

CONSERVATION ELEMENT



CITY OF GROVELAND

LAKE COUNTY, FLORIDA

ADOPTED ON _____, 2019
ORDINANCE 2018-10-34

DRAFT EVALUATION AND APPRAISAL REPORT
OCTOBER 1, 2018

**CONSERVATION ELEMENT
TABLE OF CONTENTS**

A. INTRODUCTION 1

 1. PURPOSE.....1

 2. ENVIRONMENTAL SETTING1

B. INVENTORY OF CONSERVATION RESOURCES 2

 1. RIVERS, BAYS, LAKES, ESTUARINE SYSTEMS, NATURAL RESERVATIONS, ETC.....2

 2. FLOODPLAINS2

 3. GROUNDWATER RESOURCES3

 4. COMMERCIAL VALUABLE MINERAL SOURCES.....4

 5. AREAS WITH SOIL EROSION PROBLEMS.....5

 6. ENVIRONMENTALLY SENSITIVE LANDS; FISHERIES; IMPORTANT HABITAT OR CORRIDORS; MARINE HABITATS, RARE OR ENDANGERED ECOSYSTEMS OR WILDLIFE; AND VEGETATIVE COMMUNITIES INCLUDING FORESTS7

 7. GREEN SWAMP AREA OF CRITICAL STATE CONCERN.....7

 8. AIR.....9

 9. WATER9

 10. SINKHOLES9

 11. VEGETATIVE AND LAND COVER TYPES9

 12. TOPOGRAPHY11

 13. ISSUES11

C. ANALYSIS..... 12

 1. RIVERS, BAYS AND LAKES [9J-5.013(1) (A)1, F.A.C.].....12

 2. FLOODPLAINS12

 3. MINERALS12

 4. SOIL EROSION13

 5. ENVIRONMENTALLY SENSITIVE LANDS, FISHERIES, WILDLIFE, MARINE HABITATS AND VEGETATIVE COMMUNITIES INCLUDING FORESTS [9J-5.013(1)(A)5, F.A.C. AND 9J-5.013 (2)(C)9, F.A.C.].....13

 6. GREEN SWAMP AREA OF CRITICAL STATE CONCERN.....13

7. AIR.....	13
8. WATER QUANTITY AND QUALITY	14
9. SINKHOLES	14
10. WELLFIELD PROTECTION AREAS	14
11. HAZARDOUS WASTE	14
12. COORDINATION	14
D. GOALS, OBJECTIVES AND IMPLEMENTING POLICIES	16

LIST OF TABLES

TABLE 1: SOILS	5
TABLE 2: SJRWMD’S LAND USE AND LAND COVER FOR GROVELAND.....	10

CHAPTER 5 CONSERVATION ELEMENT

***It is important to note that the old data and analysis from the *2010 Comprehensive Plan* is being superseded by new data and analysis presented below; however, the current Goals, Objectives, and Policies have been included in this *Element*. This *Element* was updated accordingly to reflect the new planning period.

A. INTRODUCTION

1. Purpose

The purpose of the *Conservation Element* is to provide a guide for the conservation, use, and protection of natural resources located within the City. The *Element* is intended to protect and enhance the public health, safety, welfare and the quality of the environment.

In addition, the *Element* establishes a plan and policy direction concerning conservation of natural resources and will provide a basis for decision-making by City officials. As growth occurs, the need for protection and management of the City's natural resources will increase.

The City's natural resources are identified and analyzed. A description of these resources and their significance is also presented. Policies to maintain and enhance these resources as well as shape growth patterns of the City are included.

2. Environmental Setting

The City is situated in the Ocklawaha River and Withlacoochee South watersheds in the following drainage basins:

- Apshawa Lake Outlet
- Clear Lake Outlet
- Lake Wash Outlet
- Palatlahaha Reach
- Steward Lake Outlet
- Walled Sink
- Church Lake
- Howey Slough
- Little Everglades
- Pine Island Lake
- Summer Lake Outlet

There is little topographic relief within the City. The upper limit is approximately 200 feet above sea level located north of Cherry Lake Road, east of S. Obrien Road, and south of West Libby Road. Around this area, there is a difference of about 105 feet in elevation (see the City's *Contour Map*).

B. INVENTORY OF CONSERVATION RESOURCES

1. Rivers, bays, lakes, estuarine systems, natural reservations, etc.

The Palatlakaha River flows through Groveland. Additionally, there are over 2,000 acres of lakes or ponds in Groveland that can be used for recreational activities such as boating, swimming, and other water related activities. The named lakes in the City include:

- Cherry Lake (407 acres)
- Lake Lucy (349 acres)
- Sumner Lake (339 acres)
- Lake Hiawatha (154 acres)
- Schoolhouse Lake (130 acres)
- Lake Palatlakaha (106 acres)
- Dukes Lake (102 acres)
- Lake Catherine (68 acres)
- Lake Spencer (56 acres)
- Palatlakaha River (51 acres)
- Lake Desire (48 acres)
- Lake David (46 acres)
- Lake Douglas (33 acres)
- Wilson Lake (32 acres)
- Long Lake (27 acres)
- Deacon Lake (26 acres)
- Cook Lake (20 acres)
- Lake Christa (14 acres)
- Wolf Lake (12 acres)
- Lake Audrey (9 acres)
- Lake Diane (2 acres)

Several of the lakes in the City are part of the Clermont Chain of Lakes, which is classified as “A Florida Outstanding Water” (F.A.C. 62-302.700 (9)). Outstanding Florida Waters are waters designated by the State that are worthy of special protection because of their natural attributes. This special designation is applied to certain waters and is intended to protect and maintain existing acceptable quality standards. The lakes are used for boating, swimming, fishing and other water activities. Overall, pollution comes from home fertilizations and road runoff. Groveland has adopted measures to ensure the conservation and protection of these lakes.

2. Floodplains

Floodplains are valuable resources which provide a rich diversity of vegetation and wildlife. These areas are sources for groundwater recharge that filters through soils during high water levels. The 100-year floodplains are also subject to inundation during a 100-year storm, causing potential loss of life and property, disruption of services, and economic loss. These areas cannot tolerate continued development which, in effect, retards their ability to absorb water and restrict the flow of water from adjacent higher elevation areas.

The County’s Geographic Information Systems (GIS) database shows that there are 100-year floodplains in the City (see the City’s *Floodplains Map*). The Federal Emergency Management Agency (FEMA) flood zone designations in Groveland are as follows:

- Zone A – Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown within these zones; and
- Zone AE - The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
- Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood

Development within floodplains will continue to be closely scrutinized to ensure compliance with established regulations.

3. Groundwater Resources

The Floridan aquifer is the principal source of drinking water for all of Lake County. Currently almost all of the ground water pumped in Lake County comes from the Upper Floridan but the potential for utilizing the lower Floridan aquifer is just beginning to be explored in Lake County.

Aquifer recharge is the process whereby rainfall percolates downward through the soil to reach the underlying aquifers. Recharge to the Floridan aquifer occurs in areas of the County where the elevation of the water table of the surficial aquifer is higher than the elevation of the potentiometric surface of the Floridan aquifer. In these areas, water moves from the surficial aquifer in a downward direction through the upper confining unit to the Floridan aquifer. The surficial aquifer system in the County is recharged by rainfall. Recharge is augmented locally by artificial recharge - wastewater or reuse water land application, rapid-infiltration basins, and septic systems.

Groveland is located in a recharge area with a recharge rate of more than 20 inches per year and a discharge rate of less than 1 inch per year.

The federal Safe Drinking Water Act, as amended in 1986, established a new program for the States to delineate and manage Wellhead Protection Areas for the protection of public ground water supplies. The Wellhead Protection Program is the first resource-based approach at the federal level for ensuring that ground water supplies are protected from a wide range of potential contaminating sources. The U.S. Environmental Protection Agency is the principal federal agency for implementing the Wellhead Protection Program with the states.

Wellhead protection areas are the surface and subsurface areas surrounding a water well or well field supplying a public water system, through which contaminants are reasonably likely to move toward and reach the water well or well field. Factors to consider in developing wellhead protection include:

- delineating protection areas around well fields;
- assessing the locations and threats to the well(s);
- developing management approaches and educational outreach programs; and
- regulatory or non-regulatory tools to reduce contamination threats.

The City has adopted a wellfield protection zone within a radius of seventy-five, two hundred, five hundred, and one thousand feet from potable water wells. The following land uses are prohibited within these zones:

- No new development (other than facilities related to the City's water system) shall be permitted within 150 feet from a well;
- Within a 500-foot radius, aboveground or underground storage tanks, sanitary hazard as defined in F.A.C. 62-550, storage or treatment of solid waste in tanks, and transmission facilities conveying reclaimed water shall be prohibited;
- Within a 200-foot radius, septic tanks, and sanitary sewer facilities shall be prohibited;
- Within a 1,000-foot radius of a well, uses shall be prohibited that require the storage, use, handling, production or transportation of restricted substances on the Florida Substance List, and agricultural chemicals, hazardous/ toxic wastes, industrial chemicals, etc. In addition, industrial percolation ponds, mining activities and similar activities are prohibited; and
- Excavation of waterways or drainage facilities which intersect the water table shall not occur within 1,000 feet.

