

CHAPTER SIX

CONSERVATION ELEMENT

PURPOSE

The purpose of the Conservation Element is to promote the conservation, use, and protection of natural resources in the Town.

NATURAL ENVIRONMENT

Climate

The Southeast Regional Climate Center has climate data available that is specific for the City of Melbourne which is within several miles north of Malabar. This data identifies that from 1948 to 2007, the average annual maximum temperature is 81.5° and the average annual minimum temperature is 63.1°. The average annual total precipitation is 49.36 inches. Precipitation is not distributed evenly throughout the year. Precipitation ranges from an average monthly low of 2.13 inches in December, to 7.80 inches in September. Precipitation is heaviest from June through September; with over 50% of the rainfall occurring during these four months. No snowfall has been reported during this reporting period.

Thunderstorms are common during the summer months. Hurricanes, much less frequent occurrences, have the potential to occur from June through November; heavy rainfall, high winds, and widespread flooding may accompany these storms. Records indicates that the Town has been brushed or hit by a hurricane 42 times from 1871 through 2007. A major event occurred in September of 1928 making landfall just 40 miles to the south with 130 mph winds. This was followed by an inactive period until 1950 when Hurricane King, a minor event occurred. The most recent occurrence was in 2004 when Hurricane Francis with 105 mph winds made land fall on September 5th which was followed by Jeanne with 102 mph winds on September 26th. Both storms caused moderate damage to the area.

Soils

Map FLU-3 *Soils*, provides the general distribution of soils in the Town as presented in the 1990 National Cooperative Soil Survey conducted by the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). Table 6-1, provides a list of the soils find in the Town. Appendix 6-A *Soil Descriptions* provides a description as provided by the Natural Resource Conservation Service (NRCS), of each of the soils represented in the Town.

Table 6-1 Soil Types Found in the Town
ANCLOTE SAND
BASINGER SAND
CANAVERAL-ANCLOTE COMPLEX
CANDLER FINE SAND
EAUGALLIE SAND
FLORIDANA SAND
IMMOKALEE SAND
MALABAR SAND
MICCO MUCKY PEAT
MYAKKA SAND
PAOLA FINE SAND
POMELLO SAND
RIVIERA SAND
SATELLITE SAND
ST JOHNS SAND
ST LUCIE FINE SAND
TOMOKA MUCK
TURNBULL AND RIOMAR SOILS
VALKARIA SAND

Physiography

The Town is in southern Brevard County. Brevard County is a coastal county located near the middle of the Florida peninsula. The County is composed of barrier islands, an estuary lagoon and the mainland. The Town is located along the western shore of the Indian River Lagoon, on the mainland; it is separated from the Atlantic Ocean coastline by the narrow coastal barrier island and the Indian River Lagoon. The nearest ocean access for the Town is through the Sebastian *Inlet*, approximately 10 miles to the south. The Cape Canaveral Inlet, also providing ocean access, is located approximately 30 miles to the north.

Map FLU-5 *Topography* identifies the topography of the Town. The Town is relatively flat with elevations ranging from 0 to 30 feet. The vast majority of the Town is at 20 feet. The lowest elevation is found along the coastline and the two creeks that traverse the Town, Turkey Creek lies in the northwest corner and Goat Creek lies in the southeast corner. The Atlantic Coastal Ridge, a narrow ridge that runs along mainland coastline, forms the highest ground in the Town. It is a natural barrier to drainage of the interior, except where it is breached by shallow sloughs or rivers. From this ridge, the ground slopes gently downward to the western sandy flatlands. The Atlantic Coastal Ridge runs along the vast majority of the eastern coast of the U.S.

Soil Erosion

Due to the relatively flat topography of the Town, lack of mining or large-scale land disturbance, and the protection by the barrier island, soil erosion is not a typical problem in the Town.

Commercially Valuable Minerals

Many areas of central and southern Florida have been utilized to mine sand and lime rock materials for road building and development activities. Other than sand or lime rock substrate, there are no commercially valuable minerals in the Town. There are several inactive mining sites in the Town. Currently, commercial mining is a prohibited use and there are no active mining operations within the Town.

Floodplains

The National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA) has identified the following flood zones within the Town:

Zone	Description
A	An area inundated by 1% annual chance flooding, for which no base flood elevations (BFE's) have been determined.
AE	An area inundated by 1% annual chance of flooding, for which BFEs have been determined.
X	Areas determined to be outside the 500-year floodplain, determined to be outside the 1% and 0.02% annual chance floodplains. Areas of minimal flood hazard from the principal source of flood in the area.
X500	Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood. An area inundated by 0.2% annual chance of flooding.

Source: Federal Emergency Management Agency (FEMA)

Map FLU-4 *FEMA Flood Zones* locates the flood zones within the Town. Most of the Town is in an X zone, which is defined as areas determined to be outside the 500-year floodplain (outside the 1% and 0.2% annual chance floodplains). This is an area of minimal flood hazard. Existing land uses found within the floodplain are illustrated in the Future Land Use Element.

