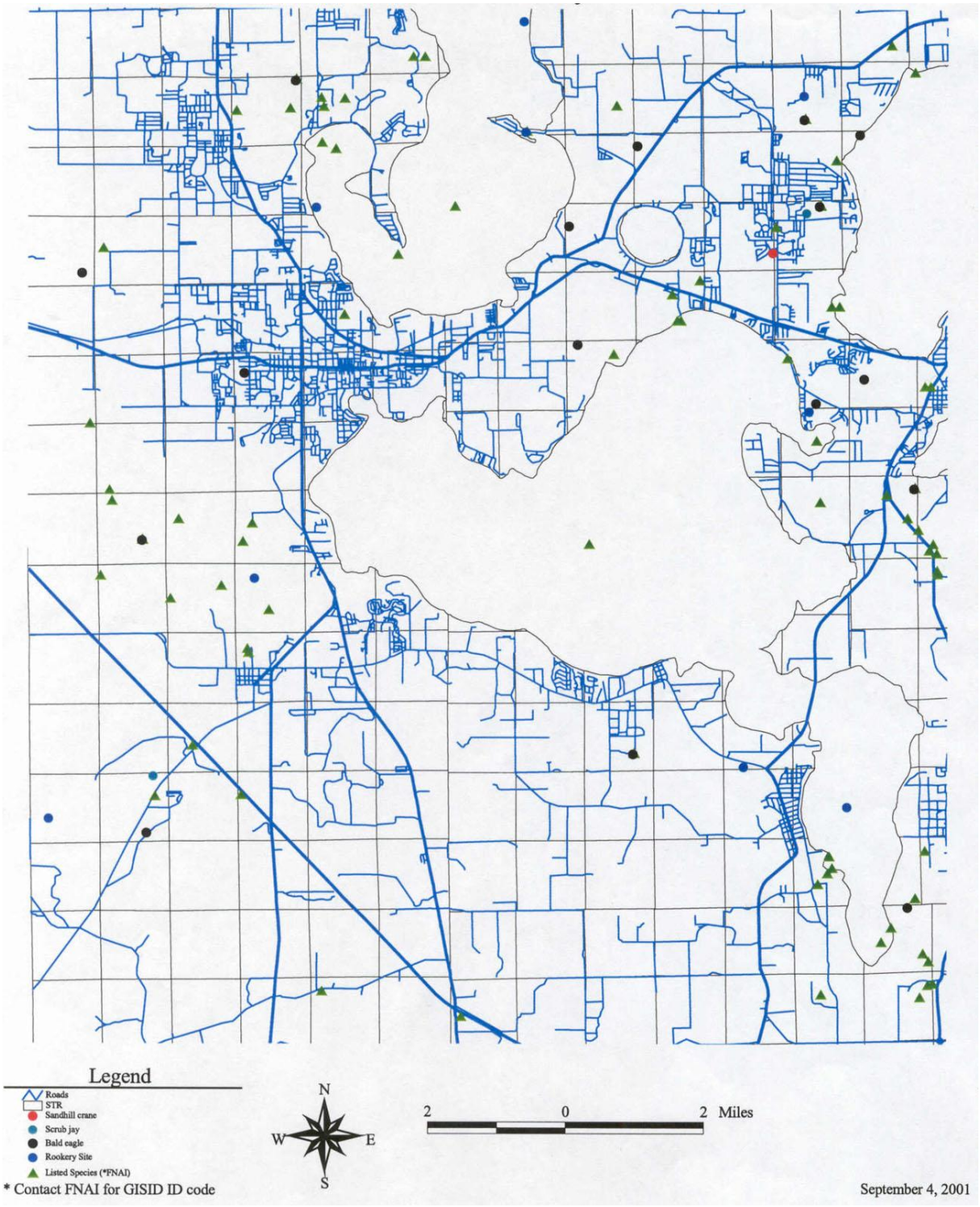
Map IX- 7: Areas Experiencing Significant Soil Erosion



Map IX- 8: Strategic Habitat Conservation Areas



Map IX- 9: Listed Species



D. GOALS, OBJECTIVES, AND POLICIES

GOAL 1: To conserve, protect, and appropriately manage the natural resources of Leesburg and the surrounding area to ensure high environmental quality and the well being of all citizens.

