



Putnam County

EAR-based Amendments

COMPREHENSIVE PLAN FUTURE LAND USE ELEMENT

Putnam County
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**Putnam County
Future Land Use Element**

Table of Contents

Section	Page
A. Introduction	5
1. General Setting and History	5
2. Population	6
B. Existing Land Use Data & Analysis	6
1. Description of Existing Land Uses	6
a. Agriculture	6
b. Commercial	6
c. Industrial	6
d. Institutional & Public Facilities	7
e. Mining	7
f. Recreation/Open Space	7
g. Residential	7
h. Silviculture	7
i. Vacant Lands	7
j. Undeveloped Land	7
2. Designated Historically Significant Properties	8
3. Inventory of Natural Resources	8
a. Topography	8
b. Natural Drainage Features	8
c. Wetlands	9
d. Floodplains	9
e. Natural Groundwater Aquifer Recharge Areas	9
f. Soils	10
g. Commercially Valuable Minerals	10
C. Future Land Use Data & Analysis	12
1. Analysis of Natural Conditions Affecting Development	12
a. Wetlands	12
b. Floodplains	12
c. Natural Groundwater Recharge	13
d. Areas of Critical State Concern	14
2. Analysis of Public Facilities Affecting Development	14
a. Transportation	14
b. Sanitary Sewer	16
c. Solid Waste	17
d. Drainage	17
e. Potable Water	18
f. Waterwells and Cones of Influence	18

3.	Vacant Land Analysis	19
4.	Land Adjacent to County Boundaries	19
a.	Boundaries with Other Counties	19
b.	Boundaries with Putnam Municipalities	19
5.	Determination of Land Uses	20
a.	Future Agricultural	20
b.	Future Commercial	20
c.	Future Conservation	20
d.	Future Industrial	21
e.	Future Mining	21
f.	Future Public Facilities	21
g.	Future Rural Center	21
h.	Future Rural Residential	22
i.	Future Urban Reserve	22
j.	Future Urban Service	22
6.	Determination of Land Requirements for Residential Land Use	22
a.	Residential Land Use	22
b.	Housing Analysis	23
c.	Seasonal Household Units and Population	23
d.	Residential Demolitions	23
e.	Determination of Number of Residential Housing Units	23
f.	Determination of Land Requirements for Residential Land Use	23
g.	Land Availability	24
D.	Electric Distribution Substations	24
E.	Energy Conservation	24

List of Tables

Table		Page
A-1	Unincorporated Putnam County, Existing Land Use	26
A-2	Commercial Minerals	27
A-3	Population Projections	28
A-4	Future Land Uses – Unincorporated Putnam County, 2010	29
A-4.1	Future Land Uses – Changes in Acreage Since 2005 EAR	30
A-4.2	Future Land Uses – Changes Associated with Rural Center Amendments	31
A-5	Residential Land Holding Capacity	32

List of Figures

Figure	Page
A-1 General Location	33
A-2 Existing Land Use	34
A-3 Future Land Use	35
A-4 Historic District	36
A-5 Water Plants and Wells	37
A-5A Water Plants and Wells Palatka Inset	38
A-5B Water Plants and Wells Interlachen Inest	39
A-5C Planned Public Potable Water Wells	40
A-6 Drainage Basins	41
A-7 Wetlands	42
A-8 Floodplains	43
A-9 Floridan Aquifer Recharge Areas	44
A-10 Soil Classifications	45
A-11 Minerals	46
A-12 Open Spaces	47
A-13 Energy/Conservation	48

Evaluation and Appraisal Report Based Amendments

Data & Analysis

A. Introduction

The data and analysis for the Future Land Use Element contains updated population projections through the new long-range planning horizon of 2025. The County is choosing the year 2015 as its five-year planning horizon. In addition to the population projections, the County's existing and future land uses will be analyzed to ensure that they are sufficient to meet the needs of future populations. The Future Land Use Map series will be revised to reflect the new five-year and long-range planning horizons.

As part of the EAR recommendations, the County will be providing data and analysis to determine the viability of each of the 21 rural centers. The County will also address relevant data and analysis to address energy conservation as required in HB 697 (2008).

1. General Setting and History

History

Until 1849, Putnam County was part of Alachua, Baker, Clay, Marion, Orange, and St. Johns Counties. In January 1849, the County was formed, and the City of Palatka was designated as the County seat. The County was named after Major Benjamin Putnam, an officer in the Second Seminole War. Steamboat traffic along the St. Johns River provided most of the intrastate commerce until the advent of the railroads. Putnam County has an agricultural and rural history with industry dominated by crops, groves, timber harvesting, and natural resource extraction.

Geography

Putnam County is located in northeast Florida. Putnam County is Florida's 38th most populous county with 0.4% of the State's population.¹ Putnam County contains a total area of 533,702 acres, including the incorporated municipalities of Crescent City, Interlachen, Pomona Park, and Welaka. The unincorporated area of the County is approximately 514,037 acres, or 98% of the County. This figure has been revised since the 2006 Comprehensive Plan to reflect approximately 1,298 acres of municipal annexations. The County contains many lakes, wetlands, and other water bodies, which account for approximately 63,740.7 surficial acres, or 12.4% of the County's total area. The St. Johns River runs through the eastern portion of the County with the City of Palatka serving as an effective head of navigation. The County has about 100 miles of river frontage. Land elevations range from 16.4 feet along the St. Johns River to 180.45 feet in the highlands west of Interlachen.

¹ State of Florida, Office of Economic and Demographic Research. Putnam County Profile. December 2008.

2. Population

Putnam County's 1990 population was 65,070 persons. In 2000, the U.S. Census Bureau recorded Putnam County's population as 70,423. This is an increase of 5,353, or 8.2%. During the years between 2000 and 2007, the County experienced an increase in total County population of 4,376. While the Bureau of Business and Economic Research (BEER) at the University of Florida has projected this level of population growth to continue, the recent economic downturn has halted several large housing projects in Putnam County. It is anticipated that growth in Putnam County will slow to a rate of less than 1% over the next few years. During the EAR-based amendments, the County will re-assess its population projections in light of current economic trends.

B. Existing Land Use Data & Analysis

Most of the land within unincorporated Putnam County is forested with a scattering of vacation and retirement homes clustered around the lakes. The majority of these homes are located in the southeast portion of the County on the peninsula formed by the St. Johns River and Crescent Lake and in the northwest portion of the County near Melrose and Interlachen. Primary residential development is projected to be strongest in the east and northwest sectors of the County. Both areas are influenced by growth in adjacent counties, are receiving improved infrastructure, and are historically popular recreational areas.

Commercial and industrial establishments are generally concentrated in the east central area around Palatka, though there are local retail and commercial land uses within all of the municipalities. Putnam County's economy depends on agriculture, silviculture, and manufacturing, including lumber, wood products, and paper and allied commodities.

Table A-1 is an update of the existing land use in the plan's inventory and analysis section.

1. Description of Existing Land Uses

- a. Agricultural: Agricultural uses cover nearly 14% of the unincorporated area of the County, or 69,909 acres.
- b. Commercial: Commercial land uses primarily serve the resident population on a retail level and area located in or near the major municipalities. A lesser proportion of commercial activity occurs around the smaller communities that are located at principal intersections and on sites along the main highways.
- c. Industrial: The majority of industrial uses are located west of the St. Johns River near the City of Palatka and are associated with the forest products related industries.

- d. Institutional & Public Facilities: The institutional uses located in the County are those related to government agencies, such as federal, State, County, municipal, and school district facilities and lands. This category also includes hospitals, clinics, and nursing homes.
- e. Mining: Mining uses include mineral extraction facilities and associated lands.
- f. Recreation/Open Space: This land use category includes active recreation facilities, water-based recreation, and open spaces. Various facilities, such as ball fields, basketball courts, and tennis courts are located in municipalities. Water-based recreation, such as fishing, has led to the construction of many boat launching ramps and several marinas. At present, the County's park system includes 16 parks with a total of 156 acres. Open spaces account for the majority of this category, comprising well over 100,000 acres. A portion of the Ocala National Forest is in Putnam County and contains 24,172 acres.
- g. Residential: Residential land uses occupy approximately 36,496 acres. This category has a density range of less than two to nine dwelling units per acre. No high-density housing was found among the existing residential uses in the unincorporated County. Low-density development is primarily scattered along the main roads, while medium density housing is located in selected areas along Crescent Lake and the St. Johns River.
- h. Silviculture: Silviculture activities are most prevalent on the west side of the County.
- i. Vacant: This category consists of vacant areas that typically have been cleared to accommodate new development. Normally, they are vacant lots, unbuilt subdivisions with a street pattern, and other vacant urban or rural areas where a specific activity is not indicated. For purposes of this study, barren and in-active mined-out lands have been included as vacant lands. Inactive mined-out areas are those that were in use prior to any restoration requirement.
- j. Undeveloped Lands (Waterbodies and Roads, Railroads, Utilities, Canals): There are approximately 9,252 acres of roads, railroads, utilities, and canals within unincorporated Putnam County. There are numerous other features, such as streams, rivers, and wetlands, included in the 63,740.7 acres of waterbodies listed in Table A-2.

Putnam County has areas of vacant and undeveloped lands scattered throughout the unincorporated area. Vacant lands account for 3.8% of the unincorporated County. Some portions of these areas are unavailable for development due their environmental sensitivity. For example, acreage included in the vacant lands category may be midden sites that are not located on maps for fear of desecration. However, because of policies in the Comprehensive Plan and regulations in the Land Development Code that require clustering and a limitation on the uses allowed in environmentally sensitive areas, upland portions of those parcels may be developable.

Vacant and developable land includes vacant lots, unbuilt subdivisions with a street pattern, and other vacant urban or rural areas where a specific activity is not indicated. Barren or inactive mined-out lands are not included in the vacant lands category.

Additionally, undeveloped lands may be considered to be lands presently in the agricultural or silviculture/forestland categories. Agricultural and silviculture/forestland comprise 53% of the unincorporated area. However, these lands may require future land use map amendments to become fully developable. There are, therefore, lands to serve development that will occur during the short-term planning horizon without putting undue adverse pressure on lands sensitive to development.

2. Designated Historically Significant Properties

This description of properties includes historic buildings, archaeological, and prehistoric sites, which have been designated by the County or state to warrant special protective status. The County has a wealth of historic sites; however, most of the historic structures are located within the city limits of Palatka and Crescent City. The Melrose section of the unincorporated area has over thirty structures of historical significance, with some of these listed in Table C-14 of the Housing Element.

In addition to historical structures, the unincorporated area of Putnam County has 63 sites classified as midden or mounds. The locations of these sites are available by contacting the County Planning Department but are omitted from this Plan to preclude unauthorized scavenging for artifacts.

There are, at last count, some 11 historic structures in Putnam County, including 4 structures on the National Register for Historic Places. This does not include those structures in the Melrose historic district located along the west Putnam County line, which has a predominance of historic residential structures. There are no other major concentrations of historic structures. Many of the historic structures are scattered throughout the County and have been included in various existing land use categories shown on the land use map, instead of having a separate land use category and acreage tabulation. Only the historic Melrose district is depicted on Map A-4.

3. Inventory of Natural Resources

a. Topography: Topography in Putnam County rises from a low of 16.4 feet along the St. Johns River in a westerly direction to a high of 180.45 feet along the central Florida highland ridgeline in the western portion of the County.

b. Natural Drainage Features: Drainage basins are delineated by topographically high areas that separate one stream basin from another. In some cases, delineations were made when manmade drainage facilities could connect one basin to another during high water periods. Each sub-basin represents a geographic area, which is developed around a central drainage

feature such as a stream or lake. County drainage basins are shown on Figure A-6.

Putnam County contains two major surface water drainage basins: the St. Johns River Basin and the Oklawaha River Basin. The northern and eastern halves of Putnam County lie within the St. Johns River Drainage Basin with those areas west of the St. Johns River draining generally south and east towards the St. Johns River. Those areas east of the St. Johns River drain generally towards the west with the exception of those areas of the Fruitland peninsula, which drain east into Dunns Creek and Crescent Lake. Sub-basins within the St. Johns River Basin are: Crescent Lake, Etoniah Creek, which is the largest sub-basin in the County, Deep Creek and St. Johns River. A portion of southwest Putnam County roughly south of S.R. 20 and west of U.S. 19 is located within the Oklawaha River Basin, which drains south and east. Sub-basins within the Oklawaha Basin are: Sweetwater Creek, Rodman Reservoir and Orange Creek.

c. Wetlands: Figure A-7 contains a map of the wetlands based on district wide wetlands information collected by the St. Johns River Water Management District (SJRWMD). Putnam County has an abundance of wetland areas scattered throughout its borders. According to SJRWMD Landuse/Landcover data from 2000, wetlands cover approximately 128,200 acres of in the County. This represents roughly 24.2% of the total County land area. Many of these wetlands are associated with the St. Johns River and its tributaries.

d. Floodplains: Floods are a natural occurrence. Rainfall in amounts excessive for assimilation by the natural drainage system creates excess water overflows onto the floodplains. A map of flood prone areas depicting information from Federal Emergency Management Agency (FEMA) is shown on Figure A-8. Significant problems arise when natural drainage patterns are altered disrupting the natural system and stressing the land's ability to function as a drainage storage, recharge, and conveyance facility. Impervious surface associated with development decreases the land area available for infiltration and increases runoff rates. Construction of structural water control facilities can change fragile natural drainage patterns and may cause severe flooding and water quality problems reaching far downstream.