Land use as it relates to the discharge of stormwater and the use of natural drainage is regulated through the St Johns River Water Management District. The Florida Building Code regulates construction as it relates to flood zones.

Air

Air quality in the Town of Malabar is generally good. Based upon ambient air quality monitoring, conducted by the Florida Department of Environmental Protection (FDEP)

and documented in the *2006 Florida Air Monitoring Report*, Brevard County, and now all of Florida, is an attainment area for the six major air contaminants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), Ozone (O₃), particulate matter (PM), and sulfur dioxide (SO₂). The attainment area designation indicates that the concentrations of major pollutants are within the acceptable limits set by the Florida Department of Environmental Protection and the U.S. Environmental Protection Agency. Air quality is a matter that must be addressed at a regional level requiring local, County and regional entities to coordinate air quality maintenance and improvement efforts. In Brevard County this includes coordination with the Cape Canaveral Air Station (CCAS) and the Kennedy Space Center (KSC).

Water Resources

Map FLU-6 *Water Bodies* identifies the water bodies within the Town. Some are manmade features, and some are naturally occurring depressional ponds. Two natural water ways, Goat Creek and Turkey Creek also traverse the Town.

The predominant water feature in Malabar is the Indian River Lagoon (IRL), located between the barrier island and the Atlantic Coastal Ridge. This is a linear estuarine system that extends along more than a third of Florida's east coast. The IRL extends over 155 miles from Ponce de Leon Inlet in Volusia County south to Jupiter Inlet in Palm Beach County. The lagoon interacts with the saline waters of the Atlantic Ocean through the inlets, providing tidal exchange with fresh water discharged into the lagoon from the inland rivers.

The IRL provides a higher species diversity than any other estuary in North America. Due to the distinct characteristics of this system, portions of the IRL have been designated as Aquatic Preserves. The eastern edge of the Town abuts the *Indian River – Malabar to Vero Beach Aquatic Preserve*, which was established on October 21, 1969 by the Governor and Cabinet. In 1975 the Florida Legislature established the Florida Aquatic Preserve Act as codified in Chapter 258, F.S. Aquatic Preserves which is administered under Chapters 18-20 and 18-21, Florida Administrative Code (F.A.C.). the surface water area of the Indian River – Malabar to Vero Beach Aquatic Preserve is approximately 43.4 square miles or 27,966 acres. The preserve is managed by the Florida Department of Environmental Protection Office of Coastal and Aquatic Managed Areas. This Aquatic Preserve overlaps temperate and the subtropical zones creating a highly diverse system; because of this diversity it is included in the U.S. Environmental Protection Agency's (EOA) National Estuary Program. The aquatic Preserve has also been designated as Outstanding Florida Water Pursuant to Chapter 62.302.7, F.A.C.

Overall, the natural hydrologic regime of the IRL has been heavily influenced over the years by human activities. Residential and commercial construction in the late 1800s and early 1900s increased the need for inlets to increase commerce. In the 1930s and 1950s much of the lagoon salt marsh was impounded for mosquito control purposes and the

Atlantic Intracoastal Waterway was expanded and deepened to allow for more navigable waterways.

Through the cooperative efforts by a variety of federal, state, county and local governments, as well as non-governmental organizations, efforts have begun to address the long-term health and viability of the estuarine lagoon and associated wildlife. A variety of organizations have monitoring and research underway in the IRL and its watershed. The St Johns River Water Management District (SJRWMD) continues to implement and update the *Indian River Lagoon Comprehensive Conservation and Management Plan (CCMP)*. The Brevard County Stormwater Program (BCSP) provides assistance and recommendations for the selection and implementation of the most efficient and cost-effective stormwater treatment methods. The Brevard County Natural Resource Management Office and the University of Florida Brevard County Extension Service have initiated and are jointly sponsoring the development of the Brevard County Comprehensive Maritime Management Master Plan (CM3P). The Indian River Lagoon Surface Water Improvements and Management (SWIM) program, administered cooperatively through the SJRWMD and the South Florida Water Management District (SFWMD) has been designed to develop and execute a combination of research and practical implementation projects to protect or restore the environmental resources of the lagoon. This program has three goals:

- Attain and maintain water and sediment of sufficient quality to support a healthy, seagrass-based estuarine ecosystem;
- Attain and maintain a functioning seagrass ecosystem which supports endangered and threatened species, fisheries and wildlife; and
- Achieve heightened public awareness and coordinated interagency management.

The Atlantic Intracoastal Waterway (ICW), which runs within the IRL, also runs off the coast of the Town. The ICW is managed and maintained by the Florida Inland Navigation District (FIND), a special state taxing district. Maintenance dredging has created Spoil Islands that run along the edge of the ICW. There are several Spoil Islands in the IRL at the southern end of the Town. The Spoil Island Working Group (SIWG), which consists of 12 Federal, State, and County government agencies and 6 non-governmental organizations, was created to implement the Indian River Lagoon Spoil Island Management Plan put forth by the Florida Inland Navigation District (FIND). The Spoil Island Project is an effort towards managing the spoil islands for recreational and environmental interests.

