

APPENDIX D.

**Coastal Management and Recreation and Open Space Element of City of Oldsmar
Comprehensive Plan**

COASTAL MANAGEMENT AND CONSERVATION ELEMENT

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I. INTRODUCTION

The city of Oldsmar is located in the eastern portion of Pinellas County. Unincorporated areas of Pinellas County bound Oldsmar to the north and northwest; by Old Tampa Bay to the south and southeast and by unincorporated Hillsborough County to the east. The character of the city is strongly influenced by its proximity to Old Tampa Bay. The climate is considered to be "subtropical" or slightly cooler than tropical with a yearly average of 74° Fahrenheit. During the summer months temperatures range between 70° and 90° Fahrenheit and a majority of rainfall occurs during this time. The winters are mild with the temperatures ranging between 50° and 70° Fahrenheit.

The 1997 population for the city of Oldsmar is 9,734. Currently, conservation represents the largest single land use, 37.0%, in the city. Most of the acreage devoted to conservation is in the Brooker Creek Preserve that encompasses more than 1,600 acres of city land. The entire preserve is over 7,000 acres. The second largest land use category is undeveloped land at 27.0%.

II. WHO MUST PREPARE A COASTAL MANAGEMENT AND CONSERVATION ELEMENT [9J-5.012(1), F.A.C.]

The geographic location and size of the city of Oldsmar, lying predominantly within the Coastal Planning Area, allows the opportunity to combine the Coastal Management Element and Conservation Element into a single element. Pursuant to Section 9J-5.005(a), Florida Administrative Code (F.A.C.), related elements can be combined provided they meet all necessary requirements.

The purpose of the Coastal Management Element is to plan for and, where appropriate, restrict development activities where such activities would damage or destroy coastal resources, and protect human life, and limit public expenditures in areas that are subject to destruction by natural disasters. The purpose of the Conservation Element is to promote the conservation, use, and protection of the city's natural resources. This combined element will identify and analyze the area's natural resources relative to coastal management and conservation.

III. COASTAL PLANNING AREA [9J-5.012(2)(E)(3), F.A.C.]

Chapter 9J-5, F.A.C., defines the coastal planning area as: an area of the local governments choosing; however, this area must encompass all of the following where they occur in the local government's jurisdiction: water and submerged lands of oceanic water bodies or estuarine water bodies; shorelines adjacent to oceanic waters or estuaries; coastal barriers; living marine resources; marine wetlands; water-dependent facilities or water-related facilities on oceanic or estuarine waters; or public access facilities to oceanic beaches or estuarine shorelines; and all land adjacent to such occurrences where development activities would impact the integrity or quality of the above. When preparing and implementing the hurricane evacuation or hazard mitigation requirements of the coastal management element, the coastal planning area shall be those portions of the local government's jurisdiction which lie in the hurricane vulnerability zone. When preparing and implementing the requirements of the coastal management element water quality, water quantity, estuarine pollution, or estuarine environmental quality, the coastal planning area shall be all occurrences within the local government's jurisdiction of oceanic waters or estuarine waters.

For purposes of this Comprehensive Plan the coastal planning area is all portions of the city except for the Brooker Creek Preserve. This area is depicted on the Coastal Planning and Coastal High Hazard Area map. Many of the structures in this area were built before prior to stringent federal, state, and local regulations designed to protect them from hurricane hazard and as a result, these structures are more susceptible to damage by major storms. A discussion of how this area was identified can be found in Natural Disaster Planning section of this element.

The discussion of natural resources will encompass all areas within the municipal boundaries of the city of Oldsmar. Many similar ecologically environments exist in both the coastal and non-coastal areas of the city, and as a combined Coastal Management and Conservation Element, all natural resources will be addressed in this element.

A. Existing Land Use Inventory [9J-5.012(2)(a), F.A.C.]

1. Residential Land Use

Within the coastal planning area (CPA) residential development consumes approximately twenty-three (23) percent of the total 4562.05 acres of land. The entire city is comprised of 6,162.05 acres of land and slightly more than seventeen (17) percent is devoted to residential land uses. Single family dwellings predominate in the older established section of the city. Other distinct residential communities are located south of State Route (SR) 586 and SR 584 to Safety Harbor and west of County Road (CR) 667 to Lake Tarpon Canal; north of SR 584 to the Brooker Creek Preserve and west of Commerce Boulevard to the west city limit line; and south of Lafayette Boulevard to the south city limit line and west of the Florida Power Corporation right of way to Safety Harbor.

2. Commercial Land Use

Almost six (6) percent of the CPA land use is devoted to commercial development. The type of commercial establishments found within the CPA can be identified as either strip commercial or highway commercial. Throughout the 1980's and the first half of the 1990's commercial activity located within the old central business district had been replaced by new commercial activity along SR 580, SR 584, and SR 586. In 1997 the city established the Oldsmar Town Center Plan to bring commercial development back to the central business district.

3. Industrial Land Use

Industrial land use accounts for approximately seven (7) percent of the total CPA land use. There are two major industrial areas located in the CPA; north of SR 580 to the Florida Power Corporation right-of-way and west of Race Track Road to Commerce Boulevard; and south of SR 584 to the Seaboard Coast Line right-of-way and east of CR 667. Industrial use in the city includes warehouse/light assembly operation and heavy commercial activities.

4. Recreation/Open Space Land Use

Recreation/open space lands account for almost six (6) percent of the total CPA land use. Recreational lands include R.E. Olds Park, Sheffield Park, Lafayette Recreation Center, Oldsmar Civic Club, and Canal Park.

5. Preservation Land Use

Preservation lands account for eleven (11) percent of the total CPA land use. Within the CPA there are two major environmentally sensitive areas; Moccasin Creek and Mobbly Bay. These areas are considered to be of significant environmental or ecological importance.

6. Conservation Land Use

Conservation areas are protected from development and are to be used for passive open space and wetland wastewater effluent disposal. Conservation lands are found in all areas of the city and include isolated wetland areas and those areas around various waterways and drainage ways. However, this acreage has not been incorporated into the total land use area.

7. Public Facility Land Use

Approximately eight (8) percent of the CPA land has been allocated for public facilities. Public facilities can include the city's sewage treatment plant, public schools, and churches. Much of the public facility land is held in right-of-ways that include public rights-of-way, Florida Power Corporation right-of-way, and Seaboard Coast Line right-of-way.

8. Vacant/Undeveloped Land Use

Vacant/undeveloped land accounts for thirty-six (36) percent of the total land within the CPA boundaries. Most vacant land is distributed between residential, commercial, and industrial acreage. The coastal planning area of the city has approximately 1,530.11 acres of vacant or undeveloped land. A further discussion of the various land uses in the city of Oldsmar can be found in the Future Land Use Element of this Comprehensive Plan.

B. Water-Dependent/Water-Related Land Uses [9J-5.012(2)(a), F.A.C.]

Water-dependent/water-related uses within the Coastal Planning Area include a private marina located south of SR 580 on the east branch of Moccasin Creek and public piers located at R.E. Olds Park and Harbor Palms Nature Park. A number of private residences also have docks located along Old Tampa Bay. All water-dependent/water-related uses are identified on the Water Dependent/Water-Related Map.

C. Shoreline Land Use Conflict and Redevelopment [9J-5.012(2)(a), F.A.C.]

The above stated facilities are not in conflict with abutting land uses. The majority of development along the shoreline is low-density residential development. There are no areas of the city in need of redevelopment. To prevent future land-use conflicts in the shoreline area the city will abide by the criteria established in the County-Wide Marina Siting Plan (Appendix A).

D. Economic Base [9J-5.012(2)(a), F.A.C.]

The coastal planning area includes all populated sections of the city, and as such, the economic base of the CPA is the same as that of the city. In 1997, approximately 970 occupational licenses were issued to businesses and individuals engaging in commerce in the city of Oldsmar. Traditionally, the sectors of the city's economy that had the majority of occupational licenses were construction, retail trade, and services. Ten years ago these sectors accounted for over 75% of the city's economy. Today they account for 56%. Business sectors that were non-existent 10 years ago but now play a large role in the city's economy include manufacturing and financial services.

According to the city of Oldsmar Occupational Licensing Department, the following is a breakdown of business sectors receiving occupational licenses in 1997. Approximately 77 licenses are issued to contractors located in the city. The construction sector includes general and special trade contractors. The retail trade sector includes general merchandise stores, food stores, gasoline service stations, and restaurants. There are 323 licenses issued to business in the retail trade sector. The services sector include personal and business services, amusement and recreation services, and professional services such as those provided by a physician and an attorney. Approximately 148 licenses are issued to services sector businesses and individuals. The financial services sector includes banks, credit unions, insurance companies and agents, and real-estate agents. This sector has 128 issued licenses. The final sector of the economy with a large number of licenses is manufacturing, which totals 63 licenses for the year. Those sectors that were either nonexistent or which contributed little to the city's economic base included agriculture, mining, and transportation services.

The implementation of the city of Oldsmar's future land use plan will affect the existing economic base. There are approximately 1,530 acres of vacant/undeveloped land presently within the CPA. Vacant/undeveloped land is comprised of 649.99 acres with a residential land use designation, 440.96 acres with an industrial land use designation, 64.81 acres with a commercial land use designation, and 374.35 acres with other classifications. The implementation of the city's future land use plan should result in increased activity and employment in the construction, manufacturing, retail trade, and service sectors.

E. Existing Infrastructure [9J-5.012(2)(h), F.A.C.]

1. Sanitary Sewer and Potable Water Facilities

The city owns and maintains those sewer lines found within its municipal boundaries. Sewage from the city is treated at the Oldsmar Wastewater Treatment Plant. The city also owns and maintains the potable water distribution system. The Pinellas County Water Supply and the city of St. Petersburg provide the potable water.

2. Drainage

Due to the city's flat topography, most of the drainage is internal and remains in the swamps and groundwater rather than flowing out of the area through surface drainage paths to Tampa Bay. In areas close to the shoreline drainage is directly into estuarine waters.

3. Bridges

The city of Oldsmar does not own or maintain any bridges, seawalls, or canals.

4. Public Access

Only limited public access to estuarine waters exist because of the tidal flats. The community fishing piers in R.E. Olds Park and Harbor Palms Nature Park allows access for recreational purposes. No public boat ramps exist. Greentree Marina, located at the head of Moccasin Creek, has a boat ramp and a boat repair/storage facility.

5. Roads

The main road along Oldsmar's waterfront is Shore Drive. Other major roads in the coastal planning area include SR 580, SR 584, SR 586, St. Petersburg Drive (state owned), County Road (CR) 752, and CR 667. The city owns and maintains all residential roads within the CPA.

IV. EFFECTS OF FUTURE LAND USE ON NATURAL RESOURCES [9J-5.012(2)(B), F.A.C.]

Future development on remaining vacant and undeveloped land is limited. A majority of the city is composed of soils with severe characteristics, constraining growth and intense development. Much of the expected population growth will occur along Tampa Road and the proposed East-West connector road. As residential areas are developed, there will be a need for increased access to the shoreline and boat access to Old Tampa Bay. Development also has the potential to substantially increase the amount of urban stormwater runoff reaching existing waterways.

The natural resources remaining within the coastal planning area will not be severely impacted by proposed future development as most of the areas around Moccasin Creek and Mobbly Bay have been designated preservation and cannot be disturbed. However, plans for the construction of 58 homes in the vicinity of Mobbly Bay are under way. To reduce the environmental impact to Mobbly Bay this

development will have a buffer zone of preservation land and on-site stormwater retention. These measures will help reduce non-point pollution discharge into Mobbly Bay.

