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ORDINANCE NO. 2013- 11

AN ORDINANCE OF THE NASSAU COUNTY BOARD OF COUNTY COMMISSIONERS ADOPTING A DEVELOPMENT ORDER FOR THE EAST NASSAU EMPLOYMENT CENTER DETAILED SPECIFIC AREA PLAN OF THE EAST NASSAU COMMUNITY PLANNING AREA, ESTABLISHED BY ORDINANCE 2011-04, UNDER CHAPTER 163, FLORIDA STATUTES; PROVIDING FOR SEVERABILITY; PROVIDING FOR CODIFICATION; PROVIDING FOR AN EFFECTIVE DATE.

LET IT BE KNOWN that, pursuant to Section 163.3245 of the Florida Statutes, the Nassau County Board of County Commissioners heard at a duly noticed public hearing convened on June 24, 2013, an Application for the East Nassau Employment Center Detailed Specific Area Plan ("DSAP") for the East Nassau Community Planning Area ("ENCPA") to be developed in the manner described in the DSAP filed by TERRAPOINTE LLC ("TerraPointe") and other owners of record for said development; and

RECITALS

WHEREAS, on May 23, 2011, Nassau County Board of County Commissioners adopted the Nassau County 2030 Comprehensive Plan by Ordinance 2011-04; and

WHEREAS, the Comprehensive Plan includes provision for the ENCPA; and

WHEREAS, on July 25, 2011, the State of Florida, Department of Community Affairs, and the Board of County Commissioners of Nassau County, Florida, entered into a Long Term Master Plan Conversion Agreement for East Nassau Comprehensive Planning Area pursuant to Florida Statutes, Section 163.3245(10); and

WHEREAS, the ENCPA is a proposed mixed use development on approximately 24,000 acres located near Yulee in Nassau County, Florida (the "ENCPA Property"); and

WHEREAS, the East Nassau Employment Center DSAP consists of approximately 4,202 acres of land divided amount three (3) distinct planning areas henceforth referred to as the Northern, Southern, and Central Planning Areas, further described in Exhibit "A" and as depicted in Exhibit "B"; and

WHEREAS, TERRAPOINTE LLC and the following entities are the Owners of Record for the ENCPA Property: Rayonier East Nassau Timber Properties I, LLC, Rayonier East Nassau Timber Properties II, LLC, Rayonier East Nassau Timber Properties V, LLC, Rayonier East Nassau Timber Properties VI, LLC, Rayonier East Nassau Timber Properties VII, LLC, all which are wholly-owned subsidiaries of TerraPointe, and Rayonier East Nassau Timber Properties III, LLC, and Rayonier East Nassau Timber Properties IV, LLC, which are wholly owned subsidiaries of Timberlands Holding Company No. 1, Inc., and

WHEREAS, the authorized agents for the Owners are Rogers Towers, P.A., 960185 Gateway Boulevard, Suite 203, Amelia Island, Florida 32034 and VHB/MillerSellen, 225 E. Robinson Street, Suite 300, Orlando, FL 32801; and

WHEREAS, pursuant to Section 163.3245(3), Florida Statutes, sector planning encompasses two levels: (1) adoption of a long-term master plan for the entire planning area as a part of the Comprehensive Plan, and (2) adoption by local development order of two or more detailed specific area plans that implement the long-term master plan; and

WHEREAS, the Nassau County Board of County Commissioners considered the report and recommendations of the Nassau County staff and the documents and comments made before the Nassau County Board of County Commissioners and finds that the DSAP plan attached to and incorporated in this ordinance is consistent with the Nassau County 2030 Comprehensive Plan; and,

WHEREAS on December 17, 2012, Nassau County Board of County Commissioners adopted Ordinance 2012-39, rezoning the ENCPA as "Planned Development for East Nassau Community Planning Area (PD-ENCPA)"; and,

WHEREAS, the Planning and Zoning Board conducted a public hearing on May 7, 2013, and found that the East Nassau Employment Center DSAP is consistent with the Nassau County Comprehensive Plan and Florida Statutes, Section 163.3245, and recommended approval of this Development Order to the Board of County Commissioners; and

WHEREAS, on June 24, 2013, Nassau County Board of County Commissioners adopted a development agreement between Nassau County and TerraPointe LLC, and the above referenced Owners of Record, establishing a Mobility Fee Agreement for the ENCPA; and

WHEREAS, the terms and conditions herein and incorporated into the simultaneously approved Mobility Fee Agreement constitute an implemented funding mechanism under the established alternative mobility funding system adopted herein and in the Agreement; and

WHEREAS, on June 24, 2013, Nassau County Board of County Commissioners adopted Ordinance 2013-10, approving the use of tax increment revenues and establishing an ENCPA Mobility Network Fund to support and subsidize the mobility fee program within the ENCPA ("Ordinance 2013-10").

FINDINGS OF FACT AND CONCLUSIONS OF LAW

1. The DSAP is consistent with Section 163.3245, Florida Statutes; and

2. The proposed DSAP is consistent with the Nassau County 2030 Comprehensive Plan, including the policies relating to the ENCPA, and Nassau County land development regulations, including the PD-ENCPA Ordinance.

NOW, THEREFORE, BE IT ORDAINED by the Board of County Commissioners of Nassau County, Florida, in public hearing duly constituted and assembled on June 24, 2013, that the DSAP is hereby approved, subject to the following terms and conditions, restated in full:

GENERAL CONDITIONS AND COMMITMENTS

1. **Application for Development Approval**. The DSAP shall be developed on the Property in accordance with (1) Objective FL.13 and associated policies of the Future Land use Element of the Nassau County Comprehensive Plan, as amended, (2) the DSAP Land Use Map, which is attached hereto as Exhibit "B", and (3) the Application for East Nassau Employment Center Detailed Specific Area Plan, prepared by VHB/MillerSellen, dated November 1, 2012, which is attached hereto as Exhibit "C." The aforementioned items shall be made part of this Development Order.

2. **Environmental Conditions.** Regionally significant natural resources have been identified and designated as part of a Conservation Habitat Network ("CHN"). The CHN is subject to the following general guidelines and standards:

a. Prior to the filing of the first application for Preliminary Development Plan (PDP) within the DSAP, a management plan shall be developed that promotes maintenance of native species and diversity in such areas and which may include provisions for controlled burns.

b. New roadway crossings for wildlife corridors within the CHN for development activity shall be permitted in conjunction with the design of the internal road network, but shall be minimized to the greatest extent practical.

c. Road crossings within the CHN will be sized appropriately and incorporate fencing or other design features as may be necessary to direct species to the crossing and enhance effectiveness of such crossings.

d. Prior to the filing of the first application for PDP within the DSAP, an environmental education program shall be developed for the CHN and implemented in conjunction with a property Owners association, environmental group, or other community association or governmental agency so as to encourage protection of the wildlife and natural habitats incorporated within the CHN.

e. The boundaries of the CHN are identified on Map FLUMS-6. The boundaries of the CHN within the DSAP shall be formally established as conservation tracts or placed under conservation easements when a development parcel abutting portions of the CHN undergoes development permitting with the St. Johns River Water Management District ("SJRWMD") and pursuant to the following criteria:

   i. As to wetland edges forming the CHN boundary, the final boundary shall be consistent with the limits of the jurisdictional wetlands and associated buffers as established in the applicable SJRWMD permits;

   ii. As to upland edges forming the CHN boundary, the final boundary shall be established generally consistent with Map FLUMS-6, recognizing that minor adjustments may be warranted based on additional or refined data, and any boundary adjustments in the upland area shall (a) continue to provide for an appropriate width given the functions of the CHN in that particular location (i.e., wetlands species or habitat protection), the specific site conditions along

such boundary, and the wildlife uses to be protected, and (b) ensure that the integrity of the CHN as a wildlife corridor and wetland and species habitat protection area is not materially and adversely affected by such boundary; and

iii. Boundary modifications meeting all of the criteria described in this subsection shall be incorporated into the CHN and ENCPA Master Land Use Plan upon issuance of the applicable SJRWMD permits and shall be effective without the requirement for an amendment to the Nassau County Future Land Use Map, ENCPA Future Land Use Element policies, or any other Nassau County Comprehensive Plan elements defined in Chapter 163, Florida Statutes.

f. Silvicultural and agricultural activities allowed in the Agricultural classification of the Future Land Use Element of the Nassau County 2030 Comprehensive Plan, excluding residential land uses, shall continue to be allowed within the CHN. When the final boundaries of any portion of the CHN are established as described above, a silvicultural management plan will be developed in accordance with best management practices to protect the overall conservation objective of such portion of the CHN.

g. A full natural resource analysis was completed by Breedlove, Dennis & Associates. The findings of this analysis are incorporated into the DSAP application as Appendix "A" and consistent with Policy FL.13.07(A)(1)(e) have guided the refinement of the CHN boundaries.

h. Wetland protection within the ENCPA Property is regulated by the SJRWMD and the Department of the Army, Corps of Engineers ("ACOE"). Prior to development, the extent of state jurisdictional wetlands and surface waters will be determined based on the Florida unified wetland delineation methodology (Chapter 62-340, Florida Administrative Code ("F.A.C.")). Dredge and fill activities and mitigation for these activities are regulated by the state through the Florida Department of Environmental Protection ("FDEP"), SJRWMD, and ACOE. In addition to state and

federal regulations, wetland protection within the Central Planning Area is included with the CHN guidelines and standards outline in ENCPA Policy FL.13.07.

3. **Transportation/Mobility Facilities.** Set forth in the Mobility Fee Agreement and below are the transportation/mobility facilities needed to serve the future land uses in the DSAP and the funding mechanisms for those improvements:

a. In assessing the transportation/mobility facilities needed to serve the DSAP, the needs for the entire ENCPA have been assessed. Given the uses proposed in the ENCPA, the following improvements (followed by the projected cost of each) will serve the ENCPA, are further depicted and described in Exhibits B and E to this Development Order, and comprise the ENCPA Mobility Network. These improvements do not include improvements which are internal to a residential subdivision (such as subdivision streets) or non-residential development (such as driveways) or which are related to a subdivision or development entrance or exit (such as turn lanes, acceleration/deceleration lanes, and entrance signalization) to an ENCPA Mobility Network improvement.

1) CR 108 Extension - $25,097,242.00

2) New I-95 Interchange - $23,725,000.00

3) Interchange Road - $22,890,267.00

4) US 17 Widening - $7,216,927.00

5) Employment Center (north/south road) - $34,855,360.00

6) Employment Center (Collector Roads) - $8,061,994.00

7) Traffic Signals at major intersections - $2,800,000.00

8) Intersection left turn lane improvements - included with Traffic Signals at major intersections

9) I-95/SR A1A Interchange Improvements - $700,000.00

10) SR A1A and William Burgess Boulevard Intersection Improvements - $500,000

11) Internal trails - $8,166,050.00

Total Cost of ENCPA Mobility Network - $134,012,840.00

Collectively, and as they may be amended pursuant to the Mobility Fee Agreement, these are referred to as the "ENCPA Mobility Network".

b. Funding of the ENCPA Mobility Network will be accomplished in part through the ENCPA Mobility Network Fund as defined in the development agreement between Nassau County and TerraPointe LLC, and the above referenced Owners of Record.

c. As described in the DSAP, transportation/mobility improvements needed to serve the DSAP include long-term (2035) and short-term (five years) improvements within the ENCPA Mobility Network.

d. The short-term (five-year) development program for the Central Planning Area as depicted in Exhibit "B" consists of 250 multi-family residential units and 400,000 square feet of non-residential uses, which uses are projected to generate a total of 6,216 daily trips. The short-term (five-year) improvements needed to serve the Central Planning Area when uses which generate such total traffic are completed and open (and have received certificates of occupancy) consist of Mobility Network roadway segments to provide access to development parcels. A signal at SR A1A and the North-South Arterial Road may be needed and should be evaluated as development occurs.

e. The long-term (build-out) development program for the Central Planning Area consists of 2,500 multi-family residential units and 7,000,000 square feet of non-residential uses (retail, office, and industrial), which uses are projected to generate a total of 91,480 daily trips. The long-term (build-out) improvements needed to serve the Central Planning Area when uses which generate such total traffic are completed and open are:

i. North - South Arterial Road (4 lanes, initially constructed as 2 lanes) - This roadway will extend through the Central Planning Area (the Employment

Center) from SR A1A to the East-West Interchange Road. A traffic signal is assumed at the intersection of this roadway and SR A1A.

ii. East - West Interchange Road (4 lanes, initially constructed as 2 lanes) - This roadway will provide access to the Central Planning Area from US 17.

iii. Collector Roadways (2 lanes with turn lanes) - The collector roadways for the Central Planning Area provide a second access point to and from SR A1A, as well as connections to the TOD area near US 17.

iv. Trail System - A system of multi-use trails is planned to provide non-auto travel choices within the Central Planning Area. The trail system will accommodate pedestrians, bicyclists and golf carts. Approximately 20 miles of trails are included as part of the Mobility Network for this area.

v. Transit Oriented Development - The Central Planning Area provides opportunities for TOD around any future stations developed as part of a potential commuter rail system.

f. No short-term (five-year) development is projected in the Northern Planning Area as depicted in Exhibit "B." The short-term (five-year) development program for the Southern Planning Area as depicted in Exhibit "B" consists of 100 single family residential units, which use is projected to generate a total of 957 daily trips. No short-term (five-year) Mobility Network improvements are needed to serve the Northern or Southern Planning Areas.

g. The long-term (build-out) development program for the Northern Planning Area consists of 769 single-family residential units and 75,000 square feet of retail uses, which uses are projected to generate a total of 12,425 daily trips. The long-term (build-out) development program for the Southern Planning Area consists of 769 single-family residential units and 25,000 square feet of retail uses, which uses are projected to generate a total of 9,550 daily trips. No long-term (build-out) Mobility Network improvements are needed to serve the Northern Planning Area. The long-term (build-out) Mobility Network Improvements needed to serve the Southern Planning Area when uses which generate the total traffic identified above are

completed and open (have received certificates of occupancy) consist of the SR A1A and William Burgess Boulevard intersection improvements described in Section 3(a)(10) above.

h. Consistent with the analysis in the Memorandum dated March 19, 2013 from Laurence Lewis to Nick Gillette and entitled "Revised SRA1A Interchange Analysis for the ENCPA DSAP Employment Center," attached hereto as Exhibit "D" (the "Lewis/Gillette Memorandum"), interchange monitoring and phased improvements shall be governed by the following:

i. When TerraPointe receives notice from the County that development within the DSAP for which building permits have been issued meets or exceeds 1.4 million sf of non-residential development or, cumulatively, 405 residential units and 1.1 million sf of non-residential development, which uses are projected to generate a total of 14,834 daily trips, TerraPointe or its successors or assigns shall conduct and submit to the Planning Director annual traffic monitoring of the existing Interstate 95/SR A1A interchange. Traffic monitoring shall include (a) intersection turning movement counts at the two signalized intersections; and (b) intersection capacity analyses at each location for the AM peak and PM peak periods. The analysis shall be based on actual observed traffic levels.

ii. If the intersection capacity analyses in the traffic monitoring indicate that no failing (at or below Level of Service "F") movements exist during the AM or PM peak periods, development within the DSAP is authorized to continue per the conditions of the Development Order and TerraPointe or its successors or assigns shall continue to conduct annual traffic monitoring of the interchange.

iii. If the intersection capacity analyses in the traffic monitoring indicate that failing (at or below Level of Service "F") movements exist during either the AM or PM peak periods, TerraPointe or its successors or assigns shall identify intersection improvements necessary to improve failing (at or below Level of Service "F") movements at the existing interchange (bring those

movements above Level of Service "F"). Such improvements are described in the Lewis/Gillette Memorandum and may include the following:

(a). Signal retiming

(b). Additional right turn lanes on the northbound exit ramp

(c). Additional lanes on the northbound entrance ramp, accompanied by a second westbound left turn lane on SR A1A

(d). Additional left turn lanes on the southbound exit ramp

(e). Other improvements as identified based on the analysis results

iv. Construction of the improvements shall be implemented by TerraPointe or its successors and shall be phased as needed to improve failing (at or below Level of Service "F") movements at the existing interchange (bring those movements above Level of Service "F"), up to a total cost of $700,000, which already has been included in the total costs for ENCPA mobility improvements. As the analyses are prepared and reviewed and as the improvements described are being implemented, development within the DSAP is authorized to continue per the conditions of the Development Order. TerraPointe or its successors or assigns shall continue to conduct annual traffic monitoring of the existing interchange after the intersection improvements have been constructed.

v. Upon completion and acceptance of the intersection improvements totaling $700,000 at the existing interchange, TerraPointe or its successors or assigns shall initiate with the County, at no cost to the County, and shall coordinate with FDOT and the TPO the planning process for preparing and submitting the Interchange Justification Report for the new I-95 interchange. Regardless of the timing of improvements at the existing interchange, the Interchange Justification Report shall be initiated prior to the build-out of the Employment Center DSAP. As the Interchange Justification Report is initiated and proceeds, development within the DSAP is authorized to

continue per the conditions of the Development Order. TerraPointe or its successors or assigns also shall continue to conduct annual traffic monitoring of the improved existing interchange.

vi. Thereafter, if the Interchange Justification Report has not been approved for the new I-95 interchange and (a) TerraPointe receives notice from the County that development within the DSAP for which building permits have been issued meets or exceeds, cumulatively, 1,875 residential units and 5.25 million sf of non-residential development, which uses are projected to generate a total of 68,610 daily trips, and (b) annual monitoring projects failures (at or below Level of Service "F") at the improved existing interchange within three (3) years of the monitoring, then, within three (3) months after TerraPointe's receipt of the notice in (a) and submittal of the monitoring in (b), TerraPointe or its successors or assigns shall initiate a proposed amendment to this DSAP Development Order. The application for the amendment shall include a study which identifies alternative and additional intersection improvements necessary to improve projected failing movements at the existing interchange (bring those movements above Level of Service "F") and shall propose necessary funding and phasing to construct such improvements. Nothing herein shall be construed to obligate the County to provide funding for such alternative and additional intersection improvements in any amount exceeding the amount which is available to be paid from the ENCPA Mobility Network Fund as defined in the development agreement between Nassau County and TerraPointe LLC, and the above referenced Owners of Record.

vii. After build-out, annual monitoring of the existing interchange may be discontinued.

i. Within this DSAP, any applicant for a PDP shall submit a Transportation Impact Analysis (TIA) to the Planning Director, using the same methodologies as set forth in Exhibit "E" to this DSAP, demonstrating which improvement(s) in the ENCPA Mobility Network set forth in Section 3(a) above, if any, are necessary as provided in this DSAP DO to serve development proposed in the PDP. The review procedures

for the TIA are established in the Mobility Fee Agreement. If the TIA concludes that any ENCPA Mobility Network improvements are necessary as provided in this DSAP DO to serve development proposed in the PDP, the applicant shall provide assurances to the Planning Director that (a) the improvements shall be commenced (a contract executed and bond posted) prior to or contemporaneous with commencement of the development, or portion of such development, which generates the need for the improvements as demonstrated in the TIA and as provided in Section 3(c)-(g) herein, or (b) the improvements shall be commenced consistent with the monitoring and phasing or timing of improvements as provided in Section 3(h) herein.

j. In order to promote alternative forms of transportation, a comprehensive system of bicycle paths and pedestrian walkways or multi-use trails shall be provided throughout the DSAP.

4. **Land Uses Summary/DSAP Land Uses**. There are five distinct proposed land uses in the DSAP: Employment Center (EC), Regional Center (RC), Village Center (VC), Transit Oriented Development (TOD) and Residential Neighborhood (RN). A summary of each sub-category follows below.

a. Employment Center (EC): The primary land use within the Central Planning Area is planned as a 1,441 acre employment center comprised primarily of office/research, light industrial, and commercial uses. The following are the general design guidelines for the EC category:

i. Development in the EC land use category shall be subject to the following land use mix percentage ranges and requirements (percentages are gross within the Central Planning Area):

(a). Office, research park and business service- 15% to 90%

(b). Industrial (manufacturing and warehousing distribution) - 0% to 60%

(c). Support retail, hotel and services- 0% to 10%

(d). Civic, public facilities and transit stations- 10% minimum; and

(e). Residential- 0% to 10%

ii. Shared parking areas and garages shall be permitted for all EC uses, including any civic and public facilities.

iii. Development shall be designed to incorporate landscaping and pedestrian amenities such as benches and bicycle parking along sidewalks and multi-use paths and streets.

iv. Development shall be designed to accommodate feeder bus, bus rapid transit, and other transit stops.

b. Regional Center (RC): The Central Planning Area is planned as a 254+/- acre RC, which will include a broad mix of uses such as, but not limited to, residential, highway commercial/interchange-related uses, regional scale retail, commercial, hotel, office, business/research parks and light industrial. The RC is planned to provide access to multi-modal transportation facilities including US 17 and the CSX rail corridor. As such, a portion of the area has been designated as a TOD district, discussed in further detail below. The following are the general design guidelines for the RC category:

i. The RC shall be designed to incorporate the key elements of a Multi-Modal Transportation District, pursuant to ENCPA policy FL.13.05.

ii. Residential development shall be permitted as detached single family units, attached townhomes, multi-family units and live-work units; residential units may be located above ground floor commercial and professional office. Residential development within the RC is not subject to density bonuses found elsewhere in the Nassau County 2030 Comprehensive Plan.

iii. Subject to a binding agreement, shared parking areas shall be permitted for all RC uses, including any public and civic land uses. The County's land development regulations may provide reduced minimum parking ratios for

development located within one-half mile of a rail transit stop or within one-quarter mile of a feeder transit line.

iv. Development shall be designed to incorporate landscaping and pedestrian amenities such as benches and bicycle parking along neighborhood sidewalks and multi-use paths.

v. Development shall be designed to incorporate high quality plazas and parks that serve residents, employees and visitors of the RC.

vi. Development shall be designed to accommodate feeder bus/transit stops.

c. Village Center (VC): The VC will be located on approximately 26 acres of the Northern Planning Area. The VC land use category is intended to serve higher density/intensity, mixed-use centers for surrounding residential neighborhoods. The general design guidelines for the VC are:

i. Residential development shall be permitted as single family, multi-family, or attached live-work units and shall be permitted above ground floor commercial and professional office.

ii. On-site parking for commercial and office land uses shall be located behind or beside buildings fronting on primary streets.

iii. Shared parking areas shall be encouraged for all VC uses, including any public and civic land uses.

iv. Sites shall be designed to incorporate landscaping and pedestrian amenities such as benches and bicycle parking along neighborhood sidewalks and multi-use paths.

v. Sites shall be designed to incorporate plazas and parks that serve the VC and surrounding neighborhoods.

vi. Sites shall be designed to accommodate existing or future feeder bus/transit stops.

d. Transit Oriented Development (TOD): Approximately 50 acres of the RC has been designated as a TOD District. This area was chosen due to its proximity to the CSX rail corridor and the potential for future commuter rail service. The TOD District is intended to be developed as a multi-modal transportation center accommodating a full range of uses including residential, retail, office and civic and organized to encourage walking as the primary form of transportation. Since the TOD district is located in the RC, the general guidelines contained in ENCPA Policy Fl.13.07(B)(1) apply to the TOD District. In addition, the following characterizations also apply to the TOD District:

i. Compact building and site design;

ii. A walking and biking environment;

iii. A mix of transit-supportive uses;

iv. Attention to pedestrian access;

v. Highest concentration of population and employment will be located closest to transit stations;

vi. Transit-supportive parking;

vii. Development within an area designated as TOD shall contain the following percentage of block types (percentages are gross within the TOD District):

(a). Mixed Use Blocks - 15% to 80%

(b). Retail Blocks - 0% - 50%

(c). Office Blocks - 0% - 60%

(d). Residential Blocks - 15% - 60%

(e). Civic Blocks - 5% - 30%; and

viii. On-site parking for commercial and office land uses shall be located behind or beside buildings fronting on primary streets (excluding internal access lanes).

e. Residential Neighborhood (RN): A majority of the Northern Planning Area and the entirety of the South Planning Area have been designated as RN. The sub-category is divided into three tiers to create a hierarchical pattern of resident neighborhoods radiating outward from the VC. Tier 1 neighborhoods are mid-density residential areas adjacent to Village Centers. Tier 2 neighborhoods are lower density in character and generally located ½ to 1 mile from Village Centers. Tier 3 represents the lowest density neighborhoods generally located beyond 1 mile from a designated Village Center.

f. The general design guidelines for Tiers 1 and 2 of RN are found at ENCPA Policy Fl.13.07(E)(1). The general design guidelines for Tier 3 of RN are found at ENCPA Policy Fl.13.07(E)(2).

g. Neighborhood Centers (NC): NCs are permitted within the RN subcategory. These centers can serve as a focal point for a neighborhood and provide limited, neighborhood-serving uses. The general design guidelines for NC within the RN are specified at ENCPA Policy Fl.13.07(E)(3).

5. **Master Planning Principles for each DSAP Planning Area.**

a. Central Planning Area: The Central Planning Area is generally characterized by mixed- use, non-residential development, but some residential will be permitted. The Central Planning Area provides for four of the seven general land uses: CHN, EC, RC and TOD. The development program for the Central Planning Area is set for 2,500 residential units and 7,000,000 square feet of non-residential square footage. The RC is oriented to the north of the Central Planning Area and the EC is located in the south. Consequently, the RC located in the Central Planning Area is only a small part of the overall RC for the ENCPA. The physical separation between the EC and RC areas is planned to be the large wetland slough (CHN) near the northern portion

of the Central Planning Area. The main access to the Central Planning Area is planned from SR 200 with additional access from US 17.

b. Northern Planning Area: The development program for the Northern Planning Area includes 769 homes and 75,000 square feet in the Village Center. This area has RN and VC land use classifications. The overall density is planned at 2.0 dwelling units per acre. A variety of housing products and price points are intended since different densities are required in the RN land use category. The denser housing product is currently designed to be south of the slough and CHN and towards the west side of the parcel proximate to the VC. Lower density housing is currently designed to be in the east. The VC within the Northern Planning Area will be located on US 17 frontage to improve the viability of the non-residential uses but maintain a local service base.

c. Southern Planning Area: This Planning Area has a Residential Neighborhood land use classification. The development program calls for 769 homes and 25,000 square feet of non-residential ("NR"). The overall density is relatively low and thus is planned to be clustered primarily on the northern section of this Planning Area leaving the southern section with large lot development or as a possible extension of the CHN with more definitive development plans. The NR is intended to provide non-residential uses to serve the population of this area. To the extent practical, this NC should be co-located proximate to the government center thereby expanding the population available to take advantage of these neighborhood serving uses. Vehicular access to the Southern Planning Area is from a yet unidentified right of way from William Burgess Boulevard.

d. Maximum Development Program for each of the DSAP Planning Areas:

Planning Area	Acres	Residential Units	Non-Residential Square Footage
Northern	665	769	75,000
Central	2,938	2,500	7,000,000

Southern	599	769	25,000
TOTAL	**4,202**	**4,038**	**7,100,000**

e. Unless otherwise provided by the operation of the Nassau County 2030 Comprehensive Plan policies relating to the ENCPA, the planned number of units and densities described above (i) may be transferred among the various planning areas of this DSAP or to other DSAPs within the ENCPA and (ii) are not intended to operate as minimum levels of development or commitments to develop.

6. **Public Facilities.**

a. Potable Water: Nassau County is located within the SJRWMD. Per the SJRWMD's 2003 Water Supply Assessment, existing water supply sources and water supply development plans are considered reasonably adequate to meet Nassau County's projected needs. JEA provides potable water service to most of Nassau County. The DSAP is located within JEA's District 7- Nassau County Water Service Area. Potable Water demands for the proposed development program were analyzed at both the 5-year and build-out milestones. Adequate capacity exists to accommodate potential impacts under both scenarios.

b. Wastewater: The DSAP is located within JEA's District 7- Nassau County Water Service Area. Adequate capacity exists to accommodate potential impacts under the projected 5-year development program. It appears that additional treatment capacity would be needed to accommodate demand by the 20 year build-out, if the DSAP-derived demand is assumed to be in addition to forecast service area demand. If the DSAP demand is within the forecasted growth, no additional facilities will be required.

c. Solid Waste: Solid waste service is provided to the DSAP by a private provider pursuant to a non-exclusive franchise with Nassau County. Available facilities have a combined lifespan of 39 years. No improvements to solid waste facilities would to be necessary to accommodate the proposed DSAP development.

d. Stormwater: Stormwater impacts and necessary improvements will be determined and permitted in accordance with the SJRWMD discharge design criteria.

e. Schools: The DSAP is located within the Nassau County School District (School District). The School District and Nassau County have entered into an interlocal agreement (ILA) regarding the location and adequate capacity of public schools. Based upon existing methodologies of the School District and Nassau County, DSAP school demand and potential impacts were projected for both the 5 year and build-out development program scenarios. It was determined that adequate capacity exists within the current system to accommodate potential impacts under the projected 5-year development program. As shown in the DSAP Application, Figure 4.8, DSAP Central Planning Area Overall Land Map, a school site of approximately 26 acres is reserved within the Central Planning Area for conveyance to the School District; its precise location and size shall be the subject of an agreement to be entered into between TerraPointe and the School District.

Additional school capacity at the elementary, middle and high school levels is proposed to accommodate the projected DSAP demand at build-out. At this time, two elementary schools are programmed within the 10 year work program and another elementary school and middle school are programmed in the 20 year work program. If constructed, these facilities should be adequate to address projected needs at the elementary and middle school levels. Development of the DSAP beyond the 5-year milestone should be monitored to determine if the inclusion of new high school facilities within future School District work plans would be needed.

f. Recreation and Open Space: Nassau County is currently deficient in recreation and open space facilities. The proposed DSAP 5 year and build-out programs are estimated to increase demand by approximately 12 acres and 141 acres, respectively. This demand is being met within the DSAP through the provision of significant open space and an extensive multi-use trail system which includes 1,700 acres of open space in the form of interconnected wetlands, surface waters, and upland preserves forming a CHN. The significant open space system provided by the DSAP is capable of not only accommodating DSAP impacts but helping the County address a County-wide deficiency in regional parks through 2030. At build-out, the DSAP is planned

to contain over 20 miles of multi-use trails. As shown in the DSAP Application, Figure 4.8, DSAP Central Planning Area Overall Land Map, a community park of approximately 20 acres is reserved within the Central Planning Area for conveyance to the County; its precise location and size is subject to adjustment.

g. Fire and Police: An approximately four (4) acre site shall be reserved for a Fire/EMS facility in an area generally depicted on the DSAP Application, Figure 4.8, DSAP Central Planning Area Overall Land Map, and its precise location shall be the subject of an agreement to be entered into between TerraPointe and the County.

h. In addition to the CHN and multi-use trail system, the ENCPA policies require the inclusion of neighborhood parks, plazas and playfields. At build-out, these facilities are anticipated to exceed the projected demand created by the DSAP development program and assist significantly in addressing the County's overall deficiency in recreation and open space acreage.

7. **Impact Fee Credits.** If Nassau County imposes or increases an impact fee or other exaction by ordinance after this DSAP Development Order, such ordinance shall include a procedure which provides credit against the impact fee or exaction for any and all land or public facilities required in this DSAP Development Order for the same need, including but not limited to those which may be required pursuant to Condition No. 6 above.

8. **Intergovernmental Coordination.** Nassau County maintains a Regional Coordination Element as a component of the Nassau County 2030 Comprehensive Plan. The element contains goals, objectives and policies ensuring coordination of planning efforts with adjacent counties and cities, regional, state and federal agencies and entities that provide services but do not have regulatory authority within Nassau County. This includes, but is not limited to, FDOT, the North Florida Transportation Planning Organization, FDEP, Florida Fish and Wildlife Conservation Commission, SJRWMD, the Northeast Florida Regional Planning Council and JEA.

9. **Projected Population for Planning Period.**

A long-term master plan adopted pursuant to Florida Statutes, Section 163.3245(3)(a), is not required to demonstrate need based upon projected population growth or on any other basis.

10. **Monitoring Official**. The Director of the Nassau County Growth Management Department or his/her designee shall be the local official responsible for monitoring the development for compliance with this Development Order.

11. **Build-out Date.** The build-out date required by Section 163.3245(5)(d), Florida Statutes, is December 31, 2035. Until that time, no development is subject to downzoning, unit density reduction, or intensity reduction.

12. **Agricultural and Silvicultural Uses**. The adoption of this DSAP does not limit the right to continue existing agricultural or silvicultural uses or other natural resource-based operations or to establish similar new uses that are consistent with a DSAP approved pursuant to Section 163.3242, Florida Statutes.

13. **Exhibits:** Below is a listing of the Exhibits to this DSAP:

Exhibit A: Legal Description of DSAP Property

Exhibit B: DSAP Land Use Plan

Exhibit C: DSAP Application, dated November 1, 2012

Exhibit D: Lewis/Gillette Memorandum, dated March 19, 2013

Exhibit E: Transportation Impact Analysis (TIA) Methodology

Section 1. Purpose and intent.

The purpose and intent of this ordinance is to adopt a detailed specific area plan in accordance with Section 163.3245, Florida Statutes.

Section 2. Title of DSAP.

The DSAP included within this ordinance shall be entitled the East Nassau Employment Center Detailed Specific Area Plan.

Section 3. Legislative findings.

1. The DSAP included in this ordinance is consistent with the goal, objectives, and policies and long-term master plan for the East Nassau Community Planning Area contained in the Nassau County 2030 Comprehensive Plan.

2. This ordinance satisfies the requirement for adoption of a detailed specific area plan by local development order as contemplated in Section 163.3245, Florida Statutes.

Section 4. Adoption of DSAP.

The DSAP included within this ordinance is hereby adopted, and property Owners within the DSAP areas shall be entitled to apply for development orders for individual projects consistent with the DSAP. The build-out date required by Section 163.3245(5)(d), Florida Statutes, is December 31, 2035. Until that time, no development is subject to downzoning, unit density reduction, or intensity reduction.

Section 5. Severability.

If any section, sentence, clause or phrase of this ordinance is held to be invalid or unconstitutional by any Court of competent jurisdiction, the holding shall in no way affect the validity of the remaining portions of this ordinance.

Section 6. Inclusion in the Code.

The Board of County Commissioners intends that the provisions of this ordinance will be codified as required by Section 125.68, Florida Statutes, and that the sections of this ordinance may be renumbered or relettered and the word "ordinance" may be changed to "section," "article," or such other appropriate word or phrase in order to accomplish its intentions.

Section 7. Effective date.

The effective date of this ordinance shall be the date of its adoption by the Nassau County Board of County Commissioners. However, if a petition is filed alleging that the DSAP is not consistent with the Comprehensive Plan or with the long-term master plan, this ordinance shall not be effective until completion of the appeal process provided in Section 163.3245(3)(e), Florida Statutes.

RENDITION

Within ten (10) days of the adoption of this Development Order, Nassau County shall render a copy of this Development Order with all attachments, certified as complete and accurate, by certified mail, return receipt requested, to the Florida Department of Economic Opportunity, Bureau of Local Planning, Northeast Florida Regional Council, and the Owners of record.

PASSED AND ENACTED BY THE BOARD OF COUNTY COMMISSIONERS OF NASSAU COUNTY, FLORIDA, THIS 24th DAY OF June, 2013.

BOARD OF COUNTY COMMISSIONERS
NASSAU COUNTY, FLORIDA

DANIEL LEEPER
Its: Chairman

Attest as to Chairman's signature:

JOHN A. CRAWFORD
Its: Ex-Officio Clerk

MES 07.02.13

APPROVED AS TO FORM BY THE
NASSAU COUNTY ATTORNEY:

DAVID A. HALLMAN

EXHIBIT "A"

RENTP I

Northern Planning Area

A parcel of land lying conjointly in Sections 25,26,34,35,36 and the John Frazier Grant (Section 39), Township 4 North, Range 26 East, all being in Nassau County, Florida and being more particularly described as follows.

BEGIN at the Northeast corner of Section 34, Township 4 North, Range 26 East, Nassau County, Florida said corner also being the Southwest corner of Section 26, Township 4 North, Range 26, East, Nassau County, Florida; thence on the North line of said Section 34, S 89°38'09" W, a distance of 352.39 feet to a point on the Easterly right-of-way line of U.S. Highway No. 17; thence departing said North line and on said Easterly Right of Way Line, S 32°54'29" E, a distance of 2004.18 feet; thence departing said Easterly Right of Way line, S 78°08'10" E, a distance of 68.23 feet, thence N 56°51'47" E, a distance of 214.00 feet; thence S 33°08'08" E, a distance of 495.00 feet; thence S 56°51'55" W, a distance of 214.00 feet; thence S 11°51'43" W, a distance of 70.71 feet to the Easterly Right of Way line of aforesaid U.S. Highway No. 17; thence on said Easterly Right of way line, S 32°56'22" E, a distance of 1677.67 feet; thence departing said Easterly Right of Way line, N 57°08'03" E, a distance of 1263.89 feet; thence S 65°17'27" E, a distance of 3081.50 feet to a point on the Westerly Right of Way line of Interstate No. 95; thence on said Westerly Right of Way line through the following courses; N 20°45'44" E, a distance of 1899.29 feet; thence N 24°42'34" E, a distance of 1200.00 feet; thence N 30°46'08" E, a distance of 1307.30 feet; thence N 24°42'34" E, a distance of 356.57 feet to a point on the Northerly meander line of Section 25; thence departing said Right of Way line and on the Northerly meander lines of Section 25 and the John Frazier Grant (Section 39), Township 4 North, Range 26 East, Nassau County, Florida; Northwesterly a distance of 4107 feet more or less to the Southerly shores of the St. Mary's River; thence departing said meander lines, Southerly and Westerly along the Southerly shores of said St. Mary's River, a distance of 5911 feet, more or less to a point on the West line of Section 26, Township 4 North, Range 26 East, Nassau County, Florida; thence on said West line, S 02°13' 52" W, a distance of 3200 feet more or less to the POINT OF BEGINNING.

A parcel of land lying conjointly in Section 12, Township 2 North, Range 26 East, along with those lands lying within Section 7 and Section 18, Township 2 North, Range 27 East, Nassau County, Florida, and being more particularly described as follows:

Commence at the Northeast corner of Section 39, Township 2 North, Range 26 East, of said County, said corner also being the Southeast corner of Section 41, Township 3 North, Range 26 East, Nassau County, Florida; thence, along the East line of said Section 39 a bearing of S 01°29'05" E, a distance of 5284.99 feet to its intersection with the North line of Section 7, Township 2 North, Range 27 East, said point also being the POINT OF BEGINNING; thence along the South boundary line of the lands recorded in Official Records 1128, Page 1599, of the public records of said Nassau County, Florida, N 88°13'16" E, a distance of 1992.01 feet, to its intersection with the West boundary line of the lands as recorded in Official Records 148, Page 233 of the public records of said Nassau County, Florida; thence departing the North line of Section 7 and along the Westerly most boundary lines of those lands as described in Official Records 148, Page 233, Official Records 959, Page 126, Official Records 936, Page 891, a bearing of S 01°59'21" E, a distance of 2240.59 feet; thence, N 88°09'13" E, a distance of 1643.54 feet; thence, S 01°50'47" E, a distance of 800.00 feet; thence, N 88°09'13" E, a distance of 800.00 feet; thence, N 01°50'47" W, a distance of 800.00 feet; thence, N 88°09'13" E, a distance of 742.81 feet, to its intersection with the Easterly line of Section 7, Township 2 North, Range 27 East; thence, S 00°37'51" E, a distance of 100.00 feet; thence departing said Easterly line of said Section 7, S 89°22'09" W, a distance of 200.00 feet; thence running parallel to said Easterly line of Section 7, S 00°37'51" E, a distance of 200.00 feet; thence N 89°22'09" E, a distance of 200.00 feet, to its intersection with said Easterly of said Section 7; thence along said line, S 00°37'51" E, a distance of 1490.34 feet, to its intersection with the Northerly line of Section 45, Township 2 North, Range 27 East, said line also being the Northerly boundary line of the lands as recorded in Official Records 1379, Page 1365 of the Public Records of said Nassau County; thence along said Northerly line, S 67°19'00" W, a distance of 610.19 feet, to the Northwest corner of said Section 45; thence departing said Northwest corner and along the Westerly line of said Section 45 S 22°36'15" E, a distance of 1484.08 feet, to its intersection with the Westerly boundary line of the lands recorded in Official Records 853, page 848 of said Nassau County, Florida; said line also being the East line of Section 18, Township 2 North, Range 27 East, Nassau County, Florida; thence departing said Westerly line and along said Easterly line S 00°31'31" E, a distance of 2255.12 feet, to its intersection with the North line of the lands as recorded in Official Records 1110, Page 670 of the public records of said Nassau County, Florida; thence departing said Easterly line and along said North line, S 89°43'13" W, a distance of 34.81 feet; thence departing the North line and along the Westerly line of the aforementioned lands recorded in Official Records 1110, Page 670 of the public records of said Nassau County, Florida, through the following courses; S 01°30'46" W, a distance of 326.16 feet; S 18°54'39" W, a distance of 439.28 feet; S 00°56'20" W, a distance of 579.16 feet; S 09°41'09" E, a distance of 216.59 feet; S 11°20'42" E, a distance of 90 feet, more or less, to its intersection with the meandering of a wetlands line; thence departing said Westerly boundary line and along said meander

line in a Westerly and Northerly direction, a distance of 7762 feet, more or less, to its intersection with a parallel offset of the centerline of a dirt timber road No. 145; said parallel offset being 25.00 feet south of the said centerline; thence departing said meander line and along said parallel offset line, N 62°42'26" W, a distance of 310 feet, more or less, to its intersection with a curved portion of the Easterly Right of Way line of Interstate 95, said Right of Way having a variable width as now established; said curve being concave Westerly and having a radius of 7789.44 feet; thence departing said parallel offset line and along the arc of said curved Right of Way line a distance of 1128.49 feet, through a central angle of 08°18'03", to its intersection with the South line of the lands recorded in Official Records 364, Page 395 of the public records of said Nassau County, Florida; said line also being the North line of Section 18, Township 2 North, Range 27 East, Nassau County, Florida; said curve being subtended by a Chord bearing of N 03°48'22" E, distance of 1127.51 feet; thence departing said Right of Way line of Interstate 95 and along said South line, N 89°14'10" E, a distance of 2898.95 feet to its intersection with the East line of said lands recorded in Official Records 364, Page 395; thence departing said South line and along said East line, N 00°31'30" W, a distance of 1398.57 feet, to its intersection with the North line of said Official Records 364, Page 395; thence departing said East line and along said North line, S 88°25'29" W, a distance of 1360.78 feet, to its intersection with the East line of Well Site No. 5 as described in Official Records 1376, Page 651 of the public records of said Nassau County, Florida; thence departing said North line and along said East line, N 01°34'31" W, a distance of 200.00 feet, to its intersection with the North line of said Well Site No. 5; thence departing said East line and along said North line, S 88°25'29" W, a distance of 200.00 feet, to its intersection with the West line of said Well Site No. 5; thence departing said North line and along said West line, S 01°34'31" E, a distance of 200.00 feet, to its intersection with the aforementioned North line of the lands recorded in Official Records 364, Page 395; thence departing said West line and along said North line, S 88°25'29" W, a distance of 1453.21 feet, to its intersection with the aforementioned Easterly Right of Way line of Interstate 95; said point being in a curve concave southwesterly and having a radius of 7789.44 feet; thence departing said North line and along the arc of said curved Easterly Right of Way line a distance of 852.10 feet, through a central angle of 06°16'04"; said curve being subtended by a Chord bearing of N 03°29'35" W, and a distance of 851.68 feet; thence departing said curve and continuing along said Easterly Right of Way line, N 16°37'37" W, a distance 3196.48 feet; thence N 11°32'32" W, a distance of 89.79 feet; thence N 88°13'16" E, a distance of 73.32 feet, to the POINT OF BEGINNING.

LESS AND EXCEPT that part of Official Records Book 1376, page 651 as recorded in the public records of said Nassau County, Florida, being known as Well Site No. 3 and Well Site No. 4.

Parcel 1 Central Planning Area

A parcel of land, being a portion of Sections 6, 7 and the Heirs of E. Waterman Mill Grant, Section 44, Township 2 North, Range 27 East, Nassau County, Florida, and being more particularly described as follows:

Begin at the Southeast corner of Heirs of E. Waterman Mill Grant, Section 44, Township 2 North, Range 27 East, Nassau County, Florida; thence on the South line of said Section 44, S 88°51'21" W, a distance of 3142.74 feet to the Northeast corner of Section 6, Township 2 North, Range 27 East, Nassau County, Florida; thence departing said South line and on the East line of said Section 6, S 00°39'07" W, a distance of 973.20 feet to the Southeast corner of said Section 6 said point also being the Northeast corner of Section 7, Township 2 North, Range 27 East, Nassau County, Florida; thence departing said East line and on the East line of said Section 7, S 00°35'09" E, a distance of 574.38 feet to a point on the Northeasterly Right of Way line of William Burgess Boulevard (100 foot Right of Way) said point also being on a curve, concave Northeast, having a radius of 595.00 feet and a central angle of 47°07'13"; thence departing said East line and on said Northeasterly Right of Way line and on the arc of said curve for the next 8 courses a distance of 489.33 feet said arc being subtended by a chord which bears N 25°00'14" W, a distance of 475.66 feet to the curves end; thence N 01°26'38" W, a distance of 887.57 feet to the beginning of a curve, concave Southwest, having a radius of 450.00 feet and a central angle of 56°32'45"; thence on the arc of said curve a distance of 444.11 feet said arc being subtended by a chord which bears N 29°43'01" W, a distance of 426.30 feet to the curves end; thence N 57°59'23" W, a distance of 655.42 feet to the beginning of a curve, concave Southwest, having a radius of 725.00 feet and a central angle of 13°30'21"; thence on the arc of said curve a distance of 170.90 feet said arc being subtended by a chord which bears N 64°44'34" W, a distance of 170.50 feet to the curves end; thence N 71°29'44" W, a distance of 964.03 feet to the beginning of a curve, concave Northeast, having a radius of 255.32 feet and a central angle of 53°48'49"; thence on the arc of said curve a distance of 239.80 feet said arc being subtended by a chord which bears N 44°35'20" W, a distance of 231.09 feet to the curves end; thence N 17°40'55" W, a distance of 229.95 feet to a point on the Southerly Right of way line of State Road No. 200 (A1A) (184 foot Right of Way); thence departing said Northeasterly Right of Way line and said Southerly Right of way line N 72°19'01" E, a distance of 629.04 feet to the Northeast corner of those lands described in Official Record Book 235, Page 514 of the Public Records of Nassau County, Florida; thence departing said Southerly Right of way line and on the Westerly line of said lands, S 17°40'59" E, a distance of 800.00 feet to the Southeast corner of said lands; thence departing said Westerly line and on the Southerly line of said lands, N 72°19'01" E, a distance of 800.00 feet to the Southeast corner of said lands; thence departing said Southerly line and on the Easterly line of said lands, N 17°40'59" W, a distance of 800.00 feet to the Northeast corner of said lands said point being on the aforesaid Southerly Right of way line of State Road No. 200 (A1A); thence departing said Easterly line and on said Southerly Right of way line for the next 3 courses, N 72°19'01" E, a distance of 2916.75 feet to the beginning of a curve, concave Southeast, having a radius of 17128.73 feet; and a central angle of 03°46'00"; thence on the arc of said curve a distance of 1126.06 feet said arc being subtended by a chord which bears N 74°12'01" E, a distance of 1125.85 feet to the curves end; thence N 76°05'01" E, a distance of 2202.00 feet to the Northwest corner of those lands described in Official Record Book 739, Page 1054 of the aforesaid Public Records; thence departing said Southerly Right of way line and on the West line of said lands and on the West line of Parcel No. 100-A as shown on Florida Department of Transportation Right of Way Map, Section No. 74060, State Road No. 200 (A1A), S 17°40'59" E, a distance of 517.51 feet to the Southwest corner of said Parcel 100-A; thence departing said West line and on the South line of said Parcel 100-A, N 72°11'36" E, a distance of 183.67 feet to the Northwest corner of Parcel 100-B of said Florida Department of Transportation Right of Way Map, Section No. 74060; thence departing said South line and on the West line of said Parcel 100-B, S 17°48'24" E, a distance of 73.85 feet to the Southwest corner of said Parcel 100-B; thence departing said West line and on the South line of said Parcel 100-B, N 72°11'36" E, a distance of 50.00 feet to the Southeast corner of said Parcel 100-B; thence departing said South line and on the East line of said Parcel 100-B, N 17°48'24" W, a distance of 73.85 feet to

the Northeast corner of said Parcel 100-B said point also being on the aforesaid South line of Parcel 100-A; thence departing said East line and on said South line and on the Southerly and Easterly lines of said Parcel 100-A for the next 4 courses, N 72°11'36" E, a distance of 52.03 feet; thence N 42°10'12" E, a distance of 531.94 feet; thence N 13°54'59" W, a distance of 160.22 feet; thence N 76°05'01" E, a distance of 675.00 feet; thence N 13°54'59" W, a distance of 40.00 feet to the aforesaid Southerly Right of way line of State Road No. 200 (A1A); thence departing said Easterly line and on said Southerly Right of way line for the next 2 courses, N 76°05'01" E, a distance of 155.31 feet to the beginning of a curve, concave Northwest, having a radius of 1969.86 feet and a central angle of 04°58'03"; thence on the arc of said curve a distance of 170.79 feet said arc being subtended by a chord which bears N 73°36'00" E, a distance of 170.73 feet to a point on the Westerly Right of way line of Oak Tree Lane; thence departing said Southerly Right of way line and on said Westerly Right of way line, S 25°30'41" E, a distance of 50.46 feet to a point on the Easterly line of the aforesaid Section 44, of Heirs of E. Waterman Mill Grant; thence departing said Westerly Right of way line and on said Easterly line of said Section 44, S 44°24'05" W, a distance of 5220.19 feet to the Point of Beginning.

Parcel 2 Central Planning Area

A parcel of land, being a portion of Sections 6, 7 and the Heirs of E. Waterman Mill Grant, Section 44, Township 2 North, Range 27 East, Nassau County, Florida, and being more particularly described as follows:

Begin at the intersection of the Southerly Right of way line of State Road No. 200 (A1A) (184 foot Right of Way) with the Southwesterly Right of Way line of William Burgess Boulevard (100 foot Right of Way); thence on said Southwesterly Right of Way line for the next 8 courses, S 17°40'55" E, a distance of 229.95 feet to the beginning of a curve, concave Northeast, having a radius of 355.32 feet and a central angle of 53°48'49"; thence on the arc of said curve a distance of 333.73 feet said arc being subtended by a chord which bears S 44°35'19" E, a distance of 321.59 feet to the curves end; thence S 71°29'44" E, a distance of 964.03 feet to the beginning of a curve, concave Southwest, having a radius of 625.00 feet and a central angle of 13°30'21"; thence on the arc of said curve a distance of 147.33 feet said arc being subtended by a chord which bears S 64°44'34" E, a distance of 146.98 feet to the curves end; thence S 57°59'23" E, a distance of 655.42 feet to the beginning of a curve, concave Southwest, having a radius of 350.00 feet and a central angle of 56°32'45"; thence on the arc of said curve a distance of 345.42 feet said arc being subtended by a chord which bears S 29°43'01" E, a distance of 331.57 feet to the curves end; thence S 01°26'38" E, a distance of 887.57 feet to the beginning of a curve, concave Easterly, having a radius of 695.00 feet and a central angle of 3°24'42"; thence on the arc of said curve a distance of 41.38 feet said arc being subtended by a chord which bears S 03°08'59" E, a distance of 41.38 feet to a point on the Northeasterly line of those lands described in Official Record Book 936, Page 894 of the Public Records of Nassau County, Florida; thence departing said Southwesterly Right of Way line and on said Northeasterly line, N 67°35'28" W, a distance of 479.97 feet to the most Northeasterly corner of said lands said point also being on the South line of Section 6, Township 2 North, Range 27 East, Nassau County, Florida; thence departing said Northeasterly line and on the North line of said lands and on said South line of Section 6, S 89°40'42" W, a distance of 528.86 feet; thence departing said North line and said South line, N 00°06'22" W, a distance of 965.41 feet to a point on the North line of said Section 6; thence on said North line, S 89°20'06" W, a distance of 1071.37 feet to the Southeast corner of those lands described in Deed Book 81, Page 359 of the aforesaid Public Records; thence departing said North line and on the East line of said lands, N 00°39'54" W, a distance of 208.70 feet to the Northeast corner of said lands; thence departing said East line and on the North line of said lands, S 89°20'06" W, a distance of 208.70 feet to the Northwest corner of said lands said point also being the Northeast corner of those lands described in Official Record Book 513, Page 91 of said Public Records; thence departing said North line and on the Northerly line of said lands, S 69°45'17" W, a distance of 94.87 feet to the Northwest corner of said lands said point also being on the Easterly Right of Way line of Harper Chapel Road and being on a curve, concave Northeast, having a radius of 126.27 feet and a central angle of 10°58'25"; thence on the arc of said curve a distance of 24.18 feet said arc being subtended by a chord which bears N 23°10'12" W, a distance of 24.15 feet to the curves end; thence on said Easterly Right of Way line, N 17°40'59" W' a distance of, 921.12 feet to a point on the aforesaid Southerly Right of way line of State Road No. 200 (A1A); thence departing said Easterly Right of Way line and on said Southerly Right of way line, N 72°19'01" E, a distance of 574.73 feet to the Point of Beginning.