The City also has established a 500 foot in radius wellhead protection area within which manufacturing uses are prohibited. The wellhead protection areas for the City's potable water supply wells are shown on the *Existing* and *Future Land Use Maps*.

4. Commercial Valuable Mineral Sources

There are three commercially valuable minerals utilized in Lake County: sand, clay and peat. A large amount of fill dirt is also removed.

The County has extensive deposits of clay and sand that cover the majority of Lake County and major deposits of peat located near lakes Apopka, Griffin and Minnehaha and the Okahumpka Marsh. These deposits were utilized as muck farms, but they have since been purchased for conservation or urban development. The County possesses two limestone deposits along its western border at Okahumpka and the Green Swamp Area of Critical State Concern. There are also substantial phosphate deposits in the far northern portion of Lake County along Lake George. However, the Ocala National Forest has land use policies that strictly forbid the mining of phosphates in the Forest.

There are no mining operations in Groveland.

5. Areas with Soil Erosion Problems

Soil erosion is not a significant issue in Lake County, with the exception of where large areas are prematurely cleared for development.

Slopes of more than 10 percent are considered unsuitable for septic tank drain fields. These slopes generally correspond with the ridge and upland regions of the County, where the soils have some potential for erosion when denuded of vegetation and are usually classified as having low runoff potential. There are a variety of soil types in Groveland (see the City's *Soils Map*). The general descriptions of the soils in the City are found below in Table 1.

TABLE 1: SOILS

Map Unit Name	Hydric Soil	Drainage Class	Steel Corrosion	Concrete Corrosion	Acres
Anclote and Myakka Soils	Yes	Very Poorly Drained	High	Moderate	10.45
Apopka Sand, 0 to 5 Percent Slopes	No	Well Drained	Moderate	High	1173.82
Apopka Sand, 5 to 12 Percent Slopes	No	Well Drained	Moderate	High	920.1
Arents	No	Somewhat Poorly Drained	Unranked	Unranked	291.41
Astatula Sand, 0 to 5 Percent Slopes	No	Excessively Drained	Low	High	13.17
Borrow Pits	Partially Hydric	Unranked	Unranked	Unranked	43.66
Brighton Muck, Depressional	Yes	Very Poorly Drained	High	High	67.57
Candler Sand, 0 to 5 Percent Slopes	No	Excessively Drained	Low	High	3100.34
Candler Sand, 5 to 12 Percent Slopes	No	Excessively Drained	Low	High	1910.31
Candler Sand, 12 to 40 Percent Slopes	No	Excessively Drained	Low	High	9.82
Ellzey Sand	Partially Hydric	Poorly Drained	High	High	77.35
Eureka Loamy Fine Sand	Yes	Poorly Drained			2.8
Immokalee Sand	Partially Hydric	Poorly Drained	High	High	51.24
Kendrick Sand, 0 to 5 Percent Slopes	No	Well Drained	Moderate	High	162.41
Kendrick Sand, 5 to 8 Percent Slopes	No	Well Drained	Moderate	High	75.82
Kendrick Sand, Thin Subsurface	No	Well Drained	Moderate	High	69.54
Lake Sand, 0 to 5 Percent Slopes	No	Excessively Drained	Low	High	73.31

Map Unit Name	Hydric Soil	Drainage Class	Steel Corrosion	Concrete Corrosion	Acres
Lake Sand, 5 to 12 Percent Slopes	No	Excessively Drained	Low	High	2.94
Lochloosa Sand	No	Somewhat Poorly Drained	High	High	130.36
Myakka Sand	Partially Hydric	Poorly Drained	High	High	375.47
Ocoee Mucky Peat	Yes	Very Poorly Drained	High	High	1,544.05
Oklawaha Muck	Yes	Very Poorly Drained	High	Low	555.04
Ona Fine Sand	Partially Hydric	Poorly Drained	High	High	47.62
Orlando Fine Sand, 0 to 5 Percent Slopes	No	Well Drained	Low	High	11.08
Orsino sand	No	Moderately Well Drained	Low	Moderate	13.15
Paola Sand, 0 to 5 Percent Slopes	No	Excessively Drained	Low	High	39.47
Placid and Myakka Sands, Depressional	Yes	Very Poorly Drained	High	High	1,618.6
Placid Sand, Depressional	Partially Hydric	Very Poorly Drained	High	High	152.82
Pomello Sand, 0 to 5 Percent Slopes	No	Moderately Well Drained	Low	High	13.2
Pompano Sand	Partially Hydric	Poorly Drained	High	Moderate	42.45
Seffner Sand	Partially Hydric	Somewhat Poorly Drained	Low	Moderate	40.87
Sparr Sand, 0 to 5 Percent Slopes	No	Somewhat Poorly Drained	Moderate	High	207.7
Swamp	Yes	Very Poorly Drained	Unranked	Unranked	189.96
Tavares Sand, 0 to 5 Percent Slopes	No	Moderately Well Drained	Low	High	887.92
Water	Unranked	Unranked	Unranked	Unranked	2,001.93
Wauchula Sand	Partially Hydric	Poorly Drained	High	High	336.14

Notes: Drainage Class - Identifies the natural drainage conditions of the soil and refers to the frequency and duration of wet periods.
Concrete Corrosion - Susceptibility of concrete to corrosion when in contact with the soil.
Steel Corrosion - Susceptibility of uncoated steel to corrosion when in contact with the soil.

Source: U.S. Department of Agriculture, Natural Resources Conservation Service’s Lake County Soils Geographic Information Systems database, August 2018.

6. Environmentally sensitive lands; fisheries; important habitat or corridors; marine habitats, rare or endangered ecosystems or wildlife; and vegetative communities including forests

Groveland has about 5,320 acres of lands designated as Conservation on the *Future Land Use Map*. The City identifies Conservation lands as all wetlands, some forests, public managed lands, floodplains, flood prone areas, and other areas in which valuable natural resources are found. No buildings are allowed on conservation lands. Permitted uses are boardwalks, docks, observation decks, and similar facilities as allowed by the City and all regulatory agencies.

Wetlands by definition are transitional lands between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered with shallow waters. They provide habitat for many species of birds, fish, and animals, and contain Aquifer Recharge Zones that allow the groundwater to be replenished. Wetlands are protected by local, regional, state, and federal regulations because of the numerous benefits they provide.

Wetland functions are interconnected with the hydrology of the area. This connection determines the presence, extent, movement, and quality of water in the wetland. It is estimated that wetlands account for about 5540.47 acres or 33.45% of land in the City (see the City's *Wetlands Map*). The City has established guidelines and standards for wetland buffer zones in this *Plan* and in the Land Development Regulations.

There are no first magnitude springs in the Groveland area.

7. Green Swamp Area of Critical State Concern

Portions of the City are within the Green Swamp Area of Critical State Concern. The Green Swamp is a 560,000-acre region that lies in portions of Lake, Polk, Sumter, Pasco, and Hernando counties. In 1974, the Florida Legislature designated 187,000 acres of the Green Swamp as an Area of Critical State Concern. Lake County contains 110,988.8 acres of the Green Swamp.

The Green Swamp River Systems rank possibly second only to the Florida Everglades in terms of hydrologic and environmental significance to the State. Overlying an important zone of groundwater recharge for peninsular Florida and the highest elevation potentiometric surface of the Floridan Aquifer, the Green Swamp ecosystem is important to the preservation of clean potable groundwater supplies. The Green Swamp is the headwater for the Hillsborough, Withlacoochee, Ocklawaha, and Peace rivers, which provide most of the area's water supply, and has a diverse ecological environment containing numerous plant species and 330 animal species, of which approximately 30 are either threatened or endangered, including the Florida black bear, Florida scrub jay, and wood stork.

The water flowing from the Green Swamp is generally of higher quality than other watersheds in the State. This is due to the Green Swamp being largely undeveloped, plus its lengthy surface water detention time. As such, water quality and quantity protection in the Green Swamp is an important issue due to its overall position in the natural geologic landscape in Florida, the resultant high potentiometric surface of the Floridan Aquifer, combined with the lack of a strong confining unit between surface waters and groundwater over much of the Green Swamp.

A majority of the Green Swamp is an area of wetlands and uplands with a high seasonal water table (i.e., generally saturated soil conditions). Less saturated soils representing old dune lines are found in ridges (generally oriented north to south) especially on the eastern side of the Swamp. Soils in these ridges are sandy. In fact, mining of these sandy ridges within the Swamp to market to the central Florida construction industry is an active business along with citrus production. Due to the prevalence of wetlands, high groundwater levels, frequency of seasonal flooding or porous sandy conditions in majority of the Green Swamp, disposal of wastewater effluent or septage presents problems of groundwater or surface water contamination. Percolation ponds, spray fields, septic systems or land application of wastewater treatment plant residuals each experience similar difficulties relating to a limited treatment ability presented by the prevailing soil conditions.