A. Vegetative Cover and Wetlands [9J-5.012(2)(b), F.A.C. and 9J-5.013(1)(a) (1), F.A.C.]

Much of the native vegetation in the city of Oldsmar, outside of Brooker Creek Preserve and Moccasin Creek has been replaced with urban tolerant vegetation. The growth and expansion of opportunistic exotic plant species such as Brazilian pepper (*Schinus tere*), Australian pine (*Casuarine spp.*), and punk tree (*Melaleuca luecodendron*) have encroached on native flora. The control and removal of these exotic species is necessary to reestablish and protect native upland and wetland habitats. For example, the Australian pine lacks a valuable erosion controlling root system, prevents the establishment of dense undergrowth, and tends to be easily blown over.

The Vegetative Cover map indicates the area of vegetative cover in the city of Oldsmar. A variety of vegetative communities can be found in the Oldsmar area including: pine flatwoods, oak hammock, freshwater swamps, cypress swamps, hardwood swamp, mangroves, salt-marsh areas, tidal flats, and marine grass beds.

The uplands include a variety of vegetation types depending on the soil moisture level. Due to high temperatures and the absence of water many of the animals found in these communities are burrowers.

Pine flatwoods are one of the most prevalent community types in the area. These forests are found on gently sloping lands with sandy soils that are moderately well drained with a fluctuating water table. Pine flatwoods are dominated by longleaf and slash pine. The pine flatwoods are composed of a dense shrub layer of saw palmetto. The flatwoods are the most common vegetative community in Florida and are considered a transitional community type. They are a valuable wildlife habitat and provide abundant cover and food sources.

The oak hammock consists of live oak-slash pine or laurel oak-cabbage palm associations. Within the oak hammock community are a number of tree species: laurel oak; live oak; water oak; southern magnolia; and red bay. Typically, oak hammocks develop along the upper edges of wetland forests and function as physical buffers to flood waters and noise, and as chemical buffers to water and air pollution.

Flatwood swales are lowland areas that are seasonally flooded. These transitional lands are situated within pine flatwoods, connecting wetland systems. Flatwood swales function as seasonal drainage corridors and provide water quality enhancement benefits.

The East Lake Tarpon area is the location of the largest freshwater swamps and sloughs in the county. The freshwater marshes are low-lying communities dominated by herbaceous plants with poorly drained soils that are frequently inundated by freshwater. Cattail, arrowroot, and sawgrass are some of the dominant species found in the area. These areas are valuable for habitat, erosion prevention, and aquifer recharge. Interior wetlands provide an important function in the hydrological cycle by receiving and retaining runoff from upland areas during the wet season; and by distributing excess water through percolation and evaporation during the dry season.

Cypress swamps are low-lying forests dominated by bald and pond cypress. These areas are frequently inundated with freshwater and have soils that are highly organic and poorly drained. They are a valuable community for wildlife, especially birds. The function of the cypress community is water storage and water quality enhancement by nutrient uptake and adsorption of contaminants by organic matter in the soil.

Hardwood swamps are also located in low-lying areas and floodplains. The soils are similar to cypress swamps although they are usually more sandy with higher percolation rates. Water plays an important

part in this community. The swamp hardwood communities that lie along the rivers and water bodies are sensitive to changes in the water cycle. Improper water management practices in both the city and adjacent areas can have a detrimental effect on these communities. Similar to cypress swamps in function and productivity, these areas also assimilate inorganic and organic waste and reduce pollution levels.

There are three preservation areas within the city of Oldsmar. First is Moccasin Creek; the mouth of the creek contains small fringe marsh areas. The creek is subject to both saltwater tidal intrusion from the South and fresh water runoff from the North. The second area is Mobbly Bay in the area of Booth Point. Booth Point is a peninsula in Old Tampa Bay that separates the smaller embayment of Safety Harbor and Mobbly Bay. The largest examples of salt-marshes are found mainly along east Booth Point. The tidal marshes adjacent to Mobbly Bay also consist of salt marsh and mangrove vegetation. Mosquito ditches cut across these marsh areas to improve circulation. The final preservation area is Brooker Creek Preserve. The Brooker Creek Preserve encompasses over 7,000 acres including 1,600 acres of land in north Oldsmar. The primary function of the preserve is to recharge ground water and provide wildlife habitat. The preserve also helps to reduce pollution in Tarpon Lake.

Estuarine wetland vegetation types are dependent upon the inundation of the tides and freshwater inputs. Under natural conditions, mangroves grow in bands or zones with the distribution controlled by environmental factors. Mangroves occur within the high marsh area and down into the upper intertidal range. Zonation patterns are apparent with white mangroves (*Laguncularia racemosa*) and buttonwood (*Conocarpus erecta*) occurring most inland, black mangroves (*Avicennia germinans*) in the middle zone, and red mangrove (*Rhizophora mangle*) along the waters edge.

Additional salt-marsh communities exist within the upper intertidal zone. The primary marsh vegetation consists of smooth cordgrass (*Spartina alterniflora*) and black needlerush (*Juncus roemerianus*). The plants serve as the initial colonizer of an area; and provide a low energy environment for future establishment of young mangrove species. As the mangrove matures and develops a canopy, the marsh species are then excluded due to light requirements.

Subtidal ecosystems are composed of seagrass beds. Due to poor water quality, there are minimal seagrass beds in the Oldsmar area of Old Tampa Bay. The seagrasses consist of four species in the area and include the turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), shoal grass (*Halodule wrightii*), and widgeon grass (*Ruppia maritima*). Seagrass beds currently occur in relatively shallow water (1-1.5 feet in depth) to satisfy light requirements.

The diminished wetlands give way to tidal flats that are exposed at low tide. The mudflats found in the area form an anaerobic layer. The significance of these mudflats is not completely understood, although they may be a transitional community to establish higher levels of vegetation. These flats can provide feeding grounds, for birds at low tides, and fish and crustaceans at high tide.

The importance of mangrove forests, salt marshes, and seagrass beds to coastal and estuarine ecosystems have been well documented over the past two decades. 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. Also 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 ecosystems, 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 and become trapped at the base of the plants. In this way mangroves, marshes, and

seagrasses reduce turbidity, increase sedimentation rates, stabilize sediments, attenuate wave action on adjacent shorelines, and reduce flood crests and flow 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.

As urbanization has taken place, the balance of nutrients has been disturbed, principally by the introduction of too many nutrients in a directly usable form. Excessive input of suspended vegetation in the intertidal zone will continue to contribute to ecological imbalance. Much of the pollution problems associated with aquatic vegetation is due to urban stormwater runoff.

B. Groundwater [9J-5.013(1)(a)(1), F.A.C.]

There are two water-bearing aquifers within the area surrounding the city of Oldsmar: the surficial and the Floridan aquifers. The first aquifer below land surface is the surficial aquifer, also known as the water table aquifer. The surficial aquifer is composed primarily of sands, organic matter and discontinuous, sandy to marly, limestone beds. The water table ranges from near sea level along the coast to 80 feet above sea level along the Pinellas Ridge. Along the shoreline the saturated thickness of the surficial aquifer averages between 20 to 30 feet. The surficial aquifer has only limited use as a supplemental source of water and is predominantly used for irrigation in nearby communities.

The surficial aquifer is important because of its hydrologic function as a water reservoir for the Floridan Aquifer. Saltwater intrusion can be prevented by the maintenance of the surface water table and the surficial aquifer. According to Hutchinson (1984), 22 inches of the annual rainfall enters the surficial aquifer in Pinellas County and two inches leak downward to the Floridan Aquifer. Maintaining the highest possible shallow aquifer is instrumental to recharge of the lower aquifer.

The confining layer between the two aquifers is composed of finer grained sands and clays of the Hawthorne Formation. This low permeable clay confining layer separates hydraulically the surficial aquifer from the underlying Floridan Aquifer. The average thickness of the confining layer is approximately 20 feet.

Underlying the confining layer is the Floridan Aquifer that provides Florida with a large percentage of its drinking water and is the principal potable ground water source in Pinellas County. The Floridan Aquifer is found in porous limestone underlying the county. The thickness of the Floridan Aquifer ranges between 1000 and 1200 feet.

Recharge to the Floridan Aquifer is considered very low in the older portions of the city of Oldsmar. The nearest recharge area is the Brooker Creek Watershed, which has a drainage basin of 42 square miles. The outflow to Lake Tarpon is the lowest point in the basin at an elevation of 2.5 feet above mean sea level. The Tarpon Lake Outfall Canal, which was built after the diking of the Lake Tarpon sinkhole, reduced the underlying potentiometric surface and induced saltwater intrusion.

A small portion of the city utilizes septic tanks for domestic waste disposal. A septic tank utilizes soil absorption for the liquid portion of sewage. Not all soils in the Oldsmar area are suitable for septic tanks. Suitable soil requirements for septic tanks include; low flood hazard, low wetness, good permeability, and a deep bedrock layer. Once drained the liquid can flow in three directions; down into the surficial aquifer and eventually recharge the Floridan Aquifer; laterally along an impermeable deposit within the groundwater; or up by evaporation and plant uptake. The surficial aquifer is close to the land surface and made up of saturated, unconsolidated material, and as such, is vulnerable to contamination from septic tank pollutants. These pollutants can also enter the Floridan Aquifer by recharge from the surficial aquifer or drainage into sinkholes and limestone fissures. Sinkholes serve as a direct connection with the aquifer without benefit of soil filtration, therefore causing a high potential for contamination.

Pollutants associated with septic tanks include pathogenic bacteria, viruses, and nitrates. The grain size of the soil determines the effectiveness of filtering out pathogenic bacteria. Nitrogen enters the soil from septic tank effluent in the form of ammonia. Soil is a poor absorber of nitrate and it is "likely that most of the nitrogen entering the soil system will eventually enter ground or surface water." (Hall, 1975)

The impact of the water supply system on the water resources is regulated by SWFWMD under its consumptive use permitting program. To ensure that the water resources are adequately protected, withdrawal quantities and the length of the permit duration are determined by SWFWMD hydrologists.

C. Air Quality [9J-5.013(1)(a)(1), F.A.C.]

The Pinellas County Department of Environmental Protection is responsible for monitoring air quality in the area around Oldsmar. The department maintains 13 monitoring sites throughout Pinellas County. Two of these sites are in the vicinity of Oldsmar. The first site is at the intersection of Curlew Road and McMullen Booth Road, approximately 0.5 miles from Oldsmar. This site measures Carbon Dioxide. The second monitoring station is located at John A. Chestnut Sr. Park in the East Lake Tarpon Area. This station is approximately 5 miles from Oldsmar and measures Sulfur Dioxide, Ozone, and PM-10 (particulates).

According to the 1995 Air Quality Report prepared by the Pinellas County Department of Environmental Management Air Quality Division the air quality in and around Oldsmar is good. In 1995, Pinellas County had 299 days in which the air quality index was in the 'good' range and 66 days in the 'moderate' range. There were 0 (zero) days when the air quality index moved into the 'unhealthy' range. The study sites several environmental and topographic factors that help to keep the air quality in Oldsmar good. Among these factors are prevailing coastal winds that assures through transport of air particles and a flat course topography that provides ample mixing and dilution of particles. The two monitoring stations near Oldsmar did not record any days when the national ambient air quality standards (NAAQS) were exceeded.

Ozone (O₃) is a colorless and unstable form of oxygen that is the primary component of smog. Ozone is not emitted directly in to the atmosphere but is the by-product of a chemical reaction between volatile organic compounds (VOC) and nitrogen oxides (NO, and NO_x). The catalyst for this chemical reaction is sunlight. It stands to reason that the highest levels of ozone are measured in the summer months when there are more hours of daylight. The East Lake Tarpon station measured a one-hour maximum level of 0.089 ppm, a 24-hour maximum of 0.058 ppm, and an annual mean of 0.024 ppm. These are well below the NAAQS for ozone of 0.12 ppm.