Parcel 3 Central Planning Area

A parcel of land, being a portion of the Heirs of E. Waterman Mill Grant, Section 39, Township 2 North, Range 26 East, and being a portion of the Heirs of E. Waterman Mill Grant, Section 44, Township 2 North, Range 27 East, and being a portion of the Heirs of E. Waterman Grant, Section 41, Township 3 North, Range 26 East, and being a portion of the Heirs of E. Waterman Mill Grant, Section 50, Township 3 North, Range 27 East, all in Nassau County, Florida, and being more particularly described as follows:

Commence at the Southeast corner of the Heirs of E. Waterman Grant, Section 41, Township 3 North, Range 26 East, Nassau County, Florida; thence on the South line of said Section 41, S 89°11'37" W, a distance of 1545.14 feet to a point on the Easterly Limited Access Right of Way line of Interstate 95 (Variable Width Limited Access Right of Way); thence departing said South line and on said Easterly Limited Access Right of Way line, N 16°36'59" W, a distance of 6775.57 feet; thence departing said Easterly Limited Access Right of Way line, N 76°21'30" E, a distance of 1570.45 feet; thence N 84°23'58" E, a distance of 1489.13 feet; thence S 83°23'13" E, a distance of 1379.20 feet; thence S 75°26'27" E, a distance of 2101.18 feet; thence N 83°17'38" E, a distance of 948.89 feet; thence N 54°57'55" E, a distance of 907.22 feet; thence N 50°01'24" E, a distance of 2463.02 feet to a point on the Southwesterly Right of Way line of CSX Railroad (200 foot Right of Way); thence on said Southwesterly Right of Way line, S 38°45'39" E, a distance of 9769.39 feet to the Northeast corner of those lands described in Official Record Book 715, Page 1293 of the Public Records of Nassau County, Florida; thence departing said Southwesterly Right of Way line and on the North line of said lands, S 72°16'23" W, a distance of 1558.37 feet to the Northwest corner of said lands; thence departing said North line and on the Westerly of said lands the next 2 courses and on the Westerly line of those lands described in Official Record Book 1205, Page 1158 of said Public Records, S 13°25'59" W, a distance of 461.74 feet; thence S 11°04'43" E, a distance of 85.85 feet to the Southwest corner of said lands; thence departing said Westerly line and on the Southerly line of said lands, N 72°19'49" E, a distance of 44.42 feet to a point on the Westerly line of those lands described in Official Record Book 826, Page 1117 of said Public Records; thence departing said Southerly line and on said Westerly line for the next 2 courses, S 32°37'18" W, a distance of 48.23 feet; thence S 31°02'03" E, a distance of 30.01 feet to the Southwest corner of said lands; thence departing said Westerly line and on the Southerly line of said lands, N 72°18'45" E, a distance of 43.74 feet to the Northwest corner of those lands described in Official Record Book 1588, Page 1340 of said Public Records said point being on a curve, concave Northeast, having a radius of 457.48 feet and a central angle of 26°44'58"; thence on the Westerly line of said lands and the arc of said curve for the next 2 courses, a distance of 213.58 feet said arc being subtended by a chord which bears S 50°22'02" E, a distance of 211.65 feet to the curves end; thence S 69°51'30" E, a distance of 259.80 feet to the Southwest corner of said lands said point also being on the Northerly Right of way line of State Road No. 200 (A1A) (184 foot Right of Way); Thence departing said Westerly line and on said Northerly Right of way line, S 76°05'01" W, a distance of 511.09 feet to the Southeast corner of those lands described in Official Record Book 142, Page 441 of the aforesaid Public Records; thence departing said Northerly Right of way line and on the East line of said lands, N 17°43'59" W, a distance of 206.66 feet to the Northeast corner of said lands; thence departing said East line and on the North line of said lands, S 72°16'01" W, a distance of 99.78 feet to the Northwest corner of said lands; thence departing said North line and on the West line of said lands, S 17°43'59" E, a distance of 200.00 feet to the Southwest corner of said lands said point also being on the aforesaid Northerly Right of Way line State Road No. 200 (A1A); thence departing said West line and on said Northerly Right of Way line, S 76°05'01" W, a distance of 60.13 feet to the Southeast corner of Tax I.D. No. 44-2N-27-0000-0003-0080 of the Property Appraiser's Office of Nassau County, Florida; thence departing said Northerly Right of Way line and on the East line of Tax I.D. No. 44-2N-27-0000-0003-0080 and Tax I.D. No. 44-2N-27-0000-0003-0000 and Tax I.D. No. 44-2N-27-0000-0003-0010, N 17°43'59" W, a distance of 256.00 feet to the Northeast corner of said Tax I.D. No. 44-2N-27-0000-0003-0000; thence departing said East line and on the North line of said Tax I.D. No. 44-2N-27-0000-0003-0000 and Tax I.D. No. 44-2N-27-0000-0003-0030 and Tax I.D. No. 44-2N-27-0000-0006-0000, S 70°03'50" W, a distance of 522.00 feet to the Northwest

corner of said Tax I.D. No. 44-2N-27-0000-0006-0000; thence departing said North line and on the West line of said Tax I.D. No. 44-2N-27-0000-0006-0000 and Tax I.D. No. 44-2N-27-0000-0008-0000, S 17°05'59" E, a distance of 201.00 feet to the Southeast corner of said Tax I.D. No. 44-2N-27-0000-0008-0000; thence departing said West line and on the aforesaid Northerly Right of Way line, S 76°05'01" W, a distance of 2180.49 feet to the beginning of a curve, concave Southeast, having a radius of 17312.73 feet and a central angle of 3°46'00"; thence on the Westerly line of said lands and the arc of said curve a distance of 1138.15 feet said arc being subtended by a chord which bears S 74°12'01" W, a distance of 1137.95 feet to the curves end; thence S 72°19'01" W, a distance of 5100.21 feet to the Southeast corner of those lands described in Official Record Book 408, Page 695 of the aforesaid Public Records; thence departing said Northerly Right of way line and on the Easterly line of said lands, N 17°40'59" W, a distance of 598.05 feet to the Northeast corner of said lands; thence departing said Easterly line and on the Northerly line of said lands and the Northerly line of those lands described in Official Record Book 1782, Page 1450 and Official Record Book 1484, Page 1762 of the said Public Records for the next 2 courses, S 72°15'36" W, a distance of 818.28 feet; thence S 89°00'37" W, a distance of 840.96 feet to a Northeast corner of last said lands; thence departing said Northerly line and on the Easterly line of said lands, N 16°36'59" W, a distance of 1241.54 feet to the most Northeast corner of said lands; thence departing said Easterly line and on the most Northerly line of said lands, S 73°23'30" W, a distance of 1172.26 feet to the Northwest corner of said lands said point being on the aforesaid Easterly Limited Access Right of Way line of Interstate 95; thence departing said most Northerly line and on said Easterly Limited Access Right of Way line, N 16°36'59" W, a distance of 1946.20 feet to the Point of Beginning.

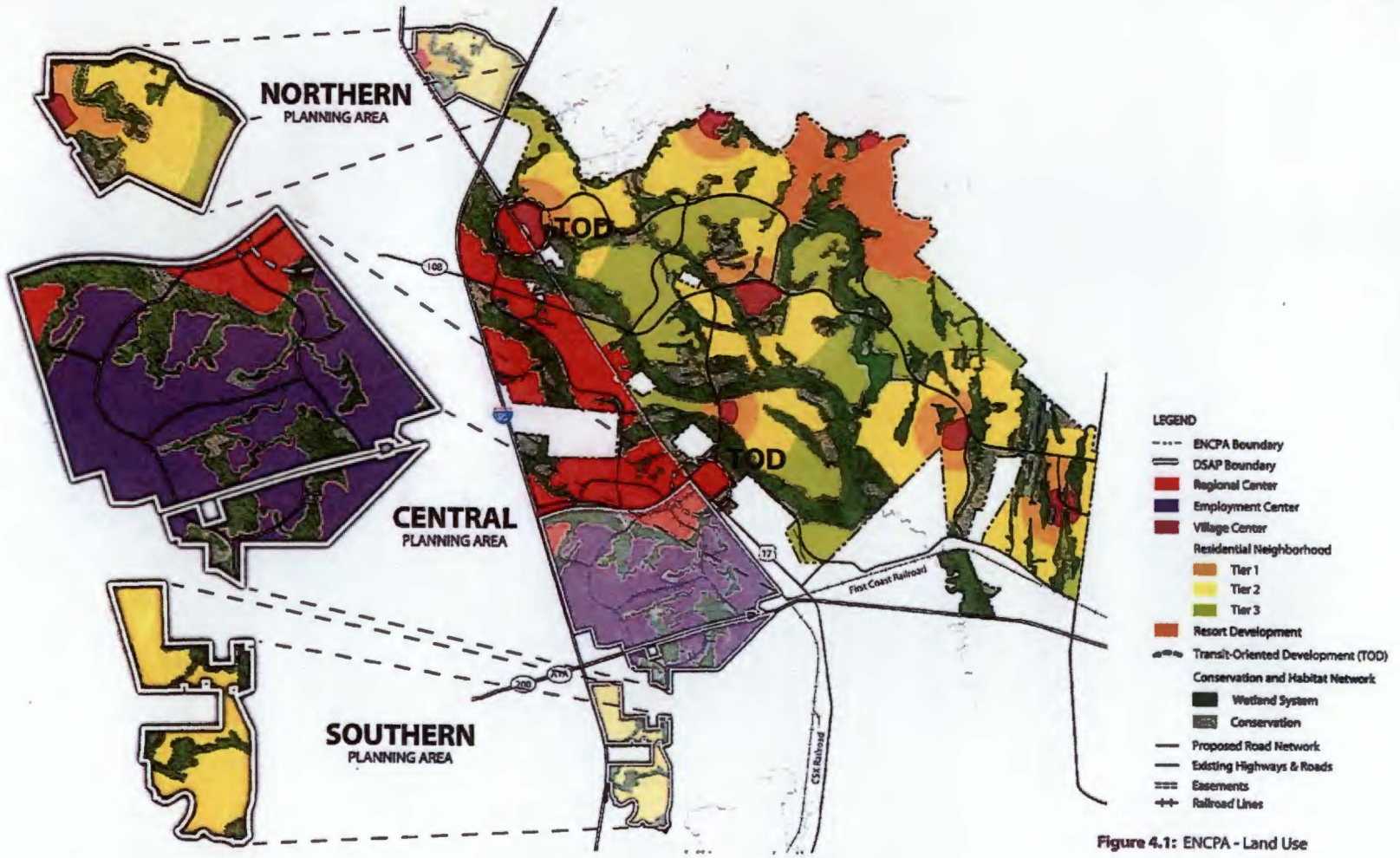


Figure 4.1: ENCPA - Land Use

EXHIBIT "B"

EXHIBIT "C"

Go To Links Below

DSAP Application

http://www.nassaucountyfl.com/DocumentCenter/View/10183

Appendix A - Natural Resource Analysis

http://www.nassaucountyfl.com/DocumentCenter/View/10184

Appendix B - Transportation Analysis

http://www.nassaucountyfl.com/DocumentCenter/View/10185

Appendix C - Public Facilities Analysis

http://www.nassaucountyfl.com/DocumentCenter/View/10186

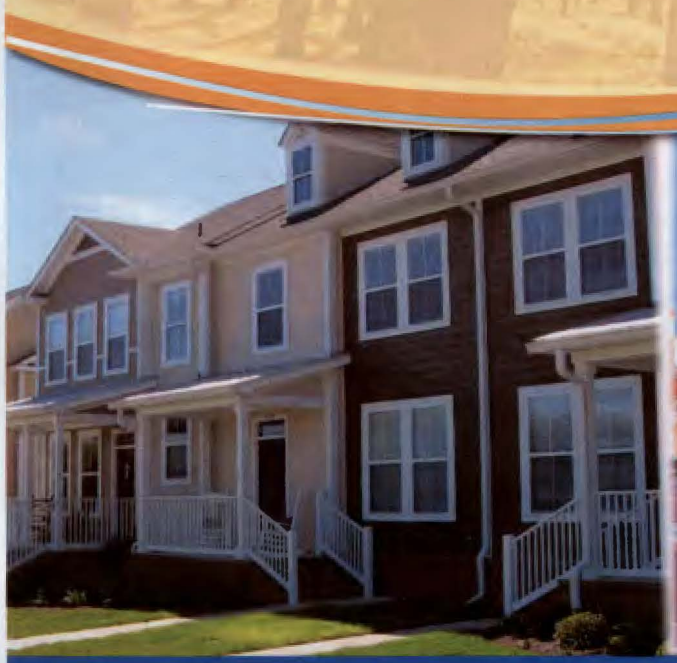
Appendix D - Intergovernmental Coordination

http://www.nassaucountyfl.com/DocumentCenter/View/10187

East Nassau Community Planning Area

Detailed Specific Area Plan: East Nassau Employment Center

North, Central & Southern Planning Areas



Owner(s)

TERRAPOINTE LLC

RAYONIER EAST NASSAU TIMBER PROPERTIES I, LLC,

RAYONIER EAST NASSAU TIMBER PROPERTIES II, LLC,

RAYONIER EAST NASSAU TIMBER PROPERTIES III, LLC,

RAYONIER EAST NASSAU TIMBER PROPERTIES IV, LLC,

RAYONIER EAST NASSAU TIMBER PROPERTIES V, LLC,

RAYONIER EAST NASSAU TIMBER PROPERTIES VI, LLC,

RAYONIER EAST NASSAU TIMBER PROPERTIES VII, LLC,

and wholly owned subsidiaries

P.O. Box 723

Fernandina Beach, Florida 32034

Consultants:

Legal

Rogers Towers, P.A.

960185 Gateway Blvd., Suite 203

Amelia Island, Florida 32034

Contact: Michael Mullin, Esquire

Community Planning, Transportation Planning and Civil Engineering

VHB MillerSellen

225 E Robinson St., Suite 300

Orlando, Florida 32801

Contact: James A Sellen, Principal

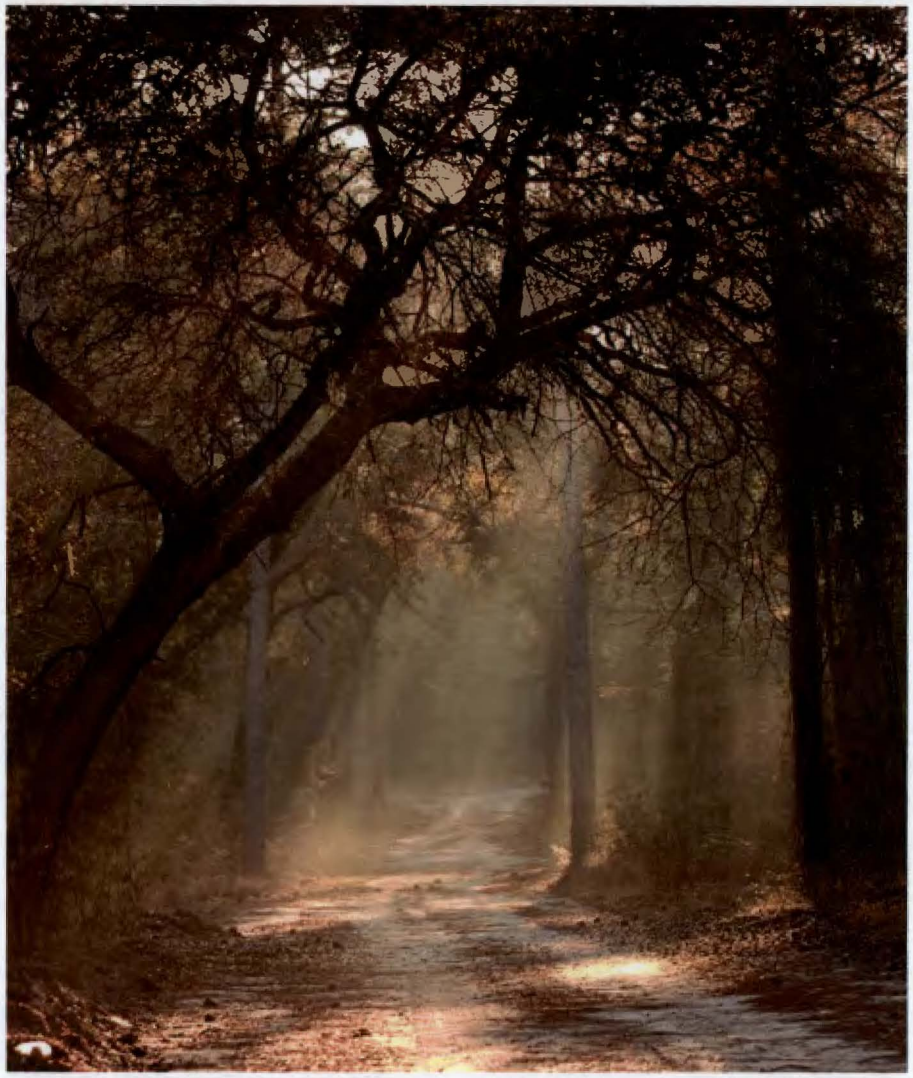
Environmental

Breedlove Dennis Associates, Inc.

330 W Canton Ave.

Winter Park, Florida 32789

Contact: Michael Dennis, President



Detailed Specific Area Plan: East Nassau Employment Center

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1 Introduction

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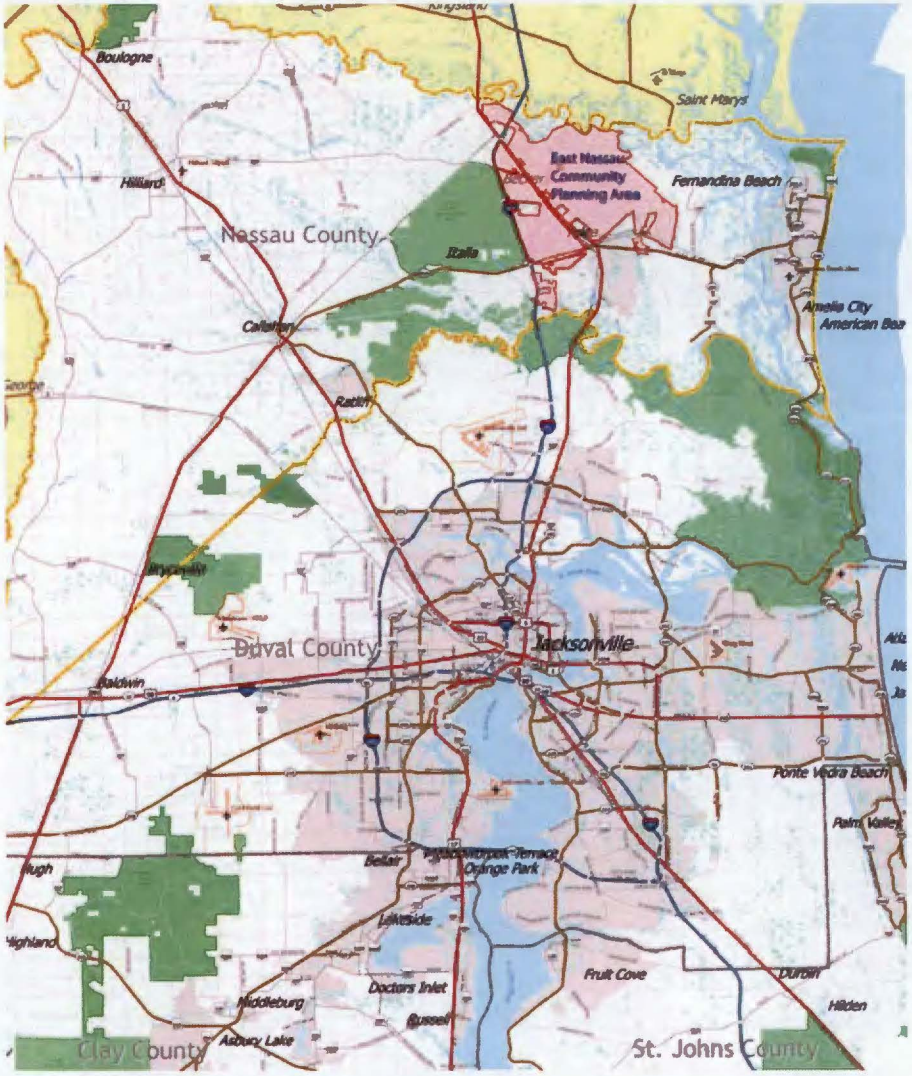

Detailed Specific Area Plan: East Nassau Employment Center

Introduction

Located in Florida's northeastern corner and bisected by Interstate 95, Nassau County serves as a key gateway to the Sunshine State. Sandy beaches, scenic rivers and abundant resources have long attracted residents to the area. From early European settlers to modern working families, the County has and continues to represent hope for a more prosperous future.

Historically, tree farming and pulp production have characterized a large portion of the local economy; however, the County's abundant land assets and proximity to the Jacksonville metropolitan area make it a prime location for accommodating a wide variety of economic development opportunities. Recognizing these opportunities, Nassau County has partnered with Rayonier, the County's largest land owner, to target areas appropriate for future economic growth and prepare long-term, financially responsible plans for those areas.

The Detailed Specific Area Plan (DSAP) is a component of this larger planning effort. It implements the goals, objectives and policies of the East Nassau Community Planning Area (ENCPA), a 24,000 acre, state approved Sector Plan intended to recognize the benefits of long-range planning for specific areas and support innovative and flexible planning and development strategies.

The DSAP is the second step in the Sector Planning process and follows the preparation of the aforementioned ECNPA master plan. Among other things, it provides detailed plans regarding the protection of natural resources, provision of adequate public facilities, and interrelationship of land uses. The East Nassau Employment Center DSAP has been organized in a manner that walks the reader logically through the master planning process. Beginning with an analysis of natural resources, it moves cumulatively into the identification of areas for conservation, the establishment of a multi-modal transportation network and the designation of complementary land uses. These components combine to form a unified "master plan" exhibit and a series of principles and guidelines which address urban form, environmental protection, mobility and economic development.

This document is intended to guide a broad array of individuals in their decision making. Its graphic nature and compact arrangement provide quick, easy reference for everyone from local officials, to future residents and business owners. Several of the more technical aspects of the plan have been placed in a separate appendices document for ease of reference.

ENCPA

Overview

In 2007, Nassau County began working with TerraPointe Services, Rayonier's real estate services company, to prepare a master plan for 24,000 acres of company owned timberland located within the eastern half of the County. Roughly bounded by the St. Mary's River to the north, S.R. 200 (A1A) to the south, Chester Road to the east and Interstate 95 to the west, this area would become known as the East Nassau Community Planning Area (ENCPA). The objective of the ENCPA was to comprehensively plan for the future growth of Nassau County in a manner which recognizes the integral relationships between economic development, transportation, land use and urban design.

The ENCPA master plan was formed over the course of several years and was the direct result of Nassau County's Vision 2032 Plan. Once complete, the plan was included in the County's regular comprehensive plan update, formally known as the Evaluation and Appraisal Report (EAR) amendment. The amended comprehensive plan, including the ENCPA master plan, was subjected to rigorous review by state and regional regulatory agencies and ultimately adopted by Nassau County in 2011.

Later that same year, significant changes were made to State legislation allowing the ENCPA master plan to be converted to a state approved Sector Plan. This conversion occurred in 2011 and was intended to take advantage of the unique benefits of sector planning. More specifically, it allowed for a higher level of detail in planning for the area; therefore, providing greater certainty to both the property owner (TerraPointe) and Nassau County.

Long-Term Master Plan

State statutes outlines a two-step sector planning process. This process includes the adoption of a long-term master plan for the entirety of the planning area and the subsequent preparation of detailed specific area plans (DSAP) for subsections of this area. The adopted ENCPA master plan fulfills the former requirement. It is comprised of both a framework map and policies intended to guide development of the area.

The framework map or "Master Land Use Plan" (Figure 1.1) is a graphic exhibit intended to identify regionally significant natural resources, guide the placement and sizing of public facilities and direct the location of land uses.

Accompanying the Master Land Use Plan are a single objective and seventeen (17) policies addressing such topics as green development practices, multi-modal transportation district design, transit oriented development (TOD) and the preservation of natural resources. Also included within the policies are specific land use sub-categories and their respective descriptions and general development guidelines.

Detailed Specific Area Plan

In late 2011, TerraPointe Services engaged VHB MillerSellen (VHB-MS) to initiate the second step in the sector planning process, the preparation of a Detailed Specific Area Plan (DSAP). The purpose of the DSAP is to provide detailed planning information for a specific portion of the 24,000 acre ENCPA; thereby, allowing property within that area to advance towards preservation or development.

The project team identified approximately 4,202 acres of land to be included within the first DSAP. This acreage is divided into three (3) planning areas (see Figure 1.1). Herein referred to as the Northern, Southern and Central Planning Areas. They were specifically selected for their unique economic development potential and their context within ENCPA when viewed in totality. The land uses included in this initial DSAP are primarily focused on job creation and the diversification of the local economy. While some areas are dedicated primarily to employment generating uses, others are predominantly residential and/or retail in nature and intended to provide the support services necessary to ensure the overall success of the larger Employment Center.

Table 1.1 outlines the maximum development program for each of the DSAP Planning Areas. This development program is an essential element of the DSAP document and guides the preparation of many of its components. This program is weighted heavily towards non-residential development, anticipating that the East Nassau Employment Center DSAP will provide the majority of employment for the remainder of the ENCPA; therefore, future DSAPs will be predominantly residential in nature and serve to balance the sector plan's jobs-to-housing ratio.

Table 1.1 East Nassau Employment Center DSAP Development Program

PLANNING AREA	ACRES	RESIDENTIAL UNITS	NON-RESIDENTIAL SQUARE FOOTAGE
Northern	665	769	75,000
Central	2,938	2,500	7,000,000
Southern	599	769	25,000
TOTAL	4,202	4,038	7,100,000

The following sections outline the sequential planning process used to develop the East Nassau Employment Center DSAP. They contain detailed information regarding natural resources, public facilities and land use/urban design culminating in both a master plan exhibit and a series of principles and guidelines intended to guide the development of the DSAP. Each of the sections begins with a brief description of the ENCPA as it pertains to the respective topic. This is intended to reinforce the relationship of the DSAP to the overall master plan and ensure consistency between the two plans.

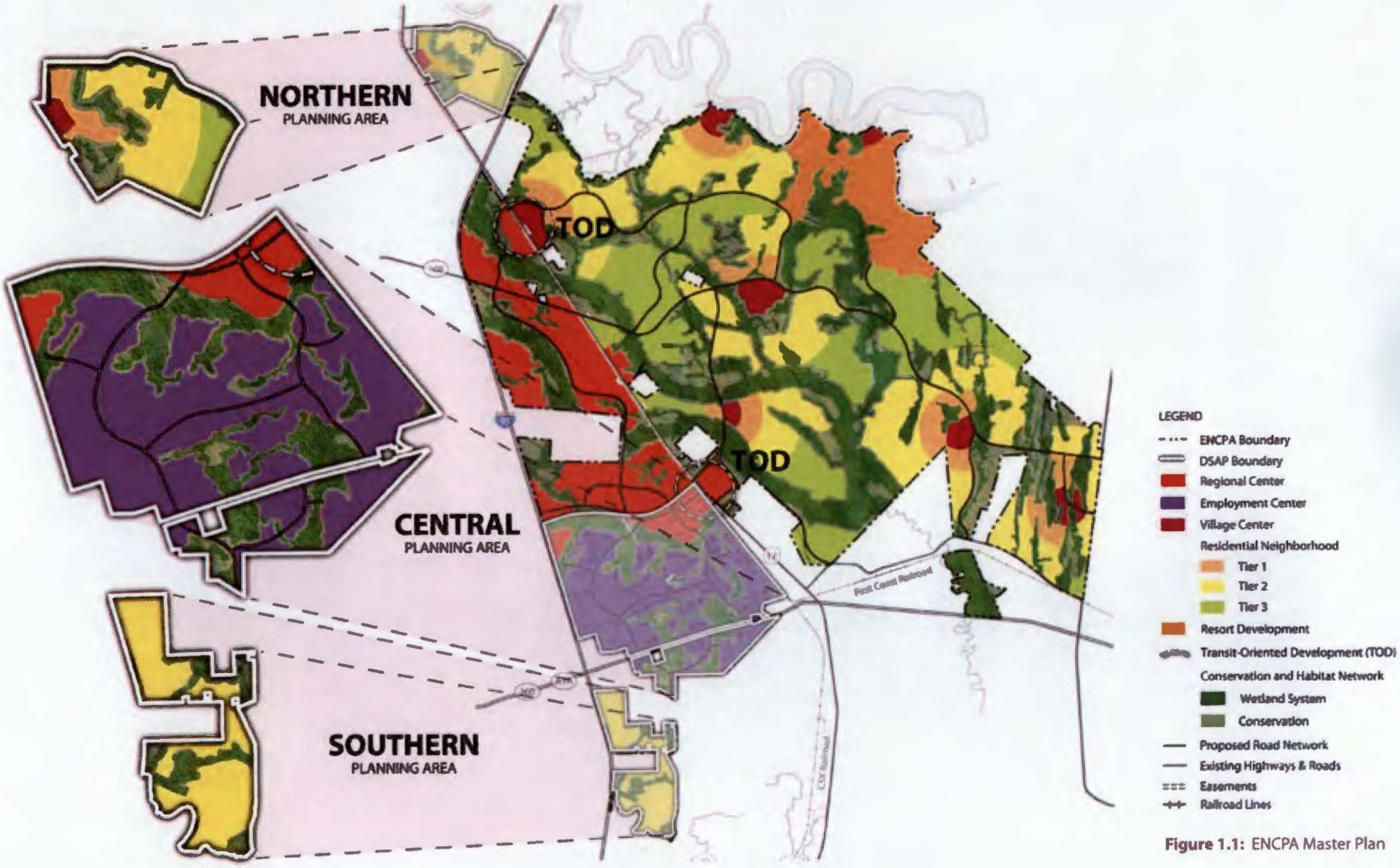

Figure 1.1: ENCPA Master Plan

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2 Environmental Conditions

Environmental Conditions

ENCPA Environmental Summary

Consistent with state statutes regarding the preparation of a Sector Plan, regionally significant natural resources within the ENCPA planning areas were identified and designated as part of a Conservation Habitat Network (CHN). The CHN was included as a land use sub-category contained within the ENCPA policies and depicted on the Master Land Use Plan (see Figure 2.1). It was designed to include a mosaic of wetlands, surface waters and uplands to provide for landscape connectivity and protection of significant natural resources within the 24,000 acre planning area. Preserving this mix of wetland and uplands within the proposed CHN will ensure the protection of a variety of wildlife habitats, retain corridors that connect major habitats allowing indigenous wildlife to move across the property and contribute to the long-term sustainability of the natural communities. It also ensures that conserved wetlands and contiguous uplands are protected.

Per Nassau County Comprehensive Plan Policy FL.13.07(A)(1), the CHN is to be subject to the following general guidelines and standards:

a) *Prior to development of portions of the ENCPA that abut boundaries of the CHN which preserve wildlife habitat, a management plan shall be developed that promotes maintenance of native species diversity in such areas and which may include provision for controlled burns.*

b) *New roadway crossings of wildlife corridors within the CHN for development activity shall be permitted in conjunction with the design of the internal road network, but shall be minimized to the greatest extent practical.*

c) *Road crossings within the CHN will be sized appropriately and incorporate fencing or other design features as may be necessary to direct species to the crossing and enhance effectiveness of such crossings.*

d) *Prior to commencement of development within the ENCPA, an environmental education program shall be developed for the CHN and implemented in conjunction with a property owners association, environmental group or other community association or governmental agency so as to encourage protection of the wildlife and natural habitats incorporated within the CHN.*

e) *The boundaries of the CHN are identified on Map FLUMS-6. The boundaries of the CHN shall be formally established as conservation tracts or placed under conservation easements when an abutting development parcel to portions of the CHN undergoes development permitting in accordance with the requirements of the St. John's River Water Management District (SJRWMD) and pursuant to the following criteria:*

i. *As to wetland edges forming the CHN boundary, the final boundary shall be consistent with the limits of the jurisdictional wetlands and associated buffers as established in the applicable SJRWMD permit;*

ii. *As to upland edges forming the CHN boundary, the final boundary shall be established generally consistent with Map FLUMS-6, recognizing that minor adjustments may be warranted based on more or refined data and any boundary adjustments in the upland area shall (i) continue to provide for an appropriate width given the functions of the CHN in that particular location (i.e., wetlands species or habitat protection), the specific site conditions along such boundary and the wildlife uses to be protected and (ii) ensure that the integrity of the CHN as a wildlife corridor and wetland and species habitat protection area is not materially and adversely affected by alteration of such boundary; and*

iii. *Boundary modifications meeting all of the criteria described in this Policy sub section shall be incorporated into the Conservation and Habitat Network and the ENCPA Master Land Use Plan upon issuance of the applicable SJRWMD permits and shall be effective without the requirement for an amendment to the Nassau County Future Land Use Map, ENCPA Future Land Use Element Policies or any other Nassau County Comprehensive Plan Elements defined in Chapter 163, F.S.*

f) *Silvicultural and agricultural activities allowed in the Agricultural classification of the Future Land Use Element of the Nassau County Comprehensive Plan, excluding residential land uses, shall continue to be allowed within the CHN. When the final boundaries of any portion of the CHN are established as described above, a silvicultural management plan will be developed in accordance with best management practices to protect the overall conservation objective of such portion of the CHN.*

As part of the DSAP process, a full natural resource analysis was completed by Breedlove, Dennis & Associates (BDA). This analysis is included as Appendix A of this document and contains specific information regarding ecological communities and protected species relative to the DSAP planning area. The findings of this analysis have been incorporated into the design of the DSAP and, consistent with Policy FL.13.07(A)(1)(e), have guided the refinement of the CHN boundaries.

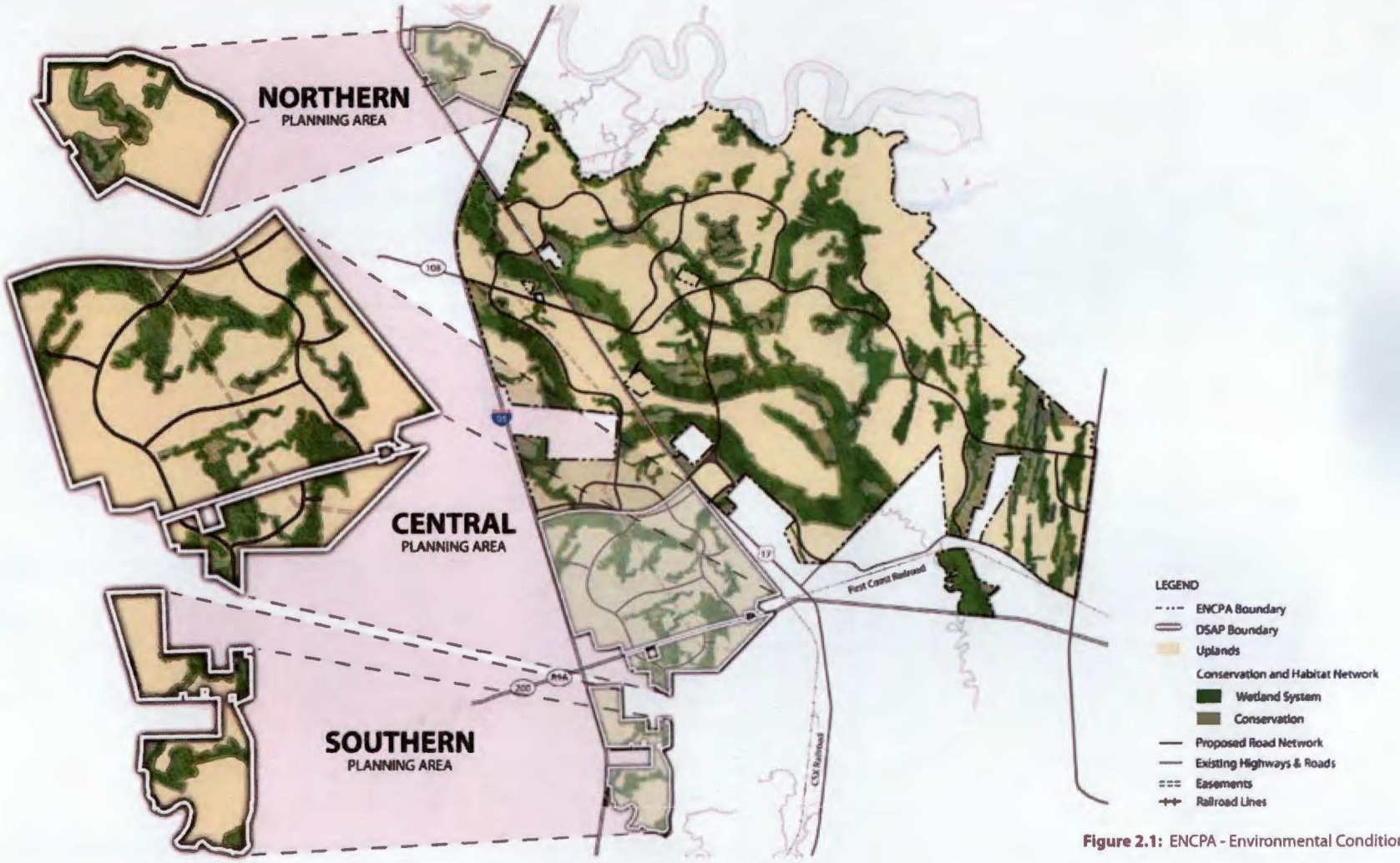
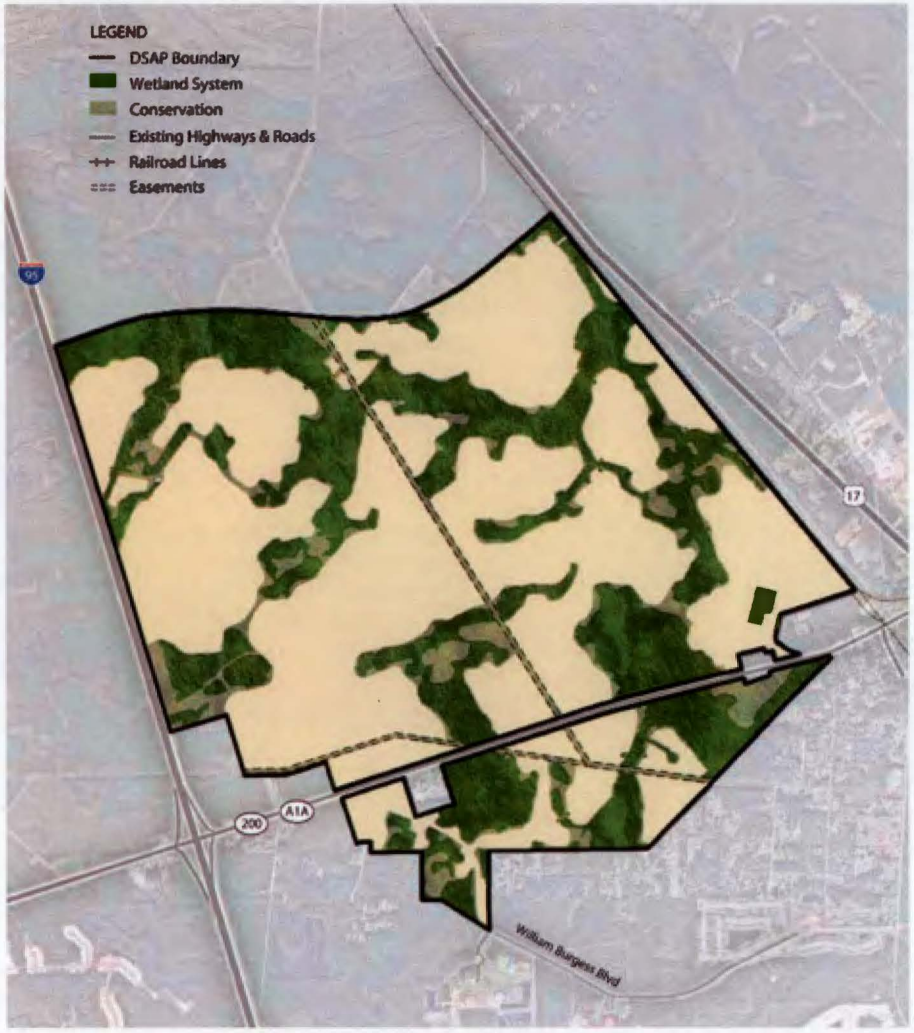


Figure 2.1: ENCPA - Environmental Conditions

Figure 2.2: Central Planning Area Refined Conservation Habitat Network



Central Planning Area

Wetlands

The East Nassau Employment Center DSAP's Central Planning Area is approximately 2,938 acres in size and consists primarily of upland coniferous plantation. In addition to these uplands, the area also contains an estimated 1,188 acres of surface waters and wetlands. The approximate extent of these wetlands and surface waters has been determined through photo interpretation and selective groundtruthing.

Surface waters within the Central Planning Area are limited (<10 acres) and generally associated with man-made drainage structures, borrow areas and reservoirs. Site wetlands total approximately 1,179 acres and consist of a variety of ecological communities. The most prevalent wetland communities found on the site are mixed forested wetlands (~867 acres), wet coniferous plantation (~100 acres) and hydric pine flatwoods (~75 acres).

Uplands

As previously mentioned, the Central Planning Area is dominated by coniferous plantations which represent approximately 97% of total upland acreage. These are actively managed silvicultural areas comprised primarily of planted slash pine. Given the predominance of planted pine within the site, there are few distinctive upland ecological communities towards which to direct conservation efforts; therefore, the site's upland conservation areas are primarily intended to protect and enhance the preserved wetlands through buffering and provide interconnectivity between systems.

Refined Conservation Habitat Network

ENCPA Policy FL.13.07(A)(1)(e) requires the adjustment of CHN boundaries as more accurate information becomes available. During the development of the DSAP, additional analysis of the Central Planning Area's wetlands was conducted via photo interpretation and selective groundtruthing. This information was used to guide both the creation of the DSAP master plan and adjust the CHN boundaries consistent with the aforementioned policy. The proposed revisions to the CHN result in the conservation of approximately 120 additional acres of environmentally significant land in the CHN then shown on the ENCPA Master Plan (see Table 2.D).

Table 2.A: Central Planning Area Environmental Site Data

GROSS AREA (ACRES)	WETLANDS (ACRES)	UPLAND (ACRES)	CHN TOTAL AREA (ACRES)	CHN WETLANDS (ACRES)	CHN UPLANDS (ACRES)
2,938	1,188	1,750	1,116	833	233

All acreage are estimated based on photo interpretation.

Figure 2.3: Northern Planning Area Refined Conservation Habitat Network

Northern Planning Area

Wetlands

The East Nassau Employment Center DSAP's Northern Planning Area is approximately 665 acres in size and, like the Central Planning Area, primarily consists of upland coniferous plantation. The approximate extent of wetlands and surface waters was determined through photo interpretation and selective groundtruthing. Little, if any, surfaces waters exist within the Northern Planning Area. Site wetlands were determined to total approximately 257 acres and consist primarily of mixed forested wetlands (~176 acres), emergent aquatic vegetation (~25 acres) and wet coniferous plantation (~20 acres).

Uplands

Like the Central Planning Area, the Northern Planning Area is dominated by coniferous plantations which represent approximately 98% of total upland acreage. These are actively managed silvicultural areas comprised primarily of planted slash pine. Given the predominance of planted pine within the site, there are few distinctive upland ecological communities towards which to direct conservation efforts; therefore, the site's upland conservation areas are primarily intended to protect and enhance the preserved wetlands through buffering and provide interconnectivity between systems.

Refined Conservation Habitat Network

As with the Central Planning Area, the Northern Planning Area's CHN boundaries have been adjusted per ENCPA Policy FL.13.07(A)(1)(e). Additional analysis of the Northern Planning Area's wetlands was conducted via photo interpretation and selective groundtruthing. The proposed revisions to the CHN result in the conservation of approximately 45 additional acres of environmentally significant lands in the CHN then shown on the ENCPA Master Plan (see Table 2.D).

Table 2.B: Northern Planning Area Environmental Site Data

GROSS AREA (Acres)	WETLANDS (Acres)	UPLANDS (Acres)	CHN TOTAL AREA (Acres)	CHN WETLANDS (Acres)	CHN UPLANDS (Acres)
665	257	408	312	251	61

All acreage are estimated based on photo interpretation.

Figure 2.4: Southern Planning Area Revised Conservation Habitat Network

Southern Planning Area

Wetlands

The East Nassau Employment Center DSAP's Southern Planning Area is approximately 599 acres in size and, like the DSAP's other Planning Areas, primarily consists of upland coniferous plantation. The approximate extent of wetlands and surface waters was determined through photo interpretation and selective groundtruthing. Surface waters within the Planning Area are total less than 2 acres. Site wetlands were determined to total approximately 216 acres and consist primarily of mixed forested wetlands (~146 acres), freshwater marsh (~31 acres) and wet coniferous plantation (~17 acres).

Uplands

Like the DSAP's other Planning Areas, the Southern Planning Area is dominated by coniferous plantations which represent approximately 98% of total upland acreage. These are actively managed silvicultural areas comprised primarily of planted slash pine. Given the predominance of planted pine within the site, there are few distinctive upland ecological communities towards which to direct conservation efforts; therefore, the site's upland conservation areas are primarily intended to protect and enhance the preserved wetlands through buffering and provide interconnectivity between systems.

Refined Conservation Habitat Network

As with the other Planning Areas, the Southern Planning Area's CHN boundaries have been adjusted per ENCPA Policy FL.13.07(A)(1)(e). Additional analysis of the Southern Planning Area's wetlands was conducted via photo interpretation and selective groundtruthing. The proposed revisions to the CHN result in the conservation of approximately 85 additional acres of environmentally significant land in the CHN then shown on the ENCPA Master Plan (see Table 2.D).

Table 2.C: Southern Planning Area Environmental Site Data

GROSS AREA (Acres)	WETLANDS (Acres)	UPLAND (Acres)	CHN TOTAL AREA (Acres)	CHN WETLANDS (Acres)	CHN UPLANDS (Acres)
599	216	383	266	216	50

All acreage are estimated based on photo interpretation.

Summary

In conclusion, the CHN boundary for each of the DSAP's Planning Areas has been refined consistent with ENCPA Policy FL.13.07(A)(1)(e). These refinements were based upon more detailed analysis of the respective Planning Area's natural resources and included photo interpretation and selective groundtruthing of ecological communities. A full description of the DSAP's environmental opportunities and constraints are contained in Appendix A: Natural Resource Analysis.

The refined CHN is consistent with the ENCPA Master Plan's primary goal of promoting sustainable and efficient regional land use. As with the original ENCPA CHN, the DSAP CHN conserves regionally significant natural resources and includes a mosaic of wetlands, surface waters and uplands which will provide long-term benefits to aquatic, wetland dependent and terrestrial wildlife that currently utilize these habitats and contribute to the long-term sustainability of these wildlife communities. It ensures that the DSAP's largest and highest quality wetland strands are protected in perpetuity and preserves natural drainage systems.

Table 2.D summarizes the impacts of the proposed refinements to each of the DSAP's Planning Areas. Overall, the refinements to the CHN boundary are anticipated to result in a net increase of approximately 250 acres of conserved lands. Per ENCPA Policy FL.13.07(A)(1)(e), this acreage may be refined further during the Preliminary Development Plan and Site Planning process as better information becomes available.

Table 2.D: CHN Refinement Summary (acres)

PLANNING AREA	ENCPA	DSAP	APPROXIMATE NET CHANGE
Central	996	1,116	120
Northern	267	312	45
Southern	181	266	85
TOTAL	**1,444**	**1,694**	**250**

It is important to note that wetland protection within the Property is regulated by the SJRWMD, the Department of the Army, Corps of Engineers (ACOE), and Nassau County. Prior to development, the extent of state jurisdictional wetlands and surface waters will be determined based on the Florida unified wetland delineation methodology (Chapter 62-340, Florida Administrative Code [F.A.C.]). Dredge and fill activities and mitigation for these activities, are regulated by the state through the Environmental Resource Permit (ERP) program, and implemented jointly by the Florida Department of Environmental Protection (FDEP) and the five water management districts.

In addition to state and federal regulations, wetland protection within the DSAP is also regulated by Nassau County. Per the County's comprehensive plan, proposed development must be directed away from wetlands "...by clustering the development to maintain the largest contiguous wetland area practicable and to preserve the pre-development wetland conditions". As previously described, provisions for wetland protection are also included within the Conservation Habitat Network (CHN) guidelines and standards outlined in ENCPA Policy FL.13.07.

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3 Mobility

Mobility

Nassau County Transportation Mobility Approach

The continued escalation of housing and transportation costs in Northeast Florida is unsustainable and fostered by sprawling development patterns, separation of uses and a single focus on the use and movement of the automobile. In fact, Nassau County households spend over 45% of the median income on costs related to housing and transportation. The solution to this problem is the integration of land use and transportation programs, strategies and policies through the development of a mobility plan. A mobility plan is a long range plan promoting development that integrates land uses, maximizes mobility choices (bike, pedestrian, transit and auto/truck), fosters healthy sustainable communities and funds a range of improvements for all modes of transportation.

The unsustainable pattern of development in Northeast Florida, and for that matter Florida in general, was further encouraged in response to provisions of Florida's Growth Management Act adopted by the state legislature in 1985. Specifically, the most problematic provisions required comprehensive plans include a concurrency management system, that required transportation capacity be available concurrent with the impacts of development. While philosophically sound, the concurrency requirement carried unintended consequences that in the real world caused the further sprawl of development and forced new development to pay for the transportation problems created by past development practices that had already completed the entitlement process. Sole reliance on the expansion of roadway capacity and the lack of public and private investment in alternative modes of transportation have discouraged urban infill and redevelopment and contributed to the proliferation of urban sprawl.

In recognition of the land use and development pattern issues caused by applying the concept of transportation concurrency in Nassau County, the Nassau County Board of County Commissioners amended Article 2 of the Nassau County Land Development Code eliminating the requirements for transportation concurrency and proportionate fair share. In its place, the Board created an interim Adequate Public Facilities System. Further the Board of County Commissioners appointed a task force to look into the options for replacing concurrency with mobility, or some other more holistic approach to planning and funding a multi-modal transportation network to serve the future needs of Nassau County.

Sector Planning and Mobility

As part of the latest update of the Nassau County Comprehensive Plan, the County adopted a Sector Plan for the ENCPA. The Sector Plan adopted in conjunction with the provisions of Chapter 163.3245 Florida Statutes provides for a long-term plan intended to "promote and encourage long-term planning for conservation, development, and agriculture on a landscape scale; to further the intent of Section 163.3177(11), which supports innovative and flexible planning and development strategies."

The Sector Plan encompasses two levels: a long-term master plan for the entire planning area as part of the Nassau County Comprehensive Plan and adoption by local development order of two or more detailed specific area plans (DSAP's) that implement the long-term master plan. The long-term master plan for the ENCPA Sector is required to provide a general identification of the transportation facilities to serve the future land uses in the long-term master plan, including guidelines to be used to establish each modal component intended to optimize mobility. The detailed specific area plan (DSAP) is required to provide detailed identification of the transportation facilities to serve the future land uses in the DSAP. The legislation also requires that the DSAP identify public facilities necessary to serve the DSAP, including developer contributions in a 5 year capital improvement schedule of the affected local government as well as principles and guidelines addressing… "quality communities of a design that promotes travel by multiple transportation modes."

One of the unique aspects of the Sector Plan legislation is the requirement, per 163.3245 (4) (a), that upon effect:

i. (4)(a) "Any long-range transportation plan developed by a metropolitan planning organization pursuant to s.339.175(7) must be consistent, to the maximum extent feasible, with the long-term master plan, including, but not limited to, the projected population, and the approved uses and densities and intensities of use and their distribution within the planning area. The transportation facilities identified in adopted plans pursuant to subparagraphs (3)(a) 3 and (b) 4 must be developed in coordination with the adopted MPO long-range transportation plan.

In summary the Sector Plan encourages and authorizes an approach for the ENCPA that is "intended to optimize mobility" for each modal component. As a result of these improvements, the average vehicle miles traveled (VMT) within the ENCPA Sector is lower than Nassau County as a whole.

ENCPA Transportation Mobility Approach

The ENCPA Sector Plan provides an approach that will replace transportation concurrency requirements with a Mobility Plan. The purpose of the ENCPA Sector Mobility Plan is to provide incentives for the development of projects that, consistent with the long-term Sector Master Plan, will use alternative modes of transportation and locate in more concentrated, mixed use locations to reduce vehicle miles traveled (VMT) and greenhouse gas emissions. The Mobility Plan has been developed in conjunction with the Regional Transportation Plan prepared by the Metropolitan Planning Organization (MPO), as well as the recent update of the County's Comprehensive Plan. The horizon year for the Mobility Plan is 203S and the modes addressed include car/truck, transit, bicycle and pedestrian facilities.