As expected in a County with 24 percent of its land in wetlands or other water bodies, extensive flood plains exist. Many of them are associated with the streams, but substantial areas are landlocked without a drainage course and the water must evaporate or be recharged into the water table. This condition occurs in the western and southeastern portions of Putnam County. Any development in floodplains is subject to the County's adopted Land Development Code. Putnam County participates in the National Flood Insurance Program administered by the FEMA. The purpose of the program is to protect lives and property through the implementation of floodplain management measures, which requires development to be constructed above the 100-year base flood elevation.

e. Natural Groundwater Aquifer Recharge Areas: The Floridan aquifer is composed chiefly of limestone and dolomite and is the major source of potable water in Putnam County. In Putnam County, high groundwater recharge areas occur in the northwest and in the Fruitland

peninsula area in the southeast. As shown on Figure A-9, the largest area of aquifer recharge in excess of 12 inches/year in Putnam County is in the southern part of the county between Pomona Park and Welaka. The central eastern portion of Putnam County between the St. Johns River and Crescent Lake contains areas of both high and moderate recharge, as does the western portion between Interlachen and the Melrose area.

f. Soils: Knowledge of soil conditions is necessary in planning for the use and management of soils for crops and pasture, woodland, woodland grazing, and as wildlife habitat. Also, knowledge of soil conditions and the ability of soil to absorb moisture are extremely important when planning for the use of septic tanks for sanitary wastewater disposal. Soil suitability is a significant potential development indicator. Since up to 76% of the households use septic systems, the placement of systems in soils that are suited for absorption is critical.

Soils in Putnam County are depicted on the Soils Classification Map, Figure A-10. This map depicts fifteen soil categories throughout the County. The map denotes land units that have a distinct pattern of soils, relief and drainage. Each land unit is a unique natural landscape and may consist of one or more major soils. Soils making up one unit can occur in other units, but in a different pattern or proportion to each other. The map provides a basis for comparing the land use soil capacity potential of large areas. Areas that are, for the most part, suited to certain kinds of farming or to other land uses can be identified.

Soil properties used are those that influence the minimum rate of infiltration obtained for a bare soil after prolonged wetting. These properties are: depth to seasonably high water table, intake rate and permeability after prolonged wetting, and depth to a layer or layers that slow or impede water movement. A hydric soil is a soil that in its natural (undrained) condition is saturated, flooded, or ponded long enough during the growing season (March — October in north Florida) to develop anaerobic conditions that favor the growth and regeneration of hydrophytic (wetland) vegetation (Florida USDA— Soil Conservation Service, 1985). Hydric soils have severe limitations for septic tank operation.

i. Commercially Valuable Minerals: Commercially valuable mineral deposits in Putnam County are of four types: sand, kaolin clay, heavy minerals and peat (not a mineral, but an extractable resource). These deposits are outlined on the map in Figure A-11. A complete discussion of mining within the County follows.

Sand

Sand deposits extend in a broad band on the western side of the County from the area around Putnam Hall and Grandin in the northwest through the sinkhole country on the western side of the County to the vicinity of Interlachen and the southern border with Marion County west of Rodman Reservoir. Numerous sand pits from current and previous mining operations dot this area. Currently, there are two active sand mining operations in the area just south of Interlachen. A large inactive operation, the Keystone

Sand Mine, is located north of Highway 100 between Putnam Hall and Florahome. Another inactive operation, the Crossley mine, is located to the northwest of Interlachen near Long Pond. The Keuka Mine owned by Florida Rock Industries is an active mine, and the Grandin Sand mine holdings (over 400 acres) in the area between Grandin and Interlachen west of Highway 315 in the near future is the second active sand excavation mine.

The sand produced is primarily construction sand; however the Feldspar Corporation kaolin operation at Edgar produces both construction and specialty sands as a byproduct of the clay mining process. The specialty sands are important for glass manufacture and other industrial uses; the glass sands have markets in Alabama, Florida and Tennessee. Tennessee

Kaolin

Kaolin clay is common throughout the Citronelle sediments of western Putnam County along the Lake Wales Ridge. This is roughly the area west of Highway 315. As of 1983 all the kaolin produced in the state came from the Feldspar Corporation's Edgar mine in Putnam County. Both sand and kaolin are produced at this mine; the sediments are hydraulically mined and water processed (dredged and slurried).

Florida kaolin has a combination of properties not known to exist naturally in any other commercial kaolin. Thus Florida kaolin is used as a single substitute for a variety of other clay blends. It is used in a wide variety of ceramic products, including high and low voltage electric porcelain, spark plug porcelain, sanitary ware, chemical porcelain, floor and wall tile, high temperature refractories, artware, and electronic ceramics.

When kaolin alone is extracted from the sand body only 20 percent of the mined material is actually marketed; the value of the silica sands in the same deposits was not exploited until around 1958. With the inclusion of construction—and specialty quality sands in the production mix, more than 85 percent of the sediments mined can be marketed. Thus the Feldspar Corporation mine at Edgar produces sand as well as kaolin (see Table A-2).

Heavy Minerals

There is a significant deposit of heavy mineral sands straddling the border between Putnam and Clay Counties east of Simms Creek and northwest of Bostwick. This is known as the Green Cove Springs ore body. It lies on the Duval Upland of northern peninsular Florida. The deposit is composed of loose to slightly consolidated quartz sands containing an average of three or four percent heavy minerals. The most abundant of these minerals are ilmenite, leucoxene, rutile, kyanite, sillimanite, staurolite, zircon, and tourmaline. Minor amounts of epidote and garnet are also found, as well as monazite.

Private owners lease the Green Cove Springs mine to IILUKA Mining Company. Mining in the Clay County portion has been done for the last 20 years. On July 7, 1983,

a conceptual plan for reclamation was approved by the Governor and Cabinet for the Green Cove Springs mine covering 11,029 acres in Clay and Putnam Counties. This plan calls for the eventual mining of 8,715 acres of the site. Reclamation requirements include restoration of drainage patterns, wetlands, and streams which may be altered. The County has approved amendments to the Comprehensive Plan to allow more mining on the Putnam County portion of the Associated Minerals site south of Sun Garden Road. Pursuant to State rules, reclamation of the site is nearly complete.

Peat

Putnam County includes several significant peat deposits. One large deposit is located in the northwestern area, extending north and south of Highway 100 between Grandin and Florahome. The Traxler Peat Company operates a mine in this area, producing peat for horticultural purposes. .

C. Future Land Use Data and Analysis

1. Analysis of Natural Conditions Affecting Development

Land has a carrying capacity to support development. Good planning strives to not stress the land beyond its capacity to support development. Such action invariably results in destruction of the environment and a dramatic reduction in quality of life.

a. Wetlands: Wetlands are considered to be an important natural resource that should be conserved as a public resource because of three significant natural functions which wetland systems provide: (1) their ability to affect water quality, (2) their ability to store storm runoff water, and (3) the influential affect of a wetland on the characteristics of species diversity.

Hydric soils are closely associated with wetlands and present severe limitations to the function of septic tanks.

b. Floodplains: Floodplains and flood hazard zones are generally more extensive than areas categorized as wetlands. Flooding is a natural occurrence, and only becomes a hazard when the natural floodplains have been altered through urbanization and development. As urbanization increases in the low-lying areas, property damage and loss of life increase due to flooding. Flooding is a problem in several areas of Putnam County where development has occurred within floodplains. Periodic flooding has been documented in numerous locations in Putnam County. Some areas of flooding identified in the draft Stormwater Management Plan prepared by Ayers and Associates are detailed below.

Palmetto Bluff Road and Millican Road have periodically flooding. Palmetto Bluff Road floods in three locations between its intersection with Millican Road and the Town of Bostwick. Millican Road floods beginning one-half mile south of the Millican/Palmetto Bluff Road intersection and extends south for approximately one-half mile. There is also an erosion problem at the Millican/Palmetto Bluff Road intersection.

Frequent flooding occurs in River Park when Lake Laverne, Lake Maxine and a third un-named lake stage up and flow west through an undersized ditch and culvert crossing at Lake Drive. The outlet system for River Park is significantly undersized in proportion to the areas of the lakes and surrounding drainage basin. As a result, the banks overtop and site flooding occurs.

Another area that experiences periodic flooding is around Mud Lake. Flooding occurred on Red Fox Trail immediately north of S.R. 19, Karen Place and Karen Court south of S.R. 19. Karen Place and Karen Court are in the Fox Trail Subdivision. At least one home in the Fox Trail subdivision flooded during the hurricanes of 2004, and numerous other homes experienced yard flooding. There were more than six inches of standing water over the road.

Local flooding has been reported in the Whispering Pines subdivision. Roads and occasional yard flooding occurs even during moderate rainfall events. The cause is predominantly from erosion of dirt roads.

CR 315 floods near the intersection with 64th Street. There is a drop in elevation where the road curves to the right around Mariner Lake. Dirt roads draining to CR 315 cause sediment to clog roadside swales along CR 315, which is a major cause of flooding at this location.

Another area with flooding problems is known locally as the Mondex Subdivision, which is located south of Palatka and north of the Barge Canal between S.R. 19 and Stokes Landing Road. This area consists of low-density residential development with numerous privately owned dirt roads and flooding is a recurring problem here. Roads, yards, and structure flooding has occurred in the subdivision on an annual basis.

Flooding in East Palatka occurs where SR 207 crosses Dog Branch. Large deposits of sediment accumulate at this location, which causes severe loss of conveyance capacity, and the water has been seen at the edge of the highway pavement.

Flooding at the County Public Works Facilities on Putnam County Boulevard and various low areas have been reported by the County. The parking lots, the clay and limerock stockpile area and the maintenance garage are flooded on average twice per year. Flooding occurs due to a relatively large watershed discharging through an undersized outlet under East River Road. No residential flooding has been reported.

Article 6, Section 6.05 LDC, establishes standards for construction in areas of special flood hazard. The areas of special flood hazard are those areas identified as category A, AO, AH, A1 through A30, AE, and A-99 of the on the latest available Flood Insurance Rate Map.

As part of the Countywide Stormwater Master Plan, the County has identified areas that experience repetitive flooding and erosion (in addition to the few general areas listed above) and developing a plan to reduce or eliminate these problems. The description of the master plan and flooding areas is elaborated upon in the Infrastructure Element.

c. Natural Groundwater Recharge: The majority of water used in the County is from the Floridan aquifer. Nearly all of the water recharging the Floridan aquifer in the SJRWMD and SRWMD is derived from rainfall in the districts. Rainfall percolating downward

from land surface to the Floridan aquifer must move through the unsaturated soil zone, the surficial aquifer, and the semi-confining layers to recharge the Floridan aquifer. The amount of water stored in the aquifer systems is determined by a balance between recharge, evapotranspiration, runoff, leakage to or from adjacent aquifers, natural discharge, and withdrawals from water wells.

In Putnam County, potentiometric highs occur in the northwest and in the Fruitland peninsula area in the southeast. These areas are known recharge points for the Floridan Aquifer (See Figure E-1). Recharge occurs from rainfall, and from lakes and other aquifers that have elevations above the potentiometric surface of the Floridan Aquifer. Discharge occurs from lateral groundwater outflow and by pumpage. Water entering the Floridan Aquifer in northwestern Putnam County flows underground to surrounding counties including Alachua, Baker, Bradford, Clay, Duval, Marion, and Union Counties.

Land uses in the northwest (Interlachen & surroundings) and southeast (Fruitland Peninsula) recharge areas need to be controlled to insure that groundwater is not contaminated. The two largest uses of groundwater are for domestic self-supply and agriculture followed by commercial and industrial uses. There are no Priority Water Resource Caution Areas where water supply is identified as being critical by the year 2010.

Water quality is generally excellent in the upper layers. Saltwater intrusion is not an overriding issue in Putnam as it is for the coastal areas of Florida. The County needs to carefully plan land uses in the high recharge areas.

d. Areas of Critical State Concern: There are no areas of Critical State Concern, pursuant to 380.05 F.S., recorded in Putnam County.