Carbon monoxide (CO) is the result of the incomplete combustion of fuels. Transportation related resources account for over 98% of all CO pollution in the country. High levels of CO have been associated with several health related problems including impaired vision, loss of manual dexterity, and loss of short term memory. CO is measured at the Curlew Road monitoring station. In 1995 this station had a one hour maximum of 4.2 ppm and an eight hour average of 2.0 ppm. These measurements are below the NAAQS for CO of 35.0 ppm for a one hour maximum and 9.0 ppm for an eight hour average.

Sulfur dioxide (SO₂) is the result of power-generating plants that burn fossil fuels such as coal and oil. Because most power-generating plants in the area are downwind from Oldsmar, SO₂ levels are low. Sulfur dioxide readings at the East Lake Tarpon station were 0.19 ppm for a maximum three hour average and a 0.02 ppm annual mean. These levels are well below the NAAQS of 0.5 ppm for a maximum three-hour average and 0.03 ppm for an annual mean.

Nitrogen dioxide (NO₂) is the result of coal and oil fired electric utility boilers and transportation sources such as gasoline and diesel powered vehicles. There is one NO₂ monitoring site in Pinellas County. It is at Azalea Park, almost 20 miles from Oldsmar. This site is near the center of the highest population

density in the county and is therefore assumed to have a higher reading than if the site was closer to Oldsmar. The Nitrogen Dioxide annual mean level at this site was 0.01 ppm in 1995. This was under the 0.05-ppm level established by the NAAQS.

Particulate matter (PM-10) can be generated by several sources. Chief among them are transportation, open burning of trash, fugitive dust, industrial operations, and diesel fuel combustion. The east Lake Tarpon station measured a 24-hour maximum of 50.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and an annual mean of 20.0 $\mu\text{g}/\text{m}^3$. The NAAQS is a 24-hour maximum of 150.0 $\mu\text{g}/\text{m}^3$ and an annual mean of 50.0 $\mu\text{g}/\text{m}^3$.

To maintain these low levels of air pollution the city will continue to enforce its Land Development Codes and to work with federal, state, and local environmental agencies. As the population of Oldsmar grows, the risks of increased air pollution exist. With proper management, air pollution levels can be maintained below National Ambient Air Quality Standards.

D. Floodplains and Areas Subject to Coastal Flooding [9J-5.012(2)(b), F.A.C.] and [9J-5.013(1)(a)(2), F.A.C.]

Pinellas County falls within the geographical region known as the Terraced Coastal Lowlands. Three terraces have been identified in Pinellas County and are known as the Wicomico, Penholoway, and Pamlico terraces. The most recently formed and lowest terrace is the Pamlico, which incorporates the Oldsmar area. This terrace encompasses lands generally between 30 feet elevation and present day sea level. This topography is evident north and west of the city of St. Petersburg and South and East of Lake Tarpon where large expanses of land are flat and low-lying. The Hawthorn clays underlie the Pamlico sands generally south of a line extending from upper Safety Harbor to the Gulf, just north of Palm Harbor.

The city's topography indicates that a large portion of land falls within either Flood Zone A or Flood Zone B. Flood Zone A is defined as those areas that fall within the 100-year floodplain. Flood Zone B are those areas between the 100 and 500-year floodplain.

Floodplains act as natural and temporary water overflow areas for rivers and water bodies during storms. Wetlands located in the flood plain serve as additional floodwater storage areas, while trees and other vegetation serve as windbreakers and slow the flow of destructive floodwaters. Unfortunately, many of the flood prone areas in the city are already built upon; and many existing residential and commercial structures, as well, as many activities within the city occur in the floodplain.

The city of Oldsmar addresses flood protection in its Land Development Code. The city is divided into three districts; floodway districts, flood fringe districts and coastal high hazard districts. The Land Development Code also regulates use in the floodplain.

E. Wildlife [9J-5.012(2)(b), F.A.C.] and [9J-5.013(1)(a)(5), F.A.C.]

The estuarine environment of Old Tampa Bay and the Brooker Creek Preserve attracts a large variety of marine life, birds, and animals. Below is a description of the species that are commonly found around Oldsmar.

1. Aquatic [9J-5.012(2)(b), F.A.C.] and [9J-5.013(1)(a)(5), F.A.C.]

The intertidal and subtidal estuarine wetlands surrounding Oldsmar perform many natural functions having intrinsic value. Of all bodies of water, such as Old Tampa Bay including Mobbly Bay and Safety Harbor, the estuarine systems offer the greatest diversity in water composition. An estuary is defined as a "semi-enclosed coastal body of water which has free access to the open ocean and within which sea water is measurably diluted with freshwater derived from land drainage." (Pritchard, 1967) 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.

Oysters (*Crassostrea virginica*) and clams (*Mercenaria* and *M. campechiensis*) are important natural resources in the area. Oysters and clams have historically provided food to man, although presently there is no harvesting of shellfish in the bay due to its poor water quality. Oysters and clams 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 constitute a major source of food for commercial and recreational 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. The oysters and clams provide a valuable food source for birds and aquatic wildlife.

The estuary and contiguous coastal waters surrounding the city of Oldsmar and the Gulf of Mexico serve as home, feeding ground, and/or nursery for more than 270 species of resident, migrant, and commercial fishes of the Gulf of Mexico that utilize estuaries at some time in their life cycle. (US Fish & Wildlife Service [USFWS], 1984) 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. The most critical use for numerous species is as a protected nursery area for larval and juvenile life stages. The protective function arises from the generally greater osmoregulatory capabilities of younger marine fishes, shallow depths, and protective cover. Reduced salinity in estuarine waters tends to exclude larger marine restricted fishes that otherwise prey on young juveniles and larvae. The nursery function is developed from high primary productivity of estuaries that provide a ready source of food.

Some of the estuarine dependent and recreational important fishes found in the area include red drum, spotted seatrout, snook, sheepshead, southern flounder, Florida pompano, black drum, and mullet. Red drums spawn near-shore, spend the summer in the estuary, and move into the near-shore Gulf with the onset of cold weather. Spotted seatrout spawn in the estuary and utilize seagrass meadows as their primary habitat. Snook spawn near the tidal passes, but spend their life within the estuary. Sheepshead spawn along sandy beaches. Juvenile sheepsheads migrate to the seagrass beds; while the adults generally inhabit areas of rocks, pilings, and seawalls in the Bay. Some of the endangered species of fish found in this area include Atlantic sturgeon and rivulus.

Development within estuarine wetland areas, known as the Aquatic Resource Management Areas is currently managed by the Pinellas County Water and Navigation Control Authority (PCWNCA). The purpose of the PCWNCA in this capacity is not to deny the use of the aquatic resources, but rather to develop methods so those resources can be utilized in such a fashion that allows man's enjoyment of these areas in a manner which preserves and enhances their overall functions and benefits.

The PCWNCA has established regulations for dredge and fill, dock and seawall construction, and mangrove alteration and removal, all of which would benefit the future viability of the area.

Portions of the Aquatic Resource Management Area (ARMA) provide a critical habitat for manatees and turtles. The manatee (*Trichechus manatus*) is an endangered species. In 1978 the Florida Manatee Sanctuary Act was passed which provided for regulation of boat speeds in specific areas for manatee protection. The Marine Mammal Protection Act of 1972 protects the manatees on a federal level.

There are five species of sea turtles that have been sighted within the Tampa Bay region. Local species include: the Atlantic loggerhead (*Caretta*), the Atlantic ridley (*Lepidochelys kempi*), the Atlantic leatherback (*Dermochelys coriacea*), the Atlantic hawksbill

(*Eremochelys imbricata*), and the Atlantic green turtle (*Chelonia mydas*) (Huff et al., 1981). All of these species are endangered, except the loggerhead which is threatened. (US Dept. of Interior, 1980).

Protection of aquatic wildlife resources can additionally be accomplished through preservation of habitat. The existing subtidal seagrass beds and remnant mangroves and salt-marsh communities serve as feeding, breeding, and refuge areas for the estuarine and marine fish and wildlife. Preservation of remaining habitats, and restoration or creation of additional vegetation systems, is necessary in the maintenance of productive populations.

In addition, aquatic fish and wildlife species require acceptable water quality conditions to exist and reproduce. Conservation of estuarine and marine water quality can be assisted by strict control of stormwater runoff from new and redevelopment projects. Projects established to improve circulation and flushing could also improve water quality conditions.

The lakes and rivers in the area provide habitat for freshwater fish. Freshwater fish in the area can include the golden topminnow, mosquitofish, least killifish, Florida gar, bluefin killifish, and largemouth bass.

Lake habitats may be divided into three zones: littoral, limnetic and profundal. The littoral zone is the most productive and occurs around the edges of lakes where sunlight penetrates to the bottom. Rooted aquatic plants are found in this area and provide food and shelter for a variety of invertebrates and small fish. The limnetic zone is the open water part of the lake but only to the depth of light penetration. The profundal zone lies below the depth of maximum light penetration and the bacteria and fungi found in this zone recycle the nutrients found in the water column and on the lake bottom.

The protection of the freshwater flow to the marsh areas and the elimination of habitat destruction will enable estuarine areas to continue to function as viable biological systems and to support fish populations.

2. Terrestrial [9J-5.012(2)(b), F.A.C.] and [9J-5.013(1)(a)(5), F.A.C.]

Oldsmar has approximately 2,000 acres of land designated as preservation or conservation. The goal of these designations is to return as much of this land as possible to its native condition. A large part of this effort is the Brooker Creek Preserve. With its immense size, over 7,000 total acres, there is ample room for wildlife species of all sizes. In the Mobbly Bay and Moccasin Creek areas land is being returned to its natural state by planting and encouraging the growth of mangroves and other aquatic and terrestrial vegetation. The area around Moccasin Creek is virtually untouched and through the preservation classification it will remain that way. While urbanization has eliminated much of the habitat suitable for many game and non-game species efforts are underway to reverse the trend. Several different vegetation communities exist within the city of Oldsmar that determine the wildlife found in the area: pine flatwoods; oak hammock; swamp hardwood; cypress swamp; freshwater marsh; and mangrove.

Within the ecological community of pine flatwoods can be found a variety of animals including deer, foxes, squirrels, armadillos, rabbits, skunks, raccoons, opossums, frogs, rattlesnakes, and a variety of birds. Bird species can include doves, wrens, pine warbler, American kestrels, and red-shoulder hawks.

The oak hammock ecological community, which functions as a physical buffer to flood waters and a chemical buffer to water quality, serves as a transition zone between flatwoods and hardwoods. Animals found in this area are very similar to those found in the flatwoods.

Vegetation in this community provides nesting areas for a variety of animals and birds including those found in the pine flatwoods, as well as, woodpeckers and owls.

The swamp hardwood community's dense vegetation provides good cover and food sources for wildlife species which includes deer, squirrels, minks, otters, raccoons, turtles, and snakes; as well as, a variety of birds: owls; hawks; turkey; and various songbirds.

The cypress swamp community provides habitat for a few mammals such as minks and raccoons; but is generally inhabited by reptiles, such as, alligators, frogs, turtles, and water snakes. Birds found in this community include owls, egrets, herons, limpkins, wood ducks, and wood storks. Fish species found in the cypress strands can include the golden topminnow, sunfish, mosquitofish, and redbfin pickerel.

The freshwater marsh community provides habitat for both wintering and year-round birds and waterfowl. Mammals that live in this area include minks, otters, raccoons, marsh rabbits, and Florida water rats. Reptiles found in this community include frogs, turtles, snakes, and alligators. Birds that make use of this environment include herons, egrets, ibis, sandhill cranes, snipes, Florida ducks, marsh hawks, and swallow-tailed kites.

The mangrove community supports a variety of wildlife. Animals inhabiting the mangrove area can include raccoons, alligators, and snakes. Birds abound in this area including the blue heron, gull, brown pelican, prairie warbler, roseate spoonbill, osprey, wood stork, southern bald eagle, and white ibis.

