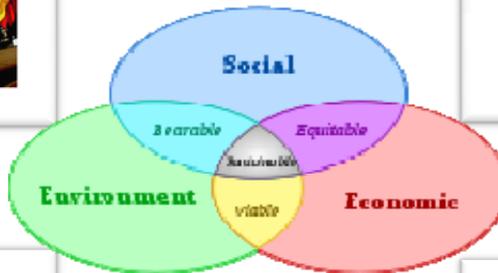




Flagler County Comprehensive Plan 2010-2035
Flagler County, Florida

Future Land Use Element

Data and Analysis



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**FUTURE LAND USE ELEMENT
DATA AND ANALYSIS**

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I. Introduction

The overriding purpose for a Comprehensive Plan is to provide a prediction of future events within the planning horizon and to ensure that the affected local government has the capabilities to accommodate and address changes in the future. Additionally, a Comprehensive Plan provides assistance to elected leaders in making decisions in the overall operation of their jurisdiction. In sum, a Comprehensive Plan should provide residents, business owners, and other local leaders with the Goals, Objectives, and Policies to manage the man-made and natural resources of the area in order for that area to remain sustainable.

The State of Florida embraces this concept and has adopted laws that require every county and city to draft, adopt, and implement a Comprehensive Plan. The requirements for the Comprehensive Plans are identified in the Florida Growth Management Act (Chapter 163, Part II, Florida Statutes) and codified in Florida Administrative Code Chapter 9J-5. Flagler County adopted a Comprehensive Plan subject to the provision of the Growth Management Act in 1990. In 1999, Flagler County completed an evaluation and appraisal of the success of the 1990 Comprehensive plan and adopted a revised Comprehensive Plan in 1999. The 1999 updated Plan was needed to address the issues and concerns that were raised in the analysis of the original Comprehensive Plan. Additionally, the 1999 update provided the standards needed to ensure that the County's Comprehensive Plan was consistent with the State's Comprehensive Plan and the Northeast Florida Regional Council's Strategic Regional Policy Plan.

The Flagler County Commission faces a different set of issues and conditions in 2010. This was first realized in 2007 when the County Commission established a committee of citizens from across the County to guide the development of a common set of goals for Flagler County. The primary purpose was to ensure that any future plans reflected an updated and accurate summary of the issues facing the County. The resulting outcome were guiding principles that addressed such issues as the protection of agricultural uses; the preservation of valuable natural resources; the creation of the City of Palm Coast; and the expansion of the City of Bunnell.

This updated comprehensive plan is for a twenty-five year planning horizon (2010 to 2035). The County is using this planning horizon so that the Comprehensive Plan is a document that provides a consistent vision for the County, but has the ability to adapt to changing conditions. It is also intended that the planning horizon ensure that the long term goals, objectives and policies included herein will be consistent with the State of Florida Comprehensive Plan, as well as the Northeast Florida Regional Council's Strategic Regional Policy Plan.

The Flagler County Comprehensive Plan has been drafted pursuant to the requirements for comprehensive plans as identified in the Florida Growth Management Act (Chapter 163, Part II, Florida Statutes) and codified in Florida Administrative Code Chapter 9J-5. Flagler County adopted its first comprehensive plan under the provision of the Growth

Flagler County Comprehensive Plan 2010-2035

Management Act in 1990. This 2010 to 2035 Comprehensive Plan addresses the issues and recommendation included in the 2009 Evaluation and Appraisal Report and reflects the second time that a major update and revision occurred since the original adoption in 1990.

It is important that the Flagler County Comprehensive Plan serve as a guide for leaders over the next 25 years. The eleven elements that constitute the Comprehensive Plan reflect the efforts of the County residents to establish guiding principles for the goals, objectives and policies contained in the Comprehensive Plan. These are intended to assist local leaders so that there is continuity and consistency.

The Flagler County Comprehensive Plan is a dynamic document. The projections and recommendations in this document are based on current conditions and the data and analysis available at this time. It is understood that the Flagler County Comprehensive Plan will be evaluated and updated over time. This provides the opportunity to update and integrate the comprehensive plan with other planning tools, such as the Flagler County Commission Strategic Plan, the Florida Department of Transportation (FDOT) long range plans, St. Johns River Water Management District (SJRWMD) water supply plan and the Northeast Florida Regional Council (NEFRC) plans. The evaluation and update is a critical part of the success of a comprehensive plan.

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II. Geographic Setting

Flagler County lies in the northeastern part of Florida, about sixty miles south of Jacksonville and 25 miles north of Daytona Beach. Flagler County is about 23 miles wide at its widest point east to west, and 29 miles long at its longest point north to south. The Atlantic Ocean beachfront area is 18 miles long and forms the eastern boundary, and Crescent Lake forms a significant portion of its western boundary.

Flagler County occupies approximately 571 square miles consisting of 485 square miles of land area and 86 square miles of water area. This area includes the incorporated cities of Beverly Beach, Bunnell, Flagler Beach, Marineland, and Palm Coast. The City of Bunnell, the county seat, is located at the geographical center of Flagler County (U.S. 1 and SR 100 crossroad).

Flagler County can be divided into two major geographic areas: the coastal area east of U.S. Highway.1 and western Flagler County west of U.S. Highway 1 (See Map 2, Major Geographic Regions). These have been broken down into smaller study areas to aid in the compiling of data that is used to analyze the existing conditions and provide guidance for future actions.

The coastal area east of U.S. Highway 1 occupies approximately thirty-five percent of the total land area. This area contains the coastal cities of Flagler Beach, Beverly Beach, Marineland and Palm Coast. There are five areas of unincorporated Flagler County that include the planned communities of Plantation Bay, Matanzas Shores, Grand Haven and Hammock Dunes; and unincorporated Painters Hill and Hammock areas along A1A. Most of the urban development activity in Flagler County has occurred in this area due to following factors:

1. Traditional development pattern of the Florida Atlantic coast.
2. The attractive natural resources.
3. A relatively affordable supply of housing within a reasonable commute of employment opportunities in other counties.
4. A developed and connected roadway system providing access to SR A1A, Interstate 95, U.S.1 and SR 100.

Current land development patterns show that most of the residential development in the coastal area is occurring in the City of Palm Coast and surrounding unincorporated areas where central water and sewer facilities are available. Other residential development occurs in the incorporated areas of Flagler Beach, Beverly Beach or Bunnell, and older, small subdivisions or isolated single-family residences along A1A, SR 100, Old Dixie Highway, Old Kings Road and John Anderson Highway. There are many factors that have resulted in the residential development of the coastal area. The primary reason is the close proximity to the Atlantic Ocean and the Intracoastal Waterway. This location provides for a pleasant climate and appealing lifestyle. Additionally there are numerous parks and recreational facilities and a growing commercial base in Palm Coast. The coastal area also contains numerous opportunities for business development and excellent schools. The Flagler coastal area is characterized by an overall low-density residential land use pattern. This is provides

an attractive area for new residents, but may result in an inefficient land use pattern that increases the cost for urban services (roads, sewer, schools, etc.).

The eastern, coastal region of the county also has many regional inducements for continued growth. The eastern seaboard of Florida has traditionally experienced growth because of tourism/retirement and proximity to the ocean and Intracoastal Waterway. Flagler County has traditionally been a tourism and retirement destination. Given the changes in the global economy, Flagler County now has additional attributes (proximity to Interstate I-95, FEC rail line, close proximity to Jacksonville and Orlando Metropolitan Statistical Areas) that could be alluring for development of industrial and technological uses. These assets help local governments in the development of balanced, sustainable communities. Prior to the economic downturn of 2008 and 2009, both Volusia and St. John Counties were experiencing high growth rates and there were thriving employment opportunities to residents of Flagler County. This accelerated residential and service commercial opportunities in the eastern portions of the County. This accelerated growth has greatly diminished and employment opportunities have declined resulting from the down-turn of the worldwide economy. This trend emphasizes the need for Flagler County to diversify its land use options in order to attract industry and other business opportunities outside the real estate, construction, tourism and service sectors.

The region of Flagler County west of U.S.1 occupies approximately 65 percent of the total land area. This area is characterized by farming and timber production. Small rural communities that have existed for many years include St. Johns Park, Espanola, Haw Creek and Cody's Corner. Rural subdivisions (one acre minimum) include Flagler Estates, Daytona North and Smokerise. Daytona North is an old residential subdivision with no existing infrastructure and few paved roads. Flagler County has adopted a municipal services taxing district to fund improvements to roadways and drainage facilities. The residents in Daytona North rely on septic tanks and on-site wells for sewer and water services. Flagler Estates is an area that has been divided through a process that allowed the land to be used and sold for agricultural purposes. The Flagler Estates area is not vested since it is not a valid subdivision approved by Flagler County and Flagler County has no legal obligations to provide services. The County has identified these as critical issues in the 2009 Evaluation and Appraisal Report (EAR) and developed strategies to limit development and address private property rights.

Up until 2005 there was little development pressure seen in the West Flagler region. In 2005, the annexation of 10,000 acres into the City of Bunnell raised concerns from state and regional agencies. The Florida Department of Community Affairs, the Northeast Florida Regional Council and other reviewing agencies expressed a concern that the annexation would spur the unchecked development of the sparsely populated rural lands. The primary issue pertains to the potential for sprawling development occurring in a manner that:

1. Does not address the provision of urban services in an efficient and orderly manner;

2. Results in the degradation of valuable natural resources including wetlands, wildlife corridors and aquifer recharge areas;
3. Establishes incompatible land use patterns that effectively eliminate the existing agricultural uses and rural land uses.

The current economic conditions have slowed the pressure for development of raw land for new housing and commercial products. This has not abated the concern from state and regional agencies. The critical element is to make sure all local governments have in place the necessary land use policies needed to guide the development or preservation in Western Flagler County. This will require the coordinated efforts of the County, the City of Bunnell and the City of Palm Coast to:

1. Ensure a cohesive method supporting the agricultural interests;
2. Establish meaningful standards for sustainable development; and
3. Prevent sprawl from occurring in the rural areas.

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III. Guiding Principles

Flagler County has experienced considerable growth and additional intergovernmental coordination issues since the adoption of the 1999 EAR-based amendments. The Flagler County Commission embraced the idea of working in a comprehensive manner to address the growth management issues that occurred after the adoption of the 2000 Comprehensive Plan. The County Commission created the Flagler County Futures Committee in 2007 as a way of systematically defining growth issues and setting in place methods for addressing those issues. This diverse group represented a variety of interests and provided guidance in the development of a general vision and guiding principles that needed to be used in the development of the goals, objectives and policies of the new comprehensive plan. The following summarizes the major issues facing Flagler County in the development of comprehensive plan for the 2010-2035 planning horizon.

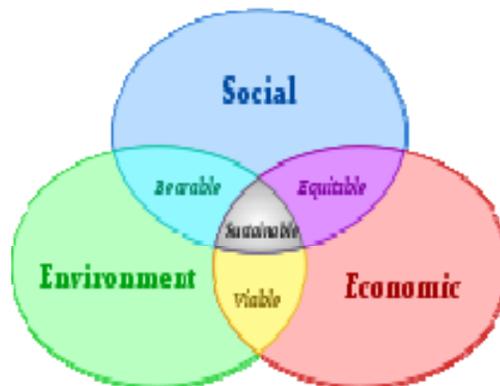
Issue 1. Sustainability



- Preservation and protection of natural resources, including: sensitive lands, habitats, wetland areas, floodways, beaches, offshore artificial reefs, and wildlife corridors.
- Preservation of the rural character of western Flagler County.
- Recognition and preservation of Flagler County's rich history, culture, and heritage.

The term "Sustainability" has many definitions and interpretations. The following figure represents how sustainability requires a balance between social, economic and environmental resources in order for the continued prosperity of the residents, businesses and natural resources within Flagler County.

Figure 1. Sustainability illustration



Source: Adams, W.M. (2006). "The Future of Sustainability: Re-thinking Environment and Development in the Twenty-first Century."

In Flagler County “sustainability” represents the ideas that Flagler County will be able to provide for the balance among the economic, social and environmental elements. Additionally, a sustainable community, such as Flagler County, can provide its residents with the quality of life they prefer. This becomes increasingly difficult as a community grows in population and diversifies in the individuals’ interest. For example, an area that is primarily rural with farming as its primary economic base and ample amounts of natural, open lands will typically have a homogeneous population that shares the same desired goals for that community. If this area experiences changes to the economic base, such as a shift from an agricultural-based economy to a bedroom community or tourism-based economy, then the population will have different and diverse interests in how government interacts with the private sector. This has been the trend in Flagler County since the adoption of the 2000 Comprehensive Plan.

In the area west of US 1 the predominant land use categories are “Agriculture and Timberlands” (62% of total land west of US 1) and “Conservation” (29% of total land west of US 1). The creation and application of these land use categories occurred as part of the initial comprehensive plan created under the 1985 Growth Management Act. The final densities and policies applicable to these land use categories were completed over a period of ten years. The overall policy direction was to allow for landowners to realize value from limited residential development and protect wetland resources. The policies and land use categories were developed to provide a balance, as well as methods to protect the agricultural and natural resources in western Flagler County. There has been limited success, but the future development pattern of home sites on 5-acre tracts now appears to be incompatible with many of the agricultural interests. It is imperative that the County utilize a program to encourage landowners to support agricultural and natural resources in western Flagler County and allow for limited mixed-use development that adheres to strict standards that emphasize “Green” development.

Over the 25-year planning horizon Flagler County’s role will include the difficult task of reviewing and making decisions that provide for the interests of the residents. The various issues raised in the 2009 Evaluation and Appraisal Report clearly show that the leaders of Flagler County are aware of these changing interests and the social, economic and physical impacts to the natural and built environments.

Issue 2. Water Resource Protection Planning



- Balance the water demand with sustainable capacity development through protection of water resources (including surface waters, aquifers, and wetlands) and conservation.
- Determine how the Comprehensive Plan has protected the quantity and quality of surface waters as environmental assets, water sources, and recreational opportunities.

The issue of water supply, provision of potable water and water conservation is already a major issue in the entire State of Florida. Flagler County is facing a difficult task of

balancing competing interests. On one side is the need for economic growth and diversity, the preservation and protection of the agricultural economy and continuation of the real estate/construction sector of the economy. These factors require the consumption and use of water and in some cases, the land where groundwater or surface water is “produced.” The other side of the issue is the need to preserve natural resources, the desire to maintain a “small town” character and the interest in maintaining low costs for the production of potable water. Flagler County must work with the cities and SJRWMD in order to balance these factors. The County’s role in the provision of these services may be change over the next 25 years but its role in coordinating plans for water conservation; water source protection and efficient delivery of services will remain in place.

Issue 3. Public Infrastructure



- (Eastern Flagler County) The upgrading of wastewater treatment on the barrier island within unincorporated and incorporated Flagler County.
- (Eastern Flagler County) The improvement of water hydrants on the barrier island for firefighting.
- Promote the expansion of wastewater reuse within unincorporated and incorporated Flagler County.
- Enhancing intergovernmental coordination between Flagler County, its cities, and adjacent counties to provide services more efficiently and achieve more sustainable growth.
- Directing commercial and industrial growth to existing transportation corridors and major intersections where utilities can be provided.

The provision of public infrastructure consisting of potable water, sanitary sewer, stormwater management and reclaimed water will continue to be controversial items in the future. Local governments, quasi-governmental entities, private companies and on-site facilities currently provide for potable water, sanitary sewer (septic) and reclaimed water services throughout Flagler County. Stormwater management is a mixture of older systems that can be private or publicly maintained and newer systems which are typically maintained by quasi-governmental entities, such as home owners association or community development districts. These services have to be planned and provided in order to meet statutory requirements for concurrency and the public’s demand for efficiency of government. Flagler County will have a role as a coordinator, a regulator and a limited provider of these services now and in the future.

Issue 4. Family Friendly Environment



- Enhancement of recreational opportunities by preserving natural areas for outdoor pursuits and by developing parks and a regional trail system.
- Preservation of the natural shoreline of major water bodies, including Crescent and Dead lakes,

and provisions for adequate and appropriate public access.

The issue of family-friendly environment is directly related to quality of life. People will move to and reside in a County that provides them with social, cultural, and economic resources that compliment their desired lifestyles. The Comprehensive Plan for Flagler County carries this concept in all of the elements.

Issue 5. Economic Development



- (Central Flagler County) Reservation of adequate economic development opportunities along the U.S. Highway 1 and Interstate 95 corridors and encouraging commercial and industrial infill, including economic development at and around the airport industrial park.
- (Western Flagler County) Protecting and promoting sustainable agriculture and supporting agri-businesses.
- (Eastern Flagler County) Protecting and enhancing water-dependent economic development, including marine industries.
- Nature and historic based-tourism – Promote environmental-based and environmentally friendly tourism as well as tourism based on historic attributes.
- Integrate education with the County's economic development plans due to its importance and relationship business development.

The local economy is the foundation of the stability of any county. Flagler County's leaders have long realized that there is need to diversify the economic base. Efforts to step-up the local economy have been severely hurt by the international economic downturn that occurred since 2007. Local leaders are looking for opportunities to act within a regional approach to improve the economic opportunities in Flagler County. The current conditions reflect an area that was heavily dependent on the residential construction industry and agriculture-related businesses. These elements will continue to be important parts of Flagler County's economy. The next step is to expand those existing businesses and use the local resources to attract new business opportunities to the County to ensure long-term stability.

Issue 6. Transportation

- (Central Flagler County) Improving the transportation network through more east-west connections across the railroad, effective access management, and enhanced connectivity.



- Improving corridor connectivity, in particular S.R. A1A, S.R. 100, U.S. Highway 1, Old Dixie Highway, and inclusion of SIS facilities.
- Coordinating multi-jurisdictional issues, primarily pertaining to corridors between neighboring counties and FDOT facilities.
- Long range transportation planning and modeling.
- (Central Flagler County) Enhancing non-motorized accessibility to Town Center through support of a rails-to-trails connection to U.S. Highway 1, public transportation, and improved street network.

Transportation will continue to be a major issue facing Flagler County. There are currently a multitude of issues that need to be addressed within the next five years. These include whether or not to form a new metropolitan planning organization (MPO/TPO) or join one of the existing MPO/TPOs'. The need to coordinate internally with the cities will need to be enhanced regardless of the decision on the MPO/TPO. Additionally, there are requirements by the State of Florida to address multi-modal transportation and reduction of greenhouse gases. These issues must be incorporated into decision on land use in order to be truly effective. Lastly, once the decisions on planning and design have been addressed, then there will be plans needed for the funding of the improvements. The old models of relying on impact fees and developer exactions will not sufficiently fund all of the improvements, especially the operational costs of transit services and the construction/maintenance of pedestrian facilities.

Issue 7. Coastal Protection and Preservation



- Preserving and retaining ocean views, beaches, public beach access, and parks.
- Promoting dune protection and pursuing other means to prevent and mitigate beach erosion.
- Maintaining the Scenic A1A Highway and the beachfront character through design guidelines and other development regulations that minimize visual impacts.
- Protecting coastal development and populations from hazards to life and property by limiting density increases on the barrier island.

Flagler County's eastern boundary is the coastline of the Atlantic Ocean and the western boundary is Crescent Lake. These are valuable natural resources that are the principle assets for the tourism portion of the local economy and serve as an attractor for those relocating to Florida from elsewhere. Over the next 25-years Flagler County faces many challenges in managing and overseeing the health and viability of these resources. This will require an extensive coordination effort with a variety of federal, state and regional agencies and organizations.

The information and public input that resulted in this list of major issues provided the framework for the 2009 Evaluation and Appraisal Report as well as a series of generalized vision statements and guiding principles. The following guiding principles provide the basis for the goals, objectives and policies found in the 2010-2035 Comprehensive Plan. These goals, objectives and policies in turn lay the framework for more detailed implementation opportunities between Flagler County and the cities within the County.

Guiding Statement for the Comprehensive Plan

- Flagler County balances rural conservation and urban growth to support a strong economy and diverse neighborhoods with easy access to services and amenities.
- Coordinated efforts to protect and enhance the natural and built environments through sustainable choices that make Flagler County a model for a “green” community (beach, mainland neighborhoods, and rural areas).

Guiding Principles for the Comprehensive Plan

Principle One: We will protect and enhance our natural environment.

- Flagler County will conserve land through efficient development patterns.
- Flagler County will conserve and protect water through sensitive design.
- Flagler County will strive to protect our air quality through reduction of green house gas emissions.

Principle Two: We will foster sustainable growth.

- Flagler County will make efficient use of limited water resources.
- Flagler County will create opportunities to expand the local economy, focusing on clean industries.
- Flagler County will be mindful of natural hazards and mitigate risks to life and property.
- Flagler County will strive to reduce energy usage and explore the use of alternative energy sources to achieve energy sustainability.
- Flagler County will support sustainable agribusiness in Flagler County through equitable protection of agricultural lands.
- Flagler County will foster livable neighborhoods, with a variety of housing options and adequate community services, amenities and infrastructure.
- Flagler County will support and expand sustainable mobility options through development patterns and transportation investments.

Principle Three: We will seek opportunities for local and regional coordination and partnership.

- Flagler County will designate growth tiers (policy areas) to accommodate urban growth while protecting our natural and agricultural resources.
- Flagler County will coordinate infrastructure provision and development decisions with other public and private providers to increase efficiency and maximize our investment.
- Flagler County will coordinate service provision with other public and private providers to increase customer service and maintain a high quality of life.

IV. Demographic Information

A. Population Projections

The County must know what is in place, what needs to be in place and how to fund it in order to develop a viable plan for sustainability in Flagler County. The first step is to review the past trends and identify the population growth trends for the planning timeframe. Flagler County has been one of, if not, the fastest growing County in Florida since the mid 1990's. This reflects the transition from a primarily rural setting to a suburban setting. The following tables provide a summary of the total population and land use trends for the County for the 25-year planning horizon.

Table A-1. Population Change 2000 to 2009			
	April 1, 2000 (Census)	April 1, 2007 (est.)	Percent Change
Flagler County Total			
Beverly Beach	547	509	-6.95
Bunnell	2,122	2,394	12.82
Flagler Beach	4,878	5,401	10.72
Marineland (part)	6	9	50.0
Palm Coast	32,732	70,376	115.01
UNINCORPORATED	9,547	14,879	55.85
Florida	15,982,824	18,680,367	16.88
Incorporated	7,904,403	9,508,495	20.29
Unincorporated	8,078,421	9,171,872	13.54

Source: Bureau of Economic and Business Research, 2008

Table A-2. Population Projections 2010 to 2035						
	2010	2015	2020	2025	2030	2035
Total Flagler County	95,700	114,700	137,400	159,500	180,600	200,300
Unincorporated Flagler County	12,221	14,121	16,391	18,601	20,711	22,681

Source: Flagler County Growth Management and Bureau of Economic and Business Research, 2009

These projections provide for a basic estimate of population so that the County can better project where development pressure will develop. These need to be used in conjunction with the goals, objectives and policies of the local government comprehensive plans to verify the potential for these projections to be realized. As development pressures inevitably continue in the western area, it is reasonable to expect some of the population allocated to the Cities of Beverly Beach, Flagler Beach and the Town of Marineland to be realized in the western areas of Bunnell, Flagler

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County and Palm Coast. This does not mean that these projections should not be used, but care needs to be used in determining the potential impacts in the future.

Population Group	2010 (Est)	2015 (Proj)	2020 (Proj)	2025 (Proj)	2030 (Proj)	2035 (Proj)
Resident Population						
Incorporated	83,479	100,579	121,009	141,299	159,899	177,619
Unincorporated Flagler County	12,221	14,121	16,391	18,601	20,711	22,681
Flagler County Total	95,700	114,700	137,400	159,500	180,600	200,300
Seasonal Population						
Flagler County Total	11,227	12,702	14,371	16,260	18,397	20,814
Total Population						
Flagler County Total	106,927	127,402	151,771	175,760	198,997	221,114

Source: Flagler County Planning and Zoning Department, 2010, based on US Census ACS 2006 to 2008 and 2009 BEBR data.

	2010	2015	2020	2025	2030	2035
Total Population	103,991	127,896	150,498	171,096	190,591	207,911
Persons per dwelling unit	2.35	2.35	2.34	2.33	2.33	2.33
Total dwelling units	44,223	54,538	64,215	73,233	81,914	89,232

Source: Florida Housing Data Clearinghouse, Shimberg Center for Housing Studies and Flagler County Planning and Zoning Department 2009

Note that the County is using data from the Florida Housing Data Clearinghouse for the data and analysis required for the Housing Element. This is different than the updated County population projections made by the Bureau of Economic and Business Research (BEBR), which is used for the Future Land, Transportation, Infrastructure, Recreation and Open Space Elements. The County realizes that there are differences in the projections, but there are sufficient consistencies so that sound goals, objectives and policies can be developed and adopted in the Comprehensive Plan. Flagler County will continuously update the data as these organization update and improve their projections.

The Flagler County Comprehensive Plan Elements are designed with goals, objectives and policies that are intended to prevent and discourage urban sprawl. Flagler County's role will require greater coordination with the cities since the population projections show that the majority of the population will reside within the cities. This means that Flagler County and the other local governments need to provide for shared efforts for protecting and preserving valuable agricultural and natural resources.

B. Seasonal Population Impacts on Population, Delivery of Services and Land Use

Seasonal population is an estimate of those persons who reside within Flagler County for a portion of the year, but do not consider Flagler County as their primary residence. This population may reside in Flagler County for many months and require provision of services and facilities similar to permanent residents. It is important that Flagler County use these estimates in the process of planning to ensure that there are sufficient resources allocated to the various governmental services and facilities on the most efficient manner possible.

These are estimates based on information provided by the US Census Bureau as part of the American Community Survey (ACS) and The University of Florida Bureau of Economic and Business Research (BEER). The Flagler County Growth Management Department used the data from these sources, as well as land use data from the county and cities to estimate the amount of total dwelling units currently occupied by seasonal population and projected the amount of land for available for future development of seasonal housing.

Existing Conditions

There are two components to seasonal population. The first are tourists who visit the area for short-term vacations (periods less than 30-days). Flagler County has many attractive attributes that makes it a prime tourist location. The tourist population impacts water, sewer, transportation, recreation and public safety services and facilities. Based on previous behavioral studies, the tourist population will typically evacuate during the first warnings of pending emergencies such as hurricanes or wildfires so there may be impacts to evacuation times, but minimal impacts to shelter space since many tourists will return to their homes.

According to the 2009 Florida Statistical Abstract, there were 68 lodging facilities containing 1,697 units in Flagler County as of July 2008. A lodging facility includes apartments, rooming houses, resort condominiums, resort dwellings, transient apartments, hotels and motels. The motels and hotels accounted for 18 facilities that housed 711 units. This means that the remaining 986 units were housed in 50 facilities that include bed and breakfasts, resort condominiums, resort dwellings or short-term apartments. These figures are based on those facilities licensed by the State of Florida Department of Business and Professional Regulation, Division of Hotels and Restaurants to operate a temporary lodging facility (time of stay less than 6 months). There were no estimates of population or persons per unit, so the Flagler County Growth Management Division assumed that using the persons per household estimates for the permanent population would provide a conservative method of estimating population of tourist, seasonal population. According to the 2008 Statistical Abstract, Flagler County had a person per household ratio of 2.33. This means that there are approximately 3,954 persons occupying the 1,697 public lodging units in 2008. In regard to potential traffic impacts a very conservative estimate would be to assume 100% occupancy and that each unit represents one vehicle. This would mean that the road

network would need to accommodate the evacuation of 1,697 vehicles, in addition to the “snow bird” and permanent residents.

Similar facilities that impact Flagler County includes campgrounds since these also provide for public lodging. There are six campgrounds located east of US 1 and four located west of US 1 for a total of ten campgrounds. All of these facilities provide for recreational vehicles and tents camping and consist of approximately 1,200 sites. A conservative estimate of the temporary population of these facilities would be based on 2.33 persons per household resulting in a total population of 3,600 persons. In regard to potential traffic impacts a very conservative estimate would be to assume 100% occupancy and that each unit represents one vehicle. This would mean that the road network would need to accommodate the evacuation of 1,200 vehicles, in addition to the “snow bird” and permanent residents.

The second component is the seasonal residents who own a second or vacation home or rent a dwelling unit for a period of 4 to 6 months within Flagler County. Over the years this population has been deemed “snow birds” since they typically are retirees who reside in the Florida during the winter months to avoid the weather conditions of their home state. These persons would not be represented by public lodging facilities since they typically do not reside on licensed public lodgings. This is a difficult population to track since there are no requirements for registering or licensing rental dwelling units or second homes. The use of the Statistical Abstract and the US Census American Community Survey (ACS) may assist in providing an estimate for seasonal owners and the use of seasonal rentals. Also past trends as to the amount of seasonal units will provide a baseline to ensure accuracy in the estimate.

The US Census ACS provided an estimate on the number of occupied residential units for Flagler County in 2008. The ACS also includes an estimate of vacant units, both owner and renter-occupied. This can be used to estimate the amount of seasonal, second homes in the County. According to the ACS Glossary available at http://factfinder.census.gov/home/en/epss/glossary_v.html#vacancy_status:

Vacant housing unit: A housing unit is vacant if no one is living in it at the time of enumeration, unless its occupants are only temporarily absent. Units temporarily occupied at the time of enumeration entirely by people who have a usual residence elsewhere are also classified as vacant.

The US Census also provides an estimate of the percent of seasonally occupied housing units. This is provided in Table 7 of the Annual Statistics published by the US Census. The 2007 Annual Statistics provided historic seasonal units by regions of the United States. Over the ten year period between 1997 and 2007 the Southern region experienced a growth in the percentage of seasonally occupied units from 2.5 in 1997 to a high of 3.4 in 2007. This rate can be expected to fluctuate based on the transition of an area from rural to urban and the impacts of a booming or descending economy. It is recommended for this planning horizon that the ten-year average of these rates be

applied. This rate can be applied to the housing data to estimate the total number of seasonal units. Based on the US Census, the average seasonal occupancy was 2.8 or total units. Table 5 below summarizes the information from the ACS for Flagler County as of 2008:

Table A-5. Housing Occupancy and Seasonal Estimate 2008	
Housing	Estimate
Total Housing Units	48,028
Occupied Units	37,931
Vacant Units	10,097
Seasonal Units	1,345

Source: Flagler County Planning and Zoning Department, 2010, based on US Census ACS 2006 to 2008 and 2009 BEBR data.

The number of persons per household of 2.33 can be applied to the 1,345 seasonal housing units to determine an estimated seasonal population of 3,133.

In order to finalize the estimate of total seasonal population for 2008, the estimates made for the two components of the seasonal population (tourists and snowbirds) must be added. The final outcome is an estimate of 10,687 persons who seasonally reside in Flagler County in 2008.

Projected Growth 2010 to 2035

Now that there is an acceptable estimate of the base population for 2010, there can be projections based on established growth rates for the two different components. Growth in the amount of tourist population is tied to public lodgings. Growth of public lodgings is based on several items. First is the land use and zoning to allow these types of facilities. The second is the market conditions that dictate the demand for tourist-based lodging. The primary resource that anchors tourism in Flagler County is the Atlantic Ocean and its beaches. The majority of the coastline in Flagler County has been developed for a variety of uses, but the primary land use pattern consists of single-family homes. Flagler Beach has very low intensity commercial uses interspersed along SR A1A and a major commercial node at the intersection of SR A1A and SR 100. There are also commercial pockets located along SR A1A in the Hammock Dunes Development of Regional Impact and adjoining lands north of Jungle Hut Road. There are multifamily developments at the south and north end of the barrier island. There are state and county parks located throughout the SR A1A corridor. There is very limited (less than 10% of the total land area) vacant land available for development on either side of SR A1A along Flagler County’s coastline. The potential for redevelopment of existing uses for more intense/dense development is a possibility, but this is limited by the land use designations assigned by the local governments (Flagler Beach, Beverly Beach, Marineland and Flagler County). The adopted Future Land Use Maps for these local governments do not include any provision for significant increases in the potential redevelopment of the barrier island.

The other sources of tourism relate to eco-tourism, agri-tourism and sports-related (golf, motorsports). The lodgings for these types of destinations do not have to be located in close proximity of the resource, but need to be centrally located near roadways and related services (restaurants, retail shopping). Majority of the end-users for this type of tourism would also utilize public lodgings located along the coast and would also use lodgings along US 1 and Interstate I-95, as well as short-term rental of homes and apartments for special events. As with the coastal-based tourism, the sport-related tourism has limited opportunities for expansion. The limitation is not necessarily based on the amount of land, but the land use designations of the areas where these new facilities could locate.

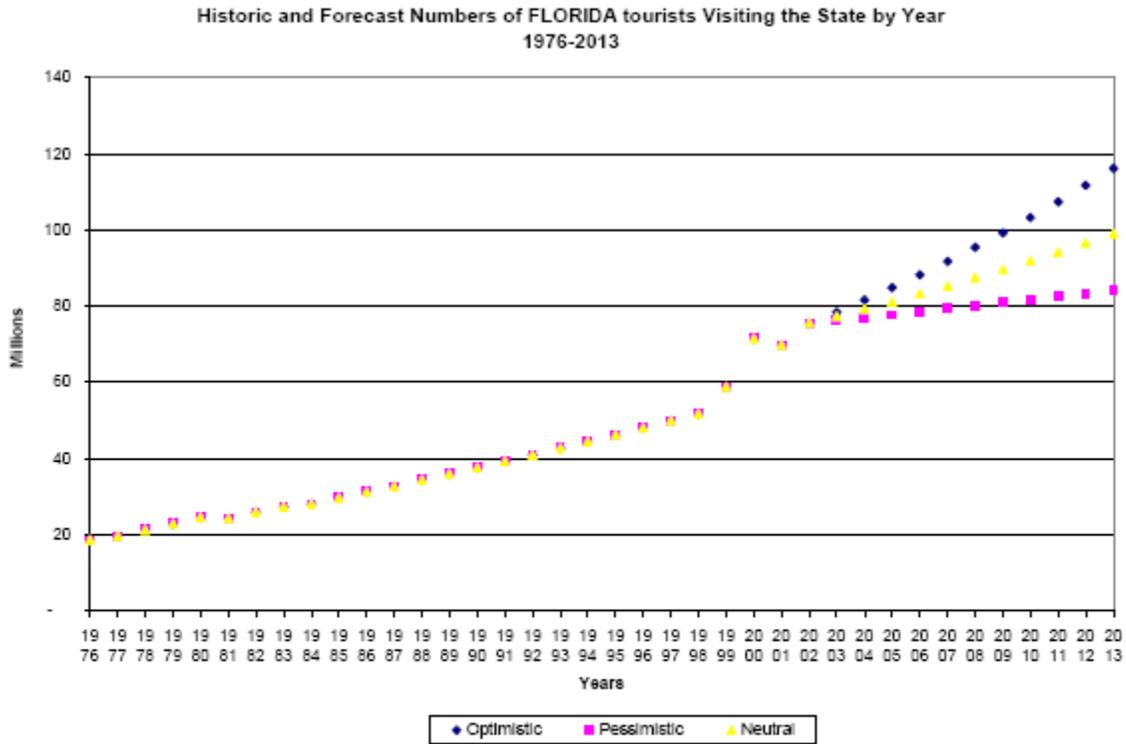
These generalized conditions reflect that expansion of seasonal population associated with tourism will be difficult to estimate. The estimates of current tourist population provide the base that a growth rate can be applied. The rate can be applied over the 25-year planning horizon to show a theoretical maximum that provides a conservative estimate.

The following graph is part of a 2003 Special Report generated by Florida TaxWatch. The report included projected estimates of increases in tourism out to the year 2012 based on a conservative growth rate of 2.5%. This growth rate can be applied to the tourist population estimate for the year 2008 and extrapolated to project the 2035 tourist population. Table 6 below reflects the project population resulting from this growth rate.

Table A-6. Tourist Population Projections Flagler County	
Year	Population
2008	7,553
2010	7,935
2015	8,978
2020	10,158
2025	11,493
2030	13,003
2035	14,712

Source: Flagler County Planning and Zoning Department, 2010, based on US Census ACS 2006 to 2008 and 2009 BEBR data.

Figure 2



Source: Historic Data, Visit Florida and CEFA, FSU; Forecast Data, CEFA, FSU

Median estimates, annual Florida visitors number: 75,627,000 (as of 2002)*

- 91,989,419 (as of 2010)
- 99,062,543 (as of 2013)

The second component of seasonal population is the “snowbird” population or those residents who own or rent a second home in Flagler County. These are persons who have their “permanent” residence outside Flagler County, and typically outside Florida. The population estimates for 2010 will be projected to grow based on the growth rates applied to the growth in tourist population. This rate of 2.5% is being used since the “snowbird” population will respond to economic shifts and changes as the tourist population. This is different than the responses from those who are permanent residents. Table 7 below summarizes the projections for the seasonal resident population in Flagler County.

Table A-7. Seasonal Occupancy Projections Flagler County	
Year	Population
2008	3,133
2010	3,292
2015	3,724
2020	4,214
2025	4,767
2030	5,394
2035	6,102

Source: Flagler County Planning and Zoning Department, 2010, based on US Census ACS 2006 to 2008 and 2009 BEBR data.

This provides the final estimate so a final estimate of seasonal population can be made by combining the estimate for tourist and seasonal population. Table 4 summarizes the final estimates between 2010 and 2035 for seasonal population in Flagler County.

Table A-8. Total Seasonal Population Projections Flagler County			
Year	Tourist Population	Seasonal Population	Total Seasonal Population
2008	7,553	3,133	10,686
2010	7,935	3,292	11,227
2015	8,978	3,724	12,702
2020	10,158	4,214	14,371
2025	11,493	4,767	16,260
2030	13,003	5,394	18,397
2035	14,712	6,102	20,814

Source: Flagler County Planning and Zoning Department, 2010, based on US Census ACS 2006 to 2008 and 2009 BEBR data.

Acceptability of Estimate

There are limited ways to validate the estimates and projection. One method is to look at the consistency with previous estimates to see the there are consistent trends. As part of the 2000 Comprehensive Plan Flagler County projected a total, peak non-resident population of 6,912 for the year 2010. This is a difference of 4,315 persons (63%) lower than the 2010 estimate of 11,227 persons. This difference can be explained by the fact that the 2000 Comprehensive Plan also underestimated the total

population of Flagler County by approximately 29,930 persons (65,770 as shown in the 2000 comp plan; 95,700 in 2010 BEBR) or 45%. The comparison of the ratio of season to permanent population (10.5% for the 2000 Comprehensive Plan and 11.2% for the 2010 estimates) reflects that the difference is acceptable and generally consistent with the projections from the 2000 Comprehensive Plan. Table 6 shows the ratio of seasonal population to permanent population for the 25 year planning horizon. This table shows that there is a consistent ratio of seasonal to permanent residents. It is understood that this trend is not linear, but the projections provide the County with a tool to use in developing goals, objectives and policies for the provision of services, protection of human safety and emergency management.

Table A-9. Ratio of Seasonal to Permanent Population Projections Flagler County			
Year	Total Seasonal Population	Permanent Population	Seasonal % of Permanent
2010	11,227	95,700	11.7
2015	12,702	114,700	11.1
2020	14,371	137,400	10.5
2025	16,260	159,500	10.2
2030	18,397	180,600	10.2
2035	20,814	200,300	10.4

Source: Flagler County Planning and Zoning Department 2010

C. Housing and Residential Development

The Flagler County Board of County Commissioners are dedicated to expanding the variety of housing in order to assure all residents have access to safe and affordable housing. The Flagler Board of County Commissioners understand that there is a direct linkage between economic development and the provision of housing. The Housing Element contains specific goals, objectives and policies to realize this effort. The Future Land Use Element has to include similar goals, objectives and policies to ensure the elements are consistent and establish a coordinated method of addressing the County's housing issues.

The first step is to identify existing and projected deficits in the supply of housing. This will lead in to an analysis of housing trends to ascertain the causes, scope and nature of any housing problems within Flagler County. Lastly the Future Land Use Element has to ensure that there is consistency in the plans, programs and policies to bring about the accomplishment of the required housing, whether through private sector efforts, non-profits, public-private partnerships, or the public sector.

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The data used in developing the goals, objectives and policies is from the Florida Housing Data Clearinghouse (FHDC) of the Shimberg Center for Housing Studies.

There are a variety of federal, state and local programs in place to address these issues. It is critical that Flagler County use these programs and the Housing Element of the Comprehensive Plan to develop appropriate actions that are pertinent to local issues. Assisting in this effort is the Flagler County Commission Strategic Plan for 2010-2015 included a goal of establishing affordable (workforce) housing and infrastructure for housing which supports a diversified economy. This goal is supported by an objective to develop a County housing program that that can stimulate the production of workforce housing. This program needs to include aggressive measures to recapture program funds to ensure the sustainability of the program. The Strategic Plan includes implementation strategies that identify modifications to the Local Housing Assistance Program (LHAP) by May of 2013 to ensure that there is a way to recapture the programs funds so that the County can continue to fund expansion of the program.

The following tables provide a summary of the demographic information that is needed to shape the proper goals, objectives and policies for the Future Land Use Element. Also it is important to include the recommendations from the Evaluation and Appraisal Report (EAR) process to ensure that the Housing Element provides a sound planning tool for Flagler County leaders.

The first item is the projected population for Flagler County. The following tables include projections from the FHDC for the County. Note that populations projections established in the Housing Element may differ from the Future Land Use Element or Public Schools Facility Element due to the sources that the County is required to use for the various elements.

The following table reflects a total population estimate that includes non-permanent residents. This is critical due to the impacts that tourism and “snowbird” populations are included with population estimates to ensure that a true population can be used to analyze the availability of affordable housing to the entire population.

Table A-10.									
Population Projection by Age Cohort 1990 to 2035									
Age	1990	2000	2007	2010	2015	2020	2025	2030	2035
0-4	1,477	2,058	3,640	4,160	5,363	6,351	7,080	7,686	8,772
5-9	1,556	2,381	4,435	4,456	5,683	6,829	7,798	8,506	9,794
10-14	1,549	2,819	5,240	5,635	6,111	7,317	8,506	9,493	10,576
15-19	1,464	2,505	5,342	5,887	7,000	7,381	8,631	9,867	10,979
20-24	1,213	1,560	4,090	4,687	5,805	6,548	6,859	7,862	8,750
25-29	1,486	1,759	3,518	4,182	5,372	6,209	6,734	7,012	7,803
30-34	1,788	2,255	3,677	3,884	5,288	6,330	7,046	7,425	8,553
35-39	1,815	2,886	4,495	4,555	5,197	6,562	7,569	8,218	9,319

**Table A-10.
Population Projection by Age Cohort 1990 to 2035**

40-44	1,629	3,227	5,707	5,751	6,137	6,683	8,128	9,171	10,080
45-49	1,374	3,235	6,392	6,980	7,388	7,550	8,069	9,586	10,182
50-54	1,420	3,364	7,002	7,822	9,387	9,428	9,441	9,948	10,399
55-59	1,824	3,515	7,335	8,344	10,635	12,044	11,823	11,697	12,480
60-64	2,761	3,999	7,247	8,443	11,166	13,613	15,049	14,579	16,345
65-69	3,287	4,361	6,873	7,756	10,971	13,900	16,671	18,183	22,257
70-74	2,209	4,145	6,464	6,929	9,301	12,805	16,000	19,064	24,629
75+	1,849	5,763	12,101	14,022	18,592	24,247	32,392	42,298	56,514
Total	28,701	49,832	93,558	103,493	129,396	153,797	177,796	200,595	237,433

Source: FHDC 2010 and Flagler County Planning and Zoning Department

This table provides information for the entire County, including the cities. It is understood that additional analysis is required to ensure that the County sets in place appropriate programs for its population, but it is necessary to review the County as a whole for efficiency in delivery of services. The information will provide support for interlocal efforts to improve the provision of affordable, workforce housing.

The following table breaks the total population down into age groups. This table indicates that Flagler County will experience an increase in amount of residents who are ages 55 or older. In 2007 this segment of the population accounts for 43% of the total population, but in 2030 it is projected to account for 53% of the population. This is one of the critical factors that need to be included in the overall approach to housing. Other information pertaining to household income, number of persons per household and economic factors will be used to direct the development of goals, objectives and policies for Flagler County.

The FHDC also provides information as to the amount of housing by ownership or rental. According to the FHDC, Flagler County total population in 2007 was 93,558 persons who occupied 39,563 households for an estimated 2.36 persons per household. The 2007 data shows that 84.3% or 33,352 households were owner-occupied with the remaining 6,211 units being renter-occupied. The percentage of owner-occupied housing is 13.9% over the State-wide percentage of 70.4% owner-occupied. The following table reflects the projected amount of units by ownership. The FHDC projections reflect that the high amount of owner-occupied will continue until 2030. This projection will need to be monitored in the future given the increasing urbanization that is occurring in the Coastal Areas (east of US 1) and efforts to diversify the economic activities in Flagler County. The critical aspect is that Flagler County be able to respond if this trend changes significantly in the future.

Occupancy	2007		2010		2015		2020		2025		2030	
	Units	%										
Owner	33,361	84%	37,035	84%	46,576	85%	55,725	85%	65,004	86%	74,007	86%
Renter	6,202	16%	6,870	16%	8,470	15%	9,735	15%	10,913	14%	12,002	14%
Total	39,563		43,905		55,046		65,460		75,917		86,009	

Source: FHDC 2010

“Affordable housing” is a term frequently used to measure how much of a family income is spent on housing, and the amount remaining that can be spent on other essential items such as food, clothing, education and medical care. Affordable housing is defined as housing which costs less than 30 percent of the family’s monthly income. The income levels of the residents will provide a valuable guide as to what programs are needed in to order for Flagler County to ensure there adequate “affordable housing”. The population that requires the most assistance is households with income less than 80% of the County’s average monthly income (AMI). The ability to afford housing becomes increasingly difficult for those whose income is below 80% of the County AMI. Since affordability is a factor of the percentage of income spent on housing, it is important to know how many of the households with incomes less than 80% of the County’s AMI will be “severely burdened”. A severely burdened household means that the household are expending more than 50% of the monthly income on housing. The following tables provide summary of the existing and projected number of households that will have income less than 80% of the County’s AMI and will be “severely burdened”.

Number of severely cost burdened (50%+) households with income less than 80% AMI by tenure						
Tenure	2007	2010	2015	2020	2025	2030
Renter	1,087	1,203	1,500	1,745	1,987	2,219
Owner	2,718	3,021	3,831	4,648	5,500	6,334

Source: FHDC 2010

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**Table A-13.
Number of Severely Cost Burdened(50%+) Owner-occupied Households
With Income Less Than 80% AMI**

Household Income as % of AMI	2007	2010	2015	2020	2025	2030
0-30% AM	1,080	1,197	1,508	1,808	2,111	2,409
30.1-50% AMI	733	816	1,044	1,279	1,531	1,776
50.1-80% AMI	905	1,008	1,279	1,561	1,858	2,149
Total	2,718	3,021	3,831	4,648	5,500	6,334

Source: FHDC 2010

**Table A-14.
Number of Severely Cost Burdened(50%+) Renter-occupied Households
With Income Less Than 80% AMI**

Household Income as % of AMI	2007	2010	2015	2020	2025	2030
0-30% AM	470	518	643	729	808	883
30.1-50% AMI	488	541	676	795	916	1,032
50.1-80% AMI	129	144	181	221	263	304
Total	1,087	1,203	1,500	1,745	1,987	2,219

Source: FHDC 2010

Flagler County staff used the data to update the goals, objectives and policies of the Future Land Use Element of the comprehensive plan. Additionally, the findings from the Evaluation and Appraisal Report (EAR) need to be incorporated as well into the Housing Element in order to meet the requirements of Chapter 163, F.S. and Rule 9J-5, FAC.

Housing Demand and Supply-Needs Analysis

By the year 2035 the unincorporated area of Flagler County is projected to experience demand for 9,734 permanent residences and 2,586 season dwelling units for a total of 10,320 new dwelling units. This estimate is based on the mid-range BEBR population projections, the person per household estimates from the Florida Housing Data Center and the projected seasonal population developed by Flagler County Growth Management.

The critical question is whether additional densities need to be allocated based on the adopted Future Land Use Map (FLUM) and the ability to accommodate these new dwelling units. Currently there are large expanses of open vacant land available for development. The actual ability to accommodate new development was analyzed as part of the study area analysis. The following table summarizes the residential development potential based on the adopted Future Land Use Map and approved/vested undeveloped residential projects.

Table A-15. Potential Residential Development	
Study Area	Dwelling Units
Coastal Area 1	531
Coastal Area 2	2,827
Coastal Area 3	624
Coastal Area 4	1,291
Coastal Area 5	5,187
Western Area 1	5,663
Western Area 2	7,368
Western Area 3	8,387
Western Area 4	716
Western Area 5	1,953
TOTAL	34,547

Source: Flagler County Planning

NOTE: Includes approved DRIs, but not approved PUDs

The total includes dwelling units approved as part of DRIs and gross, theoretical maximum development based on the currently adopted Future Land Use Map. This estimate provides a conservative estimate that may see variations based on the final actions taken on Flagler Estates (net reduction) and the implementation of the FARMS program (potential increase in development potential).

The projection of permanent and seasonal population for the year 2035 is a total of 20,814 persons. This projection can be converted to housing units by using the the persons per household used in the projections by the Shimberg Institute of 2.33 persons per household. This means that in the 2035, Flagler County will need a total of 10,320 units. This estimate indicates that the County has sufficient lands available to accommodate the projected residential population through the planning horizon of 2035.

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V. Natural Resources

Flagler County contains a multitude of valuable natural resources that are critical in the development of land use goals, objectives and policies. It is critical that future land use patterns include provisions for the protection and preservation of the varied natural resources within the County. The portion of the County west of US 1 historically has been used for forestry-related industries, silviculture and agriculture. Rock and mineral resources have not been primary uses of land and do not play an economic role in Flagler County. Natural amenities, such as the Atlantic Ocean, Intracoastal Waterway and Pellicer Creek are major recreation areas which attract tourists and visitors. Surface waters, minerals and forest resources are discussed in detail in the Conservation Element. Recreation resources are discussed in detail in the Recreation and Open Space Element

A. Topography

The topography of Flagler County is composed of a series of marine terraces. These land areas were formed at times when the sea stood at different levels, covering varying amounts of the mainland. When the sea level remained constant for long periods, the sea floor was eroded by waves and currents to a fairly level surface. When the sea dropped to a lower level, this part of the ocean bottom was exposed as a terrace.

There are three marine terraces recognized in Flagler County. These three terraces, the Silver Bluff, Pamlico and Talbot Terraces, form a relatively flat plain that slopes toward the Atlantic Ocean and toward Crescent Lake in western Flagler County. This plain consists of almost level areas interrupted by slight depressions, shallow drainageways and low, undulating ridges. The average elevation of the plain is about 25 feet above sea level, but some of the ridges rise above 40 feet.

The plain is interrupted by a low ridge region along the coast, 3 to 5 miles wide, consisting of narrow sandy ridges with low intervening swampy areas. Immediately along the coast and separated from the mainland by the Intracoastal Waterway is the barrier island which ranges from a few hundred yards to 1 mile in width.

B. Climate

Flagler County's climate is broadly classified as humid sub-tropical. The climate is tempered by the effect of the easterly sea breezes. These easterly winds, blowing about 40 percent of the time, produce a maritime influence that modifies to some extent the heat of summer and the cold of winter. In the summer, maximum temperatures reach 90 degrees or above, and the average daily temperature is 80 degrees. The beginning of the sea breeze near mid-day and the occurrence of convective afternoon thundershowers moderate the temperature. Severe winter cold fronts are unlikely. When the county is subject to invasions of cold fronts, they are relatively mild and of short duration. Temperatures average in the middle fifties. The area experiences an overnight freeze on the average of nine (9) days from early December to the middle of February. An occasional freeze occurs during November and as late as the second week in March.

Sixty percent (60%) of the rainfall, mostly in the form of local convective rainfall, occurs in the summer months. These rain showers are occasionally heavy and produce as much as two or three inches of rain at a time. The winter and spring months are the driest. Almost all rainfall during the winter and early spring is associated with frontal passages. Long periods of cloudiness and rain are infrequent. These periods are usually associated with a stationary front with waves, a so-called "northeaster", or a tropical depression.

Prevailing winds are northeasterly in the winter months and south southeasterly during the summer. The ocean trade winds, which average 5 to 10 miles per hour, blow from the southeast nearly year-round.

Tropical disturbances of hurricanes have not been a great threat to this area of the state. History indicates the chance of having hurricane force winds in any given year to be about one in thirty. Only in gusts have hurricane-force winds ever been recorded in Flagler County.

Heavy fog occurs mostly during the winter and early spring. These fogs usually form by radiation cooling at night and dissipate soon after sunrise. On rare occasions sea fog moves in from the ocean and persists for two or three days.