Objective 1.1: ***Surface Water.*** The City shall maintain regulations to protect surface water from known and identifiable pollution sources.

Policy 1.1.1: The City shall continue to support and assist the Lake County Pollution Control Department and other appropriate agencies in programs for monitoring the quality of lakes within and adjacent to the City.

Policy 1.1.2: Leesburg shall cooperate in the Florida Department of Environmental Protection's STORET program for monitoring point source discharges into the rivers.

Policy 1.1.3: Leesburg shall maintain and implement a comprehensive stormwater management ordinance with the intent to supplement State and SJRWMD regulations establishing the following programs or activities.

- Establish stormwater quality and quantity levels of service.
- Establish permitting mechanisms and procedures for enforcement of adopted levels of service.
- Establish design and performance standards, such as rainfall distribution, amounts, and intensities, to be used as part of subsequent permitting and stormwater master planning.
- Establish definitions to assist in the understanding or enforcement of concepts of the stormwater management program.
- Identify activities requiring a stormwater management permit and those development activities exempt from the permit.
- Establish maintenance and inspection procedures including procedures for appeals and penalties.

Policy 1.1.4: The City shall incorporate applicable stormwater management technical requirements of the SJRWMD into the City's stormwater management ordinance.

Policy 1.1.5: The City shall coordinate with Lake County to assure that County land use controls applicable to adjacent unincorporated areas promote land

uses which shall not adversely impact surface water quality within Leesburg through continued participation in:

- Joint City/County informal planning staff meeting
- The Lake County Technical Review Committee
- The East Central Florida Regional Planning Council's Technical Advisory Committee.

Policy 1.1.6: To protect the shorelines from erosion, and to reduce sediments and suspended solids introduced to surface waters, the City shall coordinate with the U.S. Soil Conservation Service and relevant State Agencies in the identification of shoreline erosion problems and the analysis of best management practices to retard or prevent further erosion.

Policy 1.1.7: The City shall require that run-off from new developments does not directly enter natural surface waters. Provisions for on-site detention shall be included within the Code of Ordinances.

Policy 1.1.8: **The city herein adopts the requirements of Rule 62-25, FAC and Section 402 of the Federal Clean Water Act Reauthorization for water quality standards for stormwater discharge for all new and existing stormwater management systems. As part of this adoption by reference, the city includes the following clarifications and exceptions:**

- **The city does not mandate that existing facilities must be retrofitted to meet these standards. Such retrofitting will be accomplished through the funding constraints of the city's stormwater utility and other revenue sources.**
- **The city will retrofit those existing facilities that are determined (by the city) to be required to meet EPA/FDEP TMDL program point source discharge criteria.**
- **Stormwater management systems which satisfy the appropriate state or regional regulatory design and performance criteria are**

deemed to satisfy the stormwater discharge water quality standards.

- **Stormwater management systems that comply with adequate locally or regionally established level of service standards shall also be deemed to satisfy the stormwater discharge water quality standards.**

- **The City may, at its discretion, allow exemptions to the stormwater management water quality standards to the extent permissible under federal, state or regional stormwater management water quality laws or regulations.**

- **This policy does not mandate that the city conduct water quality sampling or testing of stormwater discharge receiving waters to implement the standards of the policy.**

Policy 1.1.7:

Objective 1.2: ***Groundwater Resources.*** The City shall conserve, use best management techniques, and protect future and existing groundwater resources for potable water usage**, as needed to support water supply planning efforts as stated in the city's 10-year Water Supply Facilities Work Plan goals, objectives and project**.

Policy 1.2.1: Leesburg shall cooperate with Lake County, FDEP, **the Lake County Water Authority (LCWA)** and SJRWMD, in their continuing program to monitor groundwater quality and levels.

Policy 1.2.2: Leesburg shall continue to monitor its former solid waste disposal site in order to protect groundwater quality.

Policy 1.2.3: The City shall maintain through its Code of Ordinances, provisions that establish zones of protection around each existing and future City potable water well and prohibit specified activities and land uses adjacent to potable water wellfields and their protection zones.

Policy 1.2.4: The adopted Code of Ordinances shall continue to require all development in the City to connect to City sewer service. Temporary treatment may occur in accordance with the 10D-6, F.A.C., where service is not available within 500 feet of the proposed site. However, upon provision of availability connection will be required.