LAND COVER

Map FLU-7 Habitats and Land Cover identifies the habitat land coverage within the Town as mapped by the Florida Fish and Wildlife Conservation Commission (FFWCC). Table 6-3 identifies and provides the acreage of the land coverage.

The FFWCC map identifies there are 8,315.51 acres within the municipal limits. The land coverage can be broadly categorized into disturbed lands, open water/undisturbed wetland or upland habitats. Section I of the Table shows the developed/disturbed land coverage; this comprises 18.83 percent of 1,565.83 acres of the total area. The bulk of this, 1,297.26 acres, is considered urban in nature. Section II of the Table represents the wetland and open water coverage; this is 32.5 percent of 2,702.57 acres of the total area. Section III of the Table represents the undisturbed native upland habitats; these are 48.67 percent or 4,047.11 acres of the total area.

	HABITAT LAND COVERAGE	ACRES	HABITAT BREAKDOWN
I.	Improved Pasture	178.08	Section I. Represents developed or disturbed land for a subtotal of 1,565.83 acres or 18.83% of the total area. Nearly 83% of this category of land is considered urban in nature.
	Unimproved Pasture	2,222.2018	
	Row/Field Crops	21.18	
	Citrus	31.67	
	Other Agriculture	19.50	
	Bare/Soil/Clear-cut	15.92	
	Low Impact Urban	458.14	
	High Impact Urban	839.12	
II.	Open Water	153.65	Section II. Represents the wetland and open water coverage for a subtotal of 2,702.57 acres or 32.5% of the total area. This is comprised of open water along with salt and freshwater native habitats.
	Intracoastal Waterway	1,467.95	
	Mangrove Swamp	0.22	
	Salt Marsh	6.59	
	Freshwater Marsh and Wet Prairie	426.84	
	Shrub Swamp	218.17	
	Mixed Wetland Forest	140.53	
Cypress Swamp	174.59		
	Hardwood Swamp	114.05	
III.	Dry Prairie	1,217.37	Section III. Represents the native upland coverage for a total of 4,047.11 acres or 48.67% of the total area. This is comprised of grassland, scrub and forested habitats.
	Grassland	2.89	
	Shrub and Brushland	45.58	
	Sand Pine Scrub	154.17	
	Xeric Oak Scrub	24.54	
	Pinelands	2,066.78	
	Mixed Pine-Hardwood Forest	259.22	
	Hardwood Hammocks and Forest	276.56	
LAND COVER TOTAL ACERAGE		8,315.51	

Source: Florida Fish and Wildlife Conservation Commission, 2003

The FFWCC mapping system provided a very broad range of mapping categories, which are all represented in Table 6-3 Habitats and Land Cover. However, for ease of viewing

we have combined some of the habitat categories on Map FLU-7. Following are the combined groups.

TABLE 6-4 HABITAT CATEGORIES

Map FLU-7 Category	FFWCC Habitats combined under this Category
Agriculture	Citrus Row / Field Crops Other Agriculture
Pasture	Improved Unimproved
Brush and Grassland	Grassland Shrub and Brush land
Oak and Pine Scrub	Sand Pine Xeric Oak Scrub
Swamp Forest	Cypress Swamp Hardwood Swamp Shrub Swamp Mixed Wetland Swamp

Source: Florida Fish and Wildlife Conservation Commission

Map FLU-10 *Wetland Habitats* identifies the wetland habitats found within the Town. This map which represents solely the wetland habitats, breaks out the four forested wetland habitats that are combined within the Swamp Forest Category on Map FLU-7. There are 1,081 acres of diverse wetland habitats found within the Town. (This excludes open water and the Intracoastal Waterway.) It is important to note that the acreage identified by the FFWCC map will not correspond to the acreage totals established in the future of existing land use maps, which are parcel based maps. The FFWCC map is not parcel-based but looks at all habitat within the municipal limits; it does not exclude lakes, roadways and public right of way lands. On the FFWCC map an individual parcel may contain multiple habitats, such as urban, pineland and open water.

Natural Habitats

Over 81 percent of the Town contains undeveloped native habitats. Pinelands at 2,066.78 acres and dry prairie at 1,217.37 acre, and Intracoastal Waterway at 1,467.95 acres are the most predominate and the least fragmented habitats occurring in the Town. This is followed by 426.84 acres of freshwater marsh and wet prairie habitat, which is more scattered and in smaller more fragmented locations.

Appendix 6-B *Listed Wildlife Species* identifies those federal and state listed animal species that may be found within the Town. Listed and other animal species depend on native vegetative communities for refuge, foraging, nesting, and denning. The size, quality and connectivity of native communities all influence wildlife utilization.

Appendix 6-C *Native Plant Species* contains a list of native plant species having the potential to occur in the Town and identifies those that are listed as either threatened or endangered by federal and State agencies.

