
Conservation Element

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I. Purpose

The purpose of the Conservation Element is to promote the conservation, use and protection of natural resources. In the New Port Richey area, natural resources include the Pithlachascotee River, lakes, wetlands, floodplains, groundwater, soils, air, wildlife, terrestrial and marine habitats, and vegetative communities.

II. Background

Geographic Setting

The City of New Port Richey is located on the west side of Pasco County, a coastal county in west central Florida. The City is located approximately one-mile inland from the Gulf of Mexico. The Pithlachascotee River runs through the City. The closest municipality is the City of Port Richey which is located immediately north of New Port Richey.

Physiographic Setting

The City is located within two physiographic regions: Coastal Swamps and Coastal Lowlands. Physiographic regions are primarily a function of topographic relief and underlying sediments.

The Coastal Swamp region parallels the coast and extends inland from two to five miles. The region is characterized by both tidal marshes and coastal swamps with elevations typically less than 10 feet. Poorly drained, organic soils directly overlie several thousand feet of sedimentary rock, principally various limestone formations. A very gently sloping, very flat limestone terrain extends inland from the Gulf of Mexico. Traveling inland, the terrain changes gradually from shallow marine water to salt marshes to fresh water swamps. Much of the area is shallow to limestone and without barrier formations. Sands do not accumulate to form beaches.

The Gulf Coastal Lowlands lie landward of the Coastal Swamps a width of approximately two to eight miles. Elevations in this region range from sea level to about 100 feet; however, elevations in the City range from sea level to about 10 feet. As such, topography in the City consists of relatively flat plains. In its natural state, the Gulf Coastal Lowlands consisted mainly of pine and saw palmetto flatwoods and numerous small ponds and broad grassy soughs. However, most of this area has been transformed by urban development.

The entire City is considered coastal due to the landward extent of the freshwater/saltwater interface evident in the Pithlachascotee River. Most of the City has very little slope and, therefore, natural drainage is limited.

Climate

The New Port Richey area has a subtropical marine climate, affected largely by its location adjacent to the Gulf of Mexico. The climate is characterized by long, humid summers and mild, dry winters. Winter cold fronts and high summer temperatures are moderated by the Gulf waters. Summer temperatures are tempered by sea breezes. Winter temperatures are quite variable due to the passage of frontal systems. The average high temperature is 80.6 degrees Fahrenheit and the average low is 61.8 degrees Fahrenheit. The number of freezes, recorded at Tampa International Airport, is an average of 3.3 days per year.

Rainfall in the area is the result of three types of systems: frontal, convective and tropical cyclonic. Although most of the rainfall is associated with summer convective storms, the area has two distinct peak rainfall periods: June through September and February through April. The average rainfall totals vary from 54 to 58 inches per year. Coastal Pasco County has a very active thunderstorm season during the summer. There is an average of 85.1 thunderstorms per year. Most occur during the months of June through September. The hurricane season extends from June 1 through November 30. Snowfall in the City is rare. The maximum recorded monthly accumulation was two inches in January 1977.

Urban Context

The City is approximately 87 percent built-out. The majority of undeveloped lands are comprised of relatively small parcels located at the periphery of the City. The majority of new development activity over the planning timeframe is anticipated to occur in the western and southern parts of the City. Immediately outside the City limits, areas to the east and west contain the greatest amount of vacant lands. As the City continues to grow, and the most suitable lands are developed, more attention must be given to environmental constraints on less suitable lands. In many cases, remaining vacant lands within and proximate to the City are environmentally sensitive.

III. Inventory and Analysis

Air Quality

The Air Quality Index (AQI) is an index for reporting daily air quality. It reports on how clean or polluted the air is in a geographic area and any associated health effects. The AQI focuses on health effects experienced within a few hours or days after breathing polluted air. The US Environmental Protection Agency (EPA) calculates the AQI for five major air pollutants regulated by the Clean Air Act: ground-level ozone, particle pollution (also known as particulate matter), carbon monoxide, sulfur dioxide, and nitrogen dioxide. For each of these pollutants, EPA has established national air quality standards to protect public health. Although AQI includes all available pollutant measurements, you should be aware that many areas have monitoring stations for some, but not all, of the pollutants.

The AQI ranges from zero to 500. The higher the AQI value, the greater the level of air pollution and the greater the health concern. For example, an AQI value of 50 represents good air quality with little potential to affect public health, while an AQI value over 300 represents hazardous air quality. AQI values below 100 are generally thought of as satisfactory. When AQI values are above 100, air quality is considered to be unhealthy at first for certain sensitive groups of people, then for everyone as AQI values get higher. Table CON-1 shows the Air Quality Index Summary Report for Pasco County for 2005. The air quality monitoring station for west Pasco County is located south of the City on Darlington Road (Station #O3 121012001-1).

**Table CON-1
Air Quality Index Summary
Pasco County**

Number of Days Air Quality Was...				AQI Statistics ¹			Days Per Year Air Pollutant Predominated in Determining AQI Value ²					
Good	Moderate	Unhealthy (Sensitive Groups)	Unhealthy	Max	90th Percentile	Median	CO	NO2	O3	SO2	PM2.5	PM10
332	33	0	0	95	50	34	0	0	365	0	0	0

Notes:

1. Pollutant Standards Index: 0 - 50 Good; 50 - 100 Moderate; 100 – 200 Unhealthful; 200 - 300 Very Unhealthful; and 300 - 500 Hazardous.

2. A daily index value is calculated for each air pollutant measured. The highest of those index values is the *AQI Value*, and the pollutant responsible for the highest index value is the *Main Pollutant*. The criteria pollutants used to calculate AQI are: CO - Carbon monoxide; NO2 - Nitrogen dioxide; O³ - Ozone; SO²- Sulfur dioxide; PM2.5 - Particulate matter smaller than 2.5 micrometers; and PM10 - Particulate matter smaller than 10 micrometers.

Source: US Environmental Protection Agency, 2005 (<http://www.epa.gov/airnow/>).

The EPA air quality standards for Ozone (O³) are 0.12 parts per million (ppm) for the 1-hour average concentration and 0.08 for the 8-hour average concentration. In 2005, the O³ measurement in Pasco County for the *second-highest daily maximum value* was 0.093 ppm. This value, rounded to the nearest 0.01 ppm, should not exceed the level of the 1-hour standard. For the same year, the *fourth-highest daily maximum value* was 0.077 ppm. This value, rounded to the nearest 0.01 ppm, should not exceed the level of the 8-hour standard. Based on this data, Pasco County air quality is in compliance with EPA standards.

The Clean Air Act lists 188 hazardous air pollutants (HAPs) known or suspected to cause serious health problems and directs EPA to establish *emission* limits for those pollutants. Monitoring of *ambient* concentrations of HAPs is not mandated by the Clean Air Act, and monitoring is not the norm. EPA is developing regulations to limit HAP emissions, thereby preventing ambient HAP concentrations from reaching levels that would pose significant health risks.

**Table CON-2
Hazardous Air Pollutants Emission Summary¹
Pasco County**

Annual Pollutant Emissions (Pounds)				
Emissions	Major Source Emissions ²	Area & Other Emissions ³	On road Emissions ⁴	Nonroad Emissions ⁵
1,793,220	26,060	754,920	791,680	220,540

Notes:

1. Sum of 33 urban hazardous air pollutants (HAP).

2. Stationary sources (point sources that emit or have the potential to emit at least 10 tons/year of any one HAP, or at least 25 tons per year of a combination of HAPs).

3. Stationary sources that emit less than 10 tons/year of a single HAP and less than 25 tons/year of all HAPs combined.

4. Consist of licensed motor vehicles, including automobiles, trucks, buses, and motorcycles.

5. Consist of 2- or 4-stroke and diesel engines, nonroad vehicles, aircraft, commercial marine vessels, and locomotives.

Source: US Environmental Protection Agency, 2005 (<http://www.epa.gov/airnow/>).

Water Resources

Surface Water

Surface water resources within the City include the Pithlachascotee River, Orange Lake and Lake Chasco (refer to Map FLU-4). No part of the New Port Richey incorporated area has direct contact with the Gulf of Mexico.

Pithlachascotee River. The Pithlachascotee River starts in Hernando County as channeled flow through the Masaryktown Canal, then southwest to its headwaters, Crews Lake, and on through Pasco County and New Port Richey to the Gulf of Mexico at Miller's Bayou in Port Richey. The river traverses the City of New Port Richey from the city limits west of Rowan Road to the city limits immediately west of US 19. Major tributaries include Jumping Gully and Fivemile Creek. The upper reaches of the Pithlachascotee River contain many lakes, sinks, and depressions while the middle and lower reaches are swampy and poorly defined. The mouth of the Pithlachascotee River opens into an area of the Gulf which is characterized by a low wave energy, shallow shelf colonized by extensive seagrass meadows of turtle grass (*Thalassia testudinum*), shoal grass (*Halodule wrightii*), manatee grass (*Syringodium filiforme*), and occasional oyster reef patches. Flow is tidally influenced near the mouth of the river.

The saltwater/freshwater interface contributes to the makeup of the Pithlachascotee River. Saline waters of the river are diluted to a degree by freshwater discharge of the aquifer. However, increased pumping of the aquifer reduces surface runoff and freshwater flow in the river, further increasing the potential for saltwater intrusion.

The Clean Water Act requires that the surface waters be classified according to designated uses. The Act also establishes water quality protections stemming from the designated use of waterbody. The Pithlachascotee River is designated as *Class III Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife* by the Florida Department of Environmental Protection (FDEP). Currently, most surface waters in Florida are Class III.

Orange Lake. Orange Lake is located in Downtown New Port Richey near the Central Business District. It is believed that Orange Lake was formed by a sinkhole although the history of the lake has not been investigated. The approximately 0.75 acre lake receives stormwater runoff from the surrounding area. The lake's overflow drainage is treated and piped to the Pithlachascotee River. An inadequate drainage system in the older areas of the City facilitates use of this lake for stormwater runoff. The lake does not have enough capacity to assimilate pollutant loads of stormwater runoff and, as a result, pollutants enter the river during peak flows.

Lake Chasco. The origin of Lake Chasco has not been verified. The lake is located in the southeast quadrant of the City, east of Frances Avenue Park, and is currently used for drainage. There is no available water quality data for Lake Chasco. However, a significant amount of algal growth in the lake is indicative of poor water quality.

Floodplains

As shown in Map INF-5, the City is almost completely surrounded and traversed by areas within the Federal Emergency Management Agency (FEMA) designated Flood Zone A, which corresponds to the 100-year floodplain. These natural drainage areas predominantly occur in

coastal areas west of US 19 and along the Pithlachascotee River. The Pithlachascotee River has a drainage area of approximately 182 square miles.

Historic urban development in the floodplain in has increased the size of the floodplain in the City due to diminished drainage capacities. Current regulations restrict development in the floodplain to preserve its natural drainage function and to prevent loss of life and property due to flooding.

Groundwater

Pasco County is underlain by two aquifers, the Upper Floridan and Surficial. The Upper Floridan Aquifer serves as the principal source of water for domestic, agricultural, and industrial supplies for most of west central Florida. The Surficial Aquifer, which occurs within sand overlying the Upper Floridan Aquifer, is used primarily for lawn irrigation. Generally, the confining units which separate the two aquifers are thin and discontinuous in some parts of Pasco County.