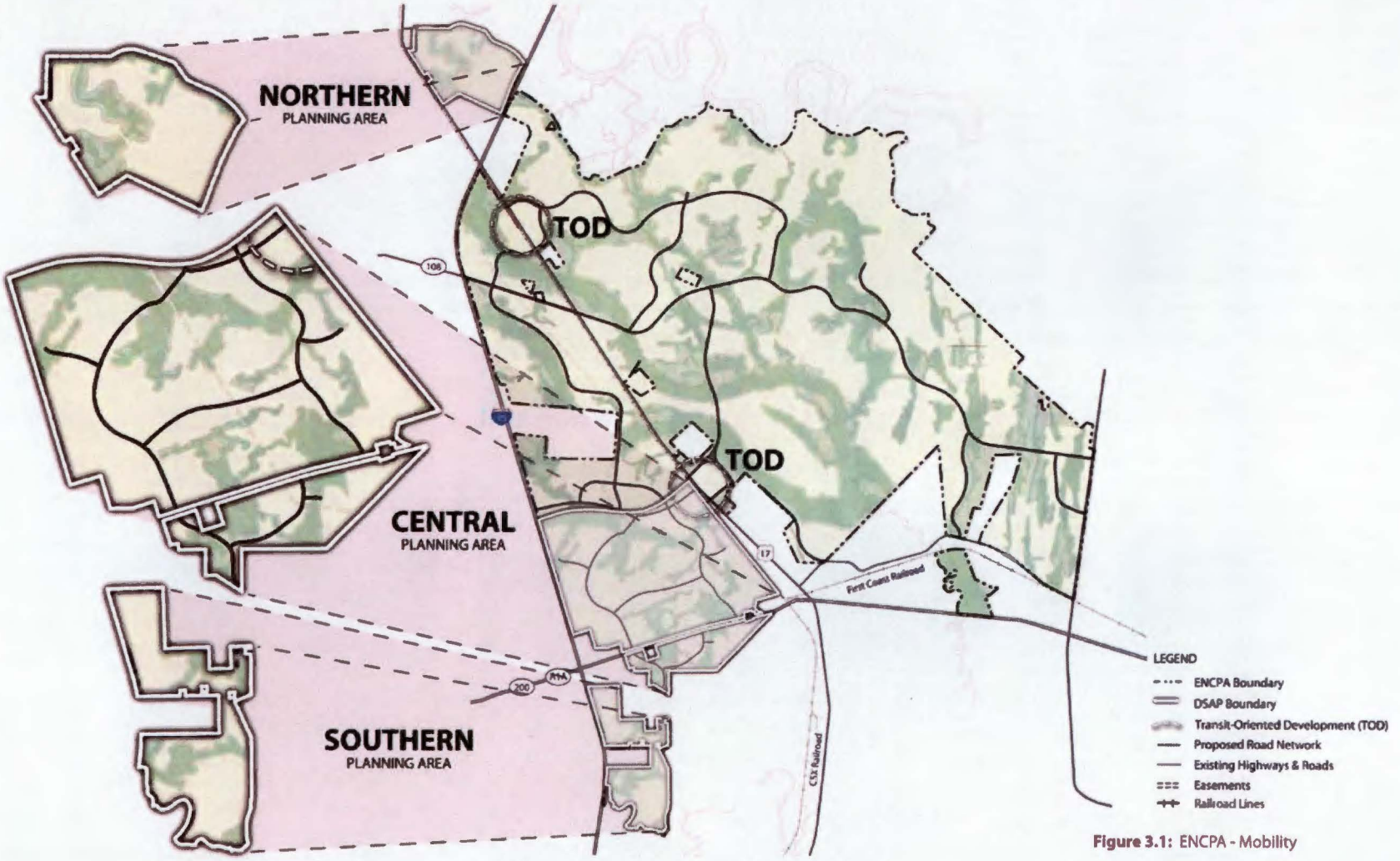

Figure 3.1: ENCPA - Mobility

The goals of the Mobility Plan are to establish a multi-modal transportation system for the ENCPA Sector; reduce vehicle miles traveled; and, to promote compact, interconnected and mixed-use land development patterns to improve the health, quality of life and sustainability of the residents of the ENCPA Sector and Nassau County.

A key component of the plan is the creation of a mobility fee, based on the total cost for recommended improvements divided by the total daily trip generation for the ENCPA Sector. The mobility fee system is designed to incentivize quality growth by allowing a proposed development to qualify for trip generation reductions, and therefore lower fees, based on adherence to site design performance standards or the construction of improvements that will result in the reductions to vehicle trips.

The Mobility Plan and related DSAP development order will require every new development or redevelopment within the ENCPA Sector, that is not otherwise vested or exempt, to be assessed a mobility fee prior to approval of final building permits. This system is intended to eliminate inequities in the former transportation concurrency system whereby all new development or redevelopment pays regardless of available capacity, or lack thereof, within the ENCPA transportation network. Applicants will still be subject to concurrency as applied in the Nassau County Adequate Public Facilities System for public schools, water, wastewater, solid waste, drainage and recreation prior to issuance of a final development permit or order.

To establish background roadway volumes in the study area, the Northeast Florida Regional Planning Model (NERPM) was run for baseline conditions without the ENCPA development. The NERPM is the adopted MPO model and is recommended by both FDOT and the Northeast Florida Regional Planning Council. This analysis shows the following roadways are projected to operate over capacity without ENCPA development:

- Interstate 95 from Duval County Line to SR 200/A1A – over capacity as a 6-lane road
- SR 200/A1A from US 17 to Chester Road – over capacity as a 6-lane road
- US 17 from Duval County Line to Harts Road – over capacity as a 2-lane road

These volumes and deficiencies are used as a starting point for identifying transportation improvements associated with the ENCPA and DSAP. Per HB 7207, development cannot be held responsible for addressing existing backlogs. Since these roadway segments are projected to operate over capacity based on other development approved within Nassau County (prior to approval of the ENCPA development program), improvements to these segments are not included as part of the Mobility Network of funded improvements.

The Mobility Network is based on the transportation demand for the approved total development program of 24,000 residential units and 11 million square feet of non-residential uses (retail, office and industrial). Based on trip generation calculations using ITE rates, this development program is expected to generate 379,721 daily trips, as detailed in Appendix B.

The estimated ENCPA cost for infrastructure improvements in the Mobility Network is $124.1 million in Year 2012 dollars, consisting of the following components:

1. CR 108 Extension
2. New I-95 Interchange
3. Interchange Road
4. US 17 widening
5. Employment Center north-south road
6. Employment Center collector roads
7. Traffic signals at major intersections
8. Internal trails

Next Steps

The Development Order for the Detailed Specific Area Plan will address the methodology for computing the mobility fee, the criteria for receiving credits, the review process, the time table, application fee and method for paying mobility fees.

The Mobility Plan for the ENCPA should be updated with the processing of each Detailed Specific Area Plan and changes to the mobility fee made accordingly.

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Mobility Plan Overview

This section summarizes the transportation mobility recommendations for the DSAP. The transportation analysis and recommendations were developed based on the approved development program and transportation network for the overall ENCPA Sector Plan. From there, the pieces of the transportation network needed to support the DSAP were then identified. The costs associated with needed improvements are also addressed through this analysis.

Complete documentation of the transportation analysis assumptions and results is provided in Appendix B, Transportation Analysis.

The mobility approach used to identify infrastructure improvements represents the coordination between land use patterns and transportation infrastructure. The benefits of this approach are a more efficient transportation system with reduced infrastructure needs. In addition, the mobility approach promotes the use of transportation options such as walking, bicycling and transit, and employs land use design standards to ensure that these options are viable. The transportation mobility approach accounts for the following elements:

- Balance of housing and employment – Per the approved ENCPA Sector Plan, the overall development program levels were identified to maintain a balance between housing units and employment square footage. In addition to strengthening the employment base for Nassau County, this balance maximizes the number of trips that stay internal to the ENCPA and reduces impacts on surrounding roadways.
- Mix of residential and non-residential land uses – Each of the residential neighborhoods contains non-residential land uses such as small-scale retail, office, and schools. These uses are located within and adjacent to residential areas, allowing many of these trips to occur by walking or bicycling. The Employment Center and Regional Center areas contain similar requirements for maintaining a mix of uses and incorporating residential and civic uses.
- Interconnected network of local streets – The Sector Plan also provides guidelines for local streets to ensure that they form a connected system between and within neighborhoods. This reduces the need for internal traffic to use the primary street network.
- Internal trails network – The ENCPA is proposed to contain approximately 100 miles of multi-use trails that can accommodate pedestrians, bicyclists and golf carts. Within the DSAP area, 20 miles of trails are planned.
- Transit-Oriented Development (TOD) – As part of long-range plans for the First Coast region, commuter rail connecting Nassau County and downtown Jacksonville has been identified for the CSX and First Coast Railroad corridors. The ENCPA plan incorporates opportunities for TOD along the First Coast Railroad located next to US 17.

A transportation mobility approach has been developed and adopted in other communities in Florida, including Pasco County, Alachua County, and Duval County.

Figure 3.1 shows the transportation network included in the previously adopted ENCPA Sector Plan

Figure 3.2 shows the recommended Mobility Network to support the overall ENCPA. In comparison to Figure 3.1, this network reflects modifications and refinements to the roadway alignments as a result of further detailed planning and analysis, but maintains the intent of the approved ENCPA transportation system. As the distribution of land uses within each DSAP is defined, TerraPointe may work with Nassau County to refine the mobility improvements associated with each phase of development.

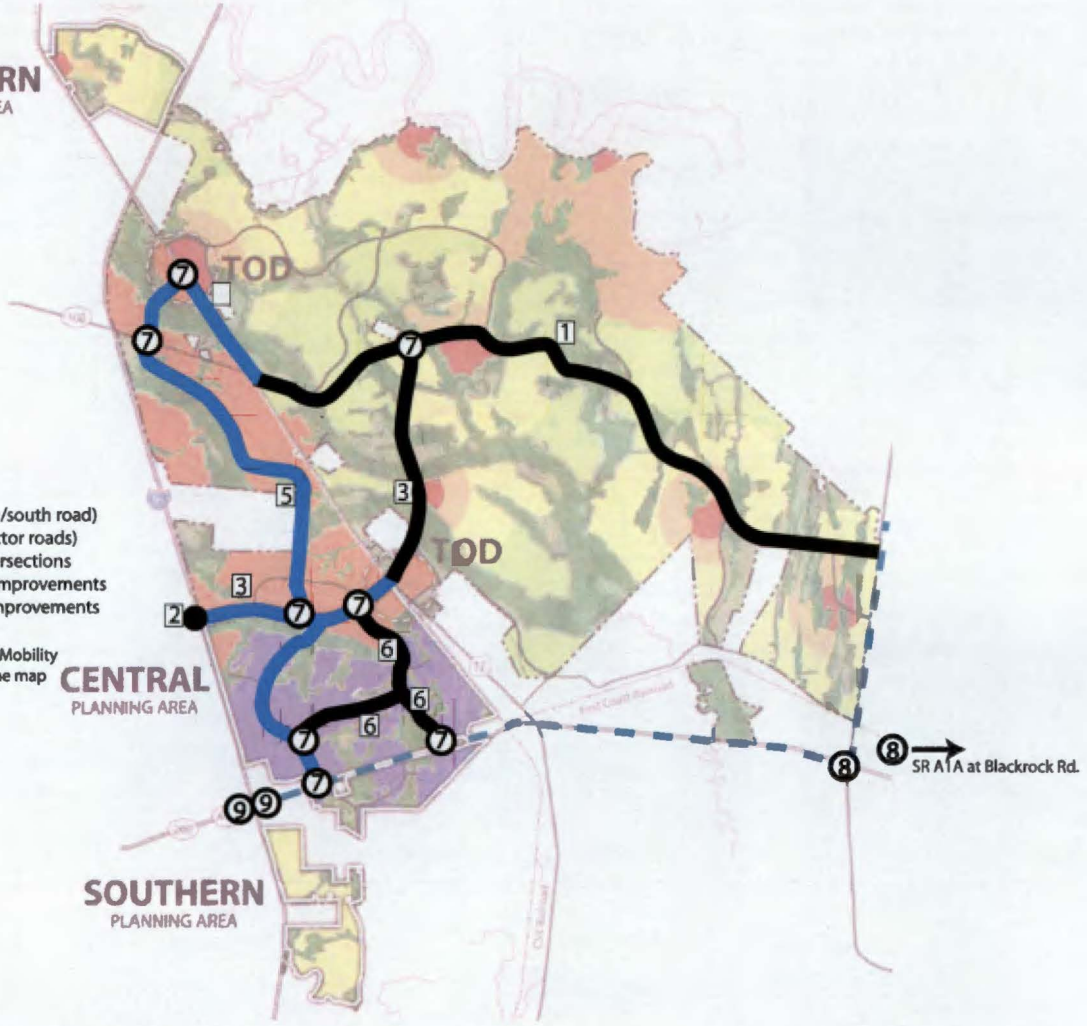
The estimated ENCPA cost for the Mobility Network is $124.1 million in Year 2012 dollars, consisting of the following components as shown on Figure 3.2:

1. CR 108 Extension
2. New I-95 Interchange
3. Interchange Road
4. Employment Center north-south road
5. Employment Center collector roads
6. Traffic signals at major intersections
7. Internal trails (not shown on exhibit)

These improvements will be funded and implemented over time based on the construction of development within the ENCPA and the trips generated by this development.

As noted on Figure 3.2, improvements to both SR A1A and Chester Road are funded through construction as part of the adopted FDOT Five-Year Work Program. Consequently, these projects were not included in the calculation of total costs. With the inclusion of these improvements in the Work Program, they will be constructed sooner than if tied to development activity within the ENCPA as part of the Mobility Network. The inclusion of the two items in the Work Program also allows mobility fee funds received in the short term to go towards other improvements.

Figure 3.2: Recommended ENCPA Mobility Network



Mobility Network Cost Components (on map)

1. CR 108 Extension
2. New I-95 Interchange
3. Interchange Road
4. US 17 Widening
5. Employment Center (north/south road)
6. Employment Center (collector roads)
7. Traffic Signals at major intersections
8. Intersection left turn lane improvements
9. I-95/SR A1A Interchange Improvements

Internal trails are included in the Mobility Network but are not shown on the map

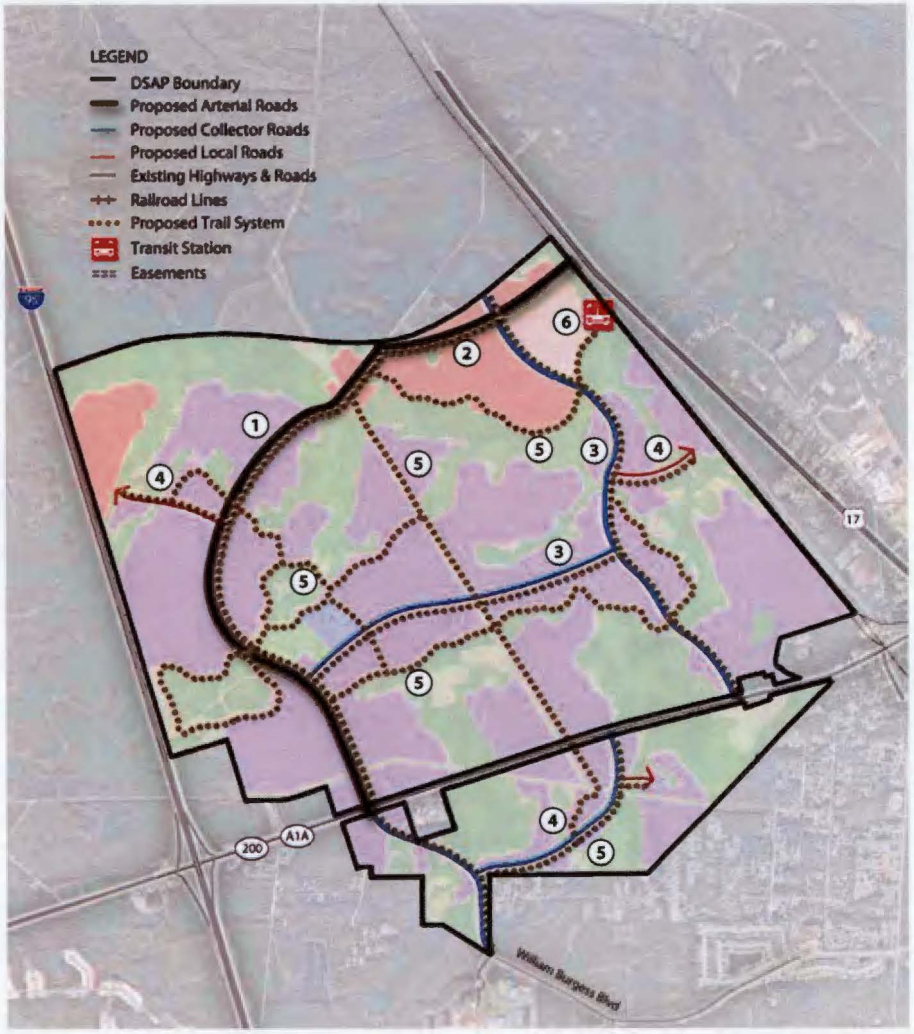
Improvements

- 4-Lanes
- 2-Lanes w/ Turn Lanes at Major Intersections
- Committed Funding Roadway
- Interchange
- Traffic Signal

Notes

1. All 4-lane roadways are assumed to be implemented in phases, with 2 lanes constructed internally.
2. The cross-sections for all the Mobility Network roadways also include 12' multi-use trails.
3. In addition to the roadways shown, the Mobility Network includes 25 miles of separate multi-use trails.
4. Roadways shown in dashed lines have committed funding through FDOT for additional lanes. These roadways are not included in the costs for the recommended mobility plan.

Figure 3.3: ENCPA DSAP Central Planning Area Mobility Plan



DSAP Master Mobility Network

This section summarizes the Mobility Network improvements associated with the buildout of the DSAP. As stated earlier, these improvements were identified based on the components needed to support development of this portion of the ENCPA. The improvements are discussed for each of the three Planning Areas (Central, Northern and Southern) associated with the DSAP.

Central Planning Area

Figure 3-3 summarizes the mobility improvements associated with the Central Planning Area. These improvements were identified based on the development program of 2,500 multi-family residential units and 7,000,000 square feet of non-residential uses (retail, office and industrial). This program for the Central Planning Area generates an estimated 91,480 daily trips at buildout. The development program and its assumptions are summarized in Appendix B and in the Land Use section of this document.

Within the Central Planning Area, the following transportation improvements have been identified:

1. **North – South Arterial Road (4 lanes, initially constructed as 2 lanes) –** This roadway will extend through the Central Planning Area (the Employment Center) and continue north through the Regional Center and connect to US 17. This roadway will serve as the spine of the ENCPA for areas between US 17 and Interstate 95. A traffic signal is assumed at the intersection of this roadway and SR A1A.

2. **East – West Interchange Road (4 lanes, initially constructed as 2 lanes) –** This roadway will provide access to the Central Planning Area from US 17. An interchange with Interstate 95 is assumed at the buildout of the Central Planning Area. As areas of the ENCPA east of US 17 are developed, the Interchange Road will be extended to the east.

3. **Collector Roadways (2 lanes with turn lanes) –** The collector roadways for the Central Planning Area provide a second access point to and from SR A1A, as well as connections to the TOD area near US 17.

4. **Local Roadways (2 lanes) –** In addition to the arterial and collector roadways included in the Mobility Network, a supporting network of local streets will be completed to provide access to parcels within the Central Planning Area. Connectivity standards for the network of arterial, collector and local streets are defined as part of the ENCPA Sector Plan.

5. **Trail System –** A system of multi-use trails is planned to provide non-auto travel choices within the Central Planning Area. The trail system will accommodate

pedestrians, bicyclists and golf carts. Approximately 20 miles of trails are included as part of the Mobility Network for this area.

6. **Transit Oriented Development** – The Central Planning Area provides opportunities for TOD around any future stations developed as part of an envisioned commuter rail system between within the Central Planning Area.

For short-term (five-year) conditions, the total development program for the Central Planning Area consists of 250 multi-family residential units and 400,000 square feet of office. This development is expected to occur around along the north-south arterial road near SR A1A. Based on ITE trip generation calculations, this development program generates a total of 6,216 daily trips.

For short-term conditions, all access will be via SR A1A. As discussed earlier, SR A1A through the Central Planning Area is funded for widening to six lanes as part of FDOT's adopted Five Year Work Program. This improvement provides the additional capacity necessary to accommodate short-term development; therefore, no additional short-term regional improvements are necessary. In terms of internal Mobility Network needs, the short-term improvements are limited to roadway segments to provide access to development parcels. A signal at SR A1A and the North-South Arterial Road may be needed and should be evaluated as development occurs. This intersection aligns with the existing intersection of SR A1A and William Burgess Boulevard, where the County desires to add a traffic signal. Any consideration of the need for a traffic signal should also address traffic volumes from this southern leg.

Figure 3.4: ENCPA DSAP Northern Planning Area Mobility Plan

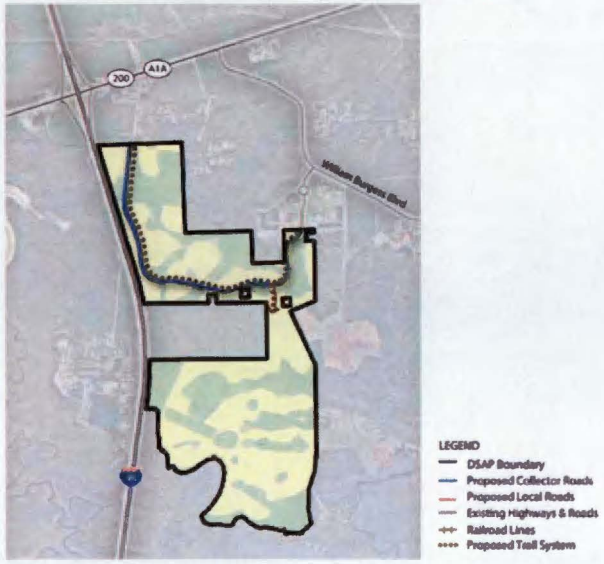
Northern Planning Area

The transportation network to support the Northern Planning Area consists of local streets and internal trails as shown on Figure 3.4.

The total development program for the Northern Planning Area consists of 769 single-family residential units and 75,000 square feet of retail; this program produces an estimated 12,425 daily trips. (The development program is discussed in more detail in Appendix B and in the Land Use chapter). Access to the Northern Planning Area is limited to a single roadway, US 17, with two access points recommended. Environmental constraints to the north and Interstate 95 to the east restrict the opportunity for additional connectivity.

For short-term (five-year) conditions, no development is projected within the Northern Planning Area. Therefore, no short-term transportation improvements have been identified for this area.

Figure 3.5: ENCPA DSAP Southern Planning Area Mobility Plan



Southern Planning Area

The transportation network to support the Southern Planning Area consists of local streets and internal trails as shown on Figure 3.5.

The total development program for the Southern Planning Area consists of 769 single-family residential units and 25,000 square feet of retail; this program produces an estimated 9,550 daily trips. (The development program is discussed in more detail in Appendix B and in the Land Use chapter). Existing access to the Southern Planning Area is limited to a single roadway, William Burgess Boulevard, to the northeast. Additional connections to the north to SR A1A have been identified as possible, but are not required to support development of this area. Environmental constraints to the south and Interstate 95 to the west restrict the opportunity for additional connectivity.

For short-term (five-year) conditions, a development program of 100 single family units is identified for the Southern Planning Area. This development program generates approximately 957 daily trips. Based on this low development intensity and the available capacity on William Burgess Boulevard, no short-term transportation improvements have been identified for this area. The analysis results are discussed in further detail in Appendix B.

Recommended Typical Cross-Sections

Figure 3-6 shows recommended cross sections for streets within the Employment Center DSAP. These sections may be modified in coordination with Nassau County. The intent of the cross sections is to provide the basis for the final design included in the Planned Development document for the Employment Center. These cross sections illustrate how mobility planning principles will be integrated into the design of Complete Streets that provide safe and comfortable accommodations for pedestrians, bicyclists and motorists. The final design may be varied based on natural features or other operational considerations.

Residential Neighborhood Local Road Cross-Section

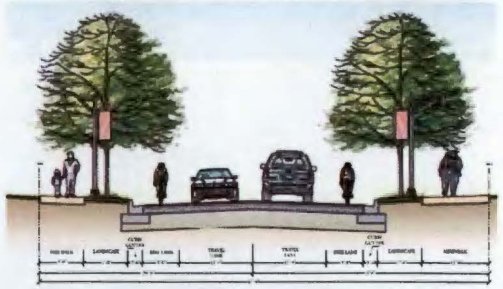
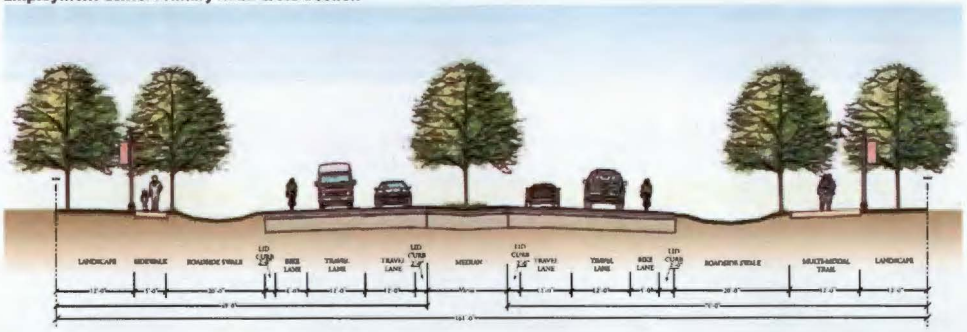
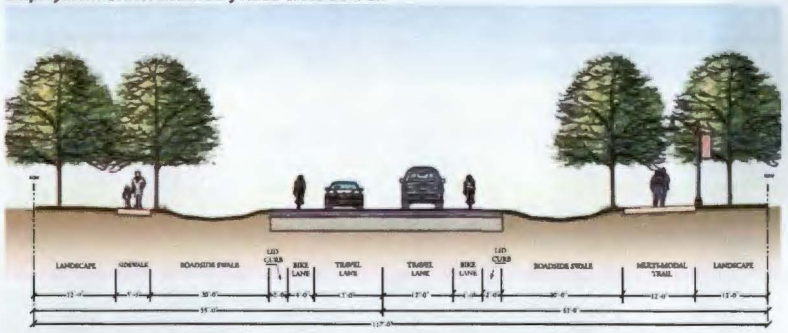


Figure 3.6: Recommended Cross-Sections

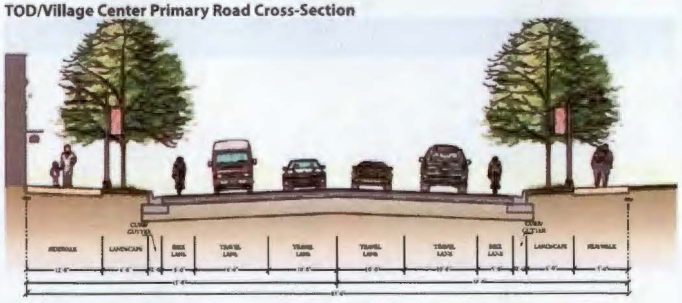
Employment Center Primary Road Cross-Section



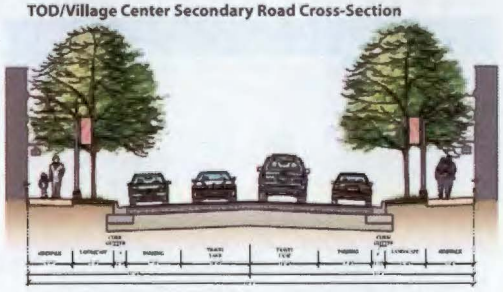
Employment Center Secondary Road Cross-Section



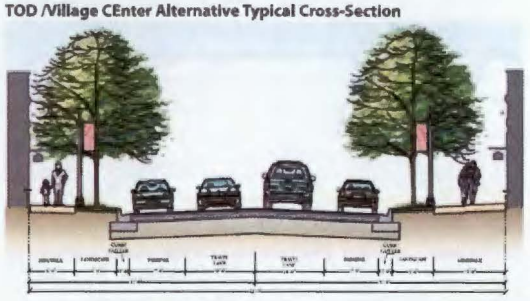
TOD/Village Center Primary Road Cross-Section



TOD/Village Center Secondary Road Cross-Section



TOD /Village CEnter Alternative Typical Cross-Section



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4 Land Use

Land Use

ENCPA Land Use Summary

The ENCPA Master Plan includes specific land use sub-categories and their respective general development guidelines. Combined, these sub-categories comprise a full mixture of uses including industrial, commercial, residential, civic and conservation. This functional mix of land uses has been allocated in a manner which supports a long-term jobs-to-housing balance for both the ENCPA and the County as a whole (see Figure 4.1). A brief description of each land use sub-category is contained below.

Conservation Habitat Network (CHN)

As previously described in the environmental conditions section, the Conservation Habitat Network (CHN) land use sub-category is intended to identify regionally significant natural resources to be conserved during and after development of the ENCPA. The CHN consists of surface waters, wetlands, buffers and other uplands designated for conservation.

Regional Center (RC)

The Regional Center (RC) land use sub-category identifies areas suitable for the location of a broad mix of uses including, high density residential, high way commercial/interchange-related uses, regional scale retail, commercial, hotel, office, business/research parks and light industrial. Included within the RC sub-category are areas designated for Transit Oriented Development (TOD) districts.

Transit Oriented Development (TOD)

Transit Oriented Development (TOD) areas are designated on the ENCPA Master Plan along U.S. 17 and adjacent to the CSX rail line. The TOD designation is intended to identify areas appropriate for the development of multi-modal transportation centers. These areas are approximately 50 acres in size and are to be designed to accommodate a full range of uses (residential, retail, office and civic) and organized in a manner that encourages walking as the primary form of transportation.

Employment Center (EC)

The Employment Center (EC) land use sub-category identifies areas suitable for the location of employment generating uses intended to serve both Nassau County and the region. These may include industrial (manufacturing, warehousing and distribution), office, research/technology and business service related uses. In addition, secondary supporting uses such as multi-family residential, retail, lodging and civic/public facilities may be permitted.

Village Center (VC)

The purpose of the Village Center (VC) land use sub-category is to identify areas which may serve as higher density/intensity, mixed-use centers for surrounding residential neighborhoods. The range of permitted uses includes residential, commercial, office and civic.

Residential Neighborhood (RN)

The purpose of the Residential Neighborhood (RN) land use sub-category is to create a hierarchical pattern of residential neighborhoods radiating outward from Village Centers. The RN land use sub-category is divided into three "Tiers". Tier 1 neighborhoods are mid-density, residential areas adjacent to Village Centers. Tier 2 neighborhoods are lower density in character and generally located ½ to 1 mile from Village Centers. Tier 3 represents the lowest density neighborhoods generally located beyond 1 mile from a designated Village Center. In addition, small, mixed-use Neighborhood Centers are also permitted within the RN. These centers may serve as a focal point for a neighborhood and provide limited, neighborhood-serving uses.

Resort Development (RD)

The Resort Development (RD) land use sub-category is intended for a mixture of seasonal and year-round housing types in a neighborhood-like setting. Non-residential uses such as hotels, restaurants and resort-serving commercial, retail and service uses shall be permitted in the Resort Development land use sub-category. It should be noted that no RD is proposed as part of the East Nassau Employment Center DSAP.

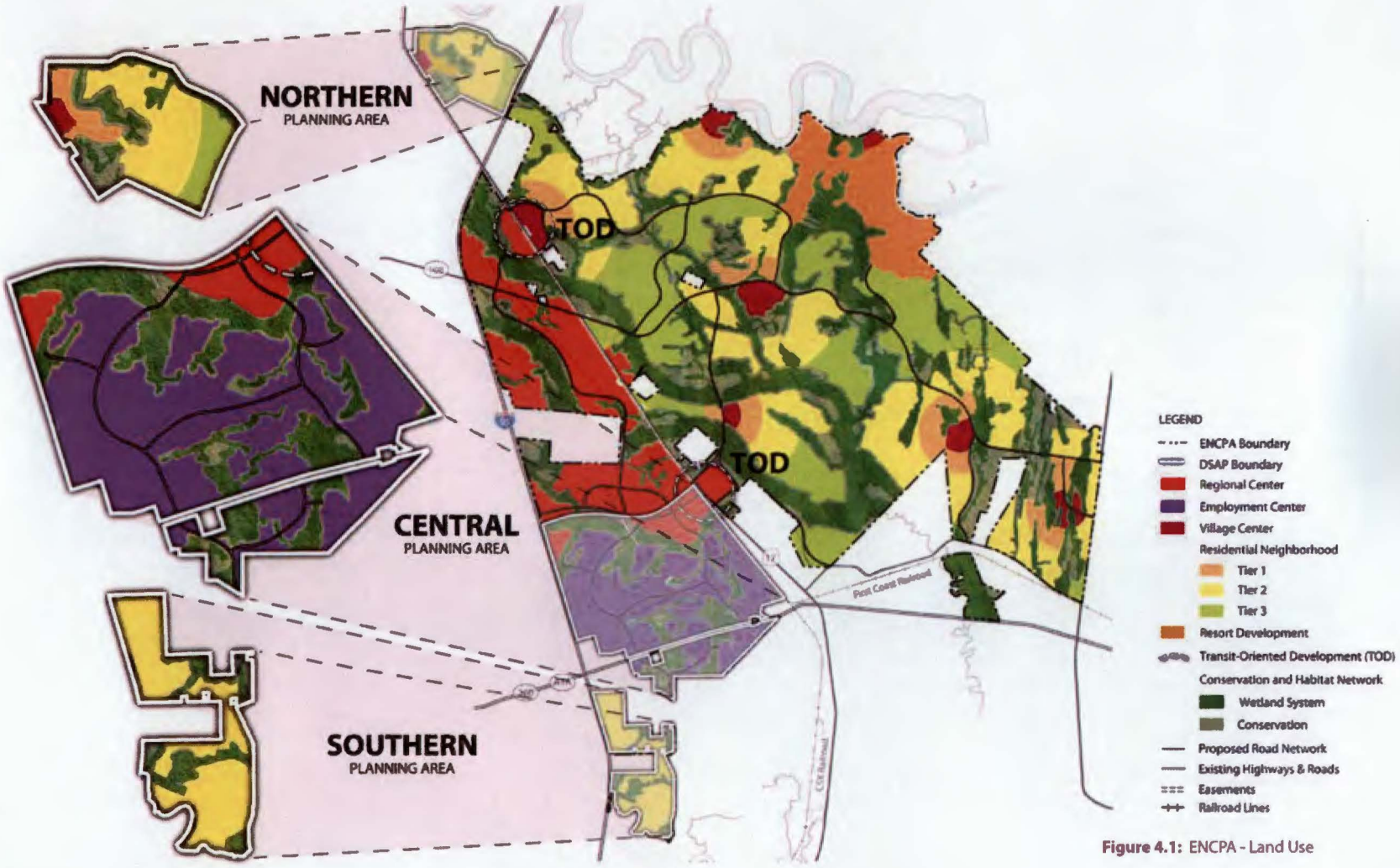


Figure 4.1: ENCPA - Land Use

Master Planning Principles
(Central, Northern and Southern Planning Areas)

Consistent with the ENCPA master plan, the East Nassau Employment Center DSAP contains a broad mixture of land uses connected by a multi-modal transportation system. It preserves large areas of regionally significant natural resources and organizes development in a compact and fiscally efficient manner. A summary of the specific aspects of each of the DSAP's planning areas is contained below.

Central Planning Area

The primary component of the Central Planning Area master plan is a +1,000 acre Conservation Habitat Network (CHN) comprised of regionally significant ecological communities and other open space. This mosaic of surface water, wetlands and upland buffers arranges development within the planning area into compact nodes while preserving critical wildlife habitat and natural drainage systems. It is critical to both the environmental sustainability of the site as well as the organization of the built environment.

Developable land within the Central Planning Area has been connected both internally and externally through a multi-modal transportation network. This network incorporates pedestrian, bicycle, transit and automobile facilities to form a functionally and fiscally efficient transportation system focused on accessibility as well as mobility. Key components of this system include an extensive multi-use path system providing safe and attractive pedestrian and bicycle access throughout the Planning Area and a Transit Oriented Development (TOD) district intended to accommodate future transit service.

The DSAP development program calls for 2,500 dwelling units and 7,000,000 square feet of non-residential development within the Central Planning Area. Two land use districts serve to organize this program in a compatible and sustainable manner. The ~1,441 acre Employment Center (EC) district is specifically intended to encourage economic development and allows such uses as manufacturing, warehousing and distribution, technological and medical research, and business services. Secondary supportive uses, including retail, lodging and multi-family residential, are also permitted. The development standards for this district are broad and intended to allow for significant flexibility; thereby, further encouraging job-creating development.

Also include within the Central Planning area is a ~300 Regional Center (RC) district and associated Transit Oriented Development (TOD) area. While the Regional Center allows for many of the same employment generating uses as the Employment Center, it is primarily intended to accommodate large-scale retail and residential uses. Approximately 50 acres of the district has been designated for Transit Oriented Development or "TOD". This TOD sub-area contains specific design principles intended to guide the development of the area in a compact, mixed-use and walkable manner. This development pattern both accommodates and encourages future transit service to the area.

Figure 4.8: DSAP Central Planning Area Overall Land Map

Table 4.A: Central Planning Area Development Program

GROSS AREA	CHN	UPLAND	RESIDENTIAL	NON RESIDENTIAL USES
2938	1,116	1,822	2,500	7,000,000

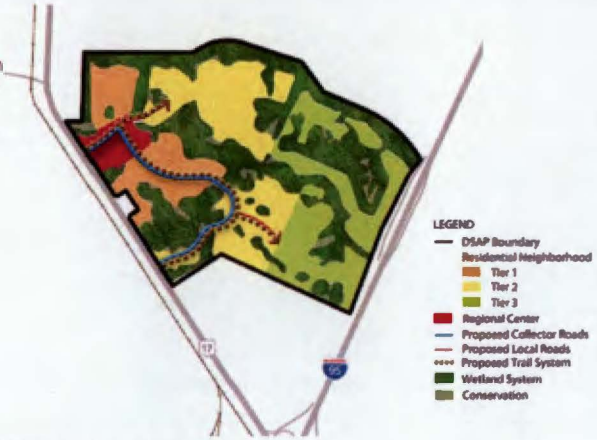


Figure 4.9: DSAP Northern Planning Area Overall Land Map

Northern Planning Area

As with the Central Planning Area, the primary component of the Northern Planning Area master plan is a Conservation Habitat Network (CHN). Comprised of regionally significant ecological communities and other open space, this network encompasses approximately 312 acres of the 665 acre Planning Area and arranges development within the planning area into compact nodes while preserving critical wildlife habitat and natural drainage systems.

The ENCPA's multi-modal transportation theme carries through to the Northern Planning Area. The Planning Area's developable lands have been connected both internally and externally with a multi-modal transportation network incorporating pedestrian, bicycle, and automobile facilities.

The DSAP development program calls for 769 dwelling units and 75 ,000 square feet of non-residential development within the Northern Planning Area. Two primary land use districts guide future development of this Area: Village Center and Residential Neighborhood. A ~26 acre Village Center (VC) district serves as a major organizing element and provides retail and service opportunities within close proximity to the Planning Area's residential neighborhoods. The Area's Residential Neighborhood (RN) district is divided into three tiers to ensure an appropriate transition of densities. Small, mixed-use Neighborhood Centers are also permitted within the Residential Neighborhood district and are intended to serve as focal points for the neighborhoods and provide limited, neighborhood-serving retail and service uses.

Table 4.B: Northern Planning Area Development Program

GROSS AREA	CHN	UPLAND	RESIDENTIAL	NON RESIDENTIAL USES
665	312	353	769	75,000

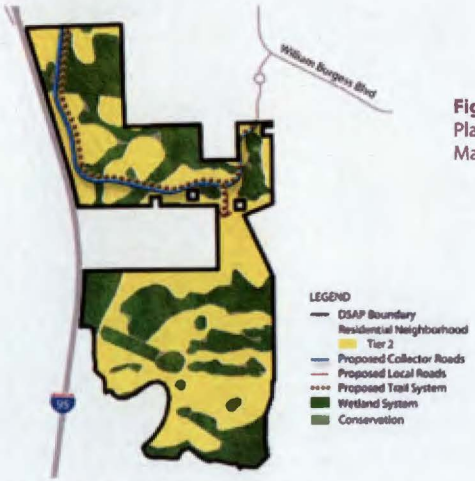


Figure 4.10: DSAP Southern Planning Area Overall Land Map

Southern Planning Area

As with the other Planning Areas, the primary component of the Southern Planning Area master plan is a Conservation Habitat Network (CHN) comprised of regionally significant ecological communities and other open space. This network encompasses approximately 266 acres of the 599 acre Planning Area and arranges development within the planning area into compact nodes while preserving critical wildlife habitat and natural drainage systems.

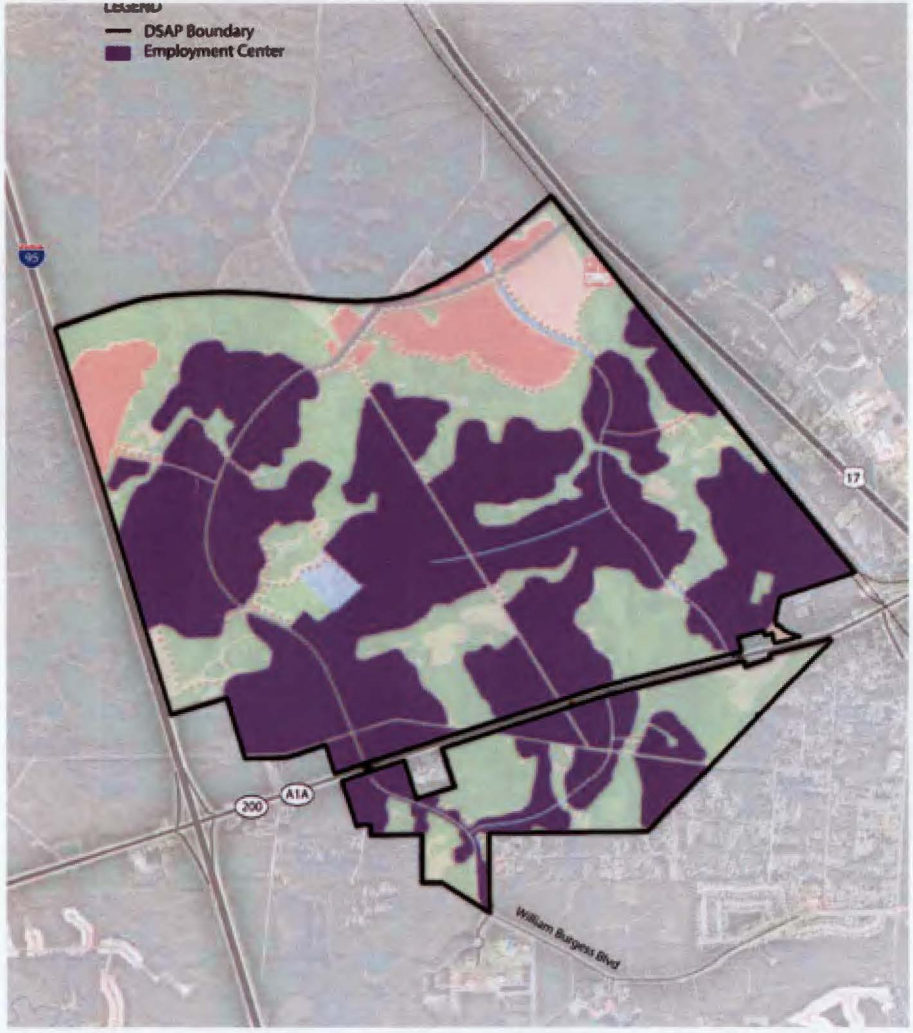
Once again, the ENCPA's multi-modal transportation theme carries through to the Southern Planning Area. The Planning Area's developable lands have been connected both internally and externally with a multi-modal transportation network incorporating pedestrian, bicycle, and automobile facilities.

The DSAP development program calls for 769 dwelling units and 25,000 square feet of non-residential development within the Southern Planning Area. This entire Planning Area is comprised of a single primary land use district: Residential Neighborhood (RN) – Tier 2. The Residential Neighborhood – Tier 2 classification allows for residential development at a minimum average net density of 2.5 dwelling units per acre. As with the Northern Planning Area, small, mixed-use Neighborhood Centers are also permitted within the Residential Neighborhood district and are intended to serve as focal points for the neighborhoods and provide limited, neighborhood-serving retail and service uses.

Table 4.C: Southern Planning Area Development Program

GROSS AREA	CHN	UPLAND	RESIDENTIAL	NON RESIDENTIAL USES
599	266	333	769	25,000

Figure 4.2: Central Planning Area DSAP Employment Center



DSAP Land Uses

There are five proposed land use districts within the East Nassau Employment Center DSAP: Employment Center (EC), Regional Center (RC), Transit Oriented Development (TOD), Village Center (VC), and Residential Neighborhood (RN). Principles and guidelines for each of the land use districts are contained in the following sections.

Employment Center (EC) (Central Planning Area)

The Central Planning Area's primary land use is a 1,441 acre Employment Center (EC). This EC is intended to provide significant economic development opportunities and improve the overall jobs-to-housing ratio within Nassau County. The EC has immediate access to higher level transportation facilities (I-95, US 17, SR 200 and the CSX rail corridor) and is to be comprised primarily of office/research,light industrial and commercial uses. A variety of secondary uses are also permitted and are intended to augment and support the Employment Center's primary uses.

Permitted Uses

Multi-family residential dwellings (whether free standing or part of a mixed use structure), office, personal services, research park, high technology, high value business industry and service uses, manufacturing, warehousing distribution, commercial, hotel and civic uses, public facilities, transit stations and other land uses that are similar and compatible. Employment Center's primary uses.

DSAP Development Standards: Employment Center

Non-Residential Standards

Minimum Lot Requirements:

- Minimum lot width: 60 feet
- Minimum lot area: 7,500 square feet
- For government uses, minimum lot area shall be consistent with the type of activity conducted on the site

- Minimum Yard Requirements:
  - Front yard: 20 feet
  - Side yard: 10 feet
  - Rear yard: 10 feet
  - No minimum lot requirements for public and/or private recreation or open space uses
- Building Restrictions:
  - Maximum Building Height: 5 stories

- Minimum FAR: None
- Maximum FAR: 1.00

- The minimum landscape area shall not be less than ten (10) percent of the total lot area and shall be in conformance with the standards in article 37.

Residential Standards

- Minimum Lot Requirements:
  - Townhouses
    - Minimum lot width:
      - Interior lot: 20 feet
      - Exterior lot: 30 feet
    - Minimum lot area:
      - Interior lot: 2,000 square feet
      - Exterior lot: 3,000 square feet

    Multiple-family dwellings and other permitted structures:
    - Minimum lot width: 100 feet
    - Minimum lot area: 10,000 square feet

- Minimum Yard Requirements:
  - Townhouses
    - Front yard: 10 feet
    - Rear yard: 10 feet
    - Side yard:
      - Interior units: 0 feet
      - Exterior units: 10 feet
  - Multiple-family dwellings and other permitted structures:
    - Front yard: 20 feet
    - Rear yard: 20 feet
    - Side yard: 20 feet

- Building Restrictions:
  - Maximum building height:
    - Duplexes and townhouses: 3 stories
    - Multiple-family dwellings: 5 stories
    - Minimum Average Net Density: 5 du/ac
    - Maximum Average Net Density: 20 du/ac

Policy FL.13.07(C)(1)specifies the following general design guidelines for the Employment Center sub-category.

a) *Development in the Employment Center land use sub-category shall be subject to the following land use mix percentage requirements (% max is based on developable land area - Gross acreage less CHN, wetlands, waterbodies, wetland buffers and public utility easements):*
   i. Office, research park and business service - 15% to 90%;
   ii. Industrial (manufacturing and warehousing distribution) - 0% to 60%;
   iii. Support retail, hotel and services - 0% to 10%;
   iv. Civic, public facilities and transit stations - 10% minimum; and
   v. Residential - 0% to 10%
b) *Shared parking areas and garages shall be permitted for all Employment Center uses, including any civic and public facilities.*
c) *Development shall be designed to incorporate landscaping and pedestrian amenities such as benches and bicycle parking along sidewalks and multi-use paths and streets.*
d) *Development shall be designed to accommodate feeder bus, bus rapid transit and other transit stops.*

This policy are hereby incorporated into the DSAP and shall apply to all future development within the EC district.

Employment Center (EC) Guidelines

A Preliminary Development Plan (PDP) shall be submitted for individual development parcels within the Employment Center of this DSAP. The PDP shall include design and architectural standards as required for a Planned Development for East Nassau Community Planning Area (PD-ENCPA). Each PDP within the Employment Center shall be consistent with the applicable policies, development principles, general guidelines and standards stipulated in Future Land Use Objective FL .13 of the Nassau County 2030 Comprehensive plan and the Employment Center development standards and guidelines of this DSAP. The PDP shall show how compatibility between land uses within the Employment Center will be achieved including, but not limited to building massing, scale fenestration, landscape, hardscape, use of the CHN, recreation areas and open spaces to define land use areas and provide buffers. Where conflicts exist between DSAP standards ant the Nassau County Land Development code, the DSAP shall control. All PDPs shall be subject to the SR200/A1A overlay regarding signage and landscape buffers adjacent to SR200. Multimodal pathway standards within this district shall be described in the PDP and shall include golf cart use.

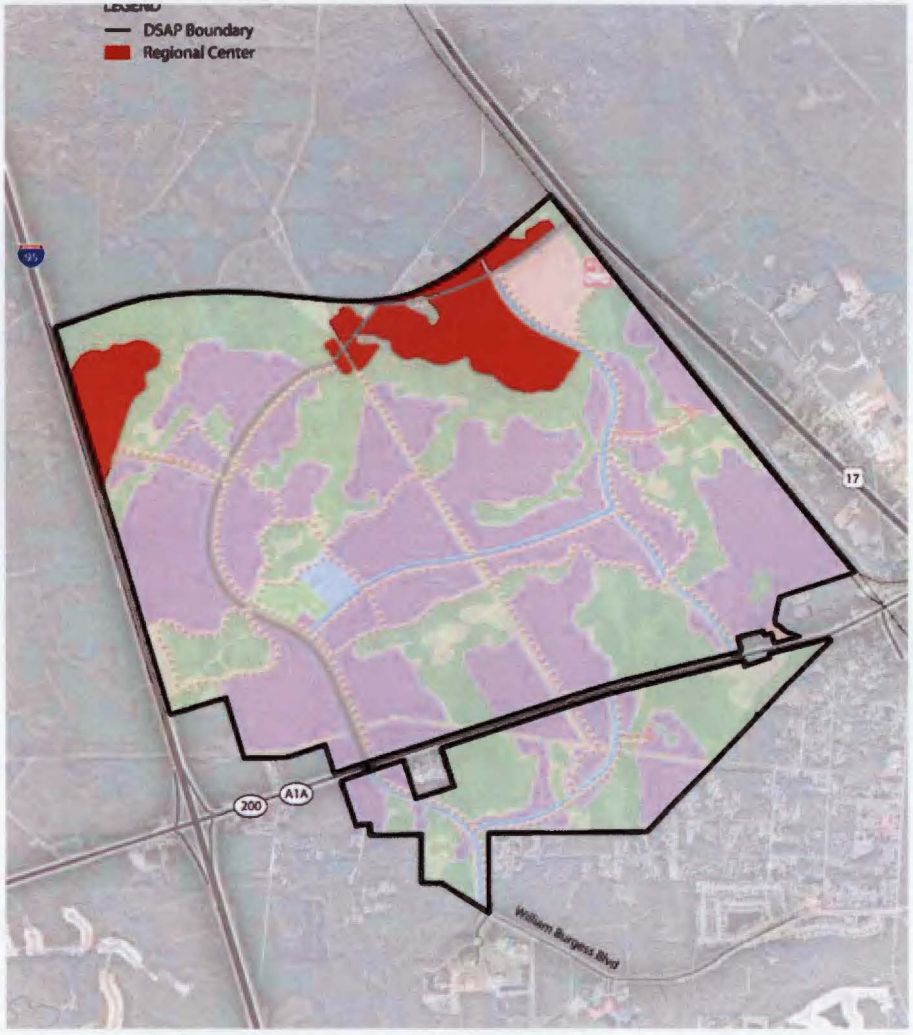
Employment Center Non Residential Guidelines

a) *Buildings should be designed to support their primary uses and incorporate design elements of scale and massing to create an attractive frontage to the primary public roadway network.*
b) *To the extent possible, the primary employee and customer entrances shall be clearly articulated in the building design and face the primary street.*
c) *A pedestrian sidewalk or passage way should connect employee and customer entrances to the primary street.*
d) *Where truck service areas and parking are located between buildings and the primary street frontage, landscaping for screening purposes should be placed between the primary frontage and the service/parking areas.*
e) *Site and landscape design should provide for safe pedestrian access through parking areas to a public right of way.*
f) *Non- Residential development within the employment center should be designed to permit connections of the CHN and open space networks.*

Employment Center Residential Guidelines

a) *Residential areas should be buffered from manufacturing and industrial areas to the extent practical by the CHN or office, institutional, open space or recreational uses.*
b) *Residential areas may be gated when pathway access is provided and the project does not prevent connectivity of the multi use pathway and open space networks.*
c) *Residential development within the employment center should encourage connections to the CHN, open space and trail networks.*
d) *Site and landscape design should provide for safe pedestrian access through parking areas to a public right of way and a transit stop as applicable.*
e) *Multifamily residential developments within the Employment Center should be connected where feasible by both vehicular and non vehicular travel modes to retail or office uses.*
f) *Residential projects may incorporate retail and office as supporting uses and amenities in free standing or vertically integrated buildings.*

Figure 4.3: Central Planning Area DSAP Regional Center



Regional Center (RC) (Central Planning Area)

In addition to the Employment Center (EC), the Central Planning Area also contains a 254 acre Regional Center (RC). The Regional Center is intended to identify areas suitable for locating a broad mix of uses including, residential, high way commercial/interchange-related uses, regional scale retail, commercial, hotel, office, business/research parks and light industrial. Like the Employment Center, the Regional Center has immediate access to higher level transportation facilities including, US 17 and the CSX rail corridor. To capitalize on the Center's proximity to the existing rail corridor and the potential for future passenger rail transit, a portion of the area has been designated as a Transit Oriented Development (TOD) district. Specifics regarding the TOD district are contained in a subsequent section.