Policy 1.2.5: Site plan review criteria shall continue to include and enforce the minimization of impervious surface coverage in development design. Impervious surface ratios shall be 80% maximum coverage for

commercial uses outside the CBD core, 100% for commercial uses within the CBD core, 80% for industrial uses, and 50% for residential uses.

Policy 1.2.6: The City shall continue to require applicants of proposed developments to provide evidence prior to the issuance of a Certificate of Occupancy that appropriate operating permits have been issued by State regulatory agencies, particularly for commercial or industrial activities using on-site storage facilities for chemical or hazardous materials and wastes.

Policy 1.2.7: Prior to development approval, an inspection shall be conducted to properly identify active drainage wells. If any wells are found, the developer shall report the presence of these wells to the city and FDEP and shall be responsible for sealing the drainage wells..

Policy 1.2.8: The City shall utilize fees from the adopted Stormwater Management Utility to investigate, operate, and maintain suitable means for treatment and management of stormwater runoff; and shall require best management practices as identified by SJRWMD to be implemented on all new development.

Policy 1.2.9: Areas designated as Conservation on the City's Future Land Use Map may be incorporated as a part of the City's wastewater treatment system and used for effluent treatment purposes, as approved by the FDEP.

Policy 1.2.10: The City's Land Development Code shall require the installation of EPA Water Sense plumbing devices including low-flow toilets, showerheads, and faucets for new construction and within new developments.

Policy 1.2.11: The City shall continue to implement, and expand where feasible, water reuse or reclamation systems for commercial, residential, and industrial operations which utilize large quantities of non-potable water.

Policy 1.2.12: The City shall adopt a local Florida Friendly Landscape ordinance, prepared with consideration to the St. John's River Water Management District's "Standards for Landscape Irrigation in Florida" document, which is based on the District's model landscape ordinance and shall promote, through educational programs and publications, the use of Florida friendly practices, which include low or no water landscaping, the use of solid waste composts, efficient irrigation systems, and the prohibition of exotic plant species, which will result in the conservation of water.

Policy 1.2.13: Septic systems are prohibited within 200 feet of a public water supply well, unless otherwise approved by the Florida Department of

Environment Protection (FDEP) or the Florida Department of Health and Rehabilitative Services (HRS).

Policy 1.2.14: The city will continue to make appropriate changes to the city's Comprehensive Plan's Conservation Element that support the attainment of water quality needed to safeguard water supply and support water supply planning efforts as stated in the city's 10-year Water Supply Facilities Work Plan goals, objectives and projects.

Policy 1.2.16: **Continue to regulate development within high recharge areas and designated wellhead protection areas of public water supply wellheads as follows:**

- **at a minimum, conform to Rule 62-521, FAC (Wellhead Protection) adopted by the Florida Department of Environmental Protection and city codes/standards pertaining to lands adjacent to streams, ponds, lakes, and wetlands, groundwater and wellhead protection, and Standard Stormwater Management Facility Construction Specifications regarding types of restrictions within designated wellhead protection areas;**
- **limit impervious surface areas, including roofs and pavement, in high recharge areas and designated wellhead protection areas, except that impervious cover factors may be increased for infill locations in already developed areas of the same or greater intensity;**
- **on-site waste disposal methods may be used only where permittable by state and local agencies having jurisdiction and where public sewer service is unavailable and is not included in the current five-year Capital Improvements Program;**
- **Designated wellhead protection areas are those set forth in the "Wellhead Protection Area Delineation" report prepared by the St. Johns River Water Management District and accepted by the City of Leesburg.**

Policy 1.2.17: Continue to implement/enforce established codes pertaining to buffer size requirements, development setback requirements, setback requirements, native vegetation setback requirements, and stormwater swale requirements, pursuant to the city code for construction site operators/owners of development to maintain. Elements of buffer zone requirements include the establishment of upland buffer zones on the landward extent of the wetland jurisdictional line as defined by St. Johns River Water Management District (SJRWMD) criteria. The City will continue to enforce these requirements as part of the pre-construction review of buffer zone

designs and as part of the construction inspection process already in place.