The Upper Floridan Aquifer is under artesian conditions in most of Pasco County. However, no confining layer exists within about three miles of the coast making the aquifer in the New Port Richey area under water table conditions. The potentiometric surface of the aquifer ranges from about sea level to 100-feet below mean sea level (MSL).

A potential source of groundwater contamination is saltwater intrusion. In coastal groundwater, saltwater underlies freshwater in a wedge that diminishes in thickness as it moves landward. If the underlying freshwater is withdrawn in excessive amounts, saltwater is allowed to migrate inland, raising chloride concentrations farther from the coast. Public water supplies may use potable water with chloride concentrations up to 250 milligram per liter (mg/l). In Pasco County, saltwater intrusion has occurred in the Upper Floridan Aquifer along the coast. This is mainly the result of over-pumping groundwater in the coastal areas and the release of archaic saltwater zones that were trapped in the sediments during the Pleistocene Period.

A study conducted by the US Geological Survey (Water-Resources Investigations Report 90-4195) for Pasco County and other counties indicated that areas of the City west of US 19 and along the Pithlachascotee River had recharge rates ranging from zero to 10 inches per year to the Surficial Aquifer and had no recharge to the Upper Floridan Aquifer. The remaining areas of the City east of US 19 had recharge rates ranging from zero to 10-inches to the surficial aquifer and zero to 10 inches to the Upper Floridan Aquifer. The study noted that recharge is commonly near zero in stream valleys and low-lying wetlands, which is characteristic of a significant portion of the City. Additionally, impervious surfaces created by urban development in the City have a negative impact on aquifer recharge rates. There is no usable recharge to the Floridan Aquifer in the New Port Richey area due to confined conditions of the aquifer and high mineralization.

There are no water wells within the City that are currently in use or proposed for use in meeting the potable water demand of the City's Water Service Area.

Ecological Communities

The ecological communities, or vegetative communities, within or adjacent to the City include urban forest, wetlands (i.e., forested wetlands, freshwater marsh, mangrove swamp and coastal marsh), rivers and streams and marine.

Upland Forest

This category consists of temperate mesic forest located on sandy, rolling, upland terrain that is dominated by laurel oak, live oak, magnolia, slash pine, longleaf pine and other mixed hardwoods. These communities are usually well-developed forests, which may be dominated by either hardwoods, pines, or a mixture. Hardwoods consist of a mixture of the broad leaf evergreen and broad leaf deciduous types.

Wetlands

Wetlands in and around the City are comprised of freshwater and saltwater wetlands (see Map FLU-4). Estuarine wetlands are found along the Pithlachascotee River and along the Gulf of Mexico coastline (in the unincorporated area). These areas have the greatest variety of wetlands including mangrove swamps, saltwater and freshwater marshes and hardwood swamps.

The importance of mangroves, salt marshes and seagrass beds to coastal and estuarine ecosystems has been well documented. As primary producers, these species of wetland vegetation provide the foundation of coastal and estuarine food webs; both as direct sources of nutrition and as generators of detrital particles. Secondary to their role as primary producers, coastal and estuarine wetlands provide protection and habitat for such organisms as shrimp, crabs, scallops and juvenile fishes. In addition, wetland vegetation provides necessary substrate for the attachment of organisms that are major food sources for many economically important species of finfish.

In addition to their contributions to the biology of the marine ecosystem, coastal and estuarine wetlands play an important role in modifying the geologic and hydrographic characteristics of the area. Acting as baffles, roots and leaves reduce the velocity of water over the bottom causing suspended particles to settle out and become trapped at the base of the plants. In this way, mangroves, marshes and seagrasses reduce turbidity, increase sedimentation rates, stabilize sediments and attenuate wave action on adjacent shorelines and reduce flood crests and flows rates after storm events. The binding and stabilization characteristics of these habitats are documented by reports of some coastal marshes and seagrass meadows surviving the destructive scouring forces of coastal storms and hurricanes in the Gulf States.

Under Section 404 of the Clean Water Act, the US Army Corp of Engineers (ACOE) exerts regulatory authority for dredge and fill activities over the waters of the United States, including wetlands. Applicants seeking approval for impacts to wetlands are required to prepare one of several types of permits that generally include the area of proposed wetland impacts, proposed mitigation, economic analyses, a public interest review, and avoidance and minimization efforts. The US Environmental Protection Agency (EPA) and the US Fish and Wildlife Service (USFWS) may comment on an ACOE permit application. A recent Supreme Court decision has limited the regulatory authority of the ACOE over isolated wetlands, so that they are limited in scope to those wetlands that are connected to waters of the United States. Still, the area of wetlands in the County that are under the regulatory authority of both the state and federal government is extensive. Under any future development scenario, it is unlikely that a high percentage of this acreage will be removed because of engineering constraints, conversion costs and existing

regulations. Thus, remaining wetland systems in Pasco County will provide a substantial framework of natural habitat.

Forested Wetlands

Also found in the vicinity of New Port Richey are cypress and hardwood swamps. The cypress swamps are low-lying forest dominated by bald (Taxodium distichum) and pond (Taxodium ascendens) cypress. These areas are frequently inundated with freshwater and have soils that are highly organic and poorly drained.

Freshwater wetlands are found in the southeast portion of the City due to annexation. Cattail (Typha spp.), fire flag (Thalia geniculata) and sawgrass (Cladium jamaicense) are some of the species found in this community. Interior wetlands (swamp and marsh systems) provide an important function in the hydrological cycle by receiving and retaining runoff from upland and urban areas. Improper water management practices in both the City and adjacent areas can have a detrimental effect on these communities.

The uplands include a variety of vegetation types depending on the soil moisture level. Upland communities include longleaf pine, slash pine and the field community. In addition, the growth and expansion of opportunistic exotic plant species such as Brazilian pepper (Schinus terbinthefolis), Australian pine (Casuarina spp.) and punk tree (Melaleuca quinquenervia) have encroached on native flora.

The longleaf pine community is identified by the typical longleaf pine-turkey oak vegetation. This community has poor soil quality and low moisture and as such many of the animals found in these communities are burrowers due to high temperatures and absence of water. The field community includes pastures, native grasslands and agricultural areas.

This category includes *Bottomland Forest*, which is characterized by occasional flooding and saturated soils. These communities, however, are generally located within the floodplain of streams and rivers and receive inundation from overflow of the channel. They are not seepage maintained (bog fed) and the soils undergo regular and distinct wetting and dry periods. They are an upper zone of the Mixed Hardwood Swamp and may grade into the Hydric Hammocks.

Bottomland Forests may grade into marsh or swamp communities on the lower edges or may be directly adjacent to lakes or streams, which only infrequently flood out of their channels. Bottomland Forests often grade into Mesic/Wet Flatwoods or even Sandhills on their upper margins. These communities may be found in low terrain and along river and stream floodplain and are common in the western, coastal portions of the County. The Bottomland Forest type is more often restricted to the larger riverine systems.

Dominant species of the Bottomland Forest include water oak, red maple, ironwood, diamond leaf oak, American elm, sweetgum, water hickory, water locust, slash pine and American holly. Most commonly, the understory is relatively sparse and open, with much of the ground cover consisting of annual species or herbaceous perennials. Possum haw, Walter's viburnum and hawthorns are characteristic understory trees or shrubs. Other species include winterberry, Virginia willow, stiff cornel dogwood, fire flag, poison ivy and peppervine. Characteristic herbs include small chain fern, bead fern, lizard's tail, sedges and saw palmetto.

Like vegetation, animal diversity in Bottomland Forest is diverse. The dominant species are terrestrial in nature, although moisture requiring species will occur and aquatic species may occur on an opportunistic basis. Mast and berry production is moderate to high, providing good food resources for grey squirrel, red bellied woodpecker, turkey, quail and white tail deer. Particularly in the drier and higher parts of these hammocks, several species of rats and mice are common, providing food for carnivores such as the bobcat. The invertebrates provide food for mice, rats, shrews, opossum and other species in the Bottomland Forests.

Bottomland Forest provide good habitat for amphibians such as the eastern spadefoot toad, leopard frog, narrow mouth toad, southern toad, green tree frog, barking tree frog, squirrel tree frog, little grass frog and common newt. Common reptiles include Florida box turtle, green anole, brown anole and southeastern five-lined skink. Snake species include the eastern indigo snake, black racer, red/yellow rat snake, rough green snake and eastern coachwhip.

Breeding birds may include blue jay, cardinal, tufted titmouse, Carolina wren, great crested flycatcher and red bellied woodpecker. Pileated woodpeckers and turkey may be found in stands. Other common species in bottomlands include the barred owl and downy woodpecker. Mammal use of the Bottomland Forest is moderate and includes such species as the cotton mouse, golden mouse, short tailed shrew, southeastern shrew and marsh rabbit.

The area's freshwater wetlands are of significance to the coastal watershed. Freshwater wetlands detain and slow the release stormwater runoff. The vitality of the marsh and mangrove swamps depends on the quality and quantity of freshwater inflow. The freshwater wetlands of the coastal watershed in conjunction with lakes and rivers are critical to environmental health concern and should be managed as an integral unit.

Freshwater Marsh

Freshwater Marshes are wetland communities dominated by non-woody vegetation such as grasses, sedges, rushes, or broad-leaved aquatic emergent plants. The soils are often saturated and the sites are regularly or occasionally flooded at least during the wet season. Freshwater marshes are similar to Wet Prairie in form and function. Freshwater marshes may range in size from less than one acre to several hundred acres and may occur within almost any other habitat. Freshwater Marshes may undergo succession to Mixed Hardwood Swamp, Cypress Swamp, Bayhead, Hydric Hammock, Wet Prairie, Mesic/Wet Flatwoods, or Ponds and Lakes.

Mangrove Swamp

Mangrove swamp, also known as tidal swamp, saltwater forest, or mangrove forest, occur on low wave energy seashores on tidally submerged soils with sand and organic substrates. They may also extend inland along tidally influenced brackish rivers. The idealized vegetation profile consists of bands along an elevational gradient that are largely made up of single species. Red mangrove, black mangrove, white mangrove and buttonwood occupy successively higher zones.

In west central Florida, mangrove swamps may be functionally divided into several variants depending on the degree of tidal influence and flushing. Mangroves generally occur from the lower end of the intertidal zone to somewhat above the upper range of salt marsh-like habitats. They are bordered on the lower side by salt marsh or open estuarine waters and on the upper

edge by overwash plains, strand, maritime forest, or flatwoods. Pasco County is near the northern limit of well-developed mangrove swamps due to the cold sensitivity of most species. Because of frost damage and other stresses, the mangrove swamps of Pasco County are generally shrub-like in appearance with few large trees. These areas are common in the coastal area, forming extensive strands often extending over 1,000-feet from shore, broken only by small islands and occasional open water ponds. Drainage and mosquito ditches are common features in mangrove swamps.

Species composition and vegetative structure is uniform within stands and among stands. Vegetation consists of almost pure stands of one or two dominant mangrove species with a low to moderate ground cover. In southern Florida, the red mangrove is generally the dominant species; however, in Pasco County, black and white mangroves are most abundant. Red mangrove occurs in the lower zones where the large aerial prop roots extending from the trunk provide stability. Black mangrove usually occurs in the upper half of the tidal zone, often behind the fringe of red mangrove. White mangrove and buttonwood may be locally common in stands at the upper end of the tidal range or may be found as subdominant or scattered throughout black mangrove stands.