More than 30,000 people visit the Green Swamp Wilderness Preserve each year to enjoy the various recreational opportunities, which include hunting, fishing, horseback riding, camping, hiking, canoeing, bird watching, and bicycling.

The City has adopted the Green Swamp Single Family Low Density, Green Swamp Single Family Rural, Green Swamp Commercial, and Green Swamp Industrial land uses to address development within the Green Swamp. Additionally, the City has established the following standards for development within the Green Swamp:

- All development must be clustered on the least environmentally sensitive areas;
- 60 percent of the site must be retained for open space;
- All recreational uses, other than passive recreation uses, shall be limited to low impact, low intensity public or private recreation uses that do not require impervious surface coverage of more than 10 percent of the lot;
- Golf courses shall be approved on a case by case basis pursuant to specified approval criteria which are set out in the Land Development Regulations; and
- There is a 50-foot-wide upland buffer from the wetland line in which no structure may be placed.

8. Air

Air quality is another example of a natural resource that impacts the City's and surrounding area's quality of life. The Florida Department of Environmental Protection and the United States Environmental Protection Agency monitor air quality data in Lake County. Lake County does not have an established program dedicated to monitoring air quality. Overall, Lake County's air quality can be considered good. The County meets all Clean Air Act standards.

The City requires that air pollutants, including smoke, particular matter, odor and toxic matter be consistent with Florida Department of Environmental Protection's air pollution standards.

9. Water

The City currently owns, operates and maintains a central potable water treatment and distribution system. The City's potable water system provides water for both residential and non-residential purposes, including fire-fighting demands. The City's water system consists of five water plants and associated water transmission and distribution pipes. The City's five water treatment plants (WTP) are grouped into two separate systems. The south system is comprised of Pomelo WTP 1 and Sampey WTP 2 and the recently completed WTP 5. The north system is comprised of Sunshine WTP 3 and Palisades WTP 4. The City's potable water system is currently meeting the potable water adopted level of service standards and there is an adequate amount of capacity to support future growth. A detailed analysis of the City's potable water system is featured in the *Public Facilities Element* of this *Comprehensive Plan*.

10. Sinkholes

Sinkholes are a natural and common geologic feature in areas underlain by limestone and other rock types that are soluble in natural water. The term sinkhole is used for closed depressions in the land surface that are formed by surficial solution or by subsidence or collapse of surficial materials owing to the solution of near-surface limestone or other soluble rocks. Fifteen small sinkholes, with the most recent sinkhole occurring in 2015, have been noted over the years in the Groveland area (see the City's *Contour Map*). It is important to note that the origin of most lakes in the County is sinkhole related subsidence in the covered karst terrain.

11. Vegetative and Land Cover Types

Data Documentation for Lake County prepared by the St. Johns River Water Management District (SJRWMD) in 2014 was examined with regard to the land cover within the City. The SJRWMD identified 71 classes of vegetative and land cover types in Groveland (see Table 2).

TABLE 2: SJRWMD’S LAND USE AND LAND COVER FOR GROVELAND

FLUCCS*	Description	Acres
1100	Residential, Low Density - Less than 2 dwelling units per acre	191.86
1180	Rural residential (2-5 acres per dwelling unit)	44.91
1190	Low density under construction	9.94
1200	Residential, Med. Density - Two to five dwelling units per acre	800.04
1290	Medium density under construction	13.86
1300	Residential, High Density	721.96
1390		183.86
1400	Commercial and Services	284.87
1480	Cemeteries	13.93
1510	Food processing	11.27
1520	Timber processing	0.49
1550	Other light industry	105.35
1611	Clays	0.06
1620		8.48
1650	Reclaimed mining lands	4.51
1670		92.84
1700	Institutional	67.31
1800	Recreational	4.59
1820	Golf course	4.10
1850	Race tracks	5.16
1860	Community recreational facilities	0.09
1890		6.08
1900	Open land (urban)	347.72
1920		353.46
2110	Cropland and Pastureland	2,599.57
2120	Unimproved pastures	257.26
2130	Woodland pastures	102.91
2140	Row crops	184.46
2150	Field crops	316.22
2210	Citrus groves	1,134.02
2410	Tree nurseries	333.29
2430	Ornamentals	168.76
2510	Horse farms	1.29
2600		1.29
2610		1.10
3100	Herbaceous Upland Nonforested	248.67
3200	Shrub and Brushland	24.05
3300	Mixed Upland Nonforested	53.60
4110	Upland Coniferous Forests	66.57
4120	Longleaf pine - xeric oak	10.10
4200	Upland Hardwood Forest	293.52
4340	Upland mixed coniferous/hardwood	261.37
4400		55.63

FLUCCS*	Description	Acres
4410	Coniferous pine	774.50
4430	Forest regeneration	329.15
5100	Streams and waterways	14.29
5200	Lakes	783.20
5250	Marshy Lakes	3.69
5300	Reservoirs	246.24
6110	Wetland Hardwood Forests	20.31
6170	Mixed wetland hardwoods	9.02
6210	Cypress	83.54
6250	Hydric pine flatwoods	55.44
6300	Wetland Forested Mixed	312.07
6410	Freshwater marshes	2,115.90
6430	Wet prairies	290.88
6440	Emergent aquatic vegetation	553.42
6460	Mixed scrub-shrub wetland	783.14
6500		0.56
7400	Disturbed land	67.32
7410	Rural land in transition w/o positive indicators of intended activity	8.69
7430		0.49
8110		23.69
8130	Bus and truck terminals	17.54
8140	Roads and highways	150.49
8180	Auto parking facilities - when not directly related to other land uses	0.98
8200	Communications	1.27
8310	Electrical power facilities	2.27
8330	Water supply plants	16.18
8340	Wastewater treatment plants	14.65
8370	Surface Water Collection Basin	182.17
TOTAL		16,253.52

Notes: *FLUCCS = Florida Land Use, Cover and Forms Classification System

Source: St. Johns River Water Management District's GIS Land Use and Land Cover 2004-2005 District Wide Data.

12. Topography

An examination of the City's *Contour Map* indicates that the highest elevation in the City is at 200 feet above sea level located north of Cherry Lake Road, east of S. Obrien Road, and south of West Libby Road. Around this area, there is a difference of about 105 feet in elevation. Lakes and major wetland areas are shown at between 80 and 120 feet..

13. Issues

The probability exists of pollution from many sources included, but not limited to:

- Homes along the lakefronts (fertilizers, septic tanks, etc.);

- Stormwater runoff from local streets; or
- Malfunctioning septic tanks within the City's Utility Service Area.

C. ANALYSIS

1. Rivers, bays and lakes [9J-5.013(1) (a)1, F.A.C.]

As previously mentioned, there are over 2,000 acres of lakes or ponds within the City limits. While the majority of these lakes are maintained by State agencies, the City will continue efforts to inform lakefront property owners about water quality and protection measures in and/or adjacent to Groveland. The City will enforce appropriate codes on lakefront areas that are in the City's jurisdiction.

To protect lakefronts from the encroachment of development, the City has established a shoreline protection and lakefront littoral zone. Only passive recreational activities are permitted within the lakeshore protection zone. The City will continue to ensure that no other construction activity will encroach into the lakeshore protection zone.

The residents of Groveland see the lakes as a critical element of their quality of life and understand the importance of preserving and maintaining the lakes' water quality. The City shall continue to support initiatives to improve and protect the lakes in the Groveland area.

2. Floodplains

To protect the floodplain area, the City requires applicants for development and redevelopment projects to position structures and impervious surfaces to areas outside of the flood zone to the extent possible. Industrial, manufacturing, commercial, and office land uses are prohibited from encroaching the uplands of the 100-year flood zone, with the exception of 100% permeable surface parking areas designed for seasonal or occasional overflow demands. The City has additional flood plain protection measures established in the Land Development Regulations.

3. Minerals

As previously mentioned, there are three commercially valuable minerals utilized in Lake County: sand, clay and peat. A large amount of fill dirt is also removed. The City anticipates that these commercially valuable minerals will continue to be extracted in various parts of the County during the short range (2020-2025) and long-range (2040) planning period. The City will continue to ensure that all Federal, State and County regulations regarding mining operations shall be followed.

4. Soil Erosion

The City has established soil erosion and sedimentation control measures in the Land Development Regulations.

5. Environmentally sensitive lands, fisheries, wildlife, marine habitats and vegetative communities including forests [9J-5.013(1)(a)5, F.A.C. and 9J-5.013 (2)(c)9, F.A.C.]

As previously stated, the City has identified about 5,320 acres of conservation lands on the *Future Land Use Map*. These are environmentally sensitive lands with natural resources that the City shall continue to protect and conserve. In addition, the City considers the lakes in the area as natural resources and as such, the City shall use its full authority and the cooperation of other governmental agencies to protect, maintain, and enhance the water quality of these lakes.

Species such as indigo, coral, and rattlesnakes; doves, quail, osprey, woodpeckers and other birds; squirrels, raccoons, rabbits, otters, pileated and other woodpeckers, and owls, are seen in the City.

No attempt has been made to instigate identification of rare or unique plants and animals or vegetative communities. It is hoped that as a result of public participation in this *Plan*, that additional information and efforts will result.