2. Analysis of Public Facilities Affecting Development

It is important to ensure that public facilities and services that are necessary to support development are available current with the impact of development.

a. Transportation:

Table B-5 of the Traffic Circulation Data and Analysis identifies those roadway segments derived from the LOS evaluation of 2015 projections and resulting capacity deficiencies. It is important to note that the strict use of annual growth rates in predicting future traffic volumes on the roadways beyond the base year 2008/09 assumes that what has happened in the immediate past will continue at the same rate indefinitely into the future. For several reasons this assumption may be unreasonable:

- the transportation-land use cycle modifies accessibility of an area; this in turn, leads to land use changes, alternative travel patterns, and varying capacities;
- significant new travel patterns emerge because of the availability of alternative trip satisfactions; and

- geometric time series extrapolation requires a growth increment decline ratio or dampening factor to provide asymmetric control to the numeric curve.

Map B-4 of the Traffic Circulation Element Data and Analysis depicts estimated YR 2015 roadway conditions based upon the resultant historical trends analysis.

Given a policy of maintaining a principal arterial level of service C for two-lane FIHS/SIS arterials and based upon projected traffic volumes, roadway segments within Putnam County are projected to operate at an acceptable level of service in YR 2015, with the exception of four (4) roadway segments: S.R. 20 (Alachua County Line to C.R. 21), S.R. 20 (C.R. 21 to Royal Way), U.S. 17/ S.R. 15 (Lake Street to San Mateo Road), and S.R. 100 (C.R. 309C to C.R. 216). It is important to note that S.R. 20 (Alachua County Line to C.R. 21) was identified to exceed the adopted service volume in the existing conditions.

To alleviate the future anticipated level of service deficiencies; the County proposes to increase multimodal options, by increasing transit services and providing additional park and ride options. The capital and annual cost, as identified within the Capital Improvement Element (CIE), will be established through a funding partnership with Ride Solutions, the County's transit authority. The following recommendations provide the necessary mitigation to provide for an adequate level of service, and were developed through close coordination with the Florida Department of Transportation and the County's transit authority. The proposed transit routes have been provided graphically on Map B-5 of the Traffic Circulation element.

- SR 20: SR 20 is an east-west arterial connecting the City of Gainesville with the City of Palatka. Ride Solutions is one of the only two public transportation services in the state that have an agreement with Greyhound and provides service connecting the cities of Gainesville, Palatka, and St. Augustine. The current Greyhound Connector route connects Interstate 75 with Interstate 95. Therefore, to maintain an adequate level of service to/from Gainesville, it is proposed to increase the transit availability. Consistent with the YR 2015 LOS analysis, one (1) new route should be added to accommodate standard workforce hours, 8:00 AM to 5:00 PM during the traditional weekday condition (Monday to Friday). Currently, Ride Solutions has identified the availability of an additional bus in their current fleet to service a new transit route along this corridor. A schedule for hours of operation will be coordinated with Putnam County, Ride Solutions, and FDOT. The annual operating cost associated with this new service would be approximately \$87,500 per year.
- SR 100: SR 100 is an east-west arterial connecting western Putnam County with the City of Palatka. Ride Solutions has proposed several routes along this segment. The two (2) routes that would alleviate potential future LOS adversities on SR 100 are the full service Interlachen route and the Florahome route. Both routes would allow residents of the western cities of Putnam County (i.e. Interlachen, Florahome, Putnam Hall, and

Melrose) the availability of transit service to downtown Palatka. Therefore, to maintain an adequate level of service to/from Gainesville, it is proposed to increase the transit availability. Consistent with the YR 2015 LOS analysis, two (2) new routes should be added to accommodate standard workforce hours, 8:00 AM to 5:00 PM during the traditional weekday condition (Monday to Friday). The Interlachen route should start in FY 2010/13. The annual operating cost associated with the two (2) new service routes would be approximately \$157,500 per year. In addition, a one-time capital expenditure of \$344,000 will be needed for the additional two (2) buses to support the service routes.

- U.S. Highway 17: U.S. Highway 17 is a north-south arterial connecting the southern cities of Putnam County with the City of Palatka. While the some of the adverse segment along U.S. 17 resides along an existing transit route, a good majority of the segment does not have a direct service line into the City of Palatka. Consistent with the YR 2015 LOS analysis, one (1) new route should be added to accommodate standard workforce hours, 8:00 AM to 5:00 PM. The annual operating cost associated with this new service would be approximately \$78,750, along with a one-time capital expenditure of \$172,000 will be needed for an additional bus to support this service route.

In order to increase the ridership along the transit corridors, consistent with Transportation Element, Policy B.1.7.3, Putnam County has proposed the consideration of future Park and Ride lots. Two (2) candidate geographic locations have been identified as probable locations to support these lots (Kay Larkin Airport and Crescent City). Putnam County will coordinate with the City of Palatka in the feasibility of identifying a Park and Ride lot within the vicinity of the Kay Larkin Airport to support interregional travel along S.R. 100 to Clay County, to the northwest.

The County shall develop an additional Park and Ride within the vicinity of Crescent City to promote travel between Volusia County and the City of Palatka. The proposed Park and Ride lot will be identified through coordination with Putnam County, FDOT and Ride Solutions, on or before December 2013. It is anticipated that the lot will be operational by 2014 and maintained as a dirt/grass lot. Furthermore, the County shall assess the usage and benefit of the lot on or before December 31, 2015, and every year thereafter. If it is determined that the lot is not beneficial, through coordination with FDOT, the County shall cease the usage of this Park and Ride lot.

b. Sanitary Sewer: Putnam County is planning to construct the East Putnam County Regional Wastewater Project in the East Palatka area. This project will provide a central wastewater system to a large area and is anticipated to reduce pollutant loading into area waters including the St. Johns River. The County expects to begin the first phase of the public sewer system in 2011. Until that time, an assumption can be made that private septic tank systems and privately operated wastewater systems will remain the principal means of wastewater effluent treatment for the five-year planning timeframe.

- c. Solid Waste: Putnam County has no solid waste level of service deficiencies through the 2025 planning horizons.

The County operates the Central Class I Landfill; however, refuse collection is franchised out, currently to Waste Pro. Their contract to collect trash began on October 1, 2009 and will continue through September 30, 2015. Waste Pro collects trash for the entire County as a homogeneous geographic service area including Crescent City, Interlachen, Welaka, and Pomona Park, except for the City of Palatka, which operates its own refuse collection system. The solid waste collected by Palatka is disposed of at the Central Landfill.

In 2008, the solid waste generation rate for the County was approximately 5.40 pounds per capita per day. This is a reduction from 6.00 pounds per capita per day in 2007. The 2010 capacity analysis report for the Central Landfill projected population and waste generation through 2025 is provided in the Infrastructure Element. The report shows that per capita waste generation per day will reduce from 5.86 pounds per capita per day to 5.84 pounds per capita per day.

- d. Drainage: Putnam County has no stormwater level of service deficiencies through the 2025 planning horizon. In order to address areas of periodic flooding, the County has scheduled capital improvement projects for stormwater in accordance with its Stormwater Master Plan.

The County has adopted general guidelines as its drainage LOS. The standard that is commonly accepted in designing drainage facilities is the design storm event. This standard specifies the intensity (rate of rainfall) and duration of the rainfall event.

Generally, it is assumed that greater damage to private property will occur due to flooding of the open channel facilities. Consequently, these major stormwater maintenance facilities are designed and should be evaluated on a LOS design criteria based on a design storm of 25-year frequency, 24-hour duration. Minor stormwater maintenance facilities are designed and should be evaluated on a LOS design criteria based on a design storm of 10-year, 24-hour duration with swales.

Permitting for stormwater discharges to groundwater are regulated under the provisions of Rule 62.528 FAC. New stormwater discharge facilities must be built in accordance with performance and design standards specified in Rule 62-528 FAC and meet water quality standards specified in Chapter 62-520, FAC. The construction of new stormwater discharge facilities must meet the permitting requirements specified in Rule 40C-42 F.A.C.

e. Potable Water: According to FDEP, there are five County-owned and operated WTPs, including East Palatka, Putnam County Maintenance Yard, Putnam County Agricultural Center, Port Buena Vista MHP, and Paradise View Estates. There are also six WTPs owned and operated by the Putnam County School Board and one WTP owned and operated by the State at the Putnam Corrections Institute. The East Putnam Regional Water System serves East Palatka, San Mateo, and surrounding areas. This facility replaces the existing East Palatka WTP, and is operated by Putnam County. The facility is a 0.93-MGD Reverse Osmosis WTP with two 900-gallon-per-minute Floridan Aquifer production wells. The East Putnam Regional WTP reduces the burden on the freshwater aquifer by using reverse osmosis to treat brackish groundwater. The facility is located at the Putnam County Public Works site (233 Putnam County Boulevard in East Palatka) and includes a new 250,000 gallon ground storage tank, a 100,000 gallon elevated storage tank, and a distribution system consisting of 27 miles of water main.

The new system meets the drinking water needs of the residents and provides fire flow of 500 gpm for two hours. Phase I (completed) serves approximately 4,000 persons and the Putnam Correctional Institute with a maximum of 550 inmates. As of June 2009, the County has issued approximately 900 permits to install water meters. Phase II (5 to 10 years away) will increase capacity of the plant to 2 MGD and include additional water mains to be installed. The combined Phase I and Phase II service area is approximately 25 square miles. The Putnam County combined Phase I and Phase II service areas are depicted on Future Land Use Series Map 7 “Planned Public Potable Water Wells Map” and in Figure A-5C.

In other areas of Putnam County, an assumption can be made that private wells and privately operated public water systems will remain the principal means of potable water for this five-year planning timeframe.

f. Waterwells and Cones of Influence: There are waterwells operated by both municipal and homeowner association operated waterwells serving the public in the unincorporated portion of Putnam County. The municipal wellfields may actually be within the land area of a municipality, however, the cone of influence of the well could extend into county jurisdiction. Examples are the municipal wells of the City of Palatka, which are on the airfield site surrounded by County lands. Additionally, there are several privately operated public wells serving homeowner associations and similar groups.

Land uses in the County located within the cone of influence that could affect the quality or quantity of water taken from a producing well must be restricted or monitored so as to retain the water quality of the aquifer. Given the rural character and the generally simple hydrogeology of Putnam County, a fixed radius approach will suffice for the County in providing wellfield protection. The FDEP defines the wellhead protection zone as a 500-foot radial setback distance around a potable water wellhead and this should be Putnam’s minimum default wellfield protection radius.

3. **Vacant Land Analysis**

Putnam County has large areas of vacant and undeveloped lands that are now available for expansion or development. The lands shown on Table A-1 and Figure A-2 as Vacant/Undeveloped are available for development at this time and total some 19,533 acres or 3.8 percent of the unincorporated County area. There are some midden sites that are not located on the maps for fear of depredation in these spots; however, they are not significant in determining the available acreage for development.

Additional undeveloped lands may be considered to be lands presently in the agricultural or silviculture/forestland categories. A total of 272,439.6 acres or 53 percent of the unincorporated County may be considered available for possible development. There is therefore, more than ample lands to serve any development that will occur during the ten-year planning period without putting undue adverse pressure on lands sensitive to development.

4. **Land Adjacent to County Boundaries**

a. **Boundaries with Other Counties:** Lands in six other counties bound Putnam County. These lands are generally a continuation of the basic land use pattern at the County border. Adjacent land use patterns are shown on Figure A-1.

To the northwest in Clay County, is the area known as Keystone Heights, which is spotted with lakes partially developed with vacation and retirement homes similar in character as that portion of Putnam County. To the north are lands in the Camp Blanding Military Reservation, which are used for training, and to the northeast are wooded and agricultural lands of Clay County.

To the northeast are vacation homes in St. Johns County across the St. Johns River from Putnam County. Due east in St. Johns County, the lands are wooded and partially developed with agricultural uses.

Further south and east are lands in Flagler County across Crescent Lake, on the east side of the Crescent Lake and the county limits, both wooded and partially developed with vacation and retirement homes. To the southeast is Volusia County with lands that are a continuation of the Putnam County land character of wooded areas interspersed with agricultural uses and homes. Further west, along the southern boundary is the continuation of the Ocala National Forest that lies partially in Putnam County, in Marion County.

To the west is a portion of Alachua County that is sparsely developed with recreational and retirement homes and some agricultural uses.

None of these land uses conflict with the emerging land use pattern of Putnam County and are, in fact a continuation of the same patterns as found in the County. Therefore, if the present development patterns are retained there should be no reasons for conflict over land uses between the various counties.

b. **Boundaries with Putnam Municipalities:** The five Putnam municipalities within the County's boundaries vary in geographic size. Future development and redevelopment that may

impact these incorporated jurisdictions needs to be coordinated with the appropriate local government offices.

Of special concern is the unincorporated area surrounding Kay Larkin Airport, a 640-acre facility in the City of Palatka. The installation is located on the west side of the City and shares its boundary with the County. Land use and related zoning around this facility must follow the requirements of s.333, F.S. There must be coordination established between the County and City to ensure that plans for future land in the area are compatible with airport operations.

5. Determination of Land Uses

This section of the Future Land Use Element translates the previous analysis into a visual scheme, the Future Land Use Map, A-3, which assigns land use categories to those areas that are anticipated for development, redevelopment or conservation of natural resources. This task includes the projection of the amount of land for different land use categories that will be necessary to accommodate future population growth (see Table A-5). The methodology used to project the future demand for the various land uses was based on the existing land use acreage, population, and development trends. .