Appendix 6-D *Invasive Pest Plant Species* identifies the invasive exotic pest plant species that may occur in the Town. Invasive exotic plant species create major problems throughout many areas of the State. The FFWCC recognize and map areas of invasive coverage in their habitat land coverage mapping program. The invasive coverage within the Town is limited to such a degree that it does not appear on the FFWCC coverage map.

Appendix 6-E *Land Coverage Descriptions* contains the descriptions of the land coverage categories located within the Town as defined by the Florida Land Use, Cover and Forms Classification System (FLUCCS).

Conservation Opportunities

Conservation opportunities are enhanced through the public ownership of land. Brevard County runs the Environmentally Endangered Lands (EEL) Program, which is dedicated to conservation through land acquisition and management. Brevard County's Parks and Recreation Department manages and assists the program. The EEL Program protects Brevard County's unique natural habitats, while managing them for their rare, threatened, endangered, or endemic plants and animals.

Three directives guide the EEL Program. The first is to conserve the natural resources of Brevard County through acquisition of environmentally sensitive lands and subsequent management of the natural resources. The second is to provide environmental education opportunities on EEL sanctuaries. The third is to provide passive recreation opportunities, such as hiking and wildlife observation. Since its start in 1990, the EEL Program has helped to protect more than 18,000 acres of threatened habitat. Much of this land has been bought in partnership with the State of Florida and the St Johns River Water Management District. The EEL Program also provides outdoor learning and recreational opportunities to Brevard County residents and visitors. There are two EEL Sanctuaries that fall within the Town, the Jordan Scrub Sanctuary and Malabar Scrub Sanctuary.

The Jordan Scrub Sanctuary is a 344-acre sanctuary that includes scenic lakes, seasonal marshes, and scrubby flatwoods. Bald eagles can be spotted, and Florida Scrub-jays can be seen foraging in the scrubby flatwoods. Adjacent to the Jordan Scrub Sanctuary is the non-EEL program 27-acre Jordan Scrub Eastern Tract, owned by the State.

The Malabar Scrub Sanctuary, which will contain the future home of the South Region Management and Education Center, is a 379-acre Sanctuary which contains xeric (dry) hammock, scrub, scrubby flatwoods, pine flatwoods, sand pine scrub, ponds, sloughs, and depression marshes. This sanctuary is a refuge for the Florida Scrub-jay, Gopher Tortoise, and Eastern Indigo snake. Adjacent to the Malabar Scrub Sanctuary is the non-EEL program 161-acre Malabar Scrub Western Tract, owned by the State.

There is over 912 acres of County of State-owned preserve lands within the Town and approximately 147 acres of Town owned park and preservation land. Map FLU-8 Parks and Conservation identifies and shows the location of these lands and the Park and Recreation Element provides further detail.

Potable Water

The Potable Water Services Element focuses on the public and domestic self-supply demand for the Town of Malabar. Approximately 20% of the Town's population is served by public water supply mains. The Harris Government Systems development operates and maintains a private water treatment plant and the three mobile home parks within the Town also maintain their own private water treatment facilities. Areas not served by these water distribution systems are served by private wells. The private wells within the Town are owned by individual homeowners and may require some treatment within the household to remove Sulphur and salts. The Town owns and maintains the public water distribution system but purchases its water from the Palm Bay Utility Department (PBUD) under a thirty-year contract. The PBUD operates the Troutman Water Treatment Facility and the South Regional Water Treatment Facility. There is sufficient capacity for the 10-year planning period.

The Troutman Water Treatment Facility has both a Lime Softening (LS) Water Treatment Plant (WTP) and a Reverse Osmosis (RO) WTP. The LS WTP withdraws water from 35 surficial aquifer wells and one Floridan Aquifer well that is used for blending during peak demand. The permitted withdrawal rates for this plant are 4.7 MGD declining 0.1 MGD per year until 2021, when the withdrawal rate will be 3.4 MGD for the surficial aquifer wells and 0.72 MGD for the Floridan Well. The RO WTP has 3 Florida aquifer wells permitted to withdraw 2.61 MGD. The current capacity of the RO WTP is 1.5 MGD with the ability to expand to 3 MGD. The South Regional Water Treatment Facility is an RO facility with five Floridan aquifer wells with a permitted withdrawal of 5.09 MGD in 2007 expanding to 10.49 MGD in 2021.

On a regional level, Brevard County and the Town of Malabar are located within the St Johns River Water Management District (SJRWMD). The St Johns River Water Management District Regional Water Supply Plan 2005 (DWSP 2005), TECHNICAL PUBLICATION SJ2006-2 provides details on the current and projected water supply for the Region.

There are no public wellfields or wellfield protection zones within the Town. However, the same vulnerabilities of public wellfield systems apply to the self-demand wells which

provide water for many residents of the Town. The Town can discourage residential source contamination through close coordination with the Florida Department of Environmental Protection and the Brevard County, the Natural Resources Management Office (NRMO), Environmental Remediation and Compliance (ERC) Section, and by providing public information regarding the safe disposal of chemicals. Specifically, information can be made available on free disposal of household hazardous wastes, information on disposal contractors available to small businesses and the special waste programs available for landfill disposal of non-typical materials, such as spill clean-ups and contaminated soils.