The City shall continue to require that no development other than water-related passive recreation, conservation facilities, and stormwater/infrastructure improvements permitted by a regulatory agency will be allowed within wetland areas of Groveland.

6. Green Swamp Area of Critical State Concern

The City recognizes the importance of the Green Swamp and will continue to enforce the development guidelines established in this *Comprehensive Plan* and the City's Land Development Regulations. The City will also coordinate with the St. Johns River Water Management District, Lake County, Florida Department of Environmental Protection, and other State or Federal agencies in their efforts to preserve, restore, and protect the environmentally sensitive lands and natural resources in the Green Swamp.

7. Air

Overall, the air quality in Groveland is good. The City will continue to review the air quality plans of Lake County on a regular basis to monitor the air quality standards in the Groveland area.

8. Water Quantity and Quality

Lake County Water Resource Management (WRM) does water testing for the County. Annual Reports available online at <https://www.groveland-fl.gov/417/Water-Quality-Reports>. The City will continue to review the water quality plans of Florida Department of Environmental Protection on a regular basis to monitor the water quality standards in the Groveland area.

The City's potable water system provides water for both residential and non-residential purposes, including fire-fighting demands. Overall, the City's potable water system is designed to accommodate future growth. With the revisions to the Consumptive Use Permit allotments and the installation of storage tanks at water treatment plant (WTP) 2 and WTP 5, there should be sufficient water capacity and storage for future growth as well. The City will continue to monitor and maintain the potable water services provided in the City's Utility Service Area during the planning period.

9. Sinkholes

The City is in an area with occasional sinkhole problems. When a sinkhole develops, the City shall implement proper planning and engineering strategies to repair or alleviate damages needed to reduce adverse environmental impacts.

10. Wellfield Protection Areas

The City shall continue to restrict development from occurring within a 75-foot radius of any public wells. No septic tanks, sanitary sewer facilities, or solid waste or disposal facilities shall be permitted within a 200-foot radius of any existing or proposed public well. The City shall also maintain a 500-foot radius wellhead protection area within which manufacturing uses are prohibited. Land use restrictions within the wellhead protection area are established in the City's Land Development Regulations.

11. Hazardous Waste

Hazardous waste is discussed in the *Public Facilities Element*. Solid waste disposal is achieved through franchise agreements with solid waste haulers. Hazardous waste is regulated by State and local rules. The City shall provide education to its residents and businesses on the importance of proper handling of hazardous wastes, especially in relation to protecting natural resources.

12. Coordination

The City shall work independently and with Lake County and regulatory agencies in an effort to educate and enforce lakefront regulations in order to protect the water quality. The City will also work independently as well as with Lake County and regulatory

agencies in an effort to preserve some of the natural environment along the lakes as a habitat for native species.

D. GOALS, OBJECTIVES AND IMPLEMENTING POLICIES

GOAL 1: Conservation of Natural Resources. Conserve, protect, and effectively manage natural resources within the City, particularly environmentally sensitive lands, wetlands, groundwater quality, and scarce vegetative communities.

OBJECTIVE 1.1: *Protecting Air Quality.* Protect air quality within the City by complying with or exceeding air standards established by the Florida Department of Environmental Protection and the United States Environmental Protection Agency. [9J-5.013(2)(b)(1), F.A.C.]

Policy 1.1.1: *Maintaining Good Air Quality.* The City shall continue to maintain good air quality through codes, ordinance, and regulations that address issues of smoke, landscaping and tree protection which contribute to the enhancement of air quality.

Policy 1.1.2: *Land Uses and Air Quality.* Groveland shall coordinate with Lake County and neighboring cities and towns to ensure that land use controls applicable to adjacent jurisdictional areas promote land uses which shall not adversely impact air quality within Groveland.

Policy 1.1.3: *Monitoring Air Quality.* The City shall cooperate with Lake County and State and Federal agencies in monitoring air quality in the City.

Policy 1.1.4: *Automobile Emission Pollution.* The City shall continue to reduce the potential for automobile emission pollution by:

1. Requiring vegetative buffers strips and/or berms between roadways and new developments.;
2. Establishing additional bikepaths/walkways so as to promote the reduction in use of automobiles; and
3. Promote planned unit development or mixed use type of land use, where feasible.
4. Transition city fleets to electric or hybrid vehicles.
5. Promote and encourage installation of electric vehicle charging stations in the city center and other public spaces.
6. Require businesses with over 50 employees to install and maintain an electric charging station.

Policy 1.1.5: *Open Burning.* The City shall discourage open burning due to its adverse impacts on air quality.

Policy 1.1.6: *Alternative Energy Resources.* The City shall encourage the use of alternative energy resources that do not degrade air quality.

OBJECTIVE 1.2: Protect Quality of Surface and Ground Waters. Protect the quality of surface and ground water by controlling existing and potential sources of contaminants and by coordinating with Lake County and other appropriate agencies. [9J-5.013(2)(b)(2), F.A.C.]

Policy 1.2.1: *Prohibited Land Uses within Certain Areas.* The City shall not permit any Industrial Future land use Map designations, amendments or Industrial zoning districts within 500 feet of lake front areas. Within areas of high groundwater aquifer recharge, industrial Future Land Use Map designations, amendments or Industrial zoning districts shall be prohibited. The storage and placement of chemicals and other environmentally hazardous material within the 100-Year Flood Plain, well field protection zones, and Conservation Future land use designation shall be restricted or prohibited according to policies cited herein this *Element*. The manufacturing of hazardous waste materials is prohibited within commercial and industrial land use designations in the *Future Land Use Map*.

Policy 1.2.2: *Commercial and Industrial Development Operating Permits.* The City shall include principles within the development review process which require applicants of proposed commercial and industrial developments to provide evidence, prior to the issuance of a Certificate of Occupancy, that all appropriate operating permits have been issued by State regulatory agencies, particularly for commercial or industrial uses and operations using on-site storage facilities for chemical or hazardous materials and wastes.

Policy 1.2.3: *Stormwater Management Techniques.* Sediments, silt, and pollution carried by urban runoff shall be reduced to the greatest extent possible through Low Impact Development (LID) stormwater management techniques designed to retain and detain stormwater runoff. This shall include mandatory on-site retention, erosion controls, and the use of native vegetation.

Policy 1.2.4: *Post-development Groundwater Infiltration Rates and Volumes.* The City shall require that impervious surfaces be limited in prime recharge areas (> 12 inches/year). Post-development groundwater infiltration rates and volumes within primary groundwater recharge areas shall meet the least restrictive of the following standards:

- Post-development rates and volumes must be at least equal to pre-development rates and volumes; or
- Post development rates and volumes must achieve at least 70% infiltration, ponding for stormwater retention/detention or structural exfiltration systems.

Policy 1.2.5: *Discharge into Lakes.* No onsite sanitary sewer system shall directly discharge into any lake, nor shall a system use surface waters for back-up or overflow discharge. New development shall be required to connect to the City sewer service in accordance with criteria established in the *Public Facilities Element* and the City's Concurrency Management System. Existing septic systems proximate to lakes shall be encouraged to connect to City sewer service if feasible. The City will request regular County inspections of existing septic tanks within 150 of lakes.

Policy 1.2.5.1 The City shall pursue grants and other funding sources which are available from the State of Florida, Lake County, and/or St. Johns River Water Management District to connect existing septic systems that may impact lakes to City sewer service or to upgrade the non-performing septic systems.

Policy 1.2.6: *Protecting the Shoreline from Soil Erosion.* To protect shoreline from erosion and to reduce sediments and suspended solids introduced to surface waters, the City shall coordinate with relevant State and federal agencies upon the presence of shoreline erosion problems to identify and analyze best management practices to implement corrective measures to retard or prevent further erosion.

Policy 1.2.7: *Acquiring Land for Recreational or Conservation Uses.* The City shall pursue grants and other funding sources which are available from the State of Florida, Lake County, and/or St. Johns River Water Management District to acquire land along lakefront and environmentally sensitive areas for recreation or conservation purposes.

Policy 1.2 8: *Agricultural Best Management Practices.* Agricultural activities are limited within Groveland. The City shall encourage existing agriculture land use activities to use best management practices in order to reduce pesticide and fertilizer runoff, prevent soil erosion, and preserve water quality. To the extent allowed by law, agricultural runoff into water bodies shall be prohibited.

Policy 1.2.9: ***Reducing Pollutant Loads.*** The City shall participate in the Florida Department of Environmental Protection’s Total Maximum Daily Load Program to reduce pollutant loadings in the Upper Ocklawaha River Basin.

Policy 1.2.10: ***Shoreline Protection and Lakefront Littoral Zones.*** Development occurring adjacent to lake shoreline or wetland areas shall prepare a design and management plan prior to the construction of the on-site improvements. This plan shall include and comply with the following guidelines:

- a. ***Preserve Native Vegetation.*** Only native vegetation shall be maintained within the shoreline and lakefront littorals zone with no mowing lower than three feet allowed within 20 feet of the normal high-water line.