All of the following categories allow for a mix of uses and the percent and types of uses are specified in the goals, objectives and policies of this element. The Plan contains a density bonus point system and additional rural and urban categories for residential and non-residential uses.

a. Future Agricultural: There are two agriculture future land use designations, A1, that permits residential development with a density range between 1 dwelling unit per 5 acres to 1 dwelling unit per 10 acres, and A2, which permits residential development with a density range of 1 dwelling unit per 10 acres and 1 unit per 20 acres. The actual allowed density is determined by the point-score methodology provided in Policy A.1.9.4 of the Future Land Use adopted goals, objectives and policies.

The Future Land Use Map shows approximately 50,425 acres in the A1 designation, however this includes other lands such as wetlands, and residential uses in addition to the farmlands. Similarly, Figure A-3 shows approximately 236,207 acres of A2 lands, which are predominantly silviculture lands.

b. Future Commercial: Commercial and service related land use includes those businesses associated with the retail trade sector. The Commercial future land use category has 1,286 acres, which is 0.3 percent of the unincorporated County.

The Floor Area Ratio (FAR) for this land use category shall have be a maximum of 1:1 with a maximum impervious surface lot coverage of 85 percent of the site.

c. Future Conservation: Conservation lands include publicly and privately owned lands dedicated and utilized for conservation and preservation purposes such as but not limited to those associated with the Ocala National Forest the floodplains and wetlands of the St. Johns River and Dunns Creek and the floodplains and wetlands of the Oklawaha River between Rodman Dam and Little Lake George. Projected growth in Putnam County can be

accommodated without removing acreage from the current conservation land use category. The Conservation land use category, as shown on the Future Land Use Map, contains approximately 126,789 acres or 26.8% of the unincorporated land area. Privately owned land in this category allows the placement of a home or caretakers residence at a maximum density of one dwelling unit per 30 acres.

d. Future Industrial: The industrial land use category includes manufacturing, assembly and processing facilities, warehousing and distribution centers, and bulk and outdoor storage uses. Mining activities are not part of this land use category. The Putnam Comprehensive Plan - Economic Element provides greater insight regarding industrial activities.

Industrial development may have a maximum FAR of 1.0 and a maximum impervious surface lot coverage of 85 percent of the lot or site. There are approximately 5,808 acres of industrial designated land in unincorporated Putnam as shown on the Future Land Use Map, comprising approximately 1.8 percent of land area.

e. Future Mining: This land use category includes those areas with either active or inactive mines and extraction facilities. There are approximately 8,279 acres of Mining lands, or 1.8 percent of the unincorporated County land area. This is a reduction of approximately 6,631 acres of Mining future land use due to closure and reclamation of some of the Illeuka mines. There are no maximum development intensity thresholds for this category and residential development is not permitted.

f. Future Public Facilities: This land use category includes facilities or services that may be public or privately owned, and are established and intended to provide public benefit. These uses generally include government buildings and grounds including police, fire and emergency rescue services, schools (all levels), libraries religious facilities, civic and community centers, airports, landfills, solid waste transfer stations, water and wastewater treatment facilities (over 500,000 GPD capacity), correctional facilities and similar uses.

Approximately 2,666 acres have been identified for this category as depicted on the Future Land Use Map. The FAR for those structures included under this category will be 0.05:1, with a maximum lot coverage of 70 percent of the site.

g. Future Rural Center: This category is intended to allow rural centers that include a mix of uses located in a compact, contiguous pattern that support the surrounding rural land uses. There are approximately 968 acres of this land use category, which is 0.2 percent of the unincorporated land area.

Residential development is allowed within a maximum density range of dwelling unit per acre up to 4 dwelling units per acre dependent upon accumulation of sufficient density bonus points. The maximum non-residential floor area ratio is 0.7 and the maximum residential FAR is 0.5:1. The maximum impervious surface coverage ratio for non-residential is 75 percent and the maximum residential impervious surface ratio for residential use is 50 percent.

h. Future Rural Residential: The Rural Residential category is intended to provide a transition area from the agriculture to urban uses. This is a mixed-use category with a predominance of residential uses. Residential development is allowed within a maximum density range of 1 dwelling unit per 5 acres up to 1 dwelling unit per acre as determined by using the point score criteria. The maximum Floor Area Ratio for both residential and non-residential uses is 0.4:1, with a maximum residential impervious surface ratio of 40%, and 70% for non-residential uses. There are approximately 27,949 acres of Rural Residential area, which is 5.9 percent of the unincorporated land.

i. Future Urban Reserve: This category is for those areas in proximity to the existing municipalities. Many of these areas do not have a full range of urban infrastructure but are close enough that urban expansion could occur. This category is predominantly for residential and agriculture uses; however, commercial, industrial and public facilities are also allowed. As a mixed-use category, these areas allow more development of commercial, industrial and public facilities with slightly higher residential densities of a maximum of 1 dwelling unit per acres (up to 4 dwelling units per acre after sufficient bonus points have been accumulated). The residential maximum impervious surface ratio is 50% with a FAR of 0.5:1 and the non-residential maximum impervious surface ratio is 80 percent with a FAR of .85:1. There are approximately 9,045 acres of land in the Urban Reserve category, 1.9 percent of the total unincorporated area.

j. Future Urban Service: This category recognizes areas where urban infrastructure, such as central water, sewer, stormwater systems, paved major roads, exists or is programmed and available for more urban type of development. Although agricultural activities are allowed as a holding land use, this land use designation allows a broad mix of residential, commercial, industrial, public facility and recreation uses. Residential development can achieve a density of up to 9 dwelling units per acre, the highest in Putnam County, with adequate density bonus points. Non-residential uses have a more urban FAR of 1.0 with a maximum impervious surface ratio of 85 percent, and residential development has a FAR of 0.7 with a maximum impervious surface ratio of 50 percent. There are approximately 2,932 acres of land in the Urban Service category, 0.6 percent of the total unincorporated area.

6. *Determination of Land Requirements for Residential Land Use*

This section of the Future Land Use Element builds upon the many factors that influence growth and land use and formulates a conceptual plan for the requirement and distribution of land uses in Putnam County as it is projected to appear in the year 2025. The Future Land Use Map (FLUM), Figure A-3, provides a depiction of the spatial distribution of land uses throughout the County.

Much of the housing analysis is contained in the Housing Element and the housing factors that influence the amount of land needed including rate of construction, population projection, and a holding capacity analysis will be included in this section.

a. Residential Land Use: According to the US Census Bureau, in the period between 1990 and 2000, Putnam County's population increased by 5,353 residents. Based upon current

County building permit data, and the University of Florida Bureau of Economic and Business Research's (BEBR) population projections, the County is currently growing at a slightly faster rate.

b. Housing Analysis: Housing need projections were prepared by the Northeast Florida Regional Council based on household projections (population age, household size), household income and housing costs. This data set is included in the Housing Element of the Plan.

c. Seasonal Household Units & Population: Seasonal and population figures are derived by calculating the number of housing units held for occupancy only during limited portions of the year, such as winter residents, and migrant worker units in the unincorporated county, and by extrapolating the seasonal population based on the 2000 Census. Anticipating this component of the population is especially important for infrastructure planning. The seasonal and migrant worker population figures presented in this report are intended to provide the maximum potential that is likely to occur during peak seasons.

The US Census tabulates seasonal housing units under vacant housing for seasonal, recreational or occasional use, housing for migratory workers and "other". The 2000 Census indicated that there were 2,955 seasonal housing units in unincorporated Putnam County, accounting for approximately 13 percent of the unincorporated County's total housing stock.

Although the seasonal population may increase slightly predominantly from the construction of seasonal homes, but also partly from additional seasonal farm labor in 2010-2025, seasonal influx of residents is not anticipated to greatly increase the total projected population and is expected to remain at approximately thirteen percent of the total population.

d. Residential Demolitions: During the time period of 2005 through 2009, 1,400 residential units were demolished. This is a significant increase from previous years. From 2000 through 2005, there were 514 demolition permits issued. From 1980 through 1990, there were 98 demolition permits issued.

e. Determining Number of Residential Housing Units: The Shimberg Center for Affordable Housing assists local governments in determining their projected number of housing units to sustain its population. Housing statistics are only projections based on statistical models and past trends. These projections may not reflect actual conditions or future housing demands and trends of the County. However, these models are the best available data.

Housing need projections were prepared by the Shimberg Center for Affordable Housing based on household projections, household income and housing costs. It is estimated that there will be a total of need for 26,649 residential dwelling units in unincorporated Putnam County by 2025.

f. Determination of Land Requirements for Residential Land Use: The estimated land requirements for the projected housing demand is derived by correlating the housing demand projected for the year 2025 with the amount of land use allocated to various residential land use categories. Table A-5 provides an analysis of residential land use requirements by the applicable land use category. Residential development with a density of more than 1 dwelling unit per acre in unincorporated Putnam County will be encouraged to concentrate in close proximity to

existing urban areas which can provide water and sewer services and within smaller mixed development nodes.

As shown in Table A-5, a total of 327,563 acres of land (as depicted on the Future Land Use Map) will be required to support residential growth development in unincorporated Putnam County through the year 2025.

g. Land Availability: As shown in Table A-1, there are 19,533 acres of Vacant/Undeveloped land in unincorporated Putnam County. These lands shown on the Existing Land Use map are included in the 327,563 acres of lands available for residential development shown on the Future Land Use Map. Projected residential growth can be accommodated without encroaching on land already designated as conservation, historic or agriculture resources.

D. Electric Distribution Substations

Section 163.3209, *F.S.*, requires the County to adopt a policy to ensure that new substations are permissible in all future land use categories except for preservation, conservation, and historic preservation categories. Consistent with this requirement, the County will adopt a policy to include new electric substations as permissible uses in all future land use categories except Conservation.

E. Energy Conservation

In 2008, the Florida Legislature passed HB 697, which required comprehensive plans to address energy conservation and efficiency in future land use, housing, conservation, and transportation elements. Putnam County has prepared new goals, objectives, and policies to incorporate these important concepts into each of the respective elements.

The Future Land Use Element has been amended to include a new goal, objectives, and policies to encourage efficient land use patterns, discourage urban sprawl, and pursue greenhouse gas reduction strategies. Specifically, the County will continue its focus on mixed-use future land use categories and encourage more compact and transit oriented developments. Also, the County has included the allowance of solar and wind farms in certain future land use categories as conditional uses. The County has also adopted Future Land Use Series Map 13, Energy/Conservation Map.

The Housing Element has been amended to include a new objective and policies to develop standards, plans and principles to address energy efficiency in the design and construction of new housing. The County will encourage energy efficient housing and site design, provide educational materials on water efficient landscaping, and educate residents on home energy reduction strategies.

The Conservation Element has been amended to include a new objective and policies to address energy conservation and the reduction of greenhouse gas emissions. The County will continue

its current practices in land conservation and acquisition to help offset carbon emissions, and will allow the use of renewable energy sources.

The Transportation Element has been amended to include a new goal, objective, and policies to incorporate transportation strategies to address reduction in greenhouse gas emissions from the transportation sector. Planning strategies to address greenhouse gas emissions include encouraging transit use, carpooling, trip chaining, energy-efficient land use patterns, increased bicycle and pedestrian facilities, and strategies to reduce vehicle miles travelled.

Table A-1: Unincorporated Putnam County, Existing Land Use 2009¹

Land Use	2009 Percent	2009 Acreage
General Agricultural	13.6	69,909.0
Commercial	0.4	2,056.1
Industrial	0.5	2,570.2
Institutional ²	0.9	4,626.3
Mining	0.6	3,084.2
Recreation/Open Space	19.5	100,237.3
Residential	7.1	36,496.6
Silviculture	39.4	202,530.6
Vacant ³	3.8	19,533.4
SUBTOTAL	85.8	441,043.7
Waterbodies	12.4	63,740.7
Roads, Railroads, Utilities, Canals	1.8	9,252.6
TOTAL	100.00	514,037.00

Sources: Putnam County, 2009

Notes:

1. The existing land use information is for unincorporated Putnam County only.
2. Institutional is comprised of Institutional, Public Grounds and Buildings, and Public Facilities.
3. Vacant lands occur in all Future Land Use categories.