Policy 1.2.18: **The city will continue to regulate (by ordinance) and control construction site waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste that may cause adverse impacts to water quality, pursuant to code of ordinances.**

Policy 1.2.19: **The City will continue to regulate stormwater discharges from pre- and post-development construction pursuant to established city codes to maintain, confine and regulate runoff from polluting surface water, reducing erosion and sedimentation, preventing flooding and endangering the ecological balance of the environment in an effort to enhances landscape value, increases groundwater recharge, enhance water quality, and decreases groundwater consumption.**

Policy 1.2.20: **The City will consider establishing a program that offers incentives to encourage infill development which describes the minimum requirements that all property owners/ developers must comply with when requesting development approval for property located within the city. Offered incentives for infill development in higher density urban areas should include density bonuses and the transfer of development rights to infill locations.**

Policy 1.2.21: **Continue to apply and evaluate the effectiveness of newly adopted multi-tiered inclined water usage rate structure (conservation rate structure) for potable water uses, in support of water conservation objectives.**

Policy 1.2.22: **Continue to apply and evaluate the effectiveness of adopted reclaimed water usage rate structure for irrigation water uses, in support of water conservation objectives.**

Policy 1.2.23: **Review local water consumption trends no less frequently than biannually and, as needed, adjust the city's water use rate structure accordingly to fund water and reclaimed water projects in accordance with the city's 5-year CIP, the city's 10-year Water Supply Facilities Work Plan and as necessary to maintain per capita consumption at or below previous levels.**

Policy 1.2.24: **The City will continue to apply the Florida Building Code for city development construction pertaining to plumbing fixture(s) back-**

flow prevention device inspection and testing requirements, and low volume fixture installation, to maintain compliance with the Florida Building Code.

Policy 1.2.25: **Continue to perform annual leak detection of the city water distribution system water mains and make necessary repairs to water mains in support of the city's active Leak Detection Program and maintain compliance with stated City CUP permit requirements. Additionally, the city will update the 5-year CIP to reflect system needs pursuant to leak detection activities.**

Policy 1.2.26: **Continue to implement SOPs in place for the review of all site development plans for potential groundwater quality impacts.**

Policy 1.2.27: The SJRWMD has the exclusive authority to regulate consumptive uses of water under Chapter 373, F.S. The City manager adopts regulations to ensure for the efficient operation of the reclaimed water system or for the health or safety of the general public or the customer, regarding the following matters:

- **The times of day or night during which the reclaimed water may be used by customers.**
- **The maximum rate of use of the reclaimed water.**
- **The right to inspect reclaimed water devices, facilities, and terminate service to reclaimed water system found to be in violation of any city ordinance, regulation or procedure.**
- **The right to impose the requirement that upon being connected to the shall not continue to be used for irrigation and shall be disconnected from the irrigation system (unless otherwise approved by the cognizant permitting agency and the city manager).**
- **The right to impose the mandatory payment of fees for the installation and usage of reclaimed water systems. Once service is connected, the user shall pay a minimum monthly charge set by resolution of the city commission.**
- **The right to temporarily discontinue service to any portion of, or the entire, reclaimed water system as deemed necessary by the .city's reclaimed water system, any existing wells on the subject property**

Policy 1.2.28: **Continue to document all un-metered water use such as fire fighting, sewer cleaning, main flushing, street cleaning and construction use. Additionally, the city will continue to require water meters for all schools, municipal buildings and municipal irrigation systems.**

Policy 1.2.29 The City shall enforce restricted irrigation hours and rain sensor device requirements in compliance with State and local regulations.

Policy 1.2.30 The City shall evaluate the technical and financial feasibility of capturing stormwater at the Turnpike WWTP sprayfield to offset groundwater withdrawals.

Objective 1.3: ***Wetland Protection.*** Wetlands and the natural functions of wetlands shall be protected from activities which alter their physical and hydrological nature.

Policy 1.3.1: The wetlands and shorelines within the City shall be protected through cooperation with the SJRWMD and FDEP who have jurisdictional authority for wetland, water quality, and submerged lands development and permitting.

Policy 1.3.2: Wetlands and shorelines shall be protected through the adoption of local level of service criteria for stormwater management as specified in the Drainage, Aquifer Recharge, and Capital Improvements Elements of this Growth Management Plan.

Policy 1.3.3: The City shall continue to implement floodplain ordinances through the adoption of Conservation Areas and Goals, Objectives, and Policies within the other elements of this plan that provide conservation and preservation mechanisms.