- b. ***Shoreline Management Plan.*** Require a shoreline management plan that describes procedures to assure minimal impacts to water quality and shoreline erosion. Where deemed necessary, silt screening shall be implemented to retain effluvial sediments carried by runoff stormwater or wave action.

- c. ***Protection of Littoral Zone.*** Applicants of new development or redevelopment shall include the following:
 1. Include typical cross sections of the surface water management system showing 100-Year Water Mark elevation and the negative-3-foot contour (i.e., below average elevation), which ever is greater.

 2. Specify what vegetation will be removed or planted in the littoral zone within the proposed development plan, including the extent, method, type and timing of any planting to be provided.

 3. Provide a description of any management procedures to be followed in order to assure the continued viability and health of the lakefront littoral zone. The lakefront littoral zone as established should consist entirely of native vegetation and should be maintained permanently as part of the water management system. As a minimum, 10 square feet of vegetated lakefront

littoral zone per linear foot of lake shoreline is required as part of the surface water management system.

- d. **Limiting Development.** Limit development within the lakefront littoral zone to water-dependent structures such as docks and piers.
- e. **Class III Waters Protection.** Class III Waters, as defined by All lakes within or adjacent to the City are Class III waters. These waters shall be protected through the following activities:
 1. Dredging activities shall be limited to the appropriate regulatory agency approved dredging.
 2. Ensure good water quality by coordinating with the FDEP, Florida Department of Natural Resources (FDNR), and the St. Johns River Water Management District in monitoring the quality of stormwater run-off and all discharge. The City shall notify the appropriate agency with jurisdiction as potential issues or problems are identified by the City.
 3. Limit the use of Class III waters to water dependent activities that are not contrary to the public interest and satisfy a community need.
- f. **Require Wetland Buffer Zones.** To protect the quality and quantity of surface waters and provide habitat for semi-aquatic or water-dependent terrestrial species of wildlife, buffer zones consistent with shall be provided landward of all wetlands as outlined below.
 1. No development of disturbance of area is permitted within 25 feet of a designated wetland area. These areas shall be marked with appropriate signage as conservation areas.
 2. No building or impervious surface area (with the exception of wet retention areas) is permitted within an average of 50 feet for development within the Green Swamp, with a 25-foot minimum, of a designated wetland area.

3. A setback may be an average of 35 feet with a 25-foot minimum, in areas absent of wildlife corridors or endangered, threatened or listed species. A wildlife study shall be required to substantiate this event unless determined to be a category III wetland.

- g. ***Shoreline Protection Zone.*** To protect the lake front areas from the encroachment of development, a shoreline protection zone shall be delineated. There shall be no disturbance within 50 feet of the landward extent of wetlands as set forth in Rule 62-340, with the exception of pilings for docks or piers. There shall be no buildings, pools, ponds, or other structures in this protection zone. There shall be no septic tanks within 75 feet of the landward extent of wetlands as set forth in Rule 62-340. All development shall be subject to the building setback requirements regarding the shoreline protection zone established in the City’s Land Development Regulations.

Policy 1.2.11: ***Promoting Low Impact Development (LID) Techniques.*** The City shall promote the use of Low Impact Development techniques which mimic a site’s pre-development and hydrologic condition. These techniques will address infiltration, attenuation, and treatment needs of each specific site. Low Impact Development works with nature to manage stormwater as close to its source as possible, with an emphasis on cost-effective strategies at the lot level. Low Impact Development employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product. Low Impact Development practices include, but are not limited to, bioretention facilities, rain gardens, vegetated rooftops, grass swales, rain barrels, permeable pavements, or the replication of predevelopment hydrology. By implementing Low Impact Development principles and practices, water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed. The City shall amend its land development codes to phase in LID as a requirement where feasible.

Policy 1.2.12: ***Promoting Green Building Techniques.*** The City shall promote “green building” techniques that reduce and ultimately eliminate the impacts of buildings on the environment and human health,

take advantage of renewable resources, and the reduce rainwater run-off to protect minerals, soils and vegetation.

OBJECTIVE 1.3: *Wetland Protection.* Protect the natural functions of identified wetland areas. [9J-5.013(2)(b)(3), F.A.C.]

Policy 1.3.1: *Designating Wetlands as Conservation Areas.* The City shall designate all wetlands within the City as Conservation within the *Future Land Use Element* and on the *Future Land Use Map*. The City may designate significant high recharge areas and undisturbed natural vegetative communities as Conservation depending on the necessity to protect such areas under this designation. The precise delineation of each area must be through specific studies and field determination.

Policy 1.3.2: *Tiered Approach to Wetlands Protection.* The City hereby adopts a tiered approach to wetland protection. The general location of extent of these wetland systems are displayed on the City's *Wetlands Map*. The exact boundaries shall be construed to coincide with the jurisdictional boundaries set by St Johns River Water Management District, the Florida Department of Environmental Protection, or the U.S. Army Corps of Engineers.

Policy 1.3.3: *Defining Wetlands.* Wetlands shall be defined according to the following categories:

Category I wetland areas shall mean those wetland areas which meet at least one of the following criteria:

1. Any wetland of any size that has a hydrological connection to nature surface water bodies or the Floridian aquifer;
2. Any large isolated uninterrupted wetlands 100 acres or larger; or
3. Any wetland of any size that provides critical habitat for Federal and/or State listed, threatened or endangered species.

Category II wetland areas shall mean those wetland areas which meet any of the following criteria:

1. Isolated wetlands or formerly isolated wetlands which by way of man's activities have been directly connected to other surface water drainage.
2. Isolated wetlands between 5 acres and 100 acres.

Category III wetland areas shall mean those isolated wetlands of less than 5 acres.

Policy 1.3.4:

Development Restrictions within Wetlands. No development shall occur in Category I wetlands except as permitted under Policy 1.6.3. In Category II wetlands, in addition to those activities permitted under Policy 1.6.3, encroachment and alteration may be allowed if:

1. Sufficient justification is provided to the City to demonstrate that the proposed use of the land is in the wider public interest.
2. Such activity complies with the requirements of all Federal, State, and regional agencies claiming jurisdiction over wetland alteration.
3. Adequate mitigation of any adverse hydrological and physical alterations is provided.
4. The site is located outside the Green Swamp Area of Critical State Concern.

Category III wetlands shall be protected consistent with the applicable environmental regulatory agencies' permitting requirements. The City reserves the right to contact and provide comments to those agencies or to intervene during the permit application review and issuance process. The City shall not issue permits for site alterations without prior issuance of the required permits from the other environment regulatory agencies. In accordance with Policy 1.13.1 no development is permitted in wetlands in the Green Swamp Area of Critical State Concern.

Policy 1.3.5:

Wetlands and Natural Buffer Zones. Wetlands shall be protected from impacts generated by adjacent land uses through natural buffer zones.

1. No development of disturbance of area is permitted within 25 feet of a designated wetland area. These areas shall be marked with appropriate signage as conservation areas.
2. No building or impervious surface area (with the exception of wet retention areas) is permitted within an average of 50 feet, with a 25-foot minimum, of a designated wetland area.

3. A setback may be an average of 35 feet with a 25-foot minimum, in areas absent of wildlife corridors or endangered, threatened or listed species. A wildlife study shall be required to substantiate this event unless determined to be a category III wetland.

Policy 1.3.6: *Identifying the Location of Wetland Areas.* 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 1.3.7: *Transfer of Development Rights and Wetlands.* To further protect pristine Class I wetlands, create wildlife corridors and allow for passive recreation activities defined herein, the City shall allow the transfer of development rights at the densities, established in the *Future Land Use Element*, from the wetlands located on a site to the upland portion the applicable site; given that there is sufficient uplands on the existing parcel of land or lot of record (at the time of this *Comprehensive Plan* adoption) to locate the proposed development. However, when the St. Johns River Water Management District and/or other regulatory agencies have approved a mitigation plan to compensate for the loss of wetlands, the City will require any development to be consistent with the terms of the mitigation plan. The transfer of density may occur provided other plan provisions regarding upland and floodplain resource protection, compatibility of adjacent land use, stormwater management and setbacks, etc. are met.

OBJECTIVE 1.4: *Protecting the Quantity of Surface and Ground Water.* Protect the quantity of surface and ground water through preservation of permeable surface and through promotion of conservation activities affecting the consumption of potable water. [9J-5.013(2)(b)(2), F.A.C.]

Policy 1.4.1: *Conserving Potable Ground Water Sources.* To conserve potable ground water sources and to accomplish reasonable reductions in water consumption, the City shall:

- a. Implement, where feasible, water reuse or reclamation systems for residential, commercial and industrial operations which utilize large quantities of non-potable water;
- b. Require new development to incorporate native and drought tolerant landscaping in the site design,;

- c. Require the installation of water saving plumbing devices in all new construction;
- d. Send conservation messages, such as the appropriate times and days to water lawns, in utility bills;
- e. Encourage existing residents and require new development to use sensors, web based smart irrigation sprinkler controllers and other rain shutoff sensors, soil moisture sensors, or evapotranspiration controllers for in-ground irrigations systems; and
- f. Encourage residents to perform visual weekly inspections of irrigation systems to identify leaks, broken sprinkler heads, and other system malfunctions. The City shall hold workshops to education residents in conjunction with the Water Management District.