In Pasco County, the size of trees is generally dependent on the frequency or severity of frost damage suffered. White mangrove is least cold hardy and generally reaches its northern limits in Hernando County. Thus, it occurs only sporadically in Pasco County and usually is restricted to small shrubs in protected sites. Red mangrove is also cold sensitive and is often damaged by frost. Therefore, it is generally restricted to young trees or shrubs less than five feet tall. Black mangrove is the dominant species in the County because of its greater cold tolerance, but it, too, rarely occurs in a true tree form.

Other than mangroves, the vegetation is usually restricted to a few herbaceous plants which tolerate saline conditions. The ground cover is usually sparse, but may be moderately dense in spots. Common species occurring are saltwort, glasswort, sea purslane, sea blite, sea lavender, leatherfern and black needlerush.

The mangrove swamp is a valuable wildlife habitat. Its primary value is as a cover and nesting habitat for many of the wading and shore birds of the coastal area. Species which may nest in the mangrove swamp include the white and brown pelican, bald eagle, American osprey, roseate spoonbill, reddish egret, great egret, snowy egret, little blue heron, black and yellow crowned night herons, glossy ibis and white ibis. Most of the species roost together in rather well defined areas and nest together in rookeries which may consist of several hundred pairs of breeding birds in a small area.

Most rookery areas are found where the nest can be protected from predators by rather large trees or by generally inundated conditions. Consequently, small islands or stands of red mangrove that are surrounded by open water are prime rookery sites. Scrubby and often unflooded black mangrove are poor rookery areas. Eagles and ospreys may also nest in mangrove trees and swamp. However, they generally require large trees with well-developed crowns, strong branches and good height. In Pasco County, where most of the swamp is of the stunted or shrub form, the swamp is not prime nesting habitat. Eagles and ospreys may however nest on larger pine on islands or rises surrounded by Mangrove Swamp.

Mangrove swamp also provides nesting habitat for several other bird species which nest individually and not in rookeries. Nesting birds found in this habitat include the black-whiskered vireo and, perhaps, the mangrove cuckoo. Several other species may feed in or near mangrove swamp, usually on a seasonal basis. These include the peregrine falcon, several vireos and warblers, dowitchers, blue-wing teal and greater scaup.

Reptile and amphibian representation in the mangrove swamp is rather low. Several threatened or endemic species occur in other parts of Florida which do not occur in this region. The Florida mud turtle, Florida snapping turtle, ornate diamondback terrapin, green anole, Florida Green water snake, Atlantic salt marsh snake and green tree frog may infrequently be found, mainly in the brackish areas. The American alligator is a frequent inhabitant of the streams and ditches in mangrove systems. Mammals are also poorly represented in mangrove swamps. Few mammals utilize this habitat, usually only on a transient feeding basis. Racoons, Florida mink and bobcat may occasionally forage or hunt in this system.

Mangrove swamp is a food source for estuaries and nursery ground for young fishes. Mangroves provide an important function in stabilizing the seashore and they act as a buffer between uplands and the marine system. They serve to stabilize the substrate, thus stabilizing coastal circulation patterns and stabilizing erosion and deposition patterns. Mangroves act as a buffer for the estuary by containing silt and nutrients washed from the uplands.

Salt Marsh

Salt marshes occur on low wave-energy seashores on tidally submerged soils with sand and organic substrates. They may also extend inland along tidally influenced brackish rivers with vegetation usually consisting of almost purely single species zones along an elevational gradient. Smooth cordgrass occupies the deeper zones and may extend up to 3,000 feet from the shoreline. Black needlerush usually occupies the next zone, also forming bands of similar size. Marshhay cordgrass and sand cordgrass may form narrow bands along the upper edge of the marsh. Sand cordgrass may form pure strands in shallow, brackish, sandy sites which are tidally influenced. In areas west of the City, this association dominates the costal zone and the near shore waters. It forms a sizable strand extending almost one-half mile from shore, broken only by small islands and occasional open water.

Salt marsh Vegetation consists of almost pure stands of the dominant species. Smooth cordgrass and black needlerush are the two most common species in Pasco County. Vegetation cover in these zones is dense, with several hundred stems per square meter and cover of nearly 100 percent. The plants are perennial but die to the ground in winter. In winter, the dead stems remain with a brown or grey color. Growth resumes in the spring until the vegetation reaches heights of three to five feet in late summer. Other plant species are rare in these zones, but they may include sea lavender, leather fern, glasswort, sea purslane and sea blite.

The shallower marsh zones which occur on more sandy substrates generally have lower plant density and cover. Growth is less in these zones, but species diversity is greater. Marshhay cordgrass may form extensive stands on the landward side of either the smooth cordgrass or black needlerush marshes. Height of vegetation in these zones is from one to three feet. Associated species may form up to 40 percent of the total cover as opposed to one percent in the lower zones. Associated species in these upper marsh zones include salt wort, leatherfern,

buttonwood, glasswort, sea blight, seaoxey daisy, groundsel, salt marsh aster and marsh elders.

Brackish water sites at the upper ends of estuaries or along brackish rivers may be dominated by sand cordgrass which grows to heights of six feet. Associated species include saw grass, saltgrass, railroad vine, marsh elder, glasswort, leatherfern, black needlerush, coastal dropseed, climbing hempweed and salt joint grass.

Vertebrate wildlife diversity is limited in salt marshes due to fluctuating water levels, generally high salinity and exposure. The food chain for this system is relatively simple and is primarily a detritus based system. The marsh rabbit and some mice and rats may graze or feed on seeds in the upper drier fringes of the marsh. Additional species which feed on grazing insects are spiders, dragonflies and some passerine birds such as marsh wrens and seaside sparrows. Other species which may be present in salt marsh are the American alligator, eastern indigo snake, diamondbacked terrapin, river otter and Florida mink. Much of the food production goes into the detrital food chain, where it is consumed by fiddler crabs, marine worms and mollusks. These, in turn, are food for racoons, river otter and several species of wading birds. These wading birds also use the marshes as feeding grounds for small fishes. Commonly occurring feeding birds are white ibis, herons, belted kingfishes, terns, black skimmers, blackbirds and grackles. Birds which may nest in the salt marshes include the long-billed marsh wren, clapper rail and common yellow-throat.

The estuarine wetland systems located along the Pithlachascotee River and extending into the Gulf are easily affected by the activities which take place within the City. The wetlands in the City are primarily for conservation purposes by providing necessary fish and wildlife habitat and promoting a natural “filter” for surface water.

Rivers and Streams

The rivers and streams category includes natural flowing waters with defined channels from the source or origin downstream to the point where tidal influences dominate flow. Rivers and streams in Pasco County may be described as either spring fed, blackwater, or seepage (bog fed).

Pasco County is the southern limit of the tertiary limestone outcrops from which spring fed streams arise. There are no major solely spring fed rivers in the County. Blackwater rivers and streams are generally dark colored (from tannic acid originating from decaying detritus) and clear, arising from swampy or marshy headwaters in response to local precipitation. Most streams in Pasco County are of this type.

Seepage streams are generally considered to be features of Florida’s Panhandle area, however, several streams in Pasco conform to this type. Seepage streams arise from depressions in rolling, sandy terrain, and receive their flow from seepage in groundwater systems. The Pithlachascotee River has some of the features of seepage streams. Seepage streams, which receive a large proportion of their flow from groundwater infiltration, are less sensitive to agricultural operations, but are sensitive to other development activities that affect infiltration and run off rates. All types of streams and rivers are sensitive, in varying degrees, to excessive loadings of nutrients and toxic materials and to dredging and channelization.

Vascular vegetation in most streams and rivers in Pasco County is limited. Most of the emergent vegetation is confined to the shore zone, where extensive stands may form. Often these stands will be sufficiently large to be considered as marshes or swamps. Species in these areas are similar to those of freshwater marshes. Deeper zones will contain floating leaved species such as spatterdock, fragrant water lily, American lotus, blue water lily, frogbit and floating heart. These species often occur where water depths are at least 24 inches and inundation is permanent. Common floating species are large water hyacinth, water lettuce, duckweed and water fern. Rooted submergent vegetation is rare in blackwater streams, largely because of poor light penetration.

Wildlife diversity in rivers and streams is relatively high. Numerous macroinvertebrates may occur. The composition of the benthic community is primarily a function of water quality, nutrient status, sediment type and flow regime. Streams which are rich in nutrients often have lower dissolved oxygen levels. The depletion of dissolved oxygen is caused by excessive phytoplankton growth fueled by high nutrient concentrations. Phytoplankton in turn deplete dissolved oxygen during daylight periods for the process of photosynthesis. In these streams, species tolerant of low oxygen and poor water quality are very abundant, while those species intolerant of low oxygen or poor water quality are often absent. Biomass of invertebrates is often greater, but diversity is lower, in nutrient rich areas. Species include tolerant chironomid midges, tubificid worms, oligochaete worms, snails, sphaeroid clams and the Asiatic clam. Many poor quality, low oxygen streams are also characterized by mucky or silty substrates, which generally support greater abundances of tolerant invertebrates.

Flowing streams with good water quality, sandy or rocky substrates, low levels of organic matter and nutrient enrichment normally have more diverse invertebrate communities, but the abundance and biomass is lower. Typical groups include mayflies, caddisflies, stoneflies, dragonflies, damselflies, intolerant midges and grass shrimp. Crayfish may be found in a wide variety of sites, while the hellgramite is found only in rapidly flowing waters of good quality. Reptiles and amphibians are common within and along the banks of the rivers and streams, particularly in the permanent rivers which often serve as refuge for many species during stressful periods such as drought or fire events.

Marine

Saltmarsh and mangrove areas along Florida's west coast contain numerous tidal creeks which are important nursery and feeding areas for such commercially important fin fish and shellfish such as redfish, mullet, blue crabs, oysters, scallops and several species of shrimp. Tidal creeks coupled with shallow seagrass meadows provide valuable habitat for juvenile and adult sportfish such as snook, spotted sea trout, mackerel, grouper and snapper. West Indian Manatees, bottlenose dolphins and several species of sea turtle also utilize seagrass meadows and coastal rivers in the area.

Seagrasses generally flourish in the shallow subtidal waters of Pasco County. The dominant seagrasses are turtle grass (*Thalassia testudinum*) and manatee grass (*Syringodium filiforme*). Other species include shoal grass (*Halodule wrightii*) and widgeon grass (*Ruppia maritima*). Seagrass beds occur in relatively shallow water (1-15-feet in depth) as a result of light requirements.

These grasses stabilize the sediments and collect and hold particles that precipitate out of the water column. In impacted areas, seagrass restoration can reestablish the marsh fringe that was lost due to previous development.

The creeks and ditches in the salt marsh area to the west of the City are often nursery grounds for mullet, crab, shrimp and snook. The mullet (*Mugil spp.*) spawn offshore in late fall where larvae develop and then move inshore. The juveniles occupy the salt marsh area and move offshore during the annual adult migration. Seagrasses also play a critical role in the life cycle of the shrimp.