Policy 1.3.4: Wetlands should be protected through transfers of density within a site from wetland areas to upland areas and surface waters should be protected through drainage enhancements as identified within the Drainage Element of this Plan. Transfer of density shall only be allowed in residential developments and shall require a PUD. This transfer of density will be at one unit per one acre and will be applied to the upland areas within the same PUD.

Policy 1.3.5: The location of wetland areas on a site shall be accurately identified during site development review. The City shall not issue a development order or permit for a parcel until all wetland areas on that parcel have

been identified and either dedicated in a conservation easement or appropriately mitigated.

Policy 1.3.6: If direct impact upon wetlands by incompatible uses cannot be avoided, the following mitigation measures are applicable:

- Mitigation will be allowed based upon no net loss of wetlands functions.
- Comply with the wetland protection standards of federal, state, regional and county agencies.
- Minimize impacts through innovative design layouts.
- Compensate for the impact by enhancing other degraded wetlands on-site, restoring natural functions of other wetlands on-site, creating new wetlands on-site, preserving significant upland areas, or providing off-site mitigation.
- A Wetland Alteration Permit must be obtained from the City unless federal, state or county permits eliminate the need to obtain one from the City, as determined by the City.
- Mitigation through restoration of degraded wetlands on-site or preservation of significant upland areas on-site will be encouraged rather than wetland creation.

Policy 1.3.7: The City shall maintain within its Code of Ordinances minimum upland buffers of 25 feet and an average of 50 feet for wetlands, as defined by the St. Johns River Water Management District.

Policy 1.3.8: **Continue to implement/enforce established codes pertaining to buffer size requirements, development setback requirements, setback requirements, native vegetation setback requirements, and stormwater swale requirements, pursuant to established city codes for construction site operators/owners of development to maintain. Elements of buffer zone requirements include the establishment of upland buffer zones on the landward extent of the wetland jurisdictional line as defined by SJRWMD criteria. The City will continue to enforce these requirements as part of the pre-construction review of buffer zone designs and as part of the construction inspection process already in place.**

Policy 1.3.9: **The city will continue to regulate (by ordinance) and control construction site waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste that may cause adverse impacts to water quality, pursuant to Section 34-1 of Chapter 34 (Environment), Section 121-19 (Erosion Control**

Required), 121-23 (Standards for Lands Adjacent to Streams, Ponds, Lakes, and Wetlands), and Section 121-24 (Groundwater and Wellhead Protection) of Chapter 121 (Resource Protection Standards), and Appendix B (Standard Stormwater Management Facility Construction Specifications).

Policy 1.3.10: **The City will continue to regulate stormwater discharges from pre and post-development construction pursuant to city codes and established Development Design Standards to maintain, confine and regulate runoff from polluting surface water, reducing erosion and sedimentation, preventing flooding and endangering the ecological balance of the environment in an effort to enhances landscape value, increases groundwater recharge, enhance water quality, and decreases groundwater consumption.**

Policy 1.3.11: **Continue to implement SOPs in place for the review of all site development plans for potential surface water quality impacts.**

Objective 1.4: ***Floodplains.*** The City shall ensure long-range protection of the functions of the remaining floodplains.

Policy 1.4.1: The City shall formally adopt the FEMA Map that indicates 100-year floodplain hazard areas.

Policy 1.4.2: The City shall continue to regulate land use and development in floodplains by requiring conformance with the provisions of the Leesburg Floodplain Ordinance, requirements of National Flood Insurance Program as provided by FEMA, and the designation of Conservation Areas.

Policy 1.4.3: The City's Code of Ordinances shall require that no hazardous materials or wastes be stored within the 100-year floodplain.

Policy 1.4.4: The City's Code of Ordinances shall require that septic systems be prohibited within 200 feet of a floodplain, unless otherwise approved by the Florida Department of Health and Rehabilitative Services or the Florida Department of Environmental Protection.

Policy 1.4.5: The City's Code of Ordinances shall allow development in the floodplain only if State, County and local regulations are followed.

Objective 1.5: ***Protection of Fisheries, Wildlife, Minerals, and Vegetative Communities.*** The City shall continue to promote the conservation and protection of wildlife, wildlife habitat, minerals, and vegetative communities.

Policy 1.5.1: The City shall assist in the application of, and compliance with, all state and federal regulations, which pertain to endangered and threatened species and species of special concern

Policy 1.5.2: The City shall stringently enforce its tree protection ordinance to protect existing vegetative communities and wildlife habitat.