Policy 1.4.2: *Emergency Conservation of Water Sources.* The City shall continue to plan for the emergency conservation of water sources in accordance with the policies of St Johns River Water Management District. The City shall enforce the provision of the Water Management District's emergency water shortage plans.

Policy 1.4.3: *Wellfield Protection Zone.* To protect the quality and quantity of Groveland's potable water supply, the City shall maintain a wellfield protection zone within a radius of one hundred and fifty, two hundred, five hundred and one thousand feet from potable water wells. The following land uses are prohibited within these zones:

- a. No new development (other than the facilities related to the City's water system) shall be permitted within one hundred and fifty feet from a well;
- b. Within a five-hundred-foot radius, aboveground or underground storage tanks, sanitary hazard as defined in F.A.C. 62-550, storage or treatment of solid waste in tanks, and transmission facilities conveying reclaimed water shall be prohibited;
- c. Within a two-hundred-foot radius, septic tanks, sanitary sewer facilities shall be prohibited;
- d. Within a one-thousand-foot radius of a well, uses shall be prohibited that require the storage, use, handling, production or transportation of restricted substances on the Florida Substance List, and agricultural chemicals, hazardous/toxic wastes, industrial chemicals, etc. In

- addition, industrial percolation ponds, mining activities and similar activities are prohibited;
- e. Excavation of waterways or drainage facilities which intersect the water table shall not occur within 1,000 feet; and
 - f. Solid waste disposal facilities shall also be prohibited within the City.

Policy 1.4.4: *Alternative, Renewable Sources of Water.* In accordance with the policies as set forth in the *Intergovernmental Coordination Element* and the *Public Facilities Element*, the City shall seek alternative, renewable sources of water other than surface and ground water to meet current and future needs. These sources are identified in the City's *Water Supply Facilities Work Plan*.

Policy 1.4.5: *Water Conservation Techniques and Programs.* The City shall promote and establish and/or require water conservation techniques and programs when and where feasible for current development and require same for new development. These techniques and programs are identified in the City's *Water Supply Facilities Work Plan*.

Policy 1.4.6: *Water Supply Facilities Plan.* Groveland's *Water Supply Facilities Work Plan (Work Plan)* shall assess existing and projected water sources and needs for at least a 10-year planning period and consider the *Regional Water Supply Plan* of the St. Johns River Water Management District. The *Work Plan* will also identify traditional and alternative water supply sources, including water conservation efforts, which the City may use to reduce or satisfy existing and projected water demands.

Policy 1.4.7: *Water Conservation and Work Plan.* The City will continue to implement the water conservation efforts identified in the *Work Plan*. These efforts will include concentrating on outreach and education as well as irrigation system modifications and indoor plumbing retrofits.

OBJECTIVE 1.5: Conserve, Appropriately Use and Protect Fisheries. Conserve, appropriately use and protect fisheries indigenous to lakes within Groveland. [9J-5.013(2)(b)(4), F.A.C.]

Policy 1.5.1: *Land Uses Compatibility and Fisheries.* The City shall promote land use activities within the *Future Land Use Element* and designated on the *Future Land Use Map* which are compatible with preservation of fisheries within the City's lakes. The City

shall prohibit any land use which shall detrimentally affect water quality or water temperature within any lake.

Policy 1.5.2: *Coordination with Environmental and Wildlife Preservation Agencies.* The City shall coordinate with and assist Federal and State environmental and wildlife preservation agencies to protect fish populations within the City's lakes and to promote environmental management activities which enhance fish propagation through natural processes or by managed fish restocking.

Policy 1.5.3: *Coordination with the Lake County Water Authority.* The City shall coordinate with the Lake County Water Authority to control any aquatic weed, algae blooms, or other aquatic plant proliferation occurring within the City's lakes. After such an event, the City shall determine the causes of the event and shall implement actions to prevent or minimize impacts from future incidences.

OBJECTIVE 1.6: *Conserve Wildlife, Wildlife Habitats, and Vegetative Communities.* Conserve and protect wildlife, wildlife habitats, and vegetative communities through the management of growth and development within the City. [9J-5.013(2)(b)(4), F.A.C.]

Policy 1.6.1: *Endangered and Threatened Species.* The City shall coordinate with the Florida Fish and Wildlife Conservation Commission, adjacent local governments, the U.S.D.A. Soil Conservation Service, the U.S.D.A. Division of Forestry to ensure the conservation and protection of endangered and threatened species, and their habitats, which occur within its jurisdiction.

Policy 1.6.2: *Inventory of Upland Vegetative Communities.* An inventory of the type and extent of all-natural upland vegetative communities is required for all proposed development sites exceeding 50 acres as well developments located adjacent to lakes and pristine wetlands and uplands (see also policy 1.13.7 for development within the Green Swamp Area of Critical State Concern), utilizing the Florida Land Use and Cover Classification System to identify vegetative types. This will include an inventory of identified important wildlife corridors. Identified onsite natural upland habitat shall be incorporated into the site's open space requirement to the greatest extent possible, taking into account site characteristics and other natural features within the site. Important wildlife corridors and links between ecosystems should also be incorporated into the open space requirement.

Policy 1.6.3: *Permitted Uses and Facilities on Conservation Lands.* Only conservation facilities and passive recreation uses shall be permitted within areas designated for Conservation (CON). Such activities and uses shall be described as follows:

(A) Passive Recreation:

- (1) Boardwalks and docks not to exceed a width of four feet;
- (2) Hiking trails, not to exceed a width of four feet unless part of a regional trail system that maintains a wider standard;
- (3) Picnic areas;
- (4) Fishing piers exceeding a width of five feet may only be located within lakes and not within wetlands; and
- (5) Observation towers.

(B) Conservation Facilities:

- (1) Fire lanes and fire/observation towers;
- (2) Facilities designed to protect nesting, feeding or habitat areas of designated endangered, threatened, or species of special concern, as determined by the Florida Fish and Wildlife Conservation Commission, or to support the propagation of common wildlife;
- (3) Fishery management;
- (4) Facilities designed to protect an archaeological or historical site;
- (5) Facilities designed to retard or eliminate soil erosion problems, particularly shoreline erosion along shorelines;
- (6) Facilities necessary to eliminate unwanted exotic vegetation; and
- (7) Wildlife monitoring devices/stations.

Policy 1.6.4: *Protection of Upland Vegetative Communities and Wildlife Habitats.* Upland vegetative communities and wildlife habitats (particularly those identified as primary habitat for endangered or threatened species) for which the City or a State agency deems environmentally significant shall be protected from adverse impacts associated with development to a degree necessary to

maintain the perpetual viability of the endangered or threatened specie(s).

OBJECTIVE 1.7: *Conserve and Appropriately Use Soils.* Conserve and appropriately use soils through the use of best management practices to minimize soil erosion problems as part of the development review process. [9J-5.013(2)(b)(3), F.A.C.]

Policy 1.7.1: *Soil Erosion Control.* The City shall require that appropriate measures be taken during land clearing and building operations to assure that exposed, destabilized, or otherwise altered soil is expeditiously covered with an acceptable erosion control material. The provision shall be applicable to the act of subdividing and installing related improvements, as well as during the development review process, including the period during which improvements may occur as well as the length of time soil may be exposed to the environment. Compaction of soils from heavy machinery shall be limited to where absolutely necessary and shall remain at least 15 feet from trees greater than 4" diameter at breast height (DBH).

Policy 1.7.2: *Notifying USDA about Soil Erosion.* The City shall notify the local office of the U.S.D.A. Soil Conservation Service of any soil erosion problems that may occur within the City's jurisdiction.

Policy 1.7.3: *Mining Activities.* No new mining activities shall be allowed within the City's jurisdictional limits and discouraged in any neighboring area. [9J-5.013(2)(c)(4), F.A.C.]

Policy 1.7.4: *Soil Erosion and Sedimentation Control Plan.* To prevent both soil erosion and sedimentation, the City shall require a soil erosion and sedimentation control plan whenever a development will involve any clearing, grading, or other form of distributing land by movement of earth, provided that any one of the following applies:

- Excavation, fill, or any combination thereof will exceed 500 cubic yards;
- Fill will exceed 3 feet in vertical depth at its deepest point as measured from the natural ground surface;
- Excavation will exceed 4 feet in vertical depth at its deepest point as measured from the natural ground surface;
- Excavation, fill, or any combination thereof will exceed an area of 1,000 square feet;
- Plant and/or tree cover is to be removed from an area exceeding 1,000 square feet on any parcel of land; or

- Whenever excavation or fill is proposed within 100 feet of a stream, stream channel, or body of water, a soil erosion and sedimentation control plan shall be provided.

OBJECTIVE 1.8: *Protecting Environmentally Sensitive Areas.* Protect environmentally sensitive lands from the encroachment of development in order to preserve their natural functions and assure their perpetual existence. Environmentally sensitive lands shall comprise wetlands, surface waters, floodplains, sink holes, aquifer recharge areas with high percolation rates, and undisturbed significant vegetative communities, particularly those serving as habitat or refuge for endangered and threatened plants and animals.