C. General Geology

The basement rocks underlying much of Florida include Pre-Cambrian and Cretaceous formations. The Cenozoic formations account for the uppermost several thousand feet of stratigraphy in Flagler County, and along with Recent sediments, are the only strata of interest here. Lower limestones of Eocene age, such as the Lake City Limestone, Avon Park Limestone and Ocala Group make up the Floridan aquifer within the Flagler County area; they do not crop out, being found at depths below 100 feet, and except as they participate in the hydrology of the region, are unlikely to influence surface landscapes.

The Hawthorne Formation is a gray to green, phosphatic, sandy clay and marl which lies unconformably on the eroded surface of the Ocala Group. Discontinuous lenses of limestone, shell and sand within the formation comprise the secondary artesian aquifer. Overlying the Hawthorne are unnamed Upper Miocene or Pliocene deposits consisting of fine to medium grain sands interbedded with shell and calcareous clays. These deposits, along with Pleistocene and Recent beds comprise the shallow water table aquifer. These later deposits consist of relatively undifferentiated and unconsolidated sediments, including fine to medium quartz sand, clayey sand, and lenses of clay and shell beds. These are generally discontinuous and quite variable in lithology and texture.

Pleistocene and Recent processes are responsible for the majority of surface physiographic features. Shell beds of the Pleistocene series thicken toward the coast and have been cemented in some places to form coquina. This distinct bed plus looser sand and shell beds crop out or occur only slightly below the surface from St. Augustine to the southern end of Flagler County. These were mapped by Cooke (1945) and

assigned to the Anastasia Formation. The Anastasia Formation was probably an offshore bar that was deposited at the same time the Pleistocene terraces were formed further inland. The Pleistocene terraces include the Talbot, Pamlico and Silver Bluff. The Talbot terrace was formed near the end of Sangamon time and extended as far eastward as about the present St. Johns and Flagler counties. The Pamlico terrace was formed during the Wisconsin Glacial Age that followed Sangamon time when the sea was lowered to an undetermined low level. The Pamlico sea advanced 2 to 5 miles inland of the present coastline of St. Johns and Flagler counties. At a later period, either during another recession of the ice in Wisconsin time (Cooke, 1945) or during the early part of recent time (Parker, 1955), the sea level remained relatively stationary at about 5 to 10 feet above its present level and the Silver Bluff terrace was formed. The Silver Bluff sea advanced less than 1 to over 4 miles landward of the present coastline of St. Johns and Flagler counties and formed a marine terrace along the coast. The following table shows the Pleistocene Terraces in Flagler County.

TABLE A-16. Pleistocene Terraces in Flagler County

Terrace	Approximate Altitude of Shoreline (feet)	Tentative Age
Coharie Sunderland	215 170	Yarmouth
Wicomico Penholoway Talbot	100 70 42	Sangamon
Pamlico	25	Wisconsin Glacial
Silver Bluff	5-10	Wisconsin Glacial or Recent

Source: Flagler County Planning and Zoning Department

D. Hydrology and Hydrogeology-Aquifer Protection

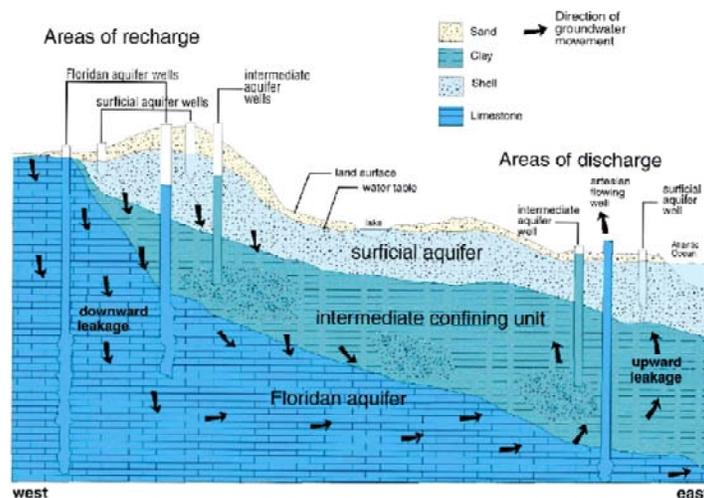
Three aquifer systems supply groundwater in Flagler County: the surficial aquifer, the intermediate artesian aquifer, and the artesian Floridan aquifer. Contrary to popular myth, there is not a large, continuous underground river originating somewhere north of Florida that passes through interconnected, open channels in the rock to provide a continuous stream of underground water. The source of water to all of these aquifers is rainfall occurring within or near the boundaries of the St. Johns River Water Management District. Some of this rainfall runs off to streams that carry it to the ocean. Some of it is returned to the atmosphere as evaporation from open water surfaces and as transpiration by plants. Some rainfall is stored in lowland areas such as lakes. Only a portion of rainfall moves downward from land surface to recharge the aquifers. The Southeastern Geological Society (1986) has defined the hydrogeologic nature of these aquifer systems, which may be briefly characterized as follows:

1. The nonartesian surficial aquifer extends from the surface to a depth of over 50 feet. It occurs over the entire county. Generally, groundwater in the nonartesian aquifer rises to within a few feet of the land surface. The surficial water table

aquifer is recharged by precipitation and by leakage from the underlying intermediate artesian aquifer where the potentiometric surface is above the surface of the water table. Discharge is by evapo-transpiration, runoff and leakage to the lower secondary aquifer.

2. The intermediate artesian aquifers are composed of lenses of sand, shell and limestone that occur within the principal aquiclude. The secondary aquifers range from less than 40 to about 90 feet below the surface, and vary in thickness from less than 1 to more than 10 feet. The intermediate aquifers are recharged from the overlying surficial water table and from the underlying Floridan aquifer. Recharge into the secondary artesian aquifer occurs locally where either the surface water table or intermediate aquifers are interconnected or by downward leakage through the aquiclude.
3. The Floridan aquifer is the major source of water for agricultural irrigation, industry and public water supply in Flagler County. Its top ranges from 50 to 150 feet below mean sea level and slopes from south to north. Water in the Floridan aquifer is replenished only in areas where the water table stands higher than the potentiometric surface. It is transmitted to the aquifer by two processes: 1) in part of the area, the aquiclude is breached by sinkholes, and the water is transmitted directly to the aquifer through these breaches; and 2) in other parts of the area where the principal aquiclude is either thin or absent, water from the nonartesian aquifer enters the artesian aquifer by downward leakage through the aquiclude. From the recharge areas, the water moves laterally through the pores and cavities in the limestone toward areas where discharge is occurring. The hydrology of Flagler County is discussed in more detail in the Groundwater section of the Conservation Element.

Figure 3. Floridan Aquifer



Source: SJRWMD

Flagler County and the cities use groundwater as the sole source of potable water. The Comprehensive Plan and Land Development Code include specific standards to protect the groundwater sources from pollution and other forms of degradation. It is important to note that urban, suburban and agricultural uses have the potential to negatively impact groundwater resources. The use of proper stormwater management

requirements, the permitting and development of industrial and commercial uses and the use of fertilizers/pesticides all must be regulated and monitored to protect the resource. Flagler County shall use the Floridan Aquifer Vulnerability Assessment (FAVA) and information from SJRWMD to ensure that the land use patterns occurring in the future do not result in a degradation of the groundwater resources in Flagler County. This coupled with the regulations contained in the Land Development Code provide the regulatory system for prevention of negative impacts. Monitoring of the impacts of the developed and agricultural areas provides greater difficulty due to the expertise and equipment required for an effective system. Flagler County shall continue to rely on the Florida Department of Environmental Protection and St. Johns River Water Management District as the primary data sources for the effectiveness of the land development code standards. In the future, major developments, such as DRIs or PUDs shall be responsible for the monitoring of groundwater resources as part of the annual reporting process.

E. Water Supply Protection and Conservation

Flagler County is required to develop and incorporate goals, objectives and policies into the comprehensive plan that implement a water supply facilities plan (WSFP). This document has to be consistent with the SJRWMD Master Supply Plan. The Infrastructure Element contains the goals, objectives and policies that implement the water conservation and supply protection standards identified in the Flagler County WSFP. This is a critical issue since Flagler County has been designated as a “Priority Water Resource Caution Area” by SJRWMD and must be aware of the lack of viable water sources for future populations. Please see the Infrastructure Element for specific information on the provision of potable water and protection of water supplies.

The Future Land Use Element and Map series emphasizes the protection of agricultural and natural resources. Performance standards are included in the Future Land Use Element to encourage the conservation of open space or agricultural resources, but allow for clustered development in a location that buffers natural resources. Flagler County shall use the most up to date sources of information, such as the FAVA in assessing future development in the areas west of US 1.

Flagler County does not plan to be a provider of potable water, but will ensure that decisions as to land use and permitting of development are made based on the adopted Comprehensive Plan and Water Supply Facilities Work Plan of those local governments providing that service. If Flagler County decides that it is financially feasible and in the best interest of the public to provide for potable water supply, treatment, and distribution, then Flagler County must amend and update its Water Supply Facilities Work Plan in order to assure that there are adequate supplies of potable water.

Flagler County will include in the Infrastructure Element goals, objectives and policies that implement the findings and recommendations established in the Flagler County Water Supply Facilities Work Plan and shall ensure that the Water Supply Facilities Work Plan and the Infrastructure Element are implemented through interlocal agreements, memorandums of understanding, or similar instruments that:

1. Require that coordination of land uses and future land use changes with the availability of water supplies and water supply facilities;
2. Establish enforceable potable water LOS standards for residential and nonresidential users;
3. Includes provision for the protection of water quality in the traditional and new alternative water supply sources;
4. Establish priorities for the replacement of facilities, correction of existing water supply and facility deficiencies, and provision for future water supply and facility needs;
5. Establish provision for conserving potable water resources, including the implementation of reuse programs and potable water conservation strategies and techniques;
6. Establish provisions for improved or additional coordination between a water
7. supply provider and the recipient local government concerning the sharing and updating of information to meet ongoing water supply needs;
8. Require the coordination between local governments and the water supply provider in the implementation of alternative water supply projects, establishment of level of service (LOS) standards and resource allocations, changes in service areas, and potential for annexation;
9. Require the coordination of land uses with available and projected fiscal resources and a financially feasible schedule of capital improvements for water supply and facility projects; and
10. Determine the need for additional revenue sources and identify how to fund water supply and facility projects.

Flagler County will assume a role of coordinator with the public and private utilities. There are efforts through the implementation of land development regulations to reduce the per capita consumption of potable water. This is the primary role that Flagler County can take in reducing impacts to water resources. The efforts for conservation need to be memorialized in the goals, objectives and policies to ensure that Flagler County:

1. Flagler County shall assist the St. Johns River Water Management District (SJRWMD) in its public information programs in an effort to increase public awareness and acceptance of water conservation techniques including wastewater reclamation.

2. Flagler County will continue to implement its water conservation related ordinances which include the use of low volume plumbing fixtures and the use of xeriscape landscaping techniques.
3. Flagler County shall amend the Land Development Regulations (LDRs) to incorporate conservation standards, such as WaterStar, so that there are incentives for developers to follow best management practices as cited in *A Guide to Florida-Friendly Landscaping (Florida Yards & Neighborhoods Handbook)* for landscape installation, irrigation, and fertilizer and pesticide application.
4. Flagler County shall establish specific standards in the Land Development Regulations (LDRs) to ensure consistency with the water conservation elements of the adopted Water Supply Facilities Work Plan that may include, but are not limited to:
 - (a) Implementation of native, xeric landscaping requirements for new development and retrofitting of existing development;
 - (b) Installation of reclaimed water with augmentation from stormwater storage facilities in order to reduce the use of potable water for irrigation purposes;
 - (c) Development of incentive to use water saving programs, such as Water Star, in new construction or major renovation of existing development;
 - (d) Implementation on restrictions/disincentives on irrigation that uses potable water; and
 - (e) Adjustment of potable water and sanitary sewer impact fees when meeting specific criteria for conservation purposes.

F. Soils

Soils are one of the most important factors affecting development potential of land. Structures cannot be built on soils with poor load-bearing capacity unless costly methods are employed to overcome the limitation.

Soils are also the main criterion for determining the productivity of cropland and timberland production. Soils rich in nutrients make good farmland. In Flagler County the soil potential for cropland is rated low to moderate. There are five (5) soil associations in Flagler County, which are rated moderate to high for production of pine woodlands.

Soil type also determines the applicability of septic tank usage for a given area. Soils with appropriate percolation characteristics can support septic tank usage with no environmental health problems. Conversely, soils classified as hydric soils have severe limitations for septic tank usage due to a high water table condition. Most of the soils in Flagler County are rated as “severely limited” for septic tank use. Soils with slight or moderate limitation make up less than 2% of the County.

G. Extractable Minerals

The attached map series contains maps that show the rock and mineral resources in the county. These are addressed in the Conservation Element.

H. Timberlands

The commercial timber producing lands comprise a significant portion of the land uses in western Flagler County. Most of the timberlands are commercial pine plantations, but areas of natural pine vegetation also occur as sand pine on high ridges and slash pine in the pine flatwoods community. Longleaf pine and slash pine are grown commercially. Due to the extensive commercial timber holdings, this component of the County's land use is anticipated to remain a significant economic sector. The conversion of these areas for master planned development has been and will continue to be an issue. The critical aspect is to ensure that rural areas are not impacted by suburban development and that additional scrutiny in regard to analysis of sprawl be applied to applications for development of commercial timber holdings.

I. Wetlands

Of Flagler County's 310,400 total acres, there currently exists about 98,542 acres of wetlands. These wetlands are distributed throughout the county, with most of the freshwater swamp and marsh areas located west of U.S. 1. The cypress bayheads occur primarily in depressions of the pine flatwoods community and along the borders of streams, sloughs and lakes. Most of the bottomland hardwood and all-coastal salt marsh areas occur in the east portion of the county east of I-95.

As the name implies, wetland communities are flooded, at least for part of the year. Wetland communities flood seasonally, usually due to changes of water level in the water bodies with which they are associated. Five types of wetland communities occur in Flagler County. They are briefly described as follows:

1. Freshwater Swamps - These swamps generally occur in depressed areas throughout the county lying either between two ridges or within stream courses and small sloughs. Tree species which are deciduous predominate and include red maple, water oak, sweet gum, tupelo and bald cypress. The community is considered a climax community.
2. Cypress Swamps and Bayheads - Cypress swamp communities occur primarily in depressions in pine flatwoods communities and also along borders of streams, sloughs and lakes. Bald cypress is dominant in swamps while pond cypress occurs most frequently in cypress domes. Succession occurs by accumulation of organic debris and filling resulting in a mixed hydric hardwoods community. Cypress bayheads also occur throughout the county in depressions among pine flatwoods and are characterized by broadleaved evergreen trees. Soils are highly acid, saturated, and periodically flooded Sweetbay, loblolly bay and red bay are the dominant tree species. The community is the result of environmental succession, preceded by marshes, swamps and wet pine flatwoods.

3. **Bottomland Hardwood** - This community is found in the marginal areas of stream courses and flood plains of streams and swamps. Occasional flooding occurs because of the proximity to wet areas. This community is a transition between hardwood swamps and upland areas. Vegetation includes live oak, cabbage palm, ironwood, red maple, sweet gum, tupelo, red bay and coontie palm. This climax community exhibits the greatest plant diversity and provides an excellent wildlife habitat. The greatest portion of Graham Swamp (Grand Haven Conservation Area) is comprised of this community.
4. **Freshwater Marsh** - The freshwater marsh communities of Flagler County are located in the western portion adjacent to Crescent Lake and Dead Lake. Plants in the community include marsh grass, sedges and lack rush. These species are salt tolerant due to the brackish water and tidal influences along Crescent Lake. This is a very productive area for wildlife.
5. **Coastal Salt Marsh** - This community occurs along the Intracoastal Waterway at elevations ranging from 0 to 5 feet above sea level. Plants include salt marsh grass, big and little cord grass, sedges and black rush.

Wetlands are fragile ecological communities dependent upon a particular hydrologic regime to supply the water necessary to support the plants and animals, which have established habitats therein. The inundation of the wetlands with water may be seasonal, semi-permanent, temporary or saturated.

Critical functions that wetlands perform include: serving as natural water retention systems; regulating the flow of water; protecting otherwise dry upland areas from inundation; and providing the main habitat for many species in the food chain. Wetlands also serve the function of flushing water by removing excess nutrients and particulates. When the weather is wet or the area is flooding, wetlands accept the excess water. On the other hand, when drought conditions exist, wetlands keep the surrounding area from becoming parched.

Within the County, development has encroached into wetlands, particularly along the banks of the Intracoastal Waterway. The most significant encroachment occurred when the saltwater canals of the Palm Coast community were dredged in the early 1970s.

J. Flood Prone Areas

Flood prone areas are relatively flat lands lying between a water body and terraces of higher ground on either side. Flood prone areas may occur in association with any riverine environment or stream, lake floodplain or associated wetland system. The flood prone area adapts to fluctuating water levels and acts as a functional part of the river system by providing overflow areas for floodwaters.

Both broad and narrow flood prone areas occur in Flagler County. Flooding involving river flows and broad expanses of flood plains occur around Crescent Lake, Lake Disston, the headwater area of Haw Creek, Dead Lake, the Matanzas River and parts of the Intracoastal Waterway. Flooding, involving stream flow in narrow confined channels occurs along Bulow, Pellicer, parts of Haw Creek, Blackwater and Sweetwater Branches and the central portion of the Intracoastal Waterway.

Flagler County's major causes of flooding are a result of past tropical storms that passed through the area. These tropical disturbances created storm surge along the Atlantic Ocean and riverine and lake flooding from the resulting heavy rainfall. The areas which are subject to periodic inundation from flooding are shown in the attached maps series.

K. Historic Resources

These resources include historic buildings, archeological and prehistoric sites which have been surveyed by a professional consultant. Previous studies indicated that there are significant and important historical resources located in Flagler County. The location of these resources was tied to the prevalent modes of transportation in place at that time. The earliest historic sites were concentrated along waterways such as the Matanzas River; Bulow, Haw and Smith Creeks; Crescent Lake; the King's Road; and the Dixie Highway. The development of the Flagler Railroad result in additional historic site being built throughout the county during the late nineteenth and early twentieth centuries.

Based on historical research and field survey, historic structures of Flagler County range in date from about 1887 to 1937. During the course of the Flagler County survey ninety-one (91) historic properties, nearly all of which were buildings, were recorded on Florida Master Site File forms. The greatest concentration of historic buildings were located at Bunnell, the county seat. Fifty-five (55) buildings were recorded there. Next was the Haw Creek-Lake Disston area with fourteen (14) including the Relay Fire Tower. Nine (9) properties were located in the Korona area, including St. Christopher's Shrine, the only historic object in the county. There were seven (7) at Flagler Beach, two (2) at St. Johns Park, and the remaining four (4) buildings were scattered randomly throughout the county.

In addition to the historic buildings survey, significant archeological and prehistoric sites were surveyed. The Division of Historical Resources of the Florida Department of State indicates there are 40 site numbers listed for Flagler County in the Master Site File, and two of these are vacant, leaving 38 sites. These prehistoric sites and historic sites are shown on Map #3, Prehistoric and Historic Sites in Flagler County. In 1998, Flagler County received a grant to document the archeological characteristics of Malacompra Plantation. The location and significance of the most important historical buildings, prehistoric and archeological sites is detailed in the following table.

Flagler County Comprehensive Plan 2010-2030

Site Name	Significance	Location
Bunnell State Bank Bldg.	Architectural	101 Bay Street Bunnell
Tribune Building	Architectural Home of <u>Flagler Tribune</u>	106 Bay Street Bunnell
Isaac I. Moody House	Architectural and History	102 N. Railroad St. Bunnell
J.F. Lambert House	Architectural and History	200 N. Railroad St. Bunnell
W.H. Cochran House	Architectural	202 N. Railroad St. Bunnell
George Moody House	Architectural and History	S.W. Corner of Lambert St. & Pine Avenue, Bunnell
Princess Estate	Architectural	South Side of Pellicer Creek
Thomas Holden House	Architectural	204 E. Moody Blvd., Bunnell
1 ½ Story Bungalow	Architectural	1000 E. Moody Blvd. Bunnell
1 ½ Story Bungalow	Architectural	200 E. Moody Blvd. Bunnell
Flagler County Courthouse	Architectural and History	200 E. Moody Blvd. Bunnell
R.W. Cody House	Architectural	S.R. 11, Haw Creek
St. Mary's Church	Architectural and History	
Bunnell City Hall	Architectural and History	U.S. #1, Bunnell
Marineland	Architectural and History	A1A North
Bear Island	Timucuan Indian Artifacts	Crescent Lake
Dupont's Mound (Marineland Midden)	Prehistoric Artifacts	Near Marineland
Kings Road Mound	Prehistoric Artifacts	East of Old Kings Road
Bon Terra Farm	Prehistoric Fossils and Artifacts	West Side of Intracoastal Waterway
Benton Mound	Timucuan Indian Artifacts	Hammock Dunes Area
Grand Haven Cove St. John's II Village	Timucuan Indian Artifacts	East Edge of Graham Swamp
Bulow Plantation	Historical	Bulow State Park
Bella Vista Plantation	Historical	Washington Oaks State Park
Mala Compra Plantation	Historical	Between A1A and the Intracoastal Waterway

Source: Florida Division of Historical Resources of the Florida Department of State

L. Air Quality

The Florida Department Environmental Protection (DEP), Division of Air Resource Management provides a summary of the air quality for the State of Florida on an annual basis. The report includes summaries on the Air Quality Index (AQI). The AQI has been developed by the EPA to provide a simplified method to advise the public on daily basis of any possible adverse health effects due to air pollution. The AQI uses measured levels of five criteria pollutants. These are combined to create a single number that can be translated into a simplified word that describes the air quality. The descriptor words used are: good, moderate, unhealthy for sensitive groups, unhealthy, and very unhealthy. Generally, the AQI value of 101, which marks the beginning of the unhealthy for sensitive groups range, corresponds to being over the air quality standard for the

pollutant. The AQI value of 51, which marks the beginning of the moderate range, corresponds to the concentration of the pollutant that is just above half of the value of the air quality standard or annual standard, whichever is lower. The AQI reported is based on the pollutant(s) with the highest index value of all of the pollutants being monitored at specified sites in an urban area. Normally, only one pollutant will have the highest index value, although it is possible for two or more pollutants to tie for the highest value on a given day. The values determined by the AQI are meant to be used to compare the air quality in one urban area day to day. They are not designed to compare one urban area to another.

The annual report from DEP does not include any specific data for Flagler County since the agency does not have any monitoring stations established in the county. The report does reference Volusia and Putnam counties. The report on these counties can be used to identify if there are any specific issues with the five pollutants that are monitored by the DEP. According to the 2009 Annual Report, the adjoining counties did not experience significant impacts due to air pollution. The report shows that Putnam County experienced 365 days deemed to be “Good”. This is consistent with other measurements dating back to 2000. In Putnam County the primary pollutants seen by the DEP are ozone and particulate material under 10 microns in size. Volusia County, being more urbanized and closer to major roadways, experienced 346 days deemed to be “Good” and 19 days deemed “Moderate”. This is also consistent with previous measurements dating back to 2000. The primary pollutants in Volusia County are ozone and particulate material under 10 and 2.5 microns. Given the location of the monitoring equipment it is reasonable to assume that the air quality index for Putnam County would be similar to Flagler County, west of US 1 and the air quality index for Volusia County is similar to Flagler County, east of US 1. This reflects that Flagler County does not currently have any significant air quality issues that need to be addressed within the timeframe of 2010 to 2015.

The planning horizon for the comprehensive plan spans from 2010 to 2035. During this 25 year period Flagler County and the cities within the county are expected to grow. The population is projected to double. This reflects a shift from a rural county to a suburban/urban county. It is difficult to project exactly what air quality issues will occur during the 2015 to 2035 timeframe, but comparison to similarly located counties in Florida can provide insight to the potential pollutants that may result with the increased urbanization of Flagler County.

According to the 2010 population projections from the Bureau of Economic and Business Research, Flagler County is projected to have a population of 200,300 people in 2035. Volusia County is a county that is the best for comparison. The current population and land use pattern in Volusia County is similar to what could occur in Flagler County by 2035. Flagler County in 2035 should not be facing any significant air quality issues assuming that there are not any significant changes in air quality technology and based on current conditions seen in Volusia County.

The passage of House Bill 697 in the 2009 Legislative Session required that all counties and cities include provisions for the reduction of greenhouse gases (GHG) in the comprehensive plan. The specific rules requiring specific data and analysis and goals, objectives and policies had not been finalized during the drafting of this element. The use of the latest draft version of the amendments to Rule 9J-5 was used to ensure that Flagler County addressed this issue using the best data available.

The revisions to Chapter 163.3177(6)(a) included a requirement for strategies to reduce GHG. A working definition of GHG, based on draft rules means materials found in the atmosphere that absorb heat energy from the Earth and prevent this heat from escaping into space. Primary greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, and ozone. In Flagler County the primary producer of GHG is the combustion engine. The Future Land Use Element has to include goals, objectives and policies to guide development in a manner that emphasizes “Green” standards. Additionally, incentives and other protective measure must be incorporated into the County’s efforts to reduce sprawl and protect rural and natural resources.

M. Coastal Management

Flagler County has approximately 18 miles of coast along the Atlantic Ocean. Additionally, the western boundary of the County is Crescent Lake. This large amount of area within the Coastal High Hazard Area (CHHA) dictates that there be specific goals, objectives and policies to ensure that natural resources are protected; future growth is directed away from the CHHA; and, those who are residing in the CHHA can be effectively evacuated during a time of natural disaster. Additionally, there needs to be coordination efforts with the adopted Peacetime Emergency Plan in the hazard mitigation aspects of both plans. The Future Land Use Element Map Series provides the location and specifics of the CHHA and the geographic locations of major thoroughfares. It is further recommended that the Coastal Management, Conservation, Transportation and Intergovernmental Coordination Elements be consulted for additional goals, objectives and policies that strive for effective management of the coastal resources of Flagler County.

The portions of the County within the CHHA are limited to areas that are either already developed and have specific entitlements (Atlantic Ocean) or limited development with the primary use of agriculture (Crescent Lake). The barrier island portion of the County is dominated by several large DRI’s and vested subdivisions approved prior to the implementation of the Florida Growth Management Act. The remaining lands under the County’s jurisdiction within the CHHA are located west of the Intracoastal Waterway (ICW) and follow a similar land use pattern as the barrier island. There are several DRIs and large PUDs located east of US 1, west of the ICW and south of SR 100. The portion of western Flagler County within the CHHA is located along Crescent Lake. This area is primarily designated for agricultural pursuits and conservation. The comprehensive plan has specific limitations identified in the goals, objectives and policies of the Future Land Use Element that prevent the approval of amendments that intensify the development within the CHHA. These are supported by other standards

that prevent the provision or expansion of utilities and services to attract more development into the CHHA.

The following tables provide conservative estimates of the total seasonal population and permanent population residing within the CHHA to the year 2035. The permanent population is based on the traffic analysis zone data from the Central Florida Regional Planning Model. This shows that population within the CHHA is approximately 80% of the total unincorporated population. This is the highest level shown in the 25 years of the model, so it was used to provide conservative estimates for all of the 5-year planning periods. The seasonal and tourist population are county-wide estimates, but for planning purposes, these are assumed to be included in the County's jurisdiction. The Flagler County Peacetime Emergency Management Plan identifies that there is sufficient shelter space through the 2010-2015 planning horizon. The demand for shelter space will increase over the 2015-2035 planning horizon, but there are plans for potential expansion of shelter space to accommodate this increase in demand.

Table A-18. Population Residing Within CHHA Flagler County				
Year	Tourist Population	Seasonal Population	Permanent Population	Total Population within CHHA
2010	7,935	3,292	9,778	21,005
2015	8,978	3,724	11,297	23,999
2020	10,158	4,214	13,113	27,485
2025	11,493	4,767	14,881	31,141
2030	13,003	5,394	16,569	34,966
2035	14,712	6,102	18,145	38,959

Source: Flagler County Planning and Zoning Department,

VI. AVAILABILITY OF FACILITIES AND SERVICES TO SERVE EXISTING AND FUTURE LAND USES

Flagler County is mandated to adopt and implement a concurrency management system that requires that adequate facilities and services be in place to meet the demand of future growth. The County has adopted minimum levels of service in the various elements of the comprehensive plan to ensure that there is a quantifiable measure for the adequacy of facilities and services. The Future Land Use Element must be coordinated with these other elements in order to assure that the future use of land will not result in degradation to the adopted levels of service and that the County maintains a financially-feasible method of funding growth-related improvements. The following summarizes the current and future conditions of these services and facilities. Please refer to the specific elements for additional information and detail.

Table A-19. Population Change 2010 to 2035						
	2010	2015	2020	2025	2030	2035
Total County	95,700	114,700	137,400	159,500	180,600	200,300
Unincorporated Population	12,221	14,121	16,391	18,601	20,711	22,681
Change in Unincorp. Population from previous 5-year period	n/a	1,900	2,270	2,210	2,110	1,970
Total Seasonal Population	106,927	127,402	151,771	175,760	198,997	221,114
Change in Season Population from Previous 5 year period		20,475	24,369	23,989	23,237	22,117

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Table A-20. Population Impacts on LOS						
Projected Impact on LOS Standards	2015	2020	2025	2030	2035	Total 2015-2035
Potable Water (gpd)	237,500	283,750	276,250	263,750	246,250	1,307,500
Sanitary Sewer (gpd)	209,000	249,700	243,100	232,100	216,700	1,150,600
ROSE-Neighborhood (ac.)	2	2	2	2	2	10
ROSE-Community (ac)	6	7	7	6	6	31
ROSE-County-wide (ac)	614	731	720	697	664	3,426
Public Schools-Elementary (students)	277	331	323	308	288	1,527
Public Schools-Middle (students)	156	186	181	173	162	858
Public Schools High (students)	198	236	230	219	205	1,088

A. Potable Water

Flagler County provides retail/distribution services to the City of Beverly Beach. The eastern portion of the County is served by on-site wells or private and public entities, such as the Dunes Community Development District. The western portion of the County is served by on-site wells since there are not any publicly maintain centralized potable water systems operating in the area. Flagler County does not plan on the development of new facilities to address future needs. The County also does not plan for the expansion of the Beverly Beach distribution system. The County will continue to coordinate with the private and public potable water providers to ensure that potable water is provided to the residents at acceptable levels of service.

B. Sanitary Sewer

As with the potable water system, Flagler County only operates the Beverly Beach Wastewater system. The eastern portion of the County is served by on-site septic systems or centralized systems provided by other governments or private companies. The western portion is served entirely by on-site septic tanks. The County does not plan on the development of new facilities to address future needs. The County also does not plan for the expansion of the Beverly Beach collection and treatment system. The County will continue to coordinate with the private and public potable water providers to ensure that potable water is provided to the residents at acceptable levels of service.

C. Transportation

The recent annexations by the cities of Bunnell and Palm Coast have reduced the miles of roadways under the maintenance and control of Flagler County. The County realizes

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that the jurisdictional issues will need to be addressed as part of the development of a new transportation planning organization (TPO) or inclusion into an existing TPO. Regardless of the TPO issue, the analysis for the Transportation Element reflects that there are no roadway deficiencies for the 2010-2015 planning horizon. The analysis reflects that there will be deficiencies occurring in the 2015 to 2035 timeframe. The following tables summarize the deficiencies and the planning period when the deficiencies are estimated to occur.

Roadway	Segment		Adopted LOS	Date of Projected Deficiency
	From	To		
I-95 (SR 9)	VC Line	SR 100	C	2025
I-95 (SR 9)	SR 100	Palm Coast Pkwy	C	2025
CR 201	VC Line	SR 100	C	2030
SR A1A	Flagler Bch City Limits	Beverly Beach City Limits	D	2035
SR A1A	Beverly Beach City Limits	Mariner Drive	D	2035
SR A1A	Palm Coast Pkwy.	Malacompra Blvd.	D	2035
SR 100	Bunnell City Limits (west)	US 1	D	2025
SR 100	US 1	Bunnell City Limits (east)	D	2020
US 1	Old Dixie Hwy.	Seminole Wds. Blvd.	D	2030

Source: Flagler County Planning and Zoning Department

The other modes of travel such as transit, bike and pedestrian are meeting current needs, but major updates will occur during the 2015 to 2035 planning horizon. The first phase of a Countywide Transits Needs Assessment was completed in 2007. The second phase is expected to be completed by 2011 and the third phase (Transit Development Plan or TDP) will follow the requirements as specified in Chapter 14-73, FAC. The County also identified the need to complete a comprehensive trails plan to be coordinated with the transit, school and recreation plans.

D. Solid Waste

Solid waste and recycling services are subject to interlocal agreement with Volusia County for disposal and private companies for collection. This will not change within the 2010-2015 planning horizon. There is adequate space for the disposal of solid waste at the Volusia County facility and this is anticipated to be the primary source for solid waste disposal until 2035. The County Commission also identified a need to seek out alternative methods of disposal and treatment to reduce the overall impacts to the environment and to provide for alternatives to the Volusia landfill.

E. Drainage

The County's adopted Land Development Code contains mandatory requirements for the provision of stormwater treatment. These regulations also include provisions for coordination with the SJRWMD to ensure regional standards are addressed. The result is a regulatory system that mandates that the pre-development condition is maintained in the post-development condition. This means that the quantity and the quality of the stormwater leaving the site is maintained in order to prevent degradation outside the

development area. These standards will be in place and maintained to ensure that future development will not have an impact to the area. Existing drainage in the eastern part of the County is through a combination of retention and detention areas, local creeks and swamps and an extensive canal system that enters and leaves through the City of Palm Coast Development. The drainage system is adequate in terms of the quantity of water capable of being accommodated. This system requires annual maintenance that is programmed as part of the annual budget process. Drainage in the western part of the County for existing uses is through a combination of retention areas, and creeks and swamps. The Daytona North MSTU has been active in working with state and federal agencies to improve the existing drainage within this antiquated plat. The remainder of the area utilizes an existing systems based on rural and agricultural use. It is anticipated that these will remain. If a property is to be developed for non-agricultural use, then it must comply with the standards established in the Land Development Code. It is anticipated that the application of the County's Land Development Code will address any future development occurring in western Flagler County.

F. Public Schools

Flagler County, the municipalities and the Flagler County School Board have an approved interlocal agreement in place that establishes the concurrency standards and procedures for the provision of public schools. These standards have been incorporated into the Public Schools Facilities Element of the Flagler County Comprehensive Plan. The analysis of the school age population projection for the 2010-2015 planning horizon reflects that there are adequate facilities in place to address the growth of the unincorporated areas. The 2015 to 2035 planning horizon shows that additional facilities for the entire County will require that a new elementary school and new K thru 8th grade school and a portion of a new high school will be needed. The exact funding sources have not been identified since the need is outside the 5-year limit of the Schedule of Capital Improvements, but it is anticipated that impact fees and developer exactions will be the primary source of funding. This is possible given that several DRIs have been required to either fund improvements or provide land for future school sites.

The Capital Improvements Element and supporting data and analysis reflect that there are not deficiencies currently identified for the 2010 to 2015 planning horizon for any of these facilities or services. This means that future growth until the year 2015 can be accommodated with the existing and planned facilities identified in the Capital Improvement Element. The 2015 to 2035 timeframe reflects a different situation where transportation and school facilities are projected to exceed the adopted levels of service. Flagler County shall continue to implement its concurrency system and will ensure that adequate capacity is properly planned and adequately funded.

VII. Land Use Analysis/Suitability for Development

Flagler County encompasses 571 square miles of total area. 485 square miles of Flagler County is land and the remaining 86 square miles is open water inclusive of the Atlantic Ocean. The following table summarizes the gross areas of the different governmental entities within Flagler County.

Jurisdiction	Area (acres)
County total (land)	310,400
County (water)	55,040
Unincorporated land	161,624
City of Beverly Beach	195
City of Bunnell	87,939
City of Flagler Beach	2,531
Town of Marineland	124
City of Palm Coast	57,987

Source: Flagler County Planning and Zoning Department (NEFRC GIS data)

The County as a whole has seen a considerable change in the use of land uses as based on the SJRWMD land use cover data for the period from 1990 to 2004. The following table reflects that the predominant land uses are forested uplands, wetlands, agriculture and residential uses. There has been a steady trend of decreasing the amount of agriculture and open lands that is providing for an increase in the amount of residential. It is also important to note that there is a corresponding increase in forested uplands and wetlands. This may be identified as a refinement of data that provides more clarity as to the actual amount of wetlands within Flagler County.

Category	1990		1995		2004	
	Acres	% of total	Acres	% of total	Acres	% of total
Residential	12,708	3.98	19,444	6.1	25,767	7.77
Commercial	438	.14	524	0.16	1,117	.034
Industrial	360	.11	390	0.12	413	0.12
Extractive	99	.03	99	0.003	134	0.04
Institutional	148	.05	186	0.06	415	0.13
Recreational	1,256	.39	1,517	0.48	1,761	0.53
Open Land	15,714	4.93	9,735	3.05	0	0.00
Agricultural	25,240	7.91	25,232	7.91	10,536	3.18
Range land	11,145	3.49	15,926	4.99	15,070	4.54
Forest, Upland	135,750	42.56	129,601	40.63	143,998	43.4
Water	11,821	3.71	11,872	3.72	14,158	4.27
Wetland	99,168	3.49	98,542	30.89	104,428	31.47
Barren land	1,314	.42	2,024	.63	2,970	0.90
TCU	3,816	3.71	3,887	1.22	4,014	1.21
Other		31.09	0	0.00	7,037	2.12
Total	318,977		318,977		313,818	

Source: SJRWMD/Flagler County Planning and Zoning Department

Table A-24. Net and Percentage Change in Existing Land Use 1990, 1995 and 2004				
Category	Category			
	1990-1995		1995-2004	
	Acres	% of total	Acres	% of total
Residential	6,736	53.01	6,323	32.52
Commercial	86	19.63	593	113.17
Industrial	30	8.33	23	5.9
Extractive	0	0.00	35	35.35
Institutional	38	25.68	229	123.12
Recreational	261	20.78	244	16.08
Open Land	-5,979	38.05	-9	-100.00
Agricultural	-8	0.03	735	-58.24
Range land	4,781	42.9	-14,696	-5.37
Forest, Upland	-3,149	-4.53	-856	11.11
Water	50	.043	14,397	19.26
Wetland	-626	-.063	2,286	5.9
Barren land	710	54.03	5,886	46.74
TCU	71	1.86	946	3.27
Other	0	0.00	127	n/a

Source: SJRWMD/Flagler County Planning and Zoning Department

The following table summarizes the amount of land by land use category on the adopted Future Land Use Map. This and the following analysis of the study areas provides a method of estimating the potential future impact that will occur as vacant lands develop and redevelopment efforts are realized. The important aspect to remember is that absorption of the vacant lands will take a considerable amount of time. Also the type of development will be dictated based on the implementation of goals, objectives and policies contained in the Future Land Use, Transportation, Infrastructure and Capital Improvements Elements. Overall, the adopted Future Land Use Map provides for sufficient amount of land for residential development, but the type and form will need to be refined from 5-acre home sites to compact urban or suburban villages. This concept also reflects that there is a need for expansion of the non-residential uses to address employment, commercial and service needs of the population in the future. These land uses also need to be addressed in the Land Development Regulations to ensure that there are sufficient restrictions and guidelines to direct the non-residential uses in appropriate locations that minimize commute/travel time and provide for a sustainable future.

Table A-25. Unincorporated Area by FLUM Classification		
FLUM Classification	Area (acres)	Percent of Total
Agriculture & Timberlands	92,087	56.88%
Agriculture	63	0.04%
Commercial: Low Intensity	22	0.01%
Commercial: High Intensity	383	0.24%
Conservation	44,782	27.66%
Educational Uses	46	0.03%
Industrial	1,480	0.91%

FLUM Classification	Area (acres)	Percent of Total
Mixed Use: Low Intensity/Low/Med. Density	6,208	3.83%
Mixed Use: High Intensity/High Density	455	0.28%
Recreation & Open Space	2,903	1.79%
Residential: Low Density Rural Estate 1 du/acre	12,038	7.44%
Residential: Low Density Single Family 1-3 du's/acre	671	0.41%
Residential: Medium Density 4-7 du's/acre	471	0.29%
Residential: High Density 8-10 du's/acre	14.	0.01%
Water bodies	286	0.18%
TOTAL	161,910	100 %

Source: Flagler County Planning and Zoning Department (NEFRC GIS data)

Flagler County is a large and diverse area. In order to effectively plan for the future it is necessary to identify those issues that are common to all part of the County and those that may be unique for a specific geographic areas. The first step is to identify those geographic areas and research the critical issues of land use patterns, natural resources, availability of urban services (roads, water, sewer, etc.). The next step is to identify the issues that need to be addressed over the next 25-years. Finally, there needs to be specific goals, objectives and policies developed for these study areas that will be incorporated into the Comprehensive Plan. This will help Flagler County staff and elected officials with the development of County-wide plans that respect and address the localized issues.

The following analysis provides a detail review of 10 study areas created to assist in the aggregation of data in order to ensure that the unique characteristics of the areas could be identified and incorporated into the goals, objectives and policies of the Future Land Use Element.

A. Coastal Area (General)

The Coastal area consists of the unincorporated areas surrounded by the cities of Palm Coast, Marineland, Beverly Beach and Flagler Beach. There are five pockets that are currently under the jurisdiction of Flagler County. The following sections summarize the total area, developed and undeveloped areas for the five distinct areas that comprise the eastern study areas of Flagler County.

The Coastal Area of Flagler County is the area that experienced tremendous growth during the 1990's and continued until the economic downturn of 2007. The area can be best characterized as low-density residential development with large areas of conservation and primarily strip-commercial retail. There are numerous parks and conservation areas that are owned by the State of Florida (Bulow Creek State Park, Bulow Plantation Ruins Historic State Park, Gamble Rogers State Park, North Peninsula State Park and Washington Oaks Garden State Park), the St. Johns River Water Management District (SJRWMD) (Graham Swamp Preserve), and Flagler County (Princess Place Preserve), as well as municipal parks that provide for preservation and protection of valuable natural resources. This makes the Coastal Area of Flagler County a very attractive area for development and new residents.

There are limited areas of industrial development located at the County Airport and along the west side of the Intracoastal Waterway. The issue of compatibility between the industrial and residential will be an issue in the future as the industrial areas develop so that Flagler County can expand its economic opportunities. The critical element is providing methods of screening, buffering and design elements that protect existing residential developments and natural resources, while allowing for reasonable use of industrial properties.

This portion of the County is also the area that is home to 4 of the 5 cities within Flagler County. Palm Coast is the largest in area and population. This city provides for a majority of urban and suburban lands in the County. Flagler Beach and Beverly Beach are coastal cities that provide for low density residential and supporting retail services. Marineland is the smallest of the cities in regard to land and population. Marineland is a small town located at the northern most portion of the barrier island and is home to one of the oldest tourist destinations in Florida.

Major issues for the Coastal Area include the following:

1. Protection of the existing residential and commercial developments located in the Coastal Area. Protection means that there are sufficient regulations in place to ensure future development is compatible and complimentary to the existing land uses in the Coastal Area. It also means that the portions of the Coastal Area within the Coastal High Hazard Areas have sufficient restrictions to prevent intensification of uses that will be negatively impacted if a major emergency, such as a hurricane, occurs in the area.
2. Identification of public improvements to roads, potable water, sanitary sewer and stormwater to ensure that existing and future residents have a good quality of life. There is also the issue of addressing how to provide needed services, such as centralized water and sanitary sewer to older areas of Flagler County that are facing septic tank and water well failure. Lastly, there is an issue with stormwater management along the barrier island in older subdivisions that were approved prior to the implementation of current stormwater regulations.
3. Coordination with the adjoining cities to ensure efficiency and consistency in the delivery of services and compatibility with regard to planning. The cities of Beverly Beach, Flagler Beach, Marineland and Palm Coast are facing pressures to develop and annex vacant lands to address these pressures. The City of Palm Coast is the primary urban center serving the coastal area since a majority of the County's population resides in the City. The City of Beverly Beach and the City of Flagler Beach are relatively constrained by either geographic limitations or policies established by the elected officials. This means that both of these cities will not experience significant expansion of land area or population. The Towne of Marineland is in a precarious situation since the area and population are very low, but there is an approved DRI that would greatly expand the population and demand for services.

4. The Dunes Community Development District (CDD) is another important entity with regards to coordinating and planning. This quasi-governmental agency is in charge of the major utilities and services for a majority of the coastal residents in Flagler County. There have been discussions regarding the potential incorporation of this area as a new city. These discussions and analysis continue, but Flagler County is aware of its role and responsibilities to provide for safe and efficient delivery of services and will continue to coordinate and plan for the Dunes CDD.

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B. Coastal Area 1 (Barrier Island/Princess Place)

Background: This area contains approximately 10,155 acres. The boundaries of the area are: the Town of Marineland and St. Johns County on the north; the City of Palm Coast and I-95 to the west; the cities of Beverly Beach and Palm Coast to the south; and the Atlantic Ocean to the east. Table 23 summarizes the current conditions in regard to the Future Land Use Map designation and the amount of developed and undeveloped lands within this study area. Note that the future development reflects the general land uses associated with the land use designation. The actual development that could occur would be a function of the final zoning classification assigned to the property at time of development.

Land Use	Total Land	Developed	Undeveloped	Maximum Intensity of Future Development
Agriculture	63	0	63	3 DU's
Agriculture and Timberlands	3,211	646	2,565	513 DU's
Commercial: High Intensity	25	19	6	6,000 sq. ft.
Conservation	1,987		1,987	n/a
Recreation and Open Space	1,686		1,686	n/a
Low Density: Rural Estate 1 unit/acre	591	591	0	0
Residential Low Density/Single-Family 1-3 units/acre	18	13	5	15 DU's
Residential Medium Density 4-7 units/acre	8	8	0	0
Residential High Density 8-10 units/acre	14	14	0	0
Mixed Use Low Intensity, Low/Medium Density	2,505	2,505	0	0
Mixed Use High Intensity/Medium/High Density	13	13	0	0
Educational Uses	15	15		
Open Water	19		19	
TOTAL	10,155	3,824	6,331	

Source: Flagler County Planning and Zoning Department (NEFRC GIS data) 2010

The Barrier Island/Princess Place Coastal Area has contains a mixture of land uses, but is primarily residential with supporting commercial, recreational and educational land uses. This pattern is reflected by the two Developments of Regional Impact (DRI) that were approved in 1984 (Hammock Dunes) and 1986 (Matanzas Shores). Hammock Dunes comprises 2,242-acre along the east and west sides of SR A1A, north. According to the original development order the project was approved for a maximum of 4,400 dwelling units, 62,000 square feet of retails uses and a 500-slip marina. Matanzas Shores is located north of Hammock Dunes on 404 acres. The project is not built-out at this time. The 1986 development order for this project included limitations of 1,450 dwelling units and 70,000 square feet of office uses. This project has not been built out since there are 998 units (platted) and no office development completed at this time. Those remaining privately-held lands on the barrier island are platted lots for single-family and manufactured home uses. There are small commercial and mixed-use areas along SR A1A (North Ocean Shore) as well. There has been a strong grass-roots from the residents to establish design and land use standards to ensure that the non-residential uses located on the barrier island reflect an efficient and aesthetically-pleasing appearance.



This area is the only part of the barrier island under County jurisdiction. The County has to establish goals, objectives and policies that direct growth out of known hazardous areas, based on the impacts of coastal natural disasters associated with hurricanes. . These directive goals, objectives and policies are in place for protection of environmental resources and public safety based on the latest data from federal, state and regional agencies. The ultimate goal is to establish mitigation and non-conforming standards for those private property interests that were in place prior to the implementation of the comprehensive plan, and prevent further intensification of incompatible land uses on the hazardous areas of the barrier island. These efforts are consistent with Chapter 9J-5.012 FAC, which contains requirements for local governments to limit public expenditures that subsidize development permitted in coastal high-hazard areas subsequent to the element's adoption except for restoration or enhancement of natural resources. There are also requirements that a local government direct population concentrations away from known or predicted coastal high-hazard areas. These rules acknowledged that local governments had to allow for the maintenance and upkeep of existing facilities and services needed for the existing development and future development that is consistent with the adopted Comprehensive Plan. In essence every county and city with jurisdiction over the barrier island was given the amount of development entitled by those comp plans approved prior to 1985 (passage of the Growth Management Act).

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The mainland portion of this study area is primarily designated for agriculture, public park and conservation uses. The Princess Place Preserve, Pellicer Creek Aquatic Preserve and other lands owned by the SJRWMD reflect the valuable natural resources in this area that need to be protected. There are small pockets (163-acres) of privately-owned lands located east of Old Kings Road and adjoining the Princess Place Preserve. These parcels have a designation of “Agriculture” and “Agriculture and Timberlands” on the adopted Future Land Use Map and AC (Agriculture) and AC-2 (Agriculture/Forestry) on the official Zoning Map. In addition, there is a golf course that occupies 646 acres of land designated for “Agriculture and Timberlands” and has a zoning of AC (Agriculture). There are 937-acres of land with a land use designation of “Conservation” and a zoning classification of AC (Agriculture) that is privately-owned (as of 2009) by Ginn-LA Hammock Beach, LLP.



This study area shares the same characteristics of the other coastal areas in that there are considerable natural resources under public ownership with the private land being developed primarily for residential use. It is important to note that the study area contains some of the most pristine natural areas in Florida. On the mainland, the Princess Place Preserve and other lands owned by the SJRWMD protect vital upland and wetland resources that are tied to the Pellicer Creek Aquatic Preserve. The barrier island portion also has several critical natural resources in the River to the Sea Preserve, Bing’s Landing Preserve and the Washington Oaks State Park. Both the mainland and barrier island resources are part of the Guana Tolomato Matanzas National Estuarine Research Reserve (GTMNERR). The GTMNERR management plan was approved on May 13, 2009 by the Governor and his cabinet and sets forth a comprehensive approach to coordinating the protection and enhancement of this area. The County’s Comprehensive Plan needs to ensure that there is consistency and coordination with the GTMNERR Management Plan so that land use and development decisions are not contrary to the protection and preservation of this valuable natural resource.



Coastal Area 1 has many different governmental jurisdictions surrounding it. The northern boundary abuts St. John’s County and the Town of Marineland. To the west

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and south on the mainland is the City of Palm Coast. The City of Beverly Beach is the southern boundary on the barrier island. The following table summarizes the land use and zoning designations implemented by these adjoining governments. Overall there are no major issues regarding compatibility or consistency.

Table A-27. Coastal Area 1 (Barrier Island/Princess Place) Surrounding Land Use and Zoning		
General Area	Land uses/zoning	Description
Town of Marineland (barrier island) and St. Johns County (mainland)	St. Johns County: "Wetlands" (OR Open Rural); "Mixed Development" (Open Rural and Commercial Highway Tourist); "Parks and Open Space" (Open Rural).	St. Johns County Open and Faver Dykes State Park, except for commercial node at the I-95/US 1 interchange.
Intracoastal Waterway/City of Palm Coast (mainland)	Greenbelt/EST-2, AGR, P&G, PRS; Conservation/P&G, PRS; Mixed Use/MPD; Residential/SFR-2, SFR-3. SFR-4;	Residential development and protected green spaces.
City of Beverly Beach	"Residential Medium Density (5-9 du/ac)"	Single-family residence and manufactured homes.
Atlantic Ocean	N/A	Open Water

According to the Flagler County General Soils Map the area contains a variety of soils. This is typical of this area since it is a transitional area from the Atlantic Ocean through the Intracoastal Waterway to Interstate 95. The barrier island comprises two primary soils groups. The first, Soils Group 15 Paola-Pomello-Cocoa, is generally associated with rolling low ridges and knolls that are interspersed throughout the coastal ridge. This soils group is well suited for development given its well-draining nature and relatively flat geography. Also located on the barrier island is Soils Group 13 Pamello-Cassia-Orsino, which is very similar to Soils Group 15, except that it is also located in many of Pine Flatwood ecological communities. Again, this soils group is well suited for development. On the mainland area Soils Groups 13 and 15 are present along the Intracoastal Waterway and adjacent to I-95. The General Soils Map reflects that there are coastal wetlands (Group 10: Turnbull-Pellicer) along the north side of the Princess Place Preserve. This area is also adjacent to the Pellicer Creek Aquatic Preserve. Lastly, there is a pocket of soils reflective of coastal dunes and sand ridges (Group 12: Orsino-Astatula-Tavares) located east of I-95, south of Pellicer Creek and east of the Princess Preserve.