Ground Water

Three aquifer systems supply groundwater in St Johns River Water Management District (SJRWMD). These are the surficial, the intermediate, and the Floridan aquifers. The St Johns River Water Management District Regional Water Supply Plan 2005 (DWSWP 2005), TECHNICAL PUBLICATION SJ2006-2, describes these systems as follows:

The surficial aquifer system consists primarily of sand, silt, and sandy clay. It extends from the land surface downward to the top of the confining unit of the intermediate aquifer system, where present, or to the top of the confining unit of the Floridan aquifer system. The surficial aquifer system contains the water table, which is the top of the saturated zone within the aquifer. Water within the surficial aquifer system occurs mainly under unconfined conditions, but beds of low permeability cause semi-confined or locally confined conditions to prevail in its deeper parts.

Water in the surficial aquifer system is generally of acceptable quality for domestic use. In coastal areas such as the barrier islands, this aquifer system is prone to saltwater intrusion. The surficial aquifer system is a source of water for public supply in St Johns, Flagler, Brevard, and Indian River counties. It is also used as a source of water for domestic self-supply.

The intermediate aquifer system consists of fine-grained clastic deposits of clayey sand to clay interlayered with thin water bearing zones of sand, shell, and limestone. In most of the SJRWMD, the intermediate aquifer system yields little or no significant amounts of water. It is also known as the intermediate confining unit. The intermediate aquifer system occurs throughout most of SJRWMD. This unit lies between and collectively retards the exchange of water between the overlying surficial aquifer system and the underlying Floridan aquifer system.

Water in the intermediate aquifer system is generally acceptable for domestic use in the northern part of the SJRWMD, where chloride, sulfate, and total dissolved solids (TDS) concentrations generally meet secondary drinking water standards. However, water quality in the southern part of SJRWMD very nearly does not meet or does not meet the secondary drinking water standards for chloride and TDS concentrations. The intermediate aquifer system is used as a water source for domestic self-supply in Duval, Clay, and Orange counties.

The Floridan aquifer system is one of the world's most productive aquifers. The rocks, primarily limestone and dolomite, that compose the Floridan aquifer system, underlie the entire state. This aquifer system does not contain potable water at all locations. Water in the Floridan aquifer system occurs under confined conditions throughout most of the SJRWMD. Unconfined conditions occur in parts of Alachua, Lake, and Marion counties, where the top of the Floridan aquifer system is at or near land surface.

Water quality in the Upper Floridan aquifer varies depending on its location. Chloride and TDS concentrations in the Upper Floridan aquifer generally do not meet the secondary drinking water standards in Brevard County.

Groundwater recharge occurs when there is addition of water to the Floridan aquifer from the overlying surficial aquifer. Recharge to the Floridan aquifer occurs in areas where the elevation of the water table of the surficial aquifer is higher than the elevation of the potentiometric surface of the Floridan aquifer. In these areas, water moves from the surficial aquifer in a downward direction through the upper confining unit to the Floridan aquifer. Recharge also occurs directly from infiltrating rainfall where the limestone of the Floridan aquifer is near or at land surface. In addition, significant local recharge may occur where sinkholes have breached the upper confining unit.

Discharge from the Floridan aquifer occurs in areas where the elevation of the Floridan aquifer potentiometric surface is higher than the elevation of the water table. In these areas, water moves from the Floridan aquifer in an upward direction through the upper confining unit to the surficial aquifer. Where the elevation of the Floridan aquifer potentiometric surface is higher than land surface, springs and free-flowing artesian wells occur.

The St Johns River Water Management District (SJRWMD) and the Brevard County Office of Natural Resources Management have a voluntary cost share program to perform well abandonment (plugging) or reconstruction of problem wells on private property. Although cost share funding percentages can vary depending on the current type of property ownership, in Brevard County, supplemental funding is available so there is no cost to the well owner. Special programs from the SRJWMD for agricultural wells are also available.

Surface Water

The St Johns River Water Management District Regional Water Supply Plan 2005 states that compared to most groundwater sources in SJRWMD, surface water sources generally are of lower quality. Surface waters tend to contain silts and suspended sediments, algae, dissolved organic matter from topsoil, and chemical and microbiological contaminants from municipal wastewater discharges, stormwater runoff, and industrial and agricultural activities. The quality of surface water may vary seasonally with variation in flow rates or water levels. Salinity is one of the most important water quality considerations in SJRWMD. In the coastal rivers of SJRWMD and the tidal reaches of the

St Johns, St Marys, and Nassau rivers, the influx of seawater limits potential. Traditionally, surface water has not been used extensively for public supply in the SJRWMD.

Pollutants

Waste generators, solid waste facilities, above and underground storage tanks, and dry-cleaning facilities are licensed by the Florida Department of Environmental Protection (FDEP). Current information on these facilities is available through the Florida Department of Environmental Protection Division of Waste Management. Information on contaminated sites is also available through the U.S. Environmental Protection Agency (EPA) Resource Conservation Recovery Act (RCRA), Superfund, National Priorities List and Brownfield databases.