A number of wildlife species that have been declared as endangered, threatened, or of special concern are likely to occur in the Oldsmar area. These species include the American alligator, eastern indigo snake, gopher tortoise, Florida gopher frog, wood stork, southern bald eagle, osprey, sandhill crane, and white ibis.

F. Minerals [9J-5.013 (1)(a)(3), F.A.C.]

There are no known commercially valuable minerals in the city.

G. Soil [9J-5.013 (1)(a)(4), F.A.C.]

There are four major soil associations found in the city of Oldsmar: Wabasso-Elred-Oldsmar, Tidal Swamp-Tidal Marsh, Astor, and Myakka-Immokalee-Pomello. These soils are identified on the Soils map. Myakka-Immokalee-Pomello soils are nearly level and gently sloping poorly drained and moderately well drained, sandy soils that have layers weakly cemented with organic matter at depths of 40 inches or less. "This association is characterized by broad flats between sloughs, low ridges and knolls and many small, shallow, grassed ponds. It occurs extensively throughout the county. Drainage is through the soils and into a few small streams, drainage ditches and lakes."(Soil Conservation Service [SCSI, 1972) The Astor association has nearly level, very poorly drained sandy soils that have a thick surface layer high in organic-matter content. The Tidal Swamp-Tidal Marsh association is characterized by level areas that are inundated daily by tides; interspersed with somewhat higher areas that are inundated less frequently. The Wabasso-Elred Oldsmar association has nearly level, poorly drained sandy soils, some of which have layers weakly cemented with organic matter at depths of 40 inches or less.

The soil's lack of drainage capabilities becomes a concern as urbanization continues to take place in the city. The increase of impermeable surfaces leads to sheetflow problems. Much of the city's land can be defined as urban land. Grading, filling, and shaping for urban development have altered this land. The Soil Conservation Service (SCS) refers to this land as "major soil properties that originally limited urban

uses which have been overcome to an acceptable extent." (SCS, 1972) Other SCS soil types that underlie the city of Oldsmar include the following:

- Immokalee fine sand that is nearly level poorly drained soil on broad flats between sloughs. It also occurs in small areas at higher elevations in association with better-drained soils.
- Myakka fine sand that is nearly level poorly drained soil on broad flats between sloughs and swamps.
- Astor soils that are nearly level very poorly drained sandy soils in swamps.
- Charlotte fine sand that is nearly level poorly drained soil in grassy sloughs and shallow depressions in the flatwoods.
- Elred fine sand that is nearly level poorly drained soil on broad, low ridges in the flatwoods.
- Felda fine sand, ponded that is nearly level, poorly drained soil in depressions and grassy sloughs. It is covered with shallow water during wet periods.
- Manatee loamy fine sand that is nearly level very poorly drained soil that has a loamy subsoil.
- Oldsmar fine sand that is nearly level poorly drained sandy soil on broad low ridges in the flatwoods.
- Palm Beach sand that is nearly level, well drained sand mixed with shells and shell fragments. It consists mainly of material dredged from nearby shallow water to fill dikes.
- Pinellas fine sand that is nearly level, somewhat poorly drained soil around sloughs and ponds in the flatwoods.
- Pompano fine sand, ponded which is nearly level, poorly drained sand soil in grassy sloughs and shallow depressions in the flatwoods. This soil is covered with water for two to six months in most years.
- Wabasso fine sand that is nearly level poorly drained soil on broad, low ridges in the flatwoods. Wabasso fine sand is periodically wet but responds well to water-control practices.

The soil make-up of the land helps to determine whether or not an area should be classified as conservation or preservation. Preservation areas are of major ecological, hydrological and physiographic significance to the public at large. These are areas that need to be protected from any further development. The preservation concept includes consideration of ecologically sensitive flora and fauna, as well as, fragile archaeological sites and any unique environmental features or systems peculiar to the region. These areas can include beaches, mangrove areas and marine grass beds, in addition to aquatic areas that include aquatic preserves and Class I and II waters.

Conservation areas are defined as those areas that are environmentally sensitive and valuable lands that need to be protected from any activity that would significantly alter its ecological integrity, balance or character. These areas are lands or waters within the coastal planning area that provide buffer zones for preservation areas, but are not absolutely critical to regional ecological integrity. However, because of their physical character or present use, these areas require special precautions when being converted to development in order to avoid direct or indirect consequences harmful to public health, safety, and welfare. These areas include hurricane velocity zones, areas below five feet mean sea level, areas within the 100-year floodplain, smaller groupings of mangrove trees, smaller freshwater swamps, and wildlife refuges.

V. Impact of Future Land Uses on Historic Sites [9J-5.012(2)(c), F.A.C.]

The city has no properties listed in the National Register of Historic Places, but several are listed in Florida's Master Site File. There are three (3) sites listed in Florida Master Site file as archaeological sites. They are site No. 8PI 83 (located in the Greentree Community), 8PI 78 (the Sunny Point area), and 8PI 75 (R.E. Olds Park). All three sites have questionable archaeological value with only flint flakes being observed. The Oldsmar Bank building is also listed on the Florida Master Site file and was renovated in 1990 at a cost of \$450,000. The building now houses the Oldsmar Public Library. There is one historically significant house listed on the Florida Master Site File, It is the James Thompson House

located at 313 Park Boulevard. This Comprehensive Plan does not propose any changes that would effect these historical properties.

VI. Estuarine and Surface Water Environment [9J-5.012(2)(d), F.A.C.]

A. Surface and Estuarine Waters Inventory [9J-5.012(2)(d), F.A.C.]

Surface water resources within the city of Oldsmar include the surrounding estuarine waters of Safety Harbor, Mobbly Bay, Moccasin Creek, and Lake Tarpon Canal. Three creeks; Lake Tarpon Canal/Brooker Creek, Rocky Creek, and Sweetwater Creek drain most of the area north of Old Tampa Bay. Portions of all three creeks have been channeled with control structures to regulate flow and prevent saltwater intrusion.

Old Tampa Bay, a large segment of Tampa Bay forms the eastern boundary of most of central Pinellas County. It has a surface area of 57,834 acres and an estimated volume of 616,625 acre-feet (Department of Environmental Regulations (DER), 1982). Old Tampa Bay receives discharge from numerous streams, wastewater treatment plants, and urban stormwater runoff. Lake Tarpon also drains into the Bay through Lake Tarpon Canal. Dredge and fill activities have occurred in this area and both the Courtney Campbell Causeway and the Howard Frankland Bridge inhibit tidal flushing.

The water quality of Old Tampa Bay has been improving over the last 10 years. Much of this improvement is due to changes made at domestic wastewater treatment facilities. As improvements have been made to wastewater treatment facilities the impact of non-point source runoff has become more apparent. Non-point source pollution (urban stormwater runoff) has a major impact on the waters of Old Tampa Bay. According to the 1989 Pinellas County Comprehensive Plan, urban stormwater runoff can be characterized as follows:

- Biochemical Oxygen Demand concentrations can exceed the criteria for treated sewage effluent.
- Stormwater runoff is a major source of nitrogen and phosphorous pollution in receiving bodies.
- Stormwater runoff is a primary source of lead and other heavy metals. In addition, other toxic materials such as pesticides and polychlorinated biphenyl's are also discharged in to Old Tampa Bay.

Booth Point is a peninsula separating Safety Harbor from Mobbly Bay in northern Pinellas County. Mobbly Bay, part of Old Tampa Bay, represents the northwest extension of Tampa Bay. About 6,000 acres of land are contained in the Mobbly Bay drainage basin. Mobbly Bay receives freshwater input from Mobbly Bayou and tidal exchange from the waters of Old Tampa Bay. The water quality of Mobbly Bay has not been thoroughly investigated. However, Table 1 provides average values for water quality parameters at a station in the vicinity of Booth Point. Mobbly Bay receives large amounts of nitrogen from two major contributing bayous, Mobbly Bayou and Boat Bayou. The Florida Power Corporation also maintains an electrical generating plant, the Higgins Generating Plant, on Booth Point which releases thermal effluent into lower Mobbly Bay. Tidal flushing is poor in this area. A study by the Hillsborough County Environmental Protection Commission found that particles dispersed in northern Old Tampa Bay may take up to 20 months to flush (Kunneke and Palik, 1984).

Moccasin Creek flows into Old Tampa Bay through a minimally developed portion of Pinellas County and consists of approximately 24 acres. The mouth of the creek contains small fringe marsh areas with adjacent residential development. Moccasin Creek has the potential to remain a natural tributary of Tampa Bay. Any alteration of the creek is subject to federal, state, and county laws as well as local ordinances. Potential pollution sources include residential and industrial stormwater runoff. The creek is primarily used for recreational (both passive and active) and conservation purposes.

Lake Tarpon Canal is a controlled depth canal that serves as an outfall for Lake Tarpon into Safety Harbor and is used to lower the lake periodically. The outfall canal was completed in 1971 and midway

down the structure is a saltwater barrier/flood control structure. A study done in 1979 indicated that erosion along the shore of the Outfall Canal had been a problem since construction. Dredging occurred in the littoral zone and the data indicated that dredging has increased the erosion along the canal and that emergent aquatic vegetation is the major contributing factor leading to bank stabilization (Southwest Florida Water Management District [SWFWMD], 1979).

The estuarine waters abutting Oldsmar are classified as Class II. According to the Department of Environmental Regulation, Class II waters are suitable for swimming and the propagation and management of fish and wildlife. In addition, all waters of the state surrounding Pinellas County have been designated as an aquatic preserve. The surface water bodies surrounding the city of Oldsmar represent a significant natural and recreational resource. Existing and future utilization of surface waters must consider maintenance of water quality for recreational uses and fish and wildlife propagation.

B. Water Quality [9J-5.012(2)(d), F.A.C.]

In and around the city of Oldsmar, estuarine waters are derived from Old Tampa Bay and Mobbly Bay; and are diluted with freshwater inputs from riverine sources, stormwater runoff, groundwater discharges, and wastewater effluent disposal.

The estuarine waters are classified as Class II by DEP. Class II waters are of such a quality or have the potential to be recreational or commercial shellfish, areas.

The designation of an area as a particular class does not necessarily indicate its suitability for the associated use. The goal is to upgrade waters, if necessary, and maintain them in the designated class. This is to be accomplished through the permitting process; whereby, discharges are kept to cumulative levels not in excess of standards for the water quality classifications.

In the Hillsborough County Environmental Protection Commission's Surface Water Quality Report 1992-1994, the water quality of Old Tampa Bay was generally good. This is an improvement from the 1980's when these waters were considered poor. The study credit improvements made at domestic wastewater treatment plants for the rise in water quality. Florida regulation now states that all effluent discharge into Tampa Bay, or its tributaries, must meet advanced wastewater treatment standards. These standards are 5 milligrams per liter (mg/l) of biochemical oxygen demand (BOD) and total suspended solids (TSS), 3 mg/l of total nitrogen, and 1 mg/l of total phosphorus.

According to the Water Quality Report the highest water quality index (WQI) value in 1994 was 89.9 at a station in lower Tampa bay. The lowest WQI value was 65.9 near Palm River in MacKay Bay. The nearest water testing site to Oldsmar is station 46 nearly Mobbly Bay. Data for this station is presented in Table 1. Thermal effluent discharge from the Higgins Generating Plant and urban stormwater runoff from the Oldsmar area affect water quality in Mobbly Bay.

As discussed earlier, urban stormwater runoff is a serious pollution problem because pollutants can enter the bay without going through natural filtering processes. Over the three-year period of this report 1994 had the lowest water quality. One of the reasons for the 1994 decrease in water quality was higher than average rainfall, 47.23 inches. Both 1992 and 1993 had rainfall totals below average, 34.98 and 37.53 respectively. This data demonstrates the effects of urban stormwater runoff. A final major problem effecting the upper bay area is restricted tidal flushing due to the presence of the Courtney Campbell Causeway and Howard Frankland Bridge.