The abundance of natural areas that have been preserved reflects the diversity of ecological communities located within Coastal Area 1. The coastal strand ecological community occurs along Flagler County's Atlantic coastline. The flora found here is tolerant to salt spray from the ocean. The trees that do exist in this environment are cabbage palm, live oak, and sand live oak. Animals that may be found in this community are bobcats, raccoons, mice, terns, gulls and the American kestrel among others. The coastal strand is highly endangered. A major concern is the pressure imparted by development. Coastal Area 1 is also home to salt water marshes, which are located along the east and west sides of the Intracoastal Waterway and into Pellicer

Creek. Salt marshes are very important because they are in essence the transition zone between terrestrial and oceanic life on low energy coastlines and estuaries. Furthermore, during storm tides they can aid in the stabilization and protection of the shoreline. Lastly, there are scattered “Cypress Swamps” throughout the area. These usually occur along rivers, lakes and strands and are interspersed among other ecological communities, such as swamp hammocks. The following table summarizes the plant and animal species that may inhabit these communities. This list is general in nature and is provided for general planning purposes only. Actual analysis of the plant and animal species will need to be part of the development review process to ensure accuracy as to those protected and endangered species residing on a specific parcel of land. Table A-28 will be common to all Study Areas throughout the County and shall apply County-wide.

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TABLE A-28. Special Protection Status of Species Sighted and Presumed to Exist in Flagler County

Plants and Lichens					
<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Glandularia maritima	Coastal Vervain	G3	S3	N	LE
Gymnopogon chapmanianus	Chapman's Skeletongrass	G3	S3	N	N
Helianthus carnosus	Lake-side Sunflower	G1G2	S1S2	N	LE
Lantana depressa var. floridana	Atlantic Coast Florida Lantana	G2T1	S1	N	LE
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Pavonia spinifex	Yellow Hibiscus	G4G5	S2	N	N
Peperomia humilis	Terrestrial Peperomia	G5	S2	N	LE
Pycnanthemum floridanum	Florida Mountain-mint	G3	S3	N	LT
Mayflies					
<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Stenacron floridense	A Mayfly	G3G4	S3S4	N	N
Dragonflies and Damselflies					
<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Gomphaeschna antilope	Taper-tailed Darner	G4	S4	N	N
Gomphus cavillaris	Sandhill Clubtail	G4	S4	N	N
Beetles					
<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Aphodius dyspistus	Surprising Pocket Gopher Aphodius Beetle	GNR	S3?	N	N
Aphodius hubbelli	Hubbell's Pocket Gopher Aphodius Beetle	GNR	S3?	N	N
Aphodius laevigatus	Large Pocket Gopher Aphodius Beetle	G3?	S3?	N	N
Aphodius troglodytes	Gopher Tortoise Aphodius Beetle	G2G3	S2S3	N	N
Copris gopheri	Gopher Tortoise Copris Beetle	G2	S2	N	N
Ischyryus dunedinensis	Three Spotted Pleasing Fungus Beetle	G2G4	S2S4	N	N
Onthophagus polyphemi polyphemi	Punctate Gopher Tortoise Onthophagus Beetle	GNRTNR	S2S3	N	N
Romulus globosus	Round-Necked Romulus Long-Horned Beetle	G1G2	S1S2	N	N
Selonodon floridensis	Florida Cibrionid Beetle	G2G3	S2S3	N	N
Selonodon mandibularis	Large-Jawed Cibrionid Beetle	G2G3	S2S3	N	N

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Butterflies and Moths					
<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Atrytonopsis loammi	Loammi Skipper	G1	S1	N	N
Cupido comyntas	Eastern Tailed Blue	G5	S2	N	N
Euphyes berryi	Berry's Skipper	G2G3	S1S2	N	N
Euphyes dukesi calhouni	Calhoun's Skipper	G3T2T3	S1	N	N
Poanes zabulon	Zabulon Skipper	G5	S4	N	N
Fish					
<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Acipenser brevirostrum	Shortnose Sturgeon	G3	S1	LE	FE
Amphibians					
<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Notophthalmus perstriatus	Striped Newt	G2G3	S2S3	C	N
Rana capito	Gopher Frog	G3	S3	N	SSC
Reptiles					
<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Alligator mississippiensis	American Alligator	G5	S4	SAT	FT(S/A)
Caretta caretta	Loggerhead	G3	S3	LT	FT
Chelonia mydas	Green Turtle	G3	S2	LE	FE
Crotalus adamanteus	Eastern Diamondback Rattlesnake	G4	S3	N	N
Dermochelys coriacea	Leatherback	G2	S2	LE	FE
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lampropeltis getula	Common Kingsnake	G5	S2S3	N	N
Lepidochelys kempii	Kemp's Ridley	G1	S1	LE	FE
Birds					
<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Aphelocoma coerulescens	Florida Scrub-jay	G2	S2	LT	FT
Aramus guarauna	Limpkin	G5	S3	N	SSC
Ardea alba	Great Egret	G5	S4	N	N
Buteo brachyurus	Short-tailed Hawk	G4G5	S1	N	N
Charadrius melodus	Piping Plover	G3	S2	LT	FT
Egretta caerulea	Little Blue Heron	G5	S4	N	SSC
Egretta thula	Snowy Egret	G5	S3	N	SSC
Egretta tricolor	Tricolored Heron	G5	S4	N	SSC
Elanoides forficatus	Swallow-tailed Kite	G5	S2	N	N
Eudocimus albus	White Ibis	G5	S4	N	SSC
Falco columbarius	Merlin	G5	S2	N	N

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<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Falco peregrinus	Peregrine Falcon	G4	S2	N	N
Falco sparverius paulus	Southeastern American Kestrel	G5T4	S3	N	ST
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Haematopus palliatus	American Oystercatcher	G5	S2	N	SSC
Haliaeetus leucocephalus	Bald Eagle	G5	S3	N	N
Hydroprogne caspia	Caspian Tern	G5	S2	N	N
Ixobrychus exilis	Least Bittern	G5	S4	N	N
Laterallus jamaicensis	Black Rail	G4	S2	N	N
Mycteria americana	Wood Stork	G4	S2	LE	FE
Nyctanassa violacea	Yellow-crowned Night-heron	G5	S3	N	N
Nycticorax nycticorax	Black-crowned Night-heron	G5	S3	N	N
Pandion haliaetus	Osprey	G5	S3S4	N	SSC*
Passerina ciris	Painted Bunting	G5	S3	N	N
Pelecanus occidentalis	Brown Pelican	G4	S3	N	SSC
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Picoides villosus	Hairy Woodpecker	G5	S3	N	N
Plegadis falcinellus	Glossy Ibis	G5	S3	N	N
Rynchops niger	Black Skimmer	G5	S3	N	SSC
Sternula antillarum	Least Tern	G4	S3	N	ST
Thalasseus maximus	Royal Tern	G5	S3	N	N
Thalasseus sandvicensis	Sandwich Tern	G5	S2	N	N
Mammals					
<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	G3G4	S2	N	N
Eubalaena glacialis	North Atlantic Right Whale	G1	S1	LE	FE
Mustela frenata olivacea	Southeastern Weasel	G5T4	S3?	N	N
Neofiber alleni	Round-tailed Muskrat	G3	S3	N	N
Peromyscus polionotus decoloratus	Pallid Beach Mouse	G5TX	SX	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	SSC
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Trichechus manatus	Manatee	G2	S2	LE	FE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*
Natural Communities					
<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Basin Marsh	N/A	G4	S3	N	N
Basin Swamp	N/A	G4	S3	N	N

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<i>Scientific name</i>	<i>Common name</i>	<i>Global Rank</i>	<i>State Rank</i>	<i>Federal Status</i>	<i>State Status</i>
Baygall	N/A	G4	S4	N	N
Beach dune	N/A	G3	S2	N	N
Blackwater stream	N/A	G4	S3	N	N
Coastal strand	N/A	G3	S2	N	N
Depression marsh	N/A	G4	S4	N	N
Dome swamp	N/A	G4	S4	N	N
Floodplain swamp	N/A	G4	S4	N	N
Hydric hammock	N/A	G4	S4	N	N
Marine consolidated substrate	N/A	G3	S3	N	N
Maritime hammock	N/A	G3	S2	N	N
Marsh lake	N/A	G4	S4	N	N
Mesic flatwoods	N/A	G4	S4	N	N
Salt marsh	N/A	G5	S4	N	N
Sandhill	N/A	G3	S2	N	N
Scrub	N/A	G2	S2	N	N
Scrubby flatwoods	N/A	G2	S2?	N	N
Swamp lake	N/A	G4	S3	N	N
Wet flatwoods	N/A	G4	S4	N	N

Source: <http://www.fnai.org/bioticssearch.cfm> dated July 6, 2011

Legend:

FNAI GLOBAL RANK DEFINITIONS

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.

G2 = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.

G3 = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.

G4 = Apparently secure globally (may be rare in parts of range).

G5 = Demonstrably secure globally.

GH = Of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker).

GX = Believed to be extinct throughout range.

GXC = Extirpated from the wild but still known from captivity or cultivation.

G#? = Tentative rank (e.g., G2?).

G#G# = Range of rank; insufficient data to assign specific global rank (e.g., G2G3).

G#T# = Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).

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G#Q = Rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q).

G#T#Q = Same as above, but validity as subspecies or variety is questioned.

GU = Unrankable; due to a lack of information no rank or range can be assigned (e.g., GUT2).

GNA = Ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).

GNR = Element not yet ranked (temporary).

GNRTNR = Neither the element nor the taxonomic subgroup has yet been ranked.

FNAI STATE RANK DEFINITIONS

S1 = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.

S2 = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.

S3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.

S4 = Apparently secure in Florida (may be rare in parts of range).

S5 = Demonstrably secure in Florida.

SH = Of historical occurrence in Florida, possibly extirpated, but may be rediscovered (e.g., ivory-billed woodpecker).

SX = Believed to be extirpated throughout Florida.

SU = Unrankable; due to a lack of information no rank or range can be assigned.

SNA = State ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).

SNR = Element not yet ranked (temporary).

FEDERAL LEGAL STATUS

Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant federal agency.

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.

LE = Endangered: species in danger of extinction throughout all or a significant portion of its range.

LE, LT = Species currently listed endangered in a portion of its range but only listed as threatened in other areas

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LE, PDL = Species currently listed endangered but has been proposed for delisting.

LE, PT = Species currently listed endangered but has been proposed for listing as threatened.

LE, XN = Species currently listed endangered but tracked population is a non-essential experimental population.

LT = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.

SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.

SC = Not currently listed, but considered a "species of concern" to USFWS.

STATE LEGAL STATUS

Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency.

Animals: Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service.

FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service.

F(XN) = Federal listed as an experimental population in Florida.

FT(S/A) = Federal Threatened due to similarity of appearance.

ST = State population listed as Threatened by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future. (ST* for *Ursus americanus floridanus* (Florida black bear) indicates that this status does not apply in Baker and Columbia counties and in the Apalachicola National Forest. ST* for *Neovison vison pop.1* (Southern mink, South Florida population) indicates that this status applies to the Everglades population only.)

SSC = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* indicates that a species has SSC status only in selected portions of its range in Florida. SSC* for *Pandion haliaetus* (Osprey) indicates that this status applies in Monroe county only.)

N = Not currently listed, nor currently being considered for listing.

Plants: Definitions derived from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505 or see: <http://www.doacs.state.fl.us/pi/>.

LE = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.

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LT = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.

N = Not currently listed, nor currently being considered for listing.

The largest provider of potable water and sanitary sewer services is the Dunes Community Development District. The Dunes Community Development District is a unit of special-purpose local government established in 1985 in accordance with Chapter 190, Florida Statutes. The District service area is approximately 2,200 acres and is responsible for potable water and wastewater utilities, distribution of reclaimed water for irrigation, storm water management for the community, operations, financing and maintenance of the Hammock Dunes Toll Bridge. The District serves the private communities of Hammock Dunes, Ocean Hammock, Hammock Beach, and Yacht Harbor Village. Matanzas Shores Development of Regional Impact also has a private utility system that serves that development. The City of Palm Coast provides potable water to a limited number of properties. Those who are not connected to the Dunes CDD utilities system, the Matanzas Shores DRI system or City of Palm Coast water must use septic tanks and private on-site wells.

At this point there are no plans for other public or private entities to provide potable water or sanitary sewer to the populated areas of the barrier island within Coastal Area 1. The primary issue with utilities pertains to ability to serve the future population, given the entitlements of the large DRI's in the area. On October 12, 2004, the SJRWMD issued a consumptive use permit to the Dunes Community Development District for the operation of potable water and irrigation wells. The permit will expire in 2024 and there are annual monitoring requirements to ensure compliance with the conditions tied to the permit. Additionally, the Dunes CDD is to provide a report every 5 years starting in 2009 to show compliance with Florida laws regulating the extraction of raw water. The permits and monitoring are common requirements for all public water utilities. Based on the data contained in the consumptive use permit the Dunes CDD can currently withdraw an average of .843 million gallons per day in 2009 and, subject to full compliance, withdraw an average of 1.356 million gallons per day in 2024. These quantities indicate that there may be a service issue in the future for serving all of the development entitled in the Hammock Dunes DRI Development Order and any expansion of the Dunes CDD utility system outside the boundary of the DRI. This means that future provisions for potable water, sanitary sewer and/or reclaimed water shall be from Palm Coast if possible or from another source not currently identified.

Please note that the mainland portion of this study area is within the City of Palm Coast utility service area, but there are no plan to expand the utilities since very is very little development that could occur in this portion of the study area.

Transportation trends follow the same pattern as the other coastal areas in that there are several roads providing for north and south access, but limited opportunities for east-west connectivity. The primary route connecting the barrier island with the mainland is the Hammock Dunes Bridge. In 2005 the segment of Palm Coast Parkway including the bridge was operating at a level of service C with approximately 9,929 Average Annual Daily Trips (AADT). SR A1A is the only arterial road located on the barrier island and serves as the only evacuation route for the residents of the barrier

island. On the mainland east-west access is primarily from Palm Coast Parkway, a divided 4-lane facility that connects from the privately-owned bridge to Old Kings Road, I-95 and US 1. North-south access is primarily served by Old Kings Road and Palm Harbor Parkway. Flagler County is working on a study to determine if a new interchange is needed on I-95. If this study shows that a new interchange is justified and the project is funded, then this improvement will provide additional evacuation access for the barrier island residents. Overall there are limited opportunities for new road alignments in the area given the development patterns, natural resources and overall costs.

A critical concern is with the need for evacuation during a hurricane event. There has to be specific requirements contained in the comprehensive plan that require a minimum evacuation time and address how the County will implement all phases of the Peacetime Emergency Plan. Additionally, the Future Land Use and Coastal Management Elements must provide goals, objectives and policies regarding mitigation actions for natural disasters. These issues will be addressed when the Coastal Management and Future Land Use Elements are presented to the Futures Committee.

Another transportation issue is the 12 mile stretch of SR A1A from the St. Johns County line to the northern limits of Beverly Beach is a State of Florida designated scenic highway known as the "A1A River and Sea Trail Scenic Highway". The 7.3 mile stretch of SR A1A from Beverly Beach to the Volusia County line is also a designated scenic highway and is known as the "A1A Ocean Shore Scenic Highway" "Flagler County A1A River & Sea Trail". Together these two Scenic Highways form a portion of the 72-mile National Scenic Highway known as the "A1A Scenic and Historical Byway". There are considerable planning efforts needed in order to attain and maintain these state and federal designations. The following maps reflect the general resources associated with these scenic highways. The Corridor Management Plans for both of these scenic highways include specific provisions for the coordination and integration with the County's Comprehensive Plan and Land Development Regulations. The A1A River & Sea Scenic Trail Corridor Management Plan includes a provision that there be a separate element included in the Flagler County Comprehensive Plan in order to assure quick accessibility to those provisions for the preservation and protection of the items that make the highway scenic and historic. The integration of the Corridor Management Plan needs to be done in order to show that Flagler County's Comprehensive Plan is consistent with the A1A River and Sea Scenic Highway Corridor Management Plan. The County amended the Land Development Code to incorporate standards consistent with the recommendations of the Corridor Management Plan. These provisions pertain to signage, landscaping, site development and building design.

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Summary: This coastal study area has many divergent interests that need to be well balanced. Additionally, there are numerous regional, state and federal initiatives that require close coordination and cooperation. This means that many decisions regarding land use must be based on the following:

1. Approved DRI DO's;
2. GTMNERR Management Plan
3. City of Marineland Comprehensive Plan
4. City of Beverly Beach Comprehensive Plan
5. City of Palm Coast Comprehensive Plan
6. A1A Ocean Shore Scenic Highway Corridor Management Plan
7. A1A River & Sea Trail Scenic Highway Corridor Management Plan

The other issue pertains to jurisdiction. The Hammock Dunes CDD is researching the potential for incorporation as a municipality. The analysis is looking at combining the private communities of Hammock Dunes, Ocean Hammock, Hammock Beach, and Yacht Harbor Village. The CDD Governing Board is in the process of surveying the residents to determine if there is support for the initiative. If there is support for the incorporation then the Governing Board must draft a charter and find sponsorship for a bill approving the incorporation by the Florida Legislature. Once these steps are completed, then there must be a referendum for final approval. According to the Dunes CDD website the referendum is expected to occur after the summer of 2010.

This area does not appear to have significant amounts of land that could be developed at this time. The future impacts of new growth do not appear to be major issue, except with the provision of utilities and services. The main concern would be the ability to provide utilities and services. The County needs to research how to provide these services. The transportation network is meeting the current demand of the residents. Additional analysis will be required as part of the Transportation and Coastal Management elements to ensure that there is adequate capacity for hurricane evacuation.

Lastly, there is a concern with the application of "Mixed Use" land use classification. The concept behind this land use designation provides for flexibility in land use patterns. Unfortunately, the ability to implement many of the policies associated with this land use category can be difficult at best. The primary concern is the application to the small

parcels (1 acre or less in size) along SR A1A. These parcels have a split of low density residential in the rear of the parcel and the front portion designated for “Mixed Use: Low Intensity/Low & Medium Density”. The ability to develop these parcels for commercial uses requires approval of a “Special Exception”. The application of these regulations has been difficult given the potential for inconsistency and incompatibility. There have been efforts by the HCCC to develop “village centers” that focus the commercial developments at appropriate locations, given the transportation network and the adjoining land uses. The goal would be to transfer the smaller strip of commercial development into a larger concentrated area that can be better planned for commercial and office uses.

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C. Coastal Area 2 (Colbert Lane/Graham Swamp)

Background: This area contains approximately 4,792 acres. The boundaries of the area are: Palm Coast Parkway/Palm Coast on the north; the Intracoastal Waterway and Colbert Lane to the east; Moody Boulevard (SR 100) to the south; and Palm Coast/Old Kings Road to the west. FLUE Table 26 summarizes the current conditions in regard to the Future Land Use Map designation and the amount of developed and undeveloped lands within this study area. Note that the future development reflects the general land uses associated with the land use designation. The actual development that could occur would be a function of the final zoning classification assigned to the property at time of development.

Land Use	Total Land	Developed	Undeveloped	Maximum Intensity of Future Development
Commercial: High Intensity	45	0	45	450,000 sq. ft. commercial, office, retail
Commercial: Low Intensity	7		7	70,000 sq. ft. commercial, office, retail
Conservation	2,403	0	2,403	0
Agriculture and Timberlands	937		937	187 du's
Low Density: Rural Estate 1 unit/acre	760	595	165	165 du's
Residential Low Density/Single-Family 1-3 units/acre	135	0	135	405 du's
Mixed Use Low Intensity, Low/Medium Density	29		29	186 du's; or 260,000 sq. ft. non-residential
Mixed Use High Intensity/Medium/High Density	316	9	307	2,070 du's or 207,000 sq. ft. non-residential
Industrial	48	48	0	0
Open Water (canals)	112	0	112	0
TOTAL	4,792	652	4,140	

Source: Flagler County Planning and Zoning Department (NEFRC GIS data) 2010

This study area is similar to all of the coastal areas in that the predominant land use is low density residential. The unique element is that a majority of the land between Old Kings Road and Colbert Lane is owned by St. Johns River Water Management District (SJRWMD). The other unique aspect is that this area holds the second largest amount of land designated for "Industrial" land uses (Coastal Area 4-Airport has the most area designated for Industrial on the adopted Future Land Use Map).

The residential lands that can be developed are located along the east side of Colbert Lane and Roberts Road. A large residential development has been approved and is in the process of development. There are plans for additional residential uses; including townhomes and more compact single-family residential that has been integrated with office and retail uses that have been delayed due to the economic downturn in the economy. The driving force for the residential is the accessibility to the Intracoastal Waterway and access to either Moody Boulevard (SR 100) or Palm Coast Parkway. These roads provide for both service retail and primary commuting routes.

The industrial component is primarily identified with the SeaRay boat manufacturing plant located northeast of Roberts Road. This facility is one of the larger employers in the County. The economic downturn has also impacted this facility, which has been protected from being shut down by the parent company at this time (2009).



There is a 50-acre parcel that has 40-acres of uplands designated for “Commercial” and approximately 10-acres designated for “Conservation”. The parcel is located on the north side of Moody Boulevard (SR 100) midway between Old Kings Road and Colbert Lane. This parcel is expected to develop for typical commercial and office uses given the future residential development occurring within 3-miles of the property.

There are smaller mixed use parcel located along Roberts Road and Colbert Lane that provide opportunities for residential and non-residential uses. The actual mixture of uses will be determined by the market conditions. The “Mixed-Use” land use categories provide a variety of issues with the ability to predict future development, as well as developing sound implementation regulations in the Land Development Code. It is anticipated that these land use categories may be eliminated in order to develop better land use classifications and standards. The key will be ensuring the rights under the current land uses are protected, and ensuring that the County staff can establish workable standards for mixed-use development.

The provision of utilities to this area is split between the Cities of Palm Coast and Flagler Beach. The City of Palm Coast currently has service rights for a majority of the area and is working on annexation agreements with the private land owners and the SJRWMD for the annexation of these areas. A review of the Palm Coast Utility Master Plan and Water Supply Plan indicates that there are facilities in place to accommodate current and future demand. The City of Flagler Beach has plant capacity to also serve a large portion of the area, but the City is in the process of obtaining approval of the Water Supply Plan. The City’s elected officials have not actively pursued additional annexation of land on the west side of the Intracoastal Waterway.

The Graham Swamp Conservation Area is a publicly owned and maintained preservation/recreation area in the middle of this study area. The property is owned by SJRWMD and is managed by Flagler County. The conservation area has an area of 3,085 acres, which has a variety of a land use classifications on the adopted Future Land Use Map (Mixed Use, Residential Low Density 1 to 3 units per acre, Agriculture and Timberlands, Conservation). The City of Palm Coast and Flagler County have been in discussions regarding the annexation of the conservation area. If this is to be the case, it is imperative that the County and the City of Palm Coast develop a plan to ensure a consistent land use designation is applied to the entire conservation area and that the respective comprehensive plans be amended to reflect the use of the area for preservation and recreation.



According to the Flagler County General Soils Map the area contains a variety of soils. This is typical of this area since it is a transitional area from the Intracoastal Waterway to the western ridges. The General Soils Map reflects that there are coastal wetlands (Group 10: Turnbull-Pelicer) along the west side of the Intracoastal Waterway from Moody Boulevard (SR 100) to the north side of Lehigh Lake. The area between these coastal wetlands and Colbert Lane contain soils reflective of coastal dunes and sand ridges (Group 12: Orsino-Astatula-Tavares). The area between Colbert Lane and Old Kings Road is where the Graham Swamp Conservation Area is located. The Soils Map indicates that this area is generally classified as a low-lying hammock with Soils Group 16: Favoretta-Tuscawilla. The area surrounding Old Kings Road and I-95 transition back to the sand ridge consisting of Soils Group 13: Pamello-cassia-Orsino and Soils Group 15L Paola-Pomello-Cocoa. The development patterns reflect that the majority of development has occurred in the coastal and sand dune communities. This is the preferred land use pattern given that the coastal wetlands and low-lying hammocks have been avoided thereby allowing for the natural functions to continue.

There are three ecological communities within Coast Area 2. The first consists of the salt water marshes along the west side of the Intracoastal Waterway and is typically know as "Salt Marshes". The "Coastal Strand" community is within close proximity of the

“Salt Marshes” community and it is generally located in the area east of Colbert Lane. The last ecological community is the “Swamp Hardwoods” within Graham Swamp. There are scattered “Cypress Swamps” throughout the area. Refer to previous Table A-28 for the listing of the plant and animal species that may inhabit these communities. This list is general in nature and is provided for general planning purposes only. Actual analysis of the plant and animal species will need to be part of the development review process to ensure accuracy as to those protected and endangered species residing on a specific parcel of land.

The roadway network is very similar to the other coastal study areas since there are two north-south routes that connect to major east-west arterial roadway that connect to US 1, I-95 and SR A1A. The primary east-west route is SR 100 (Moody Boulevard) since it has direct access to the major north-south arterial roadways (US 1, I-95, SR A-1-A). Palm Coast Parkway is a heavily traveled road that provides east-west access to these arterial roadways as well. Recent traffic studies indicate that there will need to be operational improvements at various intersections over the next 20 years. Additionally, there may be a need to improve Colbert Lane into a 4-lane roadway in order to accommodate additional local traffic from new development. Colbert Lane appears to function as a parallel facility to I-95 and SR A1A since residents of the area can use this road to access either Palm Coast Parkway or SR 100 with relative ease. Given that the majority of the vacant land under County jurisdiction is within the Graham Swamp Conservation Area, the primary development areas will occur along the west side of Old Kings Road in Palm Coast and east of Colbert Lane in Flagler County, Palm Coast and Flagler Beach. Old Kings Road is currently under construction for improvements mandated by existing DRI transportation mitigation requirements. These improvements provide for improved traffic flow and better connectivity with areas on the west side of I-95.

There are two cities that border this study area. The City of Flagler Beach provides the eastern border for the study area and abuts the County area on the north and south side of SR 100 at the Intracoastal Waterway. The City of Palm Coast surrounds the area on the north, south and west. The following table summarizes the land use, zoning and general uses of property surrounding this study area.

Table A-30. Coastal Area 2 (Colbert Lane/Graham Swamp) Surrounding Land Use and Zoning		
General Area	Land uses/zoning	Description
North of Graham Swamp, along the south side of Palm Coast Parkway.	All of the following is Palm Coast: “Residential” (R-2/R-3); “Commercial” (C-2/C-3); “Urban Core/DRI” (MPD); “Public Institutional” (PSP)	Older existing single-family development; Grand Haven master planned development, commercial and office uses along Palm Coast Parkway; DSC Flagler Campus

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Table A-30. Coastal Area 2 Colbert Lane/Graham Swamp) Surrounding Land Use and Zoning		
General Area	Land uses/zoning	Description
East of Colbert Land and along Intracoastal Waterway.	Palm Coast portion: "Urban Core/DRI" (MPD); Across ICW in Flagler Beach: "Commercial" (General Commercial); "Low Density Residential" (LDR-Low Density)(PUD); Conservation-Saline Open Water and Salt Water Marsh" (Conservation)	Palm Coast: Grand Haven; Flagler Beach; Marina Bay, single family homes and salt water marsh areas.
Moody Boulevard (SR 100) between Old Kings Road and the Intracoastal Waterway.	Flagler Beach portion: "Low Density Residential (LDR-Low Density Residential)(PUD); "Conservation Salt Water Marsh: (Conservation); "Commercial" (HC-Highway Commercial) Palm Coast: "Residential" (MPD);"Mixed Use" (MFR, COM-2, OM-3); "Conservation"(PRS)	Flagler Beach: Existing single family homes along Lambert Lane, saltwater marshes, Wadsworth Park, Commercial development underway, planned development. Palm Coast:
West and east sides of Old Kings Road.	Palm Coast: "Residential" (MPD);"Mixed Use" (MFR,MPD, COM-2,Com-3,OFC-2); "Institutional"(PSP)	Existing single-family and commercial development. New development responsible for considerable road improvements under way.

Source: Flagler County Planning and Zoning Department

Summary: This area appears to have a majority of the land preserved for conservation and recreation purposes. The remainder of the area appears to have planned approvals or pending plan approval for primarily residential and commercial land uses. The County does not have planned improvements for the provision of utilities so the surrounding cities of Flagler Beach and Palm Coast will be the ultimate providers of these services. This will result in the annexation of this area into either of the cities. Both of the cities have adequate facilities in place to address the supply/disposal, treatment and distribution/collections systems. Natural resources in the area have been satisfactorily addressed by private and public efforts. Overall, this area does not appear to have any major land use issues, but the Sea Ray plant site and surrounding areas will need to be monitored to prevent the development of incompatible uses

D. Coastal Area 3 (Bulow Creek)

Background: This area contains approximately 6,285 acres. The boundaries of the area are: SR 100 (Moody Blvd.) on the north; the Intracoastal Waterway to the east; Volusia County to the south; and I-95 to the west. Table 29 summarizes the current conditions in regard to the Future Land Use Map designation and the amount of developed and undeveloped lands within this study area. Note that the future development reflects the general land uses associated with the land use designation. The actual development that could occur would be a function of the final zoning classification assigned to the property at time of development.

Table A-31. Coastal Area 3 (Bulow Creek Study Area)				
Land Use	Total Land	Developed	Undeveloped	Maximum Intensity of Future Development
Commercial: High Intensity	20	0	20	200,000 sq. ft. commercial retail
Commercial: Low Intensity	4		4	40,000 sq. ft. commercial, office, retail
Conservation	1,270	0	1,270	0
Recreation and Open Space	414	0	414	0 (State Park)
Agriculture and Timberlands	3,078	3,078	0	
Low Density: Rural Estate 1 unit/acre	405	365	40	40 du's
Residential Low Density/Single-Family 1-3 units/acre	469	469	0	0
Residential Medium Density 4-7 units/acre	442	400	42	294 du's
Mixed Use Low Intensity, Low/Medium Density	96	96	0	0
Mixed Use High Intensity/Medium/High Density	29	0	29	290,000 sq. ft. or 290 DU's
Water	58		58	
TOTAL	6,285	4,408	1,877	

Source: Flagler County Planning and Zoning Department (NEFRC GIS data) 2010

The study area is predominately designated for "Agriculture and Timberlands" on the Future Land Use Map. The majority of that land has been developed for 5 and 10-acre ranches along John Anderson Highway. There is a more intensively developed pocket of single-family homes and manufactured homes along Old Kings Road, immediately north of Old Dixie Highway (Sugar Mill Plantation, Eagle Lakes, Bulow Plantation, and Plantation Oaks). The Bulow Creek State Park and Bulow Creek serve as the primary boundary between these residential developments and the large-lot ranches. There are several rural Planned Unit Developments (PUD's) that have been developed with smaller lot sizes, preserving large tracts of wetlands and other environmentally sensitive lands, e.g., Hammock Beach River Club and Flagler Beach Polo Club West. Additionally there is a series of large tracts (minimum of 5-acres) located north of the Bulow Plantation RV and manufactured homes development that gain access through a series of access easements granted to the property owners. One area that appears to

have an inconsistent land use designation is a 48-acre parcel owned by the State of Florida immediately adjacent to the Bulow Creek State Park, and immediately east of Bulow Plantation RV and Manufactured Home Community.



There is one parcel with a designation of “Commercial” on the adopted Future Land Use Map that is located on the west side of Old King’s Road and north of Old Dixie Highway. This parcel is undeveloped and could be used for a variety of commercial uses, given its location and proximity to residential uses. There is a 9.68 acre parcel so designated for commercial land uses that is located on the east side of I-95 and appears to not have any access from a paved road, nor any connectivity with adjoining properties for a viable commercial use.

On April 30, 2006, the Flagler County Landfill formally closed and stopped accepting construction and demolition debris. The facility currently operates as a transfer station for recycling and household hazardous waste. There are residential areas to the north, south and east of the facility site. The facility is also northeast of the Flagler County Airport, across I-95, but does not pose a threat to air navigation since the facility is closed. At this time there are no set plans for the reuse of this facility for any other use.



All of the residential developments within the study area located on Old Kings Road are provided utilities by central privately-owned, on-site package plants, with the exception of Plantation Oaks, Fairchild Oaks and Sugar Mill Plantation, which are served by Volusia County. According to Volusia County’s water supply plan for the northeast portion of the County, there is sufficient capacity to serve these existing developments, and there are no plans at this time to expand the services to other areas in southern Flagler County. The remaining ranch development along John Anderson is served by on-site wells and septic tanks. The 5-acre commercial parcel on the north side of Old Dixie Highway would need to connect to either Volusia County utilities or provide for on-site water and sewer.

Bulow Creek State Park and the associated archeological value of the ruins require that the County maintain close coordination with the Florida Department of Environmental Protection, Division of Recreation and Parks. Additionally there are 900+ acres owned by Flagler County immediately south of SR 100 that provides for the protection of valuable wetland resources. Together these conservation lands provide an opportunity to preserve and protect valuable natural resources that can be integrated into the visitors and tourism industry by emphasizing the eco-tourism opportunities.



According to the Flagler County General Soils Map the area contains a variety of soils. This is typical of this area since it is a transitional area between the Salt Marshes along the inland tidal rivers and the western Pine Flatwoods near I-95. The area between Old Kings Road and the Intracoastal Waterway consists of low-lying hammock (Favoretta-Tuscawilla) and sand ridges/coastal dunes (Orisino-Astatula-Tavares and Paola-Pomello-Cocoa). Additionally there are coastal wetlands (Turnbull-Pellicer) located adjacent to Bulow Creek. The soils types and close proximity to Bulow Creek and the Intracoastal Waterway raise concerns over the use of septic tanks and the possible negative impact on both the residents and the environment.

Refer to previous Table A-28 for the listing of the plant and animal species that may inhabit these communities. This list is general in nature and is provided for general planning purposes only.

The roadway network reflects the needs of the development pattern in that the north-south routes (Old Kings Road and John Anderson Highway) provide access to all the development. The primary east-west route is SR 100 (Moody Boulevard) since it has direct access to the major north-south arterial roadways (US 1, I-95, SR A-1-A). Old Dixie Highway provides east-west access to those residents of Fairchild Oaks, Bulow Plantation, Plantation Bay, Eagle Lakes and the one-acre estates at the southern end of John Anderson Highway. The amount of vacant land that can be developed for single family residential uses, as well as the amount of land currently available in the undeveloped platted areas, affect the ability of Old Dixie Highway and John Anderson Highway to provide both the capacity and safety to current and future residents. If we assume no changes in land use and build-out of the area by 2035, then there would be approximately 6,200 dwelling units and 5,000 square feet of retail uses needing to

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access the roadways in the area. These uses could generate up to 99,000 average daily trips on the roadway network. This means that improvements will be needed to Old Kings Road and John Anderson Highway to accommodate the increase in traffic.

Table A-32. Coastal Area 3 (Bulow Creek) Surrounding Land Use and Zoning		
General Area	Land uses/zoning	Description
North side of SR 100 (Moody Blvd)	City of Palm Coast: Com 2 and 3 (Commercial); MPUD (Mixed Planned Development); MFR-2 (Multi-family) SFR-1 (Single-Family)	Commercial uses at the interchange of I-95 and Moody Boulevard (SR 100). Single-family and multi-family development.
Along east side of Intracoastal Waterway	City of Flagler Beach: unable to obtain at the time of this report.	
Along the south side of Old Dixie Highway	Volusia County: BPUD/RPUD (Residential Planned Unit Development); C (Conservation); RA (Rural Agriculture); RC (Rural Conservation); A-2 Agriculture.	Halifax Plantation DRI, Commercial shopping center, single-family residential subdivision and conservation lands.
Along the west side of I-95	City of Palm Coast: R-2 and R-3 Low Density Single Family	Part of original single-family subdivisions.

Source: Flagler County Planning and Zoning Department

Summary: The study area contains the Bulow Creek State Park and Intracoastal Waterway that are natural resources which attract visitors and residents. It is important that these resources are properly protected and growth occurs in a manageable fashion. In order to accomplish this task, Flagler County needs to complete additional analysis on the provision of potable water and sanitary sewer from a centralized source. Due to the limited opportunities, Flagler County needs to review options with the City of Flagler Beach, City of Palm Coast, and Volusia County, so that by 2015 there is a sound and financially feasible plan to provide these services. This will ensure that the development of the vacant land will not have a negative impact on the natural resources surrounding Bulow Creek and the Intracoastal Waterway. The area also needs to have additional analysis regarding the road network and its capabilities to address the demand created by the development of the area. The current north-south routes (Old Kings Road and John Anderson Highway) which may need improvements to ensure safe use of the road at the minimum level of service required by the Comprehensive Plan and Concurrency Management System. Lastly, Flagler County needs to develop a reuse plan for the landfill. The increasing amount of residential development in the area will create potential incompatible uses for the facility.

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E. Coastal Area 4 (Airport Study Area)

Background: This area contains approximately 2,855 acres and comprises two pockets of unincorporated County surrounded by the City of Palm Coast. The boundaries of the area are: SR 100 (Moody Blvd.) on the north; Seminole Woods Parkway to the east; US 1 to the south; and Belle Terre Boulevard to the west. Table 31 (below) summarizes the current conditions in regard to the adopted Future Land Use Map designation and the amount of developed and undeveloped lands within this study area. Note that the future development reflects the general land uses associated with the land use designation. The actual development that could occur would be a function of the final zoning classification assigned to the property at time of development.

Land Use	Total Land	Developed	Undeveloped	Maximum Intensity of Future Development
Industrial	1,107	934	173	1,730,000 sq.ft.
Mixed Use: High Intensity	41	0	41	410,000 sq.ft. or 410 du's
Commercial: High Intensity	34	12	22	220,000 sq. ft.
Commercial: Low Intensity	11		11	110,000 sq. ft. commercial, office, retail
Educational	31	0	31	School site
Agriculture and Timber lands	416	0	416	83 du's
Residential: Low Density Rural Estate (1 du/ac)	798	0	798	798 du's
Conservation	339	0	339	0
Water	78		78	0
TOTAL	2,855	946	1,909	

Source: Flagler County Planning and Zoning Department (NEFRC GIS data) 2010

Land use in the vicinity of Flagler County Airport is primarily residential and commercial development. Residential development occurs west of Seminole Woods Parkway, located east of the Airport, and south of the Iroquois Canal, that forms the southernmost boundary of the Airport. Property along State Road (S.R.) 100 that borders the Airport to the north is primarily commercial use. The Flagler Palm Coast High School and Palm Coast Town Center are located on the north side of S.R. 100, across from the Airport entrance road. The Florida Hospital-Flagler is located on the north side of S.R. 100, approximately one mile east of the Airport. The land immediately east and southeast of the Airport is currently wooded, but is zoned Industrial-Planned Unit Development. Low-density residential areas are located east of Seminole Woods Parkway.

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Low-density residential areas are also located west of Belle Terre Boulevard and south of the Iroquois Canal. There is a buffer of open space that is zoned for agriculture uses that lies immediately west of the Airport.

The primary land use issue in this area is the expansion of the Flagler County Airport. The Flagler County Airport is a public use, general aviation airport owned, operated, and maintained by Flagler County. The airport is located in the eastern-central region of the County and is roughly bounded by: Belle Terre Boulevard to the west; SR 100 to the north; and Seminole Woods Parkway to the east. The airport is served by two major arterials – Interstate 95 and US 1, with SR 100 providing direct access. Future land uses surrounding the airport consist of commercial, residential, and agricultural. North of SR 100, the land has been developed for high intensity commercial, with the exception of the Flagler Palm Coast High School and Florida Hospital. The property located east of Belle Terre Boulevard and west of Seminole Woods Boulevard is planned to be low density residential.



The Flagler County Airport provides opportunities for Fixed Based Operators as methods of business development. Aeronautical users and services are the typical targeted industries, but there are opportunities for office, retail, service, industrial and warehouse uses.



The current mixture of uses within the Flagler County Airport provides for industrial, service, professional office and retail opportunities. This diversity of uses has been effectively developed in a manner that is compatible and aesthetically acceptable.



There are three major issues with regard to the compatibility of land uses surrounding an aviation facility: safety, noise and obstructions. Places of assembly (such as the high school) which are located within the flight paths are considered to be incompatible land uses. Residential land uses can also be incompatible based on noise sensitivity. Future year noise contours developed for the *Flagler County Airport Master Plan* (April, 1997) indicate that no significant noise impacts are anticipated. A recommendation of the Airport Master Plan is to develop airport zoning ordinances as a means of preventing non-compatible land uses and aerial obstructions.



The issue of land use compatibility needs to be addressed during the 2010-2035 planning horizon. It is critical that the County and the City of Palm Coast do not approve uses that will be incompatible with the expansion and development of the Flagler County Airport and its related economic opportunities.

There are residential developments in Palm Coast and Flagler County that surround or abut the Airport property. It is important that these existing uses are properly positioned to ensure compatibility with the future expansion of the Airport and the associated businesses/industries.



There is a large area left to be developed in Flagler County, surrounding the Airport. Table 31 reflects that the Airport contains a majority of the property designated for industrial development. The 968 acres shown as developed reflects the area within the Airport boundary that is designated as "Industrial" on the currently adopted Future Land

Use Map. For purposes of land use analysis, the Airport is shown as being developed although there are areas for expansion of the Airport and related uses. The 173 acres reflects property located on the east and north of the Airport that can be developed for industrial uses.

Immediately adjacent to the southern boundary of the Airport is approximately 56 acre of land owned by the County. This area is designated for “Agriculture and Timberlands” on the currently adopted Future Land Use Map. This area has been targeted for expansion of other uses, such as the site of a National Guard Armory. The close proximity to single family homes located on Laguna Terrace Trail results in the need to provide a transitional land use to buffer the residential uses from the impacts of the Airport and its related industrial uses.

There is approximately 375 acres of land with designations of “Agriculture and Timberlands” and “Residential: Low Density Rural Estate (1du/acre)” immediately east of the County-owned lands. This area also abuts the Airport. There have been conceptual plans to develop this area for a fly-in residential development, but a review of the currently adopted Official Zoning Map shows that almost 250-acres have been designed as IPUD (Industrial Planned Unit Development). The opportunity to develop this land for industrial or commercial uses could be a compatible use with the Airport. The development of an east-west road along the boundaries of these properties that connects Seminole Woods Parkway with Belle Terre Boulevard would be beneficial for the development of non-residential uses in this area. The critical element to making this change a success would be the inclusion of sufficient design standards for buffering the existing and proposed residential developments to the south.

Along Belle Terre Boulevard are large tracts of land with designations as “Agriculture and Timberlands” according to the adopted Future Land Use Map. The majority of the land is owned by Flagler County and is to be used for public purposes (civic, airport and conservation). The future expansion and alterations to the Airport would preclude extensive development of this area. Also there are wetlands and other natural resources around Gore Lake that need to be preserved and protected. This provides an opportunity for buffering of the Airport from the residential development located immediately to the west of Belle Terre Boulevard. This area is within the City of Palm Coast and has been developed for detached single-family dwellings.

This area consists of two large pockets of County surrounded by the City of Palm Coast. The following table summarizes the land uses that surround the two County areas. The study area has been separated by a large parcel that was annexed into Palm Coast. This annexation was the result of the development of this tract for residential uses that require connection to centralized potable water and sanitary sewer. Since the property is within Palm Coast utility service area, then the owner of the property was required to acquire these services from Palm Coast. This emphasizes the importance of intergovernmental coordination between the two local governments to ensure cohesive and compatible growth occurs in the study area.

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General Area	Land uses/zoning	Description
Along SR 100 between Seminole Woods Parkway and Belle Terre Boulevard.	Institutional/PSP; DRI Urban Core/MPD; Mixed Use/Com 2; Mixed Use and Industrial/Com 2	North side of SR 100-Falger Palm Coast High School, Palm Coast Town Center, and Smaller commercial retail outparcels. South side vacant commercial property small outparcel of the Airport.
Along Seminole Woods Parkway between SR 100 and US 1.	West side: Mixed-use/Com-2 (MPD); Mixed Use/Ind-1; Mixed-use/Com-2; Mixed-use/MFR-3. East side: drainage; residential/SFR2/3; Mixed-use/Com-2; Mixed-use/MPD; Residential (EST 2 and SFR 2/3	The west side is primarily vacant and undeveloped except for a single family subdivision that was annexed by Palm Coast and a new multi-family development near US 1. The east side has the most development consisting primarily of single family homes.
Along Belle Terre Boulevard between SR 100 and US 1.	Residential/SFR 2/3, except for intersections at SR 100 (mixed use/Com-2/3	Single family dwelling except at the intersection of SR 100.

Source: Flagler County Planning and Zoning Department

The majority of the lands outside the County's jurisdiction have been developed, but there are pockets of undeveloped lands within the County, so it is important to identify the environmental constraints in this study area. Flagler County is located in the Atlantic Coastal Lowlands physiographic zone. Flagler County Airport is located in the Eastern Valley, the largest geomorphic feature in the County. This valley is approximately 20 miles wide and contains most of the low wetlands of Flagler County. Elevations in this region range from 5 to 28 feet above mean sea level. The soils on Flagler County Airport are classified as the Myakka-Smyrna-Valkaria soils complex. This complex consists of nearly level, poorly drained soils that are underlain by sandy material. These soils are on broad flatwoods that are interspersed with depressional areas and small swamps that are ponded for long periods of time.

Flagler County Airport and many of the surrounding residential and commercial developments drain into the Iroquois Canal, located at the southernmost boundary of the Airport property. The canal was established for flood control purposes and is only lowered in the event of a hurricane. A master surface water management system is to be constructed to allow for the future development of the eastern portion of the Airport property. The Airport plans to construct a closed storm sewer system across the Airport's developable property to the existing Airport drainage channel that runs from north to south and outfalls into the Iroquois Canal. This channel also serves SR 100. This flow will then be routed to the eastern drainage channel, which flows south to a proposed detention pond. The pond will drain directly into the Iroquois Canal.

The vegetative cover of the study area is a mixture of wetlands and upland habitats. These vegetative communities are still found on the undeveloped portions of the Airport Study Area. Vegetation along the east and south property lines of the Airport consist of coniferous plantations, pine flatwoods, wetland coniferous forest and wetland forested

mixed vegetation. There are some cypress bayheads and small freshwater marshes interspersed through this area. Mixed wetlands predominated with some freshwater marshes on the west side of the property, just north of Gore Lake.

According to the Airport Master Plan and the Florida Natural Areas Inventory (FNAI), the study area has a significant region of scrub habitat, a natural community in decline that provides important habitat for several rare animal and plant species. The FNAI database indicated that portions of the site appear to be located on or near Potential Natural Areas (PNA). PNAs are lands that appear to be relatively intact areas of natural vegetation based on aerial photography, as determined by FNAI scientists. PNAs are not a regulatory designation but are identified for conservation planning purposes. These PNA include the following community types: scrub, wet flatwoods, swamp, floodplain strand swamp, basin swamp or mesic flatwoods. In addition there are several plant and animal species that are identified as endangered or threatened species or species of special concern that have been known to occur in the study area. These species include the Gopher Tortoise (*Gopherus polyphemus*), the Celestial Lilly (*Nebastylis floridana*), and the Lake-side Sunflower (*Helianthus camosus*). Lastly, portions of the Airport property are located on or near a potential habitat associated with a known occurrence of the Wood Stork (*Mycteria Americana*).

The provision of potable water and sanitary sewer does not appear to be a major issue given the current and future uses that could be developed. The City of Palm Coast provides the area with potable water and sanitary sewer either through direct retail service or through a wholesale agreement with Flagler County. The connection to the Palm Coast utilities typically requires annexation of the subject property. This does not apply to those properties within the Airport that are served by the County utilities. The City of Palm Coast Water Supply Plan identified specific provisions to ensure that County users of the City's water system were accommodated within the 2010 to 2020 planning horizon. The County will need to develop a similar water supply plan to ensure provision of potable water for the 2010 to 2035 planning horizon.

Ground transportation is primarily focused on SR 100 (Moody Boulevard) since it is a major east-west arterial road that intersects with a majority of the north-south arterial roads (US 1, I-95, SR A1A), as well as minor arterial and local collectors that feed into the Palm Coast, Bunnell and the unincorporated areas. Future issues pertain to better coordination with the cities and the Florida Department of Transportation to ensure that expansion of existing roads and construction of new roads are in place to accommodate future growth. One of the critical elements that will need to be studied and evaluated is an east-west road along the southern boundary of the Airport that would provide connectivity between Seminole Woods Parkway and Belle Terre Boulevard.

Summary: Flagler County has limited control over the development of lands within close proximity to the Airport. The County needs to emphasize coordination of the area's development patterns with the City of Palm Coast since all of the land surrounding this area is within the City's jurisdiction. Additionally, The City of Palm Coast will provide utilities to privately-held lands that are within the County's jurisdiction.

As the sole utility provider in the area, the connection to their utilities would likely result in the annexation of these lands. This reinforces the need for a shared focus between the County and the City to ensure that the vacant lands in this study area are developed for uses that are compatible with the Flagler County Master Airport Plan. The City of Palm Coast has initiated a study to review the existing and future land uses of vacant parcels surrounding the Airport. The goal is to ensure a coordinated approach to land use planning that is consistent with the safety standards and requirements of the Flagler County Airport. A secondary goal is to utilize the location of the Airport and the proximity of I-95 and US 1 as an economic stimulus for industrial, office and commercial development.

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F. Coastal Area 5 (Plantation Bay and Korona)

Background: This area contains approximately 4,936 acres and is located east of US 1, west and north of the Volusia County Line, west of Interstate-95, and south of the Palm Coast municipal boundary. The predominant use in this area is the Plantation Bay Development of Regional Impact (DRI). This DRI was approved in 1985 and encompasses 2,574 acres and is approved for 4,326 dwelling units and 90,000 square feet of retail commercial uses. The project also includes 1,462 acres of wetland, upland forest and lakes that will be preserved in perpetuity. The DRI Development Order also includes a requirement for dedication of 26-acres for an elementary school site. The remainder of the area has designations for agriculture and timberlands, low density residential, commercial and conservation land uses. The primary planning issues for this area include monitoring the development of Plantation Bay, addressing antiquated subdivisions in the agricultural areas north of Old Dixie Highway and addressing the traffic impacts along Old Dixie Highway and associated intersection/interchanges.

Table A-35. Coastal Area 5 (Plantation Bay/Korona Study Area)				
Land Use	Total Land	Developed	Undeveloped	Maximum Intensity of Future Development
Mixed Use: Low Intensity/Med. Density	2,553	1,795	758	4,407 du's/90,000 sq. ft. commercial/Elementary school
Conservation	227	0	227	0
Commercial: High Intensity	96	87	9	90,000 sq. ft. commercial
Agriculture and Timber lands	1,254	287	967	193 du's
Residential: Low Density Rural Estate (1 du/ac)	752	165	587	587 du's
Residential: Low Density Single-Family	48	48	0	0
Residential: Medium Density	6	6	0	0
TOTAL	4,936	2,388	2,548	

Source: Flagler County Planning and Zoning Department (NEFRC GIS data) 2010

The subject area has been developed for primarily residential uses. The Plantation Bay DRI incorporated a variety of low density residential development styles with internal recreational uses. The latest biennial report shows that there are 984 lots approved in 10 subdivision plats. The adjacent Eagle Rock subdivision consists of large lot residential development served by individual private wells and septic tanks. There is a commercial-office development completed on the northwest corner of I-95 and Old Dixie Highway that provides for a variety of office and personal retail opportunities. The remainders of the commercial uses are older highway-related uses such as a hotel, restaurant, recreational vehicle park, and gas station.

The primary planning concern for the next 25 years for this area will be the development of the vacant, agricultural lands north of Old Dixie Highway and the vacant, low density

residential lands along that road. This area is part of an antiquated subdivision that is missing adequate access and infrastructure in order to develop the property for individual homes on the minimum 5-acre lot size. The County does not have any plans in place to provide paved public roads to provide access, nor are there plans to provide utilities at this time. Flagler County needs to determine if the land use designations assigned to this area on the Future Land Use Map reflect the realities of what should be developed in the area. The proximity to suburban developments, such as Plantation Bay, makes this an area appropriate for more intensive residential development subject to the provision of roads, potable water, sanitary sewer and stormwater management facilities. The relatively low amount of conservation lands also makes this area attractive to development. The difficulties lie in the number of parcels and various ownership interests that would prevent master planning all of the area. This means that change and development in this area will be incremental. It is important that Flagler County ensure the area is developed in a manner that will be compatible with the surrounding residential uses.



The development trend in this area is greatly influenced by existing development patterns in northern Volusia County and southern Palm Coast. The area has been targeted for low-density residential development since the approval of the Halifax Plantation and Plantation Bay DRI's in the mid to late 1980's. These projects reflect a suburban development pattern that incorporates preservation of large wetland areas and retail commercial along major roadways. This trend will continue during the next 25 years, given the easy access to I-95 and US 1; thereby allowing for commuting to employment areas in Flagler and Volusia County.



The following table summarizes the land uses and developments occurring outside the study area. These land uses are compatible with the current and future land uses for the study area.