Table A-2: Commercial Minerals

Company Name	Mine Name	Commodity	Status	Location
Chesser & Strickland Sand Company	Interlachen Mine	Sand	InActive	T10S,R24E,S16
Florida Rock Industries	Keuka Mine	Sand	Active	T10S,R24E,S29
Feldspar Corp., Edgar Plastic Kaolin Division	Edgar Mine	Kaolin, Sand	Active	T10S,R24E,S30
Keystone Sand Co.	Grandin Pit	Sand	Inactive	T09S,R24E,S08
United Clay Mines Corp.	Crossley Mine	Sand	Inactive	T10S,R23E,S27
Traxler Peat Co	Florahome	Peat	Active	T09S,R24E,S11; T09s, R24E, S12
Florida Rock Industries	Grandin Mine	Sand	Active	T09S,R23E,S12, T09S, R24E, S07, and south to T10S, R24E, S05, T10S , R243 , S06
Iluka Resources (fka RGC(USA) Mineral Sands) Laubena Farms		Titanium		

SOURCE: Wright, Cynthia Roseman and Carol A. Knox. 1982. Florida

Mining Atlas: A Guide to Mineral Resource Management.

Tallahassee: Department of Environmental Regulation, Bureau of Water Management.

Updated by FDEP 2005

Table A- 3: Population Projections

<i>Year</i>	<i>Total County Population</i>	<i>Unincorporated County Population</i>	<i>Seasonal Unincorporated Population³</i>	<i>Total Unincorporated Population⁴</i>
2010	74,906 ⁴	59,176 ⁴	7,693 ⁴	66,869
2015	75,205 ⁴	59,412 ⁴	7,724 ⁴	67,136
2020	75,506 ⁴	59,650 ⁴	7,755 ⁴	67,405
2025	75,808 ⁴	59,888 ⁴	7,785 ⁴	67,673

Source:

1. Bureau of Economic and Business Research, Table 1. Estimates of Population by County and City in Florida: April 1, 2008.
2. Bureau of Economic and Business Research, Preliminary Estimate of Permanent Population: April 1, 2009. August 14, 2009.
3. Putnam County Seasonal Population Estimate Future Land Use Element Data and Analysis. September 2006. Estimate of seasonal population is 13% of the unincorporated population based upon Census 2000 data.
4. Putnam County Planning and Development Services; Plan-it U.S., LLC. September 10, 2009

Table A-4: Future Land Uses – Unincorporated Putnam County, 2010

Future Land Use Categories	Maximum Density/Intensity	FLUM Acreage	Percent of Uninc. Lands
Agriculture 1	1 du/10 ac – 1du/5 ac & 35% ISR; 85% ISR non-residential	50,425.00	10.7
Agriculture 2	1 du/20 ac – 1 du/10 ac & 35% ISR; 85% ISR non-residential	236,207.00	50.0
Conservation	1 du/30 ac & 10% ISR	126,789.00	26.8
Commercial	1:1 FAR & 85% ISR	1,286.00	0.3
Industrial	1:1 FAR & 85% ISR	5,808.00	1.8
Mining	None	8,279.00	1.8
Public Facilities	0.5:1 FAR & 70% ISR	2,666.00	0.6
Rural Center	1 du/ac & 0.5 FAR; 0.7:1 FAR non-residential	968.00	0.2
Rural Residential	1 du/5 ac & 0.4 FAR; 0.4:1 FAR non-residential	27,949.00	5.9
Urban Reserve	1 du/1 ac & 0.5 FAR; 0.85:1 FAR non-residential	9,045.00	1.9
Urban Service	1 du/1 ac & 0.5 FAR; 0.85:1 FAR non-residential	2,932.00	0.6
GRAND UNINC.TOTAL		472,354.00	100.0

Table A-4.1: Future Land Uses – Changes in Acreage Since 2005 EAR

Future Land Use Categories	FLUM Acreage 2005	FLUM Acreage 2009	Change in Acres
Agriculture 1	47,621	50,058	2,437.15
Agriculture 2	233,711	235,300	1,588.77
Conservation	127,126	126,789	-337.47
Commercial	1,561	1,290	-270.75
Industrial	5,260	5,811	550.53
Mining	14,910	8,275	-6,635.09
Public Facilities	1,806	2,659	853.06
Rural Center	4,511	4,626	115.26
Rural Residential	24,355	25,571	1,216.01
Urban Reserve	8,566	9,045	479.40
Urban Service	2,929	2,932	3.13
TOTAL	472,356	472,356	0.0

Source: Putnam County 2010

Table A-4.2 Future Land Uses – Changes Associated with Rural Center Amendments

Future Land Use Categories	FLUM Acreage 2009	Changes Associated with Rural Centers	New Land Use Total
Agriculture 1	50,058	324.2	50,382
Agriculture 2	235,300	832.0	236,132
Conservation	126,789	0	126,789
Commercial	1,290	-6.0	1,284
Industrial	5,811	24.0	5,835
Mining	8,275	4.3	8,279
Public Facilities	2,659	5.0	2,664
Rural Center	4,626	-3,560.3	1,066
Rural Residential	25,571	2,377.2	27,948
Urban Reserve	9,045	0	9,045
Urban Service	2,932	0	2,932
TOTAL	472,356		472,356

Source: Putnam County 2010

Table A-5: Residential Land Holding Capacity

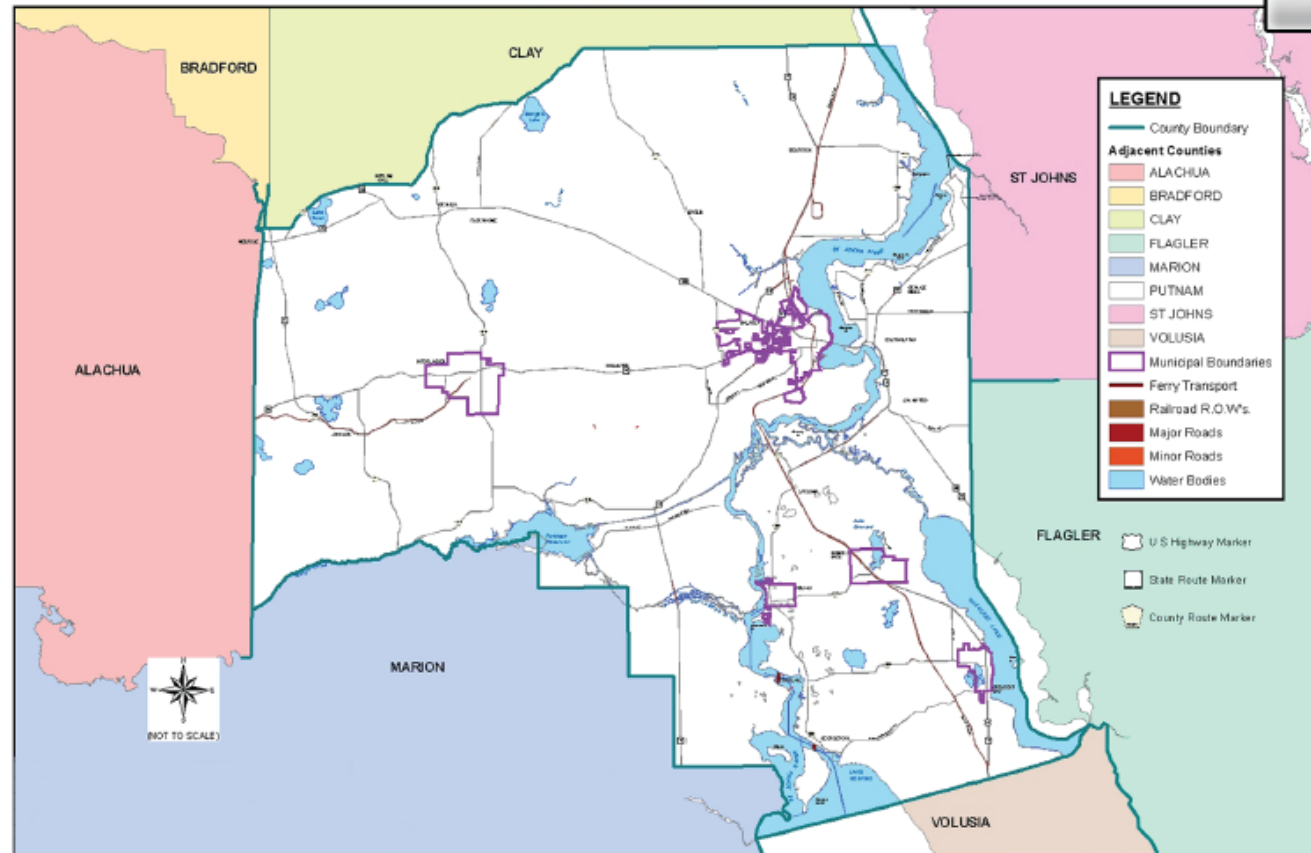
Future Land Use Categories	Total FLUM Acreage	Available for Residential Development	Net for Residential	Densities	Expected Density (Units/Acre)	Potential Total Units
A1	50,382	85%	42,825	1 du/10 ac, up to 1 du/5 ac	0.2	8,565
A2	236,132	85%	200,712	1 du/20 ac, up to 1 du/10 ac	0.1	20,071
Rural Center	1,066	40%	426	1 du/ac up to 4 du/ac	4	1,705
Rural Residential	27,948	70%	19,564	1 du/5 ac, up to 1 du/ac	1	19,564
Urban Reserve	9,045	55%	4,975	1 du/ac, up to 4 du/ac	4	19,899
Urban Service	2,932	40%	1,173	1 du/ac, up to 9 du/ac	9	10,557
Residential Low Density	0	0%	0	1 du/ac, up to 3 du/ac	0	0
RESID. TOTAL	327,505	N/A	269,675	N/A	N/A	80,361

Source: Putnam County, 2010

Notes:

- 1) Column is based upon Future Land Use categories on the FLU Map.
- 2) This column is the total acreage per land use category
- 3) Percentage of total acreage expected to be developed with residential uses. The percentages are derived from the mix of uses for each land use category contained in Policy A.1.9.3.
- 4) Net residential acres resulting from total acreage in column 2 (x) percentage in column 3.
- 5) Residential density ranges for each land use category.
- 6) Expected density = ratio of du/acre
- 7) Total units resulting from net residential acreage (x) expected density.