1. Point Source Pollution [9J-5.012(2)(d), F.A.C.]

The city of Oldsmar discharges 1.43 mgpd of treated municipal sewage into Old Tampa Bay. This discharge is in accordance with advanced wastewater treatment standards.

2. Non-Point Pollution [9J-5.012(2)(d), F.A.C.]

Major pollution to the area is from urban stormwater runoff. In a community bordering an estuarine system, each yard that drains into the Bay can be considered a non-point source discharge.

C. Impact of Development and Future Facilities [9J-5.012(2)(d), F.A.C.]

As 27% of the city's land is still vacant or undeveloped, the potential exists that future development will have a negative impact on water quality in the estuaries. This Comprehensive Plan proposes no new facilities that will alter the future circulation pattern of the surrounding estuaries. All future dredge and fill activities must be reviewed and permitted according to Aquatic Preserve and Office of Fish and Wildlife (OFW), a Division of Environmental Regulation, regulations. Since tidal flushing has already been affected by past construction activities, circulation concerns will be an important issue in any future activity.

D. Actions to Remedy Pollution Problems [9J-5.012(2)(d), F.A.C.]

Urban stormwater runoff that increases the amount of nutrients going into both the estuary and the Gulf needs to be reduced. This can be done by educating the public as to using minimal amounts of fertilizer on their lawns, reducing the dumping of various materials in the canals or Bay, and stressing the benefits associated with habitat restoration through replanting native vegetation.

Municipal control of non-point source pollution can be accomplished through any redevelopment that occurs in the future. Retrofitting of the developed areas will provide significant reduction of non-point pollutants entering coastal and estuarine water bodies, but will require large capital expenditures and additional lands for treatment. The city has an Aquatic Land Ordinance (83-13) that further protects all the lands adjacent to Tampa Bay and wetlands between. The city has zoned most areas near the estuary as preservation or conservation.

E. Regulatory Programs [9J-5.012(2)(d), F.A.C.]

DEP and SWFWMD require permits to disturb jurisdictional estuarine areas. These state agencies have established criteria for the issuance of permits that act to preserve and protect estuarine integrity. DEP, 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. DEP also establishes standards for the state's natural resources. The Surface Water Improvement and Management (SWIM) is responsible for the development of a state-mandated water use plan and the management of surface waters. SWFWMD is charged to obtain the maximum beneficial utilization and conservation of the water resources of the district and local community; and to prevent the waste, depletion, and deterioration of resources. The DEP, among other programs dealing with the estuarine environment, is responsible for implementing habitat restoration programs and the stewardship of the state's submerged lands; as well as, managing the Pinellas County Aquatic Preserve.

The TBRPC, through the "development of regional impact (DRI)" process, reviews and comments on regionally significant dredge and fill applications; and the Council's Agency on Bay Management works to implement sound estuarine management practices.

The county ordinances also address construction setbacks, beach stabilization, and dredge and fill issues. The city of Oldsmar has established ordinances that address flood hazard regulations and prohibits the removal of mangroves. The city will utilize all available programs to maintain or improve estuarine environmental quality.

VII. BEACH AND DUNE SYSTEM [9J-5.012(2)(F), F.A.C.]

There is no beach and/or dune system in the city of Oldsmar.

VIII. NATURAL DISASTER PLANNING [9J-5.012(2)(E), F.A.C.]

In 1978, the National Weather Service identified the Tampa Bay region, including Pinellas County, as one of the most hurricane-vulnerable areas in the United States with the potential for large-scale loss of life. The city of Oldsmar, located on Old Tampa Bay, has a large proportion of the city within surge vulnerable areas. Although evacuation remains a critical problem when considering the limited roadways and the inevitable impact of evacuating residents from surrounding municipalities, there are alternatives for Oldsmar residents that are not available to more-vulnerable communities.

The principle tool for analyzing the expected hazards from potential hurricanes affecting the Tampa Bay Region is the Sea, Lake and Overland Surges from Hurricanes (SLOSH) numerical storm surge model developed by the National Oceanic and Atmospheric Administration (NOAA). The SLOSH model predicts the tidal surge heights that result from hypothetical hurricanes with selected various combinations of pressure, size, forward speed, track, and winds.

A. Hurricane Vulnerability Zone [9J-5.012(2)(e)(1), F.A.C.]

Being one of Pinellas County's coastal communities, Oldsmar is highly vulnerable to natural disasters. Based on the potential effects from sever storms, evacuation zones are grouped together in a series of five levels, Evacuation Levels A through E. Depending upon the track and intensity of an approaching storm, successively more zones are evacuated. Additionally, all mobile home residents must evacuate, regardless of their location within the county. Those zones that are most susceptible to the effects of a hurricane fall within Evacuation Levels A through C. Because of the potential effects of hurricane damage in Evacuation Zones A through C this area is designated as the Hurricane Vulnerability Zone.

According to the Tampa Bay Regional Planning Council Hurricane Storm Atlas the city of Oldsmar is located in Evacuation Levels A, B, C, D, and E. Only Evacuation Levels A, B, and C contain populated areas. Evacuation Levels D and E fall within the boundaries of the Brooker Creek Preserve and this area is unpopulated by Oldsmar residents.

B. Evacuation Population [9J-5.012(2)(e)(1), F.A.C.]

With 100 percent of the city's population living in the Hurricane Vulnerability Zone all residents of the city must evacuate when the Board of County Commissioners announce an Evacuation Level C. In 1997 the population of Oldsmar was 9,734. Emergency transportation is provided by the county for those handicapped/disabled and elderly resident who have no other means to evacuate. Oldsmar is assigned one bus provided by Pinellas Suncoast Transit Authority and will report to City Hall at 100 State Street. The county Emergency Operation Center arranges any additional emergency transportation that may be needed.

Residents requiring special assistance during an evacuation are urged to pre-register with the city and/or county. According to the Oldsmar Fire Department, 19 residents are currently listed on the "evacuees with special needs" roster. In accordance with Chapter 252.355, Florida Statutes, this roster is maintained by the Oldsmar Fire Department and the Pinellas County Department of Emergency Management. Emergency personnel are charged with keeping records of all transported evacuees and where they are taken. The city, in coordination with the Pinellas County Emergency Operation Center, will confirm that all registered people with special needs have received necessary assistance before evacuating the city's Emergency Operation Center, which is located in City Hall.

C. Evacuation Routes [9J-5.012(2)(e)(1), F.A.C.]

The evacuation route for the city of Oldsmar is the most direct route to SR 580, East on SR 580, North on US 41, East on SR 54 then north on I-75 (out of the region). City evacuation routes are shown on the Hurricane Evacuation Routes map. It is assumed most residents will take I-75 north, or I-75 to I-4 east to Orlando. This will have a significant impact upon Pinellas and Hillsborough County evacuations. In addition, "through traffic" from the southwest region must also be considered.

D. Evacuation Times [9J-5.012(2)(e)(1), F.A.C.]

Evacuation Time consists of two components: Prelandfall Hazards Time and Clearance Time. Prelandfall Hazards Time is that period of time before the-eye of the hurricane crosses the coast when evacuation is no longer possible because the area is receiving hurricane conditions. The Prelandfall Hazards Time (PHT) is calculated based upon real-time storm parameters:

$$\text{PHT} = \text{radius of gale force winds} - \text{predicted forward speed.}$$

Clearance Time consists of three subcomponents: mobilization rate, travel time, and queuing/delay time. Mobilization rate refers to the response rate of the evacuating population. Travel time is the length of time required to travel from point A to point B given roadway capacity, ambient conditions, and the number of vehicles on the roadway link. Queuing/delay time is the time spent in traffic when roadway capacities are inadequate to handle the demand.

For many parts of Pinellas County, evacuation times range from 13 to 17 hours. Areas requiring this amount of time are mostly along the Gulf Coast and in the southern portion of the county. Oldsmar is located in the northern part of the county where population densities are much lower. In addition, several state road improvements have taken place over recent years, or are currently under construction, which will help reduce clearance times for Oldsmar residents. Compared to the coastal residents of southern Pinellas County, Oldsmar residents have a lower evacuation rate

E. Hurricane Shelters [9J-5.012(2)(e)(1), F.A.C.]

The Upper Pinellas County Chapter of the American Red Cross is the lead agency providing emergency public shelter in the northern part of Pinellas County. Currently, both county chapters of Red Cross have a total of 58 primary shelters. Primary shelters are typically schools and large churches located in non-hurricane evacuation zones. Secondary shelters are facilities that, because of size, food preparation capability, or other factors, are not considered primary shelters. These shelters are opened when the nearest primary shelter reaches capacity or when a major hurricane evacuation is called. Currently, evacuees are not zoned to particular shelter. The closest primary shelter to Oldsmar is Curlew Creek Elementary. This shelter has a capacity of 650 people. Countywide, primary shelters have a combined capacity of 72,286. In the event of a Category 4 or 5 hurricane this total is reduced to 53,336 and 52,236 respectfully. This reduction is due to the location of some shelters in vulnerable place.

F. Number of Persons Requiring Public Shelter [9J-5.012(2)(e)(1), F.A.C.]

A number of refuge alternatives are available to the city's estimated 10,000 evacuees. As forecasted by the Tampa Bay Regional Planning Council, an estimated 15 percent of these evacuees would use public shelters. Other options for evacuees include leaving the region, checking into a motel/hotel, or staying with friends or relatives in a non-evacuation zone. Currently, Pinellas County is recommending the "Host Home" concept as the preferred kind of evacuation. The Host Home program solicits churches, business, and organizations to predetermined the evacuation status of all members. Furthermore, these agencies are to encourage members living in non-evacuation areas to host evacuees. In cases where the entire membership lives in an evacuation area or in mobile homes, a church or facility outside the area is encouraged to accommodate those members during an evacuation.

According to the Pinellas County Planning Department, in 1995, 112,941 residents would require public shelter within the hurricane vulnerability zone, which corresponds to Evacuation Levels A through C. This anticipated evacuation population assumes a very early warning, a moderately aggressive response by local officials, and an average response by the public to Category 1 and 2 storms. Stronger storms, including Category 3 storms, are expected to yield a very early response by the public. Additionally, this total also includes a shadow population, resident who live outside an evacuation area and do not live in a mobile home or substandard housing, who seek shelter space. Existing shelter space is sufficient for an Evacuation Level A. However, the county would lack approximately 55,000 spaces in the event an Evacuation Level E is declared.

Because of the projected shelter deficits in Evacuation Levels B through E, all public education and information efforts are focused on encouraging evacuees to stay with friends, relatives, motel/hotels, or host-homes in non-evacuation zones. Furthermore Pinellas County is looking at alternatives to traditional public shelters. These include retrofitting structures to meet shelter space criteria, using unconventional refuge locations, and evacuating guest from transient accommodations to inland "sister" accommodations.

G. Anticipated Evacuation Population [9J-5.012(2)(e)(1), F.A.C.]

By 2010 the city is expected to add 4,148 people. This population increase translates into approximately 622 additional evacuees who will seek public shelter. Most of the population increase will occur in Evacuation Zone C with some growth in Evacuation Zone A. Oldsmar will continue to circulate information regarding hurricane routes, shelters, and evacuation procedures.

H. Measures to Reduce Evacuation Times [9J-5.012(2)(e)(1), F.A.C.]

Widening of existing roadways in the Oldsmar area will result in reduced evacuation times for residents. Construction on SR 580 and SR 584 is underway which will turn these 2-lane roads into 6 and 8-lane expressways. Another road project that will reduce evacuation time is the proposed East-West Connector that will link Forest Lakes Boulevard with Linebaugh Avenue in Hillsborough County. From Linebaugh Avenue residents can exit the Tampa Bay Area via the Veterans Expressway and US 41. Other measures to reduce clearance time are to increase shelter capacity. Recently completed Forest Lakes Elementary School should be analyzed for its shelter potential. Although this school is in Hurricane Evacuation Zone C it has the potential for shelter in less severe storms.