General Area	Land uses/zoning	Description
Along the west side of US 1 from Old Dixie Highway to the Volusia County line.	Industrial and commercial land uses between US 1 and FEC railroad. Agriculture and Timber lands/Residential: Low Density Rural Estate 1 du/ac west of FEC railroad all in County jurisdiction. At the County line the properties are Industrial according to the Volusia County Future Land Use Map.	Primarily vacant land with some rural residential development associated with agricultural interest. Single use commercial buildings located in close proximity of the Flagler/Volusia County line.
Between I-95 and the County line	Low Density Residential (Volusia County)	The Volusia portion of Plantation Bay DRI.
Approximately one mile north of Old Dixie Highway, between US 1 and I-95	Residential/SFR 2 and 3 (City of Palm Coast)	Single family homes.

Source: Flagler County Planning and Zoning Department

This area is east of the Atlantic Coastal Ridge so water ultimately drains to the Intracoastal Waterway and its tributaries. There is not a regional drainage facility or plan for the study area, so drainage is provided on a site by site basis as a property is developed. Plantation Bay and other recent residential subdivisions have been required to provide for on-site retention of stormwater to ensure that the water quality and quantity do not have negative effects on the environment and other property owners downstream of the development projects.

The vegetative cover of the study area is a mixture of wetlands and upland habitats typical of Pinewood Flatwoods and cypress swamp environmental communities. The majority of the area reflects the characteristics of the Pinewood Flatwoods community by the amount of open woodlands dominated by pine trees. There are some cypress bayheads and small freshwater marshes interspersed through this area, primarily north of Old Dixie Highway. These areas have been designated as Conservation on the

Future Land Use Map to protect these resources. The Plantation Bay DRI has been developed in a manner to protect the significant wetland resources within the development.

A detailed analysis of the endangered or threatened species in the area has not been completed, except within the Plantation Bay DRI. Refer to previous Table A-28 for the listing of the plant and animal species that may inhabit these communities. This list is general in nature and is provided for general planning purposes only.

The provision of potable water and sanitary sewer is relatively limited since the sole source is the privately-held utility (Plantation Bay Utility Company) that serves Plantation Bay. According to the St. Johns River Water Management District (SJRWMD) the water treatment plant has an approved capacity of .756 million gallons per day (MGD) capacity. The sanitary sewer system has a permitted capacity of .475 MGD. The Plantation Bay utilities have been expanded outside the boundary of Plantation to Bay to serve other new residential subdivisions, as well as a new County Park. The limited capacity and future demand for these services will require the expansion of the existing plants or development of new facilities.

Summary: The need to determine appropriate provision of services is critical to this area. The City of Palm Coast is immediately to the north, but there are no plans at this time to expand City utilities to the area. The Plantation Bay utilities are available, but have limitations due to the size of the treatment facilities. Additionally, there are concerns with the increase of traffic impacts associated with the development of the area. Old Dixie Highway will need to be upgraded in order to safely accommodate additional traffic. The intersection of Old Dixie Highway with US 1 also is an issue since the alignment does not meet current design standards used by the Florida Department of Transportation. Lastly, the antiquated subdivision to the north of Old Dixie Highway will need to be addressed in regard to what type of development is allowed and what conditions must be in place to allow for the development of the property.

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G. Western Area (General)

There are a number of critical issues facing the leaders of Flagler County and the cities over the next 25 years. The one issue that has been raised numerous times is the ability to protect and maintain the rural and agricultural lifestyle seen in the Western Area of Flagler County (land west of US 1). The primary concern is that the abundance of open land could be developed with relative ease. The critical aspect is protecting the property rights of the western landowners and farmers, while still ensuring the agricultural and rural characteristics of western Flagler County remain in place.



The “Agriculture and Timberlands”(1 du per 5 ac.) and the “Agriculture” (1du per 20 ac) land use categories includes land used for the production of food and fiber crops and supportive uses; agricultural sales outlets such as farmers markets; and land lying fallow which is part of a parcel that is currently or has previously been agriculturally productive. Agricultural land use categories account for the largest amount of acreage in the county – 92,150 acres. This represents 57% of the entire area subject to the County’s jurisdiction. Almost all of the land lying west of the U.S. 1 in Flagler County falls within either the agricultural category conservation (wetland swamp, marsh or water body) category or upland forest category. In addition, there are still limited amounts of timber producing lands that lie east of U.S. 1. Agricultural lands are comprised of cropland, improved pasture and rangeland. Flagler County contains no significant citrus-producing lands.



The following table summarizes general trends in farming that occurred in Flagler County between 1997 and 2007. This analysis also includes lands annexed into cities that retained their agricultural uses. The first statistic pertains to the number of farms located within Flagler County. The tables reflects that amount of farms increased between 1997 and 2002 (net increase of 9 farms), but experienced a decrease between 2002 and 2007 (net loss of 18 farms). This trend in itself is not a major concern, but when the amount of area being farmed experiences a significant decrease for the same period (net loss of 29,341 acres or 33%) then there is a concern that there is the potential of urbanization or suburbanization of the area. This may lead to sprawl and incompatibility between low density residential development and agricultural

businesses. The positive trend has been the average value of land and buildings has experienced an increase between 2002 and 2007. This would be attributable to the increasing land values associated with the building boom that Flagler County experienced during this time. Although this is good for those landowners, this increasing land value places more pressure on the land owner to convert the property from active agricultural use to residential development.

TABLE A-37. Farms: Number, Land in Farms, and Value of Land and Buildings in Flagler County, 2000, 2005 and 2007		
Number of Farms		
1997	2002	2007
125	100	82
Total Area Farmed (Acres)		
1997	2002	2007
86,861	68,364	58,396
Average Size of Farms (Acres)		
1997	2002	2007
695	684	712
Average Value of Land and Buildings per Farm (Dollars)		
1997	2002	2007
1,235,927	1,085,977	2,833,332

Source: U.S. Department of Commerce, Bureau of the Census,

According to the 2007 Census of Agriculture, Flagler County had 82 farms. The following summarizes the crop produced on these farms. The classifications are based on the North American Industry Classification System or NAICS. Please note that the number of farms shown in the following table exceed the total number of farms since a single farm can have multiple products being farmed.

Vegetable and melon farming (NAICS #1112).....	10
Fruit and tree nut farming (NAICS # 1113).....	3
Greenhouse, nursery and floriculture production (NAICS # 1114).....	15
Other crop farming (NAICS # 1119).....	2
Beef cattle ranching and farming (NAICS # 112111).....	42
Poultry and egg production (NAICS # 1123).....	7
Animal aquaculture and other animal production (NAICS # 1125).....	2

There are no operating aquaculture or food processing operations in Flagler County at this time. All of this data reflects that the major agricultural uses of land include grazing lands for cattle and beef production, lands for crops and sod farms. This has been a consistent trend since the 1997 agricultural census taken by the USDA.

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Other relevant agricultural statistics include the total acreage in cropland production and the market value of all agricultural products sold. Table XX shows the market value of all agricultural products sold in Flagler County in 2000, 2005, and 2007. This table reveals that the total income, crops income, livestock and poultry income and average income per farm.

TABLE A-38. Farm Income: Market Value of Agricultural Products Sold in Flagler County, 1997, 2002 and 2007					
Total Income (\$1,000)			Average per Farm(\$)		
1997	2002	2007	1997	2002	2007
27,837	23,789	35,140	305,906	237,894	428,538
Crops Income (\$1,000)			Livestock, Poultry and Byproducts (\$1,000)		
1997	2002	2007	1997	2002	2007
26,612	22,326	34,302	1,226	1,464	838

* Includes nursery and greenhouse products
 Source: U.S. Department of Commerce, Bureau of the Census

These statistics allow for general observations that will help craft Flagler County’s policies for protecting and protect agricultural operations and preserve the rural lifestyle that many have come to expect for western Flagler County. The current land use policies allow for low density residential development and prohibit density allocation to lands with a “Conservation” land use designation. At face value this land use pattern appears to be consistent with the concept of a rural lifestyle. The problem is that 5-acre residential lots are not accommodating for viable, commercial agricultural use. Additionally, federal, state, and regional planning authorities and professionals typical try to prevent a pattern of a single residential unit on a 5-acre parcel. This type of land use pattern has been typically classified as “urban sprawl” and has been shown to have a negative impact on the finances of local governments and negative impacts to the natural environment.

The State of Florida in FAC 9J-5 has defined sprawl as:

Urban development or uses which are located in predominantly rural areas, or rural areas interspersed with generally low-intensity or low-density urban uses, and which are characterized by one or more of the following conditions: (a) The premature or poorly planned conversion of rural land to other uses; (b) The creation of areas of urban development or uses which are not functionally related to land uses which predominate the adjacent area; or (c) The creation of areas of urban development or uses which fail to maximize the use of existing public facilities or the use of areas within which public services are currently provided. Urban sprawl is typically manifested in one or more of the following land use or development patterns: Leapfrog or scattered development; ribbon or strip commercial or other development; or large expanses of predominantly low-intensity, low-density, or single-use development.

The issue of sprawl applies primarily to Western Flagler County since the Coastal Areas east of US 1 are either developed in accordance with the approved comprehensive plan or have been placed in public ownership for protection of natural resources. The Western Area can easily be developed for rural subdivisions. The primary concern associated with this land use pattern is that the provision of urban services such as, centralized potable water and sanitary sewer, planned stormwater managements, provision of police, fire and school services, will not be provided in a planned, efficient and effective manner. The issue is not that portions of the Western Area of Flagler County are developed for rural subdivisions with densities of one unit per five acres, but development of all the lands in this land use pattern could have significant impact to the natural and agricultural resources of the area.

The member of the farming community of western Flagler County have consistently stated that they do not want to see further intrusion into their rural lifestyles and that they want to maintain their agricultural businesses. This is becoming difficult given the restrictions on various herbicides, pesticides and limitations on the withdrawal of groundwater for irrigation. Additionally, the agricultural community does not want to assume large amounts of debt to finance the farming business. The value that all farmers rely on is the value of their land for producing crops and future sales. The County needs to work with the farming interests to identify how to balance the financial windfall of developing their land for residential purposes with the preservation of the agricultural businesses that have been a critical part of Flagler County.

Flagler County attempted to address these concerns by approving standards for Minor Rural Subdivision. Appendix C, Land Development Code, Article IV, Section 4.02.02, Subdivisions Not Requiring Platting includes the rules pertaining to the division of rural lands without having to follow the rules for platted subdivisions. These regulations include requirements for minimum buildable area and access. The important aspect is that the regulations for all Minor Rural Subdivisions include the requirement for the following language on all deeds conveying property:

"THE PARCEL OF LAND DESCRIBED IN THIS DEED IS NOT A PART OF A PLATTED SUBDIVISION REVIEWED AND APPROVED BY FLAGLER COUNTY. NO GOVERNMENTAL AGENCY, INCLUDING FLAGLER COUNTY, SHALL EVER BE RESPONSIBLE FOR THE MAINTENANCE, UPKEEP OR IMPROVEMENT OF ANY PRIVATE DRIVES, ROADS, STREETS, EASEMENTS OR RIGHTS-OF-WAY PROVIDING INGRESS AND EGRESS TO THE PROPERTY HEREIN CONVEYED. DUE TO THE RURAL LOCATION OF THIS PARCEL AND DEPENDING ON THE STATE OF MAINTENANCE OF ACCESSWAYS, EMERGENCY RESPONSE TIMES MAY BE ADVERSELY AFFECTED. FIRE HYDRANTS ARE NOT AVAILABLE FOR FIRE SUPPRESSION. AGRICULTURAL USES ON ADJOINING PARCELS MAY GENERATE NOISE AND ODORS CHARACTERISTIC OF A RURAL SETTING. THIS PROPERTY MAY NOT BE A PART OF ANY MOSQUITO CONTROL DISTRICT AND THEREFORE MAY NOT BE SUBJECT TO MOSQUITO CONTROL BY ANY SUCH

DISTRICT. THIS PROPERTY IS NOT A PART OF A DEVELOPMENT WITH AN APPROVED STORMWATER MANAGEMENT SYSTEM. THIS PARCEL MAY BE SUBJECT TO FLOODING FROM TIME TO TIME AND NEITHER THE COUNTY OR ANY OTHER PUBLIC AGENCY IS RESPONSIBLE FOR PROVIDING STORMWATER MANAGEMENT OR FLOOD CONTROL."

These regulations are intended to provide large land owners with a simplified method of dividing properties that are intended for agricultural and rural purposes. The County requires the language on the deeds to ensure that the future landowners are aware that the provision of services and utilities is the responsibility of the landowner and Flagler County has no obligations to provide these services. The owners of the parcels created by Minor Rural Subdivisions can develop a single-family home on the property if the home owner can fund connection to a power utility and there is access for emergency and non-emergency services. These provisions were put in place to address concerns from rural land owners who felt the subdivision regulations placed extensive requirements for roadways, stormwater and emergency access that were overly burdensome for many of the rural and agricultural landowners. Overall, the system relies solely on the buyer being properly notified and understanding the conditions tied to the property. The primary concern is that the regulations do not contain provisions for staff review of the deeds to ensure that the language is included. This means that there are opportunities that the purchasers of these lots may not be properly notified of the private landowner's responsibilities. It is recommended that the Minor Rural Subdivision standards in the LDC be amended to require review by staff to ensure that future purchasers of the lots created under the Minor Rural Subdivision standards are aware of that they are responsible for maintenance of access and stormwater.

The elimination of the Minor Rural Subdivision standards cannot be done at this time. It is recommended that the County approach the minor rural subdivision with a short and long term approach. The first step should be an amendment of the Land Development Code to require review by staff to ensure that the provisions required by the existing regulations are included in the deed. The second step needs to be developing standards for large parcels (over 100 acres) so that portions of the land can be used for clustered residential development and the remainder being used exclusively for agricultural purposes. This action needs to include sufficient incentives so that the Minor Rural Subdivision regulations can be limited or deleted.

The existing regulations and the lack of a viable market for transfer of development rights could result in a worse-case scenario over the next 25-years is that the County and land owners do not work together and the land is developed for 5 acre "ranchettes". This is a realistic situation given the future potential for increasing population, the relatively abundance of land that can be developed for 1 unit per 5 acres home sites and the desire for a "rural" setting with close proximity to urban areas. One potential solution is to provide the opportunity for limited residential development in a manner that protects and preserves agricultural and natural resources. Future planning for land use distribution must emphasize the use of cluster development and specific performance standards as a method of allowing for limited residential development in the proper

location. There are numerous tools available to the local governments within Flagler County to work together to ensure protection of the agricultural lands and businesses that occupy Western Flagler County. The following summarize the recommended actions that the County should apply over the next 25 years.

- 1. Land development regulations that are an incentive to maintain rural lifestyles and agricultural pursuits.** The issue is to balance the rights of the landowner to reasonable use of their property, given the land use and zoning regulations, and the need to preserve lands for agricultural, rural and conservation purposes. The ability to influence development patterns plays a vital role. Flagler County respects and honors the landowners' rights to develop the land for residential uses on 5 and 20 acre parcels, but acknowledges that incentives to cluster these developments will serve to benefit both the property owner and the general public. The concept is to require residential units be clustered into areas best suited for that use. The remaining portions of the land will be protected by either a conservation easement. This policy provides the farming interest with the opportunity to receive financial benefits of the land use allocate to the property in a manner that preserves the vital agricultural needs. Additionally, the use of Green-building and site development standards shall be used as incentives so that the more intensive development of these areas has minimal environmental impacts. This action will not prevent development of the rural lands, but will provide focus as to where development should occur and shall specify the conditions that are needed to protect the agricultural uses in the area.

The benefit provided by using this planning "tool" is that it is a low cost alternative to the landowner or governmental agency. Additionally, implementation is relatively quick since it is function of drafting and implementing amendments to the existing Land Development Code. The effectiveness of this effort will be a function of the market. In 2009 there is no demand for raw land that can be developed for residential purposes. Over the next 25 years this trend will change and there will be interest in the development of the Western Area of Flagler County. It is important that the County implement some form of performance-based incentives so that it is place prior to the demand for raw land causes widespread speculation.

- 2. Intergovernmental coordination.** The ability to allow for suburban uses in areas designated for "Agriculture and Timberlands" requires that the County and adjacent cities develop long range plans for the provision of utilities and other infrastructure. The ability to rely on private wells and septic tanks becomes problematic with the expansion of suburban and urban uses. This also holds true for two-lane rural roads that are counted on to serve the increasing traffic generated by new residents. The County and adjoining cities need to develop agreements and understandings for the provision of these facilities so that transportation facilities, including future transit opportunities, can be in place to serve the residential, economic and agricultural needs of the County and the cities.

The drafting, review and adoption of joint planning agreements, memorandum of understanding, and other similar documents will take considerable time. This is why Flagler County needs to utilize regional planning efforts to minimize this time delay. Implementations of the coordination efforts are dependent on the level of participation by the other local governments and their commitment to the goal.

- 3. Transfer of Development Rights (TDR):** This is a tool that establishes a regulatory system that allows a landowner to sell their “rights” or “credits” for development of their land to other landowners so that development will occur on other parcels where it is appropriate. The system is to create a viable market for the development rights so that the “sending” area is preserved and the “receiving” area has sufficient services and facilities to accommodate future growth. This type of program has been used in other parts of the United States with varying success. The critical elements for a successful TDR consist of the following:
- a. A clearly understandable goal that can be easily identified to those who will be expected to sell their rights and those expected to purchase the rights. In Flagler County a TDR system could be used for farm owners who do not want to develop their farmlands, but need the financial benefits that come with the development of the land for residential purposes. These would be those who are within the “sending areas”. In other words these are the landowners who are requested to not develop their land and sell all of their future development rights. The western area landowners would need to have clearly defined areas that can be developed and there would need to be a requirement that land owners within these “receiving areas” purchase these rights
 - b. A reliable “market” for the rights such that owners believe that they are either receiving or paying the right price for the development rights. Aiding this item is the ability of the local governments to establish a transparent process that is well managed by an independent third party; and
 - c. Belief that the system will be maintained until the desired goal has been accomplished. In Flagler County there would need to be specific geographic areas designated for “transfer” and “receiving” zones and the ultimate goal of preserving the areas within the transfer zones has to be measurable so that all parties are clear as to what will be protected by this program. This unfortunately can be the most difficult to maintain since the market and political settings can fluctuate over the time needed to accomplish the goal.

The implementation of a TDR system requires coordination with the cities in Flagler County and a commitment of resources (staffing) to ensure that the system work. The use of a TDR system is cautionary. According to a document prepared by the Ohio State University (TDR CDFS-1246-98 Land Use Series) written by Timothy J. Lawrence;

“Unfortunately, what works in theory may not be effective in practice. While TDR’s appear to be an effective method of preserving farmland, open space, and natural resources, the reality of the situation is that have been primarily effective within urban settings. There are few successful TDR programs in rural areas.”

The previously discussed planning tools are needed to integrate into a larger management program. The program will need to be accepted by landowners, local governments and managers of natural resources in order to be effective. A program to be known as Flagler Agricultural Resource Mitigation System (FARMS) is designed to provide the framework for the various parties to work together on the sustainability of agriculture in west Flagler County. The development of the FARMS requires that Flagler County and surrounding cities develop memorandums of understanding, joint planning agreements or similar documents to memorialize and commit to the following:

1. Flagler County and other local governments commit to the protection and preservation of agricultural pursuits in west Flagler County (west of US 1). It is clarified that the development of all of the land for lots with a single-family home on a 5-acre lot may have a rural appearance, but it is not appropriate for all of the lands located west of US 1 and that all governments must work together to ensure bona fide agricultural uses are protected from non-conforming uses and the enhancement of the economic benefits resulting from Flagler County’s agricultural industries.
2. As an alternative, Flagler County establishes a performance-based development standard that only be applied to properties when specific conditions are in place. The performance-based standards provide incentives to large landowners to maintain a large portion of their property for agricultural pursuits, while allowing for compact “green” development to occur. This provides a market-driven method of avoiding sprawling 5-acre homes site, while providing the large landowner with the ability to maintain their agricultural business.
3. Flagler County continues to facilitate and develop a system for Transfer of Development Rights or rural land stewardship. It is understood that this may not be a feasible tool at this time, but over the next 20-years there may be opportunities for such a program.

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H. Western Area 1 (Smokerise/Hunter’s Ridge)

Background: This area contains approximately 17,589 acres is located in the southeastern portion of the County with the Volusia County line as the southern boundary, the City of Bunnell as the western boundary, and US 1 as the northern and eastern boundary. The land use pattern for the area consists of a mixture of agricultural uses, conservation lands under ownership by governmental entities, rural subdivisions and commercial/industrial lands between US 1 and the FEC railroad. There is a multi-county Development of Regional Impact (DRI) known as Hunter’s Ridge located at the southeastern corner of the County.

This current land use pattern consists of large tracts of land under single ownership, with smaller parcels that have been created over the years through informal lots splits. There is a large tract of land within the Hunter’s Ridge DRI that has been designated as “Conservation” on the Flagler County Future Land Use Map that correlates to mitigation area established by the DRI Development Order. There is a rural subdivision known as Smokerise located on the County line that consists of one acre lots served by on-site wells and septic tanks. Access to Smokerise is from Volusia County on SR 40. A majority of the roads are dirt roads maintained by the owners, but there is a series of small collector roads that are the maintenance responsibility of the County. The land between the FEC Railroad and the US 1 corridor is currently designated as “Commercial: High Intensity” and “Industrial” on the adopted Future Land Use Map. Lastly there is large undeveloped area of “Residential” Low Density Rural Estate (1 du/ac) immediately south of US 1.

Land Use	Total Land	Developed	Undeveloped	Maximum Intensity of Future Development
Agriculture & Timberlands	7,429	0	7,429	1,486 du’s
Conservation	7,291	0	7,291	n/a
Residential: Low Density Rural Estate	1,759	270	1,489	1,520 DU’s
Mixed Use Low Intensity-Low/Medium Density	914	914	0	4,359 DU’s; 361,520 sq. ft. commercial; 604,308 sq. ft. industrial
Commercial High Intensity	140	5	135	135,000 sq. ft.
Industrial	56	12	44	43,000 sq. ft.
Total	17,589	1,201	16,388	

Source: Flagler County Planning and Zoning Department (NEFRS GIS data) 2010

The Hunters' Ridge DRI is located in Flagler County and Ormond Beach. The DRI that was originally approved in the late 1980's is nearing build-out in Ormond Beach due to the provision of potable water and sewer from the City of Ormond Beach. The actual development of the portion within Flagler County commenced in the early part of 2002. This was made possible due to an interlocal agreement between Flagler County and Ormond Beach for the provision of potable water and sanitary sewer. The extension of Airport Road has been initiated and it is expected to be fully extended to SR 40 in Volusia County by the end of 2010.

The following table reflects the existing and proposed development for the Hunter's Ridge DRI. Note that this table includes the changes from a pending amendment to the DRI Development Order that may change the mix of uses thereby changing the intensities of the non-residential and density of residential allowed within the project. Also please note that the total area subject to the DRI Development Order is 3,800 acres, but only 914 have the Mixed Use land use category. The remaining 2,886 acres have a designation of "Conservation" or "Agriculture & Timberlands" on the adopted Future Land Use Map. An amendment to the Future Land Use Map is being processed as part of the proposed changes to the DRI Development Order amendment.

Table A-40. Hunter's Ridge DRI Development Entitlements		
Land Use	Units	Building Area (Sq. ft.)
Residential ₁	2,657	
Mixed-use		361,520
Light Industrial		604,308

Flagler County Planning and Zoning Department

The Smokerise area comprises approximately 790 acres with a designation of "Residential: Low Density Rural Estate". There are approximately 148 developable lots based on existing conditions. There are approximately 142 lots developed for single-family residential uses and approximately 520 acres of land that could be developed for single-family homes on one acre lots.

The other area with the "Residential: Low Density Rural Estate" comprises approximately 1,000 acres located immediately southwest of the FEC Railroad. According to the Official Zoning Map, the area could be developed for single-family homes and portion (74 acres) has been approved for manufactured homes. Both of the zoning classifications assigned to these land use areas requires a minimum lot area one acre on order to develop the parcel for a single-family home. Additionally, there is a requirement of processing a subdivision plat in accordance with the adopted Land Development Code. Please be aware that there is an existing, antiquated plat known as the Palm Gardens Subdivision. In 1991, the owner of the land, M.C. Strickland, agreed to the requirements that the existing antiquated plat would be vacated and new subdivision prepared in accordance with the laws in place at that time would be required

in order to develop the property for the one-acre residential lots. as part of the administrative actions to approve the Low Density Rural Estate land use and R-1 Rural Estate zoning.

The “Agriculture and Timberlands” area have seen smaller rural subdivisions develop north of Strickland Road, west of Shedd Lane. Portions of this area were split into 5-acre tracts under the County’s Minor Rural Subdivision regulations. There are approximately 12 parcels developed for single family homes. These parcels account for approximately 695 acres.

The commercial and industrial properties located along US 1 provide an opportunity for development of smaller, lower intensity non-residential uses. The proximity to the I-95/US 1 interchange in Volusia County and the FEC railroad abutting these properties provides an ideal opportunity for economic development along this corridor. There are 6 parcels that are currently developed for office, storage or retail purposes.

Table A-41. US 1 Commercial and Industrial Uses, 2009

Owner/Business	Site area	Building Area	Use
Steven Vole	3.0 acres	4,800 sq. ft.	Warehouse storage
Built Rite Kitchens of Palm Coast	1.0 acre	5,700 sq. ft.	Warehouse show room
Favoretta Business Center	2.75 acres	0 sq. ft.	Business Park Condominium
Gospel Association for the Blind	3.5 acres	4,800 sq. ft.	Office building (exempt)
Cornerstone Broadcasting Corp.	2.25 acres	121 Sq. ft.	Tower and service bldg.
M & L Canup of Ormond Ltd.	5.0 acres	0 sq. ft.	Open storage

Source: Flagler County Planning and Zoning Department

The ownership and parcel layout indicate opportunities for all types of development. There are two legal non-conforming single-family homes located within the industrial and commercial areas along the US 1 corridor. These are homesteads that will remain as currently developed until the property is redeveloped for uses consistent with the land use and zoning, or the structure housing the non-conforming use is damaged beyond 50% of the value or is abandoned for a period on one year. Given that both of the residential uses are housed on parcels larger than 5 acres, there should be sufficient spacing to buffer these uses from future commercial and industrial uses that may be developed.

The future development of the Western Area 1 is dependent on several items. First, the proposed amendment to the Hunter’s Ridge DRI will increase the number of residential dwelling units and non-residential uses in the area. Access to this area will continue to be through roads in Volusia County. This creates a problem for access by the Flagler County School Board and Flagler County Emergency Management personnel and

equipment. Interlocal agreements with Volusia County and City of Ormond Beach are identified as the best solutions to address these concerns.

Development of the lands within Western Area 1 may occur under the proposed Flagler Agricultural Resource Mitigation System or “FARMS”. This program allows for limited intensification of agricultural lands if stringent performance standards are utilized. The following table reflects the maximum development potential that could occur in Western Area 1 if 100% of the property owners decided to use this program. This analysis is based on a hypothetical maximum development scenario for both existing and future conditions. This means that under the current land use designations that theoretically there could 1,486 homes developed over all 7,429 acres of land with the “Agriculture & Timberlands” designation. This theoretical maximum residential development increases to 11,929 units on 5,888 acres with 1,541 acres of protected uplands and 7,290 acres of protected wetlands being held in preservation. This analysis reflects the theoretical maximum of development in accordance with the requirements from the Florida Department of Community Affairs. Please be aware that historically development of land in Flagler County has not ever reached the maximum allowed under the classifications of the Future Land Use Map or Official Zoning Map. Based on actual developments and historical trends, the actual amount would be 40 to 50% less than the estimates required by the Department of Community Affairs due to stringent requirements and diverseness of ownership pattern. Also, the use of the FARMS program cannot reach the maximum if there are insufficient or non-existent utilities available to serve the project. Flagler County does not have any plans to provide these services to the Study Area, so land owners would not be eligible for incentives associated with centralized potable water, sanitary sewer or reclaimed water. The only performance standards that would be available are the clustering of units, the use of FGBC site and building standards. This means that an adjusted, realistic estimate of the theoretical maximum is 5,313 dwelling units if every property owner used these standards

The acronym “FGBC” in the following table stands for “Florida Green Building Coalition”. The Florida Green Building Coalition (FGBC) is a nonprofit 501(C)3 Florida corporation dedicated to improving the build environment. Their mission is "to lead and promote sustainability with environmental, economic, and social benefits through regional education and certification programs." In keeping with the organization’s mission, FGBC has developed Green Certification Programs that apply to organization in the construction and government sectors. Seeking FGBC certification demonstrates a commitment to products and services that are green and sustainable. Certification exists for residential and commercial land development and construction practices. The certification process requires verification that the project complies with the minimum criteria established by the FGBC and a commitment to maintain these standards through the life of the project. The criteria established by FGBC often work hand in hand with other standards such as WaterStar, EnergyStar and Low Impact Development (stormwater standards).

Table A-42. FARMS Performance Standards Analysis for Western Area 1 (Smokerise/Hunter's Ridge)					
Performance Standards		Area (acres)	FLUM Density (per acre)	Bonus Density (DU's per acre)	Total Units
Name	Description				
FLUM/Zoning	Conservation	7,290	0	0	0
	Agric. & Timber	7,429	.2	0	1,486
Utilities	Potable Water, Sanitary Sewer & Reclaimed Irrig.	14,719	0	0.3	4,416
Resource Protection Areas	Wetlands	7,290	0	0.1	729
	Agriculture/Uplands	1,541	0	0.2	575
FGBC Site		14,957	0	0.1	1,472
FGBC Bldg.		14,957	0	0.1	1,472
Theoretical Maximum Number of Dwelling Units (du's)					11,929
Theoretical Maximum Population (persons)					28,034
Gross Density of Total Area (du's/acre)					.8
Net Density of Development Area (du's/acres)					1.6
Average Lot Area per Unit (du per square feet)					10,810

Flagler County Planning and Zoning Department

Accessibility appears to be the major issue facing future development of Western Area 1. Flagler County emergency management and school board staff cannot directly access the development occurring in the Smokerise and Hunter's Ridge portions of the County. County staff must travel through Volusia County in order to respond to these developments. Additionally, access over the FEC rail line can be problematic given the limited number of at-grade crossing the FEC allows. This means that existing at-grade crossings are needed to be protected and preserved as much as possible. Lastly, elevated crossing of the FEC are problematic since the ability to meet minimum design standards for final grade of the bridges and pedestrian facilities are difficult to design given the average depth of the properties between US 1 and the FEC rail line.

According to the 1997 USGS Soils Survey for Flagler County, Western Area comprises of the following General Soil areas:

1. Soils Group 2 Wabasso-Pineda-Eau Gallie: Most of the area with this soils group area used for the commercial production of pine trees and for woodland grazing of livestock, with some areas being cleared and used for pasture. The soils in this group are well suited for the commercial production of slash pine and are moderately suited for cultivated crops. The major limitation for this soils group is wetness since it is nearly level, poorly draining soil that lays on top of loamy material.
2. Soils Group 3 Myakka-Smyrna-Valkaria: This soils group, which is the largest by area in the County, consists of soils on broad flatwoods that are interspersed with depressional areas and small sloughs that are ponded for long periods of time. Most of these areas are located in the western portion of the County are used for commercial woodland. The soils in this group are moderately suited for commercial woodland and commercial production of wood. The soils group is also moderately suited for use as pasture and limited cultivated crops. The major limitation is wetness.
3. Soils Group 4 Pomona-Malabar: This soils group consists mainly of soils on low flatwoods and in sloughs interspersed with scattered areas of swamp and depressional areas that are ponded for long periods. Most of the area with this soils group area used for the commercial production of pine trees and for woodland grazing of livestock, with some areas being cleared and used for pasture. The soils in this group are well suited for the commercial production of slash pine and are moderately suited for cultivated crops. The major limitation for this soils group is wetness since it is nearly level, poorly draining soil that lays on top of loamy material.
4. Soils Group 6 Samsula-Hontoon: This soils group consists of soils within drainage ways in wetland swamps, marshes and depressional areas on the flatwoods. The largest tract of this soils group is located in Western Area 2. Most of this soils group is within areas best suited for support of the natural vegetation and wildlife habitat. This soils group is not well suited for commercial production of pine trees, but some area can be used for harvesting of cypress and other swamp hardwoods during dry periods. The major limitation of this soils group is the extreme wetness at all levels. As well as flooding.

5. Soils Group 8 Placid-Basinger-St. Johns: This soils group consists of soils found in swamps, depressional areas and poorly defined drainageways on the flatwoods. Western Area 2 is there this soils group is predominantly located, although there is a small amount near Favoretta. This soils group is not well suited for commercial production of pine trees, but some area can be used for harvesting of cypress and other swamp hardwoods during dry periods. The major limitation of this soils group is the extreme wetness at all levels. As well as flooding.
6. Soils Group 13 Pomello-Cassia-Orsino: This soils group is found on the low ridges and knolls in the flatwoods of western Flagler County. This soils group is moderately suited for pasture and wood production and can be used for residential development. Currently there area north of Espanola has pine production and woodland grazing. The main limitation of the soil is wetness.

The predominant ecological community located in this study area is the Pine Flatwood community. This upland community occurs on nearly level lands with gradual water movement to the natural drainageways. These flatwoods can best be described as open woodland dominated by pine trees. The community has fairly numerous and diverse animal populations. Larger animals such as deer and raccoon are commonly found near the boundaries between flatwoods and associated forest communities. Other animals also found here include the cottontail rabbit, cotton rat, skunk, squirrel and opossum. There are areas of consistent with the Cypress Swamp Wetland community that are interspersed within the Pine Flatwood areas . These communities have soils that are usually poorly drained and have loamy subsoils and sandy surfaces. Flora found in this community include bald cypress, pond cypress, common Button bush, cinnamon fern, fall-flowering ixia and royal fern. Animals found here include deer, raccoon, otter, wood stork, limpkin, barred owl, alligator and turtles. This type of community is very valuable for environmental educational study. The balance in this community is very delicate. Dams, dikes or drainage canals could easily change the plant occurrences. These areas are unsuitable for development. Cypress swamps also act as holding areas for excess water, which in turn is slowly released to the water table.

Refer to previous Table A-28 for the listing of the plant and animal species that may inhabit these communities. This list is general in nature and is provided for general planning purposes only.

The provision of potable water and sanitary sewer to areas outside the Hunter's Ridge DRI is not currently planned, nor are there any funds allocated for the provision of these services to this area. There is an existing interlocal agreement with the City of Ormond Beach to provide sanitary sewer and potable water to the Hunter's Ridge DRI. The remainder of the residential area could be served by on-site and wells since the land use and zoning reflects a large lot, rural development pattern.

If Flagler County wants to allow the development alternatives identified in the FARMS program, then there needs to be specific plans in place to ensure an adequate efficient method of providing utilities to the area. The built-out service population without the

FARMS program could be 3,606 persons based on 1,534 dwelling units constructed by 2030. The currently adopted level of service for potable water is 125 gallons per person per day so it is reasonable to expect a demand of 450,730 gallons per day for potable water. The currently adopted level of service for sanitary sewer is 110 gallons per person per day so it is reasonable to expect a demand of 396,642 gallons per day for sanitary sewer services. If the FARMS program is adopted then the water and sewer demand increases dramatically. The population would increase to 23,688 persons in 10,079 dwelling units. This means the water demand will increase to 2,961,000 gallons per day and the sanitary sewer demand will increase to 2,605,080 gallons per day. This impact analysis is based on the theoretical maximum impacts resulting from 100% development of the area under the FARMS program and current water and sewer consumption rates. This is a situation will not be realized, but has to be analyzed in order to be consistent with the requirements of the Florida Department of Community Affairs. Additionally, there are standards in the FARMS program that require developments utilizing density bonuses cannot use more than half of the water and sewer services identified in the adopted level of services in the Comprehensive Plan for typical single-family residences.

Accessibility appears to be an issue facing future development of Western Area 1. Flagler County emergency management and school board staff cannot directly access the development occurring in the Smokerise and Hunter's Ridge portions of the County. County staff must travel through Volusia County in order to respond to these developments. Additionally, access over the FEC rail line can be problematic given the limited number of at-grade crossing the FEC allows. This means that existing at-grade crossings are needed to be protected and preserved as much as possible. Lastly, elevated crossing of the FEC are problematic since the ability to meet minimum design standards for final grade of the bridges and pedestrian facilities are difficult to design given the average depth of the properties between US 1 and the FEC rail line. There is an existing roadway for CR 200, but extension and connectivity of this roadway is problematic given that there is limited or no existing right-of-way for the extension existing road network. Given these conditions, the importance of interlocal agreements with the City of Ormond Beach and Volusia County will be critical to providing minimal services (police, fire, emergency management) to this area.

Summary: Western Area 1 has a diverse mixture of uses that is reflects development pressures that will eventually be felt throughout the entire western portion of Flagler County. There are active sod farms and pasture lands immediately adjacent to 5-acre residential ranches. Adding to the complexities of the uses is the Hunter's Ridge DRI and the commercial and industrial uses along US 1. Finally, there are large tracts of environmentally sensitive areas (Hull Swamp and Relay WMD) that provide for the needs of the natural ecosystems of the area.

There will be increasing demand for services in this area since there are development opportunities given the land use designations on the adopted Future Land Use Map. The most obvious planning issue pertains to the provision of adequate utilities and roadways for the area. This also impacts the lack of accessibility by emergency

management personnel. There is a definite need to coordinate with adjoining cities (Bunnell and Ormond Beach), as well as Volusia County for the efficient delivery of services now and in the future.

An equally important concern with the areas designated for “Agriculture and Timberlands” is the potential land use pattern if all of the land owners decided to subdivide their lands into 5-acre home sites. This would be extremely detrimental to agricultural and natural resources in the area. The development of 5-acre home sites allows for fences to be erected that prevent movement of migratory animal species. Additionally, the five acre homes sites are not typically used for agricultural purposes since the primary use is a single family home with an accessory stables or limited pasture lands. The issue is how to allow for limited residential development without creating the checkerboard pattern that can be extremely disruptive to agriculture and natural resources in the area. The best solution would be allowing the clustering of homes on smaller sites in locations that are better suited for residential purposes and preserving the rural and natural resources.

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I. Western Area 2 (Northwest Flagler)

Background: This area contains approximately 49,857 acres and is located in the northwestern portion of the County. The St. Johns County line is the northern boundary; Putnam County line is the western boundary; SR 100 and the City of Bunnell are the southern boundary; and the City of Palm Coast is the eastern boundary. The land use pattern for the area consists of a mixture of agricultural uses and conservation lands held in private ownership.

The land use pattern reflects minimal development of residential uses, with silviculture, pasture and sod farming as the principle uses of land. There is a pocket of land designated for industrial uses located on the north side of SR 100, near the intersection with CR 305. Annexations by the cities of Bunnell and Palm Coast have resulted in an irregular boundary line and pockets of land under Flagler County jurisdiction located in the City of Bunnell. Along the eastern border there are two proposed Development of Regional Impact (DRI's) proposed within the City of Palm Coast. The Old Brick Township DRI includes 5,000 acres that the City of Palm Coast annexed in 2009. This project and the related comprehensive plan amendment have not been approved by the Florida Department of Community Affairs (DCA) so no development has been approved and development potential remains as previously existed when the property was under Flagler County jurisdiction. The project, as proposed by the developer, consists of 5,000 dwelling units and 1,000,000 square feet of commercial retail uses. The other DRI project is known as Neoga Lakes. It is also in process of the comprehensive plan amendment and DRI approval. As with the other proposed DRI, this project also has not been approved for development above what was previously allowed under the Flagler County jurisdiction. The current plan proposed by the developer for the project includes 6,400 acres of land to be developed with 7,000 dwelling units, 600,000 square feet of commercial and 1,900,000 square feet of industrial/office uses.

Land Use	Total Land	Developed	Undeveloped	Max. Intensity of Future Development
Agriculture & Timberlands	33,758		33,758	6,752 du's *
Conservation	15,650		15,650	
Residential: Low Density Rural Estate	160	100	60	56 du's
Recreation/Open Space	13	13	0	
Commercial High Intensity	16		16	160,000 sq. ft.
Mixed Use: High Intensity/Medium-High Density	56		56	560 du's or 560,000 sq. ft. commercial, retail or office
Industrial	197		197	197,000 sq.ft.
Water	7		7	
Total	49,857	113	49,744	

Source: Flagler County Planning and Zoning Department (NEFRC GIS data) 2010

Western Area 2 also includes the historic town of Espanola. This area is located where County roads 205 and 13 intersect. This area has been traditionally viewed as a rural community consisting of single-family homes.

Unlike Western Area 1, the development of 5-acre residential home sites has not occurred in Western Area 2. Increasing development pressure will occur as a result of other development improving the accessibility to the area. This in turn will increase the demand for residential development in the agricultural areas. The Minor Rural Subdivision standards provide a large land owner with a relatively easy method of dividing land into 5-acre parcels without providing paved road or stormwater improvements. This means that unless the development pattern can be changed over the next 25 years the development of Western Area 2 will increase and additional impacts to roads, stormwater, schools and other facilities can be expected.

Western Area 2 is expected to experience increasing demand for residential uses, which in turn places more pressure on landowners to use the Minor Rural Subdivision laws. These regulations are intended to allow large land owners simple methods of dividing properties that are intended for agricultural and rural purposes. The County requires specific language on the deeds to ensure that future landowners are aware that Flagler County is not responsible for the provision of improvements such as roads, stormwater management and connection to electrical utilities. In other words, the owners of these parcels can develop a single-family home on the property, but it is the sole responsibility of the home owner to pay for the extension of electrical services, access and stormwater management. This has the potential to allow the development of 5-acre home sites to overcome the ability of the County to provide minimal services, given the expectations of the home owners. This further reiterates the concern that there will be insufficient ability for the County to efficiently provide services to the public as a whole. The solution is to ensure that the future residential development of the western area of Flagler County includes provisions for necessary services (fire, law enforcement, schools, stormwater, access, solid waste collection, etc.), as well as incentives to implement sustainable land use patterns.

The industrial property along SR 100 was provided that designation as part of first cycle of amendments approved in 2008. The approximately 160-acres of land were originally designated for "Agriculture and Timberlands" on the adopted Future Land Use Map. The property is still being utilized for a sod farm activity and there are no immediate plans for that property to be developed for industrial purposes. The primary purpose of the designation for industrial uses was to position an area in western Flagler County for ease of permitting if industrial uses that are seeking remote locations along SR 100. There were specific policies incorporated in the FLUM to address concerns with the provision of industrial lands in the western area of the County:

Policy 8.9: To promote economic development, the County may permit newly designated industrial lands to be located outside of the Planned Urban Service Area provided, however, that such industrial lands shall be served by sufficient infrastructure to meet the proposed development. The County will adopt land development regulations requiring performance standards to protect adjacent

environmental and agricultural lands. The land development regulations will include, but not be limited to:

1. minimum setback of 500 feet from adjacent sensitive environmental lands to include, but not be limited to:
 - high-quality wetlands,
 - Outstanding Florida Waterways (OFWs),
 - high aquifer recharge areas,
 - lands owned or managed by the St. Johns River Water Management District, the U.S. Army Corps of Engineers, Department of Environmental Protection, Flagler County, or other government or not-for-profit entity whose primary purpose is land conservation;
2. minimum setback of 100 feet from lands in active agricultural production; and
3. require development to be consistent with LEED certification, Water Star, and Energy Star programs.

In Western Area 2, there are approximately 10 enclaves of County land within the City of Bunnell. These enclaves provide a management issues in that the provision of many services. The County has adopted a policy of encouraging the landowners of these enclaves to annex into Bunnell. This has been moderately successful. It is anticipated that many of these land owners will not voluntarily annex, so it would be beneficial to both the City of Bunnell and Flagler County to research opportunities for interlocal service agreements to ensure efficiency in delivering municipal services to the residents of these enclaves. The City of Bunnell will have to develop a plan to service these limited enclaves.

The future development of the Western Area 2 is dependent on several items. First, the proposed DRI's within Palm Coast will provide incentives for improving access to the area and thereby increase the demand for residential uses in the area. Access to the far northwestern corner of the County will continue to be problematic given that there are few public rights-of-way readily available and limited funds for acquisition of right-of-way. This means that development of any size will be restricted and will have a negative impact on the ability to provide all of the services previously described.

Development of the lands within Western Area 2 may occur under the proposed Flagler Agricultural Resource Mitigation System or "FARMS". This program allows for limited intensification of agricultural lands if specific performance standards are utilized. The following table reflects the maximum development potential that could occur in Western Area 2 if 100% of the property owners decided to use this program. This analysis is based on a hypothetical maximum development scenario for both existing and future conditions. This reflects that under the current land use designations that there would 6,747 homes that could be developed over all 33,737 acres of land with the "Agriculture & Timberlands" designation. This increases to 40,908 units on 18,921 acres with 14,726 acres of protected uplands and 15,650 acres of protected wetlands held in preservation. This analysis reflects the theoretical maximum of development in accordance with the requirements from the Florida Department of Community Affairs. Please be aware that historically development of land in Flagler County has not ever reached the maximum allowed under the classifications of the Future Land Use Map or Official Zoning Map. Based on actual developments and historical trends, the actual

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amount would be 40 to 50% less than the estimates required by the Department of Community Affairs due to stringent requirements and diverseness of ownership pattern.

The acronym “FGBC” in the following table stands for “Florida Green Building Coalition”. The Florida Green Building Coalition (FGBC) is a nonprofit 501(C)3 Florida corporation dedicated to improving the build environment. Their mission is "to lead and promote sustainability with environmental, economic, and social benefits through regional education and certification programs." In keeping with the organization’s mission, FGBC has developed Green Certification Programs that apply to organization in the construction and government sectors. Seeking FGBC certification demonstrates a commitment to products and services that are green and sustainable. Certification exists for residential and commercial land development and construction practices. The certification process requires verification that the project complies with the minimum criteria established by the FGBC and a commitment to maintain these standards through the life of the project. The criteria established by FGBC often work hand in hand with other standards such as WaterStar, EnergyStar and Low Impact Development (stormwater standards).

Performance Standards		Area (acres)	FLUM Density (per acre)	Bonus Density (DU's per acre)	Total Units
Name	Description				
FLUM/Zoning	Conservation	15,650	0	0	0
	Agric. & Timber	33,758	.2	0	6,751
Utilities	Potable Water, Sanitary Sewer & Reclaimed Irrig.	54,490	0	0.3	14,823
Resource Protection Areas	Wetlands	15,650	0	0.1	1,565
	Agriculture/Uplands	834	0	0.2	167
FGBC Site		49,387	0	0.1	4,939
FGBC Bldg.		49,837	0	0.1	4,939
Theoretical Maximum Number of Dwelling Units (du's)					40,908
Theoretical Maximum Population (persons)					96,133
Gross Density of Total Area (du's/acre)					.8
Net Density of Development Area (du's/acres)					1.7
Average Lot Area per Unit (du square feet)					22,774

Flagler County Planning and Zoning Department

According to the 1997 USGS Soils Survey for Flagler County, Western Area 2 comprises of the following General Soil areas:

1. Soils Group 1 Pineda-Winder-Riviera: This soils group consists mainly of soils on low flatwoods and in sloughs interspersed with scatters areas of swamp and

depressional areas that are ponded for long periods. Most of the area with this soils group area used for the commercial production of pine trees and for woodland grazing of livestock, with some areas being cleared and used for pasture. The soils in this group are well suited for the commercial production of slash pine and are moderately suited for cultivated crops. The major limitation for this soils group is wetness since it is nearly level, poorly draining soil that lays on top of loamy material.

2. Soils Group 2 Wabasso-Pineda-Eau Gallie: Most of the area with this soils group area used for the commercial production of pine trees and for woodland grazing of livestock, with some areas being cleared and used for pasture. The soils in this group are well suited for the commercial production of slash pine and are moderately suited for cultivated crops. The major limitation for this soils group is wetness since it is nearly level, poorly draining soil that lays on top of loamy material.
3. Soils Group 3 Myakka-Smyrna-Valkaria: This soils groups, which is the largest by area in the County, consists of soils on broad flatwoods that are interspersed with depressional areas and small sloughs that are ponded for long periods of time. Most of these areas are located in the western portion of the County are used for commercial woodland. The soils in this group are moderately suited for commercial woodland and commercial production of wood. The soils group is also moderately suite for use as pasture and limited cultivated crops. The major limitation is wetness.
4. Soils Group 4 Pomona-Malabar: This soils group consists mainly of soils on low flatwoods and in sloughs interspersed with scatters areas of swamp and depressional areas that are ponded for long periods. Most of the area with this soils group area used for the commercial production of pine trees and for woodland grazing of livestock, with some areas being cleared and used for pasture. The soils in this group are well suited for the commercial production of slash pine and are moderately suited for cultivated crops. The major limitation for this soils group is wetness since it is nearly level, poorly draining soil that lays on top of loamy material.
5. Soils Group 6 Samsula-Hontoon: This soils group consists of soils within drainage ways in wetland swamps, marshes and depressional areas on the flatwoods. The largest tract of this soils group is located in Western Area 2. Most of this soils group is within areas best suited for support of the natural vegetation and wildlife habitat. This soils group is not well suited for commercial production of pine trees, but some area can be used for harvesting of cypress and other swamp hardwoods during dry periods. The major limitation of this soils group is the extreme wetness at all levels. As well as flooding.
6. Soils Group 8 Placid-Basinger-St. Johns: This soils group consists of soils found in swamps, depressional areas and poorly defined drainageways on the flatwoods. Western Area 2 is there this soils group is predominantly located, although there is a small amount near Favoretta. This soils group is not well suited for commercial production of pine trees, but some area can be used for harvesting of cypress and other swamp hardwoods during dry periods. The

major limitation of this soils group is the extreme wetness at all levels. As well as flooding.

7. Soils Group 13 Pomello-Cassia-Orsino: This soils group is found on the low ridges and knolls in the flatwoods of western Flagler County. This soils group is moderately suited for pasture and wood production and can be used for residential development. Currently there area north of Espanola has pine production and woodland grazing. The main limitation of the soil is wetness.

The predominant ecological community located in this is of the Pine Flatwood community. This upland community occurs on nearly level lands with gradual water movement to the natural drainageways. These flatwoods can best be described as open woodland dominated by pine trees. The community has fairly numerous and diverse animal populations. Larger animals such as deer and raccoon are commonly found near the boundaries between flatwoods and associated forest communities. Other animals also found here include the cottontail rabbit, cotton rat, skunk, squirrel and opossum. There are areas of consistent with the Cypress Swamp Wetland community that are interspersed within the Pine Flatwood areas . These communities have soils that are usually poorly drained and have loamy subsoils and sandy surfaces. Flora found in this community include bald cypress, pond cypress, common Button bush, cinnamon fern, fall-flowering ixia and royal fern. Animals found here include deer, raccoon, otter, wood stork, limpkin, barred owl, alligator and turtles. This type of community is very valuable for environmental educational study. The balance in this community is very delicate. Dams, dikes or drainage canals could easily change the plant occurrences. These areas are unsuitable for development. Cypress swamps also act as holding areas for excess water, which in turn is slowly released to the water table.

Refer to previous Table A-28 for the listing of the plant and animal species that may inhabit these communities. This list is general in nature and is provided for general planning purposes only.

The provision of potable water and sanitary sewer is not currently planned, nor are there any funds allocated for the provision of these services to this area. This presents a hurdle in developing alternative development patterns to the “checkerboard” pattern that is currently allowed under the adopted Future Land Use Map and policies.

If Flagler County wants to allow the development alternatives identified in the FARMS program, then there needs to be specific plans in place to ensure an adequate efficient method of providing utilities to the area. The built-out service population without the FARMS program could be 12,915 persons based on 5,496 dwelling units constructed by 2030. The currently adopted level of service for potable water is 125 gallons per person per day so it is reasonable to expect a demand of 1,614,333 gallons per day for potable water. The currently adopted level of service for sanitary sewer is 110 gallons per person per day so it is reasonable to expect a demand of 1,420,613 gallons per day for sanitary sewer services. If the FARMS program is adopted then the water and sewer demand increases dramatically. The population would increase to 85,959 persons in

36,578 dwelling units. This means the water demand will increase to 10,744,846 gallons per day and the sanitary sewer demand will increase to 9,455,465 gallons per day. This impact analysis is based on the theoretical maximum impacts resulting from 100% development of the area under the FARMS program and current water and sewer consumption rates. This is a situation will not be realized, but has to be analyzed in order to be consistent with the requirements of the Florida Department of Community Affairs. Additionally, there are standards in the FARMS program that require developments utilizing density bonuses cannot use more than half of the water and sewer services identified in the adopted level of services in the Comprehensive Plan for a typical single-family residence.