Permitted Uses

Residential, retail (including highway-oriented, regional malls), vehicle sales, restaurants, big box retailers, hotels/motels, office, research parks, personal services, business service and light industrial, parks/plazas and other civic uses, public facilities, transit stations and other land uses that are similar and compatible.

DSAP Development Standards: Regional Center

Non-Residential Standards

- Minimum Lot Requirements:
  - Minimum lot width: 60 feet
  - Minimum lot area: 7,500 square feet
  - For government uses, minimum lot area shall be consistent with the type of activity conducted on the site
  - No minimum lot requirements for public and/or private recreation or open space uses
- Minimum Yard Requirements:
  - Front yard: 20 feet
  - Side yard: 10 feet
  - Rear yard: 10 feet
- Building Restrictions:
  - Maximum Building Height: 5 stories
  - Minimum FAR: 0.25
  - Maximum FAR: 0.50
  - The minimum landscape area shall not be less than ten (10) percent of the total lot area and shall be in conformance with the standards in article 37.

Residential Standards

- Minimum Lot Requirements:
  - Single-family dwellings and duplexes
    - Minimum lot width: 30 feet
    - Minimum lot area: 3,800 square feet
  - Townhouses
    - Minimum lot width:
      - Interior lot: 20 feet
      - Exterior lot: 30 feet
    - Minimum lot area:
      - Interior lot: 2,000 square feet
      - Exterior lot: 3,000 square feet
    - Multiple-family dwellings and other permitted structures:
      - Minimum lot width: 100 feet
      - Minimum lot area: 10,000 square feet
- Minimum Yard Requirements:
  - Single-family dwellings and duplexes
    - Front yard: 10 feet
    - Rear yard: 10 feet
    - Side yard: 5 feet
  - Townhouses
    - Front yard: 10 feet
    - Rear yard: 10 feet
    - Side yard:
      - Interior units: 0 feet
      - Exterior units: 10 feet
  - Multiple-family dwellings and other permitted structures:
    - Front yard: 10 feet
    - Rear yard: 10 feet
    - Side yard: 5 feet
- Building Restrictions:
  - Maximum building height:
    - SFR, duplexes, townhouses: 3 stories
    - Multiple-family dwellings: 5 stories
  - Minimum Average Net Density: 7 du/ac
  - Maximum Average Net Density: 20 du/ac

Policy FL.13.07(B)(1)specifies the following general design guidelines for the Regional Center sub-category.

a) *The Regional Center shall be designed to incorporate the key elements of a Multi-Modal Transportation District, pursuant to Policy FL.13.05.*
b) *Residential development shall be permitted as detached single family units, attached townhomes, multi-family units; and live-work units; residential units may be located above ground floor commercial and professional office. Residential development within the Regional Center is not subject to density bonuses found elsewhere in the Comprehensive Plan.*
c) *Subject to a binding agreement, shared parking areas shall be permitted for all Regional Center uses, including any public and civic land uses. The County's land development regulations may provide reduced minimum parking ratios for development located with a 15-minute walk of a rail transit stop or within a 5-minute walk of a feeder transit line.*
d) *Development shall be designed to incorporate landscaping and pedestrian amenities such as benches and bicycle parking along neighborhood sidewalks and multi-use paths.*
e) *Development shall be designed to incorporate high quality plazas and parks that serve residents, employees and visitors of the Regional Center.*
f) *Development shall be designed to accommodate feeder bus/ transit stops.*

These policies are hereby incorporated into the DSAP and shall apply to all future development within the RC district.

Regional Center (RC) Guidelines

A Preliminary Development Plan (PDP) shall be submitted for individual development parcels within the Regional Center of this DSAP. The PDP shall include design and architectural standards as required for a Planned Development for East Nassau Community Planning Area (PD-ENCPA). Each PDP within the Regional Center shall be consistent with the applicable policies, development principles and general guidelines and standards stipulated in Future Land Use Objective FL .13 of the Nassau County 2030 Comprehensive plan and the Regional Center development standards and guidelines of this DSAP. The PDP shall show how compatibility between land uses within the Regional Center will be achieved including, but not limited to building massing, scale fenestration, landscape, hardscape and use of the CHN, recreation areas and open spaces to define land use areas and provide buffers. Where conflicts exist between DSAP standards and the Nassau County Land Development code, the DSAP shall control. Multimodal pathway standards within this district shall be described in the PDP and shall include golf cart use.

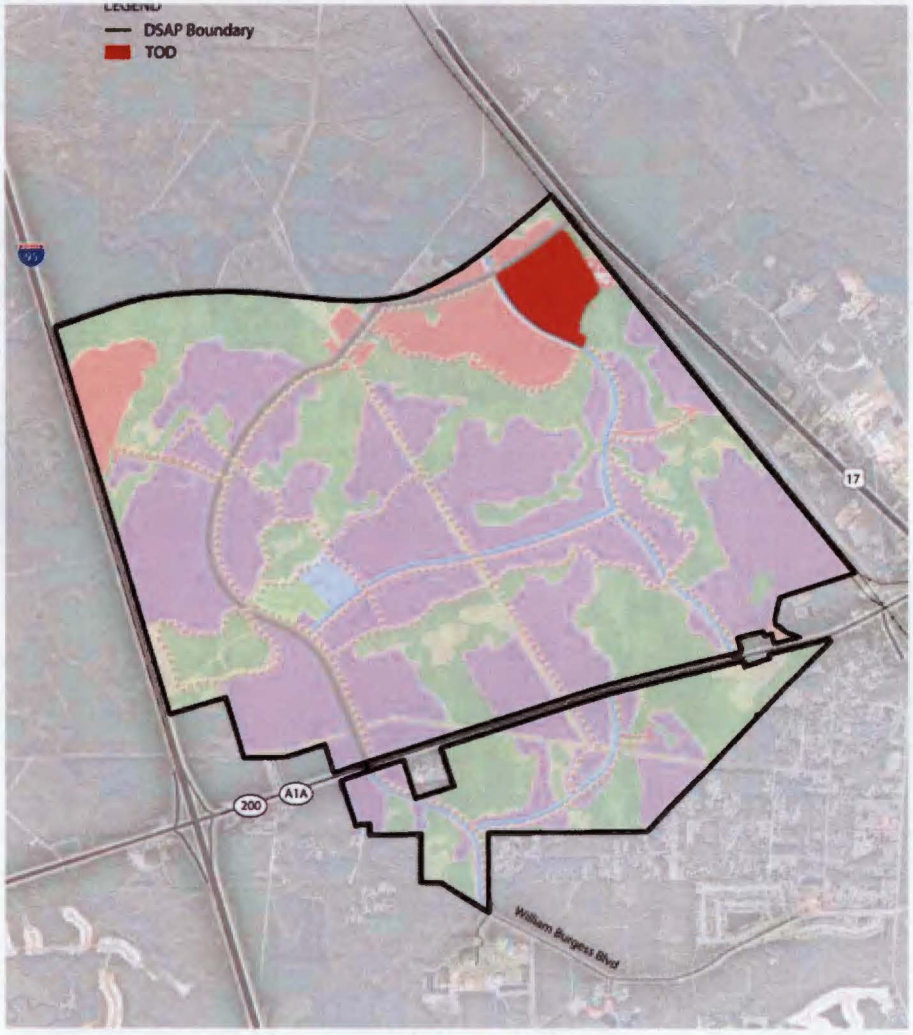
Regional Center Non Residential Guidelines

a) *Buildings should be designed to support their primary uses and incorporate design elements of scale and massing scale, massing and fenestration with surrounding development, adaptive resuse and to create an attractive frontage to the primary public roadway network.*
b) *To the extent possible, the primary employee and customer entrances should be clearly articulated in the building design and face the primary street.*
c) *A pedestrian sidewalk or passage way should connect employee and customer entrances to the primary street.*
d) *Where parking and service areas are located between buildings and the primary street frontage landscaping for screening purposes should be placed between the primary frontage and the parking/service areas.*
e) *Site and landscape design should provide for safe pedestrian access through parking areas to a public right of way.*
f) *The primary facades and entrances for buildings should be oriented to primary street frontages.*
g) *Loading and service areas should be screened and located at the rear or side of buildings away from the main building entrance.*
h) *Trash and recycling storage, mechanical equipment, transformers and similar above ground utilities where practical should be screened and located away from the primary building and street frontages.*
i) *Permanent outside storage areas should be screened and integrated within the overall building design. This should not preclude outside display of goods for marketing purposes such as associated with garden centers, farmers markets etc.*

Regional Center Residential Guidelines

a) *Residential areas should be buffered from highway oriented and big box retail to the extent practical by the CHN, office, institutional or recreational uses.*
b) *Residential areas may be gated when access is provided to the multi use pathway and open space networks.*
c) *Development should encourage connections of the CHN and open space networks.*
d) *Site and landscape design should provide for safe pedestrian access through parking areas.*
e) *Multifamily residential developments should be connected by both vehicular and non vehicular travel modes to retail or office uses where practical.*
f) *Residential projects may incorporate retail and office as supporting uses and amenities in free standing or vertically integrated buildings.*

Figure 4.5: Central Planning Area DSAP TOD



Transit Oriented Development TOD (Central Planning Area)

Approximately 50 acres of the Regional Center (RC) has been designated as a Transit Oriented Development (TOD) District. This area was chosen due to its proximity to the CSX rail corridor and the potential for future commuter rail service. The TOD district is intended to be developed as a multi-modal transportation center accommodating a full range of uses (residential, retail, office and civic) and organized in a manner that encourages walking as the primary form of transportation.

As a component of the Regional Center (RC), the general guidelines contained in ENCPA Policy FL.13.07(B)(1) apply to the TOD district. In addition, the following guidelines contained in ENCPA Policy FL.13.06 apply as well.

Permitted Uses

Residential, retail, office, restaurants, hotels/motels, personal services and business services, parks/plazas and other civic uses, public facilities, transit stations and other land uses that are similar and compatible.

DSAP Development Standards: Transit Oriented Development

- Minimum Lot Requirements:
  - Minimum lot width: None
  - Minimum lot area: None
- Minimum Yard Requirements:
  - Front yard: 0 feet, 15 ft maximum
  - Side yard: 0 feet
  - Rear yard: 5 feet
- Building Restrictions:
  - Maximum Building Height: 6 stories

The TOD (district) shall be characterized by the following:

a) *Compact building and site design;*
b) *A walking and biking environment;*
c) *A mix of transit-supportive uses;*
d) *Attention to pedestrian access;*
e) *Highest concentration of population and employment will be located closest to transit stations;*
f) *Transit-supportive parking;*
g) *Development within an area designated as TOD shall contain the following percentage of block types.*
   1) *Mixed Use Blocks - 15% to 80%*
   2) *Retail Blocks - 0% to 50%*

3) *Office Blocks - 0% to 60%*
4) *Residential Blocks - 15% to 60%*
5) *Civic Blocks - 5% to 30%; and*

h) *On-site parking for commercial and office land uses shall be located behind or beside buildings fronting on primary streets (excluding internal access lanes).*

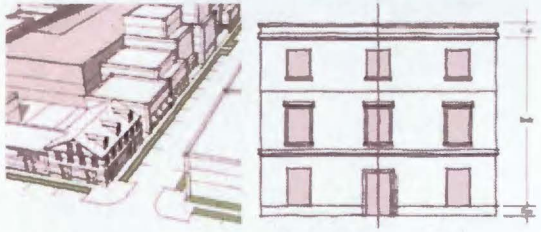
These policies are hereby incorporated into the DSAP and shall apply to all future development within the TOD district.

Transit Oriented Guidelines

A Preliminary Development Plan (PDP) shall be submitted for individual development parcels within the TOD areas of this DSAP. The PDP shall include design and architectural standards as required for a Planned Development for East Nassau Community Planning Area (PD-ENCPA). Each PDP within the TOD area shall be consistent with the applicable policies, development principles and general guidelines and standards stipulated in Future Land Use Objective FL .13 of the Nassau County 2030 Comprehensive plan and the TOD area development standards and guidelines of this DSAP. Where conflicts exist between DSAP standards ant the Nassau County Land Development code, the DSAP shall control. Multimodal pathway standards within this district shall be described in the PDP and shall include golf cart use.

Building Design Guidelines

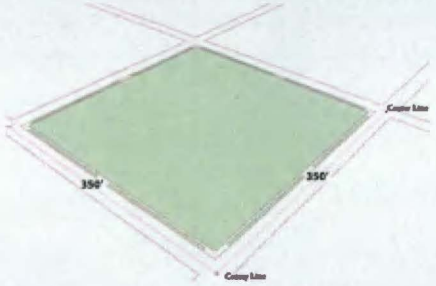
- Buildings within the TOD sub-district should be oriented to street rights-of-way and have minimal building setbacks.
- Covered walkways, terraces, balconies, awnings and street trees should be utilized to provide shaded walkways for pedestrians.



- Doorways and windows should be oriented toward a street or other public space to provide visual interest an increased security.
- All trash collection should be located to the rear of buildings or within parking areas.

Block and Street Design Guidelines

- The TOD sub-district should be designed around a connected grid or curvilinear grid street network with a typical block length of three hundred and fifty feet (350'). Block length is be measured from intersection centerline to intersection centerline.



- Traffic calming measures should be incorporated into street design. These measures may include bulb-outs, raised crosswalks, textured paving materials, chicanes and round-a-bouts. Speed bumps shall not be permitted.
- On-street parking should be utilized throughout the sub-district to both minimize off-street parking needs and provide a buffer between travel lanes and sidewalks.

Pedestrian and Bicycle Facilities Design Guidelines

- All streets should be designed with an emphasis on pedestrian and cyclist circulation and safety
- Crosswalks should be clearly defined through the use of distinct paving materials or techniques.
- All streets should incorporate pedestrian level lighting and street furniture such as planters, seating and trash receptacles.
- The TOD sub-district should contain a complete and continuous bicycle facility network which may be comprised of designated shared lane facilities, bike lanes and multi-use paths.
- Bicycle parking should be provided at a ratio of one (1) space per 3,000 square feet of retail or office use. Bicycle parking facilities should be provided at all transit stops.

Off-street Parking and Circulation Design Guidelines

- Off-street parking should be minimized, located at the rear or sides of buildings and visually screened in order to promote a walkable, pedestrian friendly environment.

- Cross access connections should be provided between adjacent parcels and parking areas.
- Parking structures fronting roadways should include ground floor retail or service uses with street access.
- Pedestrian paths through parking facilities should be clearly delineated.

Civic, Recreation and Open Space Design Guidelines

- The TOD sub-district should be organized around a centrally located public park, plaza or civic facility.
- Civic buildings should be located at a roadway intersection or the termini of roads to provide a focal point or landmark.

Signage

- Poles signs are prohibited within the TOD sub-district.

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Figure 4.4: Northern Planning Area DSAP Village Center

Village Center (VC) (Northern Planning Area)

Approximately 26 acres of the Northern Planning Area has been designated as a Village Center (VC). The Village Center (VC) land use sub-category is intended to identify areas which may serve as higher density/intensity, mixed-use centers for surrounding residential neighborhoods. The range of permitted uses includes residential, commercial, office and civic.

Permitted Uses

Single-family, two-family, ancillary (accessory) dwelling units, multi-family residential (either free standing or in mixed-use structures), retail sales, personal services, business and professional offices, recreation and commercial working waterfront uses, parks/plazas, recreation and open space, governments, other public uses and land uses that are similar and compatible.

DSAP Development Standards: Village Center

Non-residential Standards

- Minimum Lot Requirements:
  - Minimum lot width: 60 feet
  - Minimum lot area: 7,500 square feet
  - For government uses, minimum lot area shall be consistent with the type of activity conducted on the site
- Minimum Yard Requirements:
  - Front yard: 20 feet
  - Side yard: 10 feet
  - Rear yard: 10 feet. No side yard shall be required where two (2) or more buildings adjoin side by side.
- Building Restrictions:
  - Maximum Building Height: 5 stories
  - Minimum FAR: 0.20
  - Maximum FAR: 1.00
  - The minimum landscape area shall not be less than ten (10) percent of the total lot area and shall be in conformance with the standards in article 37 (Ordinance 2008-01).

Residential Standards

- Minimum Lot Requirements:
  - Single-family dwellings and duplexes
    - Minimum lot width: 30 feet
    - Minimum lot area: 3,800 square feet
  - Townhouses
    - Minimum lot width:
      - Interior lot: 20 feet
      - Exterior lot: 30 feet
    - Minimum lot area:
      - Interior lot: 2,000 square feet
      - Exterior lot: 3,000 square feet

    Multiple-family dwellings and other permitted structures:
    - Minimum lot width: 100 feet
    - Minimum lot area: 10,000 square feet
- Minimum Yard Requirements:
  - Single-family dwellings and duplexes
    - Front yard: 10 feet
    - Rear yard: 10 feet
    - Side yard: 5 feet
  - Townhouses
    - Front yard: 10 feet
    - Rear yard: 10 feet
    - Side yard:
      - Interior units: 0 feet
      - Exterior units: 10 feet
  - Multiple-family dwellings and other permitted structures:
    - Front yard: 10 feet
    - Rear yard: 10 feet
    - Side yard: 5 feet
- Building Restrictions:
  - Maximum building height:
    - SFR, duplexes, townhouses: 3 stories
    - Multiple-family dwellings: 5 stories
  - Minimum Average Net Density: 7 du/ac
  - Maximum Average Net Density: 20 du/ac

Policy FL.13.07(D)(1)specifies the following general design guidelines for the Village Center sub-category.

a) Residential development shall be permitted as single family, multi-family or attached live-work units and shall be permitted above ground floor commercial and professional office.
b) On-site parking for commercial and office land uses shall be located behind or beside buildings fronting on primary streets.
c) Shared parking areas shall be encouraged for all Village Center uses, including any public and civic land uses.
d) Sites shall be designed to incorporate landscaping and pedestrian amenities such as benches and bicycle parking along neighborhood sidewalks and multi-use paths.
e) Sites shall be designed to incorporate plazas and parks that serve the Village Center and surrounding neighborhoods. Sites shall be designed to accommodate existing or future feeder bus/transit stops.

These policies are hereby incorporated into the DSAP and shall apply to all future development within the VC district.

Village Center (VC) Guidelines

A Preliminary Development Plan (PDP) shall be submitted for individual development parcels within the Village Center of this DSAP. The PDP shall include design and architectural standards as required for a Planned Development for East Nassau Community Planning Area (PD-ENCPA). Each PDP within the Village Center shall be consistent with the applicable policies, development principles and general guidelines and standards stipulated in Future Land Use Objective FL .13 of the Nassau County 2030 Comprehensive plan and the Village Center development standards and guidelines of this DSAP. Where conflicts exist between DSAP standards ant the Nassau County Land Development code, the DSAP shall control. Multimodal pathway standards within this district shall be described in the PDP and shall include golf cart use.

Building Design Guidelines

a) Buildings should be designed to support mixed uses and incorporate design elements of scale, massing and fenestration to create an attractive frontage to the primary public roadway
b) The primary facades and entrances for buildings should be oriented to primary street frontages.
c) Loading and service areas should be screened and located at the rear or side of buildings away from the main building entrance.
d) Trash and recycling storage, mechanical equipment, transformers and similar above ground utilities where practical should be screened and located away from the primary building and street frontages.
e) Permanent outside storage areas should be screened and integrated within the overall building design. This should not preclude outside display of goods for marketing purposes such as associated with garden centers, farmers markets etc.

Block & Street Design Guidelines

a) Street and block patterns should promote an interconnected multi modal street network which provides for safe and comfortable pathways.
b) Sidewalks or pathways should be located on both sides of streets where practical and include street trees.

Pedestrian and Bicycle Circulation

a) To the extent practical, pedestrian walkways should be located between non residential building frontages and vehicular use areas. A pedestrian network connecting public right of ways with private non residential building frontages should be encouraged
b) Bicycle parking should be provided adjacent to retail and office uses as well as bus/transit stops.

Parking & Circulation Design Guidelines

a) Cross access should be provided between adjacent non residential parcels and parking areas.
b) Open space requirements may be achieved in the form of parks, squares or greens located to serve as focal points for community events and active or passive recreational activities.
c) Civic buildings, such as a community center, when located in a village center and where feasible should be located adjacent to a park, square or green park, accessible to a transit stop.

Figure 4.6: Northern Planning Area DSAP Residential Neighborhood

Figure 4.7: Southern Planning Area DSAP Residential Neighborhood

Residential Neighborhood (RN) (Northern and Southern Planning Areas)

A majority of the Northern Planning Area and the entirety of the Southern Planning Area have been designated as Residential Neighborhood (RN). The Residential Neighborhood (RN) land use sub-category is intended is to create a hierarchical pattern of residential neighborhoods radiating outward from Village Centers. The sub-category is divided into three "Tiers". Tier 1 neighborhoods are mid-density, residential areas adjacent to Village Centers. Tier 2 neighborhoods are lower density in character and generally located ½ to 1 mile from Village Centers. Tier 3 represents the lowest density neighborhoods generally located beyond 1 mile from a designated Village Center. In addition, small, mixed-use Neighborhood Centers (NC) are also permitted within the RN. These centers can serve as a focal point for a neighborhood and provide limited, neighborhood-serving uses.

Permitted Uses

Residential Neighborhoods

Single-family detached, two-family, townhomes and multi-family residential, ancillary (accessory) dwelling units, clustered residential lots (in Tier 3), parks, schools and daycare centers, other public/civic facilities, and other land uses that are similar and compatible.

Neighborhood Centers

General retail, personal services, offices, attached residential and civic uses (including religious institutions), daycare facilities, parks/plazas, other neighborhood-serving uses, and other land uses that are similar and compatible.

DSAP Development Standards: Residential Neighborhood

Non-Residential Standards

- Minimum Lot Requirements:
  - Minimum lot width: 60 feet
  - Minimum lot area: 7,500 square feet
  - For government uses, minimum lot area shall be consistent with the type of activity conducted on the site
- Minimum Yard Requirements:
  - Front yard: 20 feet
  - Side yard: 10 feet
  - Rear yard: 10 feet. No side yard shall be required where two (2) or more buildings
- Building Restrictions:
  - Maximum Building Height: 3 stories

- Maximum Lot Coverage:
  - Lot coverage by all buildings, including, accessory buildings and structures shall be not more than sixty-five (65) percent of the lot.
  - Impervious surface land coverage of recreational and open space uses should not exceed fifty (50) percent for activity based recreational development and ten (10) percent for resource based recreational development.
  - The minimum landscape area shall not be less than ten (10) percent of the total lot area and shall be in conformance with the standards in article 37.

Residential Standards

- Minimum Lot Requirements:
  - Single-family dwellings and duplexes
    - Minimum lot width: 30 feet
    - Minimum lot area: 3,800 square feet
  - Townhouses
    - Minimum lot width:
      - Interior lot: 20 feet
      - Exterior lot: 30 feet
    - Minimum lot area:
      - Interior lot: 2,000 square feet
      - Exterior lot: 3,000 square feet
    - Multiple-family dwellings and other permitted structures:
      - Minimum lot width: 125 feet
      - Minimum lot area: 15,000 square feet
- Minimum Yard Requirements:
  - Single-family dwellings and duplexes
    - Front yard: 10 feet
    - Rear yard: 10 feet
    - Side yard: 5 feet
  - Townhouses
    - Front yard: 10 ft
    - Rear yard: 10 ft
    - Side yard:
    - Front yard: 10 feet
    - Rear yard: 10 feet
    - Side yard: 5 feet
  - Townhouses
    - Front yard: 10 ft
    - Rear yard: 10 ft
    - Side yard:
      - Interior units: 0 feet
      - Exterior units: 10 feet
  - Multiple-family dwellings and other permitted structures:
    - Front yard: 20 feet
    - Rear yard: 20 feet
    - Side yard: 20 feet
- Building Restrictions:
  - Maximum building height:
    - SFR, duplexes, townhouses: 3 stories
    - Multiple-family dwellings: 4 stories
  - Maximum lot coverage:
    - SFR, duplexes, townhouses: 35%
    - Multiple-family dwellings: 25%
  - Minimum Average Net Density:
    - Tier 1: 5 du/ac
    - Tier 2: 2.5 du/ac
    - Tier 3: N/A
  - Maximum Average Net Density:
    - Tier 1: N/A
    - Tier 2: N/A
    - Tier 3: .50 du/ac clustered, .20 du/ac un-clustered

Policy FL.13.07(E)(1)specifies the following general design guidelines for Tiers 1 and 2 of the Residential Neighborhood (RN) sub-category.

a) *Private neighborhood parks, plazas and civic areas shall provide an identity for individual neighborhoods.*
b) *Community or regional parks and community facilities shall be located near or adjacent to planned and existing public school facilities. Joint-use recreational facilities with a public school facility shall be encouraged.*
c) *Private neighborhood parks are improved areas and shall provide recreational space and may include such amenities as informal play fields, play equipment, seating areas and other such improvements.*
d) *Private neighborhood parks shall be generally a minimum of ¼ acre in size and publicly accessible.*
e) *Public schools shall be located in accordance with Objective 10.3 of the Public Schools Facilities Element.*
f) *Stormwater management areas shall be designed as a visual amenity and may count towards the minimum park and common open space requirements when publicly accessible.*
g) *Transit stops, where public transit is available, should be incorporated as a focal point and designed as a civic feature in a visible and secure setting of the neighborhood.*

Policy FL.13.07(E)(2)specifies the following general design guidelines for Tier 3 of the Residential Neighborhood (RN) sub-category.

a) *Development shall not exceed an average maximum density of one (1) dwelling unit per ten (10) gross acres. However, where development is clustered to preserve open space, the County shall permit densities up to an average maximum net density of one (1) dwelling unit per two (2) acres.*
b) *Clustered development areas shall contain a minimum of eight (8) lots and a maximum of thirty (30) lots, with a maximum front lot width of 150 feet.*

Policy FL.13.07(E)(3)specifies the following general design guidelines for Neighborhood Centers within the Residential Neighborhood (RN) subcategory.

a) *The gross land area for Neighborhood Centers shall include a maximum of twelve (12) acres and shall include a park square or green of at least one (1) acre in area.*
b) *Residential development shall be permitted as attached live-work units or located above ground floor commercial and professional office.*
c) *Shared parking areas shall be permitted for all neighborhood center uses, including any public and civic land uses.*

These policies are hereby incorporated into the DSAP and shall apply to all future development within the RN district and NC sub-district.

Residential Neighborhood (RN) Guidelines

A Preliminary Development Plan (PDP) shall be submitted for individual development parcels within the Residential Districts Tiers 1, 2 &3 of this DSAP. The PDP shall include detailed design and architectural standards as required as a Planned Development for East Nassau Community Planning Area (PD-ENCPA). Each PDP for a Residential Neighborhood development shall be consistent with the applicable policies, development principles and general guidelines and standards stipulated in Future Land Use Objective FL .13 of the Nassau County 2030 Comprehensive plan and the RN development standards and guidelines of this DSAP. Where conflicts exist between DSAP standards ant the Nassau County Land Development code, the DSAP shall control. Multimodal pathway standards within this district shall be described in the PDP and shall include golf cart use.

RN Tier 1 Guidelines:

a) *Primary entrances for single family and multifamily residential structures should be visible from the public right of way.*
b) *To the extent feasible front loaded garages for detached, single-family units should be recessed from the primary facade of the primary structure.*
c) *Garages for detached or attached housing, on lots less than 40 feet wide, should generally be accessed by alley or side yard driveway.*
d) *Lot sizes should be varied within neighborhoods to encourage a variety of housing sizes and types.*
e) *Parks and open space should generally be distributed throughout a neighborhood within short walking distances for the majority of residential units. Parks and open spaces should serve as organizing design elements and focal points for neighborhood activities.*
f) *Residential streets, where feasible, should be connected to form a pattern of residential blocks that support a variety of housing types. The typical street pattern may generally be a grid however curvilinear street and cul-de-sacs may be used to accommodate environmental and unique topographic conditions.*
g) *Roadway connections or stub-outs should be encouraged between adjacent parcels to enhance connectivity between neighborhoods.*
h) *Street trees should be planted where practical and spaced generally fifty (50) feet on center.*
i) *Stormwater management areas should be designed as amenities where practical and in accord with engineering best practices.*

RN Tier 2 Guidelines:

a) *Tier 2 neighborhoods are intended to provide a range of housing types. Housing types are typically single-family dwellings.*
b) *Primary entrances for residential structures should be visible from the public street right of way.*
c) *To the extent feasible front loaded garages should be recessed from the primary facade of the primary structure.*
d) *Garages for houses on lots less than 40 feet wide should generally be accessed by alley or side yard driveway.*
e) *Parks and open space should generally be distributed throughout a neighborhood within short walking distances for the majority of residential units. Parks and open spaces should serve as organizing design elements and focal points for neighborhood activities.*
f) *Residential blocks may be formed by a connected network of curvilinear streets and cul-de-sacs. Cul-de-sacs should be used to accommodate environmental and unique topographic conditions.*
g) *Roadway connections or stub-outs should be encouraged between adjacent parcels to enhance connectivity between neighborhoods.*
h) *Street trees should be planted where practical and spaced generally fifty (50) feet.*
i) *Stormwater management areas should be designed where practical as amenities in accord with engineering best practices.*

RN Tier 3 Guidelines:

a) *Tier 3 neighborhoods are intended to provide for single-family dwellings in a rural setting. They may be clustered or in located in individual acreages typically associated with rural development patterns.*
b) *Roadway connections or stub-outs should be encouraged between adjacent neighborhoods to promote a connected public road network.*

Figure 4.5: Typical Rural Development Pattern

Figure 4.6: Rural Cluster Development

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Public Facilities Summary

Public Facilities Summary

A detailed analysis of public facilities has been conducted utilizing the DSAP land use plan and associated development program, consistent with the requirements of 163.3245(3)(b)(5) F.S. Potential impacts were analyzed for both short-term (5-yr) and long-term (build-out) conditions. The complete details of this analysis are contained in Appendix C. Findings have been summarized below.

Potable Water

Nassau County is located within the St Johns River Water Management District (SJRWMD). Per the District's 2003 Water Supply Assessment, existing water supply sources and water supply development plans are considered reasonably adequate to meet Nassau County's projected needs.

Jacksonville Electric Authority (JEA), provides potable water service to most of Nassau County. The East Nassau Employment Center DSAP is located within JEA's District 7 – Nassau County Water Service Area. Potable Water demands for the proposed development program were analyzed at both the 5-yr and build-out milestones. It was determined that adequate capacity exists to accommodate potential impacts under both scenarios (see Table 5.A).

Table 5.A: Potable Water Analysis (MGD)

	AVAILABLE CAPACITY	PROJECTED USAGE	DSAP DEMAND	REMAINING CAPACITY
5-year	6.40	2.00	0.12	4.28
Build-out	10.20	5.00	1.65	3.55

Wastewater

The East Nassau Employment Center DSAP is located within JEA's District 7 – Nassau County Sewer Service Area. Wastewater treatment demands for the proposed development program were analyzed at both the 5-yr and build-out milestones. It was determined that adequate capacity exists to accommodate potential impacts under the projected 5-yr development program (see Table 5.B). It appears that additional treatment capacity would be needed to accommodate demand by the 20 year build-out. The developer will work with JEA to identify locations and land area reservations needed to support water and wastewater facilities beyond the first five (5) years. The County will be able to evaluate these reservations and capacity in their review of each PDP within this DSAP.

Table 5.B: Wastewater Analysis (MGD)

	AVAILABLE CAPACITY	PROJECTED USAGE	DSAP DEMAND	REMAINING CAPACITY
5-year	2.00	0.86	0.12	1.02
Build-out	2.00	1.50	1.65	-1.15

Solid Waste

Solid waste service is provided to the East Nassau Employment Center DSAP by Nassau County. Available facilities have a combined lifespan of 39 years. It was determined that no improvements to solid waste facilities would to be necessary to accommodate the proposed DSAP development program at either the 5-yr or build-out milestones.

Stormwater

Stormwater impacts and necessary improvements will be determined and permitted in accordance with the St. Johns River Water Management District (SJRWMD) discharge design criteria.

Schools

The East Nassau Employment Center DSAP is located within the Nassau County School District. The School District and Nassau County have entered into an interlocal agreement (ILA) regarding the location and adequate capacity of public schools. Utilizing methodologies outlined by both the School District and Nassau County, DSAP school demand and potential impacts were projected for both the 5-yr and build-out development program scenarios.

It was determined that adequate capacity exists within the current system to accommodate potential impacts under the projected 5-yr development program. Additional school capacity at the elementary, middle and high school levels will be needed to accommodate the projected DSAP demand at build-out. At this time, two new elementary schools are programmed within the District's 10-yr work program. Another elementary school and a new middle school are programmed within the District's 20-yr work program. If constructed, these facilities would be adequate to address projected needs at the elementary and middle school levels. Development of the DSAP beyond the 5-yr milestone should be monitored to determine if the inclusion of new high school facilities within future School District work plans would be needed.

Recreation and Open Space

Currently, Nassau County is deficient in all types of recreation and open space facilities. The proposed DSAP 5-yr and build-out programs are estimated to increase demand by approximately 12 acres and 141 acres, respectively. This demand is being met within the DSAP through the provision of significant open space and an extensive multi-use trail system.

The proposed DSAP land use plan includes approximately 1,700 acres of open space in the form of interconnected wetlands, surface waters and upland preserves forming a

Conservation Habitat Network (CHN). Approximately 344 acres of uplands are included within the DSAP CHN. This open space system exceeds the demand created by the DSAP. This will serve both the residents and employees of the East Nassau Employment Center DSAP and the County. The significant open space system provided by the DSAP is capable of not only accommodating DSAP impacts but helping the County address the County wide deficiency in regional parks through 2030.

At build-out, the East Nassau Employment Center DSAP will contain over 20 miles of multi-use trails. Assuming an average width of twelve feet, this trail system would provide over 30 acres of recreational facilities and connect neighborhoods and employment centers to the extensive open space network.

In addition to both the CHN and multi-use trail system, ENCPA policies require the inclusion of neighborhood parks, plazas and playfields. At build-out, these facilities are anticipated to exceed the projected demand created by the DSAP development program and assist significantly in addressing the County's overall deficiency in recreation and open space acreage.

5yr Capital Improvement Schedule

Chapter 163.3245 requires public facilities necessary to serve the development in the DSAP identify any developer contributions to be included in the 5 year capital improvement schedule of the affected local government.

The proposed development program of the East Nassau Employment Center DSAP includes a mix of land uses projected to provide a fiscal surplus to Nassau County. This projection is based on the ratio of nonresidential to residential development that is higher for the County as a whole.

The evaluation of the 5-year projections of development for the East Nassau Employment Center Detailed Specific Area Plan indicate the following impacts to public facilities:

Roads

- 5-year transportation impacts do not adversely impact existing State or County roads to a level requiring widening or other improvements that are otherwise provided for in conjunction with the Mobility Plan and related Development Order for this DSAP. However intersection improvements on SR 200/A1A with connecting road(s) within the DSAP are anticipated within the first five (5) years. The intersection improvements are estimated to be $700,000 which will be developer funded.

Utilities

Based on the availability response letter from JEA sufficient water, wastewater(sewer) and reclaimed water service and capacity is available for the first five years of the DSAP's projected development program. System connections will be developer improvements in accordance with JEA's policies and procedures. Extension of water, wastewater to serve the first five (5) years of development will be developer funded and the estimate cost will be addressed at the first PDP submittal.

Schools

Computations based on the Nassau County School Board (NCSB) 2012-2013 Work Plan, the Amended Inter-local Agreement for Public School Facility Planning and the Nassau County 2030 Comprehensive Plan Public Schools Facilities Element indicate there currently exists sufficient capacity or it is already programmed in capacity improvements during first five years of the DSAP. Based on the DSAP and the NCSB School Impact fee Study (dated November 7, 2011), the developer will enter into a separate agreement with the NCSB to address impact fee credits for reservation of approximately 28 acres of usable land to facilitate construction of an elementary school site within the Central Planning Area.

Parks

Computations based on the Nassau County 2030 Comprehensive Plan recreation and open space level of service standards show residential units proposed to be built within DSAP during first five years create demand for 12.25 acres of land for community and regional park lands. The DSAP has planned over 340 acres of uplands in the CHN that may be used to meet the recreation land requirement. Subject to an agreement between the Developer and Nassau County addressing timing and other conditions for reservation. The Developer will reserve up to thirty four (34) usable acres of land for a regional recreation facility in an area as generally depicted on the Central Planning Area Overall Land Use Map. Any reservation will be consistent with the DSAP Development Order..

Fire & Police Stations

The County has requested approximately four (4) acres within the DSAP be set aside for a Fire/EMS site to serve the overall Yulee area. Subject to an agreement between the Developer and Nassau County. The Developer will reserve approximately four (4) acres for the Fire/EMS facility in an area generally depicted on the Central Planning Area Overall Land Use Map. Any reservation will be consistent with the DSAP Development Order.

The potential location for the elementary school, park and fire/EMS facility reservations are depicted on the DSAP Central Planning Area Overall Land Uses Map (Figure 4.8)

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6 Implementation

Implementation Strategies

Several mechanisms have been created to assist with the implementation of the East Nassau Employment Center Detailed Specific Area Plan (DSAP). These include a Planned Development ordinance intended to streamline the future entitlement process for the ENCPA as a whole and a Mobility Ordinance which implements the mobility fee system as outlined in Chapter 3 of this document. A more detailed description of each of the items is contained below. Also included is a discussion regarding potential funding mechanisms intended to address the financial feasibility of the plan.

Planned Development Ordinance

To provide consistency in the preparation and adoption of DSAPs within the ENCPA, an overall Planned Development rezoning ordinance has been prepared. The intent of this ordinance is to effectively rezone the entirety of the ENCPA; thereby, codifying specific submittal and processing procedures for both the East Nassau Employment Center DSAP and all future DSAPs. Included within the ordinance are sections addressing the intent and purpose of the PD-ENCPA zoning district and procedures for the approval and adjustment of DSAPs, Preliminary Development Plans and Final Development Plans. The adoption of this ordinance and its respective sections both clarifies and streamlines development review processes within the ENCPA and ensures compliance with the ENCPA Master Plan.

Mobility Plan

In 2011, in response to concerns regarding the unintended negative effects of Florida's concurrency management system, the legislature repealed state mandated transportation concurrency requirements. Later that same year, the Nassau County Board of County Commissioners followed suit by amending Article 2 of the Nassau County Land Development Code to eliminate the requirements for transportation concurrency at the local level. While the repeal of concurrency management addressed the ill effects of that system, it also left a void in regards to transportation planning for the County.

The East Nassau Employment Center DSAP addresses the need for a sustainable, financially feasible approach to transportation planning through the implementation of a "Mobility Plan". The Mobility Plan provides a system which encourages compact, mixed-use and multi-modal development while greatly simplifying the funding mechanisms needed to ensure adequate public facilities. Chapter 3 of this document outlines both the methodology used to development the Mobility Plan as well as a recommended plan for implementation.

The Development Order Conditions for this DSAP shall require every new development or redevelopment that occurs in the ENCPA Sector to be assessed a mobility fee prior to approval of final construction and/or engineering plans or building permits. This system is intended to eliminate inequities in the former transportation concurrency system in that all new development will pay the fee regardless of available capacity, or lack thereof, within the ENCPA Mobility Network established for the ENCPA Sector. This Mobility Fee approach shall, at a minimum, provide for: mobility fee calculation; mobility fee payment; and, mobility fee credits. The establishment of the mobility fee will not preclude the use of other potential mechanisms to fund the ENCPA Mobility Network including but not limited to tax increment financing, special assessment districts, or cost recoupment arrangements that may be approved by Nassau County or the use of incentive mechanisms for community redevelopment or economic development.

Financial Feasibility

During the course of preparing the Mobility Plan and related mobility fee system, it was determined that the proposed fee for non-residential development was exceptionally high in comparison to surrounding counties and cities and would likely inhibit rather than encourage economic development within the ENCPA. This anomalous result was attributed to the fact that previous transportation facility funding mechanisms (such as impact fees and proportionate share payments) inherently subsidized non-residential development. Similar results have been found by other counties seeking to implement a mobility fee system, namely Pasco County.

Non-residential development is often subsidized for several reasons. First, non-residential development such as office and industrial uses provide significant economic development potential. They create employment opportunities, generating jobs for both current and future Nassau County residents. They also have the ability to attract outside investment; thereby, increasing jobs, earnings and output for the respective county.

To address this issue and ensure the success of the East Nassau Employment District, alternative funding mechanisms will need to be employed to subsidize costs associated with development impacts. One such mechanism is Tax Increment Financing (TIF). Although typically associated with Community Redevelopment Areas (CRA), TIF funding may also be applied to address backlogged public facilities (see Section 163.3182, Florida Statutes) or subsidize job-creating "favored" land uses by paying all or a portion of that uses mobility fee. In the case of Pasco County, one-third of the ad valorem tax revenues resulting from the increase in the County-wide property tax yield (TIF) were used to fund the gap between discounted and standard mobility fees for the favored land uses.

Alternative funding mechanisms, such as TIF, special assessment districts, or cost recoupment arrangements, have the potential to not only subsidize transportation improvements within the ENCPA, but also other public facility improvements needed to encourage economic development within the Sector and incentivize sustainable development patterns.

Statute Compliance Matrix

STATUTE SECTION	DSAP REFERENCE
Ch.163.3245(3)(b)(1), F.S. Development or conservation of an area of at least 1,000 acres consistent with the long-term master plan. The local government may approve detailed specific area plans of less than 1,000 acres based on local circumstances if it is determined that the detailed specific area plan furthers the purposes of this part and part I of chapter 380	See Chapter 1 - Introduction.
Ch. 163.3245(3)(b)(2), F.S. Detailed identification and analysis of the maximum and minimum densities and intensities of use and the distribution, extent, and location of future land uses.	See Chapter 4 - Land Use.
Ch. 163.3245(3)(b)(3), F.S. Detailed identification of water resource development and water supply development projects and related infrastructure and water conservation measures to address water needs of development in the detailed specific area plan.	See Appendices, Section C - Public Facilities.
Ch. 163.3245(3)(b)(4), F.S. Detailed identification of the transportation facilities to serve the future land uses in the detailed specific area plan.	See Chapter 3 - Mobility and Appendices, Section B - Transportation Analysis.
Ch. 163.3245(3)(b)(5), F.S. Detailed identification of other regionally significant public facilities, including public facilities outside the jurisdiction of the host local government, impacts of future land uses on those facilities, and required improvements consistent with the long-term master plan.	See Appendices, Section C - Public Facilities.
Ch. 163.3245(3)(b)(6), F.S. Public facilities necessary to serve development in the detailed specific area plan, including developer contributions in a 5-year capital improvement schedule of the affected local government.	See Chapter 5 - Public Facilities and Chapter 6 - Implementation.
Ch. 163.3245(3)(b)(7), F.S. Detailed analysis and identification of specific measures to ensure the protection and, as appropriate, restoration and management of lands within the boundary of the detailed specific area plan identified for permanent preservation through recordation of conservation easements consistent with s. 704.06, which easements shall be effective before or concurrent with the effective date of the detailed specific area plan and other important resources both within and outside the host jurisdiction.	See Chapter 2 - Environmental Conditions and Appendices, Section A - Natural and Archeological Resources and Analysis.
Ch. 163.3245(3)(b)(8), F.S. Detailed principles and guidelines addressing the urban form and the interrelationships of future land uses; achieving a more clean, healthy environment; limiting urban sprawl; providing a range of housing types; protecting wildlife and natural areas; advancing the efficient use of land and other resources; creating quality communities of a design that promotes travel by multiple transportation modes; and enhancing the prospects for the creation of jobs.	See Chapter 4 - Land Use.
Ch. 163.3245(3)(b)(9), F.S. Identification of specific procedures to facilitate intergovernmental coordination to address extra-jurisdictional impacts from the detailed specific area plan.	See Chapter 6 - Implementation and Appendices, Section D - Intergovernmental Conditions.

The data analysis supporting this DSAP has been included in a separate appendix document and submitted to Nassau County for their regulatory review of this DSAP.

Appendix A
Natural Resource Analysis

A.1 Natural Resource Protection

A.1.1 Sector Plan Requirements: F.S. § 163.3245

Pursuant to F.S. § 163.3245, a sector plan must include the adoption of a long-term master plan (LTMP) and two or more detailed specific area plans (DSAP) whose purpose is implementation of the LTMP. According to the following sections of the rule, an approved LTMP must include the following components for the purposes of natural resource identification and protection: 163.3245(3)(a)(1) *"a framework map that, at a minimum, generally depicts areas of urban, agricultural, rural and conservation land use"*; 163.3245(3)(a)(5) *"a general identification of regionally significant natural resources within the planning area based on the best available data and policies setting forth the procedures for protection or conservation of specific resources consistent with the overall conservation and development strategy for the planning area"*; and 163.3245(3)(a)(6) *"general principles and guidelines addressing...the protection and, as appropriate, restoration and management of lands identified for permanent preservation through recordation of conservation easements...which shall be phased or staged in coordination with detailed specific area plans to reflect phased or staged development with the planning area...[and] general principles and guidelines addressing [the protection of] wildlife and natural areas."*

Pursuant to F.S. § 163.3245, a DSAP must be consistent with the adopted long-term master plan and must include conditions and commitments that provide for natural resource protection, including: 163.3245(3)(b)(7) *"detailed analysis and identification of specific measures to ensure the protection and, as appropriate, restoration and management of lands within the boundary of the DSAP identified for permanent preservation through recordation of conservation easements consistent with s. 704.06, which easements shall be effective before or concurrent with the effective date of the DSAP and other important resources both within and outside the host jurisdiction."*; and 163.3245(3)(b)(8) *"detailed principles and guidelines...[for the purpose of] protecting wildlife and natural areas..."*

A.1.2 Nassau County Comprehensive Plan: East Nassau Community Planning Area (ENCPA)

The ENCPA Master Land Use Plan (Master Plan) was adopted as an amendment to the Nassau County (County) Comprehensive Plan (Comp Plan) on October 18, 2010. The ENCPA Master Plan meets the requirements for, and was adopted as a LTMP, pursuant to the Florida sector plan statute (F.S. 163.3245).

The primary goal of the ENCPA Master Plan is to promote sustainable and efficient regional land use. One of the guiding principles includes the protection of natural resources through the establishment of the Conservation Habitat Network (CHN). The CHN was designed to include a mosaic of wetlands, surface waters and uplands to provide for landscape connectivity and protection of significant natural resources within the 24,000 (±) acre ENCPA. The CHN within the overall ENCPA contains the majority (~80%) of large connected wetland strands and a majority (~80%) of the mapped 100 year floodplain. The protection of large wetland strands and contiguous upland areas within the CHN will provide long-term benefits for the aquatic, wetland dependent, and terrestrial wildlife that currently utilize these habitats. This will also ensure that conserved wetlands and contiguous uplands will be protected in perpetuity. Preserving this mix of wetland and uplands within the proposed CHN conservation corridors will provide a variety of habitats needed by listed wildlife, provide corridors that connect major habitats allowing indigenous wildlife to move across the property without interference from proposed development, and contribute to the long-term sustainability of the wildlife communities.

Consistent with F.S. 163.3245(3)(a)(1), the adopted Comp Plan Future Land Use Map (FLUM) includes the ENCPA boundary which *"generally depicts areas of urban, agricultural, rural and conservation land us."*. Consistent with F.S. 163.3245(3)(a)(5), the FLUM depicts the adopted CHN which *"[identifies] regionally significant natural resources within the planning area..."*. Consistent with F.S. 163.3245(3)(a)(6), and 163.3245(3)(b)(7) and (8), all lands within the CHN must comply with the following guidelines and standards adopted in the Comp Plan Future Land Use Element (FLUE; Policy FL. 13.07):

- Prior to development of portions of the ENCPA that abut boundaries of the CHN which preserve wildlife habitat, a management plan shall be developed that promotes maintenance of native species diversity in such areas and which may include provision for controlled burns.

- New roadway crossings of wildlife corridors within the CHN for development activity shall be permitted in conjunction with the design of the internal road network, but shall be minimized to the greatest extent practical.

- Road crossings within the CHN will be sized appropriately and incorporate fencing or other design features as may be necessary to direct species to the crossing and enhance effectiveness of such crossings.

- Prior to commencement of development within the ENCPA, an environmental education program shall be developed for the CHN and implemented in conjunction with a property owners association, environmental group or other community association or governmental agency so as to encourage protection of the wildlife and natural habitats incorporated within the CHN.

- The boundaries of the CHN are identified on the County FLUM. The boundaries of the CHN shall be formally established as conservation tracts or placed under conservation easements when an abutting development parcel to portions of the CHN undergoes development permitting in accordance with the requirements of the St. John's River Water Management District (SJRWMD) and pursuant to the following criteria:

    - the final boundary of wetland edges forming the CHN boundary shall be consistent with the limits of the jurisdictional wetlands and associated buffers as established in the applicable SJRWMD permit;

    - the final boundary of upland edges forming the CHN boundary shall be established generally consistent with the FLUM, recognizing that minor adjustments may be warranted based on more or refined data and any boundary adjustments in the upland area shall 1) continue to provide for an appropriate width given the functions of the CHN in that particular location (i.e., wetlands species or habitat protection), the specific site conditions along such boundary and the wildlife uses to be protected and 2) ensure that the integrity of the CHN as a wildlife corridor and wetland and species habitat protection area is not materially and adversely affected by alteration of such boundary; and

    - boundary modifications meeting all of the criteria described in this policy shall be incorporated into the CHN and the ENCPA Master Plan upon issuance of the applicable SJRWMD permits and shall be effective without the requirement for an amendment to the FLUM, ENCPA FLUE policies or any other Comp Plan Elements defined in Chapter 163, F.S.

- Silvicultural and agricultural activities allowed in the Agricultural classification of the FLUE of the Comp Plan, excluding residential land uses, shall continue to be allowed within the CHN. When the final boundaries of any portion of the CHN are established as described above, a silvicultural management plan

will be developed in accordance with best management practices to protect the overall conservation objective of such portion of the CHN.

In addition to compliance with the guidelines listed above, all development within the ENCPA must also comply with all goals, objectives and policies within the Comp Plan Conservation Element (CS).

A.1.3 Local, State and Federal Natural Resource Regulations

A.1.3.1 Wetlands and Surface Waters

The approximate extent of wetlands and surface waters within the DSAP 1 Area (Property) was determined through photointerpretation and selective groundtruthing, during preliminary field studies. The Property includes approximately 1,653 acres of wetlands and approximately 11.3 acres of surface waters (Figure A1.1). Wetlands have not been flagged, mapped using a Global Positioning System (GPS) unit, surveyed or agency verified at this time.

Wetland protection within the Property is regulated by the SJRWMD, the Department of the Army, Corps of Engineers (ACOE), and Nassau County. Prior to development, the extent of state jurisdictional wetlands and surface waters will be determined based on the Florida unified wetland delineation methodology (Chapter 62-340, Florida Administrative Code [F.A.C.]). Dredge and fill activities, and mitigation for these activities, are regulated by the state through the Environmental Resource Permit (ERP) program, and implemented jointly by the Florida Department of Environmental Protection (FDEP) and the five water management districts. The ACOE regulates the depositing of dredged or fill material within "waters of the United States, including wetlands" through the Clean Water Act § 404 permitting process. The ACOE will require that jurisdictional wetlands be determined pursuant to the 1987 Wetland Delineation Manual and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region:* (November 2010), and through application of the "*Rapanos Guidance*" of June 5, 2007. Further, issuance of an environmental resource permit from the Florida Department of Environmental Protection (FDEP) will serve as state water quality certification required under § 401 of the Clean Water Act.

FIGURE A1.1.
APPROXIMATE WETLAND EXTENT BASED ON PHOTOINTERPRETATION AND SELECTIVE GROUNDTRUTHING OF THE EAST NASSAU DSAP 1 PROJECT SITE, NASSAU COUNTY, FLORIDA.