Policy 1.8.1: *Designating Conservation Lands.* The *Future Land Use Element* shall designate all wetlands and sink holes as Conservation (CON). The City may designate significant high recharge areas, areas within the 100-year floodplain, and undisturbed natural vegetative communities as Conservation (CON) where the environmental sensitivity of the subject area warrants protection from the encroachment of development to protect such areas under this designation. The *Future Land Use Map Series* shall illustrate areas designated as Conservation. The precise delineation of each area must be through specific studies and field determination.

Policy 1.8.2: *Floodplains and Flood Zones.* The City shall regulate development in areas identified as natural hazard areas, including floodplains and flood zone areas in order to maintain flood-carrying and flood storage capabilities.

Policy 1.8.3: *Long-range Protection of Floodplains.* The City shall ensure the long-range protection of the floodplains through:

- a. *Structures and Impervious Surfaces.* Positioning structures and impervious surfaces outside the 100-year floodplain to the greatest extent possible. The 100-Year floodplain shall be delineated within the *Future Land Use Map Series*, and its demarcations shall be determined by the most recent Flood Insurance Maps prepared by the Federal Emergency Management Agency.
- b. *Cluster of Residential Units.* Residential development shall cluster dwelling units on uplands located outside the 100-Year floodplain to the extent feasible.
- c. *Sanitary Sewer Systems.* Septic tanks, wastewater treatment plants, and spray fields are prohibited within the 100-Year floodplain.

- Policy 1.8.4:** *Purchasing Environmentally Sensitive Lands.* The City shall pursue State and County funds or grants to purchase environmentally sensitive lands designated as Conservation (CON) on the *Future Land Use Map*.
- Policy 1.8.5:** *Incompatible Land Uses.* The City shall ensure that future land uses that are incompatible with the protection and conservation of wetlands are directed away from wetlands.
- Policy 1.8.6:** *Legal Agreement.* Newly created mitigated areas, preservation or conservation areas as a part of a development shall be identified in a legal agreement which ensures their protection and maintenance in perpetuity. These areas shall be depicted on the *Future Land Use Map* as Conservation lands.
- Policy 1.8.7:** *Additional Wetlands Protection.* The City shall continue to ensure that:
- a. Development plans for new development to identify the location and extent of wetlands located on the property;
 - b. Development plans provide measures to assure that predevelopment flows and quality of water will be provided to maintain wetlands after development; and
 - c. Where alteration of wetlands is necessary in order to allow reasonable use of property, it should be clearly in the public interest and there is no practical alternative which reduces or avoids impacts to wetlands. Mitigation shall only be a last resort action to be used only after other measures such as reconfiguring of the development to avoid sensitive areas, reduction of density, etc. have been considered and shown not to be feasible. There shall be no net loss of sensitive lands. Any mitigation shall avoid impact to ecologically valuable uplands.
- Policy 1.8.8:** *Floodplain Mitigation.* Development within the 100-Year Floodplain shall provide necessary mitigation to maintain the natural stormwater flow regime. The 100-Year Floodplain Zone shall be delineated within the *Future Land Use Map Series*. The boundary of the 100-Year Floodplain Zone shall be determined by the most recent Flood Insurance Maps prepared by the Federal Emergency Management Agency. Mitigation shall occur through the following activities:

- a. ***Prohibited Land Uses and Activities.*** Storing or processing materials that would, in the event of a 100-Year Storm, be buoyant, flammable, explosive, or potentially injurious to human, animal or plant life is prohibited. Material or equipment immune to substantial damage by flooding may be stored if securely anchored to prevent flotation or if readily removable from the area upon receipt of a flood warning. Manufacturing land uses shall be prohibited from encroaching the 100-Year Floodplain Zone.
- b. ***Minimum Floor Height Elevation.*** All new construction and substantial improvements of existing construction must have the first-floor elevation for all enclosed areas at eighteen inches above the 100-year flood elevation.
- c. ***Construction Materials and Methods.*** All new construction and substantial improvements of existing construction shall be constructed with materials and utility equipment resistant to flood damage, and using methods and practices that will minimize flood damage and prevent the pollution of surface waters during a 100-year flood event.
- d. ***Service Facilities and Utilities.*** Electrical heating, ventilation, plumbing, air conditioning, and other service facilities shall be designed or located to prevent water from entering or accumulating within the components during a base flood. All new and replacement water supply and sanitary sewage systems shall be designed to minimize or eliminate both infiltration of flood water into the systems and discharges for the systems into flood waters.
- e. ***Residential Subdivision Plans and Design.*** Plans and designs for subdivisions shall minimize potential flood damage by locating recreation and conservation uses, if included in the plans, to areas within the Flood Zone, reserving as much land as possible outside the flood zone for other land uses. Flood zones shall be identified on all final development plans submitted to the City.
- f. ***Stormwater Facilities.*** The City shall require development to have drainage facilities in place and functioning concurrent with the impacts of development, as stipulated by deadlines established within the Concurrency

Management System. Such drainage facilities shall be designed to comply with the City's established level of service standard. Developers shall be required to install all necessary drainage facilities necessary to maintain the natural flow regime of the 100-year floodplain, consistent with level of service standards. Low Impact Development (LID) techniques shall be employed to the maximum extent feasible to further protect wetland quality.

OBJECTIVE 1.9: *Management of Hazardous Wastes to Protect Natural Resources.* Manage the use and disposal of hazardous wastes to protect natural resources and public health and safety.

Policy 1.9.1: *Commercial or Industrial Uses and Hazardous Wastes.* The City shall reserve all rights and privileges to deny development of any commercial or industrial activity which may use, store, or sell hazardous wastes which represent a potential threat to the quality of groundwater or to the health and safety of City residents.

Policy 1.9.2: *Monitoring and Management of Hazardous Wastes.* The City shall assist Lake County in the monitoring and management of any hazardous waste generators within Groveland. The City shall also notify the Lake County Department of Environmental Utilities of the presence of any disposed, buried, or stored wastes or material for which the volatility and chemical contents thereof are unknown.

Policy 1.9.3: *Collection and Disposal of Hazardous Wastes.* The City shall coordinate with the County, State, and Federal government in the collection and disposal of hazardous wastes.

OBJECTIVE 1.10: *Stormwater Management.* To provide efficient and economic stormwater management which will protect the public and property from flooding and maintain and improve water resource quality.

Policy 1.10.1: *Upgrading and Retrofitting Stormwater Facilities.* The City shall upgrade and retrofit stormwater facilities with roadway construction wherever feasible.

Policy 1.10.2: *Multiple Use of Stormwater Facilities.* The City shall allow the multiple use of stormwater management facilities for recreation, conservation, and open space.

Policy 1.10.3: *Incorporating Best Management Practices.* Upon completion of the Upper Ocklawaha River Basin Management Action Plan, the City shall amend the Land Development Regulations to incorporate Best Management Practices, non-structural stormwater management strategies, and xeriscaping to manage stormwater and its environmental impacts.

Policy 1.10.4: *Restoring and Protecting the Water Quality.* To assist the Florida Department of Environmental Protection, the St. Johns River Water Management District, and the Lake County Water Authority in their efforts to restore and protect the water quality in the Upper Ocklawaha River Basin, the City shall:

- Promote the use of wet retention and dry retention stormwater ponds;
- Promote the use of Low Impact Development (LID) techniques;
- Actively seek funding for stormwater retrofit projects, which include activities ranging from the installation of baffle boxes to the creation of detention ponds; and
- Identify strategies to eliminate or reduce direct discharge to the lakes in the City.

Policy 1.10.5: *Maintenance of Stormwater Facilities.* The City shall maintain its stormwater management facilities in such a manner that the impacts to natural systems shall be minimized.

Policy 1.10.6: *Private Stormwater Management Facilities.* The City shall require that all private stormwater management facilities be maintained such that the effectiveness for stormwater abatement and water quality improvement are maximized.

OBJECTIVE 1.11: *Aquifer Recharge Protection.* Protect aquifer recharge areas to maintain suitable groundwater levels and to protect groundwater quality. [9J-5.013(2)(b)(2), F.A.C.]

Policy 1.11.1: *Post-development Runoff and Prime Recharge Areas.* The City shall protect its groundwater resources by not allowing increases in post-development runoff volumes in prime groundwater recharge areas (> 12 inches/year).

Policy 1.11.2: *Prohibiting Land Uses and Recharge Areas.* The City shall prohibit land uses which have a high potential risk for water contamination in primary recharge areas.