Accessibility appears to be the major issue facing future development of Western Area 2. The roadway network is relatively sparse and there are not many existing road rights-of-way that provide access to the central part of the area. This is why there is such difficulty in accessing Flagler Estates. Interlocal agreements with St. Johns or Putnam County may provide interim solutions for the provision of services (police, fire, emergency management) to this area. Regardless of which local government provides the services, it is important that the services are provided in an expedient and efficient manner.

Summary: The land use pattern in Western Area 2 reflects an area that has not felt intense pressure from the development community, but that has changed over the last 5 years. The predominant uses have been for agricultural and natural resource protection. The annexations by the City of Palm Coast reflect expanding demand for residential purposes. These pending DRI's in the City of Palm Coast introduce large-scale residential, commercial and industrial uses to this area. It is important that this new, more intense pattern does not have a negative impact on the existing agricultural interests as well as the natural and historic resources located in Western Area 2.

There will be increasing demand for services in this area since there are development opportunities given the potential development of 5-acres residential lots and the proposed DRI's. Western Area 2 lacks a dedicated roadway system for the area. This currently impacts the response time of the emergency service providers, as well as school transportation, mail delivery, solid waste collection and similar services. There is a definite need to coordinate with adjoining local governments for the efficient delivery of services now and in the future.

An equally important concern that applies to all of the area west of US 1 is the potential land use pattern if all of the land owners decided to subdivide their lands into 5-acre home sites. This would be extremely detrimental to agricultural and natural resources in the area. The development of 5-acre home sites allows for fences to be erected that prevent movement of migratory animal species. Additionally, the five acre homes sites are not typically used for commercial agricultural purposes and are used primarily for pasture and open space uses. The issue is how much of the area could be developed without creating the checkerboard pattern that can be extremely disruptive to agriculture and natural resources in the area. The better solution would be allowing the clustering

of homes on smaller sites in locations that are better suited for residential purposes and preserving the rural and natural resources.

Lastly, there are the water impacts resulting from the development of 5-acre home sites. If there is a limited amount of development, then there are no real impacts to agricultural and natural resources. The wholesale development of the area for 5-acre home sites could have detrimental impacts to the supply of water for agricultural and natural resources since this development pattern is reliant on wells and septic tanks for potable water and sanitary sewer treatment. The issue of competition for limited water resources creates the potential impacts and it is important that Flagler County have provisions to protect and preserve the agricultural and natural resources in the area.

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J. Western Area 3 (Southwest Flagler/Lake Disston)

Background: This area contains approximately 58,721 acres and is located in the southwestern portion of the County. SR 100 and Daytona North are the northern boundary; Putnam and Volusia Counties are the western boundary; Volusia County is the southern boundary; and the City of Bunnell is the eastern boundary. The land use pattern for the area consists of primarily of agricultural uses and conservation lands held in both public and private ownership.

The land use pattern (see table 44) reflects development of residential uses around the Lake Disston area, with agricultural activities taking place throughout the area. This is where a majority of the food crop is grown in Flagler County. Haw Creek State Preserve is located immediately east of Dead Lake and is accessible from CR 2007. Annexations by the City of Bunnell have resulted in an irregular boundary line and pockets of land under Flagler County jurisdiction located in the City of Bunnell. Also within the City of Bunnell are the Relay Wildlife Management Area and the proposed Plum Creek development.

Land Use	Total Land	Developed	Undeveloped	Maximum Intensity of Future Development
Agriculture & Timberlands	41,935		41,935	8,387
Conservation	15,426		15,426	n/a
Medium Density Residential	15	15		
Residential: Low Density Rural Estate	450	450		
Recreation/Open Space	790	790		
Commercial High Intensity	6	6		
Mixed Use Low Intensity/Medium Density	12	12		
Industrial	73		73	730,000 sq. ft.
Water	14		14	
Total	58,721	1,273	57,448	

Source: Flagler County Planning and Zoning Department

This area also has not seen the development of 5 acre homes sites that has occurred in Western Area 1. This is could be a result of the amount of land available in Daytona North for rural residential development and the viability of the agricultural pursuits that are taking place in the area. There has been residential development along the northeast and southwest shores of Lake Disston, but that has not had a significant impact due to the conservation efforts of Flagler County to acquire land and conservation easements to protect the lake and surrounding lands. There are other rural estate areas located off SR 100 and County Roads 65 and 75. The amount and intensity of development in these areas does not appear to be creating any negative impacts at their present levels.

The previous table reflects that there are 41,935 acres of land that could be divided into 8,387 rural residential lots by either the Minor Rural Subdivision regulations or the

existing subdivision regulations. This land use pattern is a concern for all of the area west of US 1 in Flagler County. This is a land use pattern that is disruptive to agricultural and environmental resources. The concern is based on the checkerboard appearance of these subdivisions which results in disconnecting natural systems and placing residential uses right in the middle of agricultural uses. The ultimate goal is to provide incentives to land owners to avoid this land use pattern and cluster residential uses in proper locations so that the agricultural needs of the County are protected and preserved.

The industrial property along SR 100 was given that designation as part of first cycle of amendments approved in 2008. The approximately 73 acres of land were originally designated for "Agriculture and Timberlands" on the adopted Future Land Use Map. The property is still being utilized for agricultural purposes and there are no immediate plans for that property to be developed for industrial purposes. The primary reason for the designation as "Industrial" was to position an area in western Flagler County for ease of permitting for these types users who were seeking locations along SR 100. There were specific policies incorporated in the FLUM to address concerns with the provision of industrial lands in the western area of the County:

Policy 8.9: To promote economic development, the County may permit newly designated industrial lands to be located outside of the Planned Urban Service Area provided, however, that such industrial lands shall be served by sufficient infrastructure to meet the proposed development. The County will adopt land development regulations requiring performance standards to protect adjacent environmental and agricultural lands. The land development regulations will include, but not be limited to:

1. minimum setback of 500 feet from adjacent sensitive environmental lands to include, but not be limited to:
 - high-quality wetlands,
 - Outstanding Florida Waterways (OFWs),
 - high aquifer recharge areas,
 - lands owned or managed by the St. Johns River Water Management District, the U.S. Army Corps of Engineers, Department of Environmental Protection, Flagler County, or other government or not-for-profit entity whose primary purpose is land conservation;
2. minimum setback of 100 feet from lands in active agricultural production; and
3. require development to be consistent with LEED certification, Water Star, and Energy Star programs.

In Western Area 3 there are numerous enclaves of County land within the City of Bunnell. These enclaves provide a management issues in that the provision of services. The County has adopted a policy of encouraging the landowners of these enclaves to annex into Bunnell. This has been moderately successful. It is anticipated that many of these land owners will not voluntarily annex, so it would be beneficial to both the City of Bunnell and Flagler County to research opportunities for interlocal service agreements to ensure efficiency in delivering municipal services to the residents of these enclaves. The City of Bunnell will have to develop plans to service these limited enclaves.

Development of the lands within Western Area 3 may occur under the proposed Flagler Agricultural Resource Mitigation System or "FARMS". This program allows for limited

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intensification of agricultural lands if specific performance standards are utilized. The following table reflects the maximum development potential that could occur in Western Area 3 if 100% of the property owners decided to use this program. This analysis is based on a hypothetical maximum development scenario for both existing and future conditions. This reflects that under the current land use designations that there would be 8,387 homes that could be developed over all 41,935 acres of land with the "Agriculture & Timberlands" designation. This increases to 47,788 units on 22,944 acres with 18,991 acres of protected agricultural lands and 15,426 acres of protected wetlands. This analysis reflects the theoretical maximum of development in accordance with the requirements from the Florida Department of Community Affairs. Please be aware that historically development of land in Flagler County has not ever reached the maximum allowed under the classifications of the Future Land Use Map or Official Zoning Map. Based on actual developments and historical trends, the actual amount would be 40 to 50% less than the estimates required by the Department of Community Affairs due to stringent requirements and diverseness of ownership pattern.

Table A-46. FARMS Performance Standards Analysis for Western Area 3 (Southwest Flagler County/Lake Disston)					
Performance Standards		Area (acres)	FLUM Density (per acre)	Bonus Density (DU's per acre)	Total Units
Name	Description				
FLUM/Zoning	Conservation	15,426	0	0	0
	Agric. & Timber	41,935	.2	0	8,387
Utilities	Potable Water, Sanitary Sewer & Reclaimed Irrig.	57,361	0	.3	17,208
Resource Protection Areas	Wetlands	15,426	0	.1	1,543
	Agriculture/Uplands	18,991	0	.2	3,798
FGBC Site		57,361	0	.1	5,736
FGBC Bldg.		57,361	0	.1	5,736
Theoretical Maximum Number of Dwelling Units (du's)					47,788
Theoretical Maximum Population (persons)					112,301
Gross Density of Total Area (du's/acre)					.8
Net Density of Development Area (du's/acres)					1.7
Average Lot Area per Unit (du square feet)					25,902

Flagler County Planning and Zoning Department

According to the 1997 USGS Soils Survey for Flagler County, Western Area 3 comprises of the following General Soil areas:

1. Soils Group 1 Pineda-Winder-Riviera: This soils group consists mainly of soils on low flatwoods and in sloughs interspersed with scatters areas of swamp and

depressional areas that are ponded for long periods. Most of the area with this soils group area used for the commercial production of pine trees and for woodland grazing of livestock, with some areas being cleared and used for pasture. The soils in this group are well suited for the commercial production of slash pine and are moderately suited for cultivated crops. The major limitation for this soils group is wetness since it is nearly level, poorly draining soil that lays on top of loamy material.

2. Soils Group 2 Wabasso-Pineda-Eau Gallie: Most of the area with this soils group area used for the commercial production of pine trees and for woodland grazing of livestock, with some areas being cleared and used for pasture. The soils in this group are well suited for the commercial production of slash pine and are moderately suited for cultivated crops. The major limitation for this soils group is wetness since it is nearly level, poorly draining soil that lays on top of loamy material.
3. Soils Group 3 Myakka-Smyrna-Valkaria: This soils group, which is the largest by area in the County, consists of soils on broad flatwoods that are interspersed with depressional areas and small sloughs that are ponded for long periods of time. Most of these areas are located in the western portion of the County are used for commercial woodland. The soils in this group are moderately suited for commercial woodland and commercial production of wood. The soils group is also moderately suite for use as pasture and limited cultivated crops. The major limitation is wetness.
4. Soils Group 4 Pomona-Malabar: This soils group consists mainly of soils on low flatwoods and in sloughs interspersed with scatters areas of swamp and depressional areas that are ponded for long periods. Most of the area with this soils group area used for the commercial production of pine trees and for woodland grazing of livestock, with some areas being cleared and used for pasture. The soils in this group are well suited for the commercial production of slash pine and are moderately suited for cultivated crops. The major limitation for this soils group is wetness since it is nearly level, poorly draining soil that lays on top of loamy material.
5. Soils Group 5 Winder-Favoretta: This soils group consists of soils that are located on narrow to broad, low flatwoods near major streams and drainageways. The areas near the streams or drainageways are subject to flooding. The predominant soils in this group are poorly drained and are located in flat area. Most of the area is used for commercial production of pine trees, with small areas cleared for pasture or row crop production. Flooding, wetness and a high content of clay area major limitations.
6. Soils Group 6 Samsula-Hontoon: This soils group consists of soils within drainage ways in wetland swamps, marshes and depressional areas on the flatwoods. The largest tract of this soils group is located in Western Area 2. Most of this soils group is within areas best suited for support of the natural vegetation and wildlife habitat. This soils group is not well suited for commercial production of pine trees, but some area can be used for harvesting of cypress and other swamp hardwoods during dry periods. The major limitation of this soils group is the extreme wetness at all levels. As well as flooding.

7. Soils Group 7 Hicoria-Riviera-Gator: This soils group consists mainly of very poorly drained soils in swamps and depressional areas in the flatwoods. These areas are ponded for long periods. The majority of the area with this soils group is undeveloped and provide for natural vegetation and wildlife habitat. Small areas are used for harvesting of hardwood trees during extended dry periods. Wetness is the major limitation that prevents this soils group from being used for commercial production of trees.
8. Soils Group 8 Placid-Basinger-St. Johns: This soils group consists of soils found in swamps, depressional areas and poorly defined drainageways on the flatwoods. Western Area 2 is there this soils group is predominantly located, although there is a small amount near Favoretta. This soils group is not well suited for commercial production of pine trees, but some area can be used for harvesting of cypress and other swamp hardwoods during dry periods. The major limitation of this soils group is the extreme wetness at all levels. As well as flooding.
9. Soils Group 9 Favoretta-Chobee: The area where this soils group is located is often flooded in freshwater swamps on the flood plains of Haw Creek. All of the soils in this group are very poorly drained and typically located within the flood plains. The majority of the area with this soils group is undeveloped and provide for natural vegetation and wildlife habitat. Small areas are used for harvesting of hardwood trees during extended dry periods. Wetness is the major limitation that prevents this soils group from being used for commercial production of trees.
10. Soils Group 11 Terra Ceia-Winder: This soils group is located in the broad swampy area on the flood plains along lakes and streams. It can be found mainly along Crescent and Dead Lakes, within the flood plains of Haw Creek, as well as the southwestern part of Lake Disston. The major limitation of this soils group is the extreme wetness at all levels. As well as flooding.
11. Soils Group 12 Orsino-Astatula-Tavares: This soils group is located along the narrow sand ridges that run north to south from St. Johns County. Orsino and Tavares soils are moderately well-drained soils that are located on high ridges or knolls. Astatula is also located on the higher ridges, but is excessively drained. The area where this soils group is located is used for commercial production of pine trees and is favorable for residential development. Some of the areas have been cleared for use as pasture and hay production. There are limited restrictions for development, but during periods of drought these sandy soils can have limitation for tree production.
12. Soils Group 13 Pomello-Cassia-Orsino: This soils group is found on the low ridges and knolls in the flatwoods of western Flagler County. This soils group is moderately suited for pasture and wood production and can be used for residential development. Currently there area north of Espanola has pine production and woodland grazing. The main limitation of the soil is wetness.

The predominant ecological community located in this is of the Pine Flatwood community. This upland community occurs on nearly level lands with gradual water movement to the natural drainageways. These flatwoods can best be described as open woodland dominated by pine trees. The community has fairly numerous and

diverse animal populations. Larger animals such as deer and raccoon are commonly found near the boundaries between flatwoods and associated forest communities. Other animals also found here include the cottontail rabbit, cotton rat, skunk, squirrel and opossum. There are areas of consistent with the Cypress Swamp Wetland community that are interspersed within the Pine Flatwood areas. These communities have soils that are usually poorly drained and have loamy subsoils and sandy surfaces. Flora found in this community include bald cypress, pond cypress, common Button bush, cinnamon fern, fall-flowering ixia and royal fern. Animals found here include deer, raccoon, otter, wood stork, limpkin, barred owl, alligator and turtles. This type of community is very valuable for environmental educational study. The balance in this community is very delicate. Dams, dikes or drainage canals could easily change the plant occurrences. These areas are unsuitable for development. Cypress swamps also act as holding areas for excess water, which in turn is slowly released to the water table.

Refer to previous Table A-28 for the listing of the plant and animal species that may inhabit these communities. This list is general in nature and is provided for general planning purposes only.

The provision of potable water and sanitary sewer is not currently planned, nor are there any funds allocated for the provision of these services to this area. This presents a hurdle in developing alternative development patterns to the “checkerboard” pattern that is currently allowed under the adopted Future Land Use Map and policies.

If Flagler County wants to allow the development alternatives identified in the FARMS program, then there needs to be specific plans in place to ensure an adequate efficient method of providing utilities to the area. The built-out service population without the FARMS program could be 16,355 persons based on 6,960 dwelling units constructed by 2030. The currently adopted level of service for potable water is 125 gallons per person per day so it is reasonable to expect a demand of 2,044,383 gallons per day for potable water. The currently adopted level of service for sanitary sewer is 110 gallons per person per day so it is reasonable to expect a demand of 1,799,057 gallons per day for sanitary sewer services. If the FARMS program is adopted then the water and sewer demand increases dramatically. The population would increase to 85,824 persons in 36,521 dwelling units. This means the water demand will increase to 10,728,035 gallons per day and the sanitary sewer demand will increase to 9,440,673 gallons per day. This impact analysis is based on the theoretical maximum impacts resulting from 100% development of the area under the FARMS program and current water and sewer consumption rates. This is a situation will not be realized, but has to be analyzed in order to be consistent with the requirements of the Florida Department of Community Affairs. Additionally, there are standards in the FARMS program that require developments utilizing density bonuses cannot use more than half of the water and sewer services identified in the adopted level of services in the Comprehensive Plan for a typical single-family residence.

The roadway network in this area is most complete for the western portions of Flagler County when compared to the other western study areas. The critical element will be ensuring that future development can provide for a connected road network and avoid impacting the critical natural resources in the Haw Creek State Preserve and the Relay Wildlife Management Area.

Summary: Western Area 3 has the most diverse agricultural production occurring in the County. The area east of CR 305 provides opportunities for a variety of row crops and other agricultural uses. Also the area includes Haw Creek State Preserve and Relay State Wildlife Management Area. Additionally, Flagler County has been working with landowners surrounding Lake Disston to establish fee ownership and conservation easements to protect that water body and the surrounding natural resources.

Opportunities for development of agricultural related industrial and business uses could be located on the south side of SR 100, by the intersection of CR 305. This location would be beneficial to the farmers and landowner given the close proximity. Also the location is in close proximity to Daytona North and other residential areas that house potential employees, thereby improving economic opportunities and reducing trip lengths for those residents.

There will be increasing demand for services in this area since there are development opportunities given the land use designations on the adopted Future Land Use Map. The most obvious planning issue pertains to the provision of adequate utilities and roadways for the area. This also impacts the lack of accessibility by emergency management personnel. There is a definite need to coordinate with adjoining City of Bunnell and Volusia County for the efficient delivery of services now and in the future.

There is a concern that the proliferation of rural estate development on 5-acre lots in this area, as it is all of the study areas within the western area of the County. The land use pattern increases the potential for development of incompatible uses that have negative impacts on the agricultural interests, as well as creating obstructions to critical wildlife corridors. It is important to create an incentive system that encourages the clustering of residential uses in appropriate areas in order to protect and preserve the agricultural and natural resources of the County.

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K. Western Area 4 (Daytona North)

Background: This area contains approximately 3,652 acres and follows the boundary of a plat originally designed in 1972 and titled “Daytona North”. This is a pocket of one-acre residential sites primarily surrounded by agricultural lands. The boundaries of the area are: County Road 302 (Canal Avenue) on the north; County Road 305 to the east; County Road 90 West (Tangerine Avenue) to the south; and Water Oak Road to the west. Table 47 summarizes the current conditions in regard to the adopted Future Land Use Map designation and the amount of developed and undeveloped lands within this study area. Note that the future development reflects the general land uses associated with the land use designation. The actual development that could occur would be a function of the final zoning classification assigned to the property at time of development.

Land Use	Total Land	Developed	Undeveloped	Maximum Intensity of Future Development
Mixed Use: Low Intensity/Low Density	99	24	75	750,000 sq. ft. commercial. Retail, office/750 units.
Agriculture and Timberlands	68	15	53	10 du's
Residential: Low Density Rural Estate (1 du/ac)	3,796	3,090	706	706 du's
TOTAL	3,963	3,129	834	

Source: Flagler County Planning and Zoning Department 2009

Daytona North is located in the west-central portion of the county. This subdivision consists of 2,872 lots on 3,796 acres, which are being developed with mobile homes and single-family residences. In 2006 the Property Appraiser indicated that there were 1,096 improved properties within the Daytona North Study Area. A moderate development pace is expected to continue in this subdivision over the next ten years. It is expected that all of the 2,872 lots will be developed by 2030. In addition to the single family homes and manufactured homes in the area there are businesses (convenience store with gas sales, farming supplies) operating along the west side of CR 305, a 20-acre County park on Mahogany Boulevard and a church off of CR 305 and CR 302.

The development pattern in this area of Flagler County historically occurred either as low density, rural settlements, which were established years ago in agrarian Flagler County, or one to five units per acre rural subdivisions. This low-density rural development pattern occurs along county arterial roadways and develops in response to a desire for a rural residential character or agricultural pursuits, where rural levels of services are provided. In general, the rural development areas do not require urban services such as central water and sewer systems.

Under current regulations these developments would be required to provide supporting infrastructure, such as roads and stormwater. These antiquated subdivisions were not improved and sales of lots were on a first come, first serve basis. Many times the purchaser of the lot was responsible for clearing, grading and obtaining access in order to develop the lot. This process resulted in large areas of these subdivisions being vacant, and roads and canals have not been maintained. The impacts from antiquated subdivisions resulted in the following problems:

1. Alteration to surface and groundwater hydrology;
2. Inadequate urban services and facilities;
3. Deteriorating and unused roads;
4. Lack of stormwater retention basins;
5. Stagnated and weed-filled drainage canals;
6. Homes not built to accommodate flood prone areas;
7. Inadequate parks and open space acreage; and
8. Potential pollution of the surficial aquifer from septic tank usage

These issues have been identified and Flagler County is working on solutions within Daytona North. The establishment of a service district to generate revenues to fund and construct improved roadways and drainage is the first step in addressing the problems identified previously. Additionally, the Flagler County Commission created the Daytona North Service District Advisory Council (DNSDAC) under Section 28-63 of the Flagler County Code, to assist and make recommendations to the Commission on such matters as, but not limited to, procedures, finance, budget, services, improvements, subdistricts, facilities and equipment, annexation, merger, abolishment, service charges, special assessments, taxes, liens, petitions, hearings and funding. The DNSDAC receives funding from local option gas taxes and a special assessment charged on each property within the service district boundary. The charge is currently \$0.58 per linear foot of frontage for each lot. The budget for fiscal year 2008-2009 for the DNSDAC is \$413,196.00 and is being used primarily for road improvements and maintenance.

Some residential units must have been built in flood prone areas in Flagler County, including in Daytona North. With the implementation of the Flagler County Flood Damage Preservation Ordinance (85-10), St. Johns Water Management District rules and the Federal Emergency Management Agency Flood Insurance Program (FEMA), the problem has been reduced but it is not completely remedied. Future development in flood prone areas will need to be carefully managed. Any development in those areas should be allowed only after all required permits are obtained from the appropriate regulating agencies. Development in riverine floodplains should also be carefully managed. Due to the lack of extensive existing development, redevelopment is not a major issue with interior riverine floodplains.

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General Area	Land uses/zoning	Description
North of County Road 302 (Canal Road).	Agriculture and Timberlands; (AC) Agriculture	Farmlands
East of County Road 305	Agriculture and Timberlands; (AC) Agricultural Mixed Use Low Intensity/Low-Medium Density;(C-1) Neighborhood Commercial	Farmlands
West of Water Oak Road	Agriculture and Timberlands	Farmlands
South of County Road 90 West	Agriculture and Timberlands	Farmlands

Source: Flagler County Planning and Zoning Department

The predominant soil associations in this area are broad, sandy flatland, low wet flatland, or freshwater swamps and marsh commonly referred to as General Soils Map Area 2 Wabasso-Pineda-EauGallie. According to the U.S.G.S. Soils Survey for Flagler County, this soils group is generally poorly-drained and located in pine flatwoods. These soils groups are not recommended for urban development due to the extensive wetness resulting from the relatively flat elevations.

The predominant ecological community located in this study area is of the Pine Flatwood community. This upland community occurs on nearly level lands with gradual water movement to the natural drainageways. These flatwoods can best be described as open woodland dominated by pine trees. The community has fairly numerous and diverse animal populations. Larger animals such as deer and raccoon are commonly found near the boundaries between flatwoods and associated forest communities. Other animals also found here include the cottontail rabbit, cotton rat, skunk, squirrel and opossum. There are small Cypress Swamp Wetland communities interspersed within the Pine Flatwood areas in Daytona North. These communities have soils that are usually poorly drained and have loamy subsoils and sandy surfaces. Flora found in this community include bald cypress, pond cypress, common Button bush, cinnamon fern, fall-flowering ixia and royal fern. Animals found here include deer, raccoon, otter, wood stork, limpkin, barred owl, alligator and turtles. This type of community is very valuable for environmental educational study. The balance in this community is very delicate. Dams, dikes or drainage canals could easily change the plant occurrences. These areas are unsuitable for development. Cypress swamps also act as holding areas for excess water, which in turn is slowly released to the water table.

Refer to previous Table A-28 for the listing of the plant and animal species that may inhabit these communities. This list is general in nature and is provided for general planning purposes only.

The provision of potable water and sanitary sewer is not currently planned, nor are there any funds allocated for the provision of these services to this area. The general idea is that the residents will continue to utilize private wells and on-site septic systems for potable water and sanitary sewer. The residents of the area support the continuation of the wells and septic systems due to the costs of connecting to a centralized system for water and sewer. Regardless of the sources of the potable water and sanitary sewer,

Flagler County needs to identify how to ensure that there will be a safe and adequate supply of water to the residents. Additionally, Flagler County must ensure that the use of septic tanks will not result in degradation of groundwater resources. The built-out service population will be 6,749 persons based on 2,872 dwelling units constructed by 2030. The currently adopted level of service for potable water is 125 gallons per person per day so it is reasonable to expect a demand of 843,625 gallons per day for potable water. The currently adopted level of service for sanitary sewer is 110 gallons per person per day so it is reasonable to expect a demand of 742,390 gallons per day for sanitary sewer services. There currently is no indication that the existing wells or septic tanks are creating additional burdens or problems. There needs to be monitoring of the area to ensuring proper maintenance and upkeep of these systems. This responsibility needs to be coordinated between SJRWMD, Florida DEP, Flagler County Health Department and Flagler County.

The sole form of transportation is by way of personal automobile. There are many county and local roads that provide access to Daytona North. The primary route would be SR 100 West to CR 305, but access is also available from CR 305, Water Oak Road (dirt road) and County Road 90 east (dirt road). All but SR 100 West are rural 2-lane roads that serve primarily the agricultural areas of the County. SR 100 West is a paved 2-lane state-owned and maintained highway. Transportation from the Daytona North study is currently meeting adopted levels of service. The primary concern for the next 25 years will be the need to improve access and potentially widen SR 100 West and other roads in the area. The development of transit opportunities is not expected given the relatively low density development and widely dispersed land use pattern.

Summary: Flagler County has initiated efforts to address the issues associated with older subdivisions which pre-date many of our current regulations. Daytona North residents do not want to see expensive improvements installed at this time. The primary concerns pertain to improvements to the stormwater management of the area and a continued road improvement/maintenance program

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L. Western Area 5 (Flagler Estates)

Background: This area contains approximately 2,771 acres and follows the boundary of an unrecorded plat originally designed in 1970. This is a pocket of approximately one-acre residential sites primarily surrounded by agricultural lands. The boundaries of the area are: the St. Johns County boundary on the north; Amos Road to the east (unimproved); Potatoville Road to the south; and Connie Avenue (unimproved) to the west (dirt road). Table 50 summarizes the current conditions in regard to the adopted Future Land Use Map designation and the amount of developed and undeveloped lands within this study area. Note that the future development reflects the general land uses associated with the land use designation. The actual development that could occur would be a function of the final zoning classification assigned to the property at time of development.

Land Use	Total Land	Developed	Undeveloped	Maximum Intensity of Future Development
Conservation	188	0	188	
Residential: Low Density Rural Estate (1 du/ac)	2,569	0	2,569	1,953 du's (based on number of tracts)
TOTAL	2,757	0	2,757	

Source: Flagler County Planning and Zoning Department 2009

Flagler Estates is located in the northern-west portion of the county. This area consists of 1,953 tracts described through metes and bounds on 2,771 acres. At this time there are no homes or structures developed in the Flagler portion of this 10,000 acre rural development that straddles both Flagler and St. Johns Counties. The parcels do not necessarily follow the land use designations in that there are tracts located inside areas designated as “Conservation” on the adopted Future Land Use Map. Additionally, there are no roads, water or sewer facilities available to access or serve the area. Under current regulations these developments would be required to provide supporting infrastructure, such as roads and stormwater.

Flagler Estates was initially developed by Florida General Equities, a defunct corporation, around 1970. It is important to note that this development is not a recorded subdivision and was never approved by the Flagler County Board of County Commissioners. This means that this area is not currently served by basic services (roads, electricity, stormwater) since Florida General Equities did not install the necessary infrastructure, as would be required under current subdivision laws.

The issue of roads and stormwater were initially addressed by the Florida Legislature through the creation of the Sixteen Mile Creek Water Control District for agricultural

drainage purposes. This independent special district was dissolved and replaced by the Flagler Estates Road and Water Control District (FERWCD), a multi-county independent special district in 1971. The FERWCD has the power to levy an assessment of each property to generate revenue for the installation of paved roads and subdivision drainage. The FERWCD constructed improvements in the St. Johns County portion of the development, but nothing has been done in Flagler County.

In 1992 Flagler County proposed annexation of the entire Flagler Estates development into St. Johns County, but St. Johns County refused the offer. The Flagler Board of County Commissioners then determined that it would be best to withdraw the portion of the project in Flagler County from the FERWCD. In 1999, the Florida Legislature approved a phasing plan that reduced the assessments on property in Flagler County such that there would not be an assessment after 2004. In March 2004, the Flagler Estates Road and Water Control District conveyed via quit claim deed, the road and drainage rights-of-way to the Board of County Commissioners in trust for the public. The language in the quit claim does not contain any specific legal descriptions or clarifications so it is uncertain what, if anything was given to Flagler County. On August 15, 2005 Flagler County created the Flagler Estates Municipal Services Taxing Unit (MSTU) as a way of generating revenue that could be spent on needed infrastructure improvements in the area. There is currently no budget established for the MSTU and no immediate plans to allocate funding for improvements within the area.

On June 6, 1994 the Board adopted the position that because facilities and services were not available, Flagler County could not issue building permits within Flagler Estates. It is important to note that despite the Board's position, a property owner has the right to submit and request a building permit. The County staff then must either approve or deny the permit based on the codes and standards in place. As of 2009 no permits had been applied for within the Flagler County portion of Flagler Estates. Additionally, there is an issue with the ability to provide public safety (Sherriff and Fire Services) and transportation related to education (i.e. School Bus service) to the residents of this development unless there is a direct connection via a public road within Flagler County.

Flagler County has repeatedly attempted to address the issues that prevent the development of this area. The fact that there are a multitude of out-of-state owners creates difficulties in developing solutions to the road and stormwater issues. This problem is exacerbated since there are no private methods (master developer, mandatory HOA) of securing the funds needed for the improvements. If the original development corporation or a property owners' association were in place, then there could be a way of funding some of the improvements. The other methods that the County has researched include using the already established Flagler Estates MSTU or creation of a Community Redevelopment Area (CRA) and Tax Incremental Financing (TIF) to fund those improvements. These issues have been discussed with the Board of County Commissioners, but there is a concern that the current market conditions are not favorable for financing the improvements with any of the funding alternatives.

Flagler Estates was created without any formal review or approval by the Board of County Commissioners of Flagler County. In simplest terms, the land was divided for sale and use for agricultural purposes. This was done so that land could be sold and used for silviculture and other related agricultural purposes; however, the size of the parcels (+/- 1 acre) does not appear to be of a viable size for agricultural purposes. The earlier versions of the Flagler County Comprehensive Plan refer to this area as an “antiquated”, “non-conforming”, or “illegal” subdivision. All of these terms are intended to reflect that the division of this land into smaller parcels was never approved by Flagler County and there was no vesting or formal approval of the land for residential development.

The current laws pertaining to subdivisions include requirements that the developer of the property provide the basic services of electricity, stormwater management, roads and, if applicable, centralized water and sewer (i.e. central water and/or sewer are typically required when lot sizes drop below one acre in size or environmental constraints prevent the use of on-site sewage treatment systems). These are the basic public services identified in the Comprehensive Plan and Land Development Code (LDC) that are needed for any proposed division of land for the purpose of development of residential or non-residential uses. Other ancillary services that are non-concurrency related but are no less important are: schools, fire protection, law enforcement, ambulance service, postal service, and solid waste collection. The remoteness of the area makes the provision of any of these services by the County almost impossible and, if provided, level of service is significantly impacted. Flagler Estates was not initially reviewed for provision of these requirements since the owners of the land divided the property without going through the subdivision review process with Flagler County. This means that Flagler County has no obligation to provide these services to the owners of tracts within this area. The original developer formally contested this issue in the 1970s and the Court agreed with Flagler County that this division of land was not approved by the County; therefore the County is not obligated to provide these services. The Courts further indicated that the developer had the option of processing a formal subdivision of the property with Flagler County in order to “legitimize” the subdivision, but the developer chose not to pursue the formal subdivision review process.

The use of the land for residential purposes is allowed based on the currently adopted Future Land Use Map and Official Zoning Map. The Flagler Estates area has a designation of Residential Low Density: Rural Estate (1 dwelling unit/acre) and Conservation on the adopted 2010 Future Land Use Map and a zoning of R-1 (Rural Residential) District on the Official Zoning Map. Based on the current land use and zoning designations, the land owners have the right to use the land for single-family dwelling units, with agricultural purposes permitted as secondary ancillary uses to the predominate single-family residential development through the current R-1 zoning designation; however, the ability for the County to issue residential permits is restricted since there are no utilities and infrastructure (electric, stormwater, and roads) in the area. Additionally, access and the ability to serve the public safety needs (fire, police, schools, postal service, and ambulance service) are restricted by the lack of public roads accessible to the area within Flagler County. Until the minimum infrastructure

and services to meet basic public safety can be provided to Flagler Estates, the County cannot issue permits for the development of individual tracts for single-family homes. This does not mean that a property owner cannot submit a permit application for these purposes, but until these basic services are provided, the County cannot issue a permit for construction.

This was the basis of the County Commission's discussion related to Flagler Estates that occurred in 2004 and 2005. The building boom was in full swing during this time and fueled interest in the development of these lots for residential purposes. The County Commission advised staff to:

- a. Continue to acknowledge that the area was not necessarily vested for residential development;
- b. Review the existing land use and zoning to ensure that the parcels created for agricultural purposes complied with the minimum requirements of the Comprehensive Plan and the Land Development Code;
- c. Investigate how public access to the area could be accomplished through Flagler County; and
- d. Look at what funding opportunities were available so that the land owners were responsible for the costs of the services that are needed in order to develop the land for residential uses.

The County initiated preliminary efforts to review the feasibility of establishing a Municipal Service Taxing Unit (MSTU) or Community Redevelopment Area (CRA) for Flagler Estates in order to explore the funding for the necessary improvements in the area. A follow-up survey of the land owners was conducted to verify if they would be willing to participate in a special assessment or similar funding process that would allow owners to develop their property for residential purposes. The response was varied, but overall approximately 40% of the land owners agree to some form of special funding that would allow them to develop the property for residential purposes.

In summary, Flagler County and the land owners of parcels within Flagler Estates face the following situation:

1. The property can only be used for those purposes allowed by the land use and zoning regulations.
2. They can apply for a permit for a single-family home. The County will accept and review the permit application for compliance to applicable codes, but cannot issue the permit until the tract which is the subject of the permit application has access to a road, stormwater meeting current subdivision standards, and emergency services, with water, sewer, and electrical service provided on a per tract basis, pursuant to the Land Development Code.
3. The adopted Future Land Use Map and Official Zoning Map show that the area can be developed for residential single-family units on one acre parcels. This would be subject to the provision of minimal necessary facilities, as described above, and compliance with the minimum zoning requirements.
4. The costs of the provision of these services has to be the responsibility of the land owners and the County is not obligated to provide these services to the

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Flagler Estates area since the division of the land for agricultural purposes does not comply with State or local laws for subdivisions.

Given the conditions facing the development of Flagler Estates, the County Board of Commissioners determined that it is best to return the land back to farming and agricultural production. This would be a difficult task, but it is needed in order to prevent further sprawling residential development in the County. The recommendations from the Futures Committee, Planning and Development Board and the Board of County Commissioners were discussed in length at several public hearings. The resulting recommendations were a tiered approach whereby the County would:

1. Work with owners on a voluntary approach to change the land use to “Agriculture and Timberlands”.
2. Utilize federal and state grants to acquire environmental lands that would be best protected by designation as “Conservation”.
3. Establish overlays, transfer of development rights and similar zoning tools to serve as methods of limiting use for agricultural purposes.
4. Process administrative amendments to the Future Land Use Map to change the land use to “Agriculture and Timberlands”.

General Area	Land uses/zoning	Description
North of County line	“Rural/Silviculture”/Open Rural (OR)	Rural residential/vacant lands
East of Study Area (Amos Road)	Agriculture and Timberlands; Agricultural (AC)	Farmlands
West of Study Area (Connie Avenue)	Agriculture and Timberlands; Agricultural (AC)	Farmlands
South of Study Area (Potatoville Road)	Agriculture and Timberlands; Agricultural (AC)	Farmlands

Source: Flagler County Planning and Zoning Department

All of the surrounding area is used primarily for agricultural purposes, such as open pasture and silviculture. A review of the adopted Flagler County and St. Johns County Future Land Use Maps indicates that the area is targeted to remain in a rural land use category and is intended for agricultural purposes.

The predominant soil associations in this area are on low flatwoods and sloughs interspersed with scattered areas of swamps and depressional areas that are ponded for long periods of time. General Soils Map Area 1 (Pinea-Winder-Riviera) accounts for the majority of the area. According to the U.S.G.S. Soils Survey for Flagler County, this soils group is generally poorly-drained and located in pine flatwoods. The other soils type in this area is Soils Group No. 5 (Winder-Favoretta). This soils group is also poorly

drained and located in low flatwoods. Additionally, this soils group is located near streams, drainage ways and flood plains. Neither of these soils groups are recommended for urban development due to the extensive wetness resulting from the relatively flat elevations.

The predominant ecological community located in this study area is of the Pine Flatwood community. This upland community occurs on nearly level lands with gradual water movement to the natural drainageways. These flatwoods can best be described as open woodland dominated by pine trees. The community has fairly numerous and diverse animal populations. Larger animals such as deer and raccoon are commonly found near the boundaries between flatwoods and associated forest communities. Other animals also found here include the cottontail rabbit, cotton rat, skunk, squirrel and opossum. There are areas consistent with the Cypress Swamp Wetland communities that are interspersed within the Pine Flatwood areas. These communities have soils that are usually poorly drained and have loamy subsoils and sandy surfaces. Flora found in this community include bald cypress, pond cypress, common Button bush, cinnamon fern, fall-flowering ixia and royal fern. Animals found here include deer, raccoon, otter, wood stork, limpkin, barred owl, alligator and turtles. This type of community is very valuable for environmental educational study. The balance in this community is very delicate. Dams, dikes or drainage canals could easily change the plant occurrences. These areas are unsuitable for development. Cypress swamps also act as holding areas for excess water, which in turn is slowly released to the water table.

Refer to previous Table A-28 for the listing of the plant and animal species that may inhabit these communities. This list is general in nature and is provided for general planning purposes only.

The provision of potable water and sanitary sewer is not currently planned, nor are there any funds allocated for the provision of these services to this area. If development of Flagler Estates is made possible by the construction of roads and stormwater facilities, as well as the extension of electricity, there is still a concern with the sources of the potable water and sanitary sewer. Flagler County needs to identify how to ensure that there will be a safe and adequate supply of water to the residents. Additionally, Flagler County must ensure that the use of septic tanks will not result in degradation of groundwater resources. The built-out service population will be 4,590 persons based on 1,953 dwelling units constructed by 2030. The currently adopted level of service for potable water is 125 gallons per person per day so it is reasonable to expect a demand of 573,750 gallons per day for potable water. The currently adopted level of service for sanitary sewer is 110 gallons per person per day so it is reasonable to expect a demand of 504,900 gallons per day for sanitary sewer services. There needs to be monitoring of the area to ensure that the future development of Flagler Estates will not have a detrimental effect on the area's natural resources. This responsibility needs to be coordinated between SJRWMD, Florida DEP, Flagler County Health Department and Flagler County.

The sole form of transportation to this area is the personal automobile. There are no Flagler County and local roads that access Flagler Estates. This means that the only way to access Flagler Estates is to go into St. Johns County (via CR 204) and access from Flagler Estates Boulevard.

Summary: Flagler Estates represents a common problem that is observed throughout the State of Florida. Earlier laws and regulations allowed the sale of land without regard to the provision of minimum facilities, including roads, electricity, or stormwater. These developments are typically located in areas where the provision of these facilities results in a large cost. In most situations, including in Flagler County, the standard policy is to require the land owners to carry the burden of these costs. This is an acceptable policy given the philosophy that “growth needs to pay for itself” and that the provision of these services should not be at the expense of other tax payers residing in the County.

It can also be expected that the area will not be fully developed by the 2035 planning horizon, given that there are numerous requirements that need to be resolved prior to the County issuing any development permits. Questions regarding the suitability of tracts in Flagler Estates for building purposes arise annually with the tax roll trim notification to owners.

The development of Flagler Estates for single-family homes on one-acre lots is not an acceptable alternative. The Futures Committee, Planning and Development Board and Board of County Commissioners held details, exhaustive discussions on Flagler Estates and voice the following concerns:

1. There are no existing or proposed public roads providing access to the development within Flagler County.
2. The soils, wetlands and overall natural conditions are not suited for residential development on one-acre lots.
3. The County will not fund the costs for the provision of necessary services such as emergency response, police, utilities and education due to the inefficiency of the land use pattern.
4. The private property rights of the owners should be respected, but the realistic expectations must be based on the fact that the land was not divided via a formal subdivision process and the resulting parcels are not vested for any other use other than limited agricultural uses by Flagler County

All of the committee and board members agreed that action had to be taken in order to reduce potential development and establish a land use pattern that is consistent and compatible with the adjoining properties. This would be accomplished through the use of various planning tools and procedures to first seek voluntary assistance from the land owners, secondly through the use of public grants to acquire appropriate land holdings and if necessary an amendment to the Future Land Use and Official Zoning Maps to designate the lands for “Agriculture and Timberlands” and (AC) Agricultural. The Future Land Use Element shall incorporate this strategy in the Goals, Objectives and Policies to ensure a consistent effort to address this sprawling land use pattern.

VII. Anticipated Growth Patterns and the Ability to Prevent Sprawl

Flagler County updated the 2000 Comprehensive Plan in 2010 for a 25-year planning horizon in order to:

1. Address the impacts of annexations by local cities;
2. Revise pursuant to the recommendations of the Evaluation and Appraisal Report; and
3. Integrate regional characteristics into the Comprehensive Plan so that local visions could be reflected in the updated goals, objectives and policies.

The anticipated pattern of growth over the next 25 years for the unincorporated areas of Flagler County is difficult to predict based on past growth patterns due to the annexations of the surrounding cities, the uncertainty of the economic opportunities within Flagler County and the characteristics of the population moving/growing up in the area. Flagler County has to identify growth patterns based on the best data available in order to estimate where and how vacant lands may be used. This will help to set in place goals, objectives and policies that prevent unintended consequence that may have negative impacts on the natural, cultural and fiscal resources of the County. The following are trends and statistics used to estimate growth patterns:

1. **DEMOGRAPHIC TRENDS:** According to the most recent data from the Florida Housing Data Center the population as a whole will be “aging”. The following table reflects the projections by age cohort. In 1990 the amount of persons age 65 or older was 7,345, which is approximately 26% of the total permanent population. The projections for 2030 show the population of persons 65 or older will be 71,479 persons or 40% of the total permanent population for Flagler County. This will greatly influence the location and type of housing demanded in the future. Typically, retirement age people have preferred living in suburban settings that are in close proximity to businesses and services that address daily needs. This means that residential developments in close proximity to recreational, social and medical facilities will be preferred by the elderly population. The 65 and older population typically will purchase units that are in planned developments that provide for attached and detached single-family units. These market trends can change, but given the growth of large, planned developments that target the needs of active retirees, it is not expected to change in Flagler County over the next 25 years, especially with the increase of retiree population that is projected.

Table A-51. Population Projection by Age Cohort 1990 to 2035									
Age	1990	2000	2007	2010	2015	2020	2025	2030	2035
0-4	1,477	2,058	3,640	4,160	5,363	6,351	7,080	7,686	8,772
5-9	1,556	2,381	4,435	4,456	5,683	6,829	7,798	8,506	9,794
10-14	1,549	2,819	5,240	5,635	6,111	7,317	8,506	9,493	10,576

**Table A-51.
Population Projection by Age Cohort 1990 to 2035**

Age	1990	2000	2007	2010	2015	2020	2025	2030	2035
15-19	1,464	2,505	5,342	5,887	7,000	7,381	8,631	9,867	10,979
20-24	1,213	1,560	4,090	4,687	5,805	6,548	6,859	7,862	8,750
25-29	1,486	1,759	3,518	4,182	5,372	6,209	6,734	7,012	7,803
30-34	1,788	2,255	3,677	3,884	5,288	6,330	7,046	7,425	8,553
35-39	1,815	2,886	4,495	4,555	5,197	6,562	7,569	8,218	9,319
40-44	1,629	3,227	5,707	5,751	6,137	6,683	8,128	9,171	10,080
45-49	1,374	3,235	6,392	6,980	7,388	7,550	8,069	9,586	10,182
50-54	1,420	3,364	7,002	7,822	9,387	9,428	9,441	9,948	10,399
55-59	1,824	3,515	7,335	8,344	10,635	12,044	11,823	11,697	12,480
60-64	2,761	3,999	7,247	8,443	11,166	13,613	15,049	14,579	16,345
65-69	3,287	4,361	6,873	7,756	10,971	13,900	16,671	18,183	22,257
70-74	2,209	4,145	6,464	6,929	9,301	12,805	16,000	19,064	24,629
75+	1,849	5,763	12,101	14,022	18,592	24,247	32,392	42,298	56,514
Total	28,701	49,832	93,558	103,493	129,396	153,797	177,796	200,595	237,433

Source: FHDC 2010 and Flagler County Planning and Zoning Department

2. AVAILABILITY OF PLANNED DEVELOPMENT PLANNED DEVELOPMENTS: Flagler County has several large DRIs in existence that will accommodate residential, commercial and industrial uses. The following summarizes the approved DRIs in Flagler County's jurisdiction and the estimated amount of development that has occurred and the amount that is vested for future development. This reflects that are 9,427 units within approved DRI's and available for development and occupancy over the next 25 years. Additionally, there are 3,856 units approved in Planned Unit Developments throughout the County.

There are opportunities for commercial and retail/office uses. The amount of approved and vested industrial development is relatively small (1,022,788 sq. ft.) given the existing amount of industrial lands and the goals of economic diversity. The amount of approved commercial development appears to be addressing the needs of the associated residential development. In total, there is 1,094,194 sq. ft. of commercial retail and office use approved and available for development. This pattern reflects that the residential developments typically have a community shopping and service component included in the plan. The tie to the residential component of the projects means that many of the commercial centers viability are tied to the amount of housing units that are constructed and occupied.

All of these DRIs are located east of US 1 in the Coastal Area. There are two pending DRIs in the City of Palm Coast that are located west of US 1. These projects provide for additional residential, commercial and industrial uses. The improvements and

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extension of utilities required as part of these DRIs provides for opportunities for further conversion of rural lands into sprawling development. It is important to utilize the standards applied through the FARMS program to serve as incentives to protect western agricultural and natural resources in a planned, cohesive method.

DRI Name	Approved Residential		Approved Commercial (sq.ft.)		Approved Industrial		Area (acres)
	Total	Remaining	Total	Remaining	Total	Remaining	
Bulow Plantation	1,020		23,000	11,700	n/a		323
Hammock Dunes	4,400	1,340	30,700	0	n/a		2,241
Hunter's Ridge	2,657	2,320	361,520	361,250	242,788	242,788	3,800
Matanzas Shores	1,450	452	32,600	32,600	n/a		404
Plantation Bay	4,326	3,612	90,000	90,000	n/a		2,574
Total	13,853	7,742	537,820	507,120	242,788	242,788	

Source: Flagler County Planning and Zoning Department

In addition to the approved DRIs there are numerous Planned Unit Developments approved and developed in Flagler County. These projects typically involve the use of flexible development standards in order to attain a preferred mix of uses that would otherwise not be allowed under the approved zoning designation. Many of the PUDs approved prior to 1999 have been absorbed into the City of Palm Coast as a result of that City's incorporation in 2000 so the list is limited to existing PUD's that have not been built out and remain in the jurisdiction of Flagler County.

Project Name	Entitlement
Flagler Airport Industrial:	780,000 sq. ft. commercial/office park
Cascades at Grand Haven:	416 Single family units
Dixie Commons	130,000 sq. ft. office professional park
Eagle Lakes	749 single-family units
Ginn-La Jose Park	158 single-family unity, marina (46-wet slips/86 dry slips), 23,610 sq. ft. commercial
Grand Reserve East	300 Single-family units
Grand Reserve West	300 Single-family units
Hammock Beach River Club	453 single-family units, 230,694 sq. ft. commercial retail/office, 18-hole golf course
Harbor View	622 Single-family units
Marina Village	511 Single-family units, 160,500 sq. ft. commercial retail/office, 80 slip in-water marina

Project Name	Entitlement
Old Hammock Plantation	26 Single-family homes, 30,000 sq. ft. commercial retail/office
Old Kings Village	232 single-family units, 36,000 sq. ft. commercial retail/office
Sweetbottom Plantation	14 single-family units
The Reserve	75 Single-family units

Source: Flagler County Planning and Zoning Department

3. **ECONOMIC GROWTH AND DIVERSITY:** Flagler County’s leaders have identified a diversified economy as one of its primary goals with the adoption of the original comprehensive plan. The importance of this goal has been realized with the dramatic impacts resulting from the recession of 2008. As of 2010 Flagler County continues to experience one of the highest unemployment rates in the State of Florida. The critical issue identified by the leaders of Flagler County is to recruit new industries in order to diversify the economic base of the County. This would provide for stability and orderly growth. The amount of land available for industrial uses is relatively small, less than 1% of the total area on the adopted Future Land Use Map.

Flagler County was actively involved in the development of the Comprehensive Economic Development Strategy (CEDS) spearheaded by the Northeast Florida Regional Council (NEFRC). The Comprehensive Economic Development Strategy for Northeast Florida is designed to guide the economic growth of the First Coast region. It was produced with funds provided by the U.S. Department of Commerce through the Economic Development Administration (EDA), and in-kind contributions by the Northeast Florida Regional Council. The CEDS is the result of a collaborative effort by a diverse group of public officials, community leaders, and representatives of workforce development boards, institutions of higher education, minority and labor groups, and private individuals.

The CEDS provides a mechanism for coordinating the efforts of economic development organizations, local governments, and private industries for the purpose of creating jobs, fostering a stable and diversified economy, and improving living conditions. Additionally, the CEDS identifies individual programs and projects that will further the economic development goals of the First Coast region. Programs and projects identified within the CEDS are eligible for financial assistance through the Economic Development Administration.

This effort was complimented by the adoption of the Flagler County Strategic Plan in 2010. This document provides the County with a commitment to complete critical issues within the next 5 years and provides a matrix to set quantifiable methods of measuring the success of the County’s efforts.

The immediate projection for Flagler County reflects that it will continue to focus on service sector employment. According to the Florida Agency for Workforce Innovation,

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Labor Market Statistics Center, all of the top 10 gains in employment for 2009 to 2017 will be in the service industry.

Table A-54. Projected Top 10 Employment Growth 2009 to 2017

Rank	Occupation	Employment		Annual % Change	Average Annual Openings			2009 Average Hourly Wage
		2009	2017		Growth	Separation	Total	
1	Retail Salesperson	6,642	7,903	2.37	158	195	353	13.19
2	Registered Nurse	3,648	4,726	3.69	135	56	191	29.35
3	Waiters and Waitresses	4,958	5,983	2.58	128	255	383	9.84
4	Food Preparation & Serving Workers, Including Fast Food	4,078	5,020	2.89	118	73	181	8.54
5	Customer Service Representatives	3,406	4,193	2.89	98	89	187	12.37
6	Nursing Aides, Orderlies, and Attendants	3,092	3,826	2.97	92	26	118	11.92
7	Office Clerks, General	4,218	4,808	1.75	74	75	149	11.00
8	Cashiers	6,819	7,389	1.04	71	318	389	8.54
9	Landscaping and Groundskeeping Workers	2,553	3,050	2.43	62	32	94	10.79
10	Child Care Workers	2,357	2,82	2.50	59	64	123	9.83

Source: Enterprise Flagler/Florida Agency for Workforce Innovation, Labor Market Statistics Center

This trend over the next 8 years reflects that there are limited opportunities for growth of higher-paid manufacturing and related employment. This means that the focus for economic development needs to be on development of technical and industrial uses that require a well-trained technical and professional employment shed. This has been identified in both the Economic Development Element and the 2010-2015 Strategic Plan.

Additionally, Flagler County faces the following challenges in its economic development efforts:

1. Lack of construction-ready sites for the target industries.
2. Lack of reliable investment in “Green” industries that could involve the agricultural resources of western Flagler County.