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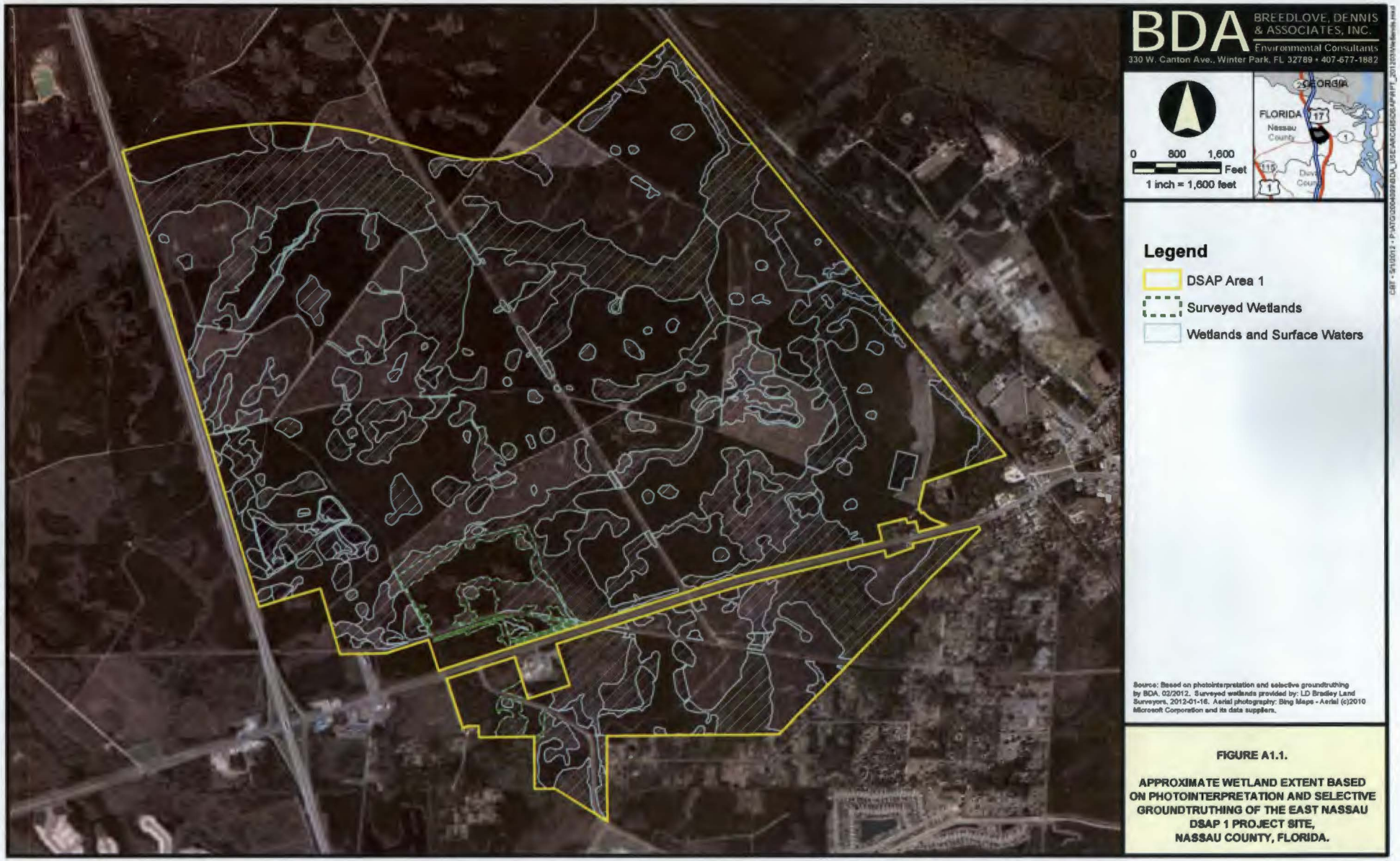

FIGURE A1.1.

APPROXIMATE WETLAND EXTENT BASED ON PHOTOINTERPRETATION AND SELECTIVE GROUNDTRUTHING OF THE EAST NASSAU DSAP 1 PROJECT SITE, NASSAU COUNTY, FLORIDA.

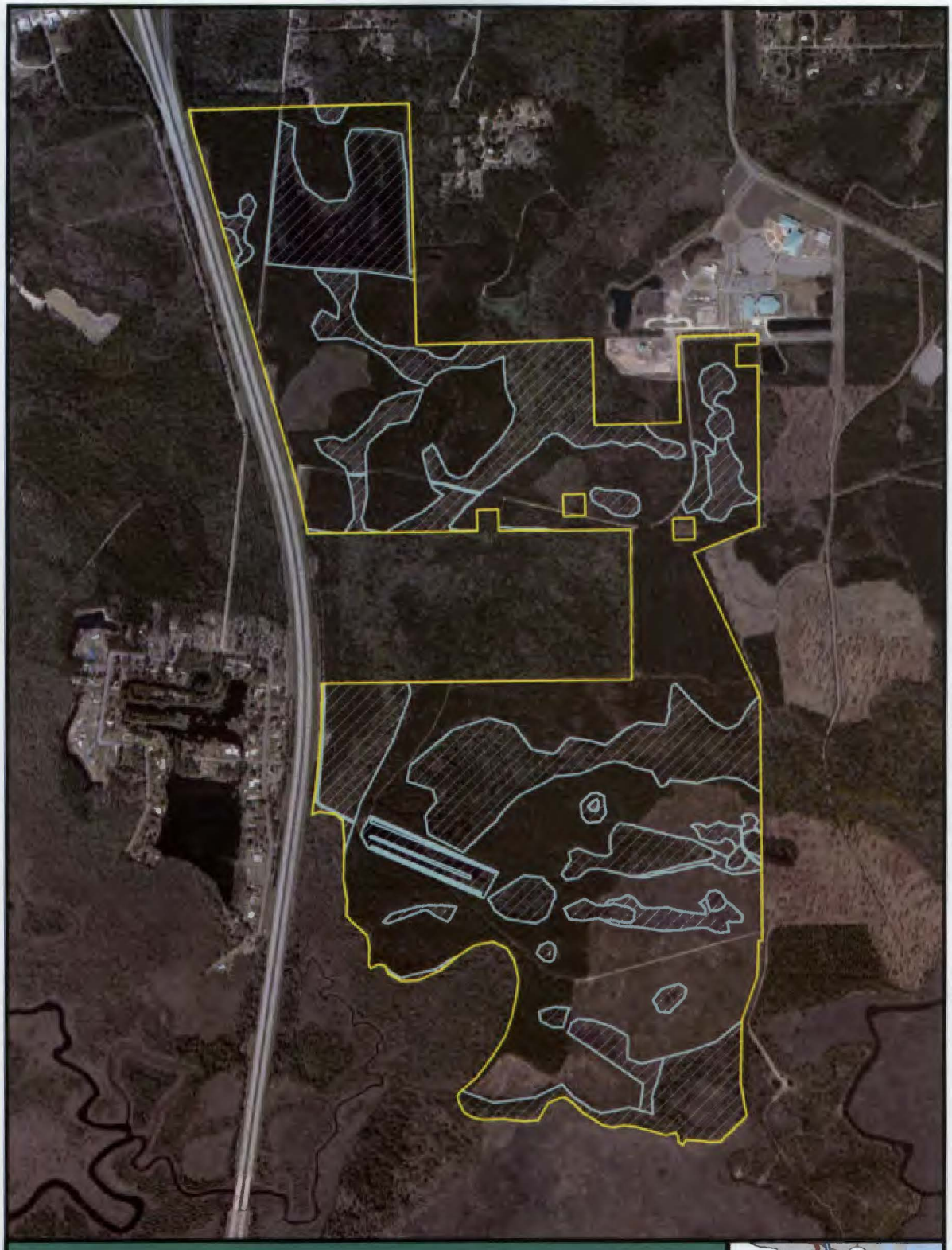

FIGURE A1.1.
APPROXIMATE WETLAND EXTENT BASED ON PHOTOINTERPRETATION AND SELECTIVE GROUNDTRUTHING OF THE EAST NASSAU DSAP 1 PROJECT SITE, NASSAU COUNTY, FLORIDA.

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In addition to state and federal regulations, wetland protection within the Property is also regulated by Nassau County. Field-verified jurisdictional wetlands are designated as Conservation I on the County FLUM. Proposed development must be directed away from wetlands *"...by clustering the development to maintain the largest contiguous wetland area practicable and to preserve the pre-development wetland conditions"* in accordance with the Comp Plan. As described above, provisions for wetland protection are also included within the Conservation Habitat Network (CHN) guidelines and standards described in Policy FL.13.07 of the Comp Plan. The CHN not only includes wetlands and surface waters but also a network of adjacent uplands depicted as Conservation on the ENCPA Master Plan. Uplands designated as Conservation areas in the CHN will serve as a buffer between jurisdictional wetlands and developable tracts. The final boundaries of wetlands and upland buffers will be formally determined when an abutting development parcel undergoes permitting in accordance with requirements of the SJRWMD. As described in Policy FL.13.07, any modifications to the CHN boundary as depicted on the ENCPA Master Plan which result in a reduction in the upland Conservation area shall provide for an appropriate width, given the functions of the CHN in that particular location (i.e. wetland species or habitat protection), the specific site conditions along such boundary and the wildlife uses to be protected. This compensation will ensure that the integrity of the CHN as a wildlife corridor and habitat protection area is not materially or adversely affected by the alteration of the CHN boundary.

Impacts to jurisdictional wetlands and conservation areas will be purposely avoided, except in cases where no other feasible or practical alternatives exist that will permit a reasonable use of the land or where there is an overriding public benefit. In such cases, final determination of impacts due to wetland encroachment, alteration, or removal will be coordinated, mitigated, and permitted through completion of state and federal regulatory authority approvals and permitting. Mitigation requirements for unavoidable impacts to wetlands must be determined using the UMAM functional analysis. Stormwater runoff generated on the Property will be treated by an extensive Surface Water Management System that will incorporate retention and detention ponds. Final impact and mitigation boundaries and acreages will be determined through state and federal permitting processes, and will be consistent with County goals, objectives and policies.

A.1.3.2 Listed Species

Based on preliminary field studies, a moderate to high likelihood of occurrence exists for several listed bird species due to the presence of potentially suitable nesting and/or foraging habitat within the Property (*see section A.4.1.2 for details*). Freshwater marsh and emergent vegetation associated with former borrow areas on the western side of the central parcel of the Property may provide potentially suitable foraging habitat for protected wading bird species such as wood stork. These borrow area marshes may also provide potentially suitable nesting habitat for Florida

sandhill cranes. Further, forested wetlands and marshes on the Property also have the potential to provide suitable habitat for limpkins. The likelihood of occurrence for the southeastern American kestrel is moderate due to the presence of potentially suitable foraging habitat in the form of open herbaceous cover within onsite utility easements. The wooden utility poles within the easements also potentially provide for suitable nesting sites. Although, no eagle nests have been documented by the FWC, or observed during preliminary field studies, the likelihood of an eagle nest occurring within the Property is moderate. This is due to the presence of large pine trees suitable for nesting, the presence of potential foraging habitat, and the proximity of the Property to potentially suitable off-site foraging habitat. The potential for occurrence of Worthington's marsh wren is considered high due to the presence of salt marsh habitat adjacent to the northern-most and southern-most parcels of the Property.

Coordination will be initiated with the USFWS and/or FWC for guidance prior to undertaking any activity that may result in the disturbance of a listed species. We will comply with all appropriate state and federal wildlife regulations and guidelines to ensure that development activities within the Property do not jeopardize any listed species.

A.1.3.3 Natural Resource Management

F.S. 163.3245(3)(b)(7) requires the *"identification of measures to ensure the protection, and as appropriate restoration and management of lands"* within the DSAP. Consistent with this requirement, areas designated as conservation (CHN) within the approved LTMP will be included in a detailed conservation and land management plan that is developed specifically for the DSAP area. This DSAP-specific conservation and management plan will take into consideration the type, location and ecological condition of wetlands and other vegetative communities, as well as the needs of any listed species that occur on the Property. In accordance with F.S. 163.3245 and Comp Plan Policy FL. 13.07, wetlands within the Property that are located within the approved CHN will be placed under conservation easements or formally established as conservation tracts as adjacent areas within the DSAP are developed.

A.2 Ecological Communities

Land use and vegetative cover types within the Property were classified based on FLUCFCS data obtained from the SJRWMD Geographic Information System (GIS) database, along with selective photointerpretation and groundtruthing (Figure A2.1). Botanical nomenclature is per Wunderlin and Hansen (Wunderlin, Richard P. and Bruce F. Hansen. 2003. *Guide to the Vascular Plants of Florida*, second edition. University Press of Florida. 787 pp.).

Legend

Out Parcel Boundary

FLUCFCS

- 310 - Herbaceous (Dry Prairie)
- 432 - Sand Live Oak
- 441 - Coniferous Plantations
- 613 - Gum Swamps
- 617 - Mixed Wetland Hardwoods
- 621 - Cypress
- 625 - Hydric Pine Flatwoods
- 630 - Wetland Forested Mixed
- 641 - Freshwater Marshes
- 643 - Wet Prairies
- 644 - Emergent Aquatic Vegetation
- 646 - Treeless Hydric Savanna
- 742 - Borrow Areas
- w441 - Wet Coniferous Plantations

Source: Vegetative delineation based on photointerpretation and selective groundtruthing by BDA, 02/2012; land use/cover categories derived from FLUCFCS Handbook, FDOT 1999.

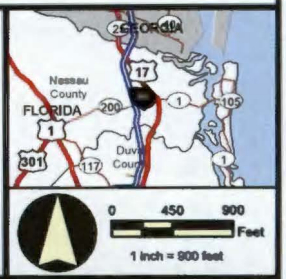

FIGURE A2.1.
FLORIDA LAND USE, COVER, AND FORMS CLASSIFICATION SYSTEM MAP OF THE EAST NASSAU DSAP 1 PROJECT SITE, NASSAU COUNTY, FLORIDA

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0 800 1,600 Feet
1 inch = 1,600 feet

Legend

- DSAP Area 1

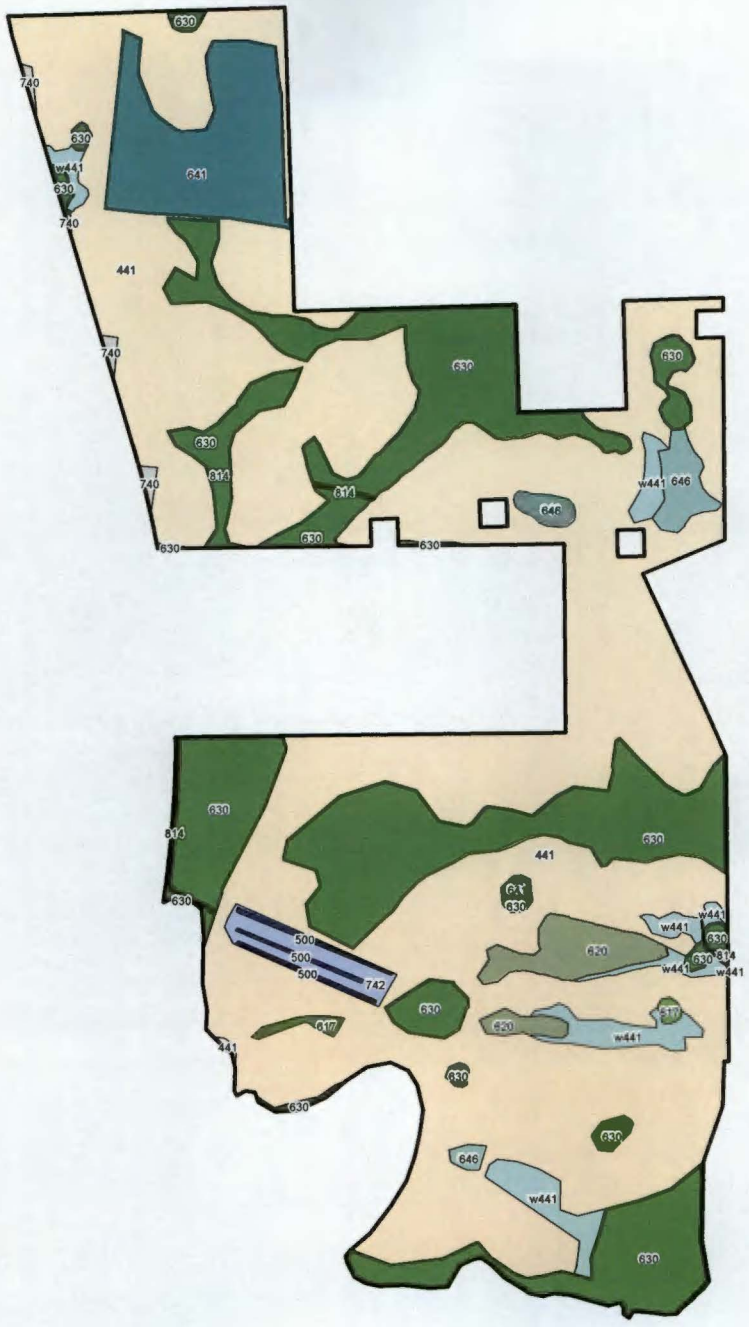
FLUCFCS

- 427 - Live Oak
- 434 - Hardwood - Coniferous Mixed
- 441 - Coniferous Plantations
- W441 - Wet Coniferous Plantations
- 510 - Swales
- 516 - Ditches
- 530 - Reservoirs
- 617 - Mixed Wetland Hardwoods
- 620 - Wetland Coniferous Forests
- 621 - Cypress
- 625 - Hydric Pine Flatwoods
- 630 - Wetland Forested Mixed
- 641 - Freshwater Marshes
- 643 - Wet Prairies
- 644 - Emergent Aquatic Vegetation
- 646 - Mixed Scrub-Shrub Wetland
- 814 - Roads and Highways
- 832 - Electrical Power Transmission Lines
- 832/643 - Wet Prairie in Power Line

Source: Vegetative delineation based on photointerpretation and selective groundtruthing by BDA, 02/2012; land use/cover categories derived from FLUCFCS Handbook, FDOT 1999.

FIGURE A2.1.

FLORIDA LAND USE, COVER, AND FORMS CLASSIFICATION SYSTEM MAP OF THE EAST NASSAU DSAP 1 PROJECT SITE, NASSAU COUNTY, FLORIDA



Legend

Out Parcel Boundary

FLUCFCS

- 441 - Coniferous Plantations
- 500 - Water
- 617 - Mixed Wetland Hardwoods
- 620 - Wetland Coniferous Forests
- 630 - Wetland Forested Mixed
- 641 - Freshwater Marshes
- 646 - Treeless Hydric Savanna
- 740 - Disturbed Land
- 742 - Borrow Areas
- 814 - Roads and Highways
- w441 - Wet Coniferous Plantations

Source: Vegetative delineation based on photointerpretation and selective groundtruthing by BDA, 03/2012; land use/cover categories derived from FLUCFCS Handbook, FDOT 1999.

FIGURE A2.1.
FLORIDA LAND USE, COVER, AND FORMS CLASSIFICATION SYSTEM MAP OF THE EAST NASSAU DSAP 1 PROJECT SITE, NASSAU COUNTY, FLORIDA

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Environmental Consultants
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A.2.1 Wetlands and Surface Waters

The Property (northern, central and southern parcels) contains approximately 1,653 acres of wetlands and approximately 11.3 acres of surface waters, based on photointerpretation and selective groundtruthing. Wetland communities are dominated by mixed forested wetlands (approximately 1,190.7 acres), wet planted pine (approximately 138.0 acres) and hydric pine flatwoods (approximately 80.1 acres). Other wetland communities within the Property include cypress swamps, scrub-shrub wetlands, mixed hardwood wetlands, coniferous wetlands, wet prairies, freshwater marsh and areas with emergent aquatic vegetation (Figure A1.1). All wetland acreages are preliminary and are subject to change based on field survey and agency review.

Open Water (500)
The southern parcel of the Property contains approximately 1.9 acres of open water associated with a man-made borrow area.

Swales (510)
Vegetated swales (approximately one acre), that transport flow during storms, generally have planted pine on their perimeter. They also include the following herbaceous groundcover species: velvet witchgrass (*Dichanthelium scoparium*), blackberry, manyflower marshpennywort (*Hydrocotyle umbellata*), sugarcane plumegrass (*Saccharum giganteum*), soft rush (*Juncus effusus*), clustered sedge (*Carex glaucescens*), scattered cypress (*Taxodium* sp.), red maple, and warty panicgrass (*Panicum verrucosum*).

Ditches (516)
Ditches (approximately 3.2 acres) within the Property include laurel oak, slash pine, red maple, wax myrtle, greenbrier, broomsedge bluestem, cinnamon fern, and Virginia chain fern.

Reservoirs (530)
A 5.2-acre reservoir that was formerly a borrow area is located on the southeastern side of the central parcel of the Property. Littoral vegetation and emergent aquatic vegetation are minimal.

Mixed Wetland Hardwoods (617)
Canopy vegetation within mixed wetland hardwoods (approximately 39.5 acres) is comprised of cypress, slash pine, and red maple. The shrub layer is generally comprised of slash pine, wax myrtle, swamp bay, saw palmetto, and gallberry. Herbaceous groundcover species include velvet witchgrass, chalky bluestem (*Andropogon virginicus* var. *glaucus*), woodoats, sugarcane plumegrass, and Virginia chain fern, among others.

Wetland Coniferous Forests (620)
Approximately 43.8 acres of coniferous wetlands are located within the Property. The canopy stratum is comprised of cypress, slash pine, sweetgum, and swamp tupelo (*Nyssa sylvatica* var. *biflora*). Sub-canopy species include

slash pine, cypress, red maple, swamp tupelo, and swamp bay. The shrub layer is comprised of slash pine, wax myrtle, swamp bay, saw palmetto, gallberry, cypress, and myrtle dahoon (*Ilex cassine* var. *myrtifolia*). The herbaceous groundcover generally includes velvet witchgrass, warty panicgrass, slash pine seedlings, beaksedge (*Rhynchospora* sp.), bog white violet (*Viola lanceolata*), slender flattop goldenrod (*Euthamia caroliniana*), chalky bluestem, woodoats, sugarcane plumegrass, Virginia chain fern, woolly witchgrass (*Dichanthelium scabriusculum*), sandweed (*Hypericum fasciculatum*), gallberry, blackberry, clustered sedge, club-moss (*Lycopodiella* sp.), swamp bay, dogfennel (*Eupatorium capillifolium*), purple bluestem (*Andropogon glomeratus* var. *glaucopsis*), sweetgum, cinnamon fern, sedge (*Carex* sp.), and camphorweed (*Pluchea* sp.).

Cypress (621)

The canopy of cypress swamps (approximately 21.6 acres) is generally comprised of cypress, slash pine, red maple, swamp bay, and swamp tupelo. The sub-canopy includes slash pine, swamp bay, and cypress. The shrub stratum often includes groundsel tree (*Baccharis halimifolia*) and gallberry. Groundcover species often include sugarcane plumegrass, yellow jessamine, purple bluestem, spadeleaf (*Centella asiatica*), and woolly witchgrass, among others.

Hydric Pine Flatwoods (625)

The canopy stratum of hydric pine flatwoods (approximately 80.1 acres) on the Property is generally comprised of slash pine, with scattered cypress, red maple, laurel oak, swamp tupelo, and swamp bay. The sub-canopy often includes slash pine, laurel oak, swamp bay, loblolly bay, red maple, swamp tupelo, sweetgum, and dahoon. The shrub layer is comprised of loblolly bay, slash pine, wax myrtle, swamp bay, saw palmetto, gallberry, and fetterbush (*Lyonia lucida*). Herbaceous groundcover species often include velvet witchgrass, woodoats, maidencane (*Panicum hemitomon*), sugarcane plumegrass, bushy bluestem (*Andropogon glomeratus*), slash pine, purple bluestem, woolly witchgrass, Virginia chain fern, sandweed, blue maidencane (*Amphicarpum muhlenbergianum*), spadeleaf, and laurel greenbrier (*Smilax laurifolia*), among others.

Forested Wetland Mixed (630)

The canopy stratum within mixed forested wetlands (approximately 1,190.7 acres) is comprised of red maple, cypress, sweetgum, laurel oak, swamp tupelo, slash pine, dahoon, and myrtle dahoon. The subcanopy stratum is comprised of cabbage palm, red maple, sweetgum, laurel oak, loblolly bay, myrtle dahoon, slash pine, cypress, and swamp bay. The shrub stratum is comprised of wax myrtle, cabbage palm, saw palmetto, fetterbush, wax myrtle, and dwarf palmetto (*Sabal minor*). Herbaceous groundcover species often include greenbrier, woodoats, roundpod St. John's-wort (*Hypericum cistifolium*), manyflower marshpennywort, cabbage palm, sweetgum, warty panicgrass, soft rush, blackberry, sedge, velvet witchgrass, camphorweed, purple bluestem, Virginia chain fern, netted chain fern (*Woodwardia areolata*), sugarcane plumegrass, sawtooth blackberry (*Rubus argutus*),

swamp bay, Virginia iris (*Iris virginica*), sandweed, blue maidencane, and maidencane.

Freshwater Marshes (641)
Approximately 45.2 acres of freshwater marsh exist on the Property within a series of former borrow areas in the central parcel, and within a large system in the southern parcel. Shrub vegetation on islands within the marshes includes swamp bay, gallberry, myrtle dahoon, red cedar, slash pine, and wax myrtle. Marsh groundcover vegetation includes sand cordgrass (*Spartina bakeri*), grassleaf rush (*Juncus marginatus*), yelloweyed grass (*Xyris* sp.), sandweed, bushy bluestem, fireweed (*Erechtites hieraciifolius*), witchgrass (*Dichanthelium* sp.), slender flattop goldenrod, and lovegrass (*Eragrostis* sp.), among others.

Wet Prairies (643)
Wet prairies (approximately 12.1 acres) within the Property are characterized by maidencane, chalky bluestem, slender flattop goldenrod, velvet witchgrass, soft rush, sawtooth blackberry, bushy bluestem, spadeleaf, turkey tangle fogfruit (*Phyla nodiflora*), and occasional slash pine. Rarely canopy-sized slash pine and shrub-sized groundsel tree are present.

Within the utility easement (832) in the central parcel of the Property, wet prairies are comprised of chalky bluestem, velvet witchgrass, sugarcane plumegrass, sandweed, bushy bluestem, blackberry, slash pine saplings, swamp bay saplings, sweetgum saplings, yelloweyed grass, gallberry, witchgrass, blue maidencane, slender flattop goldenrod, and myrtle dahoon.

Emergent Aquatic Vegetation (644)
Approximately 36.8 acres of emergent aquatic vegetation is located on the west side of the central parcel of the Property within a series of former borrow areas. Vegetation within these areas is primarily comprised of American white waterlily (*Nymphaea odorata*) and bladderwort (*Utricularia* sp.).

Mixed Scrub-Shrub Wetland (646)
The shrub stratum within scrub-shrub wetlands on the Property (approximately 39.7 acres) is generally comprised of fetterbush, slash pine, myrtle dahoon, highbush blueberry (*Vaccinium corymbosum*), Carolina willow (*Salix caroliniana*), groundsel tree, and wax myrtle, among others. Groundcover species generally include woodoats, beaksedge, sedge, redtop panicum (*Panicum rigidulum*), warty panicgrass, thistle (*Cirsium* sp.), purple bluestem, and woolly witchgrass, among others.

Wet Coniferous Plantation (W441)
Wet coniferous plantations (approximately 138.0 acres) are primarily comprised of planted slash pine (various stand ages), with rare occurrences of red maple, loblolly bay, sweetgum, dahoon, cabbage palm, and swamp bay, and very rare occurrences of cypress. The sub-canopy stratum is generally comprised of wax myrtle, swamp bay, groundsel tree, and red

cedar. Herbaceous groundcover vegetation is comprised of a variety of species including soft rush, sugarcane plumegrass, creeping primrosewillow (*Ludwigia repens*), other primrosewillow (*Ludwigia* sp.) species, sedge, Carolina redroot (*Lachnanthes caroliana*), sundew (*Drosera* sp.), camphorweed, spikerush (*Eleocharis* sp.), maidencane, yelloweyed grass, velvet witchgrass, slash pine seedlings, rush (*Juncus* sp.), beaksedge, bushy bluestem, purple bluestem, cudweed (*Pseudognaphalium* sp.), dogfennel, witchgrass, pipewort (*Eriocaulon* sp.), bogbutton (*Lachnocaulon* sp.), bog white violet, blue maidencane, maidencane, and sandweed.

A.2.2 Uplands

The Property contains ~ 2,621.7 acres of upland communities (~ 60.7%), based on preliminary photointerpretation and groundtruthing. Upland communities are dominated by Coniferous Plantations (441), which represent approximately 97.3% (~ 2,549.6 acres) of total upland acreage.

Herbaceous Land (310)
The Property contains ~1.1 acres of open herbaceous land characterized by witchgrass (*Dichanthelium* sp.), chalky bluestem (*Andropogon virginicus* var. *glaucus*), dogfennel (*Eupatorium capillifolium*), blackberry (*Rubus* sp.), scattered sand live oak (*Quercus virginiana*) saplings, laurel oak (*Quercus laurifolia*) saplings, hickory (*Carya* sp.) saplings, everlasting (*Gnaphalium* sp.), pawpaw (*Asimina* sp.), yellow jessamine (*Gelsemium sempervirens*), hairy indigo (*Indigofera hirsute*) and deerberry (*Vaccinium stamineum*).

Live Oak (427)
A small area of live oak (*Quercus virginiana*), (0.2 acres) is located on the western side of the central parcel of the Property. Canopy species are comprised of live oak, laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), red cedar (*Juniperus virginiana*), dahoon (*Ilex cassine*), southern magnolia (*Magnolia grandiflora*), and cabbage palm (*Sabal palmetto*). The shrub layer consists of saw palmetto (*Serenoa repens*), wax myrtle (*Myrica cerifera*), and sapling-sized canopy species. The herbaceous groundcover contains woodoats (*Chasmanthium* sp.), woodsgrass (*Oplismenus hirtellus*), crabgrass (*Digitaria* sp.), and panicgrass (*Panicum* sp.).

Sand Live Oak (432)
The Property contains ~5.3 acres of sand live oak. The canopy is dominated by sand live oak, laurel oak, hickory and red cedar. The groundcover is comprised of blackberry, blue huckleberry (*Gaylussacia tomentosa*), grape (*Vitis* sp.) vine, and netted nutrush *(Scleria reticularis).*

Hardwood Conifer Mixed (434)
Approximately 6.7 acres of upland within the Property is characterized as hardwood conifer mixed forest. The canopy stratum is comprised of slash pine (*Pinus elliottii*), sweetgum (*Liquidambar styraciflua*), water oak, and laurel oak. The sub-canopy is comprised of cabbage palm, red cedar,

camphortree (*Cinnamomum camphora*), and sapling-sized canopy species. The groundcover is comprised of greenbrier (*Smilax* sp.), blackberry, cabbage palm seedlings, swamp bay (*Persea palustris*) seedlings, and yellow jessamine (*Gelsemium sempervirens*).

Coniferous Plantation (441)
The Property contains approximately 2,549.6 acres of planted pine (*Pinus* sp.). The canopy stratum within actively managed silvicultural areas is comprised primarily of planted slash pine with limited occurrences of naturally recruited sand live oak (*Quercus geminata*), cabbage palm, laurel oak, sweetgum, and red maple (*Acer rubrum*). Sub-canopy species include loblolly bay (*Gordonia lasianthus*), laurel oak, and swamp bay. The shrub layer is generally comprised of saw palmetto, wax myrtle, and gallberry (*Ilex glabra*). The herbaceous groundcover is generally sparse, but where present is comprised of gallberry, Virginia chain fern (*Woodwardia virginica*), and cinnamon fern (*Osmunda cinnamomea*).

Disturbed Lands (740)
The Property contains ~1.5 acres of land cleared for billboards.

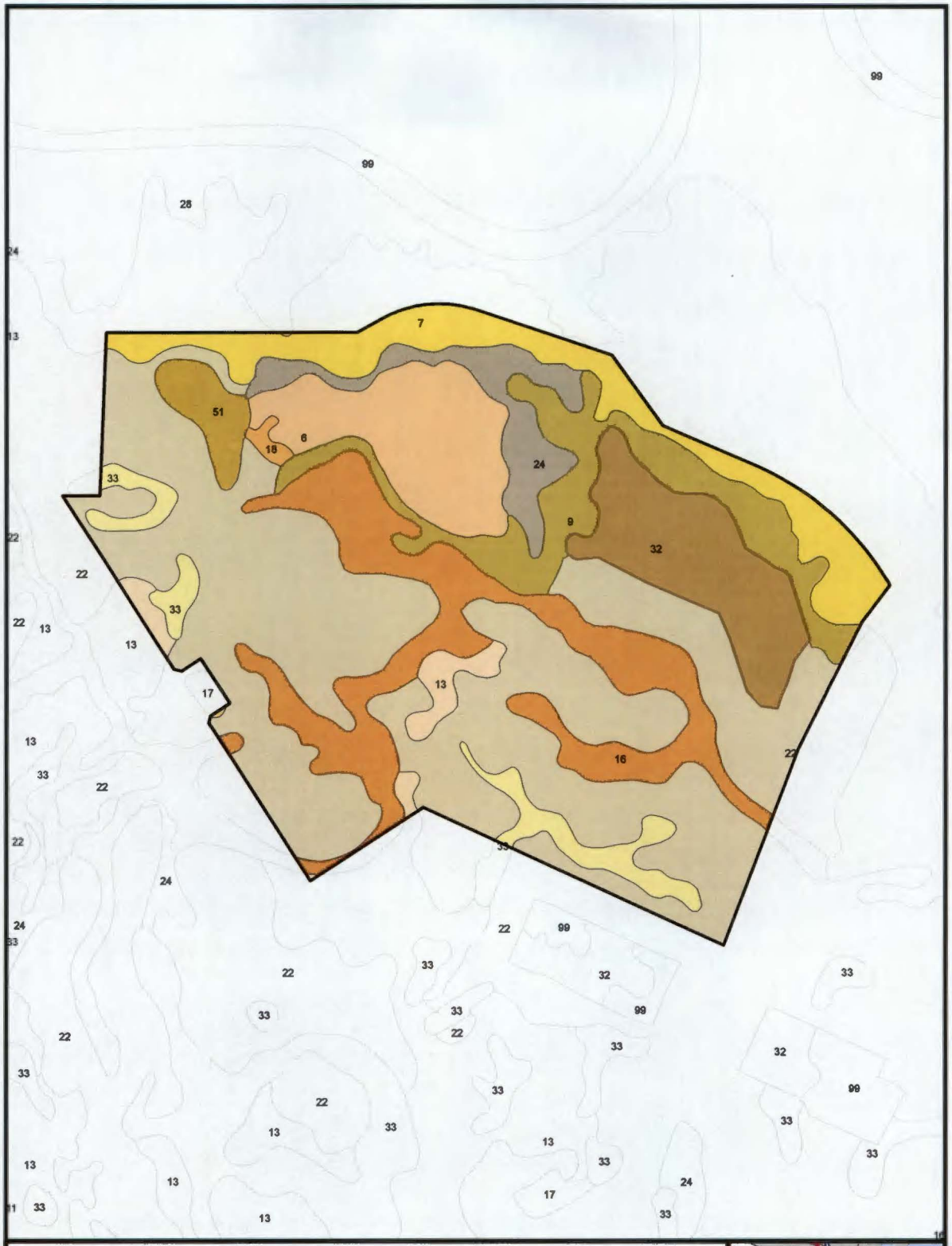
Borrow Area (742)
The Property contains ~6.3 acres of man-made borrow areas within the southern parcel. This borrow area contains three deep linear channels with open water and minimal emergent vegetation.

Roads and Highways (814)
Over 9.5 acres of field roads are located throughout the Property.

Electrical Power Transmission Lines (Utility Easement) (832)
Upland vegetative communities within utility easements on the Property (approximately 41.5 acres) are regularly managed, maintaining a shrub layer comprised of live oak, wax myrtle, gallberry, and red cedar. The herbaceous stratum is comprised of gallberry, bracken fern (*Pteridium aquilinum*), blackberry, broomsedge bluestem (*Andropogon virginicus*), and grape (*Vitis* sp.) vine.

A.3 Natural Resources Conservation Service Soils

The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Soil Survey Geographic database for Nassau County, Florida, identifies the following soil types within the Property (Figure A3.1): Hurricane-Pottsburg fine sands, 0 to 5 percent slopes (6), Leon fine sand (9), Mandarin fine sand (10), Chaires fine sand (11), Goldhead fine sand (13), Rutledge mucky fine sand, frequently flooded (14), Buccaneer clay, frequently flooded (15), Ellabelle mucky fine sand, frequently flooded (16), Sapelo-Leon fine sand (22), Kingsferry fine sand (24), Aqualfs, loamy (32), Goldhead-



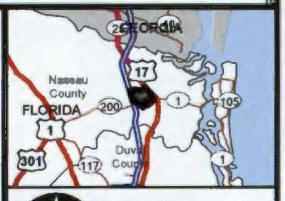
Legend

Out Parcel Boundary

NRCS Soils

- 06 - Hurricane-Pottsburg fine sands, 0 to 5 percent slopes
- 07 - Kingsland mucky peat, frequently flooded
- 09 - Leon fine sand
- 13 - Goldhead fine sand
- 16 - Ellabelle mucky fine sand, frequently flooded
- 17 - Urban land
- 18 - Lynn Haven-Wesconnett-Leon complex, depressional
- 22 - Sapelo-Leon fine sand
- 24 - Kingsferry fine sand
- 28 - Tisonia mucky peat, tidal
- 32 - Aquults, loamy
- 33 - Goldhead-Meadowbrook fine sands, depressional
- 51 - Albany fine sand, 0 to 5 percent slopes

Source: U.S. Department of Agriculture, Natural Resources Conservation Service, Soil Survey Geographic (SSURGO) database.



0 450 900 Feet

1 inch = 900 feet

FIGURE A3.1.
NATURAL RESOURCES CONSERVATION SERVICE SOILS MAP OF THE EAST NASSAU DSAP 1 PROJECT SITE, NASSAU COUNTY, FLORIDA

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Environmental Consultants
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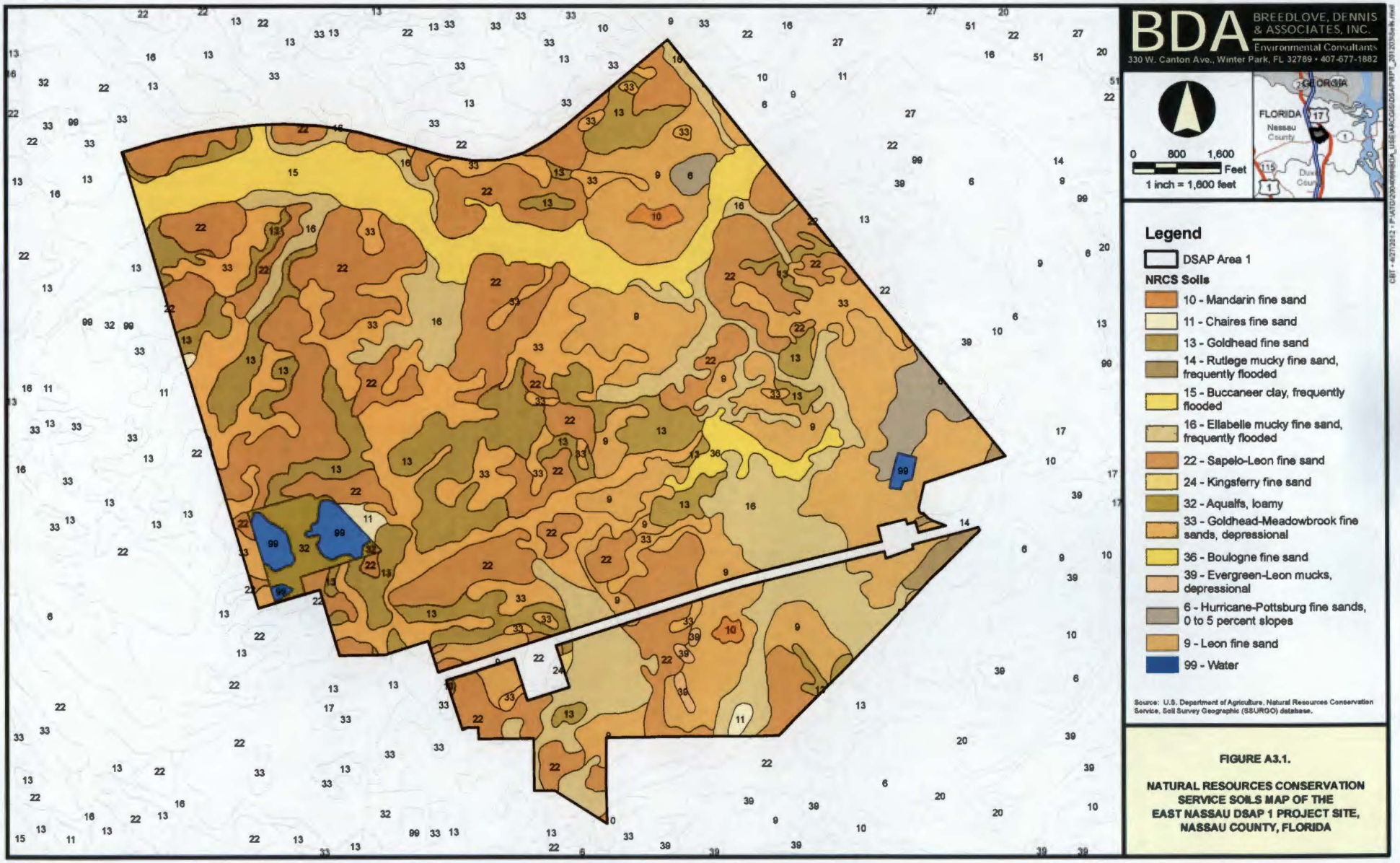

FIGURE A3.1.

NATURAL RESOURCES CONSERVATION SERVICE SOILS MAP OF THE EAST NASSAU DSAP 1 PROJECT SITE, NASSAU COUNTY, FLORIDA

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Meadowbrook fine sands, depressional (33), Boulogne fine sand (36), and Evergreen-Leon mucks, depressional (39).

A.4 Protected Wildlife and Plant Species Potential Occurrence

State and federal databases were reviewed to determine the likelihood of occurrence for protected and wildlife and species that occur or are likely to occur in within the Property and within Nassau County. Statewide GIS databases (CLIP, FNAI, etc.) of known locations and potential habitat models for rare and imperiled species were researched. Upland and wetland communities were also evaluated during field studies in 2012 to determine the occurrence or likelihood of occurrence for protected wildlife and plant species within the Property.

Species of wildlife and plants protected under provisions of the ESA of 1973, 16 United States Code 1531-1544, December 28, 1973, as amended 1976 – 1982, 1984, and 1988 ESA and Florida rule (68A-27.0001- 27.007, F.A.C.) known to occur within the County are represented in Table A4.1. (Note: The FWC adopted new rules for listing imperiled wildlife species effective on November 15, 2010. Species previously classified as Endangered [E] or Threatened [T] were approved for reclassification as T in June 2011. Final reclassifications for SSC to T or removal from the list and for E or T that were recommended for removal from the list are pending development and approval for implementation of management plans for each species.) The likelihood of occurrence, listed within this table, is based on a comparison of known general habitat requirements by these species with the habitats found on or near the Property, the quantity, quality, and adjacency of these habitats, as well as any observations of these species during preliminary field investigations. The likelihood of occurrence for protected species was rated as observed (i.e., species presence documented), high, moderate, low, unlikely, or not applicable based on knowledge of a species' habitat preference and site conditions. A likelihood of occurrence given as "unlikely" indicates that no, or very limited, suitable habitat for this species exists on site, but the site is within the documented range of the species; "not applicable" indicates that the habitat for this species does not exist on or adjacent to the site and/or the site is not within the documented range of the species.

Table A4.1 Protected Plants and Animals with Potential for Occurrence on the East Nassau DSAP 1 Project Site, Nassau County, Florida.

Species	Habitat of Occurrence	Likelihood of Occurrence	Designated Status[1]	
			USFWS[2]	FWC[34]
AMPHIBIANS				
Ambystoma cingulatum Frosted flatwoods salamander	Pine flatwoods, cypress swamp	unlikely	FT	ST
Lithobates capito gopher frog	Xeric oak scrub, sand pine scrub, sandhill, upland hardwoods, pine flatwoods, freshwater marsh.	moderate	—	SSC
Notophthalmus perstriatus striped newt	Principally longleaf pine-turkey oak sandhills, but also scrub; occasionally pine flatwoods	unlikely	C	—
REPTILES				
Alligator mississippiensis American alligator	Freshwater marsh, cypress swamp, mixed hardwood swamp, shrub swamp, bottomland hardwoods, lakes, ponds, rivers, streams.	low	FT(S/A)	—
Caretta caretta loggerhead sea turtle	Marine coastal and oceanic waters, beaches.	not applicable	FT	—
Chelonia mydas green sea turtle	Estuarine and marine coastal and oceanic waters, beaches.	not applicable	FE	—
Dermochelys coriacea leatherback sea turtle	Oceanic waters, beaches.	not applicable	FE	—

Table A4.1 Continued.

Species	Habitat of Occurrence	Likelihood of Occurrence	Designated Status[1]	
			USFWS[2]	FWC[34]
Drymarchon corais couperi eastern indigo snake	Xeric oak scrub, sand pine scrub, sandhill, pine flatwoods, pine rocklands, tropical hardwood hammock, hydric hammock, wet prairie, mangrove swamp.	low	FT	—
Gopherus polyphemus gopher tortoise	Sandhill, sand pine scrub, xeric oak scrub, coastal strand, xeric hammock, dry prairie, pine flatwoods, mixed hardwood–pine forests, ruderal.	observed	—	ST
Lepidochelys kempii Kemp's ridley sea turtle	Marine coastal waters.	not applicable	FE	—
Pituophis melanoleucus mugitus Florida pine snake	Xeric oak scrub, sand pine scrub, sandhill, scrubby pine flatwoods, old fields on former sandhill and scrub sites.	unlikely	—	SSC
BIRDS				
Aramus guarauna limpkin	Freshwater marsh, mixed hardwood swamp, rivers, streams, spring runs, lake margins, ruderal.	moderate	—	SSC
Charadrius melodus piping plover	Beaches, tidal mud flats.	low	FT	—
Cistothorus palustris griseus Worthington's marsh wren	Salt marsh.	high	—	SSC
Egretta caerulea little blue heron	Freshwater marsh, various types of forested wetlands, lakes, streams, salt marsh, mangrove swamp, tidal mud flats.	high	—	SSC

Table A4.1 Continued.

Species	Habitat of Occurrence	Likelihood of Occurrence	Designated Status[1]	
			USFWS[2]	FWC[34]
Egretta thula snowy egret	Freshwater marsh, various types of forested wetlands, streams, lakes, salt marsh, mangrove swamp, tidal mud flats, impoundments, ditches.	high	—	SSC
Egretta tricolor tricolored heron	Salt marsh, mangrove swamp, tidal mud flats, tidal creeks, tidal ditches, freshwater marsh, various types of forested wetlands, lakes and ponds.	moderate	—	SSC
Eudocimus albus white ibis	Freshwater marsh, various types of forested wetlands, salt marsh, mangrove swamp, tidal mud flats, ruderal.	moderate	—	SSC
Falco sparverius paulus southeastern American kestrel	Sandhill, pine flatwoods, dry prairie, pasture, old field.	moderate	—	ST
Haematopus palliatus American oystercatcher	Beaches, sandbars, tidal mud flats, shellfish beds.	low	—	SSC
Mycteria americana wood stork	Freshwater marsh, various types of forested wetlands, ponds, salt marsh, mangrove swamp, tidal mud flats, lagoons, flooded pastures.	high	FE	—
Pelecanus occidentalis brown pelican	Beaches, mangrove swamp, tidal mud flats, estuarine and marine waters.	low	—	SSC
Picoides borealis red-cockaded woodpecker	Sandhill, pine flatwoods.	unlikely	FE	—

Table A4.1 Continued.

Species	Habitat of Occurrence	Likelihood of Occurrence	Designated Status[1]	
			USFWS[2]	FWC[34]
Rhynchops niger black skimmer	Beaches, tidal mud flats, sandbars, tidal creeks, estuarine bays and lagoons.	unlikely	—	SSC
Sterna antillarum least tern	Beaches, tidal mud flats, estuarine and marine waters, lakes.	unlikely	—	ST
MAMMALS				
Sciurus niger shermani Sherman's fox squirrel	Sandhill, pine flatwoods, pastures.	unlikely	—	SSC
Trichechus manatus latirostris Florida manatee	Estuarine bays and lagoons, seagrass beds, rivers, spring runs.	not applicable	FE	—
Ursus americanus floridanus Florida black bear	Upland hardwood hammock, mixed hardwood-pine forest, pine flatwoods, cabbage palm-live oak hammock, cypress swamp, bay swamp, shrub swamp, hydric hammock, bottomland hardwoods.	unlikely	—	ST

[1] FE = Federally-designated Endangered; FT = Federally-designated Threatened; FT(S/A) = Federally-designated Threatened Due to Similarity of Appearance; C=Candidate for Listing; ST = State-designated Threatened; SSC = State Species of Special Concern.

[2] U.S. Fish and Wildlife Service.

[3] Florida Fish and Wildlife Conservation Commission.

[4] These state classifications are pending reclassification in accordance with revisions to Rules 68A-27.003, 68A-27.005, 68A-27.0012 and 68A-27.0021, Florida Administrative Code, for managing imperiled species as adopted by the Florida Fish and Wildlife Conservation Commission on September 1, 2010, effective November 15, 2010.

A.4.1 Protected Wildlife Species

A.4.1.1 Amphibians and Reptiles

Gopher Tortoise:

The gopher tortoise *(Gopherus polyphemus)* is listed as T by the FWC but is not listed as a T or E species by the USFWS. However, the USFWS recently determined in their 12-month finding published on July 27, 2011, that listing of the gopher tortoise as a T species in the eastern portion of its range is warranted under the ESA. Gopher tortoises were added to the candidate species list with the publication of the 12-month finding, but, for the time being, the USFWS is precluded from taking further action due to limited resources. Gopher tortoises occur in a variety of natural and disturbed habitats characterized by well-drained loose soils in which to burrow, low-growing herbaceous vegetation used for food, and open sunlit areas for nesting (Diemer 1992, Mushinsky et al. 2006). Gopher tortoises typically inhabit sites with soils that support sandhill, scrub, and pine flatwoods habitats (Enge et al. 2006). Reported annual average home range sizes vary from 1.2 to 4.7 acres for males and from 0.2 to 1.6 acres for females (Enge et al. 2006). Cox et al. (1987) indicate that patches of habitat must be at least 25-50 acres in size to support a minimally viable population of gopher tortoises, but Eubanks et al. (2002) found that 47-101 acres were needed to support populations of this size. Mushinsky et al. (2006) considered 250 acres to be the minimum area necessary to maintain a population of tortoises, and a buffer zone surrounding the 250-acre parcel would provide additional security.

A 100% survey of all areas of suitable gopher tortoise habitat will be required, immediately prior to development, to conclusively determine the population size and distribution of gopher tortoises currently on the Property and evaluate available management options. The presence of gopher tortoises within the Property would generally require development of a management plan to accommodate the species if impacts are anticipated. The plan would then be submitted to the FWC as part of the permit authorization process, prior to development.

The FWC manages and regulates the gopher tortoise under provisions of a *Gopher Tortoise Management Plan* (Management Plan) that includes *Gopher Tortoise Permit Guidelines* (Permit Guidelines) and permit provisions. Permits may be issued when authorization to "take" (i.e. excavate and relocate) gopher tortoises may be necessary. Permit applications may be requested by on-line application. All survey, capture, and relocation activities associated with permits must be conducted by an "Authorized Gopher Tortoise Agent". Land use planning that anticipates the need to accommodate the conservation needs of gopher tortoises should be designed consistent with the Permit Guidelines.

The FWC generally recommends the following options for avoiding, minimizing, and/or compensating the potential for take of gopher tortoises or their burrows to occur on lands that are proposed for development:

1. Avoid developing in the area occupied by gopher tortoises;
2. Develop so as to avoid gopher tortoise burrows by avoiding concentrations of burrows altogether and/or staying at least 25 feet from entrances of individual burrows; or
3. Relocate gopher tortoises that would otherwise be "taken" to an approved recipient site that is either on or off the development site (a 10 or Fewer Burrows Permit or Conservation Permit will be required).

FWC potential habitat models (Cox et al. 1994, McCoy et al. 2002, Endries et al. 2009) indicate that approximately 35 acres of the Property were mapped as potentially suitable gopher tortoise habitat. However, this acreage is spread out between numerous areas (~10 acres in the northern parcel, ~20 acres in the central parcel and ~5 acres in the southern parcel).

FWC *Gopher Tortoise Permitting Guidelines* require that sites that meet the criteria for *Acceptable* long-term relocation sites for gopher tortoises must be >40 acres in size and have an annual minimum depth to water table of >18 inches. The Property contains <12 acres of soils that meet the criteria for depth to water table, indicating that habitats within the Property are of relatively low quality for gopher tortoises. This information indicates that gopher tortoises and its commensals have a low likelihood of occurring within the Property.

Despite the low potential for occurrence, active gopher tortoise burrows were observed within the northern parcel in an open sandy area characterized by sand live oak (*Quercus geminata*) saplings, pawpaw (*Asimina* sp.), and shiny blueberry (*Vaccinium myrsinites*). Burrows were also observed in adjacent areas of pine plantation. Gopher tortoise surveys will be conducted immediately prior to development of specific parcels, in accordance with Permit Guidelines. Gopher tortoises that occur within areas of the Property that are proposed for development will be relocated to approved on-site or off-site recipient areas, prior to development of adjacent parcels, in accordance with Permit Guidelines.