Oysters (*Crassostrea virginica*) and clams (*Mercenaria campechiensis*) are also important natural resources in the area. These species are not spread evenly over the bottom of the estuary but rather are concentrated in certain flats, banks or reefs. Oysters serve a number of important functions in an estuarine system. They provide a structure constitute a source of food for fish. Also large populations of oysters can filter a significant amount of water each day and in doing so remove suspended matter and reduce turbidity.

It has been estimated that approximately 90 percent of all important commercial and recreational fishes of the Gulf of Mexico utilize estuaries at some point in their life cycle (USFWS, 1984). Some of the estuarine-dependent and recreationally important fish found offshore to the west of New Port Richey include red drum (*Sciaenops ocellata*), spotted seatrout (*Cynoscion nebulosus*), snook (*Centropomus undecimalis*), sheepshead (*Archosargus probatocephalus*) and black drum (*Pogonias cromis*). Red drum spawn near shore, juveniles spend the summer in the estuary and open maturation move into the near shore Gulf with the onset of cold weather. Grouper and snapper are important to both the commercial and recreational fisherman. Generally, they spawn offshore and the larvae are transported inshore by currents. The juveniles forage for smaller fish and crustaceans. Spotted seatrout spawn in the estuary and utilize seagrass meadows as their primary habitat. Snook spawn near the tidal passes, but spend the majority of their life within the estuary. Sheepshead spawn along sandy beaches, the juveniles then migrate to the seagrass beds while the adults generally inhabit areas of rocks, pilings and seawalls in the Bay. Appendix B lists species of fish that are found throughout the Tampa Bay area.

Freshwater mixing with saltwater creates unique chemical and physical environments each of which supports different communities of organisms particularly adapted to that type of water condition. The Gulf of Mexico receives freshwater from the Pithlachascotee River which flows through the center of New Port Richey. The habitat quality is a function of water quality and quantity and adapted vegetational communities. Some of the freshwater species of fish include largemouth bass (*Micropterus salmoides*) and bluegill (*Lepomis macrochirus*). There are two species of special concern found in the area. The primary habitat for Atlantic sturgeon (*Acipenser ocyrhincus*) are rivers and coastal waters and for rivulus (*Rivulus marmoratus*) are saltwater marshes and mangroves.

The City does not directly abut the Gulf of Mexico. Estuarine conditions, however, are evident within the western reaches of the Pithlachascotee River within the City.

Protected Flora and Fauna

A species may be classified as *endangered* when it is in danger of extinction within the foreseeable future throughout all or a significant portion of its range. A *threatened* classification is provided to those animals and plants likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges. *Critical habitat* is defined as the geographic area containing the physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection.

Due to the extent of urbanization, wildlife in and around the City can be expected to be limited to those species which tolerate human activity, such as raccoons, armadillos, opossums, lizards, snakes, squirrels and rabbits. Coastal marshes provide nesting and feeding areas for a wide variety of wading and shore birds including several species of herons, egrets, ibis, gulls, terns and sandpipers. Mangroves also provide roosting habitats. Threatened and endangered species or species of special concern which may inhabit these coastal saltmarshes include the brown pelican, American oyster catcher, roseate spoonbill, least tern, snowy egret, limpkin and little blue heron.

Probably the most recognized of the protected species other than the alligator and bald eagle is the West Indian manatee. The manatee's presence in Pasco County seems to be restricted to the southern coastline near the Florida Power Corporation Plant due to the plant's heated effluent. It is possible that these mammals may also seek protection from lower water temperatures during winter months by using shallow water submerged areas with mangrove swamps, salt marshes and rivers.

The Florida Fish and Wildlife Conservation Commission's (FFWCC) conducted two comprehensive analyses, entitled *Closing the Gaps* (Cox and Kautz 2000, Cox et al. 1994). Although these analyses were performed on a statewide basis, the breadth of species included in the analyses and habitat types represented provide the strongest and most readily available data, for a wildlife study at the scale of the area of Pasco County.

The data utilized for this study included the focal species selected in the 1994 study and the rare and imperiled species selected in the 2000 study. The species represented wildlife ranging from common (wild turkey, *Meleagris gallopavo*; river otter, *Lutra canadensis*) to extremely rare (piping plover, *Charadrius melodus*; Florida scrub jay, *Aphelocoma coerulescens*). Of the 130 species for which the FFWCC completed models, 45 species occur in Pasco County (See Appendix) with the maximum aggregation of 26 species occurring together in at least one *hotspot* area. It should be noted that the highest species diversities noted within the studies occurred within a limited number of habitats including sand pine scrub, sandhill, xeric oak scrub, coastal strand, hardwood swamp and bottomland hardwoods (typically associated with riverine systems).

The US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) share responsibility for administration of the Endangered Species Act, which requires that all Federal agencies undertake programs for the conservation of endangered and threatened species. Generally, the NMFS deals with those protected species occurring in marine environments, while the USFWS is responsible for terrestrial and freshwater species and migratory birds. Both of these agencies most commonly exert their protection authority through

commenting prerogatives associated with the USACE Dredge & Fill Permit process. The Florida Fish and Wildlife Conservation Commission (FFWCC) also administers programs for the protection of threatened and endangered species.

Though most of west Pasco County has been subject to intense development, there are still several areas of coastal marsh that provide substantial wildlife habitat and should be a high priority for protection. Though most of the coastal area is wetland, there are some areas of upland coastal hammock that buffer these systems. Much of this land is in public ownership (4,300 acres) or under consideration for purchase (e.g., state-owned Robert Crown Wilderness Area).

As development pressures continue to exert themselves in coastal areas, the preservation and conservation of environmentally-sensitive and valuable lands will become increasingly critical to species sustainability. Habitat within the coastal area will require steadfast protection from any activity that would significantly alter ecological integrity, balance or character.

Tree City USA Designation

The National Arbor Day Foundation acknowledged City in 2006 for the 17th year as a Tree City USA. To qualify for the designation, the City demonstrated to the National Arbor Day Foundation and the National Association of State Foresters that it had a viable tree management plan and program. In doing so, the City maintains an Environmental Committee that serves as a tree board, a tree care ordinance, a community forestry program with an annual budget of at least \$2 per capita and observes Arbor Day annually.

The City encourages residents to plant trees to enhance yards and to maintain the urban forest. The City promotes the free tree or low cost tree programs offered by the National Arbor Day Foundation (www.arborday.org) in the City's quarterly newsletter.

Beach and Dune Systems

There are no natural beach or dune systems in the City. West of the City, most undeveloped coastline on the Gulf of Mexico is fringed with natural vegetation such as mangroves and salt marsh. Coastline in residential areas is typically sea walled and bulkheaded. Proximate to the City in the unincorporated area is the Robert K. Rees Memorial Park. This 45-acre park on Green Key Road has a sandy beach area.

Soil Erosion

According to the US Geologic Survey Natural Resource Conservation Service, the predominant soil classification in New Port Richey is Urban Land Complex (see Map FLU-X). This soil classification is used when over 70 percent of the land is covered by urban development. These soils are mostly sandy but may contain shell or limestone fragments.

There are also a number of individually identified soil areas around the City including Felda fine sand, Immokalee fine sand and Myakka fine sand. All three are similar in that they consist of poorly drained soils and moderately rapidly permeable soils that formed in sandy and loamy marine sediment. Soils found east of US 19 in the City consist of those in the Tavares-Adamsville-Narcoossee Association. The terrain is nearly level to gently sloping, moderately

well-drained and somewhat poorly-drained soils that are sandy throughout; some have thin lamellae of loamy sand below a depth of 50-inches.

West of US 19 soils are classified within the Aripeka-Okeelanta-Terra Ceia Association. This association is described as being nearly level, somewhat poorly drained and very poorly drained soils; some have sandy and loamy material 20- to 30-inches thick over limestone, some have organic material 16- to 40-inches thick over sandy material and others have organic material more than 52-inches thick. Much of the area is covered by water except during extended dry periods or the area has been drained.

Many of the soils in the City are comprised of fine sands that are subject to excessive wind and water erosion if left unprotected. The area's flat topography limits erosion to some degree, while required erosion control techniques in the Land Development Code protect soils during development.

Commercially-Valuable Natural Resources

There are no known sources of commercially-valuable minerals or other natural resources in the New Port Richey area. However, fisheries in the nearby Gulf of Mexico are utilized for commercial purposes. Wetlands and freshwater flow from the Pithlachascotee River support coastal and estuarine food webs. Water quality preservation and enhancements in the Pithlachascotee River will help sustain the health of estuarine areas that are important to aquatic habitats downstream. In addition, freshwater flow from the Pithlachascotee River is a critical component maintaining the salinity gradient necessary for estuarine health.

Conservation and Recreational Use of Natural Resources

The Pithlachascotee River represents a natural recreational and conservation resource. Presently, the river is utilized for both passive and active recreational purposes. The river has experienced water quality degradation as a result of stormwater runoff from agriculture and urban areas. The degradation of the water quality of the river will have a direct effect on the productivity of the riverine and estuarine areas.

Conservation uses are designated on the Future Land Use Map (Map FLU-6). There is public access to water resources in all of the City's water-based parks (see Map ROS-1).

Pollution

Water Pollution

Water quality in the Pithlachascotee River and the Gulf of Mexico has been a major concern through the years. The watershed is heavily urbanized, particularly in the tidal reaches of New Port Richey and Port Richey. More recently, urbanization has spread to higher reaches in the watershed. Improved wastewater treatment, reuse of wastewater effluent and new standards for stormwater retention and local wetland protection have helped to improve water quality in area waterways; however, spreading urbanization in upstream locations present new sources of urban runoff to downtown stream waterbodies.

The headwaters of the Pithlachascotee River are largely preserved in the Starkey Wilderness Area. However, increasing residential development from Starkey Boulevard downstream to the

City of Port Richey will result in increased polluted stormwater runoff. Pollutants include oil and other automobile fluids, paint and construction debris, yard and pet wastes, pesticides and litter. Urban runoff contaminates streams, rivers and bays, harms aquatic life and increases the risk of flooding by clogging storm drains and catch basins.

Florida's Total Maximum Daily Loads (TMDL) Program

Water quality standards consist of three key elements: the designated uses of a waterbody, the water quality criteria established to protect those uses and an antidegradation policy. Designated uses are human uses and ecological conditions of a waterbody that are recognized and protected. Sometimes described as beneficial uses, they represent the goals that society determines should be attained in a waterbody (e.g., swimming and recreation or aquatic habitat).

Macroinvertebrate samples were collected for a Stream Condition Index (SCI) bioassessment of Pithlachascotee River in order to gain further information on the biological health of the watershed for use in the administration of Florida's Ecosystem Management Water Quality Assessment and Total Maximum Daily Loads (TMDL) programs. Because this watershed is on the State of Florida's Impaired Water Rule's List for Total Maximum Daily Loading development, the results may also be used in determination of Total Maximum Daily Loading needs and priorities. The verified parameters of impairment are dissolved oxygen (DO) and aquatic macroinvertebrates. Biological methods are particularly useful in order to ascertain if low DO levels are indicative of natural conditions. If the aquatic community is not impaired, it may be concluded that low DO levels do not adversely affect the health of the system.