3. Gras-roots level of resistance to integration of non-residential uses into the existing land use pattern in eastern Flagler County.
4. Lack of funding for development of multi-modal transportation with connection to existing economic centers within the Northeast and East-Central Planning regions.

All of these issues have been addressed in the goals, objectives and policies of the Future Land Use Element and related elements.

AGRICULTURAL PROTECTION: Flagler County has a long and valued history of agricultural production that exemplifies the rural lifestyle of Florida. Protection and preservation of agriculture is a top priority and will continue to be through the 25-year planning horizon. Throughout Florida the reduction in lands used for agriculture has been a growing trend due to transition into suburban and urban uses. Flagler County realizes that there have to be viable standards put in place to prevent the loss of viable agricultural lands. Previous sections have indicated the impacts of urbanization on farmlands in Flagler County.

The impacts of future growth on the agricultural lands west of US 1 within the County's jurisdiction should not be significant, but the currently adopted land development standards for the agricultural lands allow for sprawling residential development. There are 83,190 acres of land west of US 1 under the County's Future Land Use Map with a land use designation of "Agriculture and Timberlands". This designation allows for development of a single-family home on a 5-acre lot with on-site water and septic. This land use pattern can be allowed in limited areas, but if developed over the entire 81,890 acres will have severe issues with the preservation and continuance of the agricultural resources of the western area of Flagler County, as well as the protection of natural resources in the area.

The dilemma facing local leaders was how to reduce impacts without taking an owner's right to use their land as allowed by the Future Land Use Map. Amending the land use designation would be the most direct methods and has been used on a limited basis. The use of other planning tools, such as transfer of development rights, clustering rural development and incentives for "Green" development appear to provide for protection of all parties' interest appears to be the best alternative. The updated and revised comprehensive plan incorporates many different tools to address the impacts of urban growth in the County. Flagler County needs to update the Future Land Use Element to update goals, objectives and policies that did not address the protection of resources, and establish new or revised tools that provide opportunities for varied land use patterns. The remedy to that concern requires that the County develop a balanced approach to the land use patterns that would occur over the next 25-years and establish methods of protecting valuable natural and agricultural resources, while allowing for limited compact urban growth to occur where appropriate.

The use of transfer of development rights can be a useful tool when there is a viable market that is coordinated between the public or quasi-public authority overseeing the program and the landowners who are within the “sending” and “receiving” areas. Flagler County at this time has limited market for development rights for the following reasons:

1. The eastern coastal area is the most developed. The vacant lands within the eastern area that are still available for development have sufficient density or development entitlements allocated to the owners. This means that there is no clear market for land use entitlement units from the western, rural areas. Also many of the residents within the eastern, coastal area do not want more intensive development or redevelopment to occur.
2. Flagler County has limited ability to control the annexation of property in to adjoining cities. If a landowner within the jurisdiction of Flagler County wishes to develop his/her land at a higher intensity and is located adjoining to one of the adjoining cities, then there is an opportunity for the landowner to annex and develop under the local cities standards.
3. There are limited opportunities at this time to establish a County-wide program since many of the cities either do not want more intensive growth or allocated sufficient development entitlements through the respective comprehensive plans.

Flagler County will continue to reach out to adjoining cities for the implementation of joint planning agreements and similar methods of providing for intergovernmental coordination. The County needs to implement alternatives while the ability to implement transfer of development rights matures.

SUMMARY: The Flagler County Board of County Commissioners clearly delineated the following as guidelines for growth:

1. Protect the agricultural and natural resources of western Flagler County (area west of US 1);
2. Protect existing residential development east of US 1 so that incompatible uses are not forced into the area;
3. Diversify the opportunities for economic development;
4. Coordinate with public and private providers of utilities to ensure that that growth goes where it is most efficiently served.

These guidelines reflect that the majority of residential growth will continue in the eastern portion of the County, with limited residential development west of US 1. Opportunities for economic development are available throughout the County and need to emphasize an emphasis on sustainable “Green” industries. Retail and other commercial services follow similar trends as the residential growth. The critical aspect is to ensure that future commercial development be incorporated into central nodes within residential development to facilitate multiple modes of transportation.

One of the critical issues is the prevention of sprawl. The Florida Department of Community Affairs requires that all cities and counties provide an analysis of need for any intensification of land use, as based on the approved Future Land Use Map. Flagler County does not request any intensification of land use on the Future Land Use Map as part of the updated 2010-2035 Comprehensive Plan. This is based on the projected population and the availability of lands to serve the needs of the future population of unincorporated Flagler County. The following table reflects the current and projected population for the County as a whole and the areas of unincorporated Flagler County. The unincorporated Flagler County population is projected to be 22,681 person or 11.3% of the total population of Flagler County. Utilizing the persons per household established by the Shimberg Institute of 2.33 persons per household there will need to be 9,734 more dwelling units in Flagler County to accommodate its proportion of the population. There is sufficient capacity within the vested projects and undeveloped lands to accommodate this demand. This however does not take into account market preference and affordability. The housing in the eastern portion of the County attracts retirees and working professionals who locating for the proximity to the area's coastline and transportation network. The demand for rural settings and large-lot ranchettes continues to be a constant in the residential market.

Table A-55. Population Projections 2010 to 2035						
	2010	2015	2020	2025	2030	2035
Total Flagler County	95,700	114,700	137,400	159,500	180,600	200,300
Unincorporated Flagler County	12,221	14,121	16,391	18,601	20,711	22,681

Source: Flagler County Growth Management and Bureau of Economic and Business Research, 2009

There are policies in the Future Land Use Element to incentivize the use of “Green” development standards in strategic locations to minimize potential sprawling residential development in the agricultural areas of western Flagler County. Flagler County has determined that the use of innovative and flexible planning and development strategies that encourage clustering and agricultural/open space provisions within mixed-use development that allow a limited conversion of rural and agricultural lands is the best strategy to follow. This will allow for limited development of “Green” developments while protecting environmentally sensitive areas, maintaining the economic viability of agricultural and other predominantly rural land uses, and providing for the cost-efficient delivery of public facilities and services.

Flagler County decided that the Future Land Use Map would not be altered and the application of existing land use categories needed to remain consistent. The public input and discussion process that took over 2 years to complete identified a critical aspect of the future land use pattern:

1. The County has to support and assist agricultural businesses and interests in

order to maintain the rural character of western Flagler County (area west of US 1).

2. The predominant land use assigned to the property within western Flagler County is "Agriculture & Timberlands". This allows for a sprawling residential land use pattern at 1 unit per 5 acres. Revising this land use category to restrict residential uses or require lower densities will be fought by land owners and property rights advocates. Additionally, there are existing developments and ownership patterns that are consistent with the existing land use designations shown on the adopted Future Land Use Map (FLUM). The Board of County Commissioners identified that alternative planning tools would be best to address the issue of sprawling 5-acres.
3. The use of transfer of development rights could be a tool for the future. Flagler County realizes that in order for a TDR system to work there has to be a receiving area for the TDRs. There currently or in the next 5 years any areas within the jurisdiction of the County that are appropriate to receive additional density. The problems pertain to lack of proximity to utilities, limited access to existing transportation network, proximity within coastal high hazard areas, and impact to natural resources/corridors. Additionally, there are limited opportunities with the cities in Flagler County since many are facing surplus inventory of housing stock or the adopted Future Land Use Map includes sufficient land to accommodate the projected growth, based on BEBR projections. As the cities expand utilities there may be incentives for the cities to enter into a joint planning agreement with Flagler County as a means of ensuring well-timed absorption of land appropriate for residential development and the reimbursement to land owners who protect valuable agricultural and natural resources. The goals, objectives and policies in the Future Land Use Element, Infrastructure Element, Intergovernmental Coordination Element and Capital Improvements Element all provide for this ultimate outcome.
4. There will need to be an interim step to assure that existing farming operations are not jeopardized. The primary concern pertains to areas that are primarily pasture or tree farms. The soils are not suited for the raising of food or ornamental crops, so as the demand for residential units increases in the future, there will be greater economic incentives to convert the land into 5-acre homesites. The potential impact can be lessened by a three step procedure:
 - a. Do not amend the Future Land Use Map to allow by right more intensive development in the western area.
 - b. Identify specific performance standards that can be incorporated and expanded in the Flagler County Land Development Code that require open space, clustering, sustainable development standards and preservation/protection of open space
 - c. Establish process that requires public hearing and review of technical documents that support and are consistent with the performance

standards established in the comprehensive plan and Land Development Code.

This three step process has been incorporated into the comprehensive plan and will be added to the Land Development Code as part of the EAR-based amendment update.

The annexations by the cities of Bunnell and Palm Coast create a land use pattern that makes it difficult to discern rural and suburban areas. Additionally, the land use pattern allowable by the County Future Land Use Map results in the ability to develop 5-acre ranchettes. The main role that the County can do is to encourage large landowners to continue with agricultural activities and stress sustainable development techniques. These concepts can be realized by the implementation of a rural preservation incentive system and continued discussion with cities for the implementation of a transfer of development rights program.

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Flagler County Future Land Use Element Map Series

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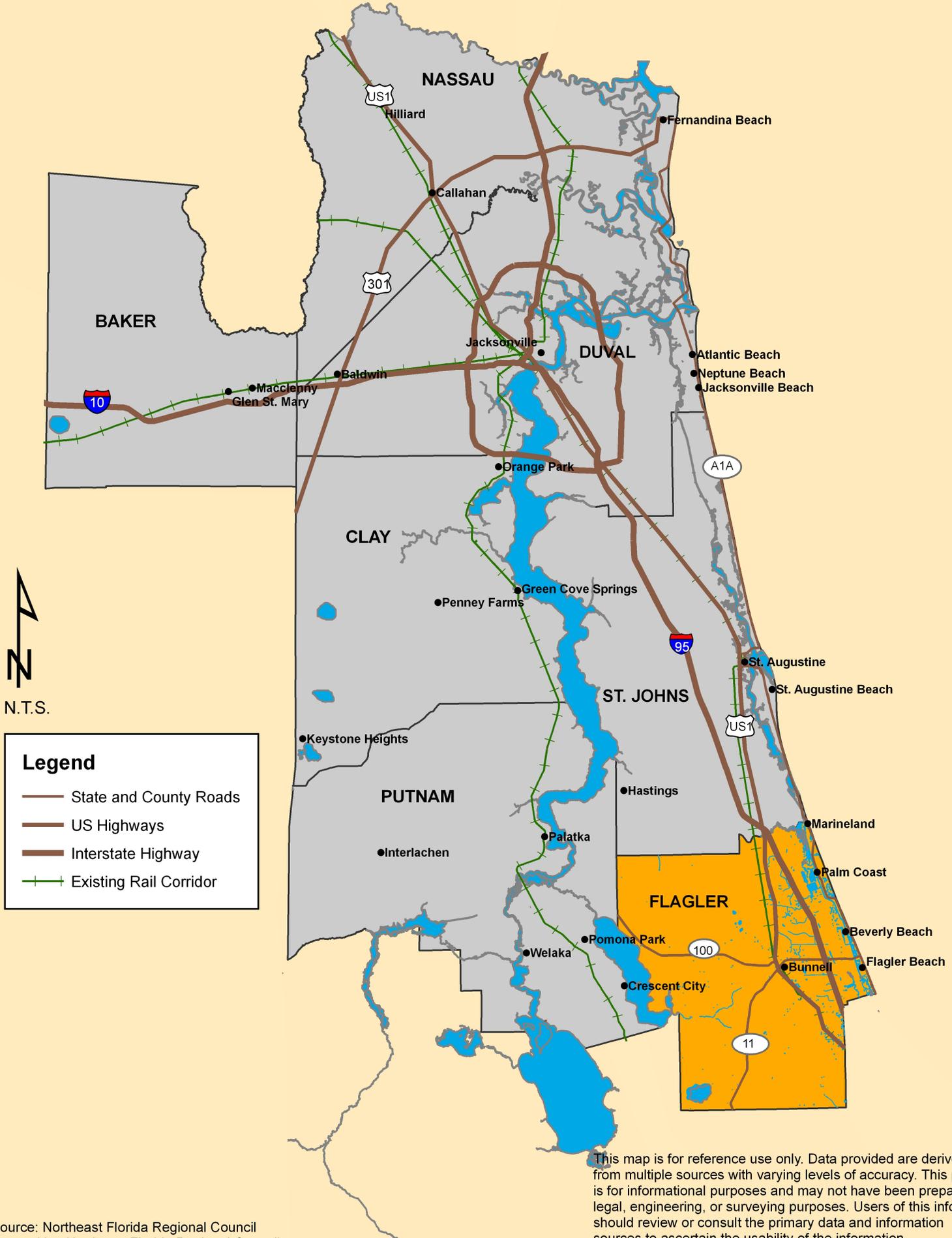
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**FUTURE LAND USE ELEMENT
DATA AND ANALYSIS
MAPS**

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NORTHEAST FLORIDA REGION



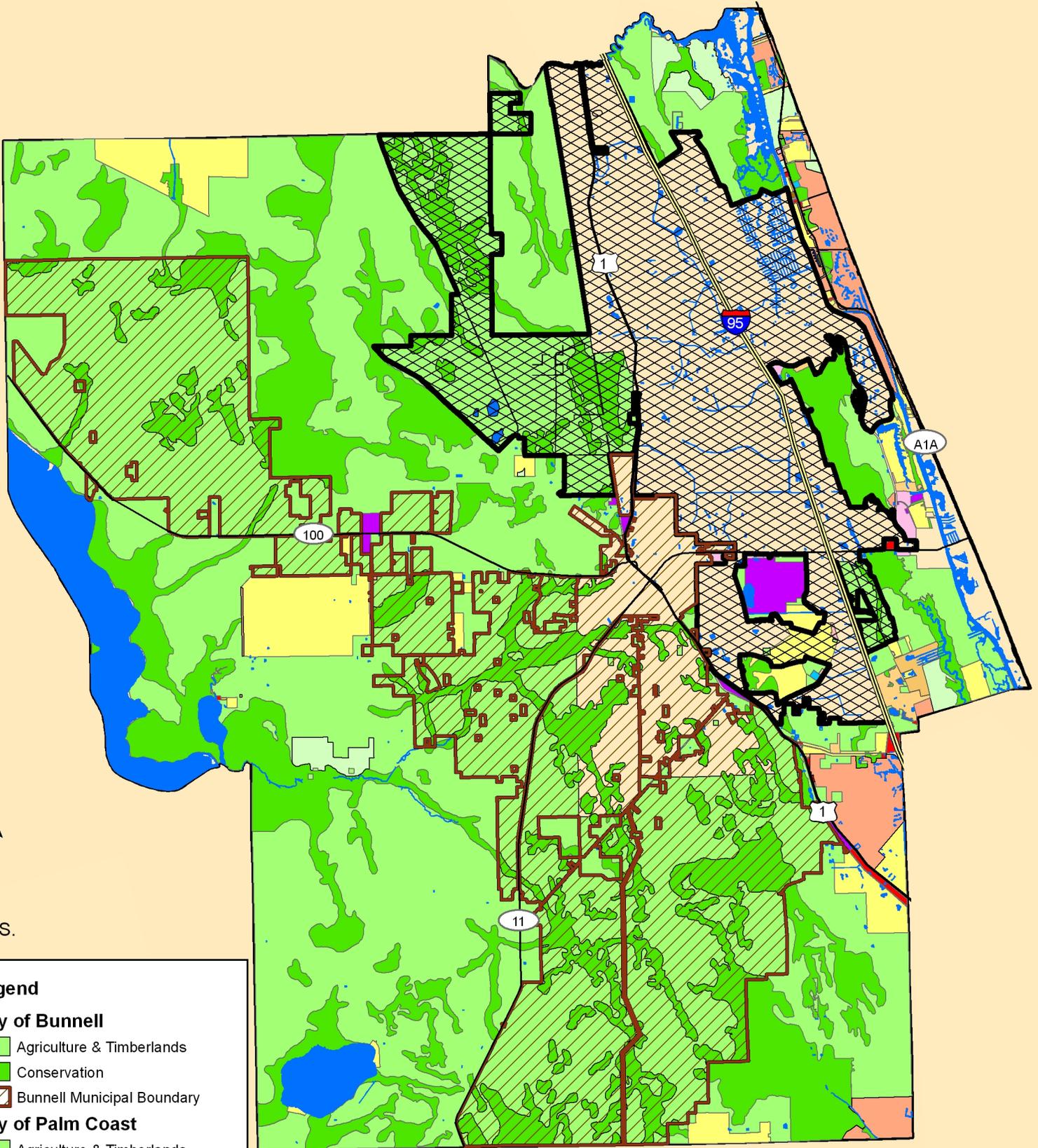
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- State and County Roads
- US Highways
- Interstate Highway
- Existing Rail Corridor

This map is for reference use only. Data provided are derived from multiple sources with varying levels of accuracy. This product is for informational purposes and may not have been prepared for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

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CITY OF BUNNELL & CITY OF PALM COAST ANNEXATIONS



N
N.T.S.

Legend

City of Bunnell

- Agriculture & Timberlands
- Conservation
- Bunnell Municipal Boundary

City of Palm Coast

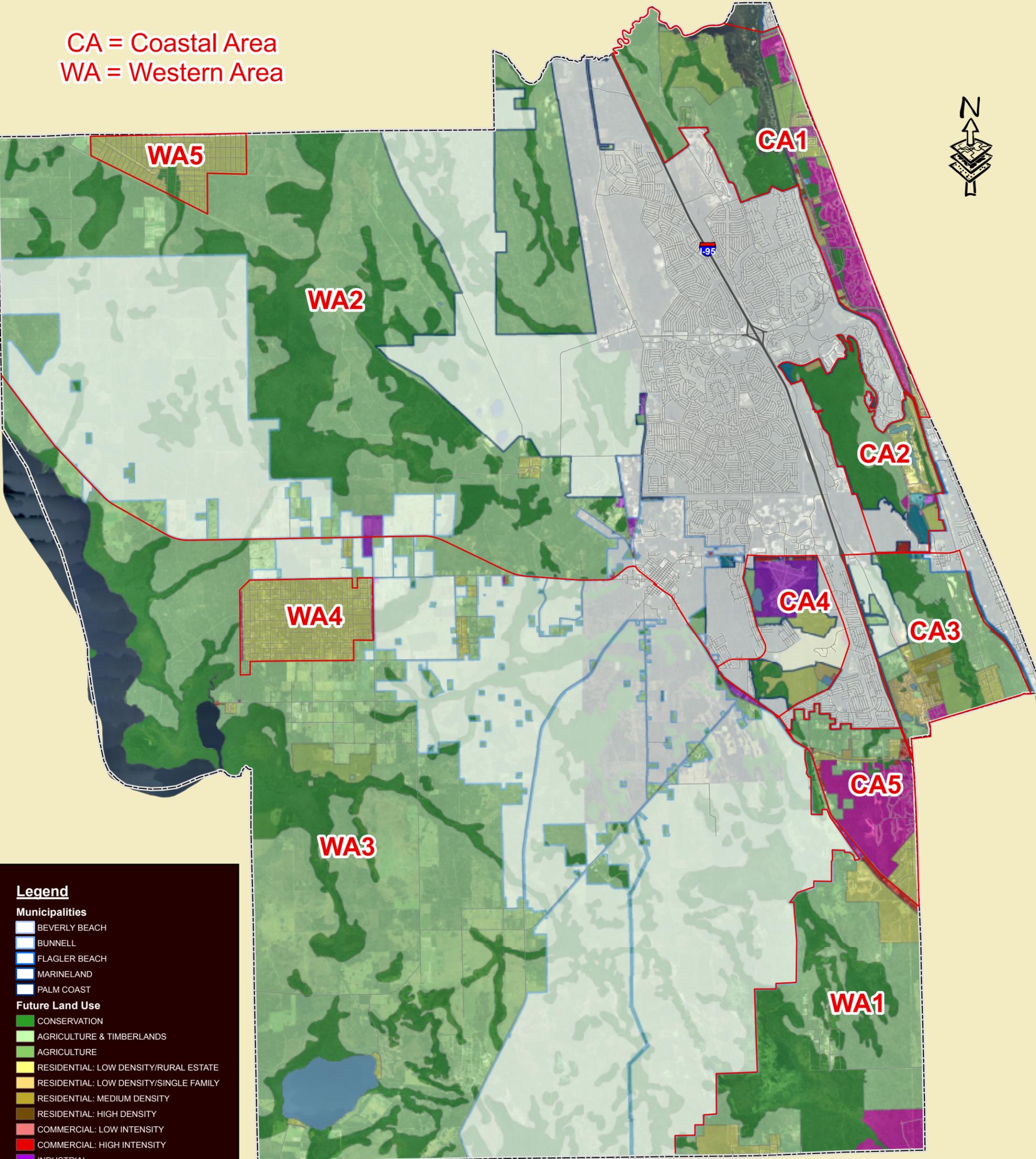
- Agriculture & Timberlands
- Conservation
- Palm Coast Municipal Boundary

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Flagler County Study Areas

CA = Coastal Area
WA = Western Area



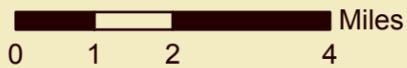
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Municipalities

- BEVERLY BEACH
- BUNNELL
- FLAGLER BEACH
- MARINELAND
- PALM COAST

Future Land Use

- CONSERVATION
- AGRICULTURE & TIMBERLANDS
- AGRICULTURE
- RESIDENTIAL: LOW DENSITY/RURAL ESTATE
- RESIDENTIAL: LOW DENSITY/SINGLE FAMILY
- RESIDENTIAL: MEDIUM DENSITY
- RESIDENTIAL: HIGH DENSITY
- COMMERCIAL: LOW INTENSITY
- COMMERCIAL: HIGH INTENSITY
- INDUSTRIAL
- RECREATION & OPEN SPACE
- EDUCATIONAL USES
- MIXED USE: LOW INTENSITY
- MIXED USE: HIGH INTENSITY
- WATER



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Coastal Area 1



Marineland
Future Land Use
Data Not Available
In GIS Format

St Johns County
Flagler County

*Atlantic
Ocean*

OLD KINGS RD N

STATE HWY A1A

INTERSTATE 95

PALM COAST PKWY

COLBERT LANE

US 1

LEGEND

- Coastal Area 1
- Not In Study Area
- FLAGLER COUNTY Future Land Use**
- CONSERVATION
- AGRICULTURE & TIMBERLANDS
- AGRICULTURE
- RESIDENTIAL: LOW DENSITY/RURAL ESTATE
- RESIDENTIAL: LOW DENSITY/SINGLE FAMILY
- RESIDENTIAL: MEDIUM DENSITY
- RESIDENTIAL: HIGH DENSITY
- COMMERCIAL: LOW INTENSITY
- COMMERCIAL: HIGH INTENSITY
- INDUSTRIAL
- RECREATION & OPEN SPACE
- EDUCATIONAL USES
- MIXED USE: LOW INTENSITY
- MIXED USE: HIGH INTENSITY
- WATER
- MARINELAND
- BEVERLY BEACH
- CITY OF PALM COAST
- Palm Coast Future Land Use**
- Residential
- Institutional
- Conservation
- Mixed Use
- Industrial
- Greenbelt
- DRI-Mixed Use
- DRI-Residential Area
- DRI-Urban Core
- Canals
- ST JOHNS COUNTY
- St Johns County Future Land Use**
- CONSERVATION
- RUR/SYLV/MISC
- PARK/RECREATION
- MIXED USE DISTRICT
- RESIDENTIAL-A
- RIGHT OF WAY
- TOWN OF MARINELAND

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0 0.5 1 2 Miles

Beverly Beach
Future Land Use
Data Not Available
In GIS Format

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Coastal Area 2



PALM COAST PKWY

Atlantic Ocean

STATE HWY A1A

OLD KINGS RD S

COLBERT LANE

Beverly Beach
Future Land Use
Data Not Available
In GIS Format

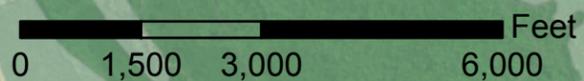
INTERSTATE 95

E HIGHWAY 100

Flagler Beach
Future Land Use
Data Not Available
In GIS Format

LEGEND

- CA_2
- NOT IN STUDY AREA
- FLAGLER COUNTY Future Land Use**
- CONSERVATION
- AGRICULTURE & TIMBERLANDS
- AGRICULTURE
- RESIDENTIAL: LOW DENSITY/RURAL ESTATE
- RESIDENTIAL: LOW DENSITY/SINGLE FAMILY
- RESIDENTIAL: MEDIUM DENSITY
- RESIDENTIAL: HIGH DENSITY
- COMMERCIAL: LOW INTENSITY
- COMMERCIAL: HIGH INTENSITY
- INDUSTRIAL
- RECREATION & OPEN SPACE
- EDUCATIONAL USES
- MIXED USE: LOW INTENSITY
- MIXED USE: HIGH INTENSITY
- WATER
- CITY OF PALM COAST
- Palm Coast Future Land Use**
- Residential
- Institutional
- Conservation
- Mixed Use
- Industrial
- Greenbelt
- DRI-Mixed Use
- DRI-Residential Area
- DRI-Urban Core
- Canals
- BEVERLY BEACH
- FLAGLER BEACH



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Coastal Area 3

Atlantic Ocean

E HIGHWAY 100

Flagler Beach
Future Land Use
Data Not Available
In GIS Format

OLD KINGS RDS

JOHN ANDERSON HWY

INTERSTATE 95

FLAGLER COUNTY
VOLUSIA COUNTY

FLAGLER COUNTY
VOLUSIA COUNTY

LEGEND

- CA 3 Boundary
- NOT IN STUDY AREA
- FLAGLER COUNTY Future Land Use**
 - CONSERVATION
 - AGRICULTURE & TIMBERLANDS
 - AGRICULTURE
 - RESIDENTIAL: LOW DENSITY/RURAL ESTATE
 - RESIDENTIAL: LOW DENSITY/SINGLE FAMILY
 - RESIDENTIAL: MEDIUM DENSITY
 - RESIDENTIAL: HIGH DENSITY
 - COMMERCIAL: LOW INTENSITY
 - COMMERCIAL: HIGH INTENSITY
 - INDUSTRIAL
 - RECREATION & OPEN SPACE
 - EDUCATIONAL USES
 - MIXED USE: LOW INTENSITY
 - MIXED USE: HIGH INTENSITY
 - WATER
- CITY OF PALM COAST Palm Coast Future Land Use**
 - Residential
 - Institutional
 - Conservation
 - Mixed Use
 - Industrial
 - Greenbelt
 - DRI-Mixed Use
 - DRI-Residential Area
 - DRI-Urban Core
 - Canals
- CITY OF BUNNELL Bunnell Future Land Use**
 - AG, AGRICULTURE (BUNNELL)
 - AG&T, AGRICULTURE & TIMBERLANDS (FLAGLER)
 - CON-B, CONSERVATION (BUNNELL)
 - CON-F, CONSERVATION (FLAGLER)
 - COMM, COMMERCIAL
 - COMM-LOW
 - I, INDUSTRIAL
 - P, PUBLIC
 - R, RECREATION
 - SF-L, SINGLE FAMILY - LOW DENSITY
 - SF-M, SINGLE FAMILY - MEDIUM DENSITY
 - SF-V, SINGLE FAMILY - VACANT
 - MH, MOBILE HOMES
 - MF, MULTI-FAMILY
 - MU-LOW, MIXED USE: LOW INTENSITY - LOW/MED DENSITY (FLAGLER)
 - DR, DEVELOPMENT RESTRICTED
 - FLOOD, FLOOD PRONE AREA
 - WET, WETLANDS
- CITY OF FLAGLER BEACH**
- VOLUSIA COUNTY Volusia Future Land Use**
 - FEDERAL HIGHWAY
 - COMMERCIAL
 - RURAL
 - URBAN LOW DENSITY
 - ENVIRONMENTAL SYSTEMS CORRIDOR
 - CONSERVATION
 - WATER



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Coastal Area 4

E HIGHWAY 100

SEMINOLE WOODS BLVD

BELLE TERRE BLVD

US HWY 1 SOUTH

Legend

- CA 4 Boundary
- NOT IN STUDY AREA
- FLAGLER COUNTY Future Land Use**
- CONSERVATION
- AGRICULTURE & TIMBERLANDS
- AGRICULTURE
- RESIDENTIAL: LOW DENSITY/RURAL ESTATE
- RESIDENTIAL: LOW DENSITY/SINGLE FAMILY
- RESIDENTIAL: MEDIUM DENSITY
- RESIDENTIAL: HIGH DENSITY
- COMMERCIAL: LOW INTENSITY
- COMMERCIAL: HIGH INTENSITY
- INDUSTRIAL
- RECREATION & OPEN SPACE
- EDUCATIONAL USES
- MIXED USE: LOW INTENSITY
- MIXED USE: HIGH INTENSITY
- WATER
- CITY OF PALM COAST
- Palm Coast Future Land Use**
- Residential
- Institutional
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- Mixed Use
- Industrial
- Greenbelt
- DRI-Mixed Use
- DRI-Residential Area
- DRI-Urban Core
- Canals
- CITY OF BUNNELL
- Bunnell Future Land Use**
- AG: AGRICULTURE (BUNNELL)
- AG&T: AGRICULTURE & TIMBERLANDS (FLAGLER)
- CON-B: CONSERVATION (BUNNELL)
- CON-F: CONSERVATION (FLAGLER)
- COMM: COMMERCIAL
- COMM-LOW
- I: INDUSTRIAL
- P: PUBLIC
- R: RECREATION
- SF-L: SINGLE FAMILY - LOW DENSITY
- SF-M: SINGLE FAMILY - MEDIUM DENSITY
- SF-V: SINGLE FAMILY - VACANT
- MH: MOBILE HOMES
- MF: MULTI-FAMILY
- MU-LOW, MIXED USE: LO INTENSITY - LO MEDIUM DENSITY (FLAGLER)
- DR: DEVELOPMENT RESTRICTED
- FLOOD: FLOOD PRONE AREA
- WET: WETLANDS



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Coastal Area 5

SOUTH DIXIE HWY

INTERSTATE 95

US HWY 1 SOUTH

FLAGLER COUNTY

VOLUSIA COUNTY

LEGEND

- CA 5 Boundary
- NOT IN STUDY AREA
- FLAGLER COUNTY Future Land Use**
- CONSERVATION
- AGRICULTURE & TIMBERLANDS
- AGRICULTURE
- RESIDENTIAL: LOW DENSITY/RURAL ESTATE
- RESIDENTIAL: LOW DENSITY/SINGLE FAMILY
- RESIDENTIAL: MEDIUM DENSITY
- RESIDENTIAL: HIGH DENSITY
- COMMERCIAL: LOW INTENSITY
- COMMERCIAL: HIGH INTENSITY
- INDUSTRIAL
- RECREATION & OPEN SPACE
- EDUCATIONAL USES
- MIXED USE: LOW INTENSITY
- MIXED USE: HIGH INTENSITY
- WATER
- CITY OF PALM COAST
- Palm Coast Future Land Use**
- Residential
- Institutional
- Conservation
- Mixed Use
- Industrial
- Greenbelt
- DRI-Mixed Use
- DRI-Residential Area
- DRI-Urban Core
- Canals
- CITY OF BUNNELL**
- Bunnell Future Land Use**
- AG, AGRICULTURE (BUNNELL)
- AG&T, AGRICULTURE & TIMBERLANDS (FLAGLER)
- CON-B, CONSERVATION (BUNNELL)
- CON-F, CONSERVATION (FLAGLER)
- COMM, COMMERCIAL
- COMM-LOW
- I, INDUSTRIAL
- P, PUBLIC
- R, RECREATION
- SF-L, SINGLE FAMILY - LOW DENSITY
- SF-M, SINGLE FAMILY - MEDIUM DENSITY
- SF-V, SINGLE FAMILY - VACANT
- MH, MOBILE HOMES
- MF, MULTI-FAMILY
- MU-LOW, MIXED USE: LOW INTENSITY - LOW/MED DENSITY (FLAGLER)
- DR, DEVELOPMENT RESTRICTED
- FLOOD, FLOOD PRONE AREA
- WET, WETLANDS
- VOLUSIA COUNTY**
- Volusia County Future Land Use**
- FEDERAL HIGHWAY
- AGRICULTURE RESOURCE
- URBAN LOW DENSITY
- COMMERCIAL
- INDUSTRIAL
- MIXED USE



0 1,000 2,000 4,000 Feet

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Western Area 1



SOUTH DIXIE HWY



US HWY 1 SOUTH

FLAGLER COUNTY

VOLUSIA COUNTY

STRICKLAND RD

LEGEND

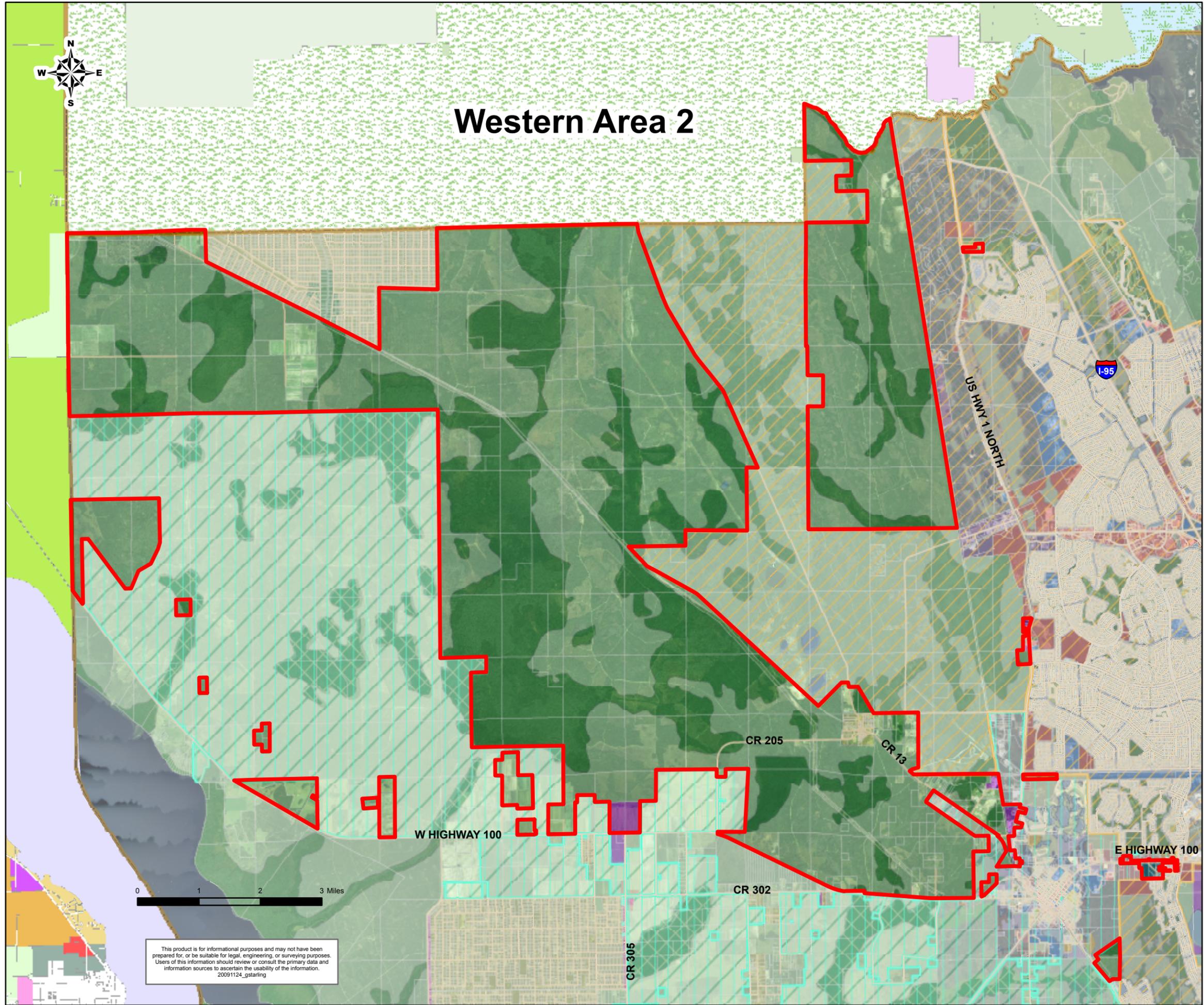
- WA1
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- CONSERVATION
- AGRICULTURE & TIMBERLANDS
- AGRICULTURE
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- RESIDENTIAL: LOW DENSITY/SINGLE FAMILY
- RESIDENTIAL: MEDIUM DENSITY
- RESIDENTIAL: HIGH DENSITY
- COMMERCIAL: LOW INTENSITY
- COMMERCIAL: HIGH INTENSITY
- INDUSTRIAL
- RECREATION & OPEN SPACE
- EDUCATIONAL USES
- MIXED USE: LOW INTENSITY
- MIXED USE: HIGH INTENSITY
- WATER
- CITY OF PALM COAST
- Palm Coast Future Land Use**
- Residential
- Institutional
- Conservation
- Mixed Use
- Industrial
- Greenbelt
- DRI-Mixed Use
- DRI-Residential Area
- DRI-Urban Core
- Canals
- CITY OF BUNNELL
- Bunnell Future Land Use**
- AG, AGRICULTURE (BUNNELL)
- AG&T, AGRICULTURE & TIMBERLANDS (FLAGLER)
- CON-B, CONSERVATION (BUNNELL)
- CON-F, CONSERVATION (FLAGLER)
- COMM, COMMERCIAL
- COMM-LOW
- I, INDUSTRIAL
- P, PUBLIC
- R, RECREATION
- SF-L, SINGLE FAMILY - LOW DENSITY
- SF-M, SINGLE FAMILY - MEDIUM DENSITY
- SF-V, SINGLE FAMILY - VACANT
- MH, MOBILE HOMES
- MF, MULTI-FAMILY
- MU-LOW, MIXED USE: LOW INTENSITY - LOW/MED DENSITY (FLAGLER)
- DR, DEVELOPMENT RESTRICTED
- FLOOD, FLOOD PRONE AREA
- WET, WETLANDS
- VOLUSIA COUNTY
- Volusia County Future Land Use**
- FORESTRY RESOURCE
- RURAL
- FEDERAL HIGHWAY
- AGRICULTURE RESOURCE
- URBAN LOW DENSITY
- COMMERCIAL
- INDUSTRIAL
- MIXED USE

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Western Area 2



LEGEND

- **WA2**
- **NOT IN STUDY AREA**
- **ST JOHNS COUNTY**
- St Johns County Future Land Use**
- AGRICULTURE
- CONSERVATION
- MIXED USE DISTRICT
- PARK/RECREATION
- RUR/SYLV/MISC
- **PUTNAM COUNTY**
- Putnam County Future Land Use**
- A1 AGRICULTURE I
- A2 AGRICULTURE II
- CC CRESCENT CITY
- CN CONSERVATION
- CR COMERCIAL
- IN INDUSTRIAL
- PF PUBLIC FACILITIES
- RR RURAL RESIDENTIAL
- UR URBAN RESERVE
- US URBAN SERVICE
- **CITY OF PALM COAST**
- Palm Coast Future Land Use**
- Residential
- Institutional
- Conservation
- Mixed Use
- Industrial
- Greenbelt
- DRI-Mixed Use
- DRI-Residential Area
- DRI-Urban Core
- Canals
- **CITY OF BUNNELL**
- Bunnell Future Land Use**
- AG, AGRICULTURE (BUNNELL)
- AG&T, AGRICULTURE & TIMBERLANDS (FLAGLER)
- CON-B, CONSERVATION (BUNNELL)
- CON-F, CONSERVATION (FLAGLER)
- COMM, COMMERCIAL
- COMM-LOW
- I, INDUSTRIAL
- P, PUBLIC
- R, RECREATION
- SF-L, SINGLE FAMILY - LOW DENSITY
- SF-M, SINGLE FAMILY - MEDIUM DENSITY
- SF-V, SINGLE FAMILY - VACANT
- MH, MOBILE HOMES
- MF, MULTI-FAMILY
- MU-LOW, MIXED USE: LOW INTENSITY - LOW/MED DENSITY (FLAGLER)
- DR, DEVELOPMENT RESTRICTED
- FLOOD, FLOOD PRONE AREA
- WET, WETLANDS
- FLAGLER COUNTY Future Land Use**
- CONSERVATION
- AGRICULTURE & TIMBERLANDS
- AGRICULTURE
- RESIDENTIAL: LOW DENSITY/RURAL ESTATE
- RESIDENTIAL: LOW DENSITY/SINGLE FAMILY
- RESIDENTIAL: MEDIUM DENSITY
- RESIDENTIAL: HIGH DENSITY
- COMMERCIAL: LOW INTENSITY
- COMMERCIAL: HIGH INTENSITY
- INDUSTRIAL
- RECREATION & OPEN SPACE
- EDUCATIONAL USES
- MIXED USE: LOW INTENSITY
- MIXED USE: HIGH INTENSITY
- WATER

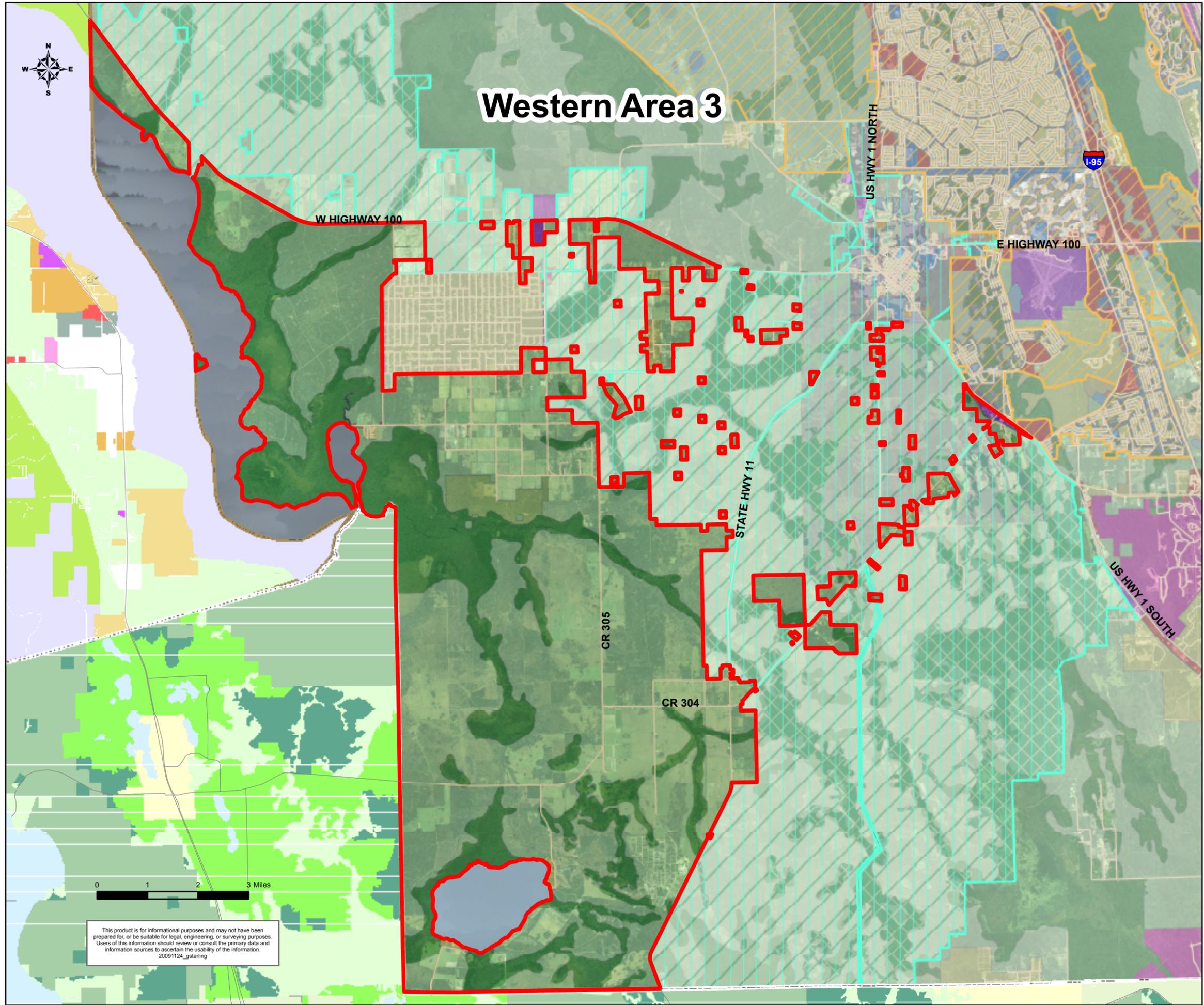


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LEGEND

- **WA3**
- **NOT IN STUDY AREA**
- FLAGLER COUNTY Future Land Use**
- CONSERVATION
- AGRICULTURE & TIMBERLANDS
- AGRICULTURE
- RESIDENTIAL: LOW DENSITY/RURAL ESTATE
- RESIDENTIAL: LOW DENSITY/SINGLE FAMILY
- RESIDENTIAL: MEDIUM DENSITY
- RESIDENTIAL: HIGH DENSITY
- COMMERCIAL: LOW INTENSITY
- COMMERCIAL: HIGH INTENSITY
- INDUSTRIAL
- RECREATION & OPEN SPACE
- EDUCATIONAL USES
- MIXED USE: LOW INTENSITY
- MIXED USE: HIGH INTENSITY
- WATER
- **CITY OF PALM COAST**
- Palm Coast Future Land Use**
- Residential
- Institutional
- Conservation
- Mixed Use
- Industrial
- Greenbelt
- DRI-Mixed Use
- DRI-Residential Area
- DRI-Urban Core
- Canals
- **CITY OF BUNNELL**
- Bunnell Future Land Use**
- AG, AGRICULTURE (BUNNELL)
- AG&T, AGRICULTURE & TIMBERLANDS (FLAGLER)
- CON-B, CONSERVATION (BUNNELL)
- CON-F, CONSERVATION (FLAGLER)
- COMM, COMMERCIAL
- COMM-LOW
- I, INDUSTRIAL
- P, PUBLIC
- R, RECREATION
- SF-L, SINGLE FAMILY - LOW DENSITY
- SF-M, SINGLE FAMILY - MEDIUM DENSITY
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- MF, MULTI-FAMILY
- MU-LOW, MIXED USE: LOW INTENSITY - LOW/MED DENSITY (FLAGLER)
- DR, DEVELOPMENT RESTRICTED
- FLOOD, FLOOD PRONE AREA
- WET, WETLANDS
- **PUTNAM COUNTY**
- Putnam County Future Land Use**
- A1 AGRICULTURE I
- A2 AGRICULTURE II
- CC CRESCENT CITY
- CN CONSERVATION
- CR COMERCIAL
- IN INDUSTRIAL
- PF PUBLIC FACILITIES
- RR RURAL RESIDENTIAL
- UR URBAN RESERVE
- US URBAN SERVICE
- **VOLUSIA COUNTY**
- Volusia County Future Land Use**
- INCORPORATED
- WATER
- ENVIRONMENTAL SYSTEMS CORRIDOR
- FORESTRY RESOURCE
- AGRICULTURE RESOURCE
- CONSERVATION
- RECREATION
- RURAL
- LOW IMPACT URBAN

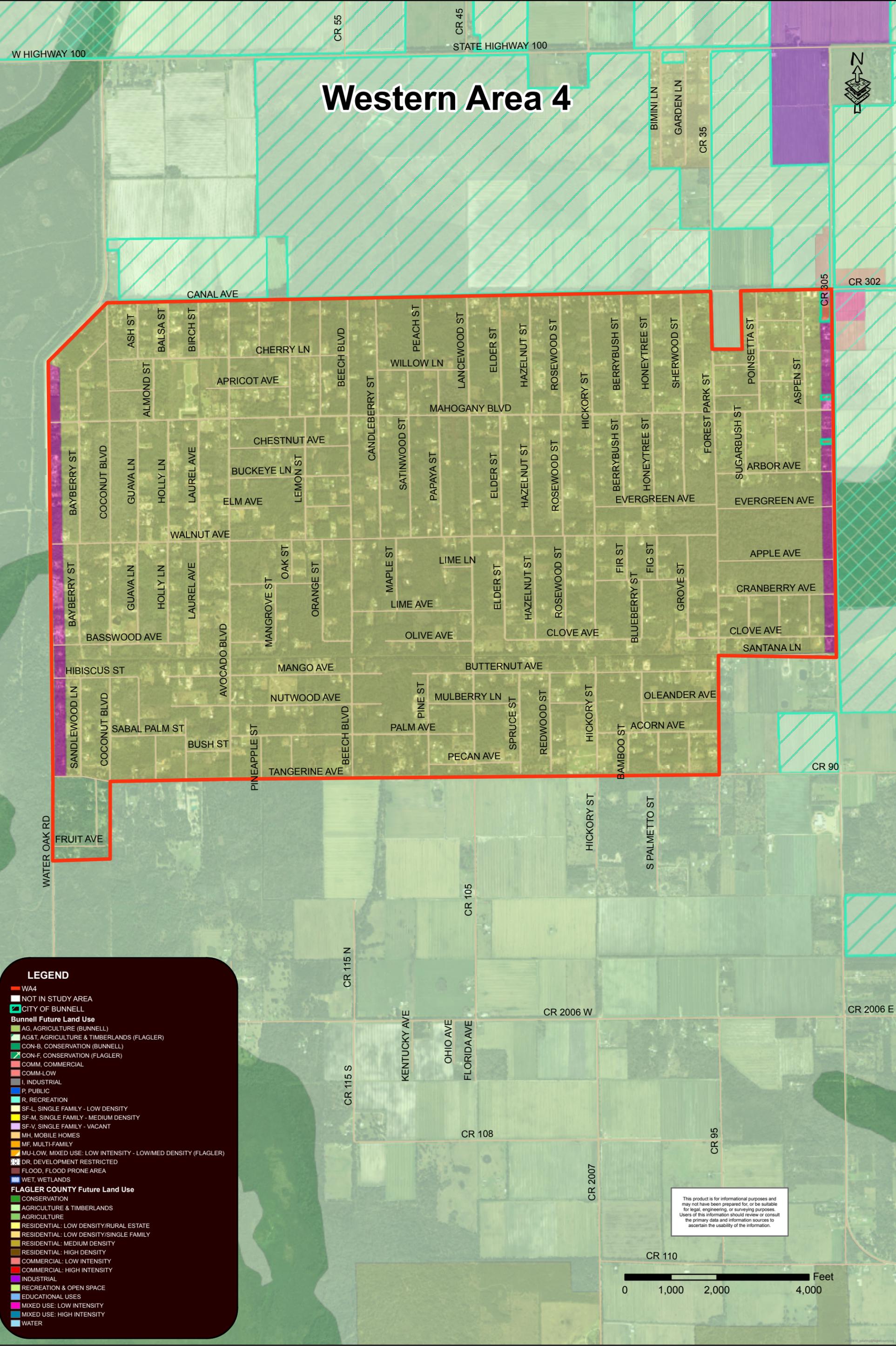
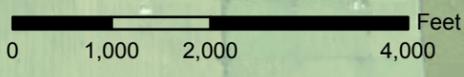