Eastern Indigo Snake:
The eastern indigo snake *(Dyrmarchon couperi)* is listed as a T species by USFWS. The primary reasons for this listing status are over-collection and habitat loss (Moler 1992). Indigo snakes occur in a variety of habitats throughout Florida, including pine flatwoods, scrubby flatwoods, sandhill, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, and human-altered habitats (USFWS 2008). Indigo snakes often winter in the burrows of gopher tortoises in northern portions of the range, but they also may take shelter in hollowed root channels, hollow logs, stump holes, trash piles, or the burrows of rodents,

nine-banded armadillos (*Dasypus novemcinctus*), or land crabs (*Cardisoma guanhumi*) in wetter habitats (USFWS 2008, USFWS 2011). Eastern indigo snakes are capable of moving considerable distances in a short period of time as demonstrated by records of movements of 2.2 miles in 42 days and 2.4 miles in 176 days (USFWS 2008). One individual was observed to have moved 13.8 miles over a two-year period in a mark-recapture study in southeastern Georgia (Stevenson and Hyslop 2010). Reported home range sizes of eastern indigo snakes in peninsular Florida range from 4 to 818 acres (USFWS 2011), and mean home range size reported from one Florida study was 292 acres (Dodd and Barichivich 2007). Radio-telemetry studies of indigo snakes in Georgia have revealed home ranges sizes of 87.5 to 8,885 acres for females and 350 to 3,825 acres for males (Hyslop 2007). Indigo snakes apparently need a mosaic of habitats to complete their life cycle, often feeding along wetland edges (Moler 1992). Population viability modeling suggests that indigo snake populations are susceptible to habitat fragmentation resulting from construction of roads and intensive human developments in occupied habitats, and that large areas protected from roads and human developments are needed to maintain viable snake populations (Breininger et al. 2004).

USFWS (2011) requires surveys to determine the presence of indigo snakes on sites in north and central Florida when impacts are projected for more than 25 acres of xeric habitat or for more than 25 active and inactive gopher tortoise burrows. Occurrence databases available from FWC and the FNAI contain no records of eastern indigo snakes within the Property, but the FNAI database contains a 1970 record of an indigo snake located 2.8 miles northeast of the Property. Older FWC habitat models (Cox et al. 1994) indicate that most of the Property was mapped as potentially suitable indigo snake habitat; however, recent FWC models (Endries et al. 2008; Endries and Enge, unpublished data) indicate that none of the Property was mapped as habitat potentially suitable for indigo snakes, although a large patch of potentially suitable habitat is located just to the northeast of the Property. Indigo snakes have the potential to occur based on several old records in the vicinity of the Property, but the likelihood of occurrence is low based on the rarity and large home range requirements of the species, and the relatively fragmented nature of the landscape surrounding the Property. No indigo snakes were observed during preliminary fieldwork within the Property.

Florida Pine Snake:

The Florida pine snake (*Pituophis melanoleucus mugitus*) is listed as a species of special concern by FWC but is not listed as a threatened or endangered species by USFWS. The Property is within the range of the Florida pine snake as mapped by Franz (1992). Florida pine snakes occur in open xeric habitats, including longleaf pine (*Pinus palustris*) – turkey oak (*Quercus laevis*) sandhills, sand pine (*Pinus clausa*) scrub, scrubby pine (*Pinus* spp.) flatwoods, and old fields on former sandhill sites (Franz 1992). Florida pine snakes are extremely fossorial, seeking out the tunnel systems of pocket gophers (*Geomys pinetis*), and, to a lesser extent, gopher tortoise (*Gopherus polyphemus*) burrows. Two radio-tracked females exhibited home ranges of

27.5 and 30 acres, and 3 males used areas 2-8 times larger in size (Franz 1992).

Available occurrence databases contain no records of Florida pine snakes on or near the Property. FWC habitat models (Cox et al. 1994, Endries et al. 2008) indicate that the Property was not mapped as potentially suitable habitat for Florida pine snakes, nor were there areas of potentially suitable habitat in the landscape surrounding the Property. It is unlikely that Florida pine snakes occur on the Property based on the absence of the xeric vegetation types preferred by this species.

Gopher Frog:
The gopher frog (*Rana capito*) is listed as a species of special concern by FWC but is not listed as a threatened or endangered species by USFWS. The Property is within the range of the gopher frog as mapped by Godley (1992). The distribution of gopher frogs seems to be restricted to that of gopher tortoises (*Gopherus polyphemus*) (Godley 1992). Gopher frogs typically occur in native, xeric, upland habitats, particularly longleaf pine (*Pinus palustris*) – turkey oak (*Quercus laevis*) sandhills which often support the densest populations of gopher tortoises. However, gopher frogs are also known from pine (*Pinus* spp.) flatwoods, sand pine (*Pinus clausa*) scrub, xeric hammocks, and the early successional stages of these communities. Preferred breeding habitats include seasonally flooded, grassy ponds and cypress heads that lack fish populations (Godley 1992). Gopher frogs will disperse up to 1.0 mile from breeding ponds to occupy gopher tortoise burrows, but they may also occupy a variety of other retreats including the burrows of rodents and crayfish, stump holes, and other crevices (Godley 1992).

There are no occurrence database records of gopher frogs on the Property, and FWC habitat models (Endries et al. 2008) indicate that it was not mapped as potentially suitable habitat for gopher frogs. However, there is a moderate likelihood that gopher frogs may occur on the Property based the observations of gopher tortoise burrows.

Frosted Flatwoods Salamander:
The frosted flatwoods salamander *(Ambystoma cingulatum)* is listed as a T species by the USFWS. The Property is near the eastern edge of the range of the frosted flatwoods salamander as mapped by Ashton (1992). The frosted flatwoods salamander inhabits fire-maintained, open-canopied longleaf pine (*Pinus palustris*) and slash pine savannas and flatwoods on the southeastern coastal plain (Ashton 1992, Means et al. 1996, Palis 1997). Breeding sites include pine flatwoods depressions such as cypress- or blackgum- (*Nyssa sylvatica* var. *biflora*) dominated swamps, graminoid-dominated depressions, roadside ditches, and borrow pits that are generally devoid of large predatory fishes. Management of ephemeral wetlands for herbaceous cover and an open canopy may improve breeding habitat for flatwoods salamanders (Gormon et al. 2009). Adults migrate to breeding sites between October and December and lay eggs on various substrates prior to wetlands filling with water in response to winter rains (Palis 1997). Breeding ponds

range in size from 0.05 - 23.5 acres and generally are <1.6 feet deep (Palis 1996). Post-larval flatwoods salamanders are fossorial, often occupying crayfish (*Procambarus* spp.) burrows, and inhabit mesic pine-wiregrass (*Aristida stricta*) flatwoods and savannas with little to no midstory and an open overstory in the uplands surrounding breeding ponds. Movements of 1.1 miles have been recorded away from breeding ponds and into surrounding pine flatwoods (Ashton 1992), and movements of 985-1,640 feet away from breeding ponds have also been reported (Means et al. 1996). Home range sizes of 0.37 acre have been reported (Ashton 1992), and approximately 2,500 acres of terrestrial habitat surrounding a breeding site is probably needed to sustain a breeding population (Palis 1997). The principal threats to flatwoods salamander populations are habitat destruction as a result of agricultural and silvicultural practices (e.g., clearcutting, mechanical site preparation including bedding), hydrological alteration, fire suppression, and residential and commercial development (Means et al. 1996, Palis 1997).

Available databases contain no records of frosted flatwoods salamanders occurring on or near the Property, which was not mapped as potentially suitable flatwoods salamander habitat by FWC (Endries et al. 2009). Moreover, the Property is outside the documented range of this species, and intensive silvicultural operations have likely eliminated preferred habitats for this species. Frosted flatwoods salamanders are unlikely to occur on the Property.

Striped Newt:

The striped newt *(Notophthalmus perstriatus)* is not listed as a T or E species or a SSC by either the FWC or USFWS. However, the USFWS recently determined in their 12-month finding published on June 7, 2011, that listing of the striped newt as E or T is warranted under the ESA. Striped newts were added to the candidate species list with the publication of the 12-month finding, but for the time being USFWS is precluded from taking further action due to limited resources. The Property is within the range of the striped newt as mapped by Christman and Means (1992). The preferred habitat of striped newts is longleaf pine – turkey oak (*Quercus laevis*) sandhills with an intact ground cover containing wiregrass, but this species is also found in scrub and scrubby flatwoods habitats (Christman and Means 1992, USFWS 2011). Striped newts have long life spans (approximately 12 - 15 years) and a complex life history. They breed exclusively in small (typically less than 12.4 acres), isolated, ephemeral ponds that lack predaceous fish and are interspersed in and surrounded by xeric upland habitats (USFWS 2011). Maidencane has been found at ephemeral ponds where striped newts have been found, and seems to be a good indicator of previous extent of flooding in ponds (LaClaire and Franz 1990, LaClaire 1995).

Striped newts occupy terrestrial habitats at considerable distances from breeding ponds. Striped newts have been observed to have moved up to 2,330 feet from ponds into surrounding uplands (Dodd and Cade 1998), and Dodd (1996) found that only 28 percent of amphibians were captured >1,300 feet from wetlands. Johnson (2003) recommended a protected area

extending 3,280 feet from breeding sites as upland "core habitat" surrounding breeding ponds. Striped newts form metapopulations that persist in isolated fragments of longleaf pine-wiregrass ecosystems, with ponds functioning as focal points for local breeding populations (Johnson 2001, Johnson 2005). Maintaining connectivity between uplands and breeding ponds of diverse hydroperiods is essential for striped newts to recolonize local breeding ponds and maintain metapopulation viability (Johnson 2005, Dodd and Johnson 2007). The principal threats to striped newts have been identified as conversion of natural habitats to intensively managed pine plantations; loss of habitat to urban development; and degradation of habitat due to fire suppression, off-road vehicle use, and road construction (USFWS 2011).

Available databases contain no records of occurrence of striped newts within the Property, and FWC habitat models (Endries et al. 2009) did not map the property as potentially suitable habitat for striped newts. It is unlikely that striped newts occur within the Property based on the absence of documented occurrences, FWC models that indicate that the Property apparently does not support suitable habitats, and because intensive silvicultural operations have likely eliminated preferred habitats for this species.

A.4.1.2 Birds

Bald Eagle:

The bald eagle *(Haliaeetus leucocephalus)* is protected by the USFWS under provisions of the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (effective August 9, 2007). Recovery goals have been achieved for this species; therefore, the bald eagle is no longer listed or protected as a T species under the U.S. ESA of 1973, as amended. The USFWS has implemented National Bald Eagle Management Guidelines (National Guidelines) (May 2007) to assist private landowners and others plan land-use activities in proximity to active bald eagle nests by measures that will minimize the likelihood of causing "disturbance" to nesting bald eagles, as defined under the BGEPA. The FWC also removed the bald eagle from classification and protection as a T species under Florida Rule and implemented a Florida Bald Eagle Management Plan (Florida Plan) (effective May 9, 2008). The Florida Plan includes Florida Bald Eagle Management Guidelines (Florida Guidelines) and permit provisions. We will coordinate with both the USFWS and FWC for guidance prior to undertaking any activity that may result in "disturbance" of nesting bald eagles.

The FWC Bald Eagle Nest Database was reviewed to determine the locations of all nests that occur on or in close proximity to the Property. The FWC database contains no records of bald eagle nests on or within 660 feet of the Property. The nearest recorded bald eagle nest is No. NA001, which is located approximately 5.1 miles southeast of the Property, was last surveyed in 2010 and was determined active at that time.

No bald eagle nests were observed during preliminary field studies. However, a juvenile bald eagle was observed near the large borrow area lake within the southeastern portion of the Property. Large pine trees suitable for nesting exist within several large areas of hydric pine flatwoods (625), and large strands of mixed forested wetlands (630). Due to the presence of large pine trees suitable for nesting, the presence of potential foraging habitat (i.e., large borrow area lakes), and the proximity of the Property to a large body of water (approximately2.5 miles from the Nassau River), the likelihood of a nest occurring on the Property is moderate.

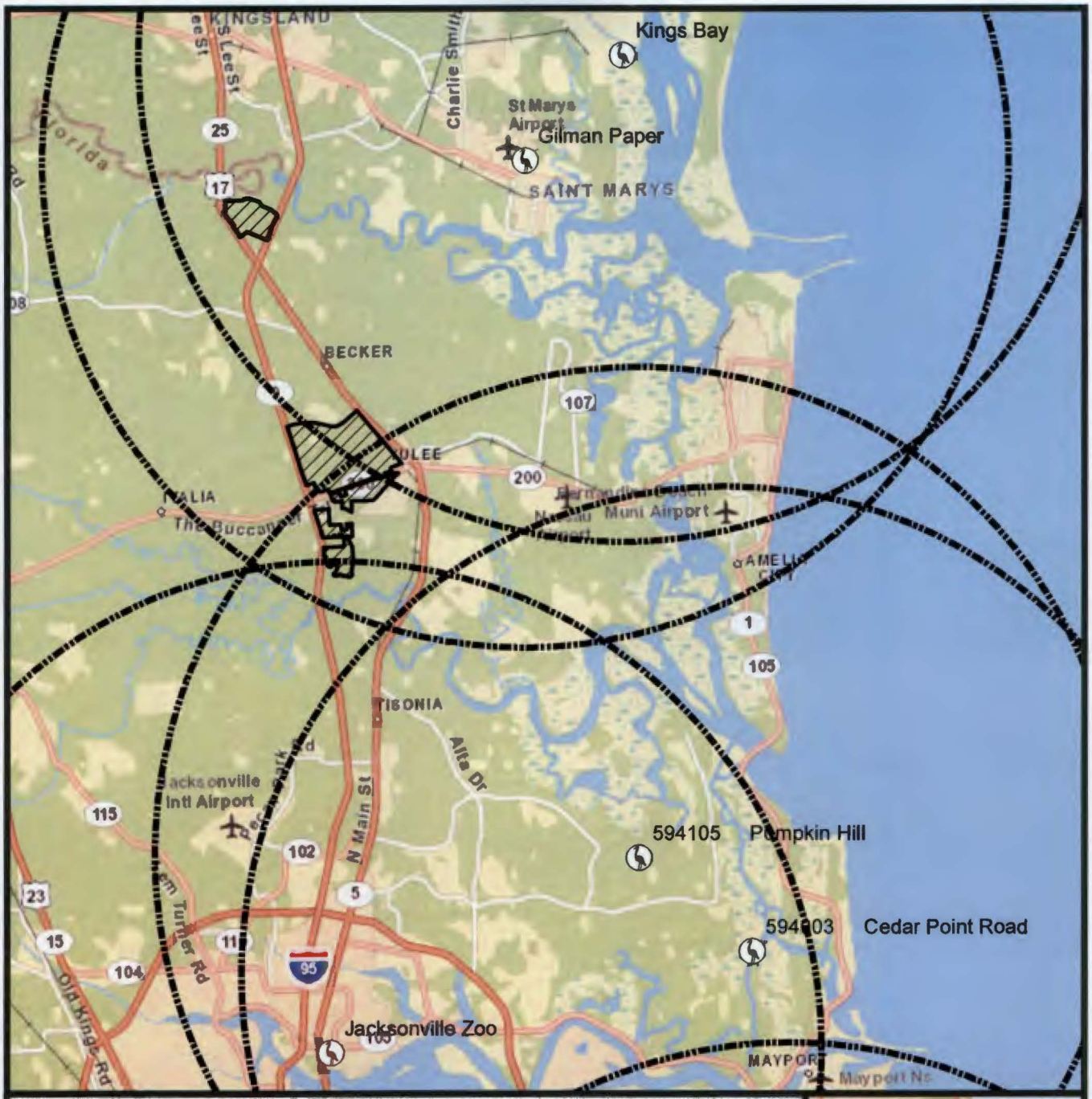
Wood Stork:

The wood stork *(Mycteria americana)* is listed as an E species by USFWS. There are no records of a wood stork nesting colony on the Property based on the most recent FWC statewide survey in 1999 and based on data available from USFWS through 2009. Wood storks typically return to the same rookery sites each year to nest (Ogden 1996). Although wood storks in south Florida will travel up to 18.6 miles from rookeries to forage in wetlands and return food to incubating adults and nestlings during the nesting season (Cox et al. 1994), wetlands within 13 miles of known rookeries are considered by USFWS to comprise Core Foraging Areas for nesting wood storks within the area of north Florida where the Property is located.

The UF database of wood stork nesting colonies through 2010 contains records of two colonies in Florida and one colony in southeast Georgia within 13 miles of the Property (Figure A4.1). The Pumpkin Hill colony (number 594105) is located ~ 11.9 miles southeast of the central parcel of the Property. Wetlands in the southern third of the central parcel are within the USFWS-designated Core Foraging Area for this rookery. Numbers of wood stork nests in the Pumpkin Hill colony since 2002 were as follows: 2009 – not active; 2008 – 22 nests; 2007 – not active; 2006 – not active; 2005 – 42 nests; 2004 – not active; 2003 – 120 nests; and 2002 – 45 nests. The following table summarizes nesting records for nesting colonies within 13 miles of the central and southern parcels, for the period from 2006 through 2010:

Rookery							Distance	
Number	Name	2010	2009	2008	2007	2006	Miles	Direction
594105	Pumpkin Hill	0	ND	75	0	0	10.7	SE
-	Jacksonville Zoo	150	88	86	47	ND	12.6	S
SNN 243	Gilman Paper (GA)	310	220	230	80	110	10.7	NE

In addition, the UF database contains records of three colonies in southeast Georgia within 13 miles of the northern parcel of the Property(Figure A4.1). Nesting records in these colonies for the period from 2006 through 2010 are as follows:



Legend

- Project Site
- Wood Stork Nesting Colony
- Core Foraging Area (13 Miles)

Sources: DSAP 1 boundary received from Barry J. Wilcox, AICP, LEED Green Associate; VHB, Inc. (2012-02-03). Wood stork nesting colony locations and Core Foraging Area boundaries obtained from USFWS, UF, or modeled by BDA. Streets base map obtained online from ESRI.

FIGURE A4.1
WOOD STORK NESTING COLONIES AND CORE FORAGING AREAS NEAR THE EAST NASSAU DSAP 1 PROJECT SITE, NASSAU COUNTY, FLORIDA

BDA BREEDLOVE, DENNIS & ASSOCIATES, INC.
Environmental Consultants
330 W. Canton Ave., Winter Park, FL 32789 • 407-677-1882

RSK • 2012-02-13 • P:\ATG:\2004099\BDA_Use\DSAP\Wood_Stork\ARGIS\2004-099 - DSAP1 Wood Stork Figure A4.1.mxd

Rookery							Distance	
Number	Name	2010	2009	2008	2007	2006	Miles	Direction
SNN 245	Rayland (GA)	0	0	0	0	0	6.1	N
SNN 246	Kings Bay (GA)	0	0	0	0	135	10.2	NE

This information indicates that consultation with USFWS will be necessary if proposed activities affect wetlands on the Property. Wood storks also may forage in on-site wetlands outside of the breeding season if hydrologic conditions are suitable. This information indicates that there is a high likelihood that wood storks may occur on the Property during the nesting season.

Wading Bird Rookeries (1999):

The FWC wading bird rookery database from the 1999 statewide survey contains no records of rookeries used by other protected species of wading birds on the Property, but there are records of two wading bird rookeries within 9.3 miles of the Property. These rookeries were not active in the 1999 statewide survey, but they were active during the 1987-1988 surveys when nests were recorded of snowy egrets (*Egretta thula*) and little blue herons (*Egretta caerulea*), both of which are protected as SSC by FWC. Protected species of wading birds, other than wood storks, will fly up to 9.3 miles from the nesting site to forage in wetlands and return food to incubating adults and nestlings (Cox et al. 1994). Wetlands within 9.3 miles of the rookeries of protected species of wading birds are considered important to wading bird nesting success.

The wetlands on the Property may be important to the nesting success of protected species of wading birds based on past records of nesting within normal foraging distances for wading birds and because wading birds have a tendency to establish new undocumented nesting sites in response to changing hydrologic conditions. Protected species of wading birds may be expected to forage in on-site wetlands during other times of the year if hydrologic conditions are suitable. No wading birds were observed during preliminary field studies within the Property. However, other waterfowl and wading birds (e.g., lesser scaup (*Aythya affinis*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*)) were observed within the borrow area lakes/marsh system on the western side of the Property. The freshwater marsh and emergent vegetation associated with the borrow lakes may provide potentially suitable foraging habitat for protected wading bird species.

Limpkin:

The limpkin *(Aramus guarauna)* is listed as a SSC by the FWC. The Property is within the range of limpkins as mapped by Bryan (1996). Limpkins are found

along the wide and well-vegetated shallows of rivers and streams statewide; around lakes in peninsular Florida; and in marshes, broad swales, strand swamps, sloughs, and impoundments in south Florida. The range of the limpkin is almost identical with that of the Florida applesnail (*Pomacea paludosa*), the primary food item in the diet of limpkins (Bryan 1996). Nests are constructed in a wide variety of situations, including slowly sinking aquatic vegetation, among tall marsh grasses, between the knees of bald-cypress, in vine-covered shrubs, in the tops of cabbage palms, and on high cypress branches. Limpkins typically occupy exclusive territories in riparian habitats that abut linearly along rivers and lake edges during nesting season (Bryan 1992). Territories average 1.93 acres in size during high population years and 9.39 acres in more normal years (Bryan 1992).

The eastern third of the central parcel of the Property is within a Breeding Bird Atlas block (Kale et al. 1992) in which limpkins were confirmed to have nested in the late 1980s and early 1990s. FWC habitat models indicate that the forested wetlands within this parcel drain to the east to Lofton Creek were mapped as potentially suitable habitat for limpkins (Endries et al. 2009).

The northern parcel of the Property is ~ 4.4 miles northwest of a BBA block with a record of confirmed nesting. FWC habitat models indicate that the forested wetlands along the northern border of the Property were mapped as potentially suitable habitat for limpkins (Endries et al. 2009). The southern parcel is ~ 1.2 miles southwest of a BBA block with a record of confirmed nesting. FWC habitat models indicate that the forested wetlands along a narrow stream draining the southwestern portion of the Property were mapped as potentially suitable habitat for limpkins (Endries et al. 2009). There is a moderate likelihood that limpkins occur on the Property based the presence of potentially suitable wetlands habitats in relatively close proximity to an area with confirmed nesting records.

Florida Sandhill Crane:
The Florida sandhill crane (*Grus canadensis pratensis)* is listed as T by the FWC. The Florida sandhill crane is a resident, breeding, non-migratory subspecies of sandhill crane (*Grus canadensis*). The greater sandhill crane (*Grus canadensis tabida*) also occurs in Florida as a wintering migrant, arriving in Florida during October and November and beginning spring migration in late February (Stys 1997). Florida sandhill cranes nest in shallow, emergent palustrine wetlands, particularly those dominated by pickerelweed (*Pontederia cordata*) and maidencane. They feed in a variety of open, upland habitats, mostly prairies, but also human-manipulated habitats such as sod farms, ranchlands, pastures, golf courses, airports, and suburban subdivisions (Nesbitt 1996, Wood 2001). Home ranges of individual pairs overlap with those of adjacent pairs, and average approximately 1,100 acres. Core nesting territories within home ranges vary from approximately 300 acres to 625 acres and are aggressively defended from other cranes (*Grus* sp.) (Wood 2001).

No Florida sandhill cranes were observed during preliminary field studies. However, portions of the borrow area lakes on the eastern side of the Property contain freshwater marsh that may provide potentially suitable nesting habitat for sandhill cranes. Therefore, a moderate likelihood exists that Florida sandhill cranes may nest or forage within the Property.

Red-cockaded Woodpecker:

The red-cockaded woodpecker *(Picoides borealis)* is listed as an E species by USFWS. The Property is within the USFWS consultation area for red-cockaded woodpeckers, and it is within the range of the species as mapped by Wood (2001). Nesting habitat for this species consists of open old-growth pine forests >60-80 years old (USFWS 2003). Stands of pines >50 years of age comprise preferred foraging habitat, and red-cockaded woodpeckers usually forage within 0.5 mile of cavity trees (USFWS 2003). Average home range size of red-cockaded woodpeckers in central Florida has been reported as 319 acres (Delotelle et al. 1995). Female red-cockaded woodpeckers usually disperse no further than two miles to establish territories of their own in areas where populations are dense, but in areas where populations are sparsely distributed females may disperse up to 15 miles (USFWS 2003).

FWC and FNAI databases contain no records of red-cockaded woodpecker groups on or near the Property, which was not mapped as potentially suitable habitat for this species by FWC (Endries et al. 2009). The nearest record of red-cockaded woodpecker cavity trees is on a private parcel of land 13.5 miles northwest of the Property. Young pine plantations characterized by high stocking density dominate the uplands on the Property, and habitat conditions on the Property are unsuitable for red-cockaded woodpeckers. The Property is beyond normal foraging and dispersal distances from other known red-cockaded woodpecker cavity trees, and the landscape between known cavity trees and the Property is a mosaic of pine plantations and forested wetlands, making it unlikely that dispersing red-cockaded woodpeckers could reach the Property. It is unlikely that red-cockaded woodpeckers occur within the Property based on the lack of suitable habitat conditions, the disturbed nature of the surrounding landscape, and the distance between the Property and known red-cockaded woodpecker cavity trees.

Southeastern American Kestrel:

The southeastern American kestrel *(Falco sparverius paulus)* is listed as T by FWC. Two subspecies of American kestrels occur in Florida, the eastern American kestrel (*F. s. sparverius*) and the southeastern American kestrel. The eastern kestrel winters in Florida, arriving in September and leaving in the early spring months of March-April (Stys 1993). Southeastern and eastern kestrels co-occur in Florida during the winter, during which time they are virtually indistinguishable in the field. Surveys intended to determine the presence of resident kestrels should be conducted between April and August, and surveys for nesting kestrels ideally would be conducted in April or May (Stys 1993, Wood 2001). Southeastern kestrels are secondary cavity nesters, typically using cavities excavated by other species in trees or snags.

Southeastern kestrels occasionally nest in human structures such as utility poles (Wood 2001). Kestrels feed in open areas, such as croplands, pasture, and open pine woods that are adjacent to nest sites. Home ranges around nest sites range 125-800 acres (Stys 1993, Wood 2001).

Available occurrence databases contain no records of southeastern kestrels on or near the Property, and FWC habitat models (Endries et al. 2009) indicate that the Property does not contain potentially suitable habitat for southeastern American kestrels. A record of nesting kestrels in the Florida Breeding Bird Atlas (BBA; Kale et al. 1992) block is located ~3.2 miles south of the northern parcel of the Property. Also, ~400 feet west of the southern parcel of the Property is a BBA block in which kestrels were confirmed to have nested in the late 1980s and early 1990s. The likelihood of occurrence is moderate for this species, based on the proximity of the Property to an area with a confirmed nesting record and the potential presence of wetland snags that could serve as nesting cavities in close proximity to open clearcut areas that could be used for foraging. Also supporting this designation is the presence of potentially suitable foraging habitat (i.e., open herbaceous cover adjacent to wooded areas) within on-site utility easements, and the presence of potentially suitable nesting sites (i.e., wooden utility poles) within the easements in the central parcel of the Property.

A.4.1.3 Mammals

Florida Black Bear:

The Florida black bear *(Ursus americanus floridanus)* is a wide-ranging omnivore that is listed as T by the FWC. Florida black bears are dependent on forest vegetation, but are not limited to specific forest types (Eason 2003). Forested wetlands provide optimal habitat, but any forested areas of large size with diverse foods and dispersed cover can support bears. Home range sizes vary but average approximately 9,200 acres for females and 39,700 acres for males (Eason 2003). Male Florida black bears have been reported moving distances of 13.7 – 87.0 miles and females have been reported moving 8.7 - 47.9 miles (Maehr et al.1988, Wooding and Hardiskey 1988, Wooding et al. 1992, Maehr 1997). Individuals tend to be solitary, except for females with young and groups at abundant food sites, but Florida black bears tolerate considerable range overlap (Eason 2003). Reserves ranging in size from 494,200–998,400 acres have been recommended as necessary to support viable populations of black bears (Cox et al. 1994, Kautz and Cox 2001). Although black bears historically ranged throughout Florida, the current range generally consists of the natural and semi-natural landscapes surrounding large parcels of public land throughout the state. Black bear habitat has been mapped as Primary Range and Secondary Range (Simek et al. 2005). Primary Range was defined as areas with evidence of females and reproduction, and factors such as habitat, general bear use, and roadkill records were used to refine range boundaries. Secondary Range was defined as areas outside of Primary Range where general bear use has been

documented by nuisance calls, sightings, and roadkill records, but evidence of females or reproduction has not been confirmed.

FWC databases contain very few records of black bear presence in the landscape surrounding the Property. There is one record of a roadkilled black bear from 1988 on SR A1A approximately 0.35 miles west of the Property, and there is one undated record of a nuisance bear in Yulee approximately 0.25 miles east of the Property. The Property is approximately 34 miles east of the Primary Range of the Osceola black bear population and is approximately 33 miles northeast of the Secondary Range of the Ocala population as mapped by FWC (Simek et al. 2005). The entire Property and most of the surrounding landscape was mapped as potentially suitable habitat for black bears by FWC (Endries et al. 2009) because the area possesses land cover characteristics similar to areas where black bears are known to occur. Despite the two records of roadkilled and nuisance bears near the Property and the presence of potentially suitable habitat on and surrounding the Property, available data indicate that the Property is not in an area known to support a sustainable bear population. Therefore, it is unlikely that black bears regularly occur on the Property.

Therefore, it is unlikely that black bears regularly occur on the Property, but the possibility exists that Florida black bears could occasionally reach the Property as they disperse from Primary and Secondary ranges to the west and southwest.

Sherman's Fox Squirrel:

Sherman's fox squirrel (*Sciurus niger shermanii*)is listed as a species of special concern by FWC but is not listed as a threatened or endangered species by USFWS. The Property is within the range of Sherman's fox squirrels as mapped by Kantola (1992) and Wood (2001). Optimal fox squirrel habitat has been characterized as mature, fire-maintained longleaf pine (*Pinus palustris*) - turkey oak (*Quercus laevis*) sandhills and pine (*Pinus* spp.) flatwoods by Kantola (1992). Preferred habitat has also been described as mature and open pine and pine-hardwood associations by Edwards and Guynn (2003). Sherman's fox squirrels are diurnal, solitary animals whose home ranges may overlap, but separate core home range areas are maintained (Kantola 1992). Male and female home ranges average 196 acres and 82 acres, respectively (Wooding 1997). Due to relatively low population densities and large home range sizes, preserves of at least 5,000-10,000 acres have been recommended as necessary to support viable populations (Kantola 1986, Cox et al. 1994). Available databases contain no occurrence records from the Property, and FWC habitat models (Endries et al. 2009) did not map the Property as potentially suitable for Sherman's fox squirrels. It is unlikely that Sherman's fox squirrels occur on the Property due to the absence of the open mature forest habitats required by this species.

A.4.2 Protected Plant Species

No protected plant species were observed during preliminary field studies within the Property. The FWC WILDOBS database contains no records of rare and imperiled species of wildlife on or near the Property. The FNAI natural heritage database contains no records of rare or imperiled plants, animals, and natural communities on or near the Property.

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Appendix B
Transportation Analysis

B.1 Summary

This report presents the transportation analysis completed for the East Nassau Community Planning Area (ENCPA). The ENCPA is defined as 24,000 acres in Nassau County, generally located east of Interstate 95 and north of State Road 200/A1A.

The transportation analysis is intended to support the Detailed Special Area Plan (DSAP) submittal to Nassau County. The DSAP requires the following:

- List of transportation improvements to support development
- How those improvements will be funded

A transportation mobility approach was used to integrate the land use planning for the DSAP with the transportation system to support the area. The benefit of this approach is a more efficient transportation system. The mobility approach promotes the use of transportation options such as walking, bicycling and transit, and employs land use design standards to ensure that these options are viable. The transportation mobility approach accounts for the following elements:

- **Balance of housing and employment** – Per the approved ENCPA Sector Plan, the overall development program levels were identified to maintain a balance between housing units and employment square footage. In addition to strengthening the employment base for Nassau County, this balance maximizes the internal capture for the ENCPA and reduces impacts on surrounding roadways.
- **Mix of residential and non-residential land uses** – Each of the residential neighborhoods contains non-residential land uses such as small-scale retail, office, and schools. These uses are located within and adjacent to residential areas, allowing many of these trips to occur by walking or bicycling. The Employment Center and Regional Center areas contain similar requirements for maintaining a mix of uses and incorporating residential and civic uses.
- **Interconnected network of local streets** – The Sector Plan also provides guidelines for local streets to ensure that they form a connected system between and within neighborhoods. This reduces the need for internal traffic to use the primary street network.

- **Internal trails network** – The ENCPA is proposed to contain approximately 50 miles of multi-use trails that can accommodate pedestrians, bicyclists and golf carts. Within the DSAP area, 10 miles of trails are planned.
- **Transit-Oriented Development (TOD)** – As part of long-range plans for the First Coast region, commuter rail connecting Nassau County and downtown Jacksonville has been identified for the CSX and First Coast Railroad corridors. The ENCPA plan incorporates opportunities for TOD along the First Coast Railroad located next to US 17.

The remainder of this Appendix addresses the following:

- Existing Conditions and Level of Service
- Future Conditions (2035) Baseline Analysis without Project
- ENCPA Transportation Network and Development Program
- ENCPA Analysis Results and Recommended Mobility Improvements
- Employment Center DSAP Recommended Mobility Improvements

B.2 Existing Conditions

The following is a description of the existing primary roadways in the study area:

Interstate 95 generally serves as the western boundary of the ENCPA and connects Nassau County to Duval County to the south and Georgia to the north. Interstate 95 currently has two interchanges within Nassau County that bracket the ENCPA – one at US 17 to the south and the other at SR 200/A1A to the south. Interstate 95 currently has six lanes through Nassau County and is under the jurisdiction of FDOT.

SR 200/A1A is the primary east-west arterial roadway in Nassau County, connecting Interstate 95 to the population centers of Fernandina Beach and Amelia Island to the east. To the west of Interstate 95, SR A1A extends to the rural community of Callahan. SR A1A serves as the southern boundary for the of the Employment Center portion of the DSAP. SR 200 is currently a four-lane divided roadway and is under the jurisdiction of FDOT.

US 17 is a rural arterial roadway that, similar to Interstate 95, connects Duval County to the south with Georgia to the north. US 17 serves as the eastern boundary for the Employment Center portion of the DSAP. US 17 currently has two lanes through the ENCPA and is under the jurisdiction of FDOT. A rail corridor borders US 17 on the east.

Pages Dairy Road is a two-lane local roadway that parallels SR A1A between US 17 and Chester Road. The roadway provides access to adjacent residential areas, with some portions of the overall ENCPA fronting directly onto it. Pages Dairy Road is currently a two-lane roadway with a rural cross section. The roadway is under the jurisdiction of Nassau County.

Chester Road is a local collector roadway that forms the eastern boundary for the overall ENCPA. The roadway extends from SR A1A north to Blackrock Road and intersects with Pages Dairy Road. Chester Road currently has two lanes and is under the jurisdiction of Nassau County.

County Road 108 (CR 108) is a rural roadway that extends from US 17 west under Interstate 95 to the town of Hilliard. CR 108 currently has two lanes and is under the jurisdiction of Nassau County.

William Burgess Boulevard is a local roadway south of SR A1A that connects US 17 to SR A1A. The Nassau County Courthouse and Florida State College at Jacksonville complexes are located along the corridor. William Burgess Boulevard provides the primary access to the southern portion of the DSAP. William Burgess Boulevard currently has two lanes and is under the jurisdiction of Nassau County.

In addition to these primary roadways, other roadway segments were included in the analysis for consistency with the Comprehensive Plan Amendment analysis completed by Nassau County for the ENCPA.

Table B-1 summarizes the existing conditions for the study area roadways, including number of lanes, daily volumes and Level of Service (LOS). The traffic counts shown are from FDOT and Nassau County. ***Table B-1*** shows that two segments currently do not meet the County's adopted Level of Service standard for daily conditions:

- SR A1A from US 17 to Chester Road
- SR A1A from Chester Road

As discussed in the next section, both segments are funded for widening to six lanes within the next five years.

It should be noted that Nassau County updated its roadway LOS standards in 2011, utilizing the provisions of HB 7207. Although SR A1A is part of the FDOT Strategic Intermodal System, the County is now able to establish the LOS standard for the roadway.

The analysis in ***Table B-1*** assumes an Urban Area Type for Interstate 95 and all roads to the east to account for the planned development and urbanization of the area through implementation of the ENCPA. The analysis presented is based on daily conditions instead of peak hour conditions, which is consistent with the mobility approach used by other jurisdictions such as Duval County and Alachua County.

Table B-1
Existing Roadway Volumes and Level of Service

Nassau Co. Link ID	FDOT Count Location	Roadway	From/To	AADT	Count Year	Number of Lanes	Adopted LOS Standard	Service Volume (2)	Meets Standard?
40	729923	I-95	Duval County Line to SR 200/A1A	59,913	2011	6D	D	110,300	Yes
41A	740158	I-95	SR 200/A1A to E-W Interchange Rd.	47,500	2011	6D	D	110,300	Yes
41B	740158	I-95	E-W Interchange Rd. to US 17	47,500	2011	6D	D	110,300	Yes
42	740132	I-95	US 17 to GA State Line	55,077	2011	6D	D	110,300	Yes
43/43A	745022	SR 200/A1A	Griffen Rd. to I-95	10,500	2011	4D	D	58,800	Yes
44	740182	SR 200/A1A	I-95 to Old Yulee Rd.	18,498	2011	4D	D	64,300	Yes
44A	740182	SR 200/A1A	Old Yulee Rd. to US 17	18,498	2011	4D	D	36,700	Yes
45/45A	740101	SR 200/A1A	US 17 to Chester Rd.	38,500	2011	4D	D	36,700	NO
46	740105	SR 200/A1A	Chester Rd. to Blackrock Rd.	37,500	2011	4D	D	36,700	NO
47/48	740103	SR 200/A1A	Old Nassauville Rd. to Amelia Island Parkway	40,000	2011	4U	D	64,300	Yes
49		CR 200A/Pages Dairy Rd.	US 17 to Chester Rd.	3,004	2009	2U	D	16,500	Yes
50		CR 107N/Blackrock Rd.	Chester Rd. to SR 200/A1A	2,700	2009	2U	D	16,500	Yes
51		CR 107S/Old Nassauville Rd.	SR 200/A1A to Amelia Concourse	6,403	2009	2U	D	16,500	Yes
51A		CR 107S/Old Nassauville Rd.	Amelia Concourse to Santa Juana Rd.	6,730	2009	2U	D	16,500	Yes
51B		Roses Bluff Rd.	Chester Rd. to west	1,597	2009	2U	D	16,500	Yes
52		Chester Rd.	SR 200/A1A to Pages Dairy Rd.	7,931	2009	2U	D	16,500	Yes
53A		Chester Rd.	Pages Dairy Rd. to Goodbread Rd. Extension	N/A	N/A	2U	D	16,500	N/A
53B		Chester Rd.	Goodbread Rd. Extension to Blackrock Rd.	6,637	2009	2U	D	16,500	Yes
53A		Amelia Concourse	SR 200/A1A to CR 107S (Nassauville Rd.)	7,211	2009	4D	D	16,500	Yes
54		Barnwell Rd.	SR 200/A1A to Oyster Bay Dr.	3,251	2009	2U	D	16,500	Yes
54A		Miner Rd.	Haddock Rd. to SR 200/A1A	7,070	2009	2U	D	16,500	Yes
55	740011	US 17	Duval County Line to Harts Rd.	10,800	2011	2U	D	22,200	Yes
56	740011	US 17	Sowell Rd. to SR 200/A1A	10,800	2011	4D	D	36,700	Yes
57	740104	US 17	SR 200/A1A to Pages Dairy Rd.	12,800	2011	4D	D	36,700	Yes
58A	740104	US 17	Pages Dairy Rd. to E-W Interchange Rd.	12,800	2011	2U	D	16,500	Yes
58B	745020	US 17	E-W Interchange Rd. to CR 108/Goodbread Rd.	10,500	2011	2U	D	16,500	Yes
59	745020	US 17	CR 108/Goodbread Rd. to I-95	10,500	2011	2U	D	21,100	Yes
60	740162	US 17	I-95 to GA State Line	2,900	2011	2U	D	21,100	Yes
60A/60B		Harts Rd	US 17 to Haddock Rd.	3,785	2009	2U	D	22,200	Yes
62		William Burgess Blvd.	SR 200/A1A to Harts Rd.	1,192	2006	2U	D	16,500	Yes
	742001	I-95/SR A1A Interchange (2)	NB I-95 to SR A1A Off-ramp	6,500	2011	1L	D	11,100	Yes
	742003		SR A1A to NB I-95 On-ramp	2,600	2011	1L	D	11,100	Yes
	742002		SB I-95 to SR A1A Off-ramp	2,000	2011	1L	D	11,100	Yes
	742000		SR A1A to SB I-95 On-ramp	6,700	2011	1L	D	11,100	Yes
	742004	I-95/US 17 Interchange (2)	NB I-95 to US 17 Off-ramp	700	2011	1L	D	11,100	Yes
	742005		US 17 to NB I-95 On-ramp	2,800	2011	1L	D	11,100	Yes
	742007		SB I-95 to US 17 Off-ramp	2,600	2011	1L	D	11,100	Yes
	742006		US 17 to SB I-95 On-ramp	650	2011	1L	D	11,100	Yes

(1) Capacity values from the FDOT Quality/Level of Service Handbook.
(2) Capacity values for ramps estimated as half the value for a 2-lane uninterrupted flow facility.
Sources: FDOT Traffic Online for SR A1A, US 17 and Interstate 95; Nassau County Local Roads Traffic Counts (2009) for all others

B.2.1 Programmed (Short-Term) Roadway Improvements

Improvements to SR A1A and Chester Road are currently in the adopted FDOT Five-Year Work Program. ***Table B-2*** summarizes these improvements along with their funding commitments and implementation timeframe. The widening of SR A1A from four to six lanes between US 17 and Chester Road is funded for construction in FY 2016 (Item #210712-4 in the table). These limits include the two segments currently operating over capacity.

The segment of SR A1A around the US 17 intersection (Item #210712-3) is programmed for construction in FY 2014.

The segment of SR A1A immediately east of Interstate 95 adjacent to the DSAP (Item #210711-2) is programmed for construction in FY 2017.

West of Interstate 95, the final phases of the SR A1A widening from two to four lanes are being completed this fiscal year (Item #210687-3 in the table).

In addition to these segments of SR A1A, the widening of Chester Road from two to four lanes is also in the adopted Work Program (Item 426031-2). The northern limit for this improvement is Green Pine Road, which corresponds to the planned connection point for the CR 108 Extension.

With the inclusion of these improvements in the Work Program, they will be constructed sooner than if tied to development activity within the ENCPA as part of the Mobility Network. The inclusion of the improvements to SR A1A and Chester Road in the Work Program also allows mobility fee funds received in the short term to go towards other improvements.

B.2.2 Planned (Long-Term) Roadway Improvements

Table B-3 lists the long-term roadway improvements for Nassau County that are in the adopted North Florida TPO Long Range Plan. These improvements were identified in 2009 as cost feasible based on existing revenue sources at that time.

Of the improvements included on the list, the widening of SR 200/A1A and Chester Road have already received funding commitments, as shown in Table B-2 and discussed above. Additional improvements within the study area include commuter rail service between Yulee and downtown Jacksonville.

Table B-2
Programmed Five-Year Roadway Improvements

FDOT Item No.	Roadway and Limits	Description	Phase	Year	Funding
210712-3	SR 200/A1A from W. of Still Quarters Rd. to W. of Rubin Lane	Add Lanes	Preliminary Engineering	2012	$ 8,600
			Right of Way	2012-2013	$ 14,646,122
			Construction	2014	$ 14,681,614
			Construction Support	2014-2016	$ 1,997,425
210711-2	SR 200/A1A from I-95 to W. of Still Quarters Rd	Add Lanes	Preliminary Engineering	2012-2013	$ 368,236
			Right of Way	2012-2013	$ 3,351,033
			Railroad And Utilities	2017	$ 3,000,000
			Construction	2017	$ 35,280,000
			Environmental	2017	$ 300,000
			Construction Support	2017	$ 6,767,880
210687-3	SR 200/A1A from Stratton Rd. to Griffin Rd.	Add Lanes	Design Build	2012	$ 643,146
			Construction Support	2012	$ 122,030
210712-4	SR 200/A1A from W. of Rubin Rd. to East of CR 107/Scott Rd.	Add Lanes	Preliminary Engineering	2013	$ 15,205
			Right of Way	2012-2015	$ 22,672,176
			Railroad And Utilities	2016	$ 3,000,000
			Construction	2016	$ 41,004,000
			Construction Support	2016-2017	$ 4,590,602
210712-1	SR 200/A1A from US 17 to CR 107	Add Lanes	Preliminary Engineering	2012-2013	$ 1,834,118
426031-2	Chester Rd from SR A1A to Green Pine Road	Add Lanes	Preliminary Engineering	2013	$ 601,000
			Right of Way	2014-2016	$ 6,967,081
			Construction	2016	$ 5,227,078
			Construction Support	2017	$ 777,826
Source: FDOT FY2012 - FY2016 Work Program					May 1, 2012

B.3 Baseline (No-Build) Roadway Volumes

To establish background roadway volumes in the study area, the Northeast Florida Regional Planning Model (NERPM) was run for baseline conditions without the ENCPA development. The NERPM is the adopted MPO model and is recommended by both FDOT and the Northeast Florida Regional Council.

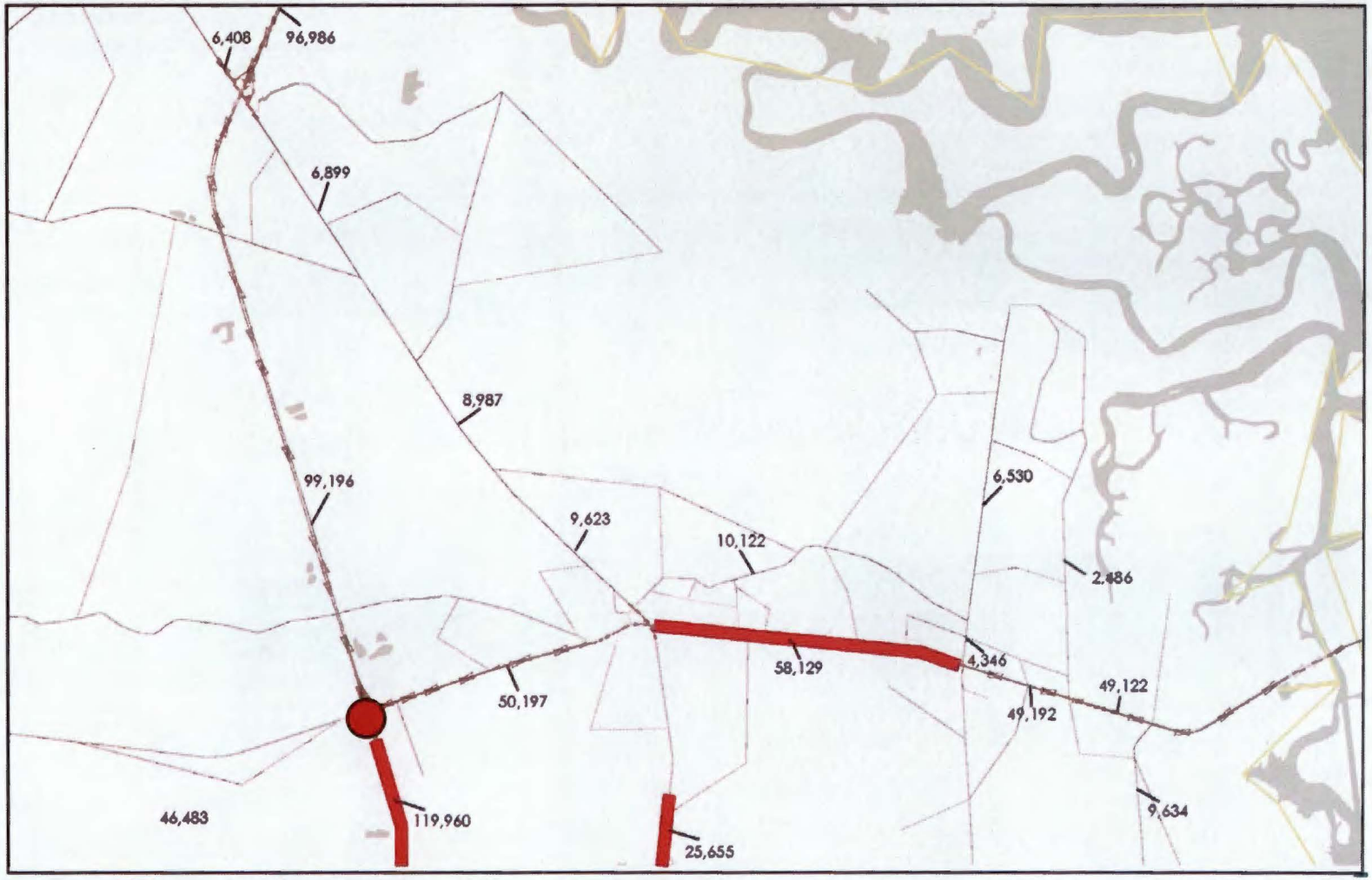
This model run reflects the 2035 Cost Feasible Model as adopted, with the long-term roadway improvements mentioned in the previous section. (The commuter rail system to Nassau County was not included in the model.)

In terms of land use, the baseline model run includes no development activity within the ENCPA. To reflect a true baseline condition, any development activity for the ENCPA within the adopted model was removed. (The adopted model included some additional development in the area, but the total number of units was less than 1,000, far less than the overall ENCPA approvals of 24,000 units.) ***Figure B-1*** shows the baseline volumes associated with this model run. ***Table B-4*** summarizes the roadway analysis based on the resulting daily volumes. This analysis concludes the following roadways are projected to operate over capacity without ENCPA development:

- Interstate 95 from Duval County Line to SR 200/A1A – over capacity as a 6-lane road
- SR 200/A1A from US 17 to Chester Road – over capacity as a 6-lane road
- US 17 from Duval County Line to Harts Road – over capacity as a 2-lane road
- US 17 from Harts Road to Sowell Road – over capacity as a 2-lane road
- Interstate 95 / SR A1A interchange ramps – over capacity in single-lane diamond configuration

These volumes and deficiencies are used as a starting point for identifying transportation improvements associated with the ENCPA and DSAP. Per HB 7207, private development cannot be held responsible for addressing existing backlogs. Since these roadway segments are projected to operate over capacity based on other development approved within Nassau County (since the ENCPA development was removed), improvements to these segments are not included as part of the Mobility Network of funded improvements. Instead, the improvements needed to address these backlogs are assumed to be in place as part of the ENCPA analysis.

Figure B-1
Year 2035 Baseline Roadway Volumes (without ENCPA)



Segments in **RED** are projected to operate over capacity.

Table B-3
Adopted Year 2035 Cost Feasible Transportation Improvements

Project ID	Roadway Corridor	From	To	Project Description	Cost in Millions (2009$)
SIS/FIHS Cost Feasible Plan Projects					
112	SR 200/ A1A	I-95	East of CR 107	Widen to 6 lanes	$ 142.70
135	US 301/ SR 200	North of Baldwin	South of Callahan	Widen to 4 Lanes	$ 258.70
Other Cost Feasible Projects (Local, Private, TRIP, Public Private Partnership)					
141	Chester Road	SR A1A	East Nassau Connector	Widen to 4 Lanes	$ 20.90
Transit Cost Feasible Projects					
G	Commuter Rail North	Downtown Jacksonville	Yulee (construct to River City/JIA)	Study and Construction of Limited Service (CSX)	$ 125.00
N/O	Commuter Rail West	Downtown Jacksonville	Macclenney	Study of Limited Service (CSX)	$ 2.00

Source: Northeast Florida TPO Envision 2035 Long Range Transportation Plan

Table B-4 REVISED
Year 2035 Baseline Roadway Analysis (without ENCPA)

Roadway	From/To	No. of Lanes	Maximum Service Volume	2035 Baseline without ENCPA		Improvement to Address Backlog
				Daily Volume	Capacity Exceeded?	
I-95	Duval County Line to SR 200/A1A	6D	110,300	119,960	YES	Widen to 8 lanes
	SR 200/A1A to E-W Interchange Rd.	6D	110,300	99,196		
	E-W Interchange Rd. to US 17	6D	110,300	99,196		
	US 17 to GA State Line	6D	110,300	96,986		
SR 200/A1A	Griffen Rd. to I-95	4D	58,800	46,483		
	I-95 to Old Yulee Rd.	6D	55,300	50,197		
	Old Yulee Rd. to US 17	6D	55,300	48,364		
	US 17 to Chester Rd.	6D	55,300	58,129	YES	Widen to 8 lanes
	Chester Rd. to Blackrock Rd.	6D	55,300	49,122		
	Old Nassauville Rd. to Amelia Island Parkway	4U	64,300	49,073		
CR 200A/Pages Dairy Rd.	US 17 to Chester Rd.	2U	16,500	10,122		
CR 107N/Blackrock Rd.	Chester Rd. to SR 200/A1A	2U	16,500	2,486		
CR 107S/Old Nassauville Rd.	SR 200/A1A to Amelia Concourse	2U	16,500	9,634		
	Amelia Concourse to Santa Juana Rd.	2U	16,500	3,698		
Chester Rd.	SR 200/A1A to Pages Dairy Rd.	4D	36,700	5,015		
	Pages Dairy Rd. to CR 108 Extension	4D	36,700	6,530		
	CR 108 Extension to Blackrock Rd.	2U	16,500	2,898		
Amelia Concourse	SR 200/A1A to CR 107S (Nassauville Rd.)	4D	36,700	13,097		
US 17	Duval County Line to Harts Rd.	2U	22,200	25,655	YES	Widen to 4 lanes
	Harts Rd. to Sowell Rd	2U	22,200	24,090	YES	Widen to 4 lanes
	Sowell Rd. to SR 200/A1A	4D	36,700	12,967		
	SR 200/A1A to Pages Dairy Rd.	4D	36,700	9,415		
	Pages Dairy Rd. to Interchange Rd.	2U	21,100	9,623		
	Interchange Rd. to CR 108	2U	21,100	8,987		
	CR 108 to I-95	2U	21,100	6,899		
	I-95 to GA State Line	2U	21,100	6,408		
I-95/SR A1A Interchange	NB I-95 to SR A1A Off-ramp	1L	11,100	23,188	YES	Widen to 3 lanes
	SR A1A to NB I-95 On-ramp	1L	11,100	12,112	YES	Widen to 2 lanes
	SB I-95 to SR A1A Off-ramp	1L	11,100	12,106	YES	Widen to 2 lanes
	SR A1A to SB I-95 On-ramp	1L	11,100	23,776	YES	Widen to 3 lanes
I-95/US 17 Interchange	NB I-95 to US 17 Off-ramp	1L	11,100	4,192		
	US 17 to NB I-95 On-ramp	1L	11,100	2,420		
	SB I-95 to US 17 Off-ramp	1L	11,100	2,420		
	US 17 to SB I-95 On-ramp	1L	11,100	4,039		

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B.4 ENCPA Transportation Network and Development Program

The development program and transportation framework for the ENCPA were determined as part of the previous approvals for the ENCPA Sector Plan. ***Figure B-2*** shows the proposed transportation network and development areas.