Figure A-1



9/15/2010

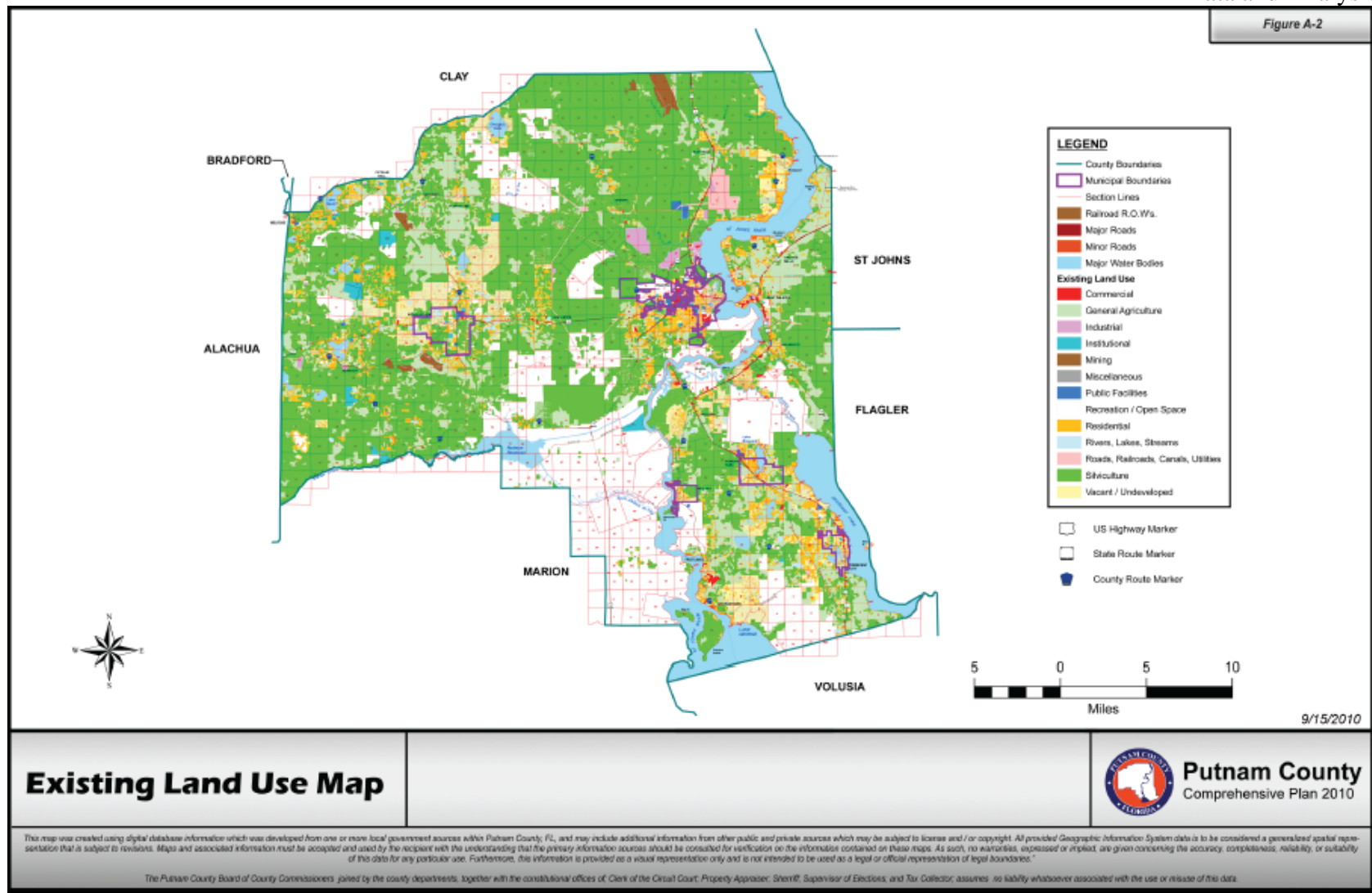
General Location Map



Putnam County
Comprehensive Plan 2010

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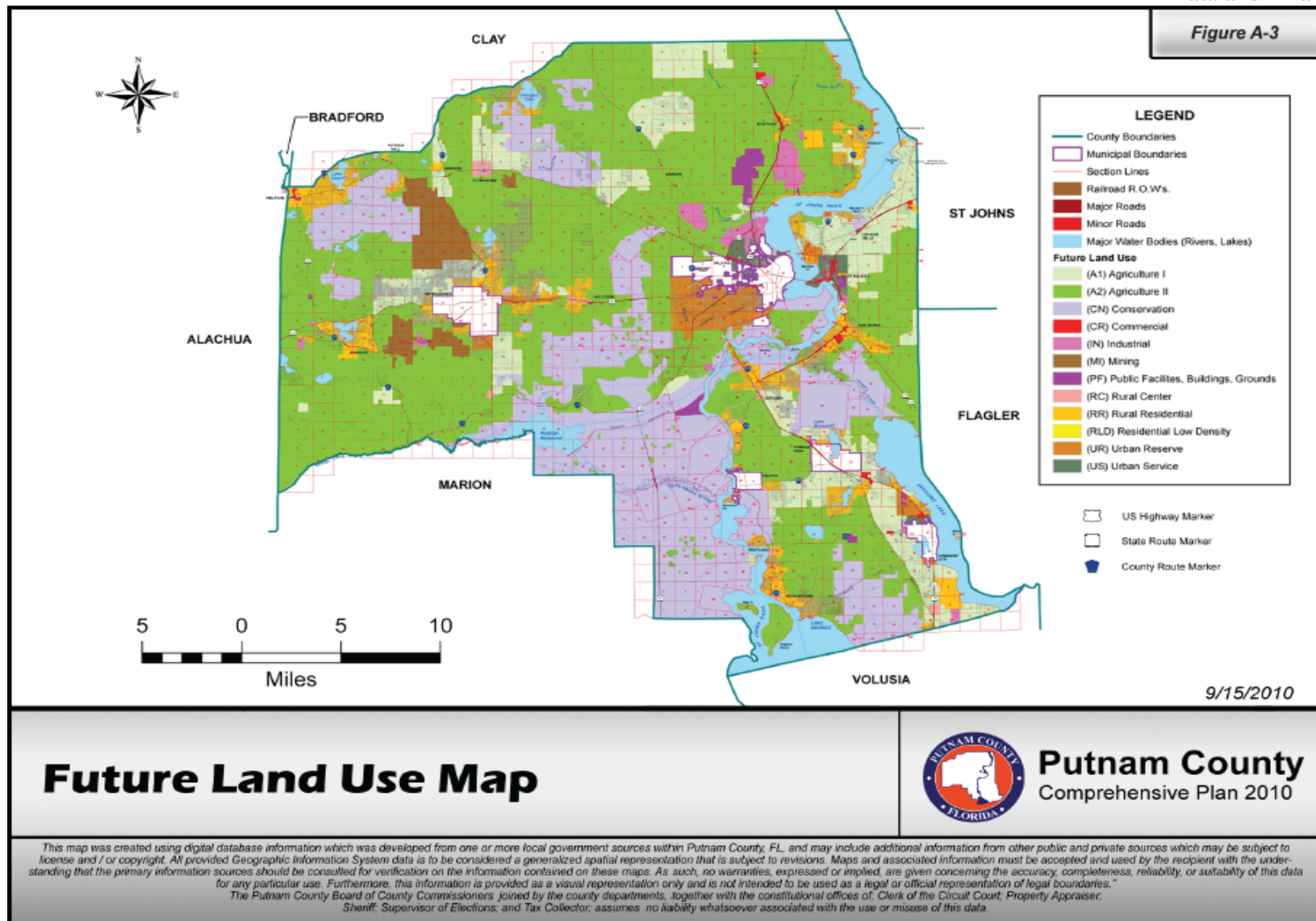
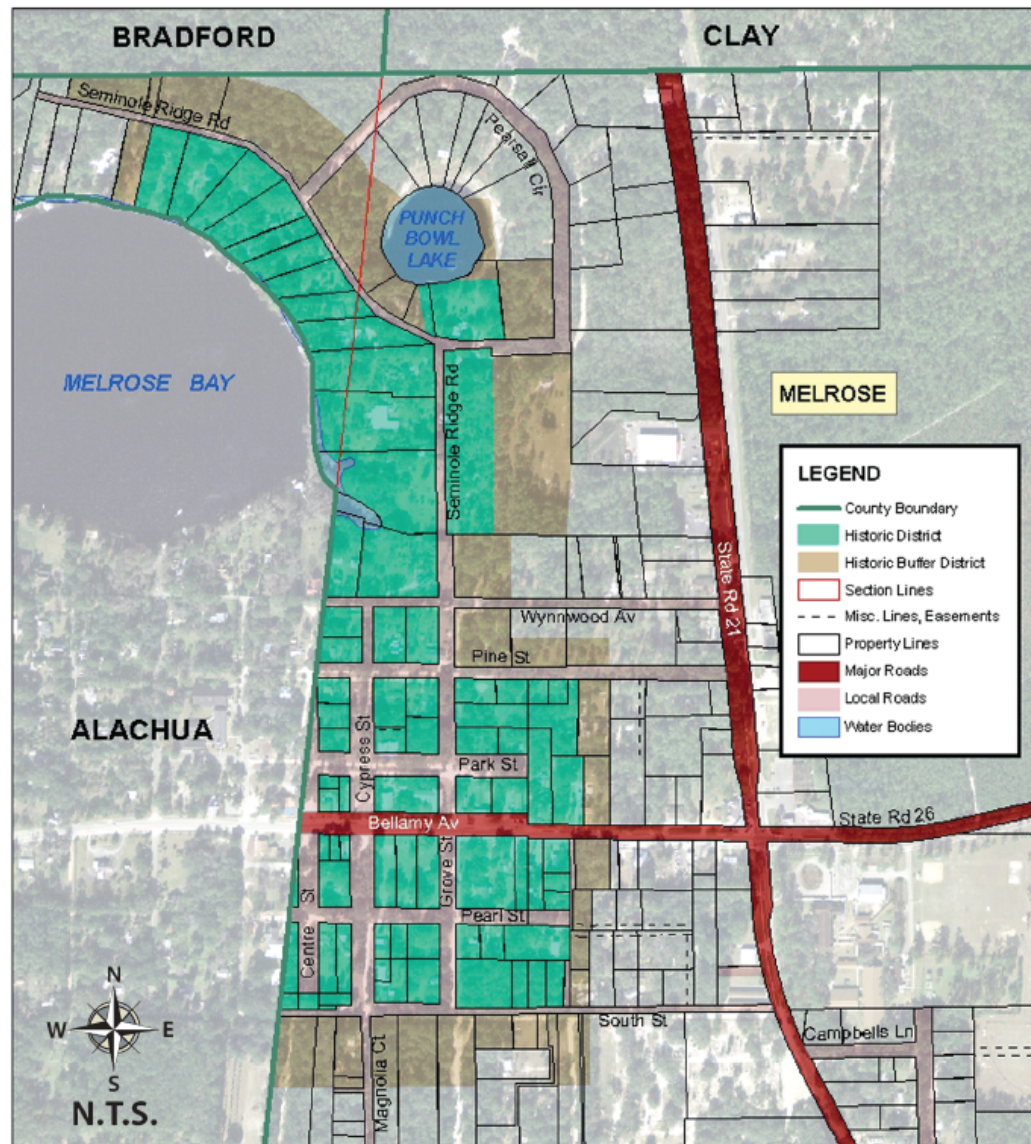