The water quality sampling site is located upstream of the Starkey Road bridge crossing. Long-term water quality trends have shown the dissolved oxygen levels in the Pithlachascotee to drop below the State Standard of 5.0 mg/l, particularly in the summer months. The aquatic macroinvertebrate community was sampled nine times since fall of 1993 (further upstream in the headwaters). It has always been relatively healthy with one exception: in August of 1994, the Stream Condition Index resulted in a poor score and this placed the stream on the Impaired Water Rule's List for Total Maximum Daily Loading for biology.

At the time of sampling, the stream was about 0.4 meters deep and water velocity was 0.2 meters/second. The habitat assessment score was 133 out of 160, which places it in the optimal category for habitat characterization. Dissolved oxygen was 4.94 mg/l, conductivity was 188 micromhs per centimeter (umho/cm), pH was 7.48 SU and temperature was 21.44 C°.

The Stream Condition Index is based on ten measurements that assess the ecological integrity of the aquatic macroinvertebrate community. If the Index score falls between 73 and 100, it is considered good; if it falls between 46 and 72, fair; between 19 and 45, poor; and between 0 and 18, severely degraded. The Stream Condition Index score was 62 out of 100, falling in the "fair" category. This means that the aquatic macroinvertebrate community was healthy and the stream was meeting designated uses of a Class III waterbody.

The FDEP *Impaired Waters Rule* has identified dissolved oxygen and aquatic macroinvertebrates as a parameter of concern for the Pithlachascotee River. The dissolved oxygen measurement taken in April 2005 was below the State Standard of 5.0 mg/l. However, biological sampling at this site indicated that the aquatic invertebrate community was relatively

healthy. It may be concluded that the biological community at this location was not adversely impaired by dissolved oxygen fluctuations and that these fluctuations are largely natural.

National Pollutant Discharge Elimination System

The 1972 Clean Water Act (CWA) was amended to prohibit the discharge of any pollutant to waters of the United States from a point source, unless the discharge is authorized by a NPDES permit. Initial efforts to improve water quality under the National Pollutant Discharge Elimination System (NPDES) program primarily focused on reducing pollutants in industrial process wastewater or municipal sewage. In 1987, the CWA was amended to require implementation of a comprehensive national program for addressing stormwater discharges. Phase I was promulgated by the US Environmental Protection Agency (EPA) in 1990 and required the development and issuance of general NPDES permits for stormwater discharge from a large number of priority sources. Sources included several categories of industrial activity, including construction sites that disturb five or more acres of land and municipal separate storm sewer systems (MS4s) generally serving populations of 100,000 or more.

Implementation of the second phase of the Federal NPDES program was initiated in 2000. Phase II expanded the Phase I program to include smaller municipalities in MS4 permitting, provide certain exclusions for industrial stormwater discharge permitting and expanded construction permitting to include smaller sites with disturbed area between one and five acres. The NPDES program was subsequently delegated to FDEP.

The City of New Port Richey submitted application for coverage under the Phase I MS4 program as a co-permittee with Pasco County in 1996 and is currently operating under Permit FLS000032, issued November 1, 1997. Specific activities associated with that permit are currently managed and enforced by FDEP.

Radon Pollution

Radon is a carcinogen and the second leading cause of lung cancer. Radon comes from the radioactive breakdown of naturally occurring radium found in most Florida soils. As a gas in the soil, it enters buildings through small openings in the foundation. Since the building can hold the radon similarly to smoke trapped under a glass, indoor radon concentrations can increase to many times that of outdoor levels.

The EPA and the US Geological Survey have evaluated the radon potential in counties nationwide to one of three zones based on radon potential. Each zone designation reflects the average short-term radon measurement that can be expected to be measured in a building without the implementation of radon control methods. The radon zone designation of the highest priority is Zone 1 (greater than 4 picocuries per liter). Zone 3 is the lowest (less than 2 pCi/L). All of Pasco County is designated as Zone 3. For comparison, outdoor concentrations of radon are typically about 0.4 pCi/L of air. The average indoor radon concentration is about 1.3 pCi/L of air.

Hazardous Waste

Hazardous waste must be handled in special ways to prevent threats to human health and the environment. Paint products, solvents, some batteries, household cleaners and pesticides are typical examples. When disposed of in the municipal landfill or otherwise improperly managed, these materials have the potential of contaminating the ground water. Potential environmental

and health-related impacts of hazardous waste have led to a regulatory framework that extends from federal government to local government.

Hazardous waste is defined in Section 9J-5.003(54), FAC, “solid waste, or a combination of solid wastes, which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or may pose a substantial present or potential hazard to human health or the environment when improperly transported, disposed of, stored, treated or otherwise managed.

Hazardous Waste Regulatory Requirements

The Federal Government enacted the Resource Conservation and Recovery Act (RCRA), which established a national comprehensive hazardous waste management system. RCRA regulates hazardous waste from its point of generation through its final disposal. Hazardous waste generators are the first link in this “cradle-to-grave” hazardous waste management system. Pursuant to the authority granted by RCRA, the US Environmental Protection Agency (EPA) has developed generator standards that address on-site accumulation of hazardous waste, cradle-to-grave tracking via a manifest system, labeling, and recordkeeping and reporting requirements. These standards are found in Title 40, Code of Federal Regulation (CFR), Part 262 and Chapter 62-730, FAC. Recognizing that generators produce waste in different quantities, EPA established three categories of generators. The extent of regulation to which hazardous waste generators are subject depends on the volume of hazardous waste each generator produces:

- Large Quantity Generators (LQGs) generate 2,200 pounds or more of hazardous waste per month or 2.2 pounds or more of acute hazardous waste per month (such as some pesticides, toxins or arsenic and cyanide compounds).
- Small Quantity Generators (SQGs) generate 220-2,200 pounds of hazardous waste per month.
- Conditionally Exempt Small Quantity Generators (CESQGs) generate less than 220 pounds of hazardous waste per month or less than 2.2 pounds of acute hazardous waste per month.

Certain widely generated hazardous wastes including lead-acid and nickel-cadmium rechargeable batteries, certain pesticides and mercury lamps and devices are called “universal wastes” and are managed under streamlined regulations that encourage the collection and proper management of these wastes while reducing the regulatory burdens and barriers under RCRA. These standards are found in Title 40, CFR, Part 273 and Chapter 62-737, FAC. Hazardous waste generated in private homes is called Household Hazardous Waste (HHW) and is exempt from Federal and State regulations.

Florida has adopted by reference portions of Title 40, CFR, Parts 260-271 and 273 into Chapter 62-730, FAC. In some instances, Chapter 62-730, FAC, is more stringent than the federal regulations.

Based on Department estimates, Florida has approximately 3,371 large quantity generators, between 2,600 and 5,000 small quantity generators and between 17,700 and 21,000

conditionally exempt small quantity generators of hazardous waste (Figure 1). Based on Department estimates, LQGs generate an estimated 363,195 tons of fully regulated hazardous waste, SQGs generate an estimated 12,225 tons and CESQGs generate an estimated 6,213 tons of fully regulated hazardous waste annually in Florida. This does not include generation estimates of exempt and universal hazardous waste.

Florida has a very extensive statewide infrastructure of household hazardous waste collection centers operated by local government. These centers offer proper hazardous waste management to residents. Many centers also accept waste from Conditionally Exempt Small Quantity Generators at a reduced price, lessening the need for more commercial treatment facilities.

The following FDEP programs are some of the ways by which Florida's short-term and long-term needs for hazardous waste management are reported on and met. Details on these programs can be found in FDEP's annual *Solid Waste Management in Florida* report, or on the referenced websites.

- Biennial Hazardous Waste Reporting System for Large Quantity Generators of Hazardous Waste (www.floridadep.org/waste/categories/hazardous)
- Local Assessment, Notification and Verification Program for Small Quantity Generators of Hazardous Waste (SQG Program)
- Enhanced Local Assessment, Notification and Verification Program for Small Quantity Generators of Hazardous Waste (ESQG Program)
- Mercury-Containing Lamps and Devices Management Program (www.floridadep.org/waste/categories/mercury)
- Battery Recycling and Toxics Reduction (www.dep.state.fl.us/waste/categories/batteries)
- Operation Cleansweep for Pesticide Collection and Disposal (www.floridadep.org/waste/categories/cleansweep-pesticides)
- Electronics Recycling (www.floridadep.org/waste/categories/electronics)
- Used Oil Recycling (www.floridadep.org/waste/categories/used_oil)
- Local Hazardous Waste Collection Center Grant Program for Household Hazardous Waste (www.floridadep.org/waste/categories/hazardous/pages/household.htm)
- Pollution Prevention (www.floridadep.org/waste/categories/p2)

Ultimately, it is the facility owner's responsibility to stay current with the hazardous waste regulations and comply with all applicable environmental regulations. Failure to meet the applicable rules may subject facilities to more stringent standards. For example, small quantity generators dumping hazardous waste illegally not only become subject to disposal facility standards but will also be subject to enforcement actions. FDEP has an agreement with EPA that mandates the assessment of penalties for violations of the Resource Conservation and Recovery Act (RCRA) requirements.

Hazardous Waste Generators

The Water Quality Assurance Act of 1983 (Section 403.7225, FS, and Chapter 83-310, Laws of Florida) requires each county to conduct a County Government Hazardous Waste Management Assessment. The Hazardous Waste Management Assessment Study cites that the most

frequently used storage methods for hazardous wastes are above ground tanks, 55-gallon drums and various sized cans and pails. Waste oils, greases, lubricants and spent solvents are most commonly disposed either in a landfill, recycling methods or by pouring the waste down the drain into the sewer or septic tank. Other practices used regularly for hazardous waste disposal involve transporting to a permitted hazardous waste disposal facility and involve burying or piling waste on the site.

Hazardous wastes are generated not only by large industrial firms but also by hundreds of small commercial operations, various consumer services and individual households when discarding paint, used oil, cleaning solutions and lead-acid batteries. Approximately 45 percent of the improperly disposed hazardous wastes are used oils and lubricants.

There are a number of hazardous waste generators in the City, especially along US 19. Based on the results of a countywide survey, approximately one million pounds of waste are produced annually in Pasco County (TBRPC, 1986). Waste oils, greases and lubricants account for over half the waste produced. Many of these small generators are associated with automobile services and lawn services.

Hazardous wastes generated by households are exempt as a hazardous waste, but can be polluting nonetheless. Hazardous waste amnesty day events in Pasco County have been replaced with two permanent collection facilities open to the public on a weekly basis, plus one Saturday a month. The two County facilities equipped to accept most household hazardous wastes are located on Hays Road and Handcart Road. Biomedical wastes are accepted through a separate program. The County sends out 25,000 to 33,000 pounds of hazardous waste annually for recycling and treatment.

Hazardous wastes received at the County facilities are recycled or treated in an environmentally sound manner. For example, oil based paint; flammable liquids and gasoline are bulked in 55-gallon drums and transferred to an out-of-state facility by a licensed, registered and certified hauler. These liquids undergo a fuel blending process where they are mixed in a certain ratio for their caloric contents and then used to generate electricity at other plants throughout the country. Other items that cannot be recycled at this time, such as pesticides, are treated by incineration at special hazardous waste incinerators located elsewhere in the country.

To reduce quantities of household hazardous wastes that cannot be recycled easily or inexpensively, the County encourages the public to buy pesticides in very small quantities, share leftover pesticides with others to utilize, or use substitutes that are less toxic.