IX. POST DISASTER REDEVELOPMENT [9J-5.012(2)(e)(2), F.A.C.]

A. Land Development Code (LDC)

The Oldsmar land Development Code contains non-conforming use provisions that state a structure that has been damaged, made unsafe, or unusable to an extent less than 50 percent of its fair market value may be restored or reconstructed for its intended use. However, the regulations state that nothing contained in this section shall relieve the owner of the obligation to restore the damaged structure in compliance with the Building and Safety codes in effect. All damaged property must be restored to prevent recurring damage from severe storms. If the structure is damaged to more than 50% of its value the structure must be demolished and any new structure must meet today's more stringent building code.

B. Oldsmar Emergency Operations Plan.

The city of Oldsmar has adopted the Pinellas County Peacetime Emergency Plan and, in the event of a major disaster, will operate under the county Plan. The city has also prepared a more detailed plan, more specific to the city of Oldsmar, which will serve as standard operating procedures for emergency

situations. The plan provides a description of the personnel, equipment, and communications/warning system involved in supervising evacuations during a natural disaster. In addition, an outline of action expected on the part of the public during the warning period, the actual evacuation, and after the emergency ceases is included.

The city has also designated an Incident Commander who shall oversee the development and maintenance of the city's Emergency Operation Plan. The Commander will also act as a liaison between state, regional, county, and city emergency response and planning agencies.

C. Pinellas County's Post-Disaster Redevelopment Guide

Pinellas County's *Post-Disaster Redevelopment Guide* was intended to adhere to the requirements of Chapter 9J-5, F.A.C., by establishing procedures to eliminate the exposure of human life and property to natural hazards. The guide also provides local governments with supplemental guidance in carrying out critical actions following a major disaster.

The county's *Post-Disaster Redevelopment Guide* also suggests each local government should establish a Post-Disaster Redevelopment Task Force. The task force advises the governing board regarding issues and problems faced during redevelopment and reconstruction. The task force will review damage reports, recommend rezonings and building moratoria, set a schedule for recovery, recommend relocations, and property acquisitions. For smaller local governments, like Oldsmar, the task groups should be broad-based and include both elected and non-elected representatives that could provide fresh perspectives on development.

D. Reconstruction

The city has taken a policy-oriented approach to post storm reconstruction planning. The policy oriented Emergency Operations Plan provides general guidance to more specific reconstruction decisions. The plan addresses the following issues:

- Identification of hurricane vulnerability zones and coastal high hazard areas and a process for updating this information following the storm.
- A process for identifying the extent and nature of damages by geographic location, i.e. Damage Assessment.
- Identification of a range of alternatives from which decision-makers can choose depending upon relevancy given the impact of the disaster.
- Identification of the redevelopment opportunities that may be present after the disaster.
- Description of the post-storm decision-making process.

E. Coastal High Hazard Area [9J-5.012(2)(e)(3), F.A.C.]

According to Section 163.3178 F.S., the CHHA is defined as "category I evacuation zones" otherwise meant as those areas that must evacuate when a category I hurricane threatens a region. The portion of Oldsmar that lies in a Category I Evacuation Zone is south of Lafayette Boulevard and St. Petersburg Drive. This area is in Evacuation Zone I I and is depicted on the Coastal Planning and Coastal High Hazard Area map.

1. Existing and Proposed Land Use in CHHA [9J-5.012(2)(e)(2), F.A.C.]

Existing land use in Coastal High Hazard Area is primarily residential and preservation. Other uses in this area include commercial water related/water dependent features such as the Greentree Marina. Future development in the CHHA is limited to recreational and residential uses in accordance with the Future Land Use Map.

2. Structures Repeatedly Damaged [9J-5.012(2)(e)(2), F.A.C.]

There are two properties in the city deemed "repetitive loss" by the National Flood Insurance Program. These properties are located at 346 East Shore Drive and 506 East Shore Drive.

3. Coastal or Shore Protective Structures [9J-5.012(2)(e)(2), F.A.C.]

The city does not own or maintain any sea walls or other protective structures.

4. Infrastructure in CHHA [9J-5.012(2)(e)(3), F.A.C.] and [9J-5.012(2)(g), F.A.C.]

a. Sanitary Sewer and Potable Water Facilities

The city owns and maintains those sewer lines found within its municipal boundaries. Sewage from the city is treated at the Oldsmar Wastewater Treatment Plant. The city also owns and maintains the potable water distribution system. PCWS and the city of St. Petersburg provide the potable water.

b. Drainage

Drainage in this area is into Old Tampa Bay and Mobbly Bay.

c. Bridges

The city of Oldsmar does not own or maintain any bridges, seawalls, or canals.

d. Public Access

Only limited public access exists because of the tidal flats. The community fishing piers in R.E. Olds Park and Harbor Palms Nature Park allows access for recreational purposes. No public boat ramps exist. Greentree Marina, located at the head of Moccasin Creek, has a boat ramp and a boat repair/storage facility.

e. Roads

The main road along Oldsmar's waterfront is Shore Drive.

F. Future Demand on Infrastructure in the CHHA [9J-5.012(2)(e)(3), F.A.C.]

Most of the growth in Oldsmar will be outside the Coastal High Hazard Area. Impact to infrastructure within the CHHA will be minimal and will be centered on improvements to the potable water distribution system, wastewater distribution system, and the wastewater treatment plant. The city has minimal infrastructure in the CHHA and it is not feasible to move existing facilities out of the CHHA.

G. Hazard Mitigation [9J-5.012(2)(e)(2), F.A.C.]

As a relatively small community within Pinellas County, most hazard mitigation measures applied to Oldsmar trickle down from federal, state, regional, and county levels. The most notable program developed by the federal government is the National Flood Insurance Program (NFIP) established in 1968. The program grants federal flood insurance to floodplain residents where building codes and land use control measures have been instituted by the local government. Other federal programs include the Community Rating System and the Federal Disaster Assistance Program. Another federal program, the Interagency Hazard Mitigation Team, dispatches survey teams to tour disaster sites following a presidential declaration of a major disaster. Based upon the team's observations, a report is issued that

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includes recommendations to the local government regarding methods to reduce damage caused by future storms.

Significant state programs include the Coastal Zone Protection Act of 1985; the Coastal Construction Control Line Program; a permitting program operated by the Florida Department of Environmental Protection for among other things, the construction of piers and docks; the state Conservation and Recreation Land Program; and the Florida Beach Management and Erosion Control Program.

X. Potable Water [9J-5.013(1)(c), F.A.C.]

A. Current and Projected Water Use [9J-5.013(1)(c), F.A.C.]

The city of Oldsmar obtains its water through the Pinellas County Water Supply and the city of St. Petersburg. The Pinellas County Water System (PCWS) was created by legislation in 1935 to supply water to the gulf beaches. The PCWS, through its wholesale and retail service areas, provides approximately one-half of the water used by the Pinellas County population. Current and projected water use for the city is provided in Table 2.

B. Conservation [9J-5.013(1)(c), F.A.C.]

The SWFWMD has a number of conservation programs and policies. The Rules of the District, 40D-21, F.A.C., Water Shortage Plan, was developed to protect the water resources during periods of declared water shortages. Assistance from local governments is requested in the enforcement of these rules. SWFWMD has been authorized by the Florida Legislature to manage and regulate the freshwater resources of southwest Florida. They are the permitting authority for consumptive use, wells, surface water management and storage, and stormwater discharge. All projects are reviewed and evaluated in order to protect the natural environment and preserve our water resources.

C. Hazardous Waste [9J-5.013(1)(b), F.A.C.]

Hazardous waste is defined in Section 9J-5.003(34), F.A.C., as:

"solid waste, or a combination of solid wastes, which, because of its quantity, concentration, 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 is generated by large industrial firms and dozens of small commercial operations, various consumer services, and individual households. The management and control of hazardous waste problems are the concern of the federal, state, county, and local governments. The federal government regulates large quantity waste generators (Chapter 40 CFR, Part 261-265), although enforcement is carried out in Florida by the Department of Environmental Regulation. According to the city of Oldsmar Wastewater Treatment Plant, there are 41 generators of hazardous waste in the city. Hazardous waste generators include manufacturing plants, service stations, auto repair centers, photo processing centers, dry cleaners, and medical offices. The city does not have a hazardous waste management plan, however, it does monitor for hazardous waste at the wastewater treatment plant. It is not permissible to dispose of hazardous waste in Oldsmar, therefore, no regulations exist for safe disposal of hazardous waste within the city limits. All hazardous waste must be hauled out of the city by a certified carrier to a licensed disposal site.

XI. GOALS, OBJECTIVES, AND POLICIES

A. Introduction

Pursuant to Section 163.3177 (9) and (10), F.S., and Section 9J-5.012(3), and 5.013(2), F.A.C., the following represents the Coastal Management and Conservation Goals, Objectives, and Policies of the city of Oldsmar. 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.

B. Non-applicable Items

The coastal planning area in the city of Oldsmar includes all areas with the municipal boundaries other than Forest Lakes and Cypress Lakes DRI areas. However, as a combined Coastal and Conservation Element, those goals, objectives, and policies addressed in the other elements are applicable to the city of Oldsmar. Based on the findings contained in this element and pursuant to Section 9J-5.002, F.A.C., it has been determined that the following objectives, and policies identified in 9J-5.012(3) and 9J-5.013(2), F.A.C., are not applicable to the city of Oldsmar. Those items not applicable to the city of Oldsmar include protection of existing natural reservations and protection of areas suitable for extraction of minerals.

C. Local Goals, Objectives, and Policies

GOAL 1

TO ENSURE THE HIGHEST ENVIRONMENTAL QUALITY POSSIBLE, THE CITY OF OLDSMAR SHALL CONSERVE, PROTECT AND APPROPRIATELY MANAGE THE NATURAL RESOURCES (AQUATIC, WETLAND AND TERRESTRIAL).

Objective 1.1

The city shall protect the quality and quantity of surface and groundwater via its new Land Development Codes (LDC).

Policy 1.1.1

The city shall promote water conservation as an integral part of water management programs, rules and plans and the use and reuse of water of the lowest acceptable quality for the purpose intended for lawn watering.

Policy 1.1.2

The city shall cooperate with SWFWMD to conduct water conservation programs and will develop an emergency water conservation plan for Oldsmar.

Policy 1.1.3

The city shall upgrade the drainage system to include stormwater treatment for water quality by construction of retention/detention ponds.

Policy 1.1.4

The city shall protect water storage and water quality enhancement functions of wetlands, flood plains and aquifer recharge areas through acquisition, enforcement of laws and the application of land and water management practices which provide for compatible uses.

Policy 1.1.5

The city shall cooperate with the SWFWMD, Pinellas County and the West Coast Regional Water Supply Authority to:

- Identify and map major groundwater recharge areas within the city and, as determined by the SWFWMD, cones of influence of those public water supplies serving the community; and
- Establish long-term monitoring of ambient groundwater quality trends.

Policy 1.1.6

In order to protect the quality and quantity of surface water and groundwater, the city shall enforce regulations that ensure:

Protection of the water supply from the danger of drought or overdraft; and Establishment of policies prohibiting development which has the potential to introduce toxic materials into the groundwater system.

Policy 1.1.7

At such time that the SWFWMD designates prime recharge areas within the city of Oldsmar, the city shall classify such areas as preservation on the Future Land Use Map.

Policy 1.1.8

Activities in the city that could conceivably breach the confining layer to the Floridan Aquifer shall be strictly regulated.

Policy 1.1.9

The city shall minimize the amount of impervious surface areas in order to promote groundwater infiltration, minimize runoff and improve water quality; through adoption of Policy 2.1.1 of the Infrastructure Element.