- Policy 1.11.3:** *Prohibiting Land Uses and Public Water Supply Wells.* The City shall continue to prohibit land uses within specific distances from public water supply wells that could have negative impacts on groundwater quality.
- Policy 1.11.4:** *Regional Aquifer Recharge Protection.* The City shall continue to coordinate with Lake County, St Johns River Water Management District, and state and federal agencies to achieve regional aquifer recharge protection objectives.
- Policy 1.11.5:** *Groundwater Withdrawals.* The City shall coordinate with St Johns River Water Management District in its consumptive use permit applications to determine the extent to which groundwater withdrawals can be made without resulting in harm to the water resources and associated natural systems and shall manage its groundwater withdrawals in compliance with the conditions of its consumptive use permits to avoid such harm.
- Policy 1.11.6:** *Reclaim Water.* The City shall maintain its reclaimed water system to provide re-use water for irrigation and to decrease the potable water demand.
- Policy 1.11.7** The use of fertilizers and chemicals shall be minimized to the maximum extent possible.

OBJECTIVE 1.12: *Quality of Lakes.* To preserve the quality of Groveland’s lakes, recognizing the importance of lake beauty, cleanliness, and recreational use as a natural asset contributing to the general appeal of Groveland as a residential and business community.

- Policy 1.12.1:** *Working with Public and Private Companies.* The City shall work with private and public companies to implement projects, reduce pollutants, and improve water quality for those lake and river systems wholly and/or partially within the City.
- Policy 1.12.2:** *Encouraging Citizen and Neighborhood Involvement.* The City shall encourage citizen and neighborhood involvement in addressing lake water quality concerns for those lakes wholly and/or partially within the City.

OBJECTIVE 1.13: *Development within the Green Swamp Area of Critical State Concern.* Establish criteria for development within the Green Swamp Area of Critical State Concern to conserve and protect its natural and ecological resources.

- Policy 1.13.1:** *Development in Floodplains and Wetlands.* The City shall prohibit any development in floodplains and wetlands within the Green Swamp Area of Critical State Concern (ACSC).
- Policy 1.13.2:** *Wastewater Sludge.* The City shall prohibit any and all placement of wastewater sludge within the Green Swamp ACSC.
- Policy 1.13.3:** *Industrial Development and Mining.* The City shall prohibit all Industrial development, peat and lime rock mining, clay mining and sand mining within the Green Swamp ACSC. This prohibition of industrial development shall specifically include facilities engaged in industrial activities, as defined in the Environmental Protection Agency’s National Pollution Discharge and Elimination System for Stormwater Associated with Industrial Activity including:
- Petroleum pipelines;
 - Landfills;
 - Incinerators;
 - Wholesale chemical operations;
 - Petroleum related industries and fuel dealers (with the exception of gas stations and truck stops, which may be permitted);
 - Dry cleaning plants; and
 - Chemical research operations.
- Policy 1.13.4:** *Surface Water and Groundwater Recharge.* Development within the Green Swamp ACSC shall not alter the quantity, quality, and natural flow regime of surface water, nor the quantity or quality of groundwater recharge.
- Policy 1.13.5:** *Natural Flow of Wetlands.* Within the Green Swamp ACSC, the natural flow of wetland systems shall be maintained by the use of upland buffers, the City complying with the conditions of its consumptive use permits regarding limitations on groundwater withdrawals, and controls on stormwater runoff.
- Policy 1.13.6:** *Threatened and Endangered Species.* A study for threatened and endangered species of special concern is required for all proposed development exceeding 50 acres within the Green Swamp ACSC. If it is determined that listed species are located on the site, a habitat management plan must be prepared using the guidelines and protocols of the Florida Fish and Wildlife Conservation

Commission (FFWCC). This plan must be reviewed by FFWCC prior to the issuance of a development order by the City.

Policy 1.13.7: *Inventory of Vegetative Communities.* An inventory of the type and extent of all-natural upland vegetative communities is required for all proposed development sites exceeding 50 acres within the Green Swamp ACSC, utilizing the Florida Land Use and Cover Classification System to identify vegetative types. This will include an inventory of identified important wildlife corridors. Identified onsite natural upland habitat shall be incorporated into the 60% open space requirement to the greatest extent possible, taking into account site characteristics and other natural features within the site. Important wildlife corridors and links between ecosystems should also be incorporated into the open space requirement.

Policy 1.13.8: *Exotic and Nuisance Plants.* No exotic or nuisance plant species shall be used in landscaping within the Green Swamp ACSC.

Policy 1.13.9: *Post- and Pre-Development Recharge.* Projects located within the Green Swamp ACSC and within the Most Effective Recharge Areas must retain three inches of runoff from directly connected impervious areas within the project. Applicants may instead demonstrate that the post-development recharge will be equal to or greater than the pre-development recharge. Most Effective Recharge Areas are those areas with soils classified by the Soil Conservation Service as Type "A" Hydrologic Soil Group. Directly connected impervious areas are those impervious areas which are connected to the surface water management system by a drainage improvement such as a ditch, storm sewer, paved channel, or other man-made conveyance. Stormwater that is retained must be infiltrated into the soil or evaporated such that the storage volume is recovered within 14 days following a storm event.

Policy 1.13.10: *Floodplain Study.* Within the Green Swamp ACSC, a detailed flood insurance study shall be performed for all subdivision proposals and other proposed development which have five (5) acres or more in the 100-year floodplain. The construction of a single-family residence on a parcel of land containing five (5) or more acres which is not part of a subdivision or which is part of a subdivision in existence on the effective date of this plan amendment is exempt from this requirement. Phases of a larger development, if the larger development meets the five (5) acre

criterion, are not exempt from this requirement. If existing subdivisions are proposed for replatting, the replatted portion shall be required to comply with this requirement if the replatted portion meets the five (5) acre criterion. Subdivisions which contain 10 lots or less shall be exempt from these requirements. The study shall be performed in accordance with the Flood Insurance Study Guidelines and Specifications for Flood Contractors.

POLICY 1.13.11: *Development Conflict in the Green Swamp ACSC.* When a conflict arises regarding development criteria within the Green Swamp ACSC, the more restrictive policy will be followed.

OBJECTIVE 1.14: *Intergovernmental Coordination Activities for the Conservation of Natural Resources.* Manage natural resources and conservation issues transcending the City's jurisdictional area or constituting an issue of regional nature through intergovernmental coordination.

Policy 1.14.1: *Intergovernmental Coordination.* The City shall coordinate with neighboring municipalities and Federal, State, and Lake County agencies to manage natural resources and conservation activities and identify and regulate wetland areas, floodplains, environmentally sensitive lands, conservation areas, and unique native habitats in Groveland. Such management activities shall engage, but not be limited to:

- participation in technical review activities;
- ensuring public facilities are readily available to serve proposed developments; or
- attending public meetings regarding environmental issues that will have a direct or adverse impact to the City.

Policy 1.14.2: *Resolving Conservation Concerns.* The City shall coordinate with the Florida Department of Environmental Protection, the St. Johns River Water Management District, the Florida Fish and Wildlife Conservation Commission, and other appropriate agencies as deemed necessary to resolve conservation concerns which presently exist or which may emerge.

OBJECTIVE 1.15: *Reducing Energy Requirements.* Enhancing conservation and efficiency measures to reduce energy requirements shall be practiced. [9J-5.013(2)(b)(5), F.A.C.]

Policy 1.15.1: *Energy Conservation Measures.* The City shall conduct energy audits, monitor energy use, and implement cost-effective energy

conservation measures in all public buildings. [Chapter 163.3177(6)(d), F.S.]

Policy 1.15.2: *Promote the Use of Energy Saving.* The City shall continue to reduce levels of all air-conditioning, heating and lighting systems during non-business hours, and promote the use of energy saving features in all government buildings. [Chapter 163.3177(6)(d), F.S.]

Policy 1.15.3: *Energy Efficient Construction and Operation.* Local codes and ordinances shall be reviewed and revised by December 2020 so as to not handicap implementation of energy efficient construction and operation. [Chapter 163.3177(6)(d), F.S.]

Policy 1.15.4 Photovoltaic solar panels shall be included as a part of the energy supply for all new City structures and retrofitted onto existing City structures as financially feasible.

OBJECTIVE 1.16: *Redefining Open Spaces.* To redefine and provide a more specific definition of open spaces and ensure that adequate uplands are preserved for the residents and guests of Groveland to enjoy.

Policy 1.16.1: *Definition of Open Space.* The City hereby adopts the following definition for open spaces:

Open Space: Open space is figured on the Gross Land Area. Up to 50% of the open space requirement may be met with wetlands, except in the Green Swamp Area of Critical State Concern where 100% of the open space requirement may be met with wetlands. Open space may include landscaped buffers and stormwater facilities if they are designed to be a park-like setting with pedestrian amenities and free form ponds. Open space may be passive or active. Open space may include public recreational components of developments. The majority of the open space shall be permeable; however, up to 10% may be impervious (plazas, recreational facilities, etc.). Wet ponds are not counted as part of that 10 percent.

Densities would be determined by the Net Land Area. The Net Land Area is figured by taking the Gross Land Area (total property less any lakes or water bodies), then subtracting from that any open space requirements.

POLICY 1.16.2: ***Purchasing Environmentally Sensitive Lands and Uplands.*** To ensure adequate uplands are preserved for the public to enjoy, the City shall acquire additional open space by purchasing environmentally sensitive lands and lands adjacent to uplands as practical and feasible.