Within Brevard County, the Natural Resources Management Office (NRMO), Environmental Remediation and Compliance (ERC) Section is currently contracted with the Florida Department of Environmental Protection (FDEP) to inspect all petroleum storage facilities and oversee the cleanup of petroleum contamination in Brevard County in accordance with Chapters 62-761 and 62-770, Florida Administration Code (F.A.C.). The Primary responsibility of the ERC Section is to provide technical oversight, administrative activities necessary to prioritize, assess, and clean-up sites contaminated by stationary petroleum storage systems.

An August 2008 database search identifies that at this time there are no sites in the Town of Malabar listed on the U.S. Environmental Protection Agency's (EPA) Federal Superfund list or the National Priorities List (NPL). There are no designated or candidate brownfields in the Town. There are no dry-cleaning facilities, petroleum, or any other contaminated sites identified in the Town.

CONSERVATION ELEMENT GOALS, OBJECTIVES, AND POLICIES

Goal 6-1:

Conserve, protect and appropriately manage the Town's natural resources in order to enhance the quality and natural systems within the coastal community.

6-1.1 Objective:

Protect Air Quality. The Town shall meet or exceed the minimum air quality standards established by the Florida Department of Environmental Protection (FDEP) and shall support the established regulatory programs to prevent and/or minimize non-point sources of air pollution (note: The Town has no point sources of air pollution).

6-1.1.1 Policy:

Combat Erosion and Generation of Dust Particles. Land development regulations shall incorporate performance standards which combat erosion and generation of fugitive dust particles. The regulations shall require that measure be taken on building sites or cleared areas which assure that exposed, destabilized, or other altered soil is expeditiously covered with an acceptable erosion control material.

6-1.1.2 Policy:

Air Pollution and Land Use Regulations. The Town shall continue to protect against loss of air quality by maintaining land use controls which promote only activities compatible with existing land uses and natural systems and prohibit activities which generate air pollutants and other adverse impacts on the environmentally fragile ecosystem.

6-1.1.3 Policy:

Greenhouse Gas Emissions. The Town shall promote the development of multi-use trails and increasing the efficiency of the roadways through the Town to promote energy conservation.

6-1.2 Objective:

Water Quality and Quantity. The Town shall conserve, appropriately use and protect the quality and quantity of current and projected water sources and

appropriately regulate the Town's stormwater run-off and other water sources that flow into estuarine or oceanic waters.

6-1.2.1 Policy:

Water Quality, Surface Water Management and Land Use. For site plan approval, the Town shall require that surface water management systems be designed and operated consistent with the Town's adopted drainage level of service. The Town shall continue to make efforts to prevent negative impacts from development to the Indian River Lagoon and its tributaries designated as Class II Waters, by implementing, and revising when necessary, the adopted surface water protection regulations.

6-1.2.2 Policy:

Regulate Agricultural Activities to Preserve Water Quality. The Town shall encourage the utilization of agricultural Best Management Practices developed by the Florida Department of Agriculture to promote the protection of water quality. The Town shall provide, as available, educational materials on the most current Best Management Practices.

6-1.2.3 Policy:

Regulate Wastewater Treatment Discharge to Preserve Water Quality. For site plan approval, the Town shall require:

- a. Local government entities shall require customers with private septic tanks to connect to public gravity sanitary sewer collection systems within 365 days of written notice that the service is available, as required by F.S. 381.00655.
- b. New subdivisions shall provide sewerage connections for each lot in the development.
- c. New septic tank systems shall meet applicable state standards for permitting.

6-1.2.4 Policy:

Preserve and Enhance Lagoon and Canal Shoreline. Compliance with the approved permits from state, federal or other local governments, when applicable, for protection of submerged and shoreline resources shall be incorporated in the Town planning process. Where deemed appropriate by the Town, the site plan shall include the planting of native shoreline vegetation to promote shoreline stability and to protect water quality.

6-1.2.5 Policy:

Protect Surficial Aquifer Recharge Areas. Requirements shall be incorporated into the Town's land development regulations which require retention of open space for all development in order to preserve the quality and quantity of water resources within the surficial aquifer.

6-1.2.6 Policy:

Deep Aquifer Water Conservation: In order to protect the quality and quantity of deep aquifer water resources, the Town shall coordinate with the St Johns River Water Management District and other applicable regulatory agencies in identifying free flowing deep aquifer wells and in requiring corrective measures; including capping, plugging, or installing regulatory devices which control the discharge of water from the deep aquifer.

6-1.2.7 Policy:

Conservation of Potable Water Supply. In order to conserve potable water supply and to achieve a reduction in the current rates of water consumption the Town shall:

- a. Make available educational materials regarding various methods of water conservation at the household and small business level.
- b. Encourage the use of water saving plumbing fixtures on all new development.
- c. Enforce the Town's adopted landscape ordinance.

6-1.2.8 Policy:

Emergency Conservation of Water Sources. The Town shall coordinate with the St Johns River Water Management District (SJRWMD) in implementing emergency water conservation measures based on the SJRWMD plans for management of the region's water resources.