The industry types that are estimated to produce over 100,000 pounds of hazardous wastes annually include general automotive, repair shops, highway and street construction, except elevated highways, auto and home supply stores, executive and legislative offices combined and automotive repair shops, not elsewhere classified. Almost 80 percent of the hazardous wastes produced from small quantity generators are from these five industry types. One-third of all the hazardous wastes from small quantity generators are produced from general automotive repair shops.

Since 1991, Pasco County has worked with the small quantity generators to comply with hazardous waste identification, packaging, storage, labeling, transportation and proper disposal according to RCRA requirements. To further implement the requirements of RCRA relative to

water and energy conservation; reductions in consumption of natural resources; reduction or elimination of waste including nonhazardous waste; and recycling of hazardous waste, the county established a SQG Pollution Prevention Program in April 1999. The voluntary program addresses SQG facilities individually and consists of the following phases:

- *Facility Audit*: Audits are carried out in a fashion similar to the SQG inspection process but also include a review of resource consumption, solid waste constituents, water consumption rate and recycling.
- *Survey/Questionnaire* to retrieve economic data and obtain additional information on the facility operations and solicit the owners/operators opinions on certain preliminary alternatives.
- *Recommendations* for a simple and practical plan for the owner/operator of the facility to consider.
- *Implementation*: The owner may elect to adopt all or part of the recommendations in the plan.

Development Pressure

Vacant lands for future development are in short supply in the City. Soil characteristics on some remaining undeveloped land places are unsuitable for development. This is especially evident for lands in the southeast quadrant of the City bordering on the unincorporated area. This location is within the 100-year floodplain and is a mixture of wetlands and uplands.

Due to limited available lands for *greenfield* development, the focus of future development activity in the City will be on infill and redevelopment. Generally, these development types make use of existing urban services and previously altered lands creating economies of scale and reducing pressure on environmentally sensitive lands.

Due to proximity to coastal resources, future development within the City should not affect estuarine circulation. Should the municipal limits be extended to these areas through annexation, existing regulatory requirements would prevent arbitrary destruction of these areas. The US Army Corp of Engineers (USACE) has authority to regulate activities in waters of the US under the Clean Water Act and the Marine Protection, Research and Sanctuaries Act of 1972, as amended. The USACE regulates all dredging, excavation and filling activities taking place in or adjacent to Waters of the United States (generally including canals, streams, wetland floodplains and coastal plains). Projects are reviewed by USACE for impacts to navigation and environmental resources (wetlands).

Measures to protect and maintain the natural vegetation communities, native wildlife and natural processes (fires, floods, etc.) should be evaluated for environmentally-sensitive areas. Possible measures for providing long-term protection of such area include:

- Conservation easements with current landowners to allow continued use consistent with goals for protecting native wildlife;
- Acquisition;
- Prioritizing use as mitigation for wetland or upland impacts that require permits;

- Strict adherence to wetland, floodplain and protected species regulations and policies of other agencies;
- Evaluation of development proposals to ensure consideration of potential for conservation corridors that may provide benefit to wildlife;
- Density transfers to other development properties (with bonuses for uplands); and
- Land use, zoning or development restrictions.

Water Use and Conservation

Water Use

New Port Richey is a residential community with little industrial activity and no agricultural activity. Potable water use in the New Port Richey Water Service Area is predominantly by residential uses, followed by commercial and institutional uses. Detailed information on the City's potable and reclaimed water systems is provided in the Infrastructure Element (see Exhibit INF-1 New Port Richey Water Supply Facilities Work Plan, 2012-2025).

The water supply is a major issue for all communities in the Tampa Bay area. Concern centers on aquifer draw-down, saltwater intrusion, periodic droughts, protection of recharge areas and consumption rates. The Comprehensive Plan is required to assess water needs and sources taking into consideration the Southwest Florida Water Management District Regional Water Supply Plan (RWSP) as a means to strengthen coordination between water supply planning and local land use planning. The RWSP assesses the regional water demand and potential sources over the next 20 years.

The City falls within the northern portion of the planning region known as the North Tampa Bay Water Use Caution Area (NTBWUCA). The RWSP shows that sufficient, reasonably obtainable water sources (including demand management) exist in the NTB planning region to meet future demands and replace some of the current withdrawals causing hydrologic stress. The RWSP identifies potential options and associated costs for developing other water sources and provides information to assist water users in developing funding strategies to construct water supply development projects. Six water source options were identified in the RWSP to address water supply needs for the NTB planning region. These options include:

- Surface water/storm water
- Reclaimed water
- Water conservation
- Brackish groundwater
- Seawater
- Fresh groundwater (limited)

In the future, water demands in NTBWUCA will likely be met with the sources listed above. However, management techniques and technologies such as improved water treatment methods, aquifer storage and recovery (ASR) and aquifer recharge systems will be required to meet the projected demands.

In 1998, SWFWMD entered into an agreement with Tampa Bay Water and its member governments (Tampa, St. Petersburg, New Port Richey and Hillsborough, Pasco and Pinellas counties) to help resolve the resource impacts in the NTBWUCA. The NTB New Water Supply and Groundwater Withdrawal Reduction Agreement established an overall strategy to reduce reliance on ground water, implement alternative sources and allow recovery of natural systems. The City is currently planning and operating consistent with this agreement. The Tampa Bay

Water Special District Public Facilities Report, March 1, 2011 (incorporated hereto by reference), demonstrates through the TBW Long-Term Water Supply and Master Water Plan that sufficient water supply projects exist to meet the City's water needs over the next 20 years.

Water Conservation

The conservation of existing groundwater is a major issue facing the entire Tampa Bay region. The RWSP identifies conservation as the first source to meet projected water demand for all major water users.

In times of severe drought conditions, the City implements all directives issued by SWFWMD. The Water Resources Act of 1972 mandated each water management district to promote the conservation, development and proper utilization of surface and groundwater (Section 373.013, FS). SWFWMD has incorporated water conservation policy and rule development, planning resource management and public information. SWFWMD implements an emergency water use program for declared drought periods.

SWFWMD provides information regarding water conservation techniques for homeowners and other water consumers and is involved in a variety of water conservation initiatives to reduce demands on existing resources. These initiatives include public education and outreach programs, wastewater reuse, leak detection programs and the promotion of water conserving landscapes such as xeriscaping. Section 373.246, FS, enabled the water management districts to formulate a plan for implementation during periods of water shortage, declare water shortage warnings and implement water use restrictions. The intent of these plans is to provide for essential water uses (e.g., fire protection and hospitals) and ensure equity in all other uses. Assistance from local governments is enlisted in the enforcement of these rules.

The City employs various water conservation programs including distribution of high-efficiency plumbing retro-fit kits at no charge to water customers; a reclaimed water system which uses a conservation-based volumetric rate structure; and a three-tier rate structure for potable water use that encourages water conservation.

The City implements emergency water restrictions as directed by SWFWMD and enforces year-round water restrictions, allowing lawn irrigation only one day per week. Additionally, the City Code requires the use of drought-tolerate native vegetation for certain development proposals, and the Comprehensive Plan and supporting neighborhood plans encourage xeriscaping in both public and private realms.

IV. Plan to Address Needs

Water Quality

Improvement of water quality in the Pithlachascotee River, land acquisition and strict development regulation within coastal areas are necessary for maintaining or enhancing the ecological quality of riverine and coastal areas. Polluted urban runoff, which increases the amount of nutrients entering the river, estuaries and the Gulf of Mexico, needs to be reduced to produce desired results.

Municipal control of non-point source pollution can be accomplished through application of modern stormwater management regulations for new development and redevelopment. Also, retrofitting of existing urban areas will provide significant reductions in non-point pollutants entering coastal and estuarine water bodies, but will require large capital expenditures and additional lands for treatment. The City has developed a master drainage plan and has identified needed improvements. As funds become available, these improvements will be initiated.

The FDEP and the SWFWMD require permits to alter jurisdictional estuarine areas and have established criteria for the issuance of such a permit, which acts to preserve and protect estuarine integrity. FDEP, through its office of Coastal Management, is involved in providing funding for the development and implementation of projects and studies aimed at estuarine protection and management. FDEP is responsible for implementing habitat restoration programs and the stewardship of the State's submerged lands. SWFWMD is responsible for the quantity and flood control and drainage structures that, in turn, affect the quality and quantity of freshwater entering the estuaries. The FDEP is responsible for the prevention and control of pollutants spilled into or upon coastal waters, estuaries, tidal flats and lands adjoining the coastline.

The Pithlachascotee River Task Force was established in 1987 to develop effective management plans for protection of the river. The goals and objectives of the task force include protection of natural resources, regulation of uses and development of a master plan for the river.

Stormwater runoff best management practices (BMPs) need to be expanded by the private sector, as well as public agencies. Stormwater runoff BMPs include engineering retrofits, riparian zone stabilization vegetative swales and created wetlands. Homeowners can participate in reducing stormwater runoff pollution by limiting lawn fertilization, removing yard and pet waste so that it does not enter the stream with stormwater runoff, eliminating dumping of various materials into waterbodies and restoring habitat through planting of native vegetation.

V. Goals, Objectives and Policies

Introduction

Pursuant to Section 163.3177(6), Florida Statutes, the following represents the Conservation Element Goals, Objectives and Policies of the City. These goals, objectives and policies are intended to address the establishment of a long-term directive for protecting and enhancing the natural resources found in the community.

Implementation

Unless otherwise stated, the implementation of objectives and policies contained in this Section shall be through the development, adoption and application of the regulations set forth in the City Code of Ordinances and Land Development Code.

GOAL CON 1

Conserve, protect, manage and restore the City's natural resources to promote a sustainable environment that supports a healthy population.

Air Quality

Objective CON 1.1

Continue to meet or exceed all minimum air quality levels required by the Florida Department of Environmental Protection.

Policies

CON 1.1.1 The City shall reduce the potential for automobile emissions pollution by the following measures:

- a. Require native vegetative buffer strips between roadways and residential development;
- b. Promote the use of alternative transportation modes such as mass transit, car pooling, walking and bicycling, as well as encourage compact urban development pattern in accordance with the Future Land Use and Transportation elements; and
- c. Assure continued operation of roadways at acceptable levels of service.

CON 1.1.2 Prohibit industrial or commercial land uses which would emit air pollutants in sufficient volumes to degrade the City's ambient air quality--whether in terms of public health, visual aesthetics, or odor-- unless it can be satisfactorily proven to the City that all available pollution control devices and practices will be employed upon occupancy.

Hazardous Waste Management

Objective CON 1.2

Increase the City's involvement in monitoring, proper handling, treatment and disposal of hazardous waste.

Policies

- CON 1.2.1 The City shall coordinate with Pasco County, Tampa Bay Regional Planning Council and Florida Department of Environmental Protection in developing an emergency response plan for incidents involving hazardous waste.
- CON 1.2.2 Recycling of hazardous waste products, such as oils, solvents and paints, shall be promoted by the City.
- CON 1.2.3 The City shall sponsor periodic "Amnesty Days" or other methods to facilitate the collection and disposal of individual and small business hazardous waste.
- CON 1.2.4 The City, in conjunction with Pasco County and the Tampa Bay Regional Planning Council, shall institute an educational program using mailings and public meetings to inform the City's residents of applicable state and federal regulations, effective methods for safely storing and disposing of household and commercial hazardous waste and the availability of Pasco County hazardous waste collection facilities for household hazardous wastes.