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Western Area 4



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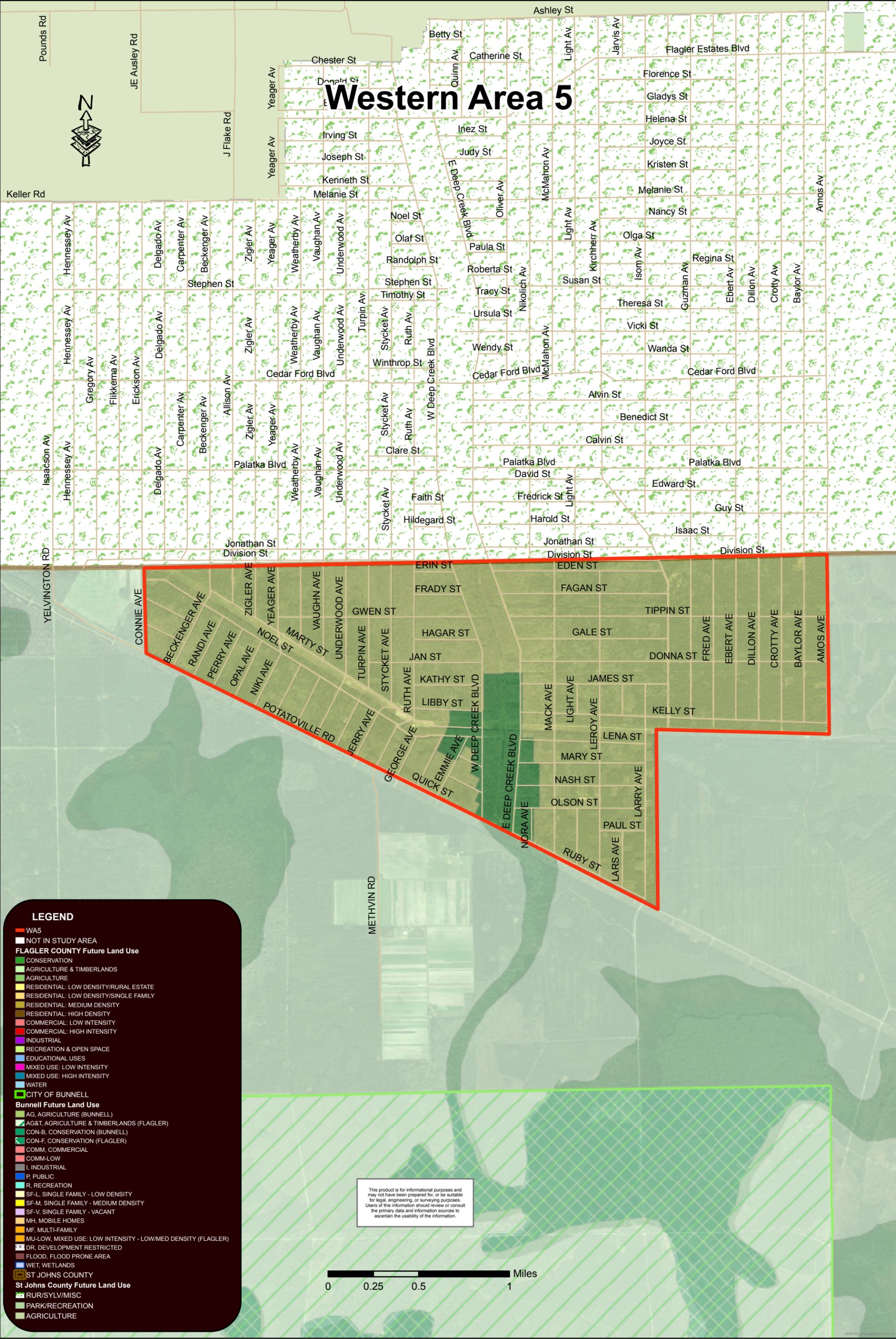


LEGEND

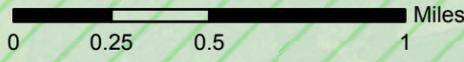
- WA4
- NOT IN STUDY AREA
- CITY OF BUNNELL
- Bunnell Future Land Use**
- AG, AGRICULTURE (BUNNELL)
- AG&T, AGRICULTURE & TIMBERLANDS (FLAGLER)
- CON-B, CONSERVATION (BUNNELL)
- CON-F, CONSERVATION (FLAGLER)
- COMM, COMMERCIAL
- COMM-LOW
- I, INDUSTRIAL
- P, PUBLIC
- R, RECREATION
- SF-L, SINGLE FAMILY - LOW DENSITY
- SF-M, SINGLE FAMILY - MEDIUM DENSITY
- SF-V, SINGLE FAMILY - VACANT
- MH, MOBILE HOMES
- MF, MULTI-FAMILY
- MU-LOW, MIXED USE: LOW INTENSITY - LOW/MED DENSITY (FLAGLER)
- DR, DEVELOPMENT RESTRICTED
- FLOOD, FLOOD PRONE AREA
- WET, WETLANDS
- FLAGLER COUNTY Future Land Use**
- CONSERVATION
- AGRICULTURE & TIMBERLANDS
- AGRICULTURE
- RESIDENTIAL: LOW DENSITY/RURAL ESTATE
- RESIDENTIAL: LOW DENSITY/SINGLE FAMILY
- RESIDENTIAL: MEDIUM DENSITY
- RESIDENTIAL: HIGH DENSITY
- COMMERCIAL: LOW INTENSITY
- COMMERCIAL: HIGH INTENSITY
- INDUSTRIAL
- RECREATION & OPEN SPACE
- EDUCATIONAL USES
- MIXED USE: LOW INTENSITY
- MIXED USE: HIGH INTENSITY
- WATER

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Western Area 5



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

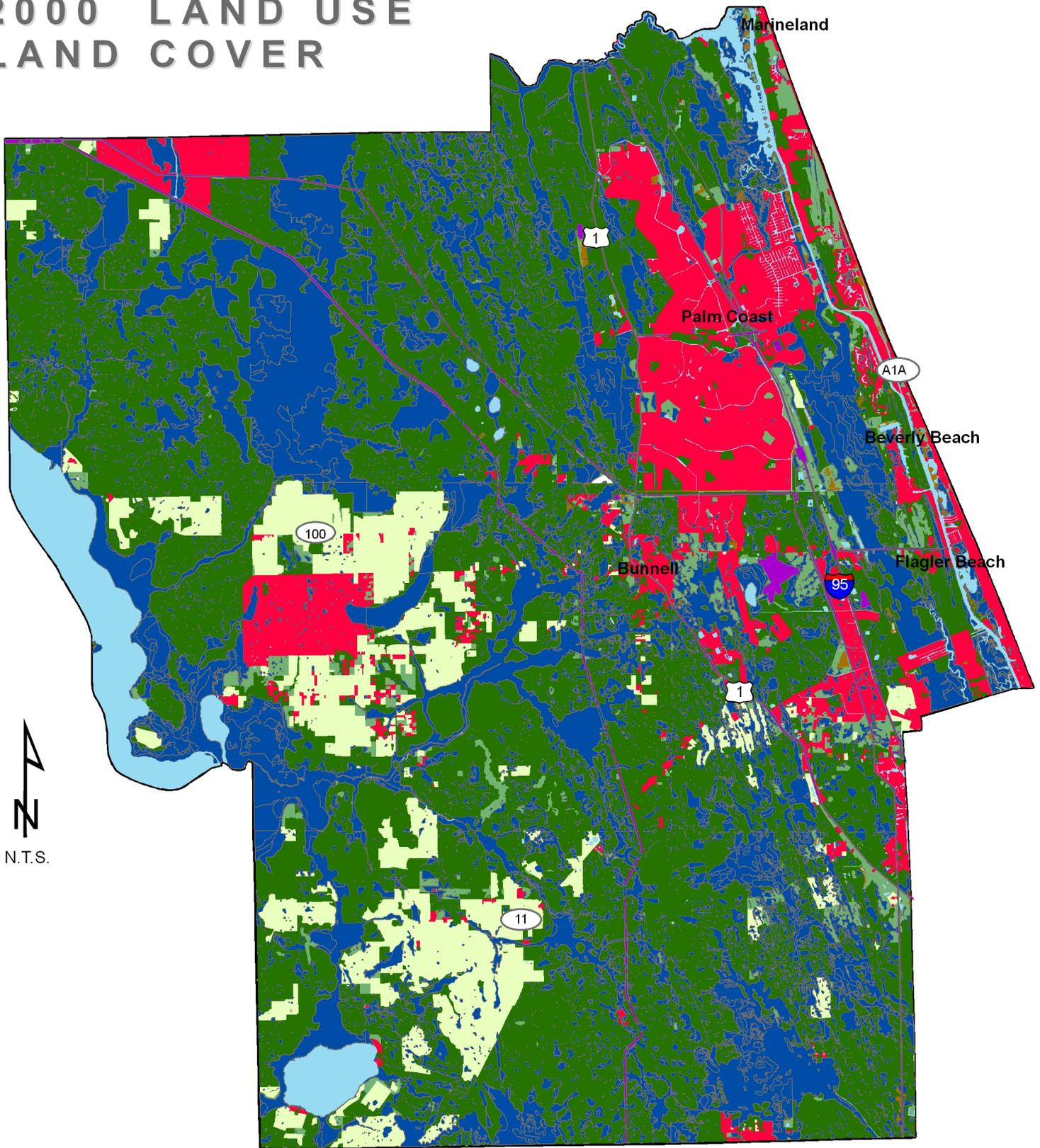


LEGEND

- WA5
- NOT IN STUDY AREA
- FLAGLER COUNTY Future Land Use**
- CONSERVATION
- AGRICULTURE & TIMBERLANDS
- AGRICULTURE
- RESIDENTIAL: LOW DENSITY/RURAL ESTATE
- RESIDENTIAL: LOW DENSITY/SINGLE FAMILY
- RESIDENTIAL: MEDIUM DENSITY
- RESIDENTIAL: HIGH DENSITY
- COMMERCIAL: LOW INTENSITY
- COMMERCIAL: HIGH INTENSITY
- INDUSTRIAL
- RECREATION & OPEN SPACE
- EDUCATIONAL USES
- MIXED USE: LOW INTENSITY
- MIXED USE: HIGH INTENSITY
- WATER
- CITY OF BUNNELL
- Bunnell Future Land Use**
- AG, AGRICULTURE (BUNNELL)
- AG&T, AGRICULTURE & TIMBERLANDS (FLAGLER)
- CON-B, CONSERVATION (BUNNELL)
- CON-F, CONSERVATION (FLAGLER)
- COMM, COMMERCIAL
- COMM-LOW
- I, INDUSTRIAL
- P, PUBLIC
- R, RECREATION
- SF-L, SINGLE FAMILY - LOW DENSITY
- SF-M, SINGLE FAMILY - MEDIUM DENSITY
- SF-V, SINGLE FAMILY - VACANT
- MH, MOBILE HOMES
- MF, MULTI-FAMILY
- MU-LOW, MIXED USE: LOW INTENSITY - LOW/MED DENSITY (FLAGLER)
- DR, DEVELOPMENT RESTRICTED
- FLOOD, FLOOD PRONE AREA
- WET, WETLANDS
- ST JOHNS COUNTY
- St Johns County Future Land Use**
- RUR/SYLV/MISC
- PARK/RECREATION
- AGRICULTURE

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2000 LAND USE LAND COVER

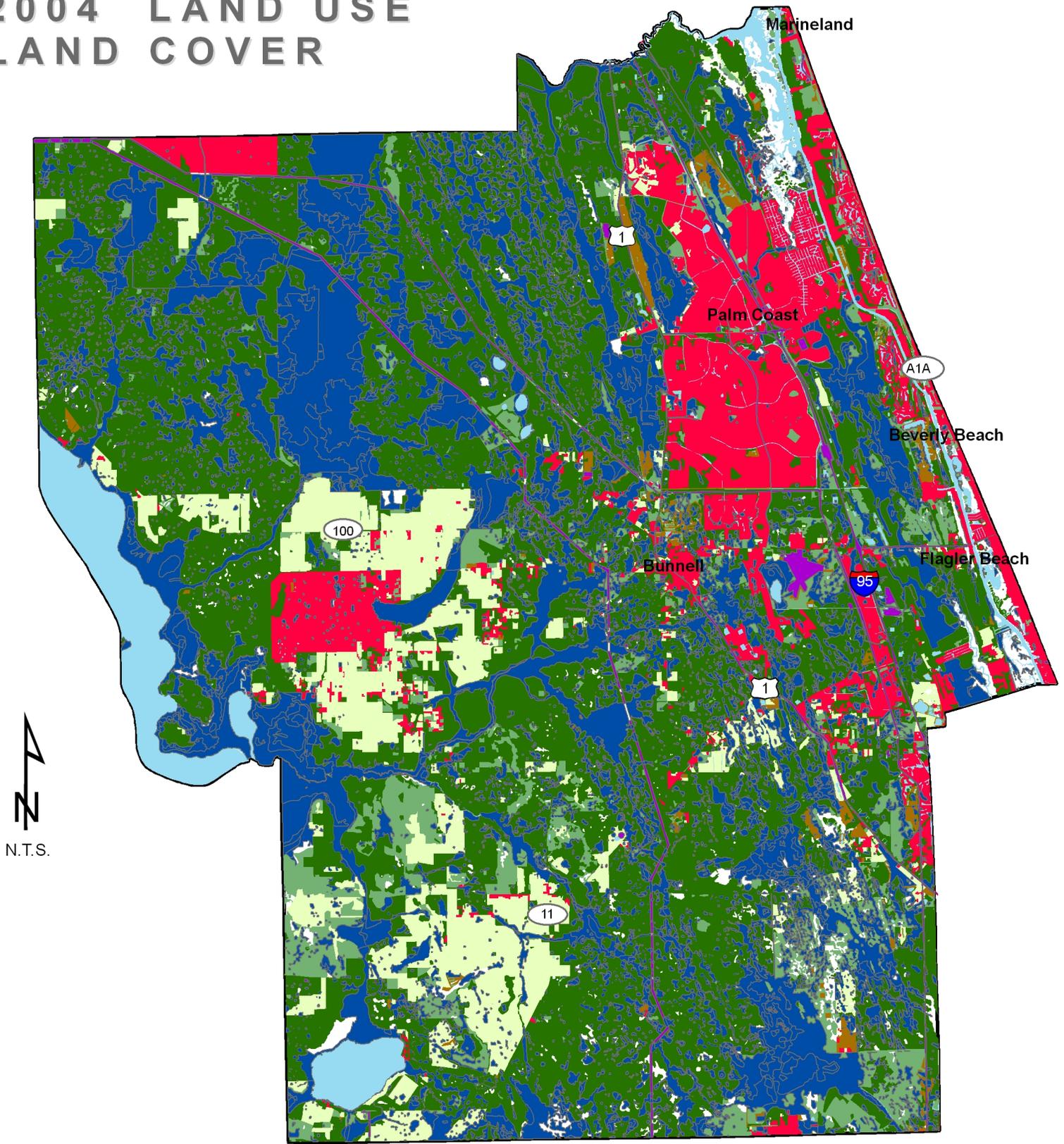


Source: SJRWMD, 2000
Created by: Northeast Florida Regional Council

This map is for reference use only. Data provided are derived from multiple sources with varying levels of accuracy. This product is for informational purposes and may not have been prepared for, legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

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2004 LAND USE LAND COVER



N
N.T.S.

2004 Land Use Land Cover

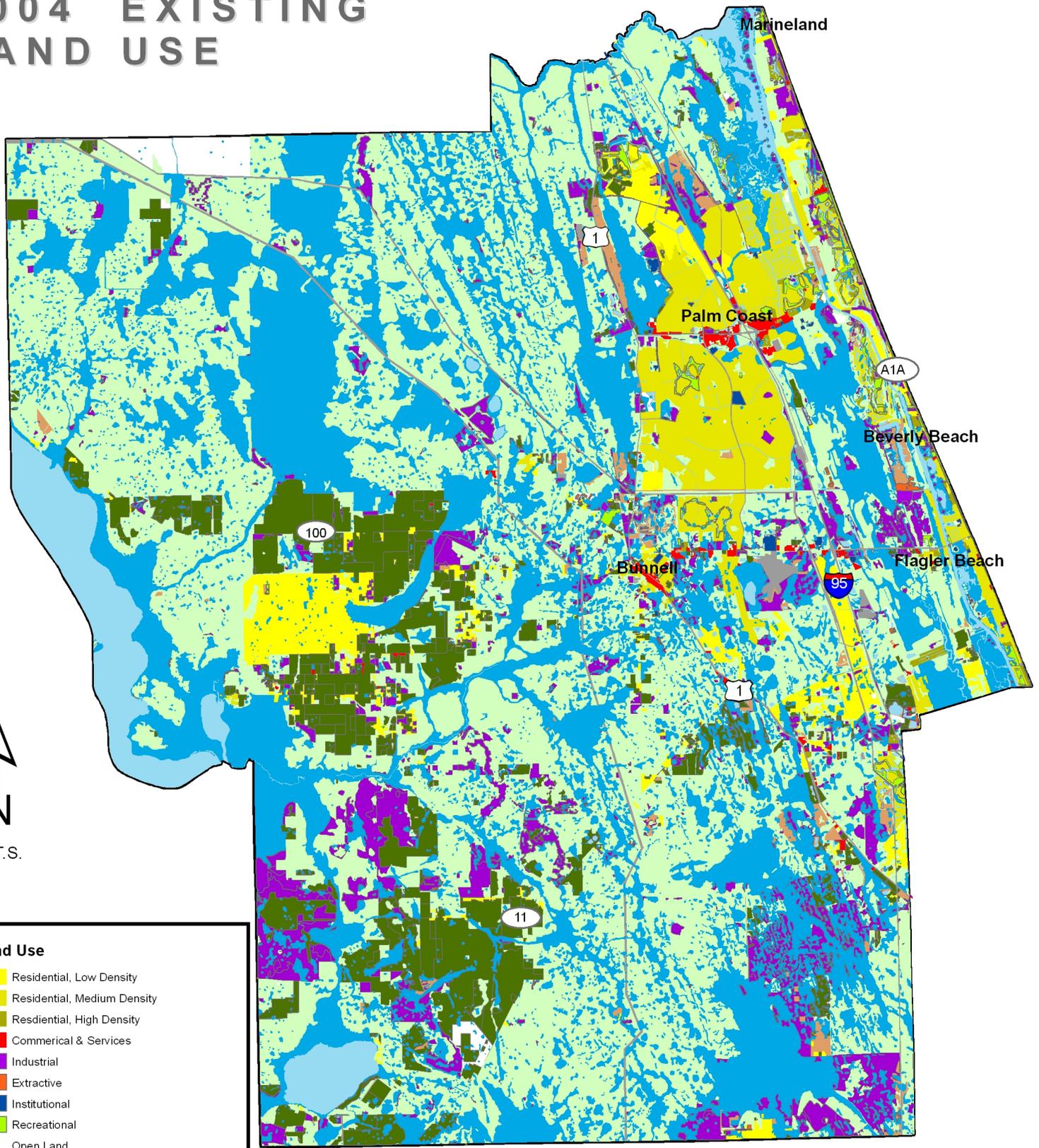
- AGRICULTURE
- BARREN LAND
- RANGELAND
- TRANSPORTATION, COMMUNICATION AND UTILITIES
- UPLAND FORESTS
- URBAN AND BUILT-UP
- WATER
- WETLANDS

Source: SJRWMD, 2004
Created by: Northeast Florida Regional Council

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2004 EXISTING LAND USE



N.T.S.

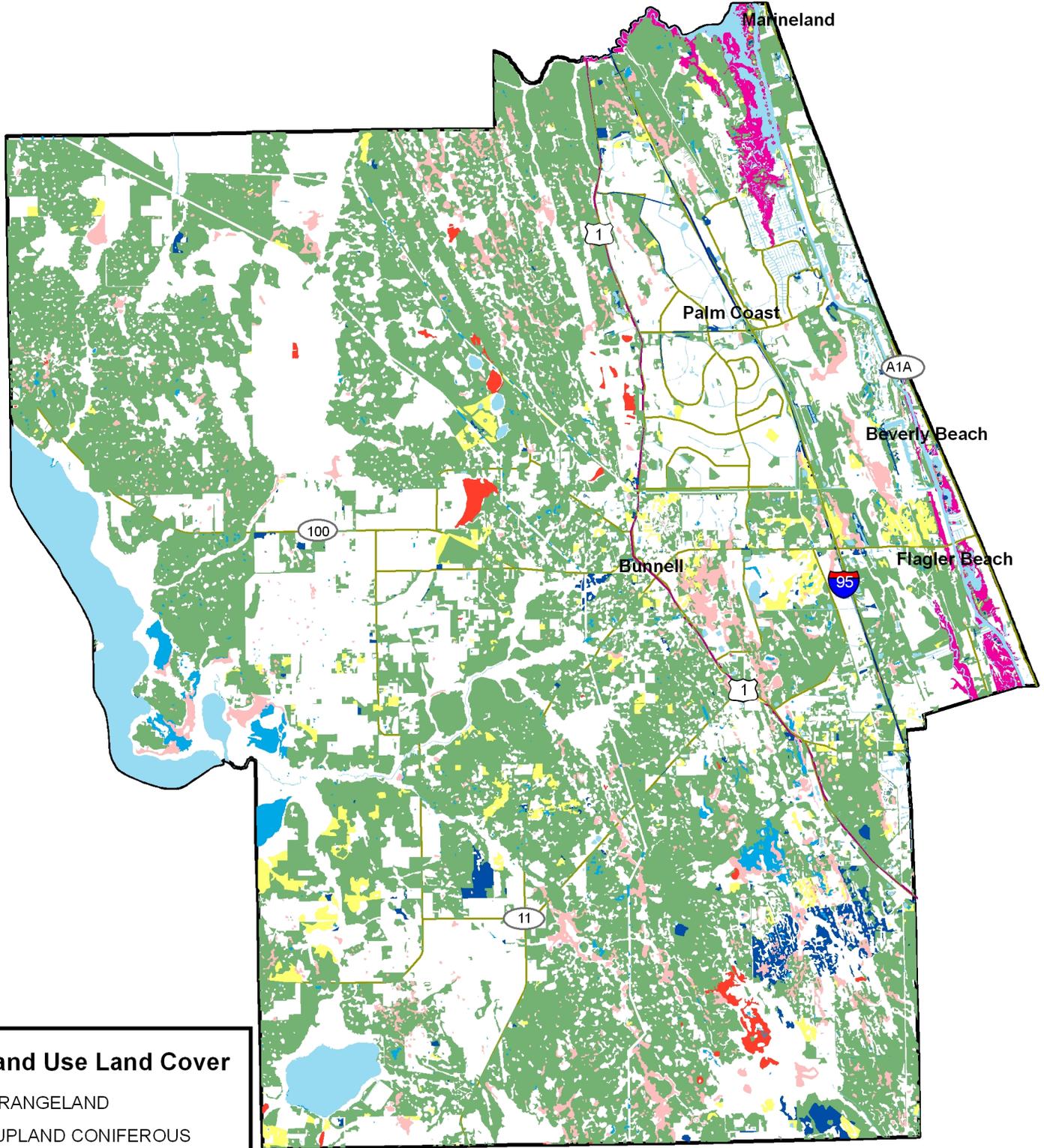
Land Use

- Residential, Low Density
- Residential, Medium Density
- Residential, High Density
- Commercial & Services
- Industrial
- Extractive
- Institutional
- Recreational
- Open Land
- Agriculture
- Upland Non-Forested
- Upland Forested
- Water
- Wetlands
- Barren Lands
- Transportation, Communications & Utilities

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VEGETATION



N.T.S.

2004 Land Use Land Cover

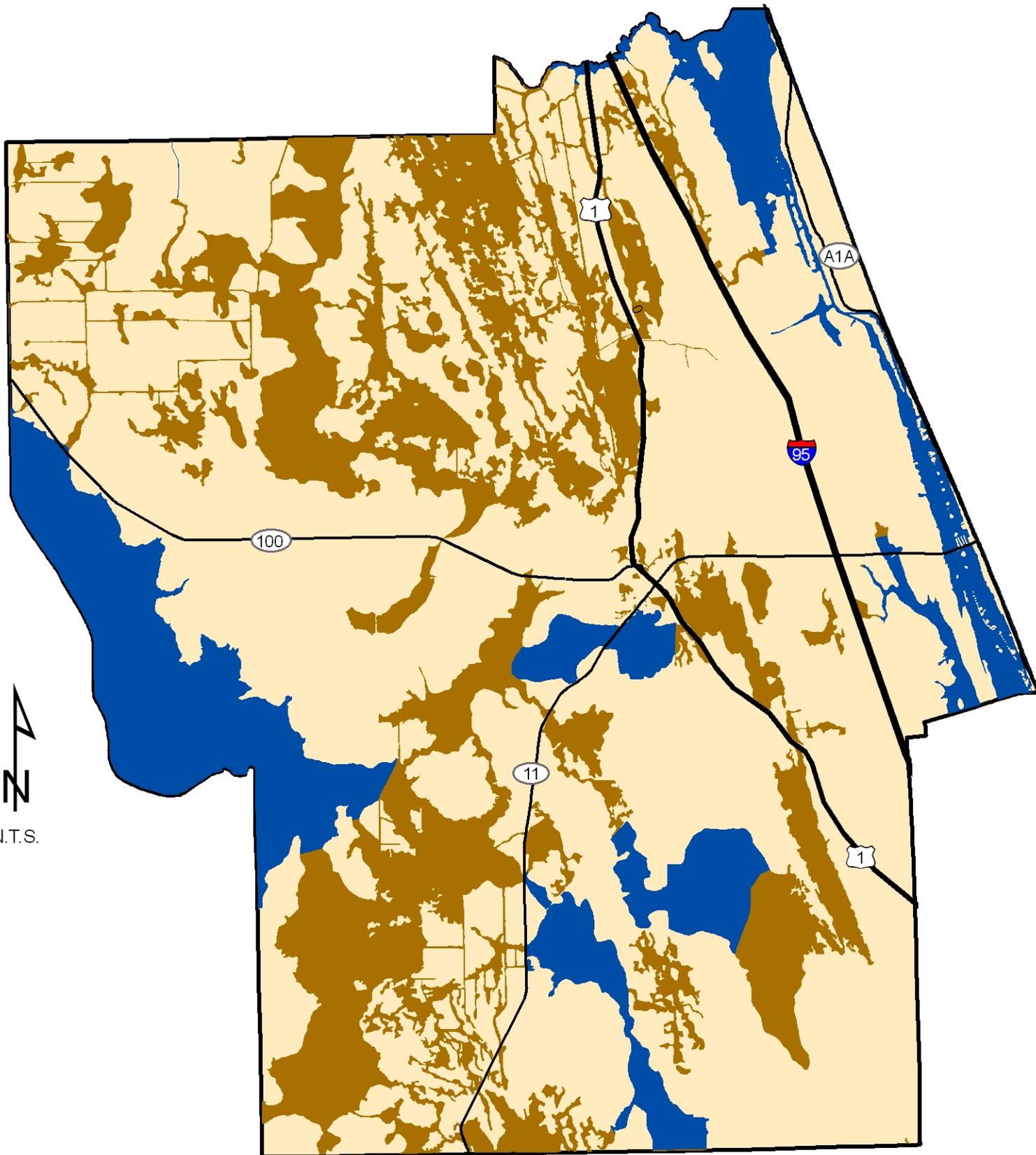
- RANGELAND
- UPLAND CONIFEROUS
- UPLAND HARDWOOD
- SWAMP HARDWOOD
- FRESHWATER MARSHES
- CYPRESS
- SALTWATER MARSHES
- WATER

Source: SJRWMD, 2004
Created by: Northeast Florida Regional Council

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100 YEAR FLOODPLAIN MAP



Legend

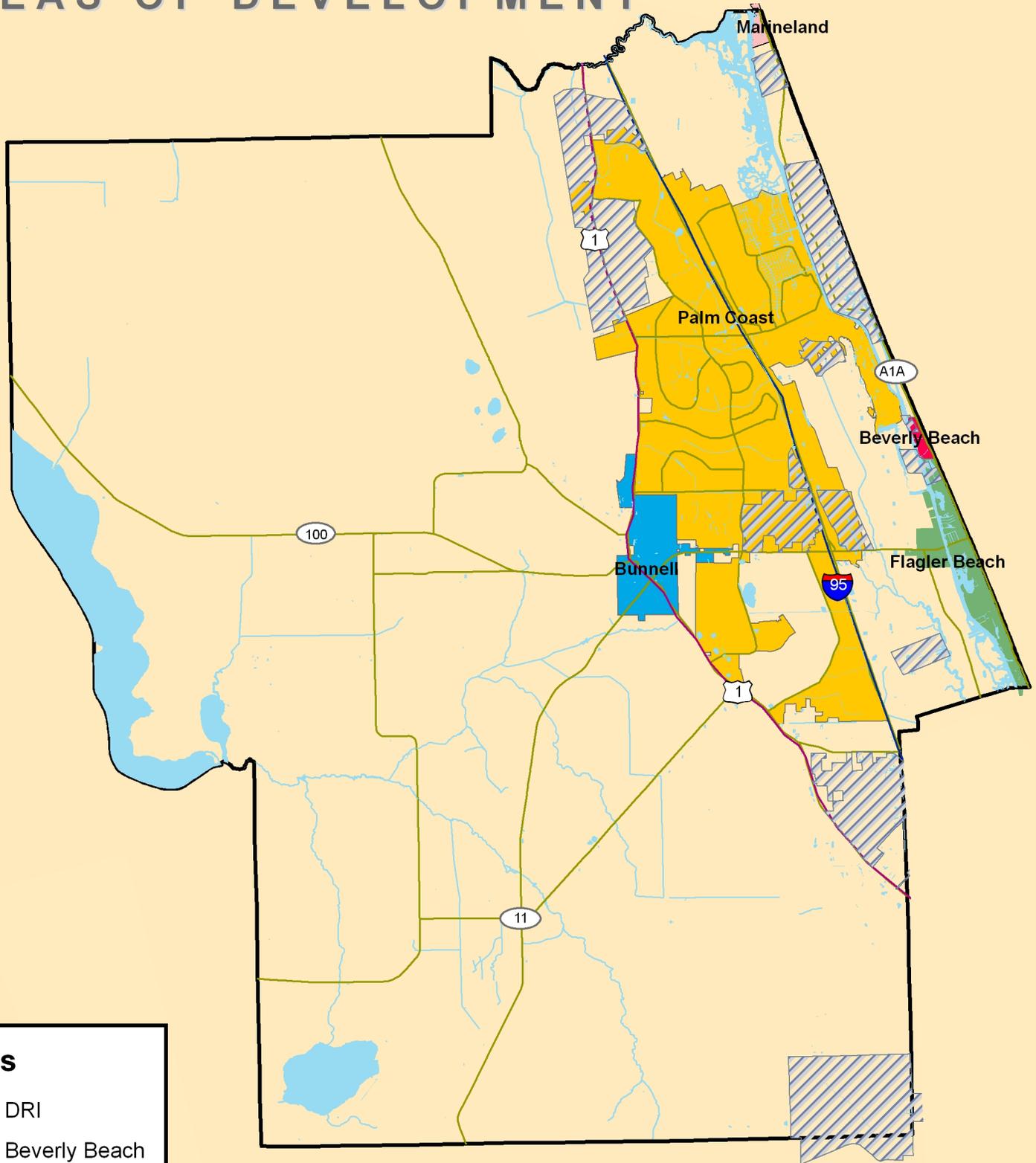
-  Determined Base Flood Elevations
-  No Base Flood Elevations Determined

Source: Federal Emergency Management Agency
Created by: Northeast Florida Regional Council

This map is for reference use only. Data provided are derived from multiple sources with varying levels of accuracy. This product is for informational purposes and may not have been prepared for, legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

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AREAS OF DEVELOPMENT



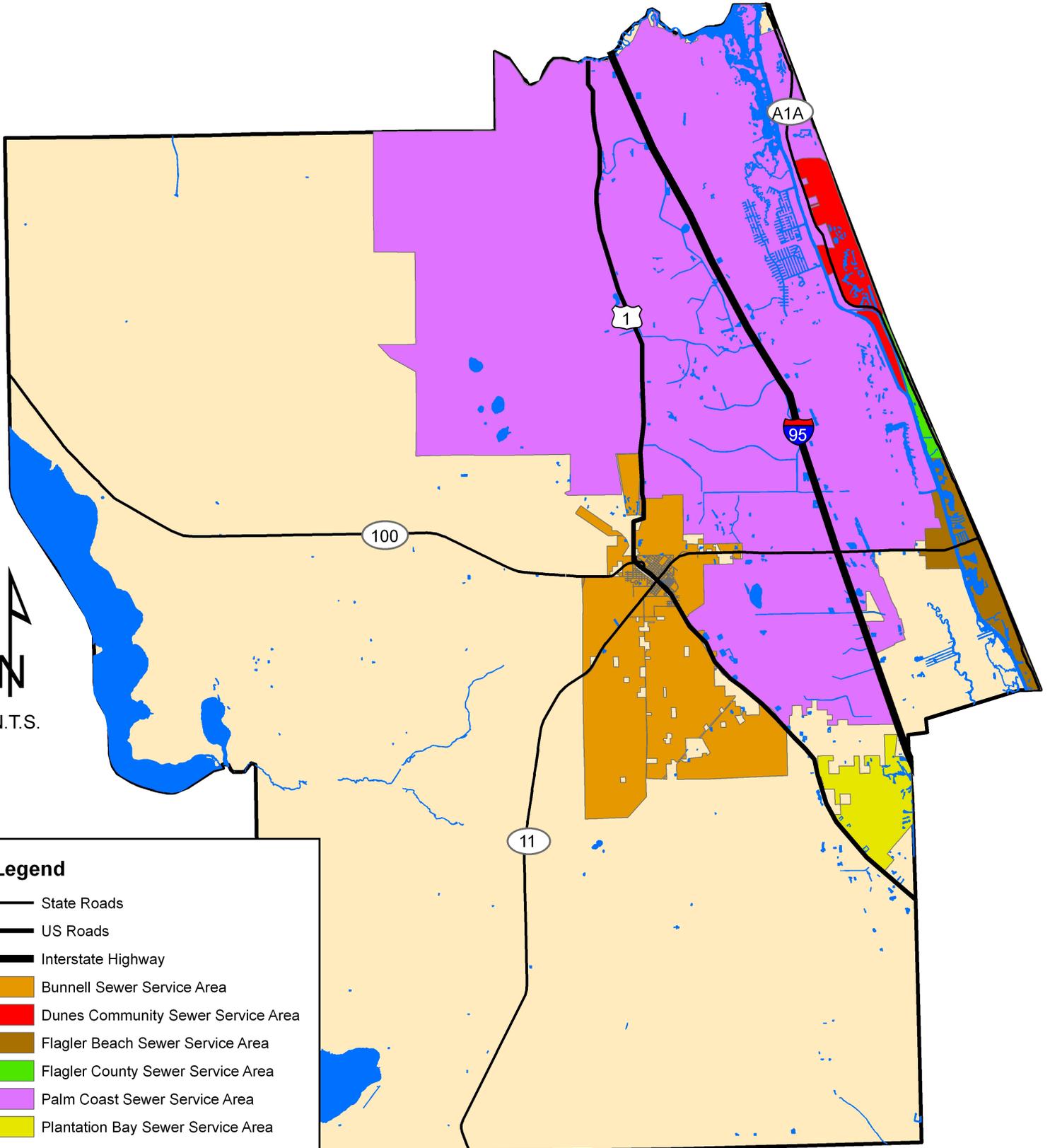
Areas

-  DRI
-  Beverly Beach
-  Bunnell
-  Flagler Beach
-  Marineland
-  Palm Coast

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AREAS SERVED BY CENTRALIZED SANITARY SEWER SYSTEMS

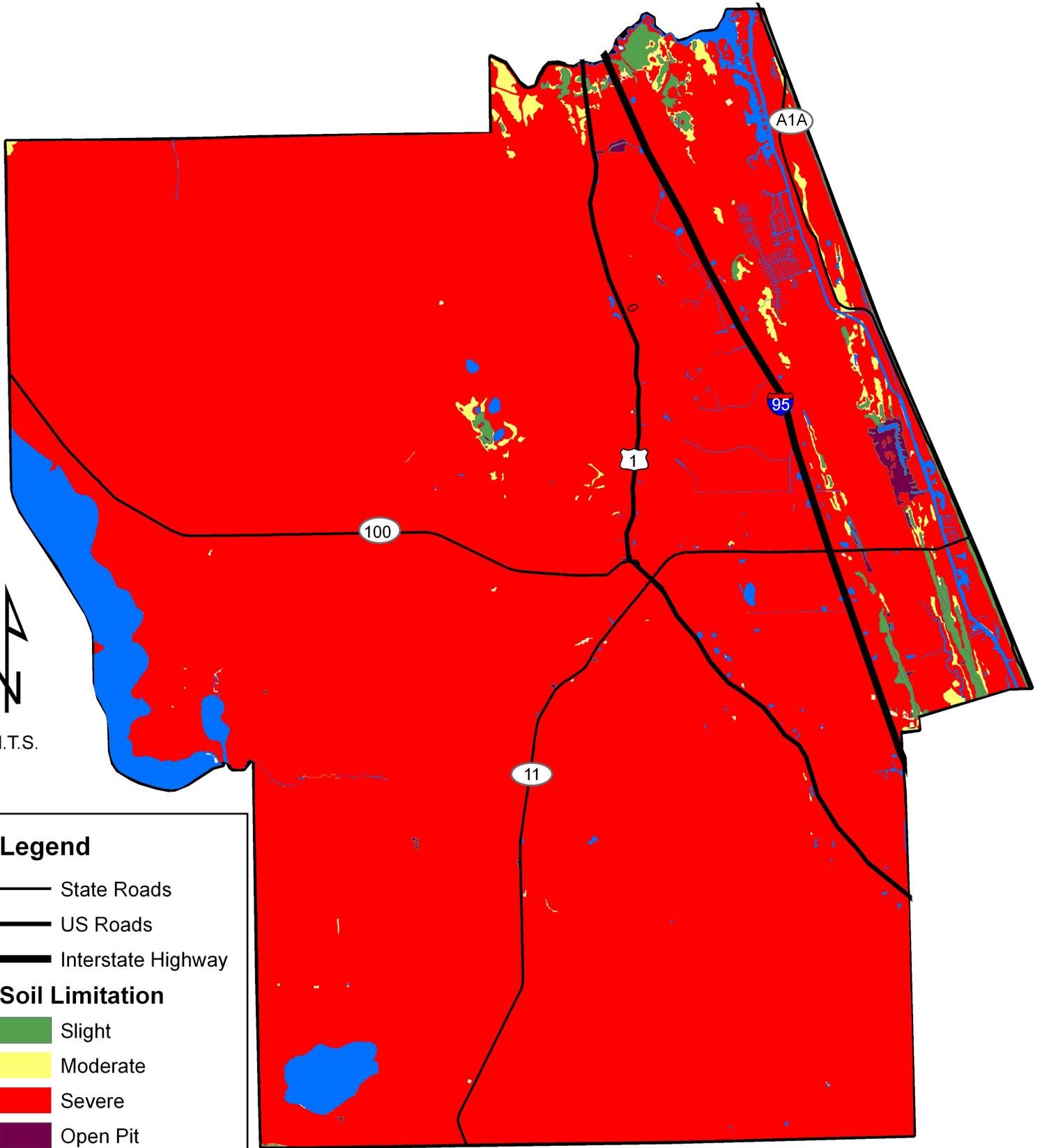


Source: City of Palm Coast, Florida
Created by: Northeast Florida Regional Council

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SOIL LIMITATIONS TO SEPTIC TANKS



Legend

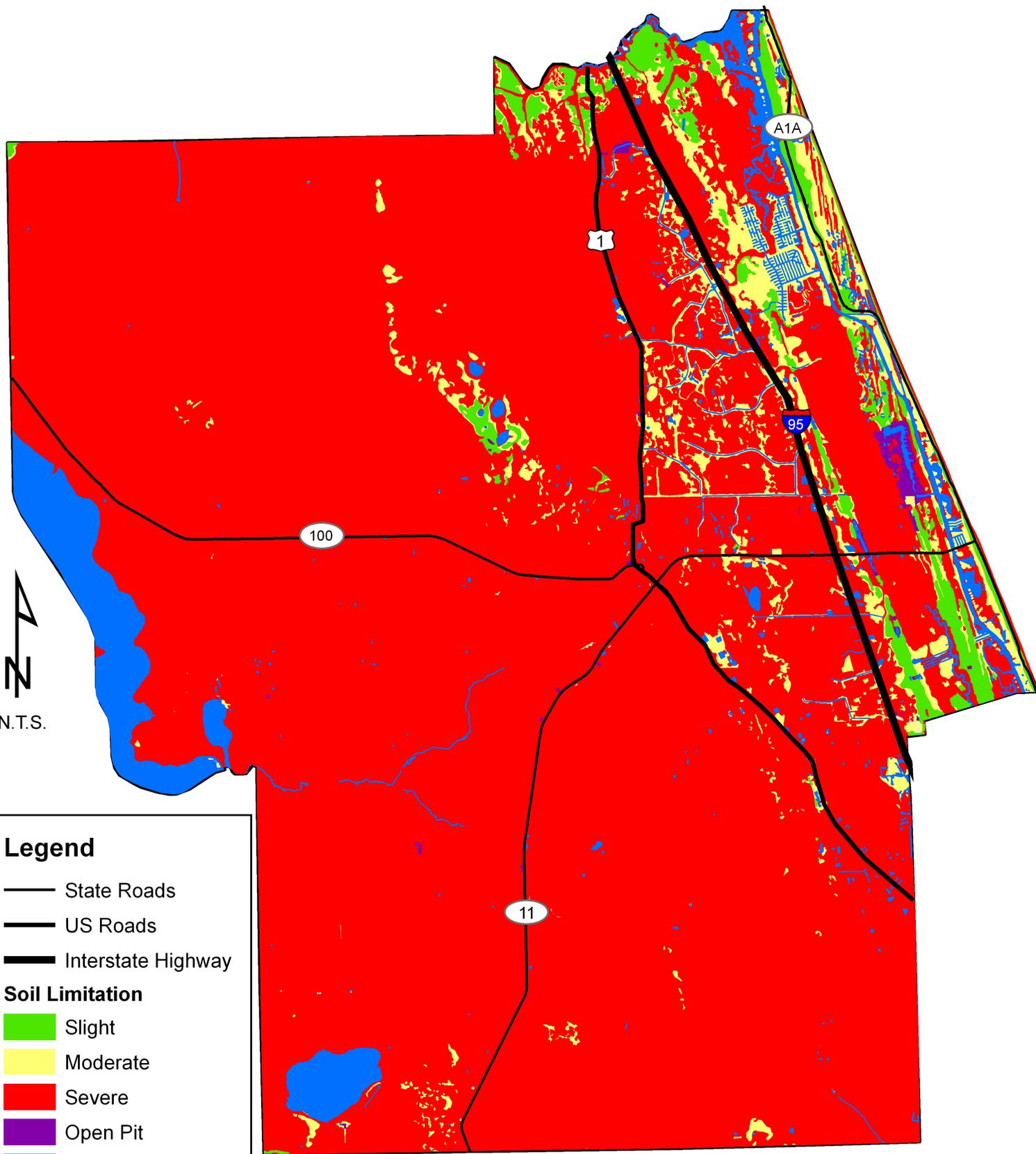
- State Roads
- US Roads
- Interstate Highway

Soil Limitation

- Slight
- Moderate
- Severe
- Open Pit
- Surface Water

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SOIL LIMITATIONS FOR DWELLINGS



N.T.S.

Legend

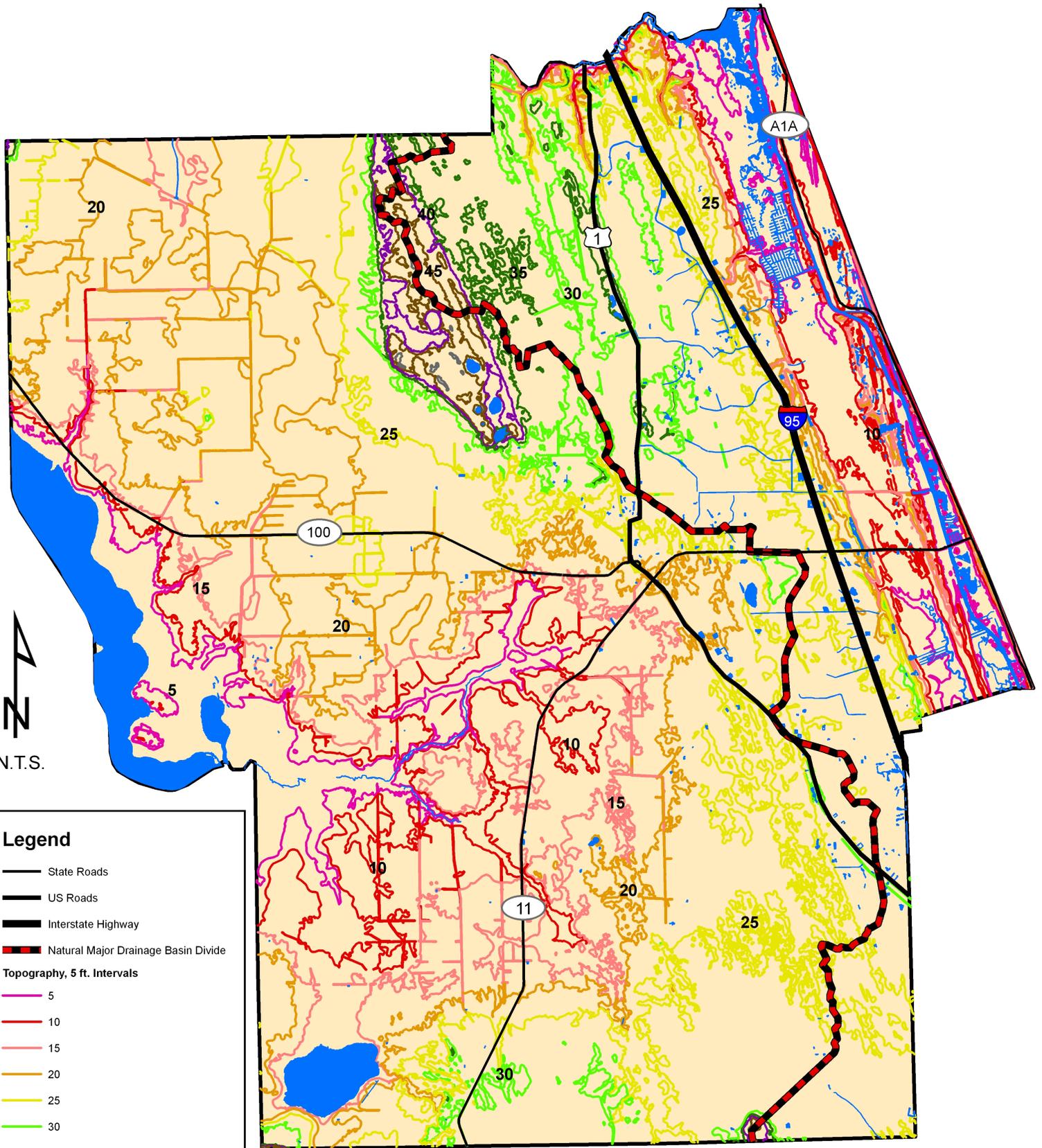
- State Roads
- US Roads
- Interstate Highway

Soil Limitation

- Slight
- Moderate
- Severe
- Open Pit
- Surface Water

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TOPOGRAPHY OF FLAGLER COUNTY

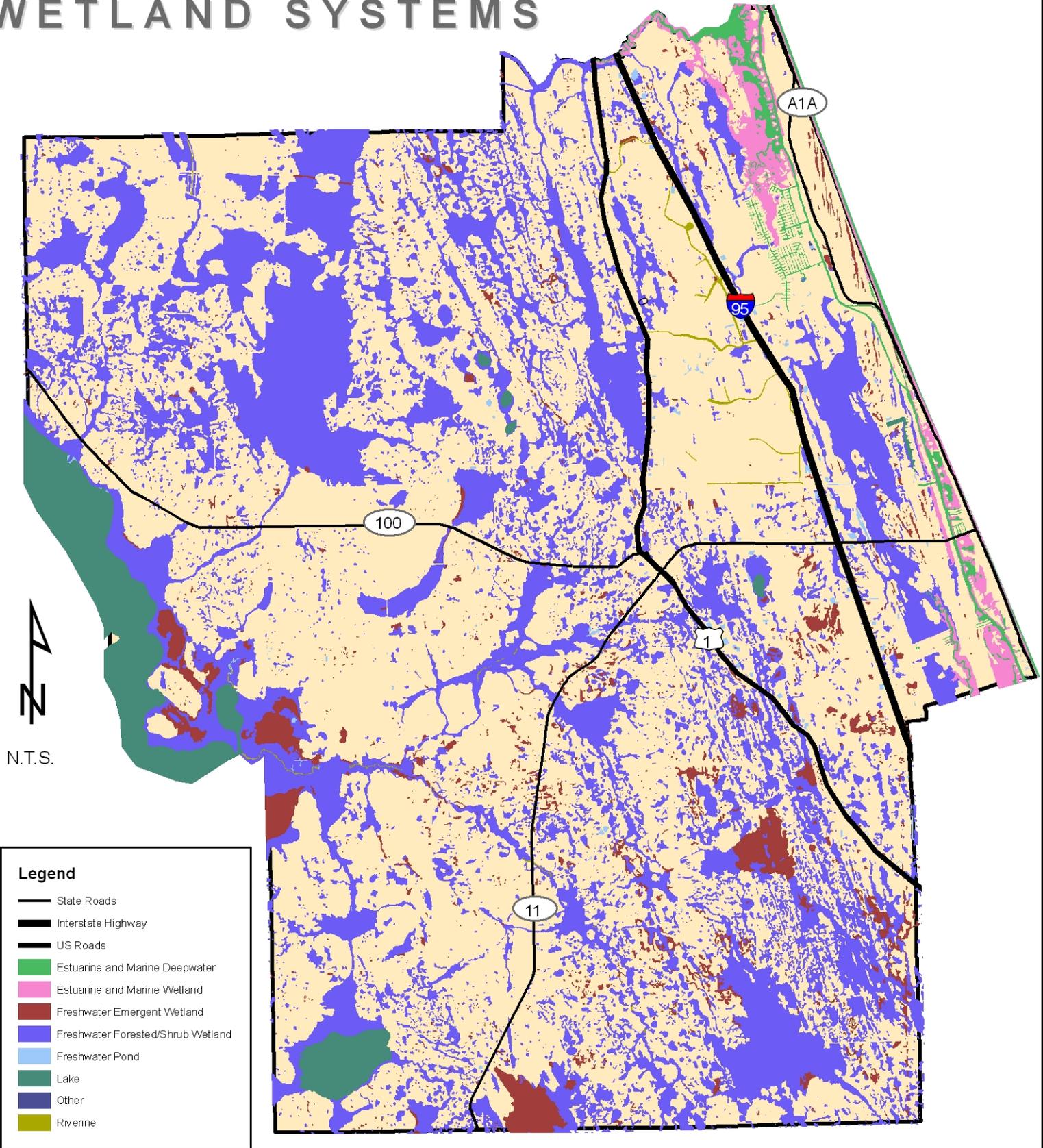


Legend

- State Roads
- US Roads
- Interstate Highway
- Natural Major Drainage Basin Divide
- Topography, 5 ft. Intervals**
- 5
- 10
- 15
- 20
- 25
- 30
- 35
- 40
- 45
- 50

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NATIONAL WETLANDS INVENTORY WETLAND SYSTEMS

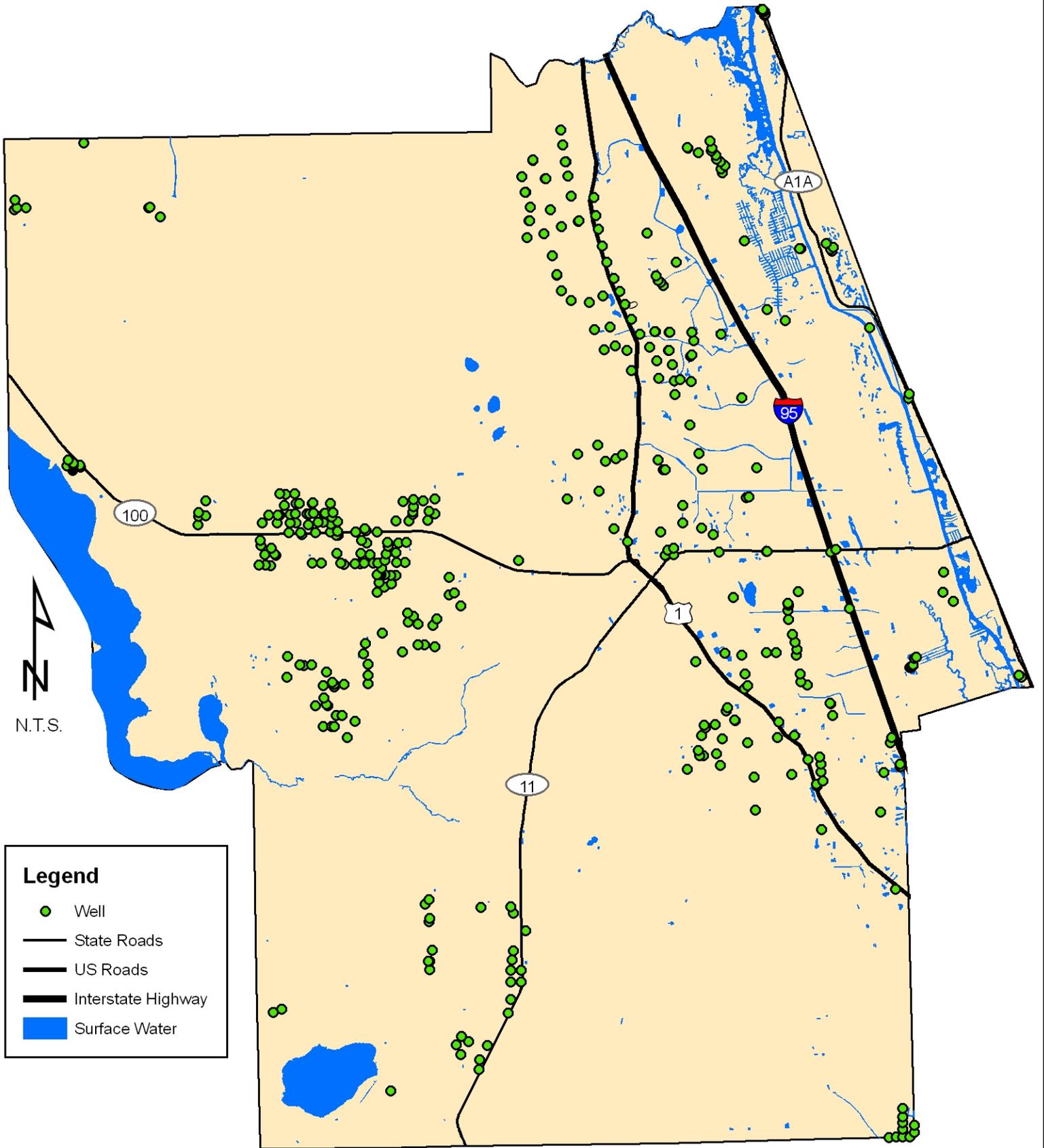


Source: St. Johns River Water Management District
Created by: Northeast Florida Regional Council