Figure A-4



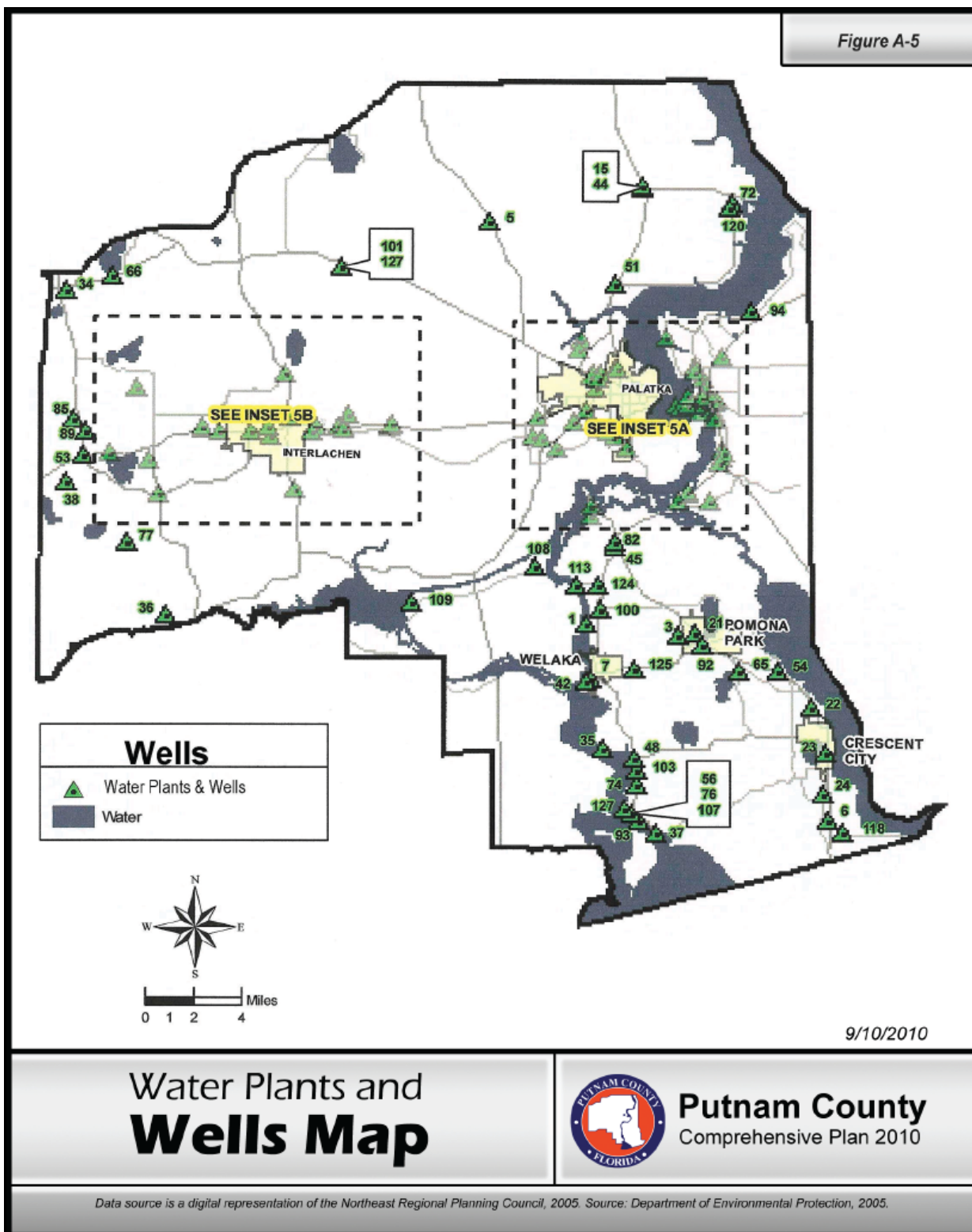
9/10/2010

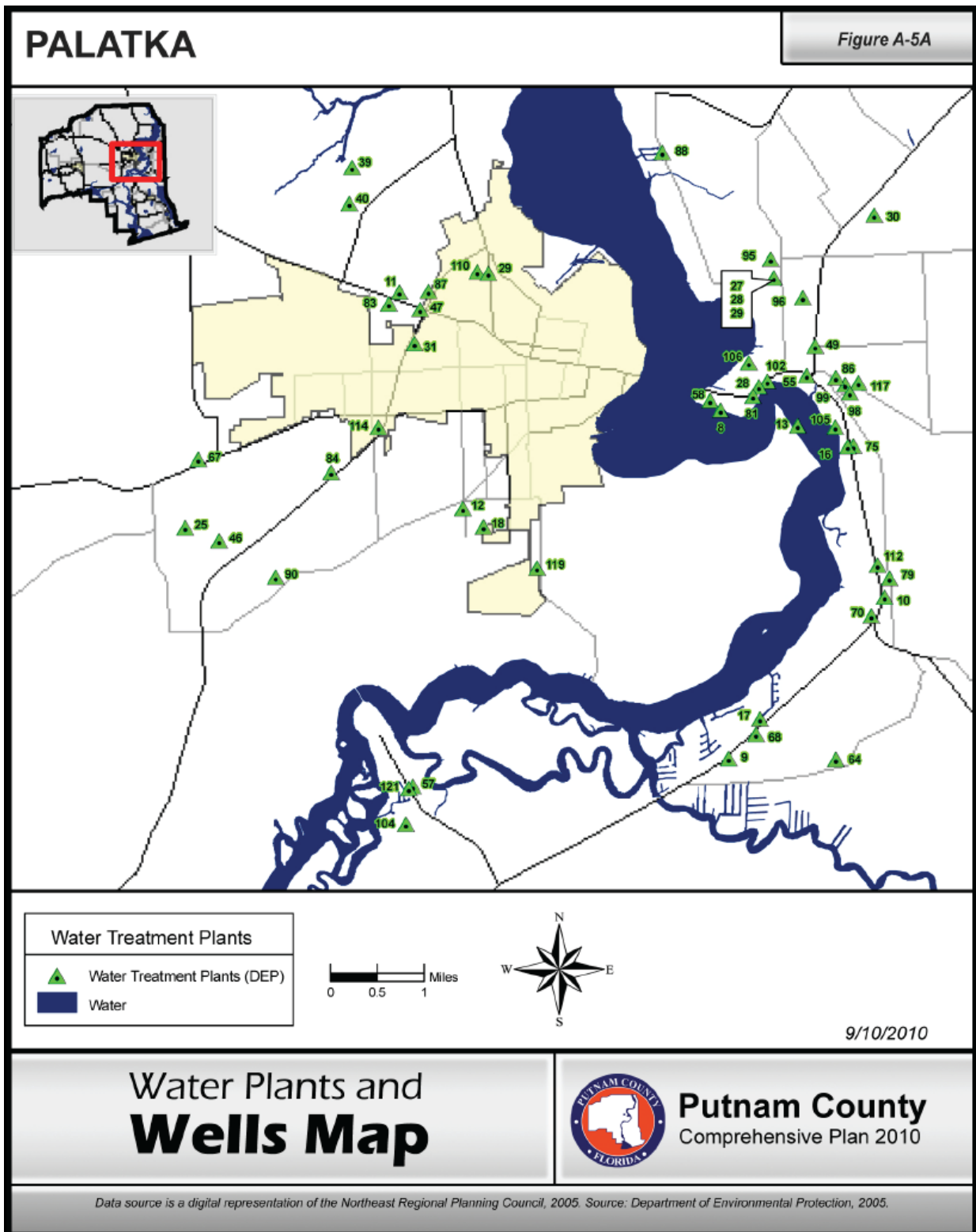
Historic District Map

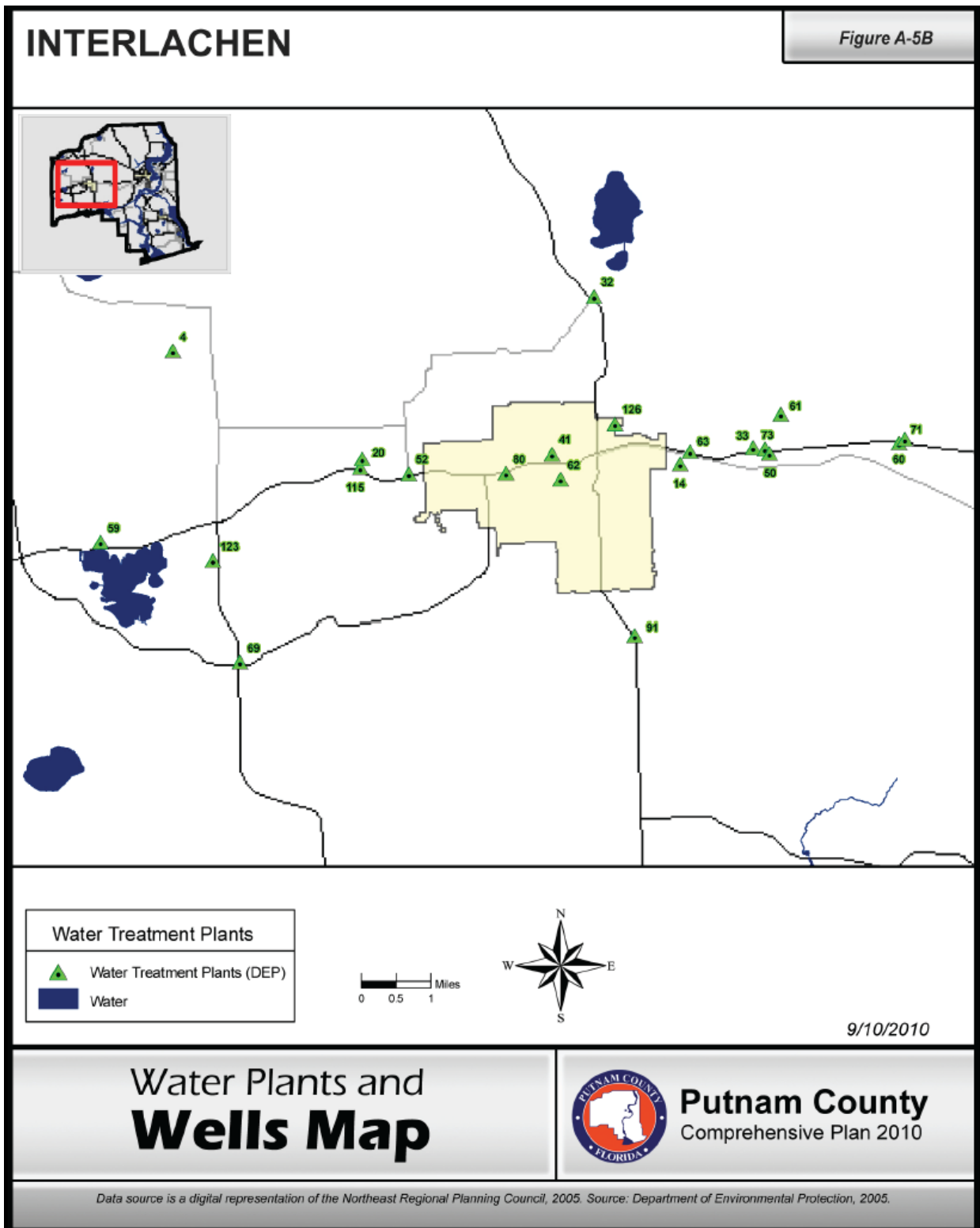


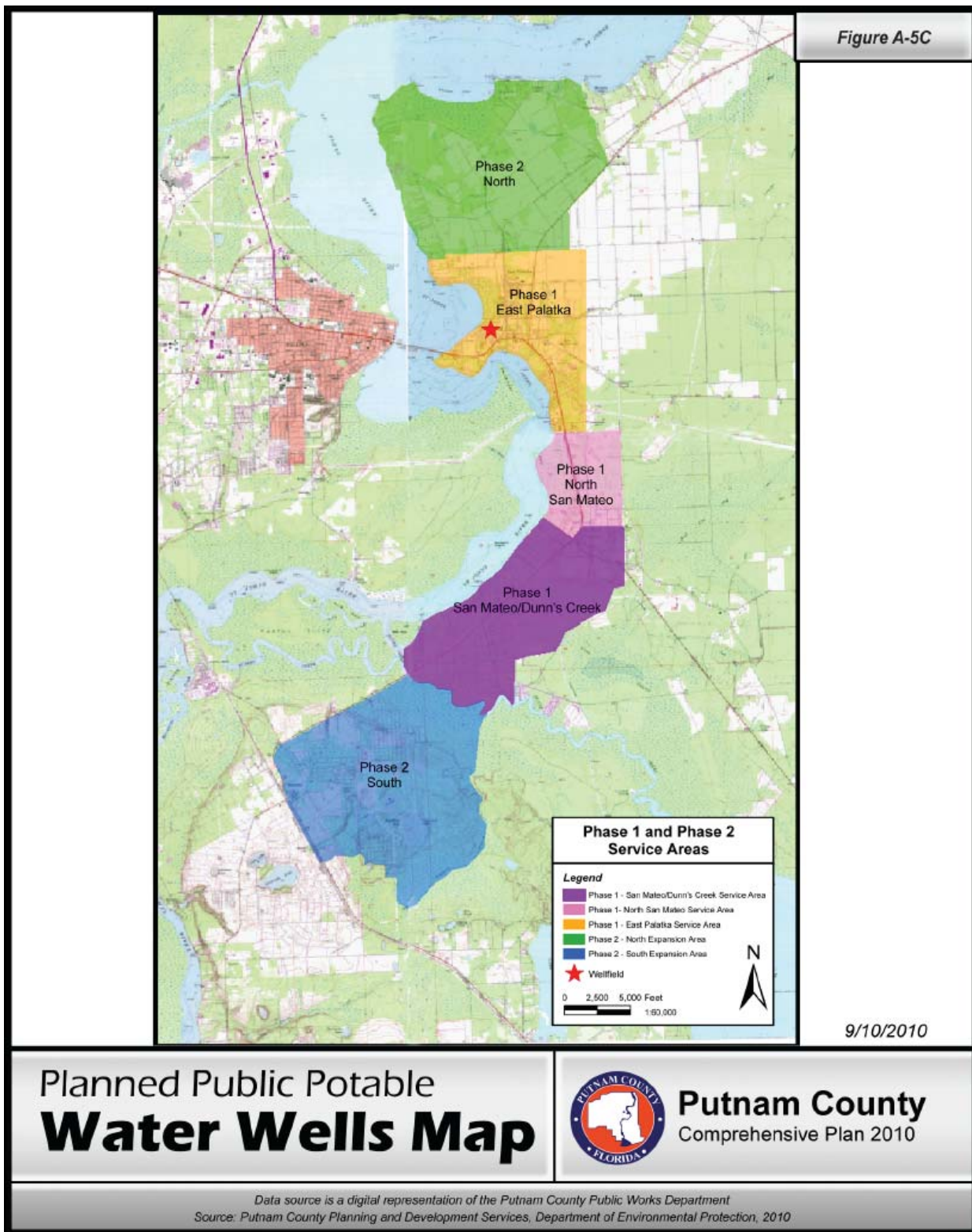
Putnam County
Comprehensive Plan 2010