A general description of the overall ENCPA development program is as follows:

- The area east of US 17 consists of several residential neighborhoods, each with a neighborhood center containing retail and other non-residential uses.
- The area between US 17 and Interstate 95 contains the Employment Center and the Regional Center, which contains the majority of the regional employment and retail uses for the ENCPA. The Employment Center and Regional Center are also designed to accommodate residential units.
- Two separate residential neighborhoods are located north and south ends of the ENCPA. The northern neighborhood (Neighborhood A) is west of Interstate 95 along US 17. The southern neighborhood (Neighborhood H) is south of SR A1A adjacent to Interstate 95.

Table B-5 summarizes the overall ENCPA development program by neighborhood and presents the total trip generation based on ITE 8th Edition rates. As shown in the table, the entire ENCPA is estimated to have a gross trip generation of 379,721 daily trips. Of this total, approximately half (193,000 trips, or 51% of the total) are generated by the Employment Center and Regional Center areas between US 17 and Interstate 95. The remaining trips are generated by the residential neighborhoods located east of US 17 and in the separate outparcels to the north and south.

Figure B-3 shows the ENCPA transportation network as entered into the model (2035 NERPM) for analysis. The major components included in the model are as follows:

- CR 108 Extension – The east-west spine of TerraPointe will be an extension of CR 108 east from US 17 to Chester Road. This roadway will provide access to neighborhood areas and also provide an alternate coastal evacuation route for eastern Nassau County. Due to the rail corridor adjacent to US 17, an overpass with interchange ramps is proposed where the CR 108 Extension crosses US 17. The CR 108 Extension is in the adopted Comprehensive Plan for Nassau County, but is not included in the adopted regional model, since it was not identified as a cost-feasible improvement at the time.

Figure B-2
Previously Approved ENCPA Master Plan and Transportation Framework

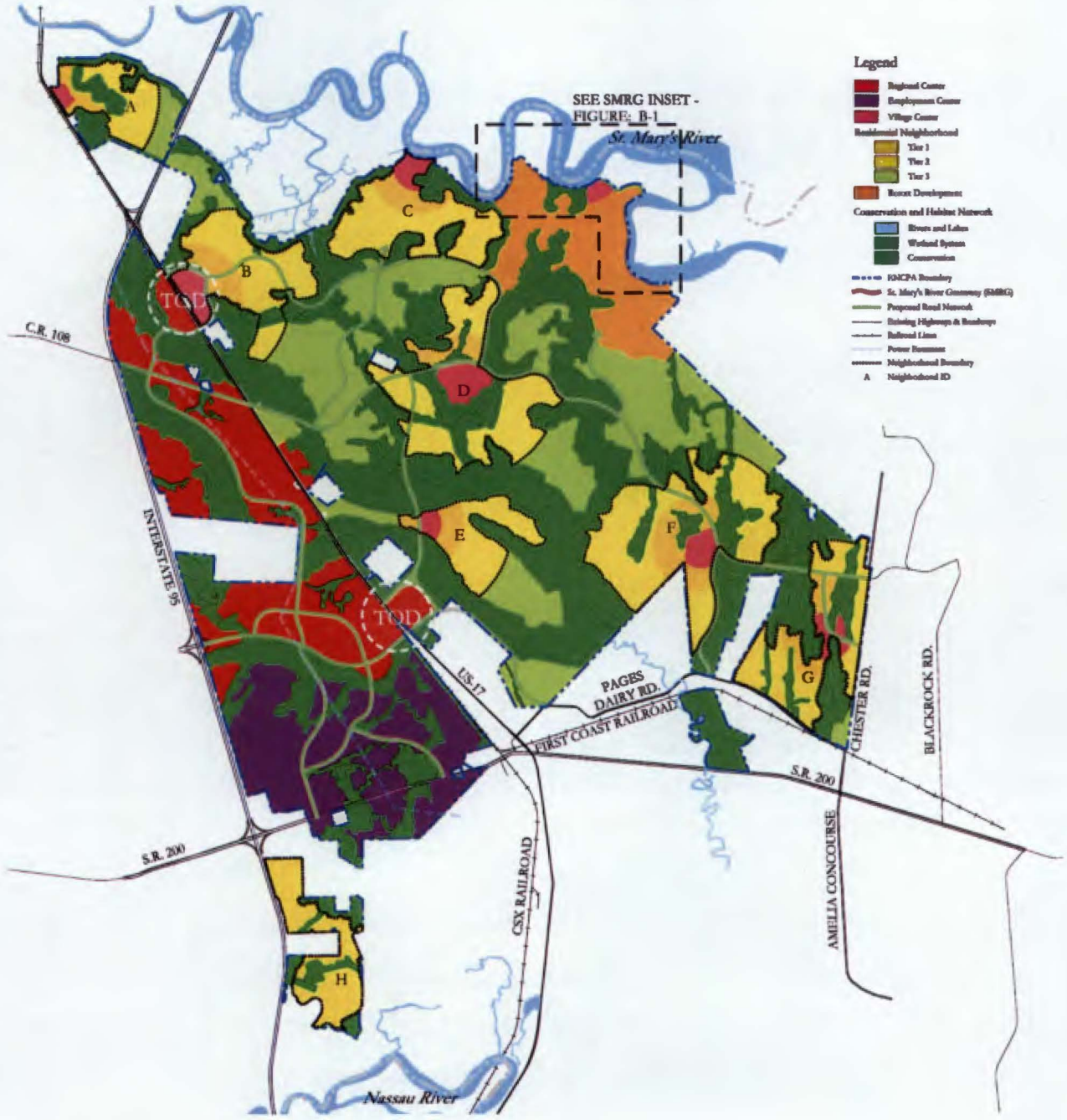

Table B-5
ENCPA Daily Trip Generation (pg 1 of 2)

Neighborhood	Land Use	ITE Category	Intensity	Daily Trips
A	SF Residential	210	769 du	6,792
	Apartment	220	0 du	0
	Retail	820	75,000 sf	5,633
	Subtotal			*12,425*
B	SF Residential	210	1,624 du	13,511
	Apartment	220	250 du	1,639
	Retail	820	165,000 sf	9,404
	Subtotal			*24,554*
C	SF Residential	210	1,481 du	12,412
	Apartment	220	250 du	1,639
	Retail	820	140,000 sf	8,451
	Subtotal			*22,502*
D	SF Residential	210	1,936 du	15,881
	Apartment	220	250 du	1,639
	Retail	820	170,000 sf	9,588
	Subtotal			*27,108*
E	SF Residential	210	1,170 du	9,992
	Apartment	220	0 du	0
	Retail	820	75,000 sf	5,633
	Subtotal			*15,625*
F	SF Residential	210	2,433 du	19,597
	Apartment	220	250 du	1,639
	Retail	820	140,000 sf	8,451
	Subtotal			*29,687*

Table B-5
ENCPA Daily Trip Generation (pg 1 of 2)

Neighborhood	Land Use	ITE Category	Intensity	Daily Trips
G	SF Residential	210	1,439 du	12,088
	Apartment	220	0 du	0
	Retail	820	95,000 sf	6,568
	Subtotal			*18,656*
H	SF Residential	210	769 du	6,792
	Apartment	220	0 du	0
	Retail	820	25,000 sf	2,758
	Subtotal			*9,550*
Resort	Condominium	230	1,513 units	6,836
District	Timeshare (1)	265	1,513 units	7,588
	Apartment	220	157 du	1,075
	Retail	820	125,000 sf	7,851
	Hotel	310	400 rooms	3,268
	Subtotal			*26,618*
Employment	Apartment	220	2,500 du	16,625
Center and TOD	Retail	820	700,000 sf	24,058
	Office Park	750	1,890,000 sf	20,103
	Industrial Park	130	4,410,000 sf	30,694
	Subtotal			*91,480*
Regional Center	SF Residential	210	5,696 du	54,511
	Apartment	220	0 du	0
	Office	710	500,000 sf	4,607
	Office Park	750	490,000 sf	5,515
	Retail	820	1,200,000 sf	34,151
	Industrial Park	130	400,000 sf	2,732
	Subtotal			*101,516*
TOTAL GROSS TRIP GENERATION				**379,721**

Source: ITE Trip Generation, 8th Edition 4/28/12

(1) Trip generation for Timeshare is based on 50% occupancy.

Figure B-3
ENCPA Network and TAZs Added to Model

- North-South Regional Center Arterial – The north-south spine of the Regional Center and Employment Center will be a road connection between SR A1A and US 17. This roadway will also parallel Interstate 95 and is intended to provide capacity relief for local trips while minimizing the amount of project traffic that uses Interstate 95.

- New I-95 Interchange and Connector Road – Within the Employment Center and Regional Center, a new interchange with Interstate 95 is proposed between SR A1A and US 17. The interchange will provide capacity for ENCPA traffic and minimize the traffic impacts to the existing interchanges to the north and south. Access to the interchange will be through a new east-west roadway that will cross US 17 (with an overpass and ramps) and connect to the CR 108 Extension.

- Employment Center Collector Roads – As part of the development of the Employment Center north of SR A1A, collector roadways are proposed to support internal circulation between parcels.

The following Mobility Network components are proposed but were not included in the model:

- Local Roadways (2 lanes) – In addition to the arterial and collector roadways included in the Mobility Network, a supporting network of local streets will be completed to provide access to parcels within the Central Planning Area. Connectivity standards for the network of arterial, collector and local streets are defined as part of the ENCPA Sector Plan.
- Trail System – A system of multi-use trails is planned to provide non-auto travel choices within the ENCPA. The trail system will accommodate pedestrians, bicyclists and golf carts. Approximately 100 miles of trails are included as part of the Mobility Network.

The development program and roadway network were added to the Year 2035 model to identify long-term conditions with the development of ENCPA. Each neighborhood as shown in the trip generation table (***Table B-5***) was assigned its own TAZ in the model. Given the geographic size of the Employment Center and Regional Center, these areas were divided into multiple TAZs, with the development program distributed evenly among them. Four TAZs were used for the Employment Center and three TAZs were used for the Regional Center.

B.5 ENCPA Analysis Results and Recommended Improvements

Based on the addition of the overall ENCPA development program and roadway network to the Year 2035 model, the future year volumes were developed. As initial steps in developing the total roadway volumes, the following components were reviewed:

- Background traffic – The background (non-ENCPA) traffic was based on the baseline Year 2035 model run described earlier in this section.
- ENCPA project traffic from model – In evaluating the model results, the total volumes presented include both internally captured trips and regional external trips. This is because trips remaining within the ENCPA may still use roadways such as US 17 and the CR 108 extension for travel within the community.
- ENCPA trip distribution – The distribution of ENCPA trips was reviewed based on aggregate areas within Nassau County and the region, rather than on a segment by segment basis. ***Figure B-4*** shows the aggregate areas used to compare the trip distribution calculations. ***Table B-6*** shows the trip distribution produced by the model. The analysis showed that almost 71% of the trips associated with the ENCPA are expected to remain within Nassau County. This is consistent with one of the goals of the ENCPA Sector Plan to provide employment opportunities to support new and existing County residents. This trip distribution is also consistent with the project goals of maximizing internal capture through a balanced mix of uses.
- Total roadway volumes – The future conditions traffic volumes represent the total volumes projected by the model with the addition of the ENCPA development. In some instances, background trips from the baseline no-build scenario are expected to become project trips, as the employment base created within the ENCPA allows Nassau County residents to stay within the County for work trips. This approach of using total traffic volumes directly from the model is based on guidance from the *NCHRP report Evaluating and Communicating Model Results: Guidebook for Planners*.
- Impacts of local street connectivity – As mentioned earlier, the ENCPA Sector Plan provides guidelines for local streets to ensure that they form a connected system between and within neighborhoods. This reduces the need for internal traffic to use the primary street network. However, local streets generally are not included in travel demand models. To account for this extra capacity, project traffic estimates for internal streets were reduced by 15 percent. This factor accounts for the share of trips within ENCPA that are shorter distance (less than two miles) and can occur through biking, walking, and/or local streets. The need for adjustment for these factors is also acknowledged in the NCHRP report mentioned above.
- Internal trails network – As mentioned earlier, the ENCPA is proposed to contain approximately 50 miles of multi-use trails that can accommodate pedestrians, bicyclists and golf carts. Similar to local streets, however, these trails are not included in the travel demand model. To estimate the benefit

of this connectivity and extra capacity, project traffic estimates for internal streets were reduced by 5 percent.

Table B-7 presents the Year 2035 roadway volumes with the addition of ENCPA development. This analysis shows the following roadways are projected to operate over capacity with ENCPA development:

- Interstate 95 from Duval County Line to US 17
- SR 200/A1A from Old Yulee Road to US 17
- SR 200/A1A from Chester Road to Blackrock Road

Figure B-4
Aggregate Areas for Trip Distribution Evaluation

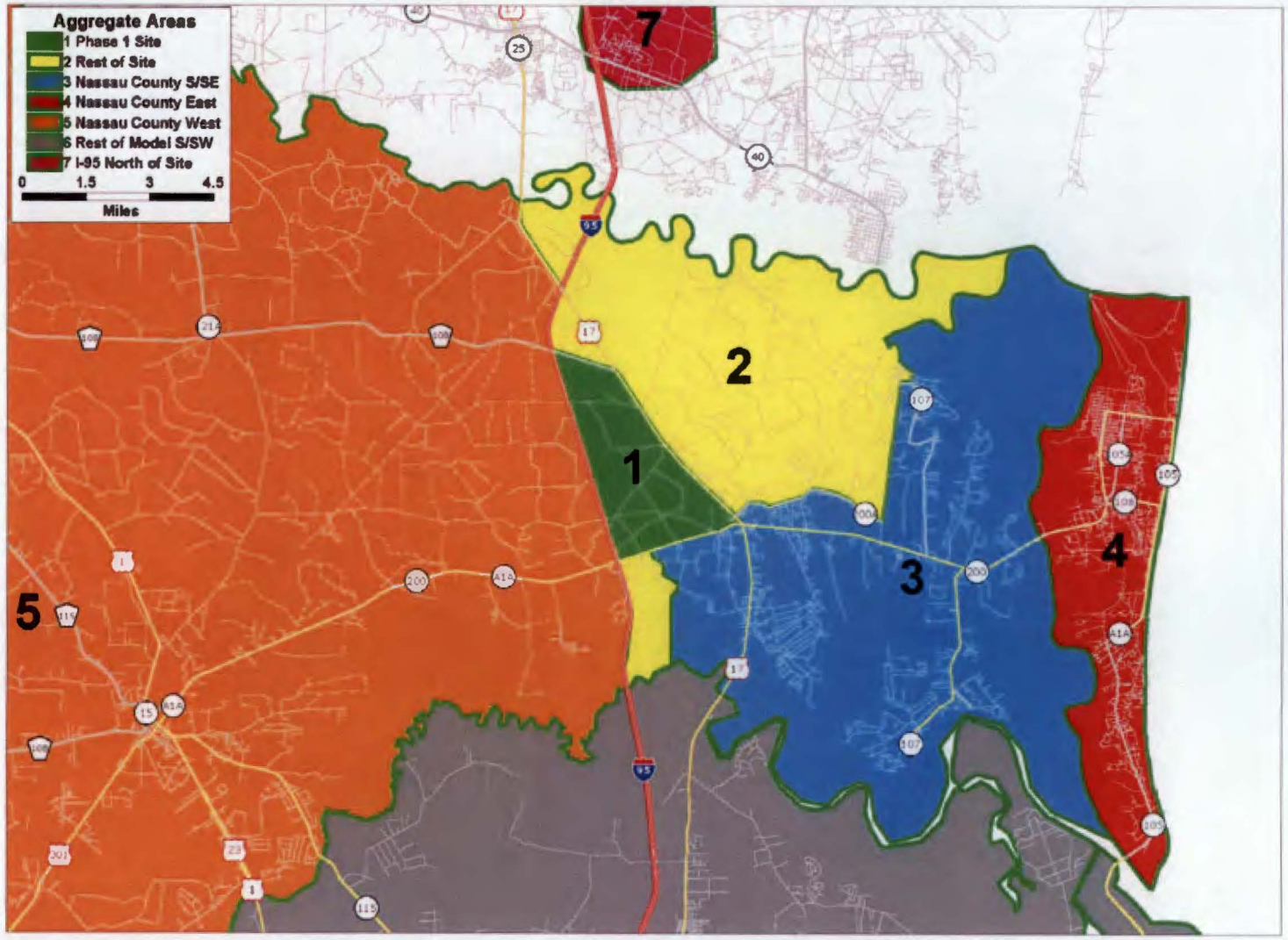

Table B-6
Trip Distribution Summary from Model

Area (from Figure B-4)	Trip Distribution
1 and 2 (ENCPA)	46.54%
3 and 4 (Eastern Nassau County)	18.45%
5 (Western Nassau County)	5.92%
6 (Duval County and points south)	27.14%
7 (Georgia and points norths)	1.95%
TOTAL	**100.00%**
Within Nassau County	*70.91%*
Outside Nassau County	*29.09%*

Table B-7 REVISED (1 of 3)
Year 2035 Roadway Analysis with ENCPA

Roadway	From/To	2035 Baseline without ENCPA		Improvement to Address Backlog	No. of Lanes	Maximum Service Volume	Net New ENCPA Trips	Reductions		2035 Daily Roadway Volume	Roadway Capacity Used	Capacity Exceeded?	Mobility Recommendation
		Daily Volume	Capacity Exceeded?					Local Street Connections	Internal Trails System				
I-95	Duval County Line to SR 200/A1A	119,960	YES	Widen to 8 lanes	8D	146,500	30,940			150,900	103%	YES	Additional capacity through N-S Regional Center
	SR 200/A1A to E-W Interchange Rd.	99,196			6D	110,300	39,154			135,691	123%	YES	Arterial and regional commuter rail
	E-W Interchange Rd. to US 17	99,196			6D	110,300	11,085			109,676	99%		
	US 17 to GA State Line	96,986			6D	110,300	4,481			96,986	88%		
SR 200/A1A	Griffen Rd. to I-95	46,483			4D	58,800	5,584			52,067	89%		
	I-95 to Old Yulee Rd.	50,197			6D	55,300	8,051			58,248	105%	YES	Additional capacity through Interchange Rd
	Old Yulee Rd. to US 17	48,364			6D	55,300	5,306			53,670	97%		
	US 17 to Chester Rd.	58,129	YES	Widen to 8 lanes	8D	73,800	5,818			63,947	87%		
	Chester Rd. to Blackrock Rd.	49,122			6D	55,300	7,901			57,023	103%	YES	Additional capacity through intersection improvements
	Old Nassauville Rd. to Amelia Island Parkway	49,073			4U	64,300	6,087			55,160	86%		
CR 200A/Pages Dairy Rd.	US 17 to Chester Rd.	10,122			2U	16,500	2,680	-402	-134	12,266	74%		
CR 107N/Blackrock Rd.	Chester Rd. to SR 200/A1A	2,486			2U	16,500	0			2,114	13%		
CR 107S/Old Nassauville Rd.	SR 200/A1A to Amelia Concourse	9,634			2U	16,500	0			9,475	57%		
	Amelia Concourse to Santa Juana Rd.	3,698			2U	16,500	0			3,370	20%		
Chester Rd.	SR 200/A1A to Pages Dairy Rd.	5,015			4D	36,700	15,206			20,221	55%		
	Pages Dairy Rd. to CR 108 Extension	6,530			4D	36,700	7,062			13,592	37%		
	CR 108 Extension to Blackrock Rd.	2,898			2U	16,500	1,892			4,790	29%		
Amelia Concourse	SR 200/A1A to CR 107S (Nassauville Rd.)	13,097			4D	36,700	954			14,051	38%		
US 17	Duval County Line to Harts Rd.	25,655	YES	Widen to 4 lanes	4U	64,300	1,448			27,103	42%		
	Harts Rd. to Sowell Rd	24,090	YES	Widen to 4 lanes	4U	64,300	2,682			26,772	42%		
	Sowell Rd. to SR 200/A1A	12,967			4D	36,700	3,151			16,118	44%		
	SR 200/A1A to Pages Dairy Rd.	9,415			4D	36,700	6,486			15,901	43%		
	Pages Dairy Rd. to Interchange Rd.	9,623			2U	21,100	6,991			16,614	79%		
	Interchange Rd. to CR 108	8,987			2U	21,100	7,324			16,311	77%		
	CR 108 to I-95	6,899			2U	21,100	11,668			18,567	88%		
	I-95 to GA State Line	6,408			2U	21,100	4,142			10,550	50%		
I-95/SR A1A Interchange	NB I-95 to SR A1A Off-ramp	23,188	YES	Widen to 3 lanes	3L	33,300	0			23,188	70%		
	SR A1A to NB I-95 On-ramp	12,112	YES	Widen to 2 lanes	2L	22,200	1,029			13,141	59%		
	SB I-95 to SR A1A Off-ramp	12,106	YES	Widen to 2 lanes	2L	22,200	995			13,101	59%		
	SR A1A to SB I-95 On-ramp	23,776	YES	Widen to 3 lanes	3L	33,300	0			23,776	71%		
I-95/US 17 Interchange	NB I-95 to US 17 Off-ramp	4,192			1L	11,100	6,758			10,950	99%		
	US 17 to NB I-95 On-ramp	2,420			1L	11,100	1,290			3,710	33%		
	SB I-95 to US 17 Off-ramp	2,420			1L	11,100	1,269			3,689	33%		
	US 17 to SB I-95 On-ramp	4,039			1L	11,100	6,877			10,916	98%		

Table B-7 REVISED, cont. (2 of 3)
Year 2035 Roadway Analysis with ENCPA

Roadway	From/To	2035 Baseline without ENCPA		Improvement to Address Backlog	No. of Lanes	Maximum Service Volume	Net New ENCPA Trips	Reductions		2035 Daily Roadway Volume	Roadway Capacity Used	Capacity Exceeded?	Mobility Recommendation
		Daily Volume	Capacity Exceeded?					Local Street Connections	Internal Trails System				
CR 108 Extension	Chester Rd. to Interchange Rd.				2U	16,500	17,809	-2,671	-890	14,247	86%		
	Interchange Rd. to US 17				2U	16,500	10,578	-1,587	-529	8,462	51%		
	US 17 to I-95 Overpass				2U	16,500	14,106	-2,116	-705	11,285	68%		
	SR A1A to Interchange Rd.				4D	36,700	12,996	-1,949	-650	10,397	28%		
N-S Regional Center Arterial	DSAP Collector Loop Rd. to Interchange Rd.				4D	36,700	6,392	-959	-320	5,114	14%		
	Interchange Rd. to CR 108				4D	36,700	26,672	-4,001	-1,334	21,338	58%		
	CR 108 to US 17				4D	36,700	2,728	-409	-136	2,182	6%		
Interchange Rd.	I-95 to N-S Regional Center Arterial				6D (2)	55,300	30,065			30,065	54%		
	N-S Regional Center Arterial to US 17				4D	36,700	25,203	-3,780	-1,260	20,162	55%		
	US 17 to CR 108				4D	36,700	22,547	-3,382	-1,127	18,038	49%		
DSAP Collector Loop Rd.	N-S Regional Center Arterial to Interchange Rd.				2U	16,500	10,381	-1,557	-519	8,305	50%		
DSAP Collector (A1A Connector)	SR A1A to DSAP Collector Loop Rd.				2U	16,500	14,014	-2,102	-701	11,211	68%		

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Table B-7 REVISED, cont. (3 of 3)
Year 2035 Roadway Analysis with ENCPA

North-South Cordon Line Analysis (Cordon Line located north of SR A1A)

North-South Roadway	From/To	Maximum Service Volume	2035 Daily Roadway Volume	Roadway Capacity Used
I-95	SR 200/A1A to E-W Interchange Rd.	110,300	135,691	123%
N-S Regional Center Arterial	SR A1A to Interchange Rd.	36,700	10,397	28%
DSAP Collector (A1A Connector)	SR A1A to DSAP Collector Loop Rd.	16,500	11,211	68%
US 17	Pages Dairy Rd. to Interchange Rd.	21,100	16,614	79%
Chester Rd	Pages Dairy Rd. to CR 108 Extension	36,700	13,592	37%
Total - all North-South Routes		**221,300**	**187,505**	**85%**

East-West Cordon Line Analysis (Cordon Line located west of Chester Road)

East-West Roadway	From/To	Maximum Service Volume	2035 Daily Roadway Volume	Roadway Capacity Used
CR 108 Extension	Chester Rd. to Interchange Rd	16,500	14,247	86%
CR 200A/Pages Dairy Rd.	US 17 to Chester Rd.	16,500	12,266	74%
SR 200/A1A	US 17 to Chester Rd.	73,800	63,947	87%
Total - all East-West Routes		**106,800**	**90,460**	**85%**

An important component of the mobility approach is the provision of transportation capacity through network connectivity and alternate routes. ***Table B-7*** also summarizes the recommended mobility solution to address the capacity issues identified. In most cases, the recommended approach provides for additional capacity on parallel routes. In the case of SR A1A between I-95 and Old Yulee Road, it is proposed that parallel capacity be provided through the CR 108 Extension. For the section of SR A1A between Chester Road and Blackrock Road, intersection improvements are proposed in the form of additional left turn lanes at the Chester Road and Blackrock Road intersections. In the case of Interstate 95, it is proposed that parallel capacity be provided through the north-south arterial roadway through the Regional Center and Employment Center. Similarly, ENCPA impacts at the existing I-95 interchanges at SR A1A and US 17 will be addressed through the construction of a new interchange. This interchange has been assumed in the transportation analysis and the costs are included in the Mobility Network discussed below.

Figure B-5 shows the recommended Mobility Network to support the buildout of the ENCPA. The numbers below correspond to the Figure.

1) CR 108 Extension
2) New I-95 Interchange
3) Interchange Road
4) US 17 widening
5) Employment Center north-south road
6) Employment Center collector roads
7) Traffic signals at major intersections
8) Intersection left turn lane improvements
9) Internal trails (not shown on exhibit)

These improvements will be funded and implemented over time based on the construction of development within the ENCPA and the trips generated by this development.

Table B-8 summarizes the estimated ENCPA costs for the Mobility Network in Year 2012. As shown in the table, the total estimated cost is **$124.63 million**.

Key assumptions regarding the ENCPA costs are as follows:

- All costs are in Year 2012 Dollars.
- Transportation costs per mile are based on costs from improvements within the adopted FDOT Work Program within Nassau County and District 2.
- Right of way costs are estimated as $15,000 per acre, with corridor widths consistent with the illustrative cross sections in the Mobility chapter.

For corridors such as CR 108 where excess capacity is provided, the ENCPA share of the cost is calculated as the capacity used (plus overages on parallel corridors) divided by the total roadway capacity. In the case of CR 108, the ENCPA volumes at buildout plus the capacity overage from SR A1A equate to 77% of the total roadway capacity.

Figure B-5 (REVISED 4/12/13)
Recommended ENCPA Mobility Network

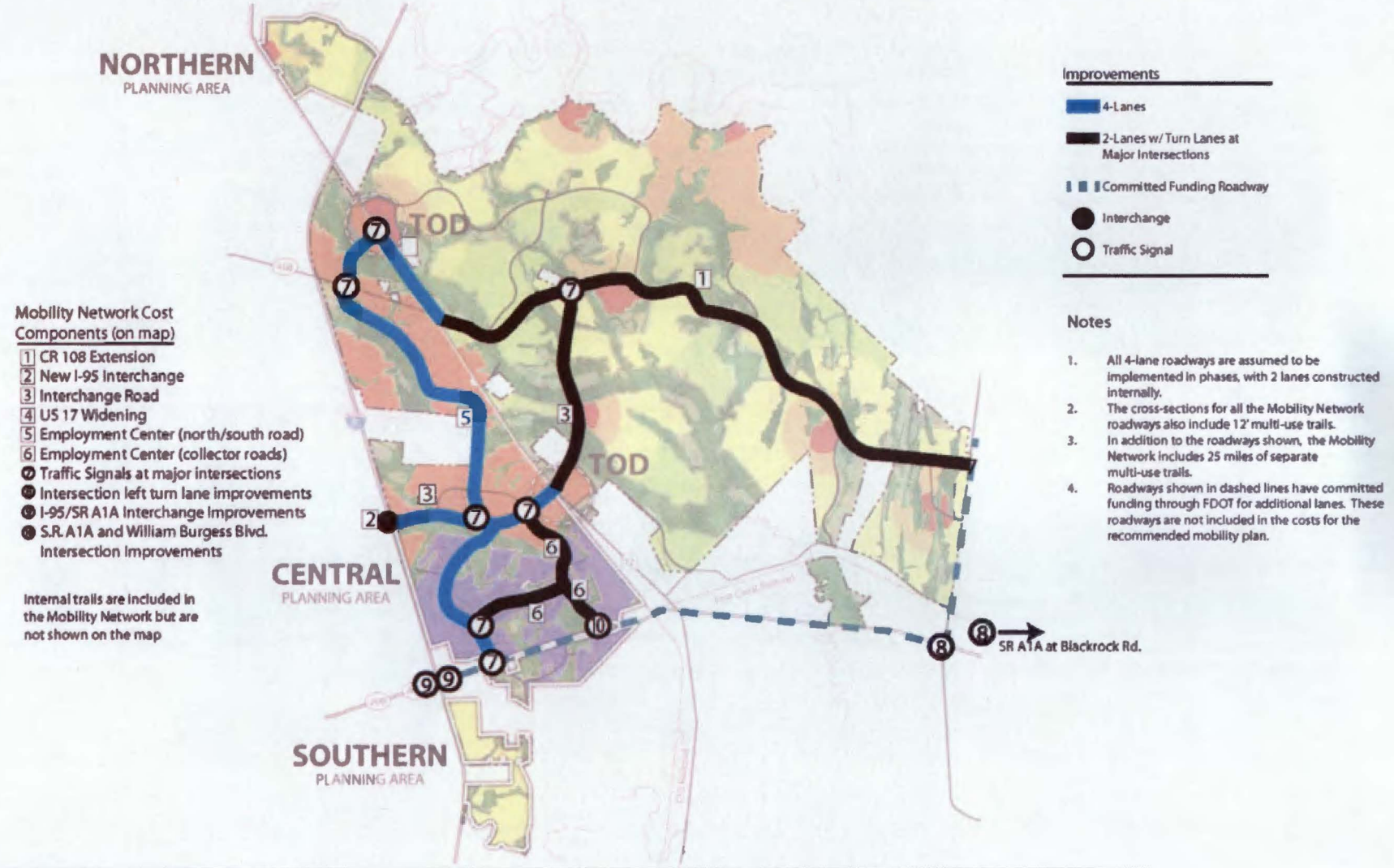

Table B-8 REVISED
Mobility Improvements Summary

Roadway/Segment	Length (miles)	Improvement	TerraPointe Share	Design and Construction Cost per Mile			Design and Construction Subtotal	ROW Subtotal	TOTAL COST	TERRAPOINTE SHARE
				Roadway	Multi-Use Path (12')	Sidewalk				
CR 108 Extension										
US 17 to Interchange Rd	1.7	New 2-lane road	77%	$3,027,000	$163,321	$102,285	$5,597,430	$498,000	$6,095,430	**$4,693,481**
Interchange Rd to Resort Area	3.7	New 2-lane road	77%	$3,027,000	$163,321	$102,285	$12,182,642	$1,083,000	$13,265,642	**$10,214,544**
Resort Area to Chester Rd	1.6	New 2-lane road	77%	$3,027,000	$163,321	$102,285	$5,268,170	$468,000	$5,736,170	**$4,416,851**
Interchange Road										
Interstate 95 to N-S Regional Center Arterial	1.1	New 4-lane road	100%	$4,644,000	$163,321	$102,285	$5,400,567	$322,000	$5,722,567	**$5,722,567**
East Frontage Rd to US 17	1.2	New 4-lane road	100%	$4,644,000	$163,321	$102,285	$5,891,527	$351,000	$6,242,527	**$6,242,527**
US 17 to CR 108	2.1	New 4-lane road	100%	$4,644,000	$163,321	$102,285	$10,310,173	$615,000	$10,925,173	**$10,925,173**
Interchange Road at I-95		New interchange	100%				$23,650,000	$75,000	$23,725,000	**$23,725,000**
Employment Center Collector Roads	2.3	New 2-lane road	100%	$3,027,000	$163,321	$102,285	$7,572,994	$489,000	$8,061,994	**$8,061,994**
N-S Regional Center Arterial										
US 17 to CR 108	1.2	New 4-lane road	100%	$4,644,000	$163,321	$102,285	$5,891,527	$351,000	$6,242,527	**$6,242,527**
CR 108 to Interchange Road	3.6	New 4-lane road	100%	$4,644,000	$163,321	$102,285	$17,674,582	$1,054,000	$18,728,582	**$18,728,582**
Interchange Road to SR 200/A1A	1.9	New 4-lane road	100%	$4,644,000	$163,321	$102,285	$9,328,251	$556,000	$9,884,251	**$9,884,251**
US 17										
N-S Regional Center Arterial to I-95	1.2	Widen to 4 lanes	50%	$5,676,000	$163,321	$102,285	$7,129,927	$87,000.00	$7,216,927	**$3,608,464**
Traffic Signals (at 10 new major intersections)		Install new signal	100%						$3,500,000	**$3,500,000**
SR A1A Intersection Improvements										
Dual left turn lanes at SR A1A/Chester Rd		New left turn lane	100%						$250,000	**$250,000**
Dual left turn lanes at SR A1A/Blackrock Rd		New left turn lane	100%						$250,000	**$250,000**
Internal multi-use trail system (off-street)	50		100%		$163,321		$8,166,050		$8,166,050	**$8,166,050**
TOTAL							**$124,063,840**	**$ 5,949,000**	**$134,012,840**	**$124,632,011**

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B.6 Recommended Improvements – Employment Center DSAP

This section summarizes the Mobility Network improvements associated with the buildout of the DSAP. As stated earlier, these improvements were identified based on the components needed to support development of this portion of the ENCPA. The improvements are discussed for each of the three Planning Areas (Central, Northern and Southern) associated with the DSAP.

B.6.1 Central Planning Area

Figure B-6 summarizes the mobility improvements associated with the Central Planning Area. These improvements were identified based on the development program of 2,500 multi-family residential units and 7,000,000 square feet of non-residential uses (retail, office and industrial). This program for the Central Planning Area generates an estimated 91,480 daily trips at buildout. ***Table B-9*** summarizes the development program and its trip generation.

Within the Central Planning Area, the following transportation improvements have been identified:

- **North – South Arterial Roadway (4 lanes)** – This roadway will extend through the Central Planning Area (the Employment Center) and continue north through the Regional Center and connect to US 17. This roadway will serve as the spine of the ENCPA for areas between US 17 and Interstate 95. A traffic signal is assumed at the intersection of this roadway and SR A1A.
- **East – West Interchange Road (4 lanes)** – This roadway will provide access to the Central Planning Area from US 17. An interchange with Interstate 95 is assumed at the buildout of the Central Planning Area. As areas of the ENCPA east of US 17 are developed, the Interchange Road will be extended to the east.
- **Collector Roadways (2 lanes with turn lanes)** – The collector roadways for the Central Planning Area provide a second access point to and from SR A1A, as well as connections to the TOD area near US 17.
- **Local Roadways (2 lanes)** – In addition to the arterial and collector roadways included in the Mobility Network, a supporting network of local streets will be completed to provide access to parcels within the Central Planning Area. Connectivity standards for the network of arterial, collector and local streets are defined as part of the ENCPA Sector Plan.

Table B-9
DSAP Trip Generation

North Area - Neighborhood A

Land Use	ITE Category	Intensity	Daily Trips
SF Residential	210	769 du	6,792
Apartment	220	0 du	0
Retail	820	75,000 sf	5,633
Gross Total - North Area			**12,425**

Central Area - Employment Center

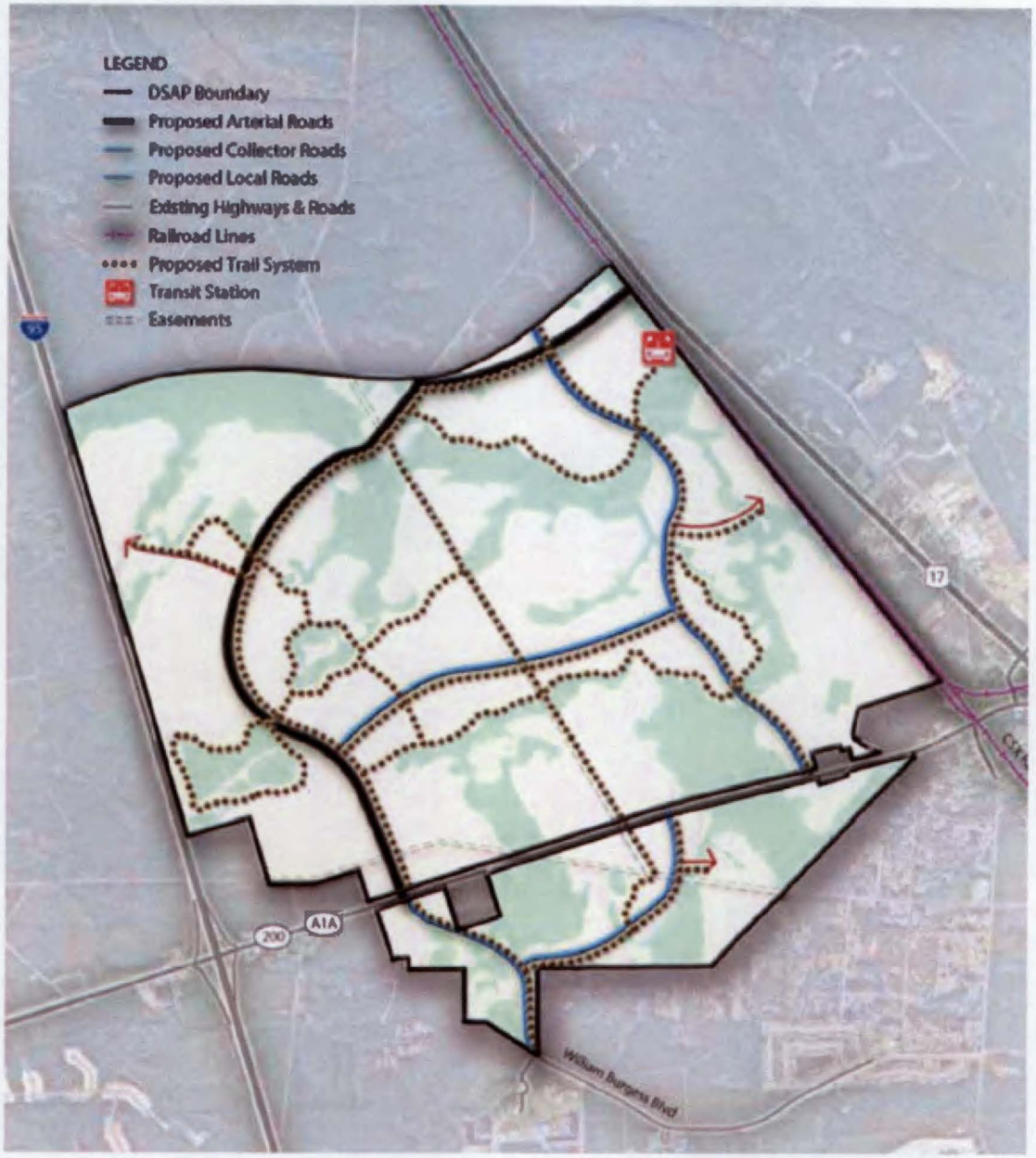
Land Use	ITE Category	Intensity	Daily Trips
Apartment	220	2,500 du	16,625
Retail	820	700,000 sf	24,058
Office Park	750	1,890,000 sf	20,103
Industrial Park	130	4,410,000 sf	30,694
Gross Total - Central Area			**91,480**

South Area - Neighborhood H

Land Use	ITE Category	Intensity	Daily Trips
SF Residential	210	769 du	6,792
Apartment	220	0 du	0
Retail	820	25,000 sf	2,758
Gross Total - South Area			**9,550**

Source: ITE Trip Generation, 8th Edition 4/28/12

Figure B-6
DSAP Mobility Network



- **Trail System** – A system of multi-use trails is planned to provide non-auto travel choices within the Central Planning Area. The trail system will accommodate pedestrians, bicyclists and golf carts. Approximately 10 miles of trails are included as part of the Mobility Network for this area.
- **Transit Oriented Development** – The Central Planning Area provides opportunities for TOD around any future stations developed as part of a commuter rail system between Nassau County and downtown Jacksonville. Such a system has been included in the adopted MPO Long Range Transportation Plan, as discussed earlier in this section.

For short-term (five-year) conditions, the total development program for the Central Planning Area consists of 350 multi-family residential units and 400,000 square feet of office. This development is expected to occur along the north-south arterial road near SR A1A. Based on ITE trip generation calculations, this development program generates a total of 6,822 daily trips. ***Table B-10*** summarizes this calculation.

For short-term conditions, all access will be via SR A1A. As discussed earlier, SR A1A through the Central Planning Area is funded for widening to six lanes as part of FDOT's adopted Five Year Work Program. This improvement provides the additional capacity necessary to accommodate short-term development. It is recommended that the following new signals be implemented to address the five-year impacts of the DSAP; the total cost for these improvements is $700,000.

- Traffic signal at SR A1A and North/South Arterial
- Traffic signal at SR A1A and DSAP Collector Road

In terms of internal Mobility Network needs, the short-term improvements are limited to roadway segments needed to provide access to development parcels. This may include the initial segments of the North-South Arterial, constructed as two lanes.

Table B-10
Five-Year DSAP Development Program
Daily Trip Generation

Land Use	ITE Category	Intensity	Daily Trips
Apartment	220	350 du	2,245
Office Park	750	400,000 sf	4,577
Total			**6,822**

B.6.2 Northern Planning Area

The transportation network to support the Northern Planning Area consists of local streets and internal trails. No regional roadways are proposed.

The total development program for the Northern Planning Area consists of 769 single-family residential units and 75,000 square feet of retail; this program produces an estimated 12,425 daily trips. Access to the Northern Planning Area is limited to a single roadway, US 17, with two access points recommended. Environmental constraints to the north and Interstate 95 to the east restrict the opportunity for additional connectivity.

For short-term (five-year) conditions, no development is projected within the Northern Planning Area. Therefore, no short-term transportation improvements have been identified for this area. However, given the current capacity availability on US 17 as documented in the existing conditions analysis earlier in this section, it is reasonable to expect that a small increment of development could be accommodated within the next five years without triggering any adverse roadway impacts.

B.6.3 Southern Planning Area

The transportation network to support the Southern Planning Area consists of local streets and internal trails. No regional roadways are proposed.

The total development program for the Southern Planning Area consists of 769 single-family residential units and 25,000 square feet of retail; this program produces an estimated 9,550 daily trips. Existing access to the Southern Planning Area is limited to a single roadway, William Burgess Boulevard, to the northeast. Additional connections to the north to SR A1A have been identified as possible, but are not required to support development of this area. Environmental constraints to the south and Interstate 95 to the west restrict the opportunity for additional connectivity.

For short-term (five-year) conditions, no development is projected within the Southern Planning Area. Therefore, no short-term transportation improvements have been identified for this area. However, given the current capacity availability on William Burgess Boulevard as documented in the existing conditions analysis earlier in this section, it is reasonable to expect that a small increment of development could be accommodated within the next five years without triggering any adverse roadway impacts.

Appendix C

Public Facilities Analysis

C.1 Introduction

A detailed analysis of public facilities has been conducted utilizing the DSAP land use plan and associated development program to calculate maximum theoretical impacts. Impacts were analyzed for both short-term (5-yr) and long-term (build-out) conditions. For the purpose of calculating 5-yr impacts, a development program of 350 residential units and 400,000 square feet of non-residential uses were assumed. The full DSAP development program was assumed for estimation of impacts at build-out (2030).

Included in this analysis were the full range of public facilities as defined by 163.3164, Florida Statutes, including potable water, sanitary sewer, solid waste, drainage, schools and parks. Due to the detailed nature of transportation impact studies, an analysis of these facilities was handled separately. A full transportation impact analysis is contained in Appendix B.

It is important to note that each of the following analyses assumes that demand generated by the proposed DSAP is in addition to projected increase in demand generated by population growth which would have occurred regardless of the DSAP. In effect, these two projections overlap to an extent. It can be assumed that some portion of the already projected population increase will occur within the DSAP; therefore, the following impact analyses should be considered conservative and it may be presumed that actual impacts may less.

C.2 Potable Water

Nassau County is located within the St Johns River Water Management District (SJRWMD). Per the District's 2003 Water Supply Assessment, existing water supply sources and water supply development plans are considered reasonably adequate to meet Nassau County' projected needs while sustaining water quality and protecting wetland and aquatic systems; therefore, neither the County nor the DSAP area is within a priority water resource caution area (PWRCA). Given that the District's finding that adequate supplies exist to accommodate the area's projected needs, Nassau County has not been required to prepare a water supply plan (WSP)

or otherwise identify water resource development or water supply development projects to accommodate projected demand.

Jacksonville Electric Authority (JEA), a municipally owned utility, provides potable water service to the East Nassau Employment Center DSAP site. JEA's potable water system is made up of 134 artesian wells, tapping the Floridian Aquifer. 35 water treatment plants treat and distribute this water to users through more than 4,000 miles of water main in multiple service districts. The East Nassau Employment Center DSAP is located within JEA's District 7 – Nassau County Water Service Area. Currently, the District 7 water service area is served by four potable water treatment plants; Lofton Oaks, Otter Run, Nassau (Yulee) Regional, and West Nassau Regional. Combined, these plants form the Lofton Oaks Grid (see Figure C-2-1).

It should be noted that the North Planning Area is located immediately outside the northernmost boundary of JEA's District 7 boundary for potable water service. Due to ENCPA policy limitations and planned densities within the North Planning Area, private wells are not feasible. There are two potential options for serving this area with potable water. First, the North Planning Area could be annexed into the JEA service area and the central water system could be extended down HWY 17. Second, an independent central potable water plant could be constructed for the North Planning Area. Operation of this facility could be assumed by JEA at a future date.

C.2.1 Potable Water – 5-yr Projections

Potable water demand for the proposed 5-yr development program was calculated utilizing Nassau County's adopted level of service (LOS) for new development, as reported in the Nassau County 2030 Comprehensive Plan. The LOS for potable water service within Nassau County is 100 gallons per capita per day. This LOS is then multiplied by 2.32 persons per household to convert GPD/capita to GPD/household. For non-residential uses, the LOS requirements are based upon an Equivalent Residential Connection (ERC) to be calculated by the service provider, at the time of application. For the purposes of this study, an average value ERC of 0.1 gallons per day per square foot was applied to non-residential development. Using these values, Table C-2a estimates short term (5-yr) demand for potable water.

Table C-2a Estimated Potable Water Demand (5-Yr)

	Residential	Non-residential	Total Demand
DSAP (5-yr)	350 du	400,000 sq ft	0.12 MGD

Table C-2b provides projected available treatment capacity, current usage, 5-yr DSAP demand and resulting capacity.

Table C-2b Projected Potable Water Plant Capacity (5-Yr) (MGD)

Water Plant	Plant Capacity*	Current Usage*	DSAP Demand	Remaining Capacity
Lofton Oaks Grid	6.40	2.00	0.12	4.28

**Source: As reported by JEA Water System Planning Staff, March 2012*

Adequate capacity exists at the available treatment facilities to accommodate the proposed 5-yr development program.

C.2.2 Potable Water – Build-out Projections

Tables C-2c estimates the East Nassau Employment Center's potable water demand at build-out utilizing the same methodology as the 5-year development program.

Table C-2c Estimated Potable Water Demand (Build-out)

	Residential	Non-residential	Total Demand
DSAP (Build-out)	4,038 du	7,100,000 sq ft	1.65 MGD

Should the DSAP's maximum development program be realized, total projected demand for potable water could be approximately 1.31 million gallons daily (MGD).

Table C-2d provides projected available treatment capacity, forecasted demand through 2035, DSAP demand at build-out and resulting capacity. Values reported consider the known plant capacity increase to the West Nassau facility, set to expand in 2014 from 1.4 MGD to 5 MGD.

Table C-2d Projected Potable Water Capacity (2035) (MGD)

Water Plant	Plant Capacity*	Projected Usage*	DSAP Demand	Remaining Capacity
Lofton Oaks Grid	10.2	5.00	1.65	3.55

**Source: As reported by JEA Water System Planning Staff, March 2012*

Adequate capacity exists within the Lofton Oaks Grid to accommodate the proposed development program through 2035. It should be noted that the preceding calculations are based upon average daily flow. Maximum daily flow or "peak hour" flow requires approximately twice the average daily flow capacity. Although the 5-year DSAP demand may be accommodated under both average daily and maximum daily flow conditions, additional treatment capacity may be needed to accommodate maximum flow in the 2035 scenario.

C.2.3 Potable Water – Proposed Infrastructure Plan

A conceptual potable water plan was prepared based upon the projected Detailed Specific Area Plan (DSAP) land use program. The resulting utility infrastructure map is shown as Figure C-2-2, Water Infrastructure Map. The proposed water distribution system will connect to the existing potable water mains currently owned and operated by JEA.