6-1.2.9 Policy:

Ensure Potable Water Supply. The Town shall ensure that existing and new development shall be serviced with an adequate supply of potable water at the adopted level of service, and that, at a minimum, meets the state water quality standards.

6-1.2.10 Policy:

Water Supply Planning. The Town shall cooperate with local, regional, state and federal agencies in the management of freshwater resources to maintain adequate freshwater supplies. The Town shall participate in the coordination of the Regional Water Supply Plan with the St Johns River Water Management District.

6-1.3 Objective:

Maintenance of Floodplain. The Town shall protect the natural functions of the 100-year floodplain in order to protect and maintain its flood-carrying and flood storage capacity.

6-1.3.1 Policy:

Enforce Policies to Maintain Floodplain. The Town shall enforce and maintain consistency with the program policies of the National Flood Insurance Program administered by the Federal Emergency Management Administration (FEMA), and;

The Town shall monitor new cost-effective programs for minimizing flood damage. Such programs may include modification in construction setback requirements or other site design techniques, as well as upgraded building and construction techniques. The Town's adopted flood protection regulations shall be amended as necessitated by changes in FEMA regulations.

6-1.4 Objective:

Protect and Preserve Wetlands. The Town's wetlands shall be protected and preserved from physical and hydrologic alterations.

6-1.4.1 Policy:

Wetland Development Restrictions. Wetlands shall be protected from physical or hydrologic alterations in order to maintain natural functions. To ensure there is no net loss of wetland functionality, the Town shall:

- a. Strictly enforce the Town's adopted wetland development restrictions and interpretations which require that for site plan review approval, no development shall be permitted in wetlands other than approved passive recreation, open space, restricted access way, bird sanctuary, natural stormwater retention / detention, natural preserve, or other similar approved uses pursuant to the Town's Stormwater Management and Flood Protection Ordinance;

- b. Require the property owner or developer of property to provide a professionally conducted wetland delineation survey for all development application purposes;
- c. Utilize the wetland definition and delineation methodology utilized by the U.S. Army Corps of Engineers, the St Johns River Water Management District and the Florida Department of Environmental Protection when addressing wetland issues. Where there is a discrepancy between a developer or owners wetland delineation and that of one of the above agencies, the Town shall employ the definition that delineates the larger area;
- d. Preserve the Town Council's right to require dedication of a conservation easement to preserve wetland functions and provide for exceptions where the subject land area no longer retained the characteristics, functions and value of a wetland;
- e. Ensure that when unavoidable wetland impacts are authorized, the proposed project has avoided and minimized the wetland impacts to the maximum extent practicable and that mitigation shall be required for all authorized impacts;
- f. Allow for flexibility in placement of a single family residential structure to provide for the maximum allowable avoidance of pre-existing wetlands that may occur on the parcel;
- g. Encourage the creation, restoration and preservation of wetlands through partnerships with public and private entities; and
- h. Require buffers between wetlands and land uses that may negatively impact the wetland ecosystem. Buffers shall be defined as the transition areas separating wetland and upland areas and in which development activities may be regulated to protect wetlands. The boundary of the buffer area shall begin at the wetland delineation line. The regulated buffer transitional area shall be no less than twenty-five (25) feet in width from the delineated wetland.

6-1.5 Objective:

Combat Soil Erosion. Reduce the incidence of soil erosion caused by land clearing, breaches in stabilized shorelines, and lands having exposed soil without vegetative cover.

6-1.5.1 Policy:

Implementing Erosion Control. Land development regulations shall require that appropriate measures be taken during land clearing and building operations to assure that exposed, destabilized or otherwise altered soil is expeditiously covered with an acceptable erosion control material. These provisions shall be incorporated in the Subdivision and Tree Landscape Ordinance.

6-1.6 Objective:

Preventing Potential Adverse Impacts of Future Mining and Excavation Activities. No mining activities shall be permitted within the Town of Malabar since the Town is characterized by natural systems which would potentially receive irretrievable losses from the impacts of such operations.

6-1.6.1 Policy:

Prohibition Against Mining Activities. Land development regulations shall prohibit mining activities based on the irretrievable losses which such intense activities may potentially impose on the Town's fragile ecosystem as documented in the Comprehensive Plan Data Inventory and Analysis.

6-1.7 Objective:

Protect Native Vegetation. The Town shall protect and retain major vegetative communities, including, but not limited to, the hardwood hammock community, wetlands, prairies and pinelands.

6-1.7.1 Policy:

Implementing Protection of Vegetative Communities. Land development regulations, including the adopted Land Clearing and Tree and Landscape Ordinance, as well as performance standards governing development activities shall be used in managing and protecting the impacts of development on major vegetative communities. These regulations shall mandate fair and equitable restoration and/or mitigative measures in order to compensate for loss of vegetation.