This map is for reference use only. Data provided are derived from multiple sources with varying levels of accuracy. This product is for informational purposes and may not have been prepared for, legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

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PUBLIC SUPPLY WELLS 2007

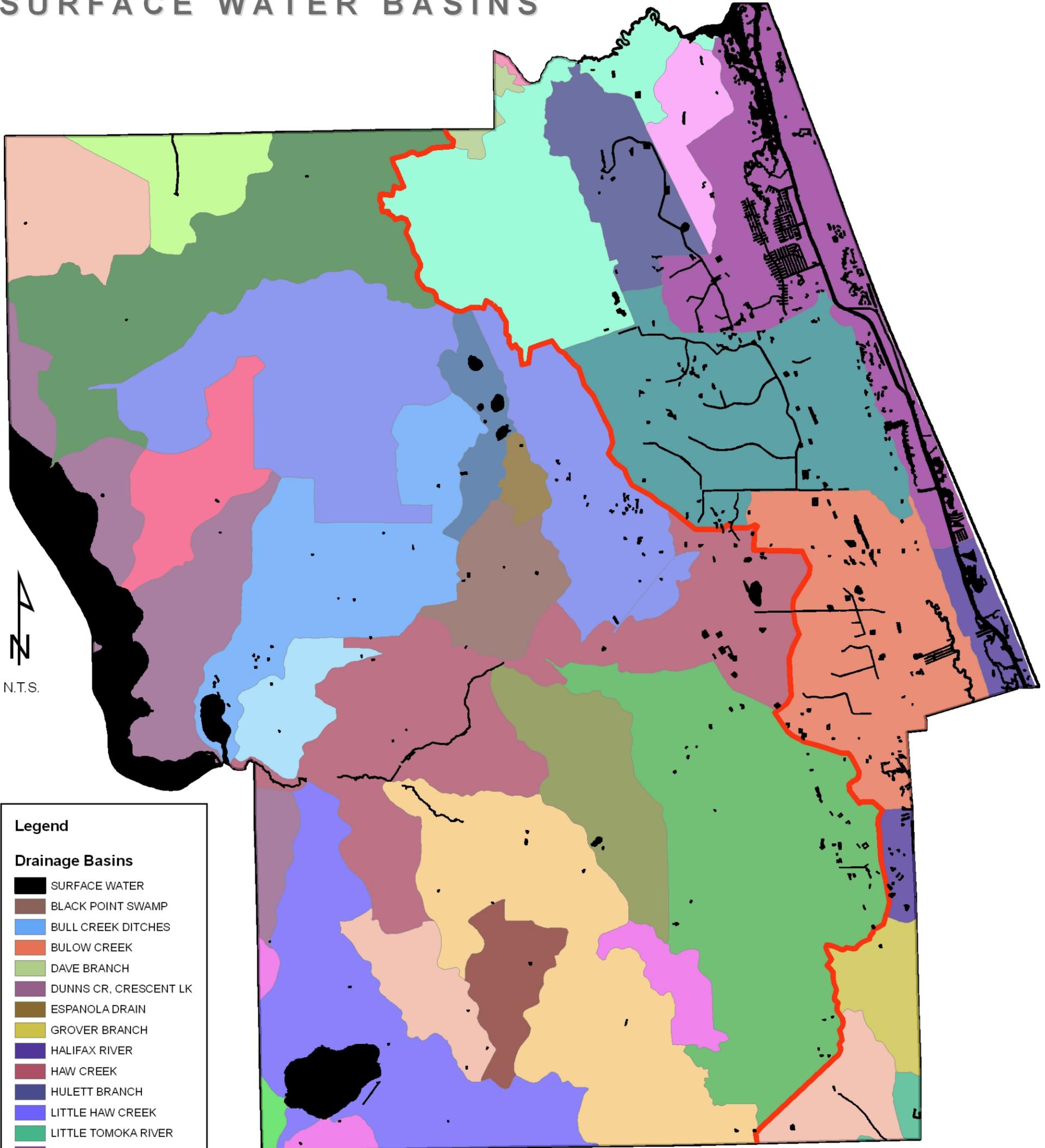


Source: St. Johns River Water Management District
Created by: Northeast Florida Regional Council

This map is for reference use only. Data provided are derived from multiple sources with varying levels of accuracy. This product is for informational purposes and may not have been prepared for, legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

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SURFACE WATERS & SURFACE WATER BASINS



Legend

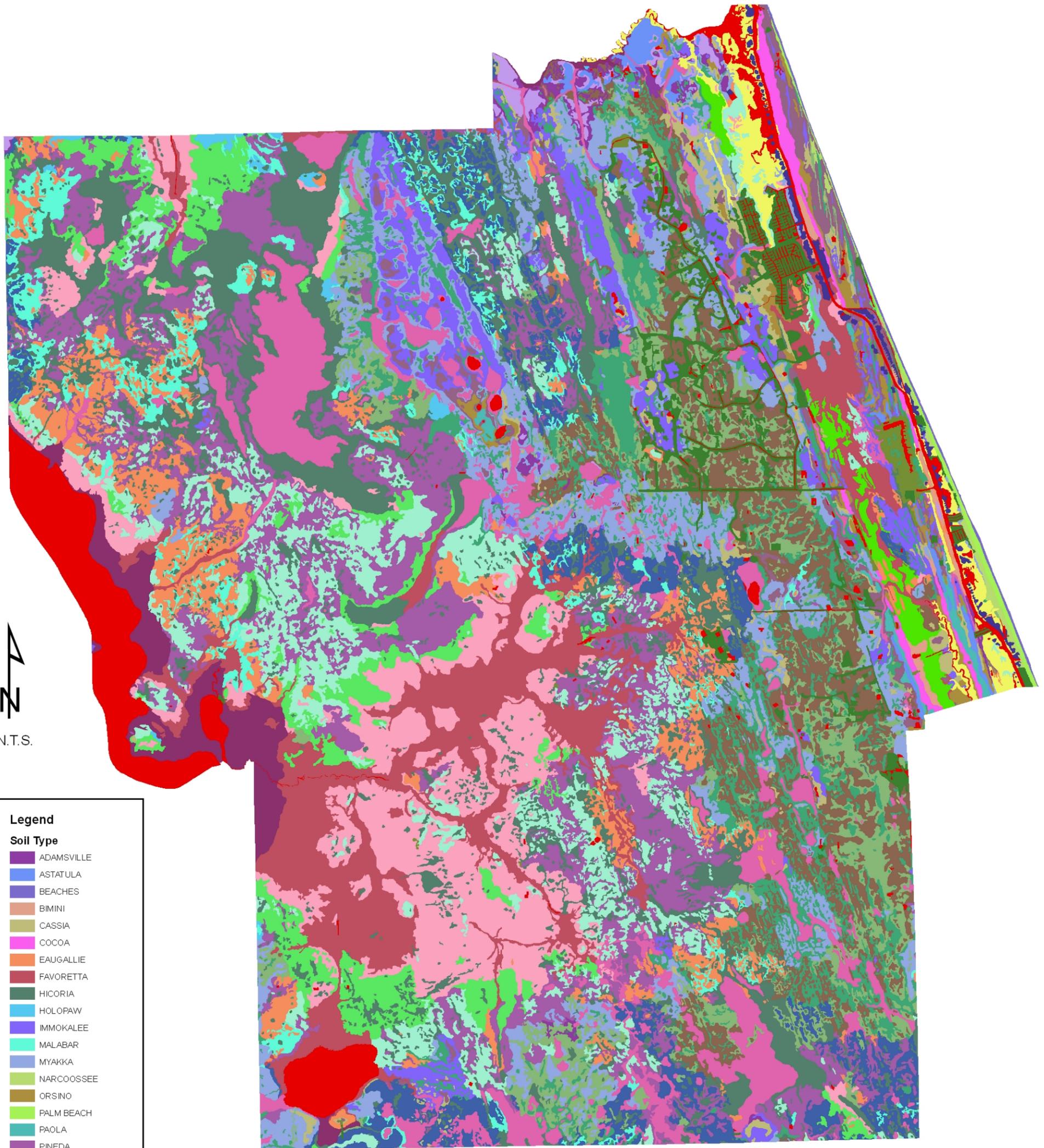
Drainage Basins

- SURFACE WATER
- BLACK POINT SWAMP
- BULL CREEK DITCHES
- BULOW CREEK
- DAVE BRANCH
- DUNNS CR, CRESCENT LK
- ESPANOLA DRAIN
- GROVER BRANCH
- HALIFAX RIVER
- HAW CREEK
- HULETT BRANCH
- LITTLE HAW CREEK
- LITTLE TOMOKA RIVER
- MATANZAS RIVER
- MIDDLE HAW CREEK
- MUD LAKE OUTLET
- PARKER CANAL
- PELLICER CREEK
- SALT CREEK DITCHES
- SAW GRASS BAY
- SIXTEENMILE CREEK
- ST. JOE CANAL
- STEVENS BRANCH
- STYLES CREEK
- SWEETWATER BRANCH
- TANK LAKE OUTLET
- UNNAMED BRANCH
- UNNAMED CANAL
- UNNAMED DITCHES
- UNNAMED SLOUGH
- WHITE OAK SWAMP

Regions to the West of the red line are in the Lower St. Johns River Basin.
Regions to the East of the red line are in the North Coastal Basin.

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GENERAL SOIL MAP



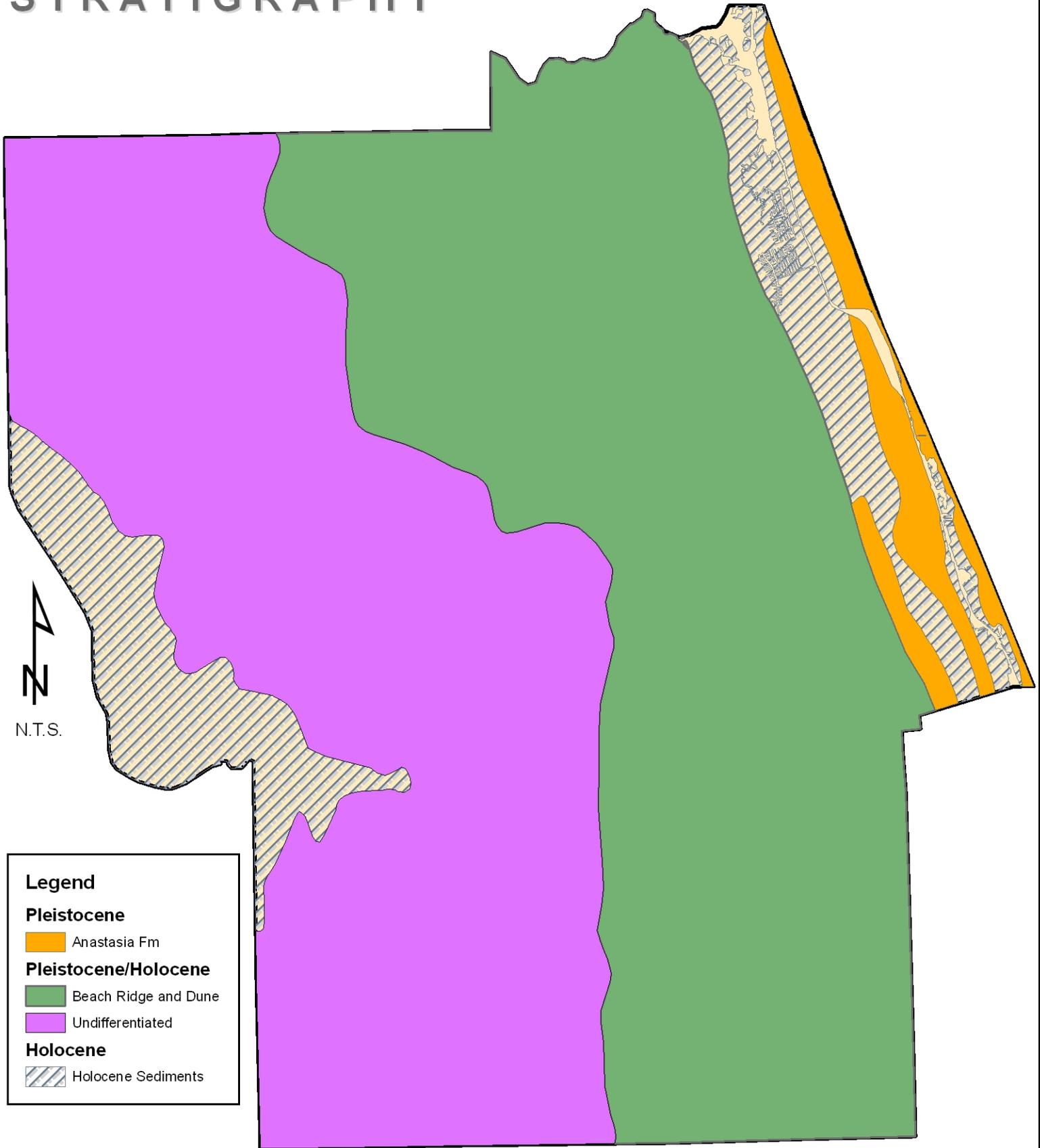
Legend

Soil Type

ADAMSVILLE
ASTATULA
BEACHES
BIMINI
CASSIA
COCOA
EAUGALLIE
FAVORETTA
HICORIA
HOLOPAW
IMMOKALEE
MALABAR
MYAKKA
NARCOOSSEE
ORSINO
PALM BEACH
PAOLA
PINEDA
PITS
PLACID
POMELLO
POMONA
QUARTZIPSAMMENTS
RIVIERA
SAMSULA
SMYRNA
TAVARES
TERRA CEIA
TURNBULL
TUSCAWILLA
UDARENTS
VALKARIA
WABASSO
WATER
WINDER

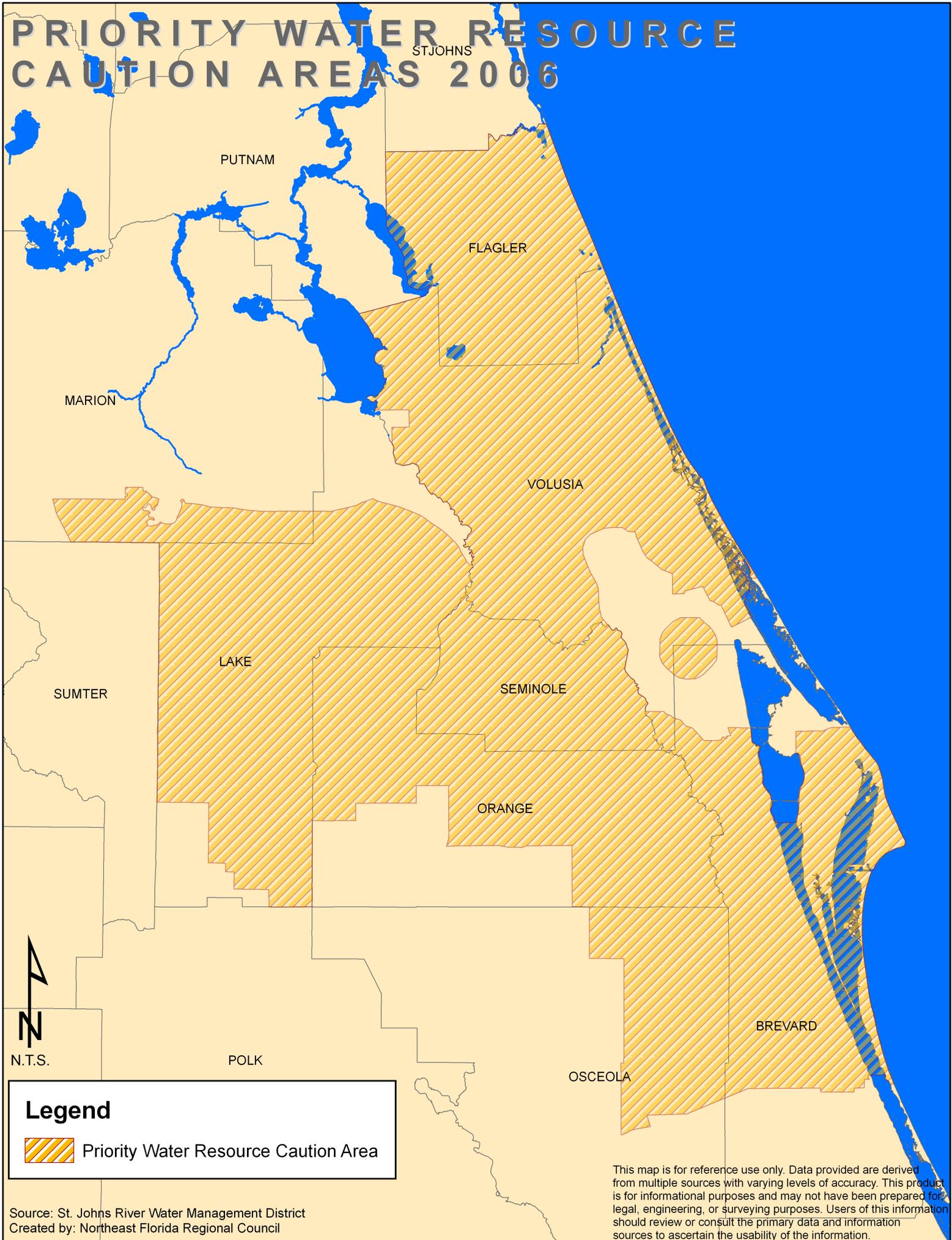
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ROCK AND MINERAL RESOURCES STRATIGRAPHY



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PRIORITY WATER RESOURCE CAUTION AREAS 2006



STJOHNS

PUTNAM

FLAGLER

MARION

VOLUSIA

LAKE

SUMTER

SEMINOLE

ORANGE

BREVARD

POLK

OSCEOLA



N.T.S.

Legend

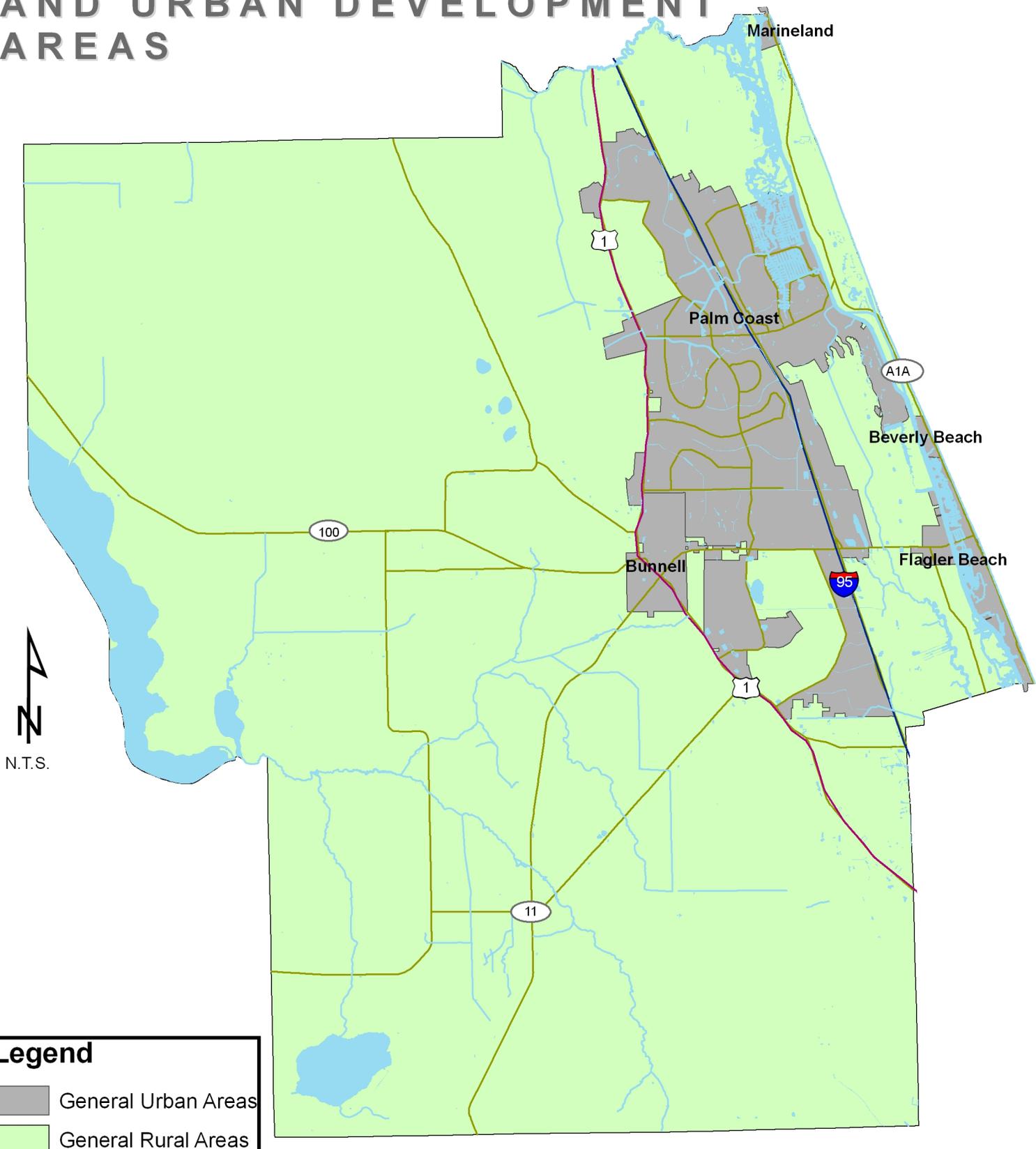
 Priority Water Resource Caution Area

Source: St. Johns River Water Management District
Created by: Northeast Florida Regional Council

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GENERAL RURAL AND URBAN DEVELOPMENT AREAS



Legend

- General Urban Areas
- General Rural Areas

Source: US Census and TIGER
Created by: Northeast Florida Regional Council

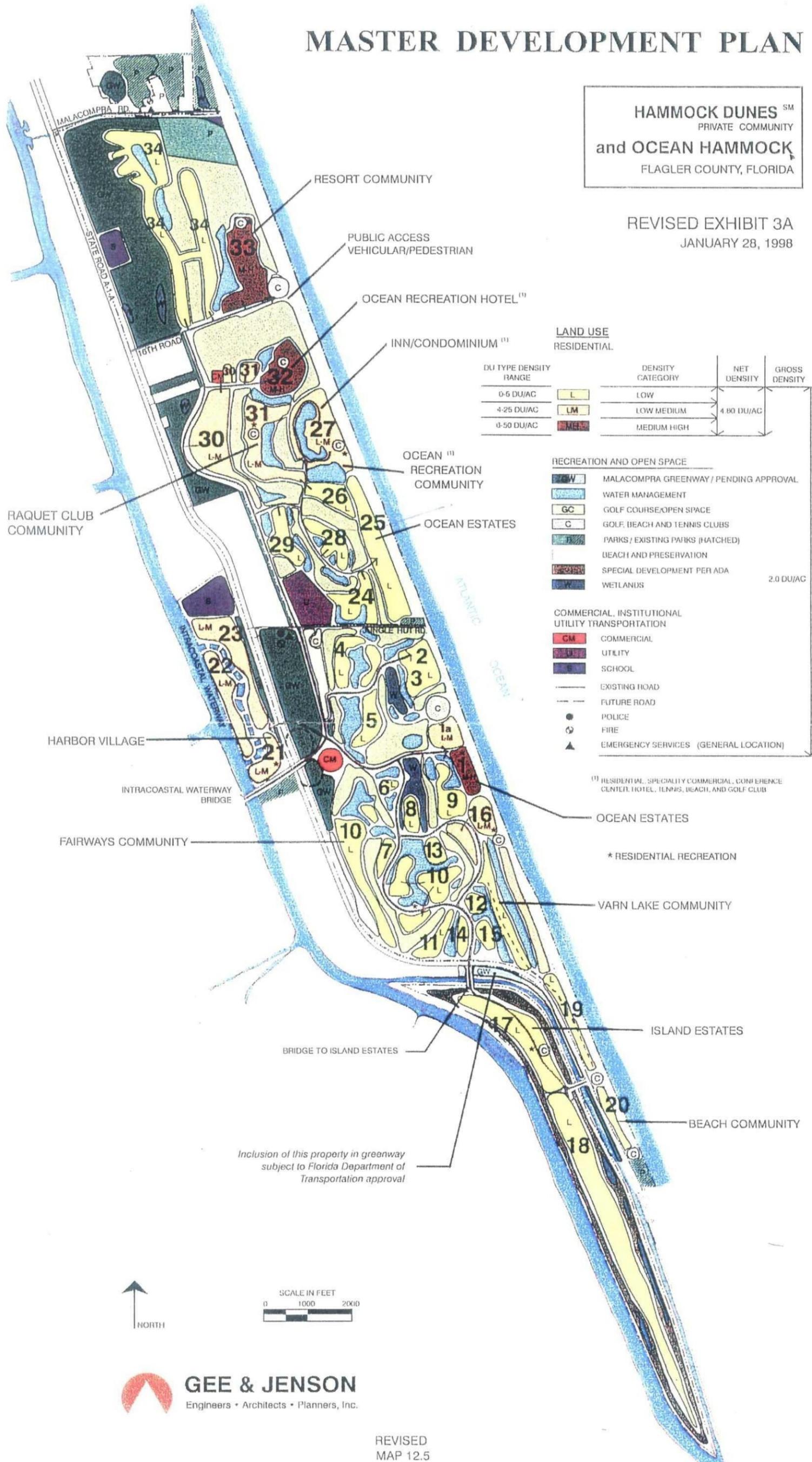
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MASTER DEVELOPMENT PLAN

HAMMOCK DUNESSM
PRIVATE COMMUNITY
and OCEAN HAMMOCK
FLAGLER COUNTY, FLORIDA

REVISED EXHIBIT 3A
JANUARY 28, 1998



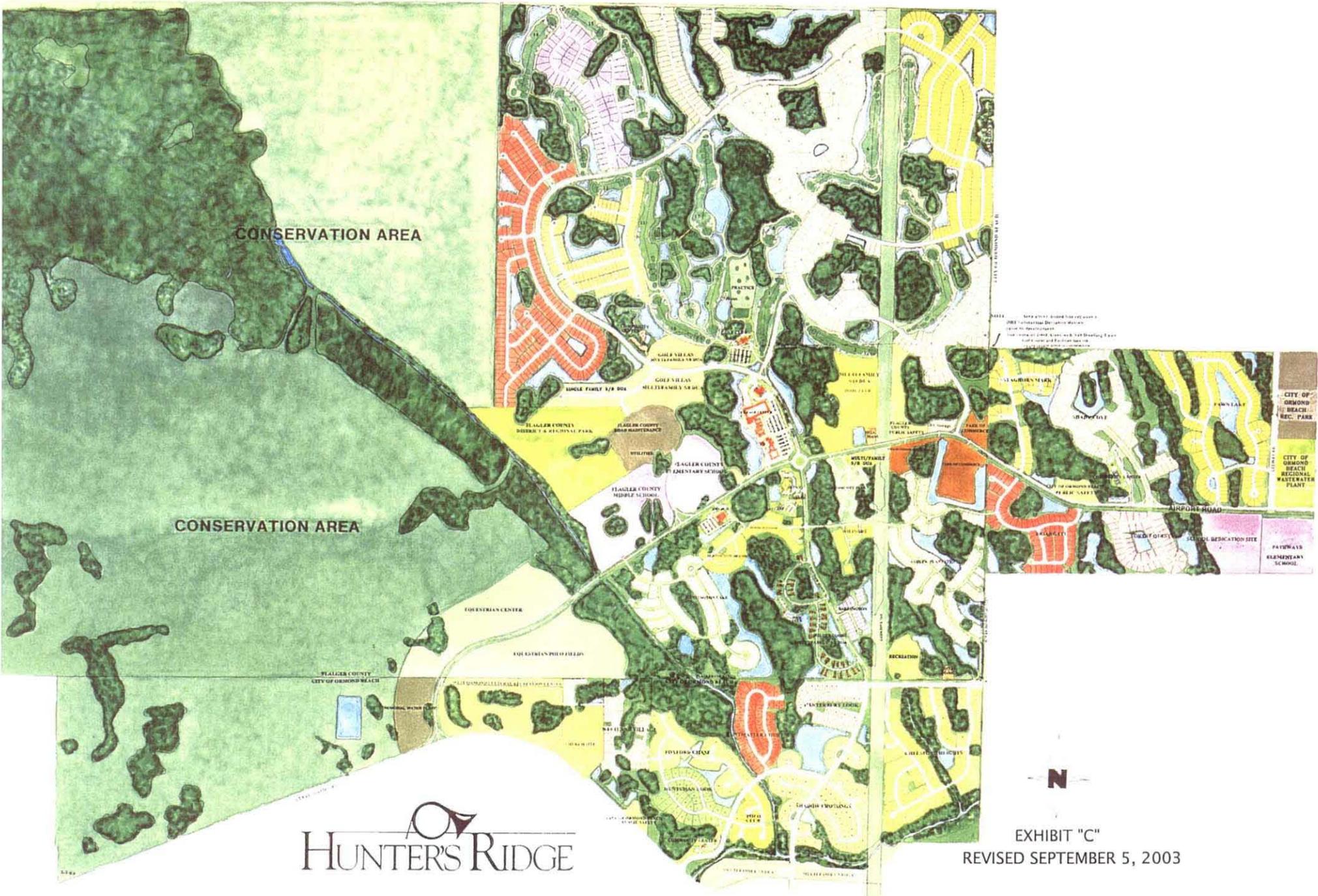
*Inclusion of this property in greenway
subject to Florida Department of
Transportation approval*



GEE & JENSON
Engineers • Architects • Planners, Inc.

REVISED
MAP 12.5

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CONSERVATION AREA

CONSERVATION AREA

HUNTER'S RIDGE

EXHIBIT "C"

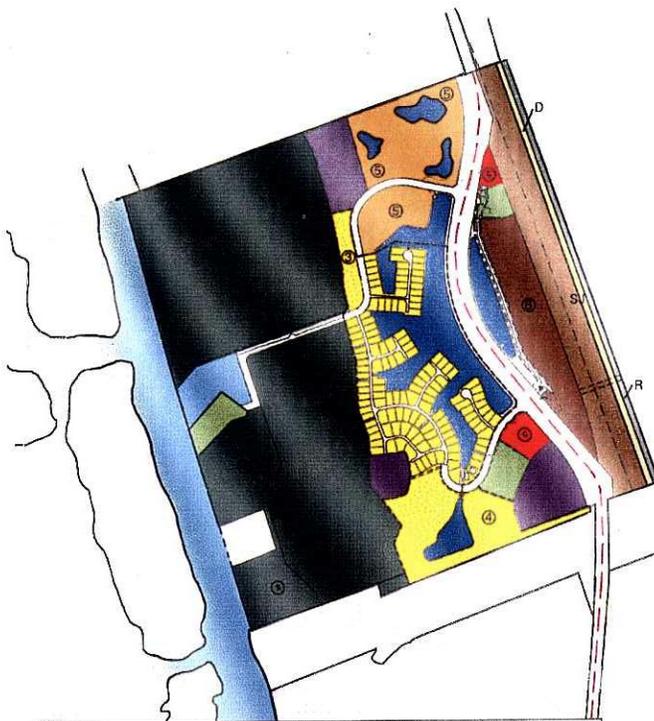
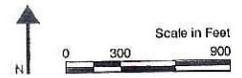
REVISED SEPTEMBER 5, 2003

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Map H - Master Development Plan

Matanzas Shores DRI

April 9, 1998



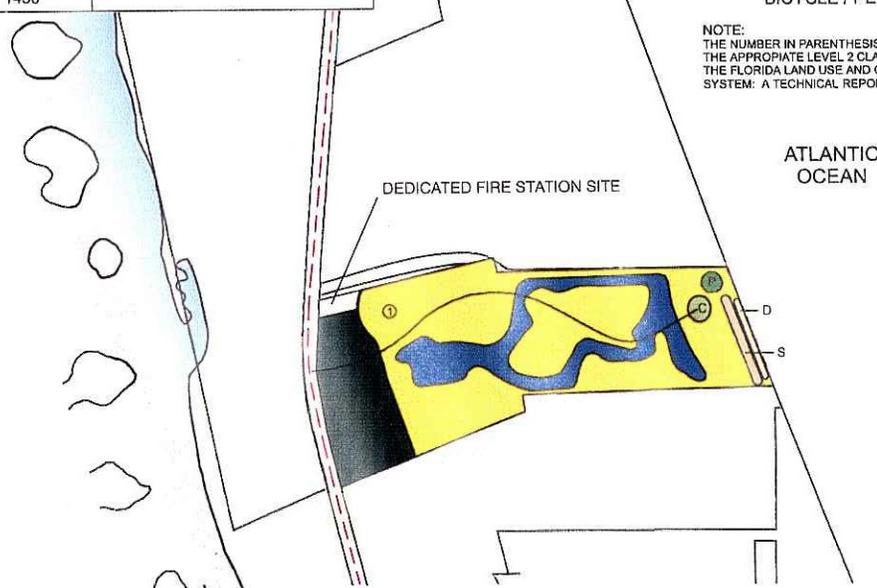
LANDUSE

- RESIDENTIAL (110)
 - 6-12 DU/AC
 - 12-20 DU/AC
 - 12-25 DU/AC
- COMMERCIAL AND SERVICES (120)
 - BUSINESS OFFICE / COMMERCIAL
- TRANSPORTATION (140)
 - PUBLIC ROADS
 - PRIVATE ROADS
- COMMUNICATIONS AND UTILITIES (150)
 - SEWAGE TREATMENT/ STORMWATER MANAGEMENT PONDS
- RECREATIONAL (170)
 - PARKS
 - CLUBS
- SHRUB AND BRUSHLAND (320)
 - SCRUB JAY HABITAT
 - COASTAL SCRUB
- HARDWOOD FOREST (420)
 - MATURE MESIC HAMMOCK
- BAYS AND ESTUARIES (540)
 - INTRACOASTAL WATERWAY
- OTHER WATER AREAS (560)
 - STORMWATER RETENTION
- WETLAND-VEGETATED NON-FORESTED (640)
 - SALT WATER MARSH REMNANT
- SAND OTHER THAN BEACHES (720)
 - PRIMARY DUNE (DOWN TO MEAN HIGHWATER)
- EXPOSED ROCK (730)
 - COQUINA OUTCROPS
- PROPERTY LINE
- BICYCLE / PEDESTRIAN PATH

CLUSTER DATA

CLUSTER NUMBER	DWELLING UNITS	DENSITY RANGE	CLUSTER DENSITY
1	350	6-12	7.4
2*	0	0	0
3	168	6-12	3.8
4	151	6-12	7.7
5	320	12-20	13.7
6	461	12-25	22.8
TOTAL	1450		

NOTE:
THE NUMBER IN PARENTHESIS CORRESPONDS WITH THE APPROPRIATE LEVEL 2 CLASSIFICATION AS PER THE FLORIDA LAND USE AND COVER CLASSIFICATION SYSTEM: A TECHNICAL REPORT 4/78.



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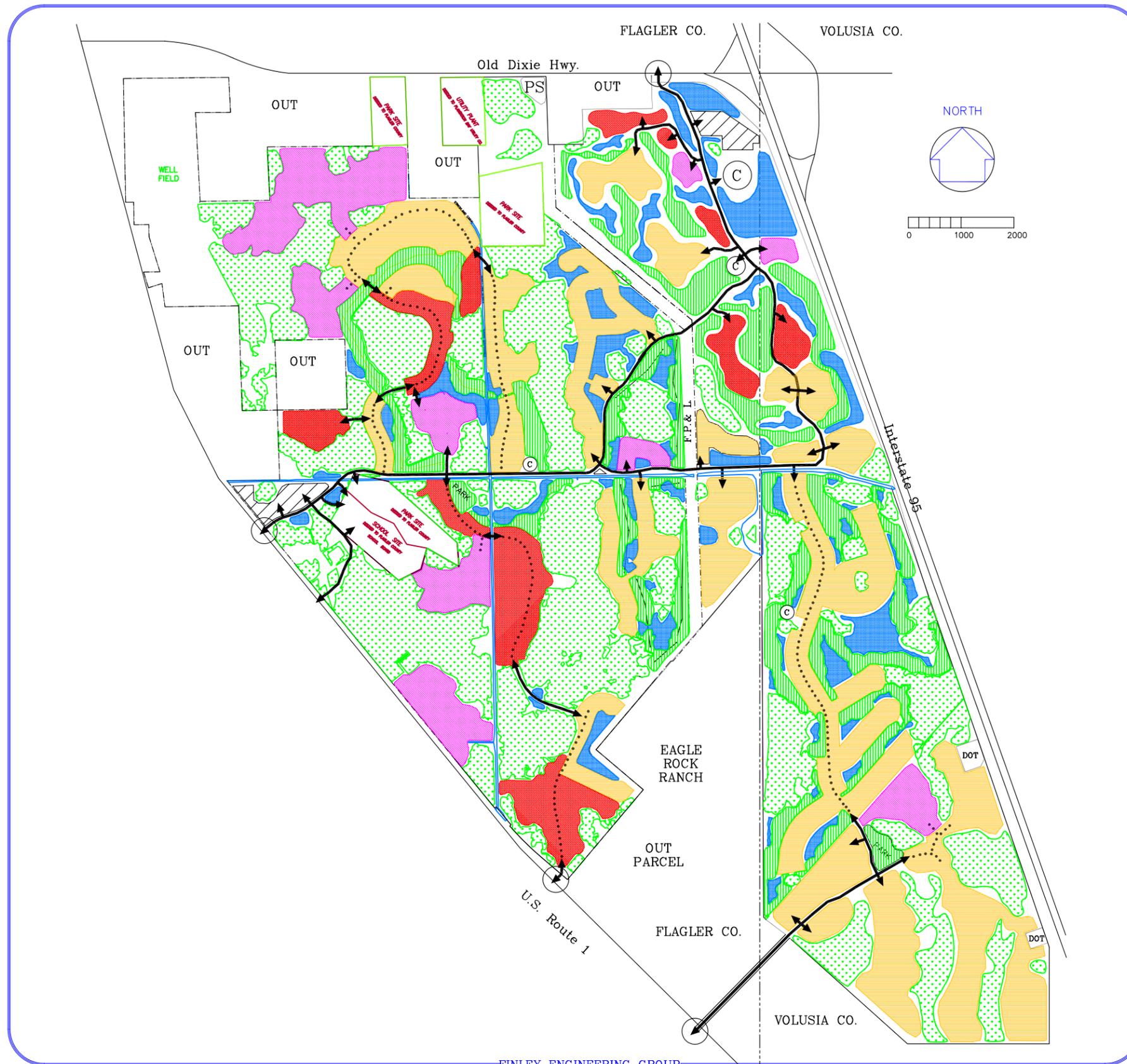
MAP H - 1
 MASTER
 DEVELOPMENT PLAN

PLANTATION BAY

REVISED
 JULY 6, 2004

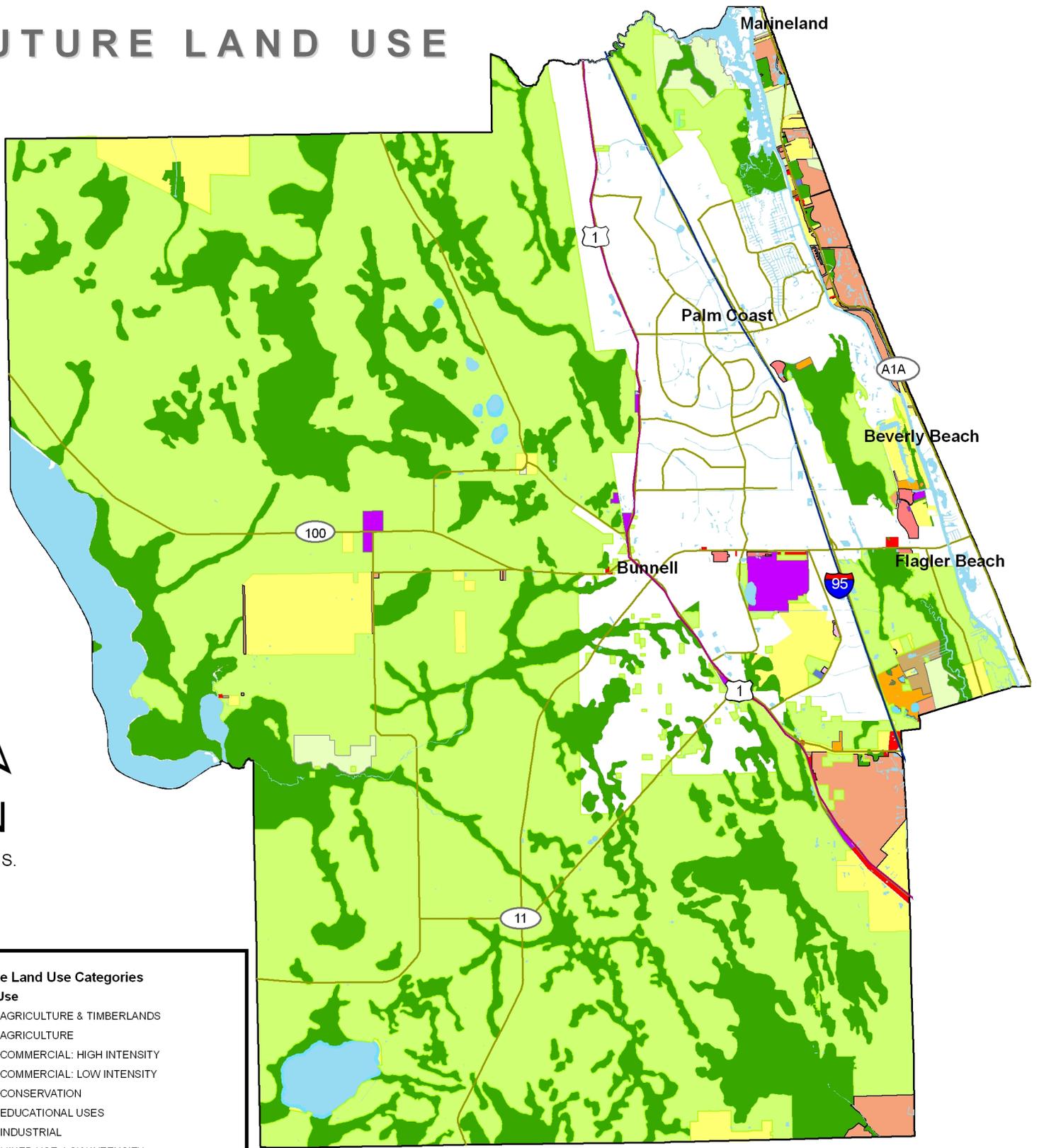
LEGEND:

- Plantation Bay Property Line
- - - - - Flagler/Volusia County Line
- - - - - Florida Power & Light Electrical Easement
- Single Family Residential (1-4du/ac)
- Low Density Residential (4-6du/ac)
- Medium Density Residential (6-8du/ac)
- Commercial
- Golf Course / Recreation
- Water
- Environmentally Significant Area
- Open Space
- C Clubs (Golf, Tennis)
- PS Public Safety (Police, Fire)
- DOT Land Taken by FDOT for I-95 Widening
- Collector Road Access Point
- Collector Road
- Subdivision Street



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FUTURE LAND USE



Future Land Use Categories

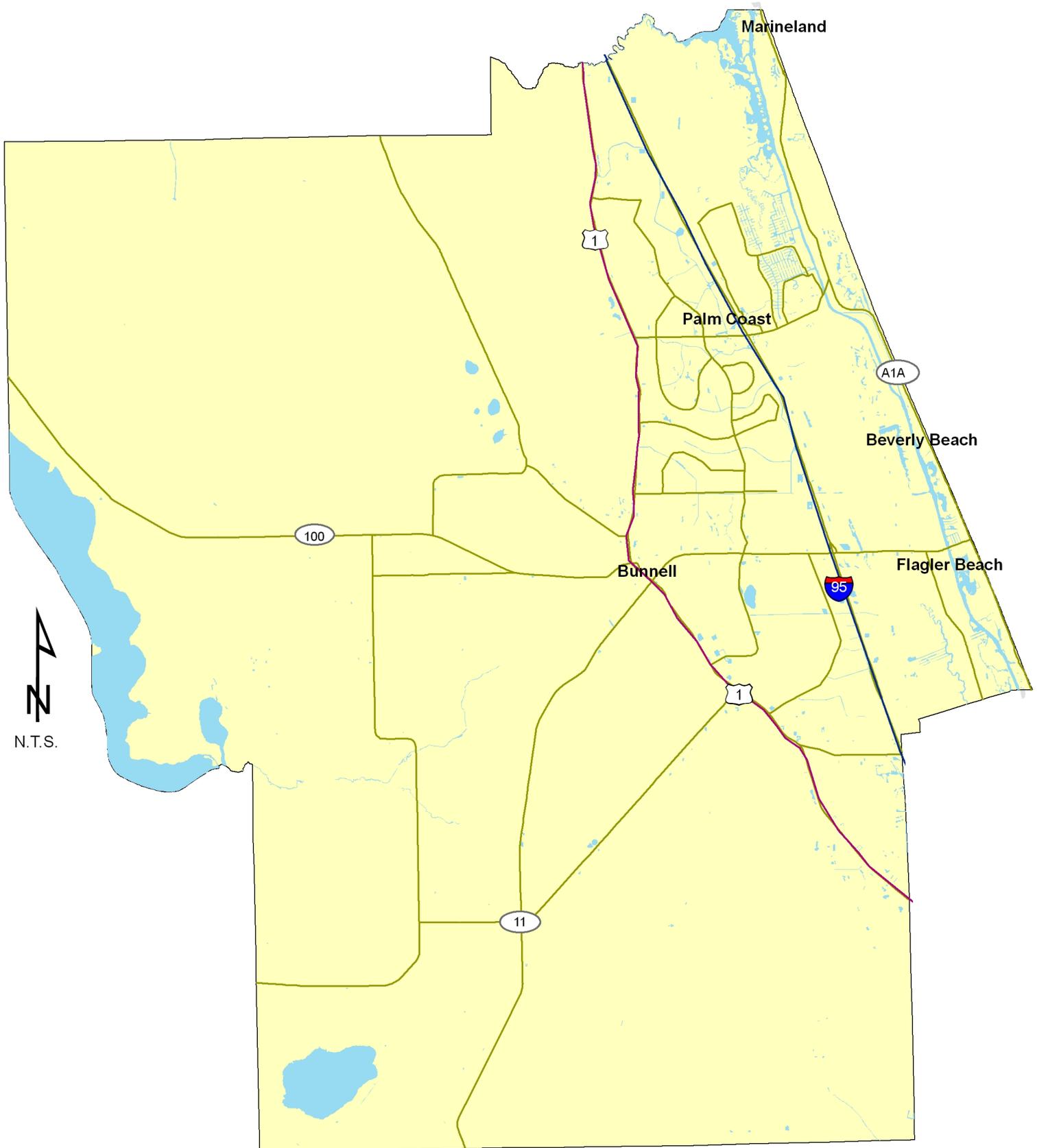
- LandUse**
- AGRICULTURE & TIMBERLANDS
 - AGRICULTURE
 - COMMERCIAL: HIGH INTENSITY
 - COMMERCIAL: LOW INTENSITY
 - CONSERVATION
 - EDUCATIONAL USES
 - INDUSTRIAL
 - MIXED USE: LOW INTENSITY
 - MIXED USE: HIGH INTENSITY
 - RECREATION & OPEN SPACE
 - RESIDENTIAL: LOW DENSITY/RURAL ESTATE
 - RESIDENTIAL: LOW DENSITY/SINGLE FAMILY
 - RESIDENTIAL: MEDIUM DENSITY
 - RESIDENTIAL: HIGH DENSITY
 - WATER

Source: Flagler County
 Created by: Northeast Florida Regional Council

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GENERAL ROADWAYS

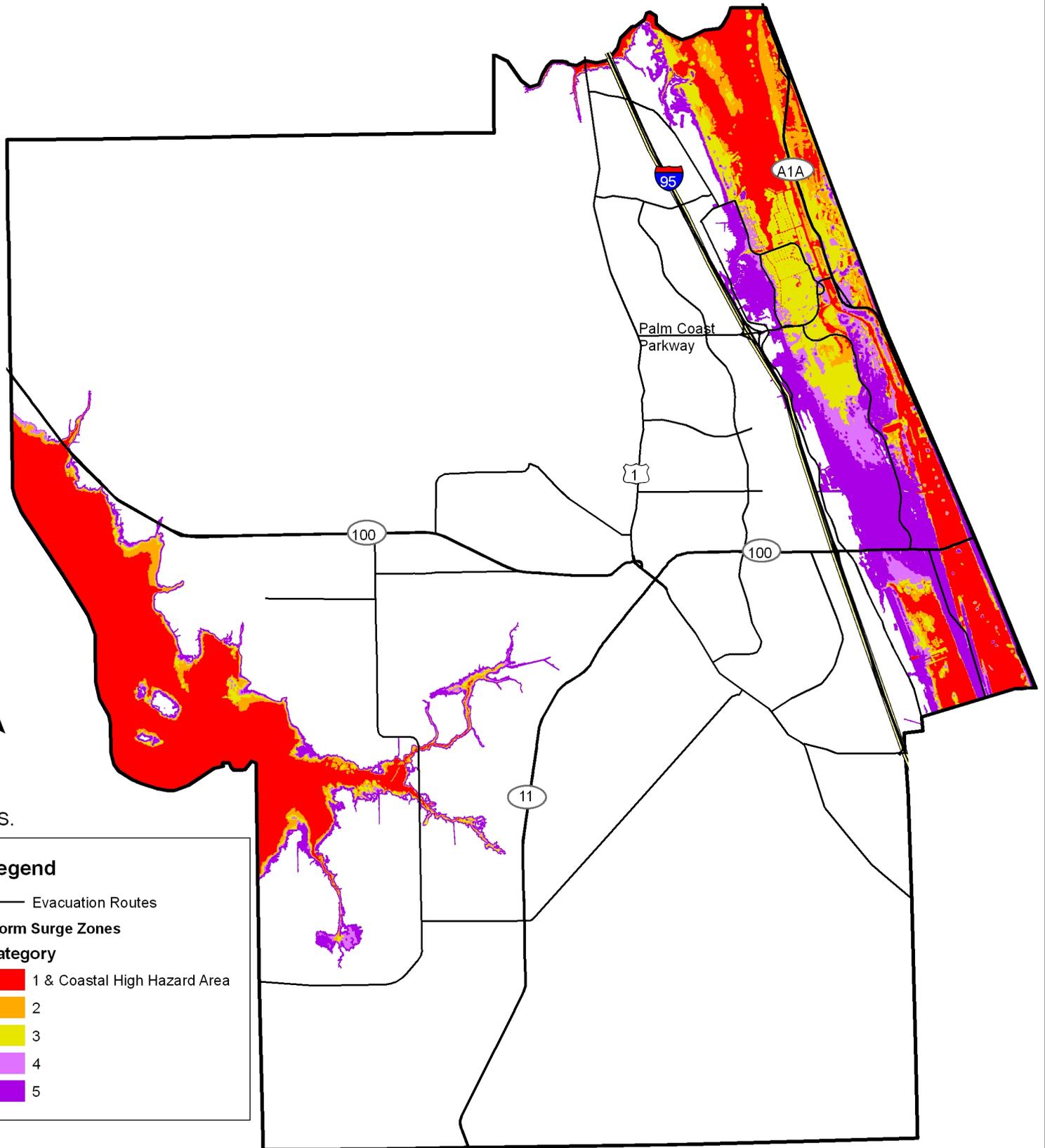


Source: Northeast Florida Regional Council
Created by: Northeast Florida Regional Council

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STORM SURGE ZONES



Legend

— Evacuation Routes

Storm Surge Zones

Category

- 1 & Coastal High Hazard Area
- 2
- 3
- 4
- 5

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