Policy 1.1.10

The city shall allow septic tanks consistent with Pinellas County Health Department standards in the specific areas of the city currently allowed (only where sewer services are not available), until such time as service to the wastewater treatment plant is available; the city will provide incentives for septic tank transition to the wastewater treatment plant; and promote the maintenance of existing septic tanks to Health & Rehabilitative Services (HRS) standards.

Measure

Surface and groundwater quality and quantity.

Objective 1.2

Regulations for development within the 100-year flood plain shall be strictly enforced.

Policy 1.2.1

New development or redevelopment approvals shall require that post-development runoff rate, volume and pollutant load do not exceed predevelopment conditions.

Policy 1.2.2

Recognizing that portions of the community are located within the 100-year flood plain, the city shall maintain strict enforcement of appropriate federal, state, and regional coastal construction codes and coastal setback regulations.

Policy 1.2.3

The city shall protect the natural functions of the 100-year floodplain so that the flood carrying and flood storage capacity is maintained by enforcing its zoning codes.

Policy 1.2.4

The city shall maintain a strict flood plain management program to preserve hydrologically significant wetlands and other natural flood plain features.

Policy 1.2.5

In order to reduce non-point source pollutant loading, a stormwater management plan shall follow the regulations set out in Chapter 17-25, F.A.C.

Policy 1.2.6

In order to reduce non-point source pollutant loading and improve the functioning of the city's drainage system, dumping of debris of any kind (e.g., yard clippings and trimmings), into drainage ditches, canals and stormwater control structures shall be prohibited.

Policy 1.2.7

The city shall endeavor to protect existing natural reservations by enforcing its LDC.

Policy 1.2.8

The city shall establish criteria for designating environmentally sensitive lands and adopt and enforce these criteria through its LDC.

Measure

Implementation of flood plain management regulations.

Objective 1.3

The city shall conserve or improve wetlands, aquatic resources, and wildlife population and habitat to maintain their environmental and recreational value with its LDC.

Policy 1.3.1

All existing marine wetlands shall be designated preservation land as set forth on the Future Land Use Map.

Policy 1.3.2

The city shall adopt by reference the standards and regulations set forth in the Pinellas Aquatic Preserve Management Plan to protect and enhance the water quality of Upper Tampa Bay.

Policy 1.3.3

Conservation areas, such as coastal marshes, freshwater swamps and mangrove areas shall be protected from development that would significantly alter their function and character. Once a conservation area is established, at least 1:1 mitigation of these communities shall be required.

Policy 1.3.4

The city's existing wetlands shall be conserved and protected from physical and hydrological alterations by enforcing its LDC.

Policy 1.3.5

Projects (e.g., marinas, causeways and dredging) which could inhibit tidal circulation shall include measures to maintain or improve tidal circulation and flushing.

Policy 1.3.6

Dredge and fill activities shall be conducted only when necessary after review and comment by appropriate government agencies and all other interested parties, and in a manner least harmful to the surrounding environment.

Policy 1.3.7

The city shall implement plans established for post-disasters redevelopment program including interagency hazard mitigation reports.

Policy 1.3.8

The city shall establish a program to acquire environmentally sensitive, natural, and other lands.

Policy 1.3.9

Protection and conservation of wetland areas shall be accomplished through a comprehensive planning process that includes a consideration of the type, value, function, size, condition and location of wetlands.

Policy 1.3.10

Incompatible land-uses shall be directed away from wetlands via the city's LDC.

Measure

Implementation of land regulations which protect environmental systems

Objective 1.4

The city shall conserve, appropriately use, and protect native vegetation through its LDC.

Policy 1.4.1

The city shall continue to enforce the local tree ordinance which require that all new development preserve at a minimum twenty (25%) percent of the native vegetation on site. This should not be interpreted to allow development in wetland areas.

Policy 1.4.2

Native vegetation shall receive priority in the landscaping requirements.

Policy 1.4.3

The city shall encourage shorelines lacking wetland vegetation to be planted with native vegetation in order to minimize potential flood damage, stabilize the shoreline and trap sediments and other non-point source pollutants, and provide additional habitat for fish and wildlife.

Policy 1.4.4

The city shall encourage through site plan review, the removal of exotic species such as punk tree (*Melaleuca sp.*), Australian pine (*Casuarina sp.*) and Brazilian pepper (*Schinus Sp.*).

Policy 1.4.5

The city shall study soil and vegetation conditions to properly design its LDC.

Policy 1.4.6

The city shall utilize soil erosion mechanisms to control sedimentation, assure the continual efficient operation of the drainage system and protect streams and bays from substantial alteration of their natural functions.

Policy 1.4.7

The city shall protect unique upland communities in identified preservation areas from development that would significantly alter their character by enforcing its LDC.

Policy 1.4.8

The city shall establish implementation activities for the conservation of native vegetative communities via the LDC.

Measure

Enforcement of LDC

Objective 1.5

As of the effective date of this Comprehensive Plan, the city shall increase protection of species with special status from adverse impacts by enforcing its LDC.

Policy 1.5.1

The city shall assist 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) by enforcing all codes and ordinances.

Policy 1.5.2

Any areas that are identified as containing viable populations of, or suitable habitats for, species listed as endangered, threatened, or of special concern by the state and federal government, shall be classified as environmentally sensitive, preservation, or conservation areas with future development limited to land uses compatible with the listed species.

Policy 1.5.3

The city shall work in cooperation with DEP, US Fish and Wildlife Service and other state and federal agencies to develop an area-specific manatee protection plan to ensure long-range manatee and habitat protection.

Policy 1.5.4

The city shall adopt measures to ensure the protection of habitat of special significance to manatees, including additions to publicly owned preserves and refuges where possible.

Policy 1.5.5

The city shall enforce its LDC for the protection of water quality.

Measure

Implementation of protective measures

Objective 1.6

The city of Oldsmar shall increase its involvement in monitoring efforts in the proper handling, treatment and disposal of hazardous waste within its jurisdiction by code enforcement.

Policy 1.6.1

The city shall work with the DEP, TBRPC, and the county in developing an emergency response plan to handle accidents involving hazardous waste.

Policy 1.6.2

A program shall be developed to regulate small generators of hazardous wastes to protect natural resources and public health.

Policy 1.6.3

Recycling of hazardous waste products such as oils, solvents and paints shall be promoted by the city.

Policy 1.6.4

"Amnesty Days" and other methods shall be used to facilitate the collection and disposal of individual and small business hazardous waste.

Policy 1.6.5

The city of Oldsmar, in conjunction with the TBRPC, Pinellas County and neighboring municipalities, shall institute an educational program using mailings and public meetings to inform the city's residents of effective methods to safely store and dispose of household and commercial hazardous material.

Measure

Participation in hazardous waste management efforts

Objective 1.7

The city shall increase efforts to comply with all state and federal standards for air quality by enforcing its LDC.

Policy 1.7.1

The city shall work to reduce the potential for automobile emissions pollution by the following measures:

- require vegetative buffer strips between roadways and residential development;
- promote alternative transportation modes such as car pooling, pedestrian and bicycle paths; and
- assure continued operation of roadways at acceptable levels of service.

Measure

Compliance with standards

Objective 1.8

The city of Oldsmar shall protect and restore its shoreline and natural system and establish construction standards that minimize the impacts of man-made structures on these systems.

Policy 1.8.1

Where existing waterways are not seawalled or bulkheaded, native marine vegetation shall be used for shoreline stabilization where technically feasible.

Policy 1.8.2

The planting of native marine vegetation in front of the seawall to act as a natural buffer is encouraged.

Policy 1.8.3

The city shall limit shoreline development that will adversely impact marine fisheries habitats with its LDC and public acquisitions.

Policy 1.8.4

Land and water uses within the city shall be compatible with the protection of coastal resources by following the LDC.

Policy 1.8.5

Marine commercial nodes shall be located on upland shore areas.

Policy 1.8.6

Outside of marine commercial nodes, shoreline land uses shall be designated recreation, residential, conservation or preservation.

Policy 1.8.7

Shoreline development shall be consistent with the countywide marina-siting plan.

Measure

Implementation of coastal construction regulations

Objective 1.9

As of the effective date of this Comprehensive Plan, development activities shall ensure the protection of historic and architecturally significant resources.

Policy 1.9.1

The city shall ensure that historic and architecturally significant resources are protected either through their designation as a historic site by the federal government, state of Florida, Pinellas County and/or a locally adopted by historic preservation ordinance by submitting recommendations to the appropriate agencies.

Measure

Protection of historic resources.

Objective 1.10

The city shall participate in the establishment and implementation of an intergovernmental coordination mechanism to protect, maintain and improve coastal resources that shall address natural systems on a system wide basis regardless of political boundaries.

Policy 1.10.1

The city shall initiate proceedings to develop joint planning and management programs with the neighboring municipalities for hurricane evacuation, provision of public access, provision of infrastructure, controlling stormwater, protection of wetland vegetation and coordinating efforts to protect species with special status.

Policy 1.10.2

The city shall coordinate with neighboring municipalities, Florida Power Corporation, and Pinellas and Hillsborough Counties to protect estuaries which are within the jurisdiction of

more than one local government; including methods for coordinating with other local governments to ensure adequate sites for water-dependent uses, preventing estuarine pollution, controlling surface water runoff, protecting living marine resources, reducing exposure to natural hazards, and ensuring public access by following the LDC.

Policy 1.10.3

The city shall work with those communities and counties bordering Tampa Bay in the implementation of the Tampa Bay Management Plan developed by the Surface Water Improvement and Management Program.

Policy 1.10.4

Pursuant to Section 9J-5.012(3)(b)(11), F.A.C., the levels of service for the coastal area are those designated in Objective 1.1 of the Traffic Element; Objective 2.1 and Policies 2.2.4 and 2.2.5 of the Infrastructure Element and Policy 1.1.1 of the Recreation and Open Space Element.

Policy 1.10.5

The city shall provide, continue and replace adequate physical access to Safety Harbor via the R.E. Olds Park.

Measure

Establishment of an intergovernmental coordination mechanism to manage coastal resources

Objective 1.11

The city shall establish standards for prioritizing shoreline uses.

Policy 1.11.1

The city shall set criteria for shoreline uses.

Policy 1.11.2

The city shall ensure that required infrastructure is available to serve development or redevelopment along the shoreline at densities proposed in the future land use plan.

Policy 1.11.3

The city shall coordinate all resource protection plans, zoning ordinances and LDC's to assure adequate protection of the natural environment.

Measure

Set criteria or establish standards for shoreline uses.

Objective 1.12

The city shall establish LOS standards, areas of service and phasing new infrastructure improvements.

Policy 1.12.1

The city shall define LOS standards for all infrastructure including drainage facilities while defining areas of service.

Measure

Set LOS Standards.

GOAL 2

THE CITY SHALL PROVIDE A SET OF GUIDELINES FOR DEVELOPMENT THAT PROTECTS THE LIVES AND PROPERTY OF ITS RESIDENTS FROM THE EFFECTS OF NATURAL DISASTERS.

Objective 2.1

As of the effective date of Oldsmar's Comprehensive Plan, the city shall not subsidize development permitted in Coastal High Hazard Area except for restoration or enhancement of natural resources except deemed in the public interest.

Policy 2.1.1

As of the effective date of this Comprehensive Plan, the city of Oldsmar shall designate the Coastal High Hazard Areas, as that portion of the community that is in the evacuation zone for a Category I hurricane.

Policy 2.1.2

The city shall not support or finance new local transportation corridors that lie within the Coastal High Hazard Area.

Policy 2.1.3

The city shall not extend sewer and water lines within the Coastal High Hazard Area which will encourage future growth/higher densities in those vulnerable areas.

Policy 2.1.4

The city shall establish a priority system for shoreline uses.