6-1.8 Objective:

Protecting Fisheries, Wildlife and Wildlife Habitats. The Town shall coordinate with Brevard County, the Marine Resources Council of East Central Florida, the St Johns River Water Management District (SJRWMD), the Florida Fish and Wildlife Conservation Commission (FFWCC) and the U.S. Fish and Wildlife Service (USFWS) in protecting fisheries, wildlife, and wildlife habitat.

6-1.8.1 Policy:

Manage the Impacts of Development on Fisheries. The Town shall incorporate procedures for coordinating with the Florida Fish and Wildlife Conservation Commission, the U.S. Fish and Wildlife Service and the Marine Resources Council of East Central Florida, as appropriate, in reviewing the implications of development proposals, including proposed subdivisions and site plan review petitions. Such coordination shall be designed to assist in identifying potential adverse impacts of proposed development on marine habitats and fisheries.

6-1.8.2 Policy:

Protect Wildlife and Wildlife Habitats. Land development regulations shall incorporate provisions which restrict development activities known to adversely impact endangered, threatened, or rare wildlife and wildlife habitats as well as wildlife and wildlife habitats of special concern. The Town shall further protect wildlife and wildlife habitats by use of conservation easements pursuant to stipulations incorporated into the Stormwater Management and Flood Protection Ordinance.

6-1.8.3 Policy:

The Town shall require, as part of the development review process that applicants coordinate with the U.S. Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission for any development proposed on parcels that are mapped as providing habitat to State of federally listed wildlife species.

6-1.9 Objective:

Protect Environmentally Sensitive Lands. Designate environmentally sensitive lands for protection based on locally determined criteria which further the goals, objects and policies of the Conservation Element.

6-1.9.1 Policy:

Environmentally Sensitive Areas. The Town shall require approval from all applicable external agencies having jurisdiction regarding the protection of environmentally sensitive habitat, and shall require consistency with the policies in this Comprehensive Plan that govern:

- a. Management of surface water;
- b. Preservation of open space; and
- c. Preservation of native vegetation.

6-1.9.2 Policy:

Identification of Sensitive Lands. The Town shall coordinate and cooperate with the County and other applicable government agencies to identify sensitive lands located in the Town for conservation and appropriate use.

6-1.10 Objective:

Hazardous Waste Management. The Town shall coordinate with Brevard County as well as appropriate State and regional agencies in developing effective plans for managing hazardous waste.

6-1.10.1 Policy:

Managing Hazardous Waste. The Town shall continue to work with the County and appropriate State and regional agencies in developing an improved area-wide solid waste management program which includes more innovative solid waste management technologies that save energy and/or produce renewable energy and effectively manage hazardous waste.

6-1.10.2 Policy:

The Town shall cooperate with appropriate public agencies to assure that solid and hazardous wastes generated within the Town are properly managed to protect the environment. The Town shall report any solid or hazardous waste violation they may become aware of to the appropriate jurisdictional agency.

6-1.10.3 Policy:

Designate Environmentally Endangered Lands as Conservation on the Future Land Use Map. Within two (2) years of the adoption of this plan, lands that are managed by the Brevard County Environmentally Endangered Lands (EEL) program shall be allocated as Conservation on the Future Land Use Map.

6-1.11 Objective:

Intergovernmental Coordination for Managing Conservation Activities. Establish an Intergovernmental coordination mechanism in order to manage natural resources and assist in implementing appropriate laws, ordinances, and plans of existing State, regional and local agencies sharing responsibilities for managing natural resources within the Town.

6-1.11.1 Policy:

Intergovernmental Coordination in Managing Conservation Activities. The Town shall coordinate and cooperate with the County and adjacent local governments to conserve and appropriately use unique vegetative communities located within one or more local jurisdictions.

6-1.12 Objective:

Continuing Evaluation of the Conservation Element Effectiveness. The Town shall use the following policies as criteria in evaluating the effectiveness of the Conservation Element.

6-1.12.1 Policy:

Review the Impact of Changing Conditions on Conservation Policy. The Town shall monitor and evaluate significant changes in the characteristics of natural resources within the Town. Policy implications of such changes shall be examined, and corrective measure shall be pursued. Conservation policies shall be refined as needed in order to remain responsive to evolving problems and issues.

6-1.12.2 Policy:

Schedule, Budget and Implement Programmed Activities. The timely scheduling, programming, budgeting and implementation of programmed conservation activities identified in this Element shall be evidence of the Town's effectiveness in carrying out a systematic program for implementing conservation management goals, objectives, and policies.

6-1.12.3 Policy:

Coordinate with Public and Private Sectors. While continually implementing and evaluating the Conservation Element the Town shall maintain a process of intergovernmental coordination as well as coordination with private sector groups interested in conservation policy and programs. The effectiveness of this approach shall be evaluated by the success of coordination mechanisms in resolving conservation problems and issues.

6-1.12.4 Policy:

Achieve Effective Resolution of Conservation Goals, Objectives and Policies. The effectiveness of the Conservation Element shall be measured by the Town's success in achieving conservation goals, objectives and policies. The Conservation Element incorporates a systematic planning

process for identifying conservation problems and issues and implementing corrective measures.