Water Quality and Quantity

Objective CON 1.3

Protect the quality and quantity of surface waters and groundwater.

Policies

- CON 1.3.1 The City shall protect water storage and water quality enhancement functions of wetlands and floodplains areas through acquisition, enforcement of laws and the application of land and water management practices which provide for compatible uses.
- CON 1.3.2 The City shall implement an educational program for residential and commercial consumers to discourage waste and conserve water.
- CON 1.3.3 The City shall continue to implement a comprehensive water shortage plan and enforce the provisions set forth in the Southwest Florida Water Management District's Water Shortage Plan, Chapter 40D-21, FAC.
- CON 1.3.4 The City shall coordinate with Tampa Bay Water and the Southwest Florida Water Management District, including consideration of the Regional Water Supply Plan, to ensure that sources exist to supply the City's current and projected potable water needs and to reduce dependence upon the Floridan aquifer for potable water needs.

- CON 1.3.5 The City shall incorporate alternative and traditional water supply projects and conservation and reuse programs deemed necessary to meet projected water needs as identified in the City's Water Supply Facilities Work Plan.

Pithlachascotee River

Objective CON 1.4

Protect, conserve, restore and enhance the natural function of the Pithlachascotee River.

Policies

- CON 1.4.1 In order to reduce non-point source pollutant loads and improve the functioning of the City's drainage system relative to the riverine system, dumping of debris of any kind (e.g., yard clipping and trimmings) into drainage ditches, storm sewers and other stormwater control structures shall be prohibited.
- CON 1.4.2 By 1993, the City shall coordinate with adjacent municipalities, county and appropriate agencies to ensure adequate sites for water-dependent uses, prevent pollution to the river, control surface water runoff, protect living aquatic resources, reduce exposure to natural hazards and ensure public access.
- CON 1.4.3 Where the shoreline of the Pithlachascotee River is not seawalled native vegetation shall be used for shoreline stabilization.
- CON 1.4.4 The replacement material for failed or damaged Pithlachascotee River concrete seawall should be rip-rap or planting of native vegetation where technically feasible.
- CON 1.4.5 Setbacks or other non-structural methods of shoreline protection shall be given the highest priority.

Wildlife and Habitat

Objective CON 1.5

Conserve and enhance wetlands, aquatic resources and wildlife habitats to maintain their environmental and recreational value.

Policies

- CON 1.5.1 Through the Intergovernmental Coordination Committee, the City shall work with Pasco County, the Southwest Florida Water Management District and the Florida Department of Environmental Protection to identify, protect and conserve the natural character and function of area rivers, lakes, wetlands, floodplains and upland areas.
- CON 1.5.2 The City shall coordinate with Pasco County, Southwest Florida Water Management District, Army Corp of Engineers, Florida Fish and Wildlife

Conservation Commission and US Fish and Wildlife Service, as appropriate, to develop strategies and partnerships for the protection of riverine habitats, including wetlands and the 100-year floodplain within Pasco County designated Critical Linkages and Ecological Planning Units and habitats for threatened, endangered, or species of special concern.

- CON 1.5.3 The City shall identify coastal marshes, freshwater wetlands and hardwood hammocks as Conservation on the Future Land Use Map.
- CON 1.5.4 Conservation areas, such as coastal marshes, freshwater wetlands and hardwood hammock areas shall be protected from development that would significantly alter their function and character as defined by the regulatory permitting agencies.
- CON 1.5.5 Through the Intergovernmental Coordination Committee, the City shall coordinate with the county and appropriate agencies to identify specific pollution problems adversely affecting wildlife and fish populations and establish and implement the necessary programs, local laws and regulations to reverse and eliminate adverse pollution sources.
- CON 1.5.6 The City shall assist the Florida Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission and US Fish and Wildlife Service in the application of and compliance with all state and federal regulations pertaining to species of special status (e.g., endangered, rare, species of special concern and threatened).
- CON 1.5.7 The City shall promote local, regional, state and federal initiatives that aim to protect and maintain the natural vegetation, native wildlife and natural processes within Coastal Marsh wetlands within and adjacent to the City through the following:
- a. Conserve environmental lands;
 - b. Protect water quality;
 - c. Eliminate additional impact to wetlands;
 - d. Protect the remaining uplands adjacent to Coastal Marsh wetlands to provide a transition buffer;
 - e. Retrofit of stormwater draining through this area; and
 - f. Remediate/restore any previous impacts to wetland systems that can be rehabilitated.
- CON 1.5.8 The clustering of residential development, or the implementation of other measures to minimize adverse environmental impacts, shall be required whenever areas of significant native habitats are involved.

Florida Native Vegetation

Objective CON 1.6

The City shall conserve, appropriately use and protect native vegetation, including the City's urban forest.

Policies

- CON 1.6.1 The City shall require that all new development preserve at a minimum 25 percent of the native upland vegetation on site. This should not be interpreted to allow development in wetland areas.
- CON 1.6.2 The use of native vegetation shall receive priority in the landscaping requirements of Land Development Code.
- CON 1.6.3 The City shall encourage the removal of exotic species such as punk tree (*Melaleuca* sp.), Australian pine (*Casuarina* sp.) and Brazilian pepper (*Schinus* sp.) through site plan review.
- CON 1.6.4 The City shall coordinate with the Pasco County and the Southwest Florida Water Management District to protect the cypress and hardwood communities within the vicinity of New Port Richey by preventing activities which would alter their character and natural function.
- CON 1.6.5 The City shall address soil conditions to determine suitability for development during the site plan review process. New development shall be prohibited on hydric soils, as defined by the Natural Resources Conservation Service and Florida Department of Agriculture, except to accommodate an overriding public interest.
- CON 1.6.6 Although limited natural vegetative communities remain in the City, every effort shall be taken to protect these resources as including the following measures:
- a. Recreational development shall be compatible with the surrounding environment and shall be subject to performance standards adopted in the Land Development Code; and
 - b. The clearing of trees and wetland vegetation shall be prohibited, unless specifically permitted;
 - c. All applications for development approval on sites with natural vegetative communities shall be subject to site plan review.
- CON 1.6.7 The City shall continue to review development proposals where site alteration would result in the destruction, moving, or removing of natural vegetation. In order to preserve existing vegetation to the greatest extent possible, all development proposals shall be reviewed according to the following criteria:
- a. The extent to which the actual or intended use of the property requires cutting down or destroying trees, or necessitates a change of grade;

- b. The desirability of preserving any tree by reason of its size, age, or some other outstanding quality, such as uniqueness, rarity, or status as a historic or specimen tree;
- c. The extent to which the area would be subject to increased water runoff and other environmental degradation due to removal of vegetative cover or change of grade;
- d. The heightened desirability of preserving or enhancing tree cover in densely developed or populated areas;
- e. The need for visual screening in transitional areas, or relief from glare, blight, commercial or industrial unsightliness or any other affront to the visual or aesthetic sense in the area;
- f. The effect that changes in the natural existing grade will have on the trees to be protected and preserved; and
- g. The effect that changes in the natural existing grade will have on drainage and its impact on adjoining properties.

Wetland Protection

Objective CON 1.7

Implement a local planning process to protect the identified wetlands on Map FLU-4 from physical and hydrologic alteration.

Policies

- CON 1.7.1 The City shall require the submittal of a wetland survey at the appropriate phase in the land development review process. This requirement must be met prior to issuance of any development order.
- CON 1.7.2 The classification of wetlands in the City shall be as follows:
- a. Category I wetlands shall include wetlands having hydrological connection to natural surface water bodies, any wetland within a lake littoral zone, any isolated wetland 40 acres or larger, or wetlands containing Strategic Habitat Conservation Areas as identified by the Florida Fish and Wildlife Conservation Commission;
 - b. Category II wetlands shall include formerly isolated wetlands which have been connected to other surface water drainage and are greater than or equal to five acres, or are less than 40 acres and do not qualify as Category I;
 - c. Category III wetlands shall include isolated wetlands less than five acres do not qualify as Category I or II wetlands.
- CON 1.7.3 The City shall coordinate with the US Army Corp of Engineers, the Florida Department of Environmental Protection and the Southwest Florida Water Management District to identify and regulate wetland areas under the respective agency's jurisdiction.

- CON 1.7.4 The City shall require the identification of Category I, II and III wetlands for prior to the review of any Future Land Use Map amendment or development site plan proposals. Sites with wetlands that are under consideration for a Future Land Use Map amendment or site plan approval shall be designated as Conservation on the Future Land Use Map during or prior to the next regular update of Comprehensive Plan.
- CON 1.7.5 The City shall require a minimum 25-foot buffer between Category I and II wetlands and new development in order to protect water quality, preserve natural wetland functions and preserve wildlife habitat. The buffer, as measured landward from the approved jurisdictional line, shall be maintained in a natural vegetative state and be free of exotic and nuisance species as defined by the Florida Pest Council.
- CON 1.7.6 The City shall not permit development in Category I or II wetlands or wetland buffers except as follows:
- a. Clearing and/or construction of bicycle and walking trails;
 - b. Construction of timber boardwalks/catwalks for direct access to water bodies; construction of wildlife management shelters, footbridges, observation decks and similar structures not requiring a dredging and/or filling for their replacement.
 - c. Clearing and or construction of electric utility, storm water management, water, or waste water infrastructure as needed to provide public service (excluding roadways) that does not impair the long term viability of the wetland system;
 - d. Dredging and filling is permissible within Category I and II wetlands as necessary for these activities if:
 - i. No other reasonable alternative exists and avoidance cannot be achieved;
 - ii. Such activity is consistent with other policies of the Comprehensive Plan;
 - iii. Such activity complies with the requirements of all federal, state and regional agencies claiming jurisdiction over wetland alteration;
 - iv. Appropriate justification for alterations is provided to the City;
 - v. Adequate mitigation of any adverse hydrological and physical alterations is provided. The basis for mitigation shall be categorized by type of wetland area. Mitigation shall be required to replace the habitat and functions performed by the wetland areas destroyed. Reasonable assurance shall be provided for type-for-type mitigation at the ratios set by agency regulations; and
 - vi. No more than one percent of any Category I wetland is impacted (may be increased in cases of overriding public benefit); and
 - vii. No more than 15 percent of any Category II wetland is impacted (may be increased in cases of overriding public benefit).

Overriding public benefit are those actions required by local, state, or federal government necessary for the promotion of public safety, health, or general welfare such as storm water management activities, or the provision of water and waste water facilities, but not including roadways.