Measure

Amount and nature of public expenditures in the Coastal High Hazard Area

Objective 2.2

As of the effective date of this Comprehensive Plan, the city shall direct population concentrations away from the designated Coastal High Hazard Area.

Policy 2.2.1

The city of Oldsmar, recognizing its vulnerability to coastal hazards, identifies the portion of the city within the Category I evacuation zone as the Coastal High Hazard area.

Policy 2.2.2

The city shall maintain or reduce allowable density in the Hurricane Vulnerability Zone consistent with the Future Land Use Map of this Comprehensive Plan.

Policy 2.2.3

The city of Oldsmar shall continue to implement growth management techniques (e.g. Land Acquisition, Use of Easements, Use of Zoning and Codes, Tax Incentives, Capital Facilities/Infrastructure Requirements, and the Dissemination of Information) within the Coastal High Hazard Area consistent with the Future Land Use Map of this Comprehensive Plan.

Policy 2.2.4

The city shall implement a program of public land acquisition and management for recreation, conservation and preservation areas within the Hurricane Vulnerability Zone.

Policy 2.2.5

The city shall review federal and state development proposals that are to be located within the Coastal High Hazard Area and the Hurricane Vulnerability Zone, and support those projects that are consistent with this Plan.

Policy 2.2.6

The city shall require a coastal hazard disclosure statement on all real estate transfers or leases within the Coastal High Hazard Area.

Policy 2.2.7

The city shall institute activities for general hazard mitigation.

Measure

Population density within the Coastal High Hazard Area

Objective 2.3

As of the effective date of this Comprehensive Plan, the city shall maintain or reduce hurricane clearance times via its Hurricane evacuation plan.

Policy 2.3.1

The city shall coordinate with state, regional and county agencies to ensure that major evacuation routes are adequately maintained and, when necessary, improved to facilitate an efficient and safe evacuation.

Policy 2.3.2

The city, in cooperation with the Pinellas County Department of Civil Emergency Services and the Upper Pinellas County Chapter of the American Red Cross shall sponsor annual hurricane preparedness seminars to increase hurricane awareness.

Policy 2.3.3

City emergency response personnel and volunteers shall coordinate with county and state emergency response agencies in emergency planning, including communications, traffic control and warning operations, to effect a safe and efficient evacuation of the city.

Policy 2.3.4

The city shall implement activities for hurricane evacuation.

Measure

Hurricane Evacuation Clearance Times.

Objective 2.4

The city shall reduce the risk of exposure of human life and public and private property to natural disasters through preparedness planning and implementation of hazard mitigation measures.

Policy 2.4.1

The city, in coordination with the county Department of Civil Emergency Services, shall develop a comprehensive Hurricane Plan which shall address the four phases of comprehensive emergency management: preparedness, response, recovery and mitigation.

Policy 2.4.2

The city shall designate an emergency management coordinator who shall oversee the development/revision of a hurricane plan; act as a liaison between state, regional, county and city emergency response and planning agencies; and ensure coordination between emergency management and development management activities in the city.

Policy 2.4.3

The city shall review the existing coastal construction building code and should adopt, at a minimum, the coastal construction standards embodied in the Coastal Zone Protection Act and shall strictly enforce their implementation through the building inspection process.

Policy 2.4.4

The city shall adopt and strictly enforce all appropriate federal, state, and local coastal construction codes, coastal setback requirements and flood plain management regulations.

Policy 2.4.5

Special care facilities shall not be located in the Coastal High Hazard Area. Special care facilities are discouraged in the Hurricane Vulnerability Zone unless adequate provisions for safe and efficient evacuation and shelter are ensured.

Policy 2.4.6

The city shall incorporate into its peacetime emergency plan recommendations from hazard mitigation reports.

Measure

Development of city Hurricane Plan
Implementation of Policies

GOAL 3

THE CITY SHALL EXPEDITE POST-DISASTER RECOVERY AND REDUCE THE FUTURE RISK TO HUMAN LIFE, AND PUBLIC AND PRIVATE PROPERTY FROM NATURAL HAZARDS THROUGH RECOVERY AND REDEVELOPMENT STRATEGIES.

Objective 3.1

The city shall designate a Recovery Task Force to hear preliminary damage assessments and direct post-disaster recovery and redevelopment activities.

Policy 3.1.1

The Recovery Task Force shall consist of the City Emergency Management Coordinator, the Building and Inspection Department and other members as appointed by the City Council.

Policy 3.1.2

The Recovery Task Force shall fulfill the following responsibilities, as well as others deemed necessary:

- Hear preliminary damage reports;
- Take necessary steps to seek financial assistance from the appropriate state and federal agencies;
- Establish criteria that distinguish between immediate repairs and clean-up actions. Authorize immediate clean-up and repairs necessary to protect the public health, safety and welfare;
- Identify areas within the community where minor, moderate and major damage has occurred;
- Recommend to the City Council temporary building moratoria for building activities not essential to protect health, safety and welfare;
- Recommend to the City Council appropriate hazard mitigation policies which should be implemented in response to the disaster; and
- Prepare a report evaluating post-disaster redevelopment response and make recommendations for necessary changes to this Comprehensive Plan.

Measure

Designation of a Recovery Task Force

Objective 3.2

In order to effectively manage the timing and sequence of reconstruction, the city will establish, in advance, a set of reconstruction permitting procedures.

Policy 3.2.1

Following a major hurricane event, the City Council will adopt a temporary post-disaster building moratorium to allow sufficient time for immediate damage assessment, the identification of redevelopment opportunities, and hazard mitigation policy implementation.

Policy 3.2.2

The city shall adopt a post-disaster procedure that will expedite permitting for minor repairs. The procedure shall include development plan review, engineering approval and building permitting and shall provide that all permitting is coordinated with the appropriate agencies and consistent with the objectives of this Comprehensive Plan.

Policy 3.2.3

The city shall establish implementation activities for identifying areas needing redevelopment, eliminating unsafe conditions and inappropriate uses.

Measure

Establishment of reconstruction permitting procedures

Objective 3.3

The city shall develop and implement key reconstruction and redevelopment strategies that will promote hazard mitigation.

Policy 3.3.1

Where feasible, property which has received recurring major hurricane damage from storm surge should be publicly acquired or designated conservation on the Future Land Use Map to prevent redevelopment of the property to its pre-hurricane land use.

Policy 3.3.2

The city shall consider one or more of the following strategies in those areas which receive major or moderate damage:

- Relocation further inland (Moving development/infrastructure away from the coastal high hazard area);
- Reduction of permissible density of development in the area;
- Reconstruction according to more stringent building and construction standards; and
- Public acquisition of damaged areas.

Policy 3.2.3

The city shall establish implementation activities for identifying areas needing redevelopment, eliminating unsafe conditions and inappropriate uses.

Policy 3.3.3

The city shall employ hazard mitigation goals during reconstruction decision-making including the following objectives:

- Enhancement of local recreational and open space opportunities;
- Enhancement of local public beach access;

- Enhancement and restoration of local natural ecosystems;
- Reduction of traffic congestion, noise, and other transportation related problems; and Enhancement of the long-term economic vitality of the local commercial base.

Policy 3.3.4

The city shall analyze relocation, mitigation, or replacement of infrastructure in the Coastal High Hazard Area when the need for state funding is anticipated.

Measure

Implementation of policies during reconstruction

Objective 3.4

The city shall continue to provide the amount of beach or shoreline access that is consistent with the current beach/shoreline access to population ratio.

Policy 3.4.1

The city shall add shoreline access through its Parks and Recreation program to meet future population increases.

Measure

Add more shoreline access.

GOAL 4

THE LDCS SHALL BE ADOPTED WHICH IMPLEMENT THE REQUIREMENTS OF THIS COMPREHENSIVE PLAN.

Objective 4.1

The LDC's shall be adopted that implement the requirements of the following Coastal Management and Conservation Element policies.

Policy 4.1.1

The city shall adopt the following policies:

Policy 1.1.1, 1.1.3, 1.1.4, 1.1.6, 1.1.8, 1.1.9, 1.1.10, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.5, 1.2.6, 1.3.2, 1.3.3, 1.3.5, 1.4.1, 1.4.2, 1.4.3, 1.4.4, 1.4.5, 1.4.6, 1.4.7, 1.4.8, 1.5.2, 1.5.4, 1.6.2, 1.7.1, 1.8.1, 1.8.2, 1.8.3, 1.9.1, 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.2.6, 2.4.3, 2.4.4, 2.4.5, 3.2.1, 3.2.2 and 3.3. 1.

Measure

Adoption of the Coastal and Conservation Element Policies.

Objective 4.2

The city shall continue to maintain and enhance its infrastructure system within the Coastal High Hazard Area.

Policy 4.2.1

Existing infrastructure in the coastal high hazard area shall be maintained or improved as necessary to protect the health, safety and welfare of existing residents.

Policy 4.2.2

The city shall maintain LOS standards for residents in the coastal high hazard area.

Measure

Maintenance of infrastructure in the coastal high hazard area.

Table 1

Water Quality Parameter	Annual Average		
	Surface	Middle	Bottom
Depth (feet)	0.0	3.6	7.2
Temperature, Water (C°)	24.4	24.3	24.3
Temperature, Air (C°)	25.1	NA	NA
Turbidity (NTU)	5.5	NA	NA
Nitrogen, Total (mg/l)	1.14	NA	NA
Conductivity (micromhos/cm)	37,750	38,042	38,192
Chlorophyll, Total (ug/l)	13.7	NA	NA
Biochemical Oxygen Demand (mg/l)	2.3	NA	NA
Coliform, Total (colonies/100 ml sample)	7.0	NA	NA
Coliform, Fecal (colonies/100 ml sample)	7.0	NA	NA
Phosphate, Total (mg/l)	0.26	NA	NA

Source: Surface Water Quality 1992-1994, Hillsborough County Environmental Protection Commission, 1994

Table 2

Potable Water Daily Demand Based on Permanent Population Projection 1997-2015		
Year	Population	Demand
1997	9,734	1.109 mgd
2000	10,642	1.213 mgd
2005	12,266	1.398 mgd
2010	13,882	1.582 mgd
2015	14,829	1.690 mgd

Source: Oldsmar Wastewater Treatment Plant, 1997.

Appendix A

County-Wide Marina Sitting Plan

The location of new or expanded public or private boating access facilities including but not limited to marinas, boat ramps, residential marina basins, port facilities, commercial docs, or rental facilities should be determined by the following criteria:

- a) Should be approved based upon demonstrated need for new or expanded facilities in the chosen location;
- b) Preferences should be given to expansion of suitable existing marinas rather than new construction. When new development occurs, construction should be encouraged to locate in areas which have been altered by man, particularly when such areas have been used for marina related activities in the past;
- c) Should preferably be located outside any Aquatic Preserve, Outstanding Florida Water, Class II Waters and any areas approved, or conditionally approved, by the Florida Department of Environmental Protection for shellfish harvesting. When a facility is located inside one of these special areas, development should meet the special requirements or management plans which guide development in these locations;
- d) Should be located outside highly productive and/or unique habitats, such as seagrass beds, warm water refuge or manatee calving areas, as determined by the FDEP, FGFWFC, or Pinellas County based upon vegetation and/or wildlife species;
- e) Should demonstrate sufficient upland area to accommodate all needed support facilities, particularly parking spaces, dry storage, utilities, and stormwater treatment areas;
- f) Should not require dredging of artificial waterways for access by canal or channel, and should not require filling to provide access by road;
- g) Marina basins and canals should provide adequate water depth to accommodate the proposed boat use including a standard depth clearance for manatees of four feet between the lowest point on the boat hull and the bottom;
- h) Should be located in areas where there is adequate flushing of the basin to prevent stagnation and water quality deterioration;
- i) The construction of marina type facilities should minimize the disturbance of natural shoreline and estuarine resources that provide shoreline stabilization and protect landward areas from the effects of storm events.