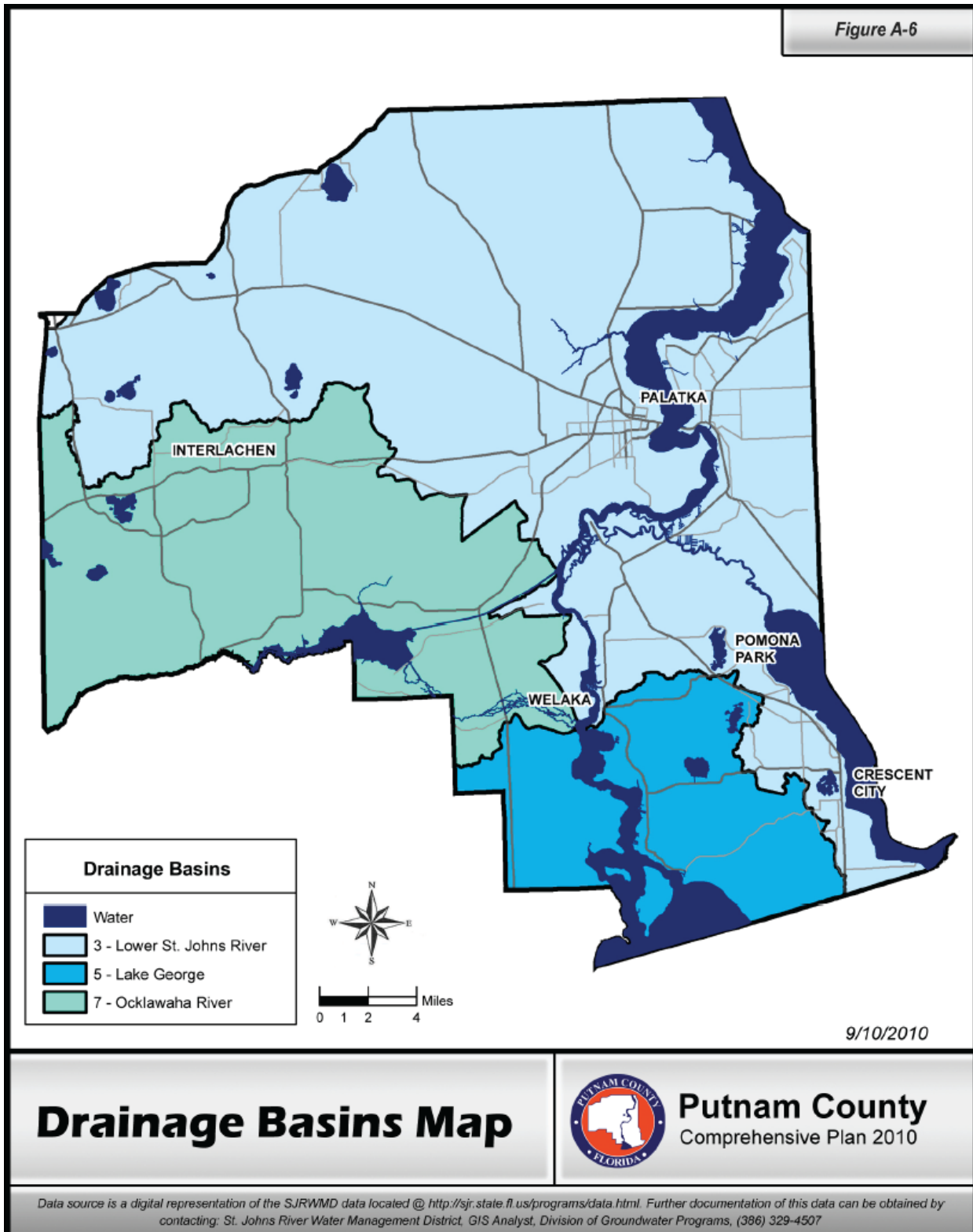
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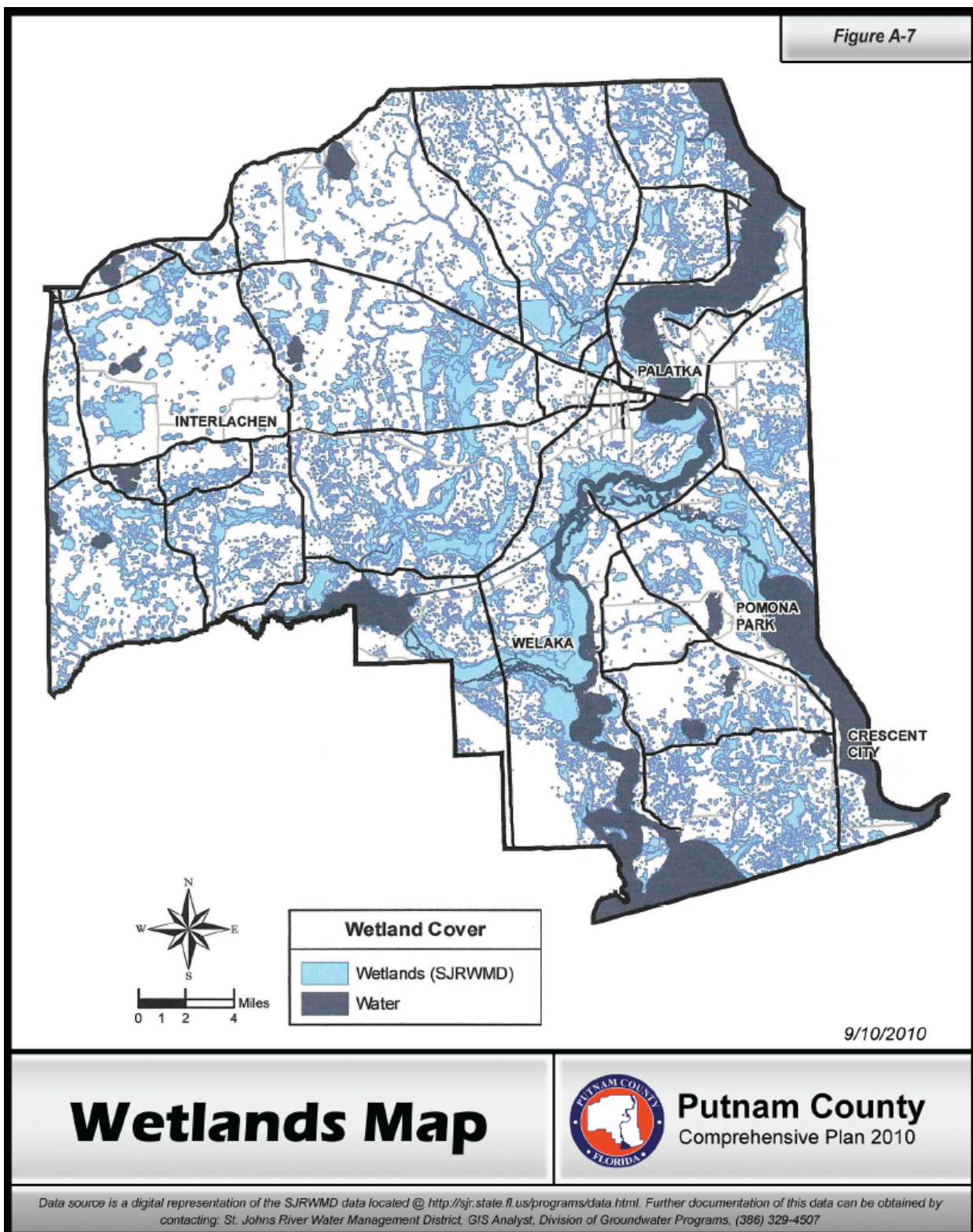
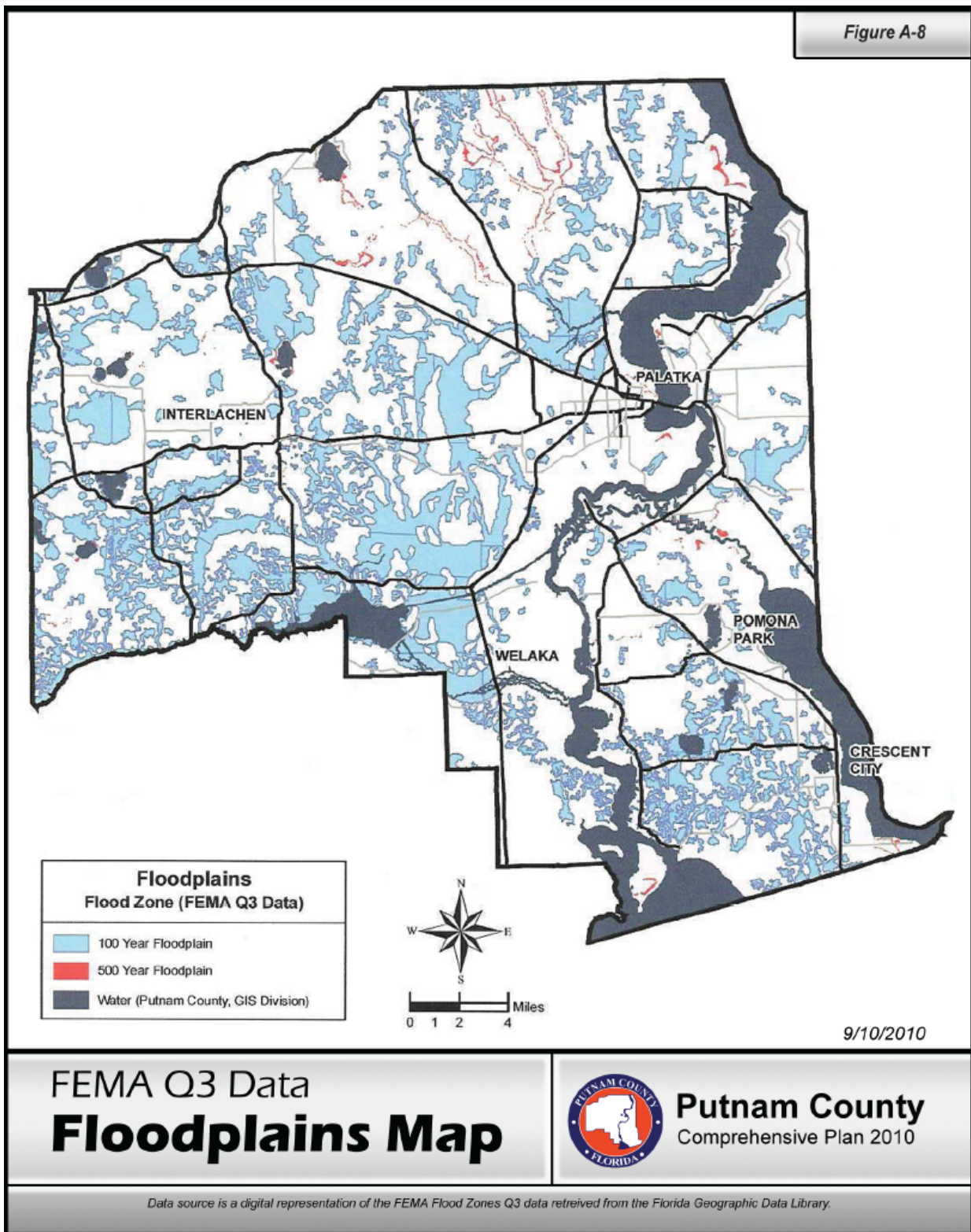


Figure A-8



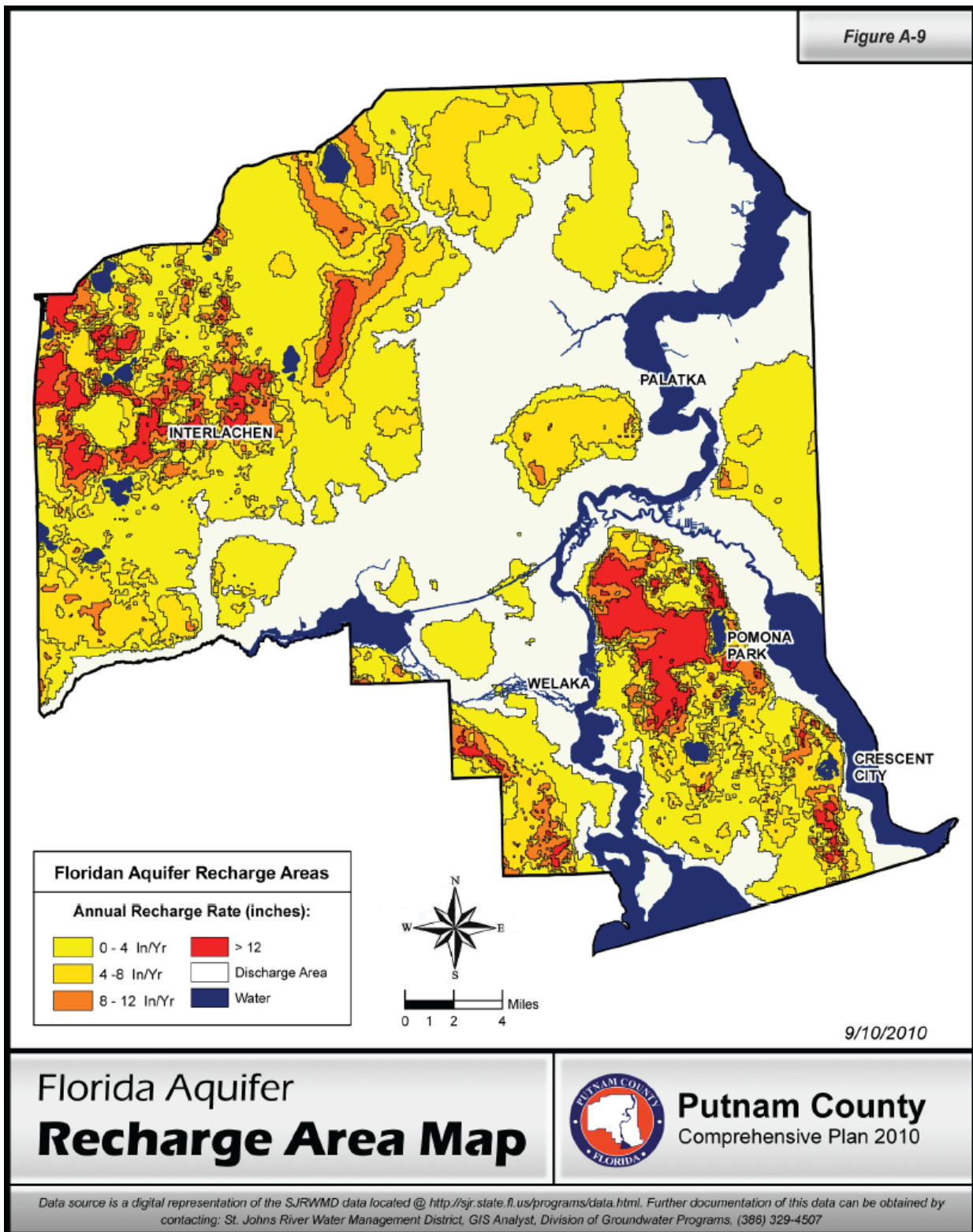


Figure A-10