- CON 1.7.7 Removal, encroachment, or alteration for Class III wetlands may be allowed with the extent of such activities being determined on a case-by-case basis in conjunction with applicable regulatory agencies and in the interest of public benefit.
- CON 1.7.8 When encroachment, alteration, or removal of Category III wetlands is permitted, habitat compensation or mitigation as a condition of development approval shall be required. The basis for mitigation shall be categorized by type of wetland area. Mitigation shall be required to replace the habitat and functions performed by the wetland areas destroyed. Reasonable assurance shall be provided for type-for-type mitigation at the ratios set by agency regulations.
- CON 1.7.9 Onsite one-for-one transfer of development density or intensity out of and away from wetlands and wetland buffers to uplands shall be required for all land uses other than those listed in Policy CON 1.7.12.
- CON 1.7.10 The City shall require all wetland encroachments to be mitigated according to chapters 62-25 and 40D-4, FAC, and Section 404, Clean Water Act and mitigation compliance to be monitored by the Florida Department of Environmental Protection, Southwest Florida Water Management District and US Army Corp of Engineers.
- CON 1.7.11 In combination with other goals, objectives and policies of the Comprehensive Plan, the City shall protect and conserve wetlands by redirecting incompatible uses away from wetlands.
- CON 1.7.12 For lots of record existing as of the adoption date of this Plan which do not contain sufficient uplands to permit development, fill and clearing of natural vegetation shall be allowed only in conjunction with the minimal access way and a minimum amount beneath one residential structure, provided the direction and rate of historical flow are not altered. Structures within wetland areas must be elevated on pilings. Subsequent to Plan adoption, the City shall prohibit the creation of lots or parcels with inadequate uplands.
- CON 1.7.13 Any development related encroachments shall be mitigated consistent with the following mitigation requirements:
- a. Two acres of wetlands shall be created for every acre of wetlands altered, unless other requirements are enforced pursuant to b, below;
 - b. Mitigation requirements contained in a., above, may be increased or decreased by the City Council, or by its specific design, depending on the type, function and viability of the wetland system being altered; site characteristics; nature of the proposed project; and other kinds of compensation being proposed. However, in no event shall the mitigation ratio be less than 1.15 acres of created wetlands to each acre altered or lower than those set forth in chapters 62-25 and 40D-4, FAC, and Section 404, Clean Water Act.
 - c. All approved mitigation shall demonstrate through appropriate monitoring by the Florida Department of Environmental Protection, Southwest Florida Water Management District and US Army Corp of Engineers and reporting by the

developer that at least an 85 percent planting survival rate for wetland areas created/augmented during mitigation is achieved for a period of at least two years for herbaceous wetland communities and for at least five years for forested wetland communities.

Floodplain

Objective CON 1.8

Protect the natural function of the 100-year floodplain to carry, store and filter flood waters through land development regulations.

Policies

- CON 1.8.1 If any filling of land occurs during site design such that the volume of floodplain storage would be reduced, an equal volume of soil shall be excavated within the same floodplain to provide compensatory storage. Such excavations shall not be located within land areas identified for conservation purposes, or within the jurisdictional wetland limits of regulatory agencies, except for the purpose of providing pretreated stormwater storage capacity.
- CON 1.8.2 The City shall protect the natural functions of the 100-year floodplain so that the flood-carrying and flood storage capacity and water quality benefits are maintained.
- CON 1.8.3 The City shall encourage the development of a strict floodplain management program by state and local governments to preserve hydrologically significant wetlands and other natural floodplain features.
- CON 1.8.4 Recognizing that portions of the community are located within the 100-year floodplain, the City shall strictly enforce all appropriate federal, state and regional coastal construction codes and coastal setback regulations.
- CON 1.8.5 The City shall minimize the amount of impervious surface in order to promote groundwater filtration, minimize runoff and protect water quality.
- CON 1.8.6 The City, through the implementation of the Land Development Code, shall promote appropriate land use practices compatible with floodplain areas and provide for performance standards which, at a minimum, require that:
- a. To the maximum extent legally possible, new development shall not be located in river floodways, the area of highest velocity during flow;
 - b. New development permitted in the flood fringe, the area of the floodplain outside the floodway, shall be required to meet flood hazard construction requirements;
 - c. Development along the Pithlachascotee River floodplain shall be low density residential with adequate setbacks to maintain any existing areas of natural habitat; and
 - d. The prevention of erosion, retardation of runoff and protection of natural functions and values of the floodplain be considered while promoting public usage.

- CON 1.8.7 In addition to the Conservation land use designation, the City shall protect the Pithlachascotee River through the use of the "Pithlachascotee River Environmental Corridor." The corridor is defined as the area within 50 feet landward from the top of the river bank. In places where the top of the bank is not discernable, either the mean high water line or the upland/wetland boundary shall be used, whichever is greater. Development within the corridor shall be managed as follows:
- a. Lots created after November 1, 1990, shall denote the corridor on the lot survey, and shall dedicate the corridor to the City via conservation easement.
 - b. Only water-dependent uses within the corridor are permitted.
 - c. Existing vegetation within the corridor shall be preserved. Where native vegetation has been disturbed in the past, it shall be restored concurrent with new development.
 - d. Where new plantings are required, a restoration plan, specifying appropriate vegetation for rehabilitation of shores and associated lands (such as grasses for submerged lands and shorelines and trees/shrubs for banks sloping away from shore) shall be submitted as part of the development proposal. The type of vegetation selected for new plantings shall be based upon its ability to provide shore stabilization, water purification and wildlife habitat.
- CON 1.8.8 Floodplains whose functional values have been degraded or destroyed through human intervention shall be restored, if feasible, through the public acquisition of historic floodplain lands. Various state, regional and local acquisition programs shall be sought for this purpose.
- CON 1.8.9 The City shall prohibit fill material or other structures to adversely obstruct the natural movement of floodwater, overland sheet flow or pose a threat to the public health, safety and welfare.
- CON 1.8.10 The City will continue the use of the Conservation future land use category to protect the natural functions of floodplains and shorelines.

GOAL CON 2

Promote a sustainable energy future by increasing energy efficiency in all sectors.

Energy Efficiency in City-Owned Facilities

Objective 2.1 Increase municipal energy efficiency by 10 percent by the year 2025 by reducing total energy use in City-owned buildings, facilities and fleet.

Policies

CON 2.1.1 The City shall determine total energy use and costs for municipal facilities and set up a system to track use and costs for major City facilities.

- CON 2.1.2 The City shall identify energy-saving measures including opportunities for use of renewable resources in municipal buildings and facilities and seek funding (e.g., state and federal grants) for implementation.
- CON 2.1.3 The City shall develop an energy-saving incentive program to encourage efficiency in City government by returning a portion of the money saved to the participating bureaus and for other energy projects.
- CON 2.1.4 The City shall promote the use of energy-efficient street lighting systems, and continue to convert street lights to be more energy efficient.

Energy Efficiency in Residential Buildings

Objective 2.2 Encourage energy efficiency in residential buildings by helping to develop and promote public/private partnerships, utility, local, state and federal programs.

Policies

- CON 2.2.1 The City shall coordinate with the electric utility to bring utility-sponsored, energy-efficiency programs to homeowners.
- CON 2.2.2 The City shall investigate requiring energy audits for any residential structure receiving improvement grant funding from the City.

Energy Efficiency through Land Use Regulations

Objective 2.3 Promote residential, commercial, industrial and transportation energy efficiency and use of renewable resources through land use regulations.

Policies

- CON 2.3.1 The City shall promote density, location and mix of land uses that decrease the length of required daily trips and encourage the consolidation of related trips.
- CON 2.3.2 The City shall investigate the potential for energy savings from solar access standards for commercial buildings and multi-family housing.

Energy Efficient Transportation

Objective 2.4 Promote energy-efficient transportation.

Policy

- CON 2.4.1 The City shall provide opportunities for multimodal mobility through implementation of Goal TRA 2 and Goal TRA 3 objectives and policies.

Telecommunications as an Energy Efficiency Strategy

Objective 2.5 Research and support telecommunication opportunities that reduce the need for travel.

Policy

CON 2.5.1 The City shall examine citywide telecommunications needs in partnership with local businesses, agencies, and developers.

Waste Reduction and Recycling

Objective 2.6 Promote energy savings through reduced use of excess materials, such as packaging; recovery of materials from the waste stream for direct reuse and remanufacture into new products; recycling; and purchase of products made from recycled materials.

Policies

CON 2.6.1 The City shall continue its recycling efforts including office wastepaper and other materials recycling and the curbside recycling program.

CON 2.6.2 The City shall develop a plan to increase recycling rates in all sectors.

CON 2.6.3 The City shall develop a recycling plan for city events.

Exhibit CON-1

Focal Species in Pasco County, Florida Gap I¹ and Gap II² Analyses Florida Fish and Wildlife Conservation Commission

(T) Threatened
(E) Endangered
(SSC) Species of Special Concern

AMPHIBIANS AND REPTILES

Common Name / Scientific Name

American alligator (SSC) *Alligator mississippiensis*
Central Florida crowned snake *Tantilla relicta*
Eastern diamondback rattlesnake *Crotalus adamanteus*
Eastern indigo snake (T) *Drymarchon corais couperi*
Eastern tiger salamander *Ambystoma tigrinum*
Florida pine snake (SSC) *Pituophis melanoleucus mugitus*
Gopher frog (SSC) *Rana capito aesopus*
Gopher tortoise (SSC) *Gopherus polyphemus*
Peninsula crowned snake *Tantilla relicta*
Peninsula mole skink *Eumeces egregious onocrepis*
Short-tailed snake *Stilosoma extenuatum*
Spotted turtle *Clemmys guttat*
Suwannee cooter *Pseudemys concinna suwanniensis*

BIRDS

Common Name / Scientific Name

American oystercatcher *Haematopus palliatus*
American swallow-tailed kite *Elanoides forficatus*
Black rail *Laterallus jamaicensis*
Black-crowned night-heron *Nycticorax nycticorax*
Brown pelican (SSC) *Pelecanus occidentalis*
Cooper's hawk *Accipiter cooperii*
Cuban snowy plover *Charadrius alexandrinus*
Florida burrowing owl *Athene cunicularia floridana*
Florida sandhill crane (T) *Grus canadensis pratensis*
Florida scrub jay *Aphelocoma coerulescens*
Hairy woodpecker *Picoides villosus*
Least bittern *Ixobrychus exilis*
Limpkin (SSC) *Aramus guarana*
Marian's marsh wren *Cistothorus palustris marianae*
Osprey *Pandion haliaetus*
Piping plover (T) *Charadrius melodus*
Scott's seaside sparrow *Ammodramus maritimus peninsulae*
Short-tailed hawk *Buteo brachyurus*

Southeastern American kestrel (T) *Falco sparverius paulus*
Southern bald eagle (T) *Haliaeetus leucocephalus*
Swainson's hawk *Limnothlypis swainsonii*
Wild turkey *Meleagris gallopavo*
Wilson's plover *Charadrius wilsonia*
Yellow-crowned night heron *Nyctanassa violacea*

MAMMALS

Common Name / Scientific Name

Bobcat *Lynx rufus*
Florida black-bear (T) *Ursus americanus floridanus*
Florida mink *Mustela vison*
Florida mouse (SSC) *Podomys floridanus*
Fox squirrel (T) *Sciurus niger*
Northern yellow bat *Lasiurus intermedius*
River otter *Lutra canadensis*
Round-tailed muskrat *Neofiber alleni*

1. Cox, J. A., R. S. Kautz, M. MacLaughlin, and T. Gilbert. 1994. Closing the Gaps in Florida's Wildlife Habitat Conservation System. Florida Game and Freshwater Fish Commission Office of Environmental Services.
2. Cox, J. A., and R. S. Kautz. 2000. Habitat Conservation Needs of Rare and Imperiled Wildlife in Florida. Florida Fish and Wildlife Conservation Commission Office of Environmental Services.