Policy 1.5.3: The City shall request assistance from and consult with the Florida Fish and Wildlife Conservation Commission (FFWCC), adjacent local governments, the USDA Soil Conservation Service, the Audubon Society, and the USDA Division of Forestry, prior to the issuance of a development order where Listed Species may be suspected to exist.

Policy 1.5.4: Development shall be prohibited within any established wildlife habitat easement. However, the City shall allow the transfer of density for the easement. Transfer of density shall only be allowed in residential developments and shall require a PUD. This transfer of density will be based on the underlying zoning or land use density, whichever is the most restrictive, and will be applied to the upland areas within the same PUD.

Policy 1.5.5: In areas identified as being environmentally sensitive, or as having Listed Species within them, the following activities shall be regulated to ensure that such areas are preserved:

- The removal, excavation, or dredging of soil, sand, gravel, minerals, organic matter, or materials of any kind;
- The changing of existing drainage characteristics, sedimentation patterns, flow patterns, or flood retention characteristics;
- The disturbance of the environmentally sensitive area's water level or water table by drainage, impoundment, or other means;
- The dumping or discharging of material, or the filling of an environmentally sensitive area with material;
- The placing of fill or the grading or removal of material that would alter topography;

- The destruction or removal of plant life that would alter the character of an environmentally sensitive area or wildlife habitat; and

- The conduct of an activity that results in a significant change of water temperature, a significant change of physical or chemical characteristics of environmentally sensitive area water sources, or the introduction of pollutants.

Policy 1.5.6: The City shall maintain a comprehensive inventory of ecological communities and shall recommend such acquisition, through the Conservation and Recreation Land Program and the Save Our Rivers Program, of the most vulnerable communities as deemed necessary by the City.

Policy 1.5.7: The City shall develop an ordinance stating that mining operations, other than those existing at the time of annexation into the City, shall be prohibited within the City's jurisdictional limits.

Objective 1.6: ***Air Quality.*** The City shall meet and exceed the minimum air quality levels established by the FDEP.

Policy 1.6.1: On an annual basis, the City shall obtain a revised list of any identified air pollution generators in Leesburg from the Department of Environmental Protection.

Policy 1.6.2: The City shall cooperate with the appropriate County departments and State and Federal agencies in monitoring air quality in the City.

Policy 1.6.3: The City shall continue existing efforts to maintain good ambient air quality through the adoption of codes, ordinances, and regulations that address issues of smoke, landscaping, and tree protection which contribute to the enhancement of air quality.

Policy 1.6.4: The City shall regulate wind related soil erosion by requiring stabilization practices recommended by the Soil Conservation Service.

Policy 1.6.5: The City shall develop an industrial land use ordinance, which governs the maintenance of pollutant emissions standards based on federal, state, and local standards.

Objective 1.7: ***Soil Erosion.*** The City shall consult with the USDA Soil Conservation Service on the use of Best Management Practices to minimize soil erosion problems as part of the development review process.

Policy 1.7.1: The City shall utilize topographic, hydrologic, and vegetative cover maps in the site plan review process to determine if the proposed development will have a negative impact.

Policy 1.7.2: The City's Code of Ordinances shall require that all site developments utilize one of the following techniques in order to reduce soil erosion once development is complete:

Sodding of site;

Seeding of site;

Intermediate cover (hay, tarps, etc.); and

- Other methods determined adequate by the City.

Objective 1.8: ***Hazardous Waste.*** The City shall assist Lake County in implementing their Code of Ordinances, which address the reduction, disposal, and management of hazardous wastes.

Policy 1.8.1: The City shall assist the County in its efforts to manage hazardous wastes through educational programs that advise City residents on the problems and issues of hazardous waste.

Policy 1.8.2: The City shall continue training its employees to identify and inspect wastes before they are taken to waste disposal facilities sites.

Policy 1.8.3: The City shall continue its interlocal agreement with Lake County Fire and Rescue concerning accidents involving hazardous waste, or establish its own emergency response plan.

Objective 1.9: ***Mining***. The City shall discourage mining activities within the City's jurisdictional limits.

Policy 1.9.1: The City shall develop an ordinance which discourages mining in the City of Leesburg.