Figure C-2-1
JEA District 7 – Water Service Area

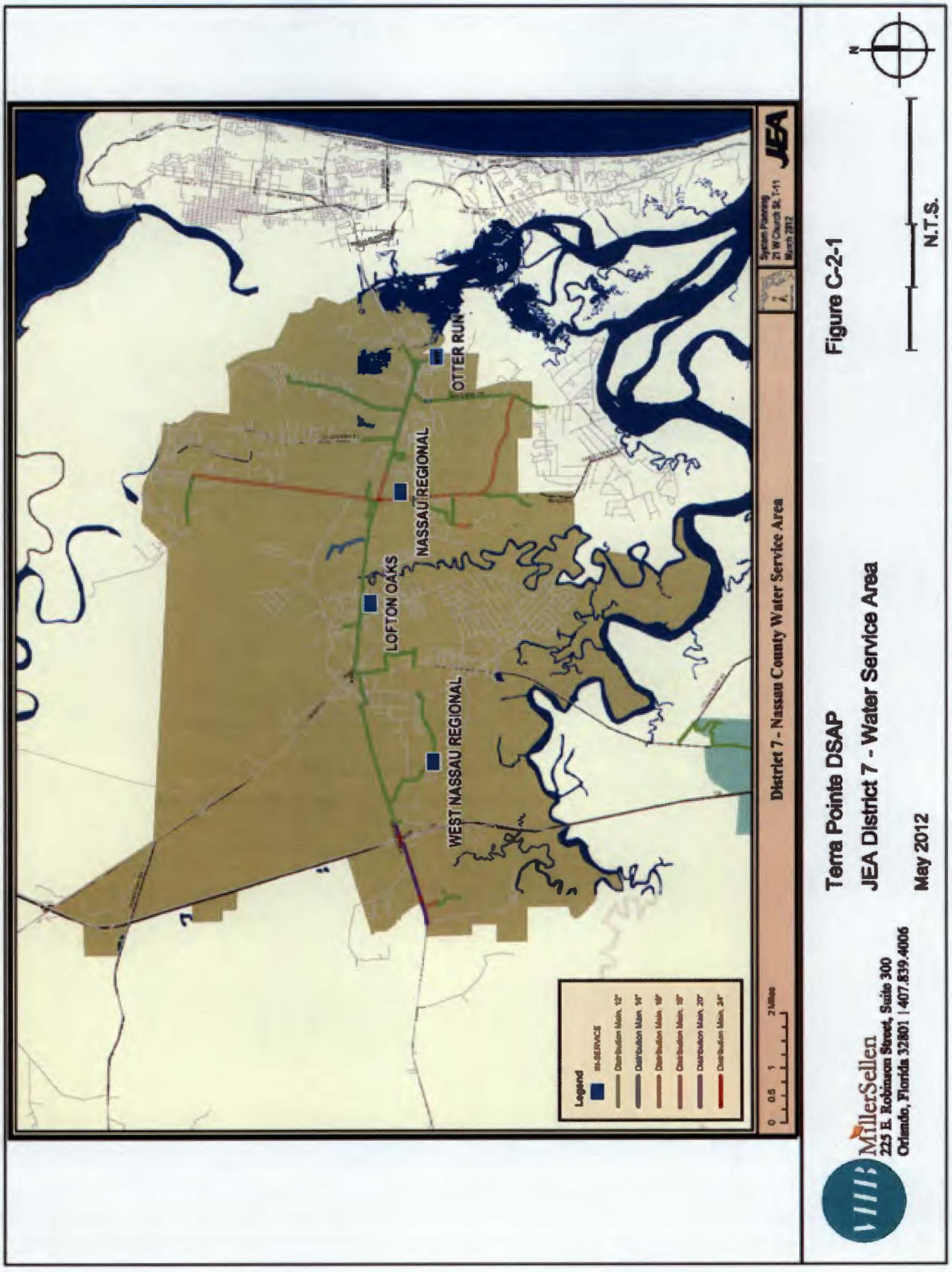
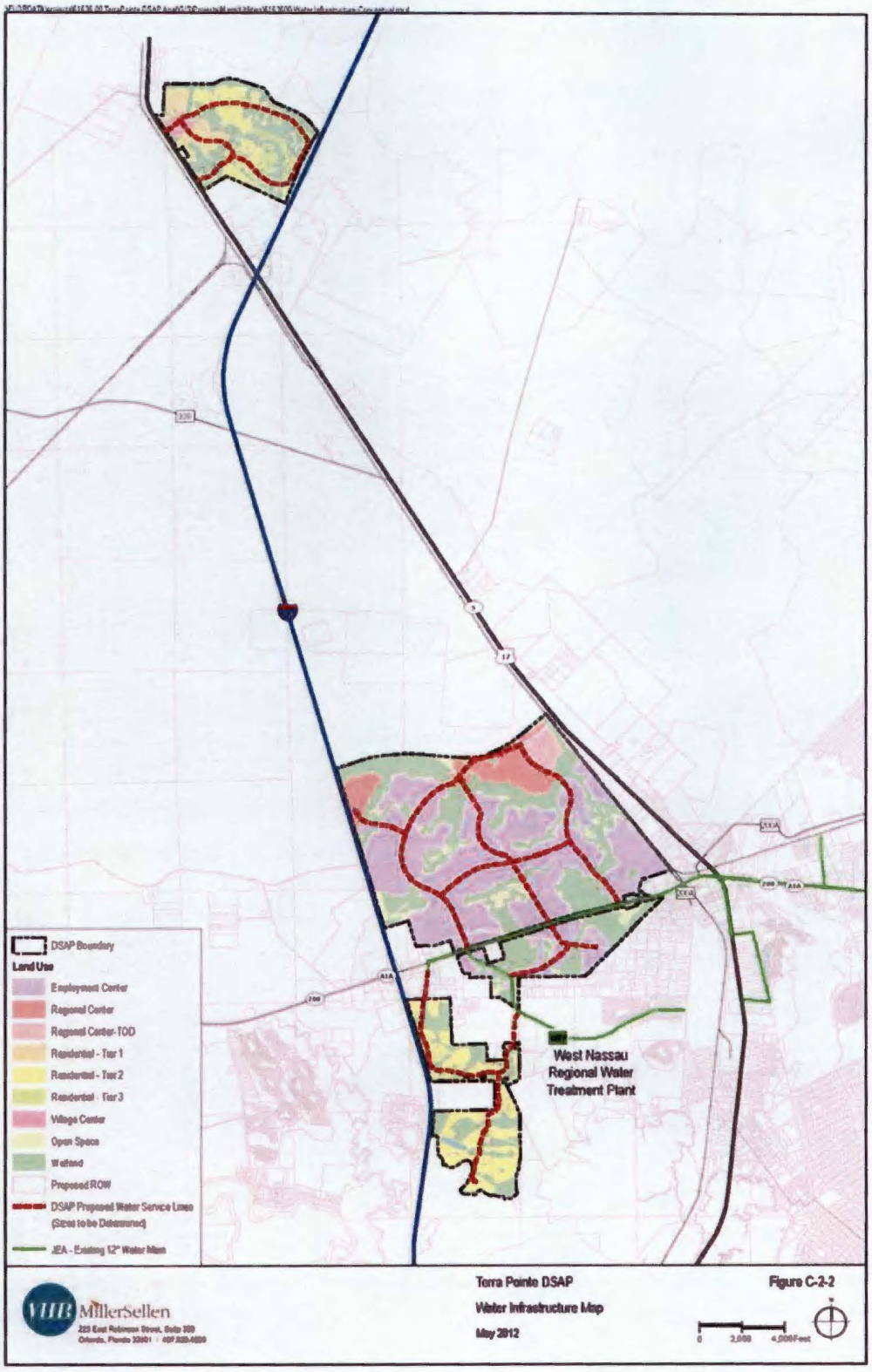


Figure C-2-2
Water Infrastructure Map



C.3 Wastewater

JEA Service Area 7 is served by a single wastewater treatment plant, the Nassau Regional Sewer Treatment Facility (see Figure C-3-1). JEA is currently operating this facility at the permitted level of 1.55 MGD. Currently, average daily demand at this facility is 0.86 MGD. JEA has plans to expand the plant to 2.0 MGD in the year 2014, in preparation to meet the needs of future growth. Scheduled sewer improvements beyond 2014 are limited to force main construction, in conjunction with roadway improvements and future development needs.

As with potable water, it should be noted that the North DSAP is located immediately outside the northernmost boundary of JEA's District 7 boundary for sewer service. Again, due to ENCPA policy limitations and planned densities within the North Planning Area, private septic systems are not feasible. For this reason, it is recommended that annexation of the North Planning Area into the JEA service district be sought; thereby, allowing the extension of the existing 8-inch sanitary forcemain which currently terminates at the intersection of HWY 17 and HWY 108.

C.3.1 Wastewater – 5-yr Projections

Wastewater demand for the proposed 5-yr development program was calculated utilizing Nassau County's adopted level of service (LOS) for new development, as reported in the Nassau County 2030 Comprehensive Plan. The LOS for wastewater treatment service within Nassau County is 100 gallons per capita per day. This LOS is then multiplied by 2.32 persons per household to convert GPD/capita to GPD/household. For non-residential uses, the LOS requirements are based upon an Equivalent Residential Connection (ERC) to be calculated by the service provider, at the time of application. For the purposes of this study, an average value ERC of 0.1 gallons per day per square foot was applied to non-residential development. Using these values, Table C-3a estimates short term (5-yr) demand for wastewater treatment.

Table C-3a Estimated Wastewater Demand (5-Yr)

	Residential	Non-residential	Total Demand
5-YR DSAP	350 du	400,000 sq ft	0.12 MGD

Table C-3b provides projected available treatment capacity, current usage, 5-yr DSAP demand and resulting capacity.

Table C-3b Projected Wastewater Plant Capacity (5-Yr) (MGD)

Wastewater Plant	Plant Capacity*	Current Usage*	DSAP Demand	Remaining Capacity
Nassau Regional	2.00	0.86	0.12	1.02

**Source: As reported by JEA Water System Planning Staff, March 2012*

Adequate capacity exists at the available treatment facilities to accommodate the proposed 5-yr development program.

C.3.2 Wastewater – Build-out Projections

Tables C-3c estimates the East Nassau Employment Center's potable water demand at build-out utilizing the same methodology as the 5-year development program.

Table C-3c Estimated Wastewater Demand (Build-out)

	Residential	Non-residential	Total Demand
DSAP (Build-out)	4,038 du	7,100,000 sq ft	1.65 MGD

Should the DSAP's maximum development program be realized, total projected demand for wastewater treatment would be approximately 1.31 million gallons daily (MGD).

Table C-3d provides projected available treatment capacity, forecasted demand through 2035, DSAP demand at build-out and resulting capacity.

Table C-3d JEA Wastewater Plant Availability (MGD) after Build-Out

Wastewater Plant	Plant Capacity*	Projected Usage*	DSAP Impact	Available Capacity
Nassau Regional	2.00	1.50	1.65	-1.15

**Source: As reported by JEA Water System Planning Staff, March 2012*

At this time, adequate wastewater treatment capacity does not exist to accommodate the proposed DSAP development program at build-out. It is estimated that the Nassau Regional Sewer Treatment Facility would need to be expanded to 3.25 MGD over the next 20 years to accommodate both projected growth as well as the proposed DSAP development program.

C.3.2 Wastewater – Proposed Infrastructure Plan

Figure C-3-2, Wastewater Infrastructure Map, shows gravity sewer service area boundaries, represented by a circle (Radius = 2,000ft). Due to the isolated nature of many of the proposed development parcels, it is likely that sewage collection systems will not be connected through large gravity main networks. Limited by topography and geometry, small service areas will be most probable. Central to the service area boundary is a lift station/pump station. If development timing allows, manifold force main systems can be replaced with cascading sewer systems, allowing for less expensive pumping designs.

The final design of the conceptual wastewater Infrastructure must conform with, and be permitted through, the Florida Department of Environmental Protection Agency. The infrastructure design must be able to handle Average Day and Peak Day design flows. Gravity sewer systems must be design to operate within the range of allowable flow velocities. Pump stations with manifolding force mains must operate in the "all-on" condition and be able to perform a complete "pump-out." All components of the wastewater collection system must comply with the standards established by JEA.

Figure C-3-1
JEA District 7 – Sewer Service Area

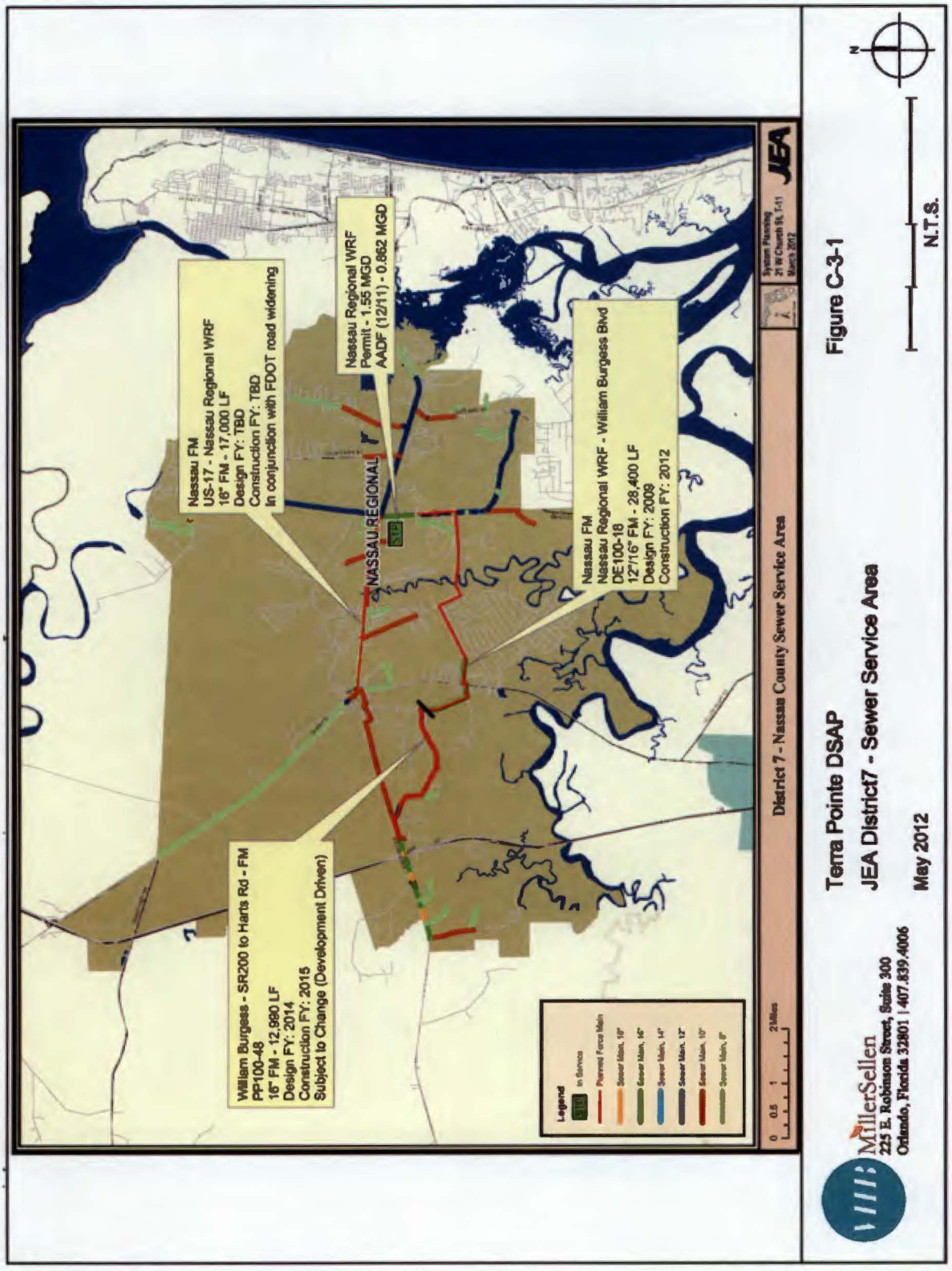
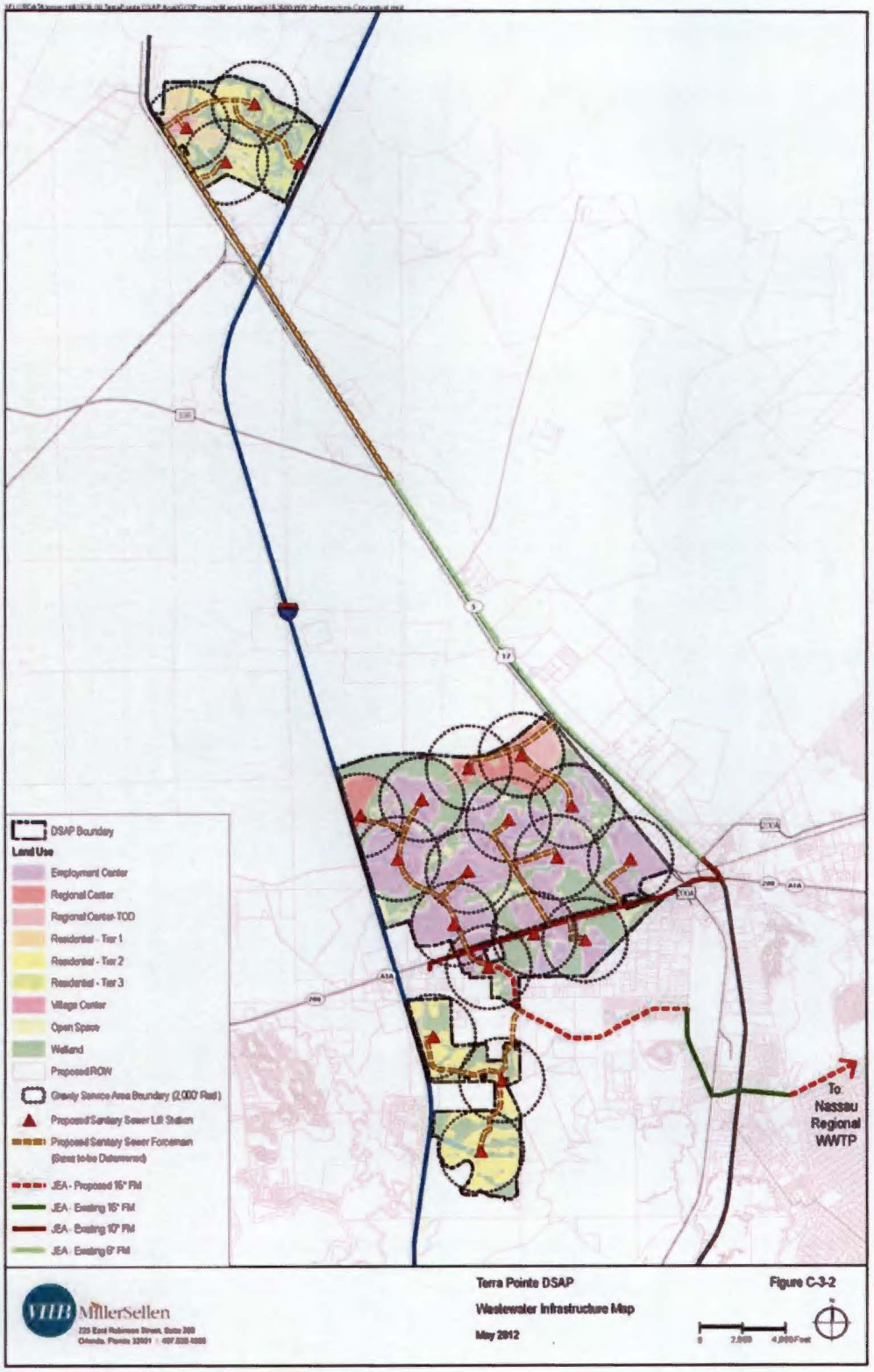


Figure C-3-2

Wastewater Infrastructure Map



C.4 Solid Waste

Solid Waste service is provided to the region by Nassau County. Nassau County has an adopted solid waste Level of Service of 4.91 pounds per capita per day. Table C-4 provides an estimate of solid waste creation at build-out based upon the number of residential units and projected persons per household within the DSAP.

Table C-4a Estimated Solid Waste Demand at Build-out (lbs/capita/day)

Residential Units	Persons Per Household	Projected DSAP Population	LOS*	Total Demand (Tons per year)	Total Demand (lbs per day)
4,038	2.32	9,368	4.91	8,395	46,000

**Source: Nassau County 2030 Comprehensive Plan*

Nassau County has agreements with Camden County Landfill Solid Waste Disposal Facility (Georgia) and with Chesser Island Road Landfill (Georgia). Both agreements signed in 2009 are for ten years with the option to renew for an additional five years.

Camden County Landfill Solid Waste Disposal Facility is located 30 miles northwest of the DSAP area. The Camden County Landfill will allow 450 tons per day. It currently receives 150 tons per day from Nassau County. The life expectancy is more than 15 years.

Owned by Waste Management of Georgia, Chesser Island Road Landfill (CIRL) is located 35 miles to the northwest of the DSAP area. CIRL disposes 810,000 tons per year, with a life expectancy of 27 years.

Table C-4b estimates the impact of the DSAP development program on the existing capacity of the Camden County and Chesser Island Road Landfills. The proposed DSAP contributes less than 23 tons per day to each landfill, at final build-out. The resulting additional annual tonnage reduces the estimated lifespan of the landfill by less than one tenth of a year.

Table C-4b Solid Waste Capacity

Provider	Current Annual Tonnage	Estimated Lifespan (yrs)	DSAP Annual Tonnage	New Lifespan (yrs)
Camden County	146,000	12	9,045/2	12
Chesser Island	810,000	27	9,045/2	27

In summary, no improvements to solid waste facilities have been determined to be necessary to accommodate the proposed DSAP development programs.

C.5 Stormwater

Stormwater management system improvements for this region of Nassau County may be developed as regional systems accounting, where possible, for multiple areas of improved development. Efforts may be made to design stormwater treatment and attenuation systems, (i.e. wet and dry ponds, swales, underground chambers, ex-filtration trenches, etc.) and supporting conveyance pipes and swales as systems.

Stormwater systems will be permitted in accordance with the St. John's River Water Management District (SJRWMD) discharge design criteria. Since the proposed stormwater management system will meet the requirements set forth by SJRWMD and Nassau County, the quality of the storm water leaving the site will meet state water quality standards. The ultimate receiving waters will be the St. Mary's River or the St. John's River.

The interconnected wetland systems serve as the method for conveying the treated runoff to the river. In locations where the wetland systems will be severed by proposed roadways, storm drainage networks will be installed beneath the roadway to provide proper surface water flow between wetland areas.

Compared to the pre-existing condition, control structures within the designed ponds and conveyance systems will delay the release of excess stormwater, thereby allowing suspended solids, excess nutrients such as nitrogen and phosphorus, and other potential pollutants to be removed from the stormwater discharge. The proposed stormwater ponds will be designed at such a size in order to provide storage of stormwater run-off and limit post-development discharge from exceeding pre-development discharge from the project. Lastly, the modeling techniques and design applications will comply with SJRWMD requirements and incorporate best management practices in the treatment ponds and conveyance systems.

C.6 Schools

In 2008, Nassau County adopted a school concurrency system consistent with state statute. The details of this system are outlined in both an Interlocal Agreement (ILA) with the School Board of Nassau County and Nassau County's Comprehensive Plan's Public School Facilities Element (PSFE). These documents identify procedures for determining available capacity, identifying deficiencies and implementing improvements.

For the purpose of determining existing and future capacity, the County was subdivided into eight (8) Concurrency Service Areas. These CSAs identify which schools may serve a proposed development project. The East Nassau Employment Center DSAP is located within both the Yulee North and Yulee South CSAs. These CSAs are currently served by Yulee Primary School, Yulee Elementary School, Yulee Middle School and Yulee High School.

Via the Comprehensive Plan's PSFE, Nassau County has adopted a Level of Service (LOS) of 95% of the permanent Florida Inventory of School Houses (FISH) capacity for elementary schools and 100% for middle and high schools. For the purpose of estimating DSAP impacts, an analysis was completed for both the 5-yr (2016) and build-out conditions.

C.6.1 Schools – 5-yr Projections

Table C-6a estimates short-term or 5-yr student generation for the East Nassau Employment Center DSAP. Student generations rates for each school level were provided by Nassau County School Board Staff.

Table C-6a Estimated DSAP Student Generation (5-yr)

Residential	Student Generation Rates			Students by School Type		
Units	Elementary	Middle	High	Elementary	Middle	High
350	.25	.14	.16	88	49	56

**Source: 2012 student generation rates as provided by Nassau County School Board staff*

Table C-6b is an estimate of 5-yr capacity available at the public schools serving the DSAP. The 2012-2013 Nassau County School Board 5-year Facilities Work Program was used to determine permanent FISH capacity and projected enrollment per school. Available capacity was calculated by applying the adopted LOS to projected 2016/17 enrollment.

Table C-6b 5-yr School Capacity (Yulee CSA)

School	FISH Capacity	2016/17 Projected Enrollment	2016/2017 LOS	Available Capacity
Yulee Primary	832	798	103%	-21
Yulee Elementary	831	798	96%	33
Yulee Middle	943	909	80%	34
Yulee High	1,121	981	87%	140

**Source: 2012-13 Nassau County School Board 5-yr Facilities Work Program*

Per Table C-6b, a 5-year deficit is projected at Yulee Primary. In addition, adequate capacity does not exist to accommodate the project 5-yr student demand at either the elementary or middle school level. Adequate capacity does exist at Yulee High to accommodate the projected 56 students generated by the 5-yr development program.

Per the Amended Interlocal Agreement for Public School Facility Planning (ILA), new capacity in place or under construction in the first three years of the Schools District's Educational Facilities Plan may be added to the capacity shown in the respective CSA and utilization rates will be adjusted accordingly. At this time, 132 additional middle school student stations are planned and funded within the first

three years of the 2012-2013 Educational Facilities Plan. The addition of 132 new student stations at the middle school level brings total available capacity in 2016/2017 to 166; therefore, these additional improvements will result in sufficient capacity to accommodate the 5-yr development program's projected middle school demand of 49 students.

In addition to the inclusion of programmed improvements, the ILA allows for the use of additional capacity contained in adjacent CSAs. Per the County's PSFE, CSAs contiguous to Yulee North and South include, North Central Nassau, South Central Nassau and Fernandina. At this time, no schools exist in the North Central Nassau or South Central Nassau; therefore, no additional capacity may be had from these areas. The Fernandina Beach CSA contains four (4) schools including, Emma Love Hardee Elementary, Southside Elementary, Fernandina Beach Middle and Fernandina Beach Senior High.

Table C-6c is an estimation of 5-yr capacity available within the Fernandina Beach CSA.

Table C-6c 5-yr School Capacity (Fernandina CSA)

School	FISH Capacity	2016/17 Projected Enrollment	2016/2017 LOS	Available Capacity
ELH Elem	710	541	75%	110
Southside Elem	687	611	81%	76
Fernandina Middle	795	639	89%	156
Fernandina High	1,255	789	70%	466

**Source: 2012-13 Nassau County School Board 5-yr Facilities Work Program*

It appears that adequate capacity exists within the adjacent Fernandina CSA to accommodate the projected elementary level impacts of the DSAP 5-year development program; therefore, no amendment to the Nassau County Capital Improvements Plan (CIP) or School Board's Educational Facility Plan is needed at this time.

C.6.1 Schools – Build-out Projections

Table C-6d estimates long-term or build-out student generation for the East Nassau Employment Center DSAP.

Table C-6d Estimated DSAP Student Generation (build-out)

Residential	Student Generation Rates			Students by School Type		
Units	Elementary	Middle	High	Elementary	Middle	High
4,038	.25	.14	.16	1,010	565	646

**Source: 2012 student generation rates as provided by Nassau County School Board staff*

Build-out of the DSAP development program could result in the addition of 1,010 elementary school students, 565 middle school students and 646 high school

students. Utilizing the school districts prototypical school sizes as outlined in the ILA, it can be assumed that the equivalent of 1.26 elementary schools, .47 middle schools and .43 high schools would be needed to accommodate the projected DSAP student generation at build-out. The School Board's 2012-2013 Work Plan contains two new Yulee area elementary schools within the 10-year work plan. If built, these schools would address projected deficits at the existing Yulee area elementary schools and accommodate the projected DSAP student generation at build-out. Additional middle and high school improvements may need to be included in future School Board Work Plans to accommodate projected impacts at those levels.

C.7 Recreation and Open Space

Nassau County has adopted within its comprehensive plan a tiered recreation and open space level of service (LOS) standard based upon acreage per 1,000 residents. These LOS standards are summarized in Table C-7a.

Table C-7a Nassau County Recreation and Open Space LOS

Type	Service Radius	Minimum Size	Acres/1,000 Residents
Community Parks	1-2 Miles	10 Acres	3.35
Regional Parks - General	County-wide	30 Acres	10
Regional Parks – Beach Access	County-wide	Variable	.25
Regional Parks – Boat Facility	County-wide	Variable	.40

Source: Nassau County 2030 Comprehensive Plan

C.6.1 Recreation and Open Space – 5-yr Projections

Table C-7b estimates short-term or 5-yr recreation and open space demand for the East Nassau Employment Center DSAP. It assumes a standard 2.5 persons per household (PPH) for the 350 residential units proposed in the 5-yr development program.

Table C-7b Estimated DSAP recreation and open space demand (5-yr)

Type	Projected 5-yr Population*	Acres/1,000 Residents	Projected 5-yr Demand
Community Parks	875	3.35	2.93
Regional Parks - General	875	10	8.75
Regional Parks – Beach Access	875	.25	0.22
Regional Parks – Boat Facility	875	.40	0.35

**350 dwelling units x 2.5 persons per household = 875 residents*

C.6.2 Recreation and Open Space – Build-out Projections

Table C-7c estimates long-term or build-out recreation and open space demand for the East Nassau Employment Center DSAP. As with the 5-yr projections, the build-out projections assume a standard 2.5 persons per household (PPH) for the 4,038 residential units proposed at build-out.

Table C-7c Estimated DSAP recreation and open space demand (build-out)

Type	Projected Buildout Population*	Acres/1,000 Residents	Projected Buildout Demand
Community Parks	10,095	3.35	33.82
Regional Parks - General	10,095	10	100.95
Regional Parks – Beach Access	10,095	.25	2.52
Regional Parks – Boat Facility	10,095	.40	4.04

**4,038 dwelling units x 2.5 persons per household = 10,095 residents*

Currently, Nassau County is deficient in all types of recreation and open space facilities. The proposed DSAP 5-yr and build-out programs are estimated to increase demand by approximately 12 acres and 141 acres, respectively. This demand is being met through the provision of significant open space and an extensive multi-use trail system.

The proposed DSAP land use plan includes approximately 1,700 acres of open space in the form of interconnected wetlands, surface waters and upland preserves forming a Conservation Habitat Network (CHN). This open space system is intended to serve both the residents and employees of the East Nassau Employment Center DSAP as well as the remainder of the County. The significant open space system provided by the DSAP is capable of not only accommodating DSAP impacts but also addressing a County wide deficiency in regional parks through 2030.

At build-out, the East Nassau Employment Center DSAP will contain over 20 miles of multi-use trails. Assuming an average width of twelve feet, this trail system would provide over 30 acres of recreational facilities and connect neighborhoods and employment centers to the extensive open space network.

In addition to both the CHN and multi-use trail system, ENCPA policies require the inclusion of neighborhood parks, plazas and playfields. At build-out, these facilities are anticipated to exceed the projected demand created by the DSAP development program and assist significantly in addressing the County's overall deficiency in recreation and open space acreage.

C.7 Summary

In conclusion, adequate potable water, sanitary sewer, solid waste, public school and recreational facilities exist to accommodate the proposed DSAP 5-yr development program. Future improvements may be necessary to accommodate the DSAP's projected wastewater and public school impacts at build-out.

Appendix D

Intergovernmental Coordination

Section 163.3245, Florida Statutes, requires the, "Identification of specific procedures to facilitate intergovernmental coordination to address extrajurisdictional impacts from the detailed specific area plan." Nassau County maintains a Regional Coordination Element as a component of the comprehensive plan. This element contains goals, objectives and policies ensuring coordination of planning efforts with adjacent counties and cities, regional, state and federal agencies and entities that provide services but do not have regulatory authority within Nassau County. This includes, but is not limited to, the Florida Department of Transportation (FDOT), the North Florida Transportation Planning Organization, Florida Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission (FWC), St Johns River Water Management District (SJRWMD), the Northeast Florida Regional Planning Council (NFRPC) and Jacksonville Energy Authority (JEA).

EXHIBIT "D"

VHB Planning | Transportation | Land Development | Environmental

Vanasse Hangen Brustlin, Inc.
225 East Robinson Street, Suite 300
Orlando, FL 32801
407.839.4006 • Fax 407.839.4008
www.vhb.com

Memorandum

To: Nick Gillette, Gillette and Associates, Inc.

Date: March 19, 2013

Project No.: 61636.00

From: Laurence Lewis

Re: REVISED SR A1A Interchange Analysis
ENCPA DSAP Employment Center

Summary

This technical memorandum summarizes the analysis of the I-95/SR A1A interchange and the potential impacts associated with the development of the Employment Center DSAP within the East Nassau Community Planning Area (ENCPA). The purpose of the analysis is to estimate short-term and mid-term impacts of the DSAP on the interchange, assuming that the new ENCPA interchange to the north is not in place.

The following are the primary conclusions of the analysis:

- For existing conditions, both intersections at the I-95/SR A1A interchange operate at Level of Service C or better for both the AM and PM peak. For the worst case movement (AM peak at the southbound ramps, westbound left turn), approximately 88 percent of the capacity is currently being used.
- With buildout of the Employment Center (2,500 residential units and 7 million sf non-residential) but without the new interchange, both intersections at the SR A1A interchange are projected to operate at LOS F if no improvements are made.
- Assuming the six-lane widening of SR A1A but no improvements to the existing turn lanes or ramps at the existing interchange, approximately 16 percent of the DSAP Employment Center can be developed before the interchange reaches capacity for worst case conditions. This equates to 14,834 daily trips.
- The five-year development program for the DSAP Employment Center equates to 6,822 daily trips. Therefore, no short-term improvements to the existing interchange are needed within the next five years.
- The proposed ENCPA Mobility Plan includes $700,000 for mid-term improvements at the I-95/ SR A1A interchange. Potential improvements include dual left turn and right turn lanes to increase the intersection capacity. With these improvements, approximately 75 percent of the DSAP Employment Center can be developed before any portion of the interchange reaches capacity for worst case conditions. This equates to 68,610 daily trips.
- The long-term strategy for the ENCPA Mobility Plan is to invest in a new interchange rather than pursue a long-term reconstruction of the A1A interchange. A new interchange will provide more capacity and will also shift traffic away from SR A1A. The new interchange is

consistent with the planning goals for the ENCPA, and is included in both the approved Sector Plan and the County Comprehensive Plan.

- Approval of a new interchange will occur through the Interchange Justification Report (IJR) process, which requires approval from both FDOT and FHWA. To meet the federal IJR requirements, the existing interchange will have to meet failure to demonstrate a need for the new interchange.

Existing Conditions Analysis

The interchange analysis includes the two intersections of SR A1A and the I-95 ramps:

- I-95 NB ramps at SR A1A (east intersection)
- I-95 SB ramps at SB A1A (west intersection)

Traffic counts at the two intersections were collected on Wednesday January 23, 2013 for the AM Peak (7-9 AM) and PM Peak (4-6 PM) periods. Copies of the traffic counts are included as **Attachment A.**

Both intersections were analyzed using Synchro 7. The Synchro model was constructed to match existing conditions at the interchange in terms of lane geometry and signal phasing. **Table 1** summarizes the results of the existing conditions Synchro analysis. Copies of the Synchro analysis reports are included as **Attachment B.**

Table 1 – Existing Conditions Summary

Intersection Analysis Results	I-95 NB ramps and SR A1A		I-95 SB ramps and SR A1A	
	AM Peak	PM Peak	AM Peak	PM Peak
Overall Level of Service	B	B	C	B
Failing Movements?	No	No	No	No

Source: VHB 3/6/13

The Volume to Capacity ratio was used as an estimate of the capacity used for each movement. For existing conditions, the worst case scenarios exist during the AM peak at the SB ramp intersection and the PM peak at the NB ramp intersection. **Table 2** below summarizes the results of the two worst case scenarios, the westbound left movement during the AM peak and the northbound right during the PM peak.

Table 2 – Existing Conditions Summary for Worst Case Scenarios

Intersection Analysis Results, Worst Case Scenarios	I-95 SB ramps and SR A1A AM Peak Westbound Left	I-95 NB ramps and SR A1A PM Peak Northbound Right
Level of Service	B	C
Failing Movement?	No	No
Volume to Capacity Ratio	0.88	0.82

Source: VHB 3/6/13

DSAP Employment Center Trip Generation

As documented in earlier submittals for the ENCPA DSAP, the development program for the DSAP Employment Center consists of 2,500 residential units and 7 million square feet of nonresidential uses, as follows:

- 2,500 apartments
- 700,000 sf retail
- 1,890,00 sf office park
- 4,410,000 sf industrial

Table 3 summarizes the gross trip generation for the DSAP Employment Center. For the AM Peak Hour, the Employment Center is estimated to generate 8,178 trips. For the PM Peak Hour, the Employment Center is estimated to generate 10,088 trips.

Table 3 – DSAP Employment Center Trip Generation Summary

Land Use	ITE Category	Intensity	Daily Trips	AM Peak Trips			PM Peak Trips		
				Total	In	Out	Total	In	Out
Apartment	220	2,500 du	16,625	1,275	255	1,020	1,550	1,008	542
Retail	820	700,000 sf	24,058	485	296	189	2,343	1,148	1,195
Office Park	750	1,890,000 sf	20,103	2,714	2,415	299	2,402	336	2,066
Industrial Park	130	4,410,000 sf	30,694	3,704	3,037	667	3,793	797	2,996
Gross Total			**91,480**	**8,178**	6,003	2,175	**10,088**	3,289	6,799

Trip Distribution and Trip Assignment

The trip distribution for the DSAP Employment Center is assumed to be the same as the overall directional distribution for the ENCPA. (This distribution was documented in Table B-6 of the DSAP Transportation Appendix B.) **Table 4** summarizes the distribution for the Employment Center traffic using the SR A1A interchange (in the absence of a new interchange to the north):

Table 4 – DSAP Employment Center Traffic Distribution

Direction (to/from)	Distribution
South via I-95	27.14%
North via I-95	1.95%
West via SR A1A	5.92%
Total through SR A1A Interchange	**35.01%**

Without a new I-95 interchange, 35% of the Employment Center traffic will travel through the existing SR A1A interchange. The remaining trips are to/from the east, or remain internal to the Employment Center.

Future Conditions Analysis

Based on the trip generation and distribution for the DSAP Employment Center, future conditions were analyzed at the two interchange intersections using Synchro. For each scenario (AM Peak and

PM Peak at each intersection), the Employment Center project traffic was added to the existing traffic volumes. Sketches of the traffic volume calculations are included as **Attachment C.** The following assumptions were used to develop these volumes:

- No growth in background traffic is assumed. This was done to isolate the impacts of ENCPA development and remove traffic growth from approved but unbuilt development along SR A1A.
- The widening of SR A1A to six lanes is assumed through the interchange, as the widening of SR A1A from I-95 east is funded through FDOT's Five Year Work Program. No improvements to turn lanes or ramps are assumed at the interchange. (However, if FDOT or others fund turn lane or ramp improvements, this could increase the capacity available for the ENCPA or for other development.)

Table 5 summarizes the Synchro intersection analysis assuming buildout of the DSAP Employment Center but no new I-95 interchange. This analysis shows that with buildout of the Employment Center, both worst case movements, the westbound left (WBL) during the AM peak and the northbound right (NBR) movement during the PM peak, would operate at LOS F for future conditions. Copies of the Synchro reports are included as **Attachment D.**

Table 5 – Future Conditions Summary for Worst Case Scenarios – DSAP Employment Center Buildout, No New I-95 Interchange

Intersection Analysis Results, Worst Case Scenarios	I-95 SB ramps and SR A1A AM Peak Westbound Left	I-95 NB ramps and SR A1A PM Peak Northbound Right
Level of Service	F	F
Failing Movement?	Yes	Yes
Volume to Capacity Ratio	1.43	1.93

Source: VHB 3/6/13

Interchange Capacity Threshold

Based on the analysis results for existing conditions and for buildout of the Employment Center, a straight line estimate (interpolation) was used to identify when either of the interchange intersections would reach 100% capacity. **Table 6** summarizes this capacity calculation. As shown in the table, just over 16 percent of the DSAP Employment Center can be developed before either the westbound left in the AM peak or northbound right in the PM peak at the SR A1A interchange would reach capacity. Of the two movements, the northbound right movement will reach capacity before the westbound right movement. Therefore, the northbound right movement during the PM peak will be used for the analysis. In terms of daily trips, the percentage associated with the northbound right equates to 14,834 daily trips. **Table 7** summarizes the equivalent development program associated with this threshold. Assuming an even mix of uses based on the approved Employment Center program (Scenario 1), the threshold equates to 405 residential units and approximately 1.1 million square feet of non-residential uses. Assuming that non-residential uses are developed first (Scenario 2), the threshold equates to zero residential units and approximately 1.4 million square feet of non-residential uses.

Table 6 – Summary of Interchange Capacity Threshold

	DSAP Daily Trips		Interchange Movement Capacity Used		Employment Center Buildout	
	AM WBL	PM NBR	AM WBL	PM NBR	AM WBL	PM NBR
Existing Conditions	0	0	88%	70%	0%	0%
DSAP Employment Center Buildout	91,480	91,480	143%	192%	100%	100%
Interchange Capacity (with no improvements)	**19,959**	**14,834**	**100%**	**100%**	**21.8%**	**16.2%**

Note: Interchange capacity based on worst case conditions as shown in Table 1 and Table 4.

Table 7 – Development Program Threshold for Existing Interchange Capacity (Based on Northbound Right Movement During the PM Peak Hour)

Land Use	Scenario 1 All Land Uses		Scenario 2 Non-Residential Only	
	Intensity	Percentage of Total	Intensity	Percentage of Total
Apartment	405 units	16.2%	0 units	0%
Retail	113,514 sf	16.2%	138,724 sf	19.8%
Office	306,487 sf	16.2%	374,556 sf	19.8%
Industrial	715,135 sf	16.2%	873,964 sf	19.8%
Total	405 residential units, 1,135,135 sf non-residential		0 residential units, 1,387,244 sf non-residential	

The five-year development program for the Employment Center DSAP consists of 350 apartments and 400,000 sf office. (This program is documented in Table B-10 of DSAP Transportation Appendix B.) The five-year development program generates 6,822 daily trips, less than the 14,834 trip threshold for the existing interchange capacity. Therefore, no short-term improvements to the existing interchange are needed within the next five years to accommodate DSAP development.

ENCPA Mobility Plan Improvements

A key component of the ENCPA Mobility Plan is the creation of alternate routes as a way to provide long-term transportation capacity. Similar to the investment in CR 108 as a parallel route to SR A1A, the Mobility Plan includes costs for a new interchange instead of costs for the long-term reconstruction of the SR A1A interchange. A new interchange (with connecting roadway network) will provide more capacity and will also shift traffic away from SR A1A.

For the I-95/SR A1A interchange, the ENCPA Mobility Plan includes $700,000 for intersection improvements. This funding is in addition to the costs for a new I-95 interchange to the north. Potential improvements include dual left turn and right turn lanes, in particular for the movements to and from Duval County. As stated above, no interchange improvements are needed to accommodate the DSAP five-year development program, so the turn lane improvements would address mid-term impacts.

Using the Florida Department of Transportation (FDOT) Generic Cost Per Mile Models, the following improvements, as summarized in **Table 8**, can be made to the I-95/ SR A1A interchange using the $700,000 included in the ENCPA Mobility Plan.

Table 8 – Estimated Costs for I-95/ SR A1A Interchange Improvements

Improvement	Description	Length (mi.)	FDOT Cost Model	Cost per Mile (both directions)	Cost per Mile (one direction only)	Improvement Cost
Add second lane to I-95 southbound on-ramp	Convert one westbound through lane on SR A1A to second left turn lane; Add second receiving lane to I-95/A1A southbound ramp	0.25	Rural Widen Existing 2 Lane Arterial to 4 Lanes Undivided; Add 1 Lane to Each Side; 5' Paved Shoulders	$2,042,737	$1,021,369	$255,342
Add second right turn lane to I-95 northbound off-ramp	Add northbound right turn lane at I-95/A1A northbound ramp	0.25	Rural Widen Existing 2 Lane Arterial to 4 Lanes Undivided; Add 1 Lane to Each Side; 5' Paved Shoulders	$2,042,737	$1,021,369	$255,342
	Add signal head and retime signal for protected northbound right movement at I-95/A1A northbound ramp	-	-	-	-	$25,000
Add second left turn lane to I-95 southbound off-ramp	Add southbound left turn lane at	0.1	Rural Widen Existing 2 Lane Arterial to 4 Lanes Undivided; Add 1 Lane to Each Side; 5' Paved Shoulders	$2,042,737	$1,021,369	$102,137
	Total					**$637,821**

Source: FDOT Generic Cost per Mile Models, Updated as of 2/20/2013

3/6/13

As listed in **Table 8**, at the I-95/SR A1A southbound ramps intersection, the conversion of one of the westbound through lanes to a westbound left turn lane is proposed, with the addition of a receiving lane on the on-ramp. Also proposed at this intersection is the addition of a second southbound left turn lane at the southbound off-ramp. For the intersection of SR A1A and the I-95 northbound ramps, the addition of a second northbound right turn lane is proposed. **Table 9** below summarizes the results of the Synchro 7 analysis of the interchange with the modified geometry. Copies of the Synchro analysis reports are included as **Attachment E.**

Table 9 – Future Conditions Summary for Worst Case Scenarios – DSAP Employment Center Buildout, Modified Intersection Geometry, No New I-95 Interchange

Intersection Analysis Results, Worst Case Scenarios	I-95 SB ramps and SR A1A Westbound Left	I-95 NB ramps and SR A1A Northbound Right
Level of Service	D	B
Failing Movement?	No	No
Volume to Capacity Ratio	1.04	0.81

The results shown are for the PM Peak period, since this represents worst case conditions at both locations.

Source: VHB 3/6/13

With the proposed geometric modifications to the I-95/SR A1A interchange, the two worst case movements, the westbound left movement and the northbound right movement, are not projected to have failing levels of service even with the full buildout of the DSAP employment center. However, the westbound left turn is projected to remain over capacity (with a volume to capacity ratio greater than 1.0). **Table 10** shows the capacity threshold for the interchange with the addition of the recommended improvements. As shown in the table, approximately 75 percent of the DSAP Employment Center can be developed with the addition of these improvements. This equates to approximately 68,610 daily trips.

Table 10 – Summary of Interchange Capacity Thresholds, After $700,000 in ENCPA Mobility Network Improvements

	DSAP Daily Trips	Employment Center Buildout	Interchange Capacity Used
Existing Conditions	0	0%	88%
DSAP Employment Center Buildout	91,480	100%	104%
Interchange Capacity Threshold (with improvements)	**68,610**	**75%**	**100%**

Source: VHB 3/9/13

Table 11 summarizes the equivalent development program associated with this threshold. Assuming an even mix of uses based on the approved Employment Center program, the threshold equates to 1,875 residential units and approximately 5.25 million square feet of non-residential uses.

Table 11 – Development Program Threshold for Interchange Capacity, After Improvements (Based on Westbound Left Movement During the PM Peak Hour)

Land Use	Intensity	Percentage of Total
Apartment	1,875 units	75%
Retail	525,000 sf	75%
Office	1,417,500 sf	75%
Industrial	3,307,500 sf	75%
Total	1,875 residential units, 5,250,000 sf non-residential	

The approval of the new interchange requires approval of an Interchange Justification Report (IJR) by the Federal Highway Administration (FHWA). The FHWA specifies eight required criteria for a new interchange, all of which must be met. One of the criteria is to demonstrate that the capacity need cannot be met at existing interchanges. To satisfy this standard, it will be necessary to achieve failing conditions at the existing interchange (for temporary conditions only).

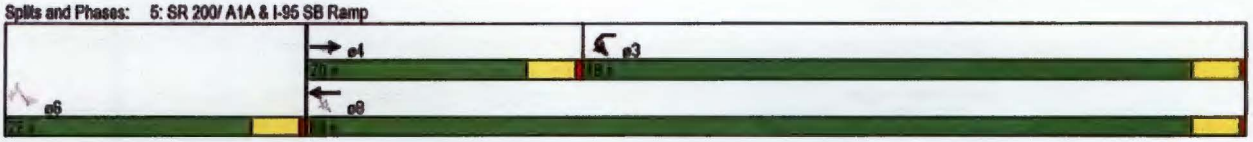
Unlike other ENCPA conditions that only involve one government entity (Nassau County), the approval of the IJR involves regional, state and national agencies. For example, the IJR must be submitted by FDOT to the Federal Highway Administration (FHWA). As a result, FDOT approval is required (both by District 2 and by Central Office) before it is formally submitted. Additionally, final approval requires the support of the First Coast TPO and the addition of the project in the region's adopted Long Range Transportation Plan.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations		↑↑	↱	↰	↑↑		↰		↱		
Volume (vph)	0	421	177	805	228	0	43	0	54	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0		0	80	0	0
Storage Lanes	0		1	1		0		1	1	0	0
Taper Length (ft)	25		25	25		25		25	25	25	25
Right Turn on Red			Yes			Yes			Yes		
Link Speed (mph)		45			45			30		30	
Link Distance (ft)		1872			654			812		870	
Travel Time (s)		28.4			9.9			18.5		19.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	458	192	875	248	0	47	0	59	0	0
Turn Type			Perm	pm+pt			custom		custom		
Protected Phases		4		3	8						
Permitted Phases			4	8			6		6		
Minimum Split (s)		20.0	20.0	8.0	20.0		20.0		20.0		
Total Split (s)	0.0	20.0	20.0	48.0	68.0	0.0	22.0	0.0	22.0	0.0	0.0
Total Split (%)	0.0%	22.2%	22.2%	53.3%	75.6%	0.0%	24.4%	0.0%	24.4%	0.0%	0.0%
Yellow Time (s)		3.5	3.5	3.5	3.5		3.5		3.5		
All-Red Time (s)		0.5	0.5	0.5	0.5		0.5		0.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lead	Lead	Lag							
Lead-Lag Optimize?		Yes	Yes	Yes							
v/c Ratio		0.73	0.44	0.88	0.10		0.13		0.07		
Control Delay		42.6	8.5	22.0	0.4		30.8		0.1		
Queue Delay		0.0	0.0	3.4	0.0		0.0		0.0		
Total Delay		42.6	8.5	25.4	0.4		30.8		0.1		
Queue Length 50th (ft)		131	0	476	2		22		0		
Queue Length 95th (ft)		184	56	#684	3		52		0		
Internal Link Dist (ft)		1792			574			732		790	
Turn Bay Length (ft)			190						80		
Base Capacity (vph)		629	439	992	2517		354		876		
Starvation Cap Reductn		0	0	61	0		0		0		
Spillback Cap Reductn		0	0	0	0		0		0		
Storage Cap Reductn		0	0	0	0		0		0		
Reduced v/c Ratio		0.73	0.44	0.94	0.10		0.13		0.07		

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 12 (13%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle: 80
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: SR 200/ A1A & I-95 SB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations		↑↑	↱	↰	↑↑		↰		↱		
Volume (vph)	0	421	177	805	228	0	43	0	54	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0		
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00		
Frt		1.00	0.85	1.00	1.00		1.00		0.85		
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583		
Flt Permitted		1.00	1.00	0.31	1.00		0.95		1.00		
Satd. Flow (perm)		3539	1583	571	3539		1770		1583		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	458	192	875	248	0	47	0	59	0	0
RTOR Reduction (vph)	0	0	158	0	0	0	0	0	47	0	0
Lane Group Flow (vph)	0	458	34	875	248	0	47	0	12	0	0
Turn Type			Perm	pm+pt			custom		custom		
Protected Phases		4		3	8						
Permitted Phases			4	8			6		6		
Actuated Green, G (s)		16.0	16.0	64.0	64.0		18.0		18.0		
Effective Green, g (s)		16.0	16.0	64.0	64.0		18.0		18.0		
Actuated g/C Ratio		0.18	0.18	0.71	0.71		0.20		0.20		
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0		
Lane Grp Cap (vph)		629	281	992	2517		354		317		
v/s Ratio Prot		0.13		c0.43	0.07						
v/s Ratio Perm			0.02	c0.20			c0.03		0.01		
v/c Ratio		0.73	0.12	0.88	0.10		0.13		0.04		
Uniform Delay, d1		34.9	31.1	14.5	4.0		29.8		29.0		
Progression Factor		1.00	1.00	0.63	0.09		1.00		1.00		
Incremental Delay, d2		7.2	0.9	10.4	0.1		0.8		0.2		
Delay (s)		42.2	32.0	19.4	0.4		30.4		29.2		
Level of Service		D	C	B	A		C		C		
Approach Delay (s)		39.2			15.2			29.7		0.0	
Approach LOS		D			B			C		A	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

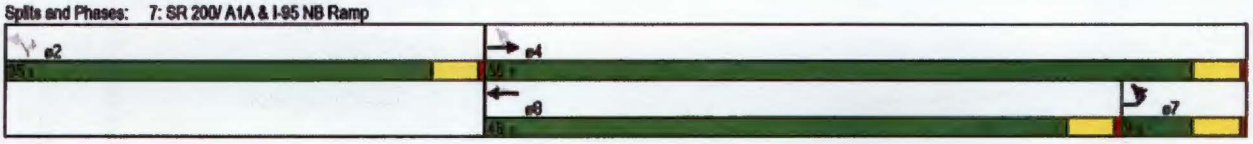
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER
Lane Configurations											
Volume (vph)	65	396	0	0	999	59	35	0	383	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	352		0	120		185		0	225	0	0
Storage Lanes	1		0	1		1		1	1	0	0
Taper Length (ft)	25		25	25		25		25	25	25	25
Right Turn on Red			Yes			Yes			Yes		
Link Speed (mph)		45			45			30		30	
Link Distance (ft)		654			1896			933		930	
Travel Time (s)		9.9			28.7			21.2		21.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)											
Lane Group Flow (vph)	71	433	0	0	1086	64	38	0	416	0	0
Turn Type	pm+pt					Perm	custom		custom		
Protected Phases	7	4			8						
Permitted Phases	4					8	2		2		
Minimum Split (s)	8.0	20.0			20.0	20.0	20.0		20.0		
Total Split (s)	9.0	55.0	0.0	0.0	46.0	46.0	35.0	0.0	35.0	0.0	0.0
Total Split (%)	10.0%	61.1%	0.0%	0.0%	51.1%	51.1%	38.9%	0.0%	38.9%	0.0%	0.0%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5		3.5		
All-Red Time (s)	0.5	0.5			0.5	0.5	0.5		0.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead	Lead					
Lead-Lag Optimize?	Yes				Yes	Yes					
v/c Ratio	0.25	0.22			0.46	0.08	0.06		0.51		
Control Delay	8.6	1.8			17.1	4.0	20.2		5.1		
Queue Delay	0.0	0.0			0.0	0.0	0.0		0.0		
Total Delay	8.6	1.8			17.1	4.0	20.2		5.1		
Queue Length 50th (ft)	6	13			147	0	14		3		
Queue Length 95th (ft)	m14	17			183	21	36		65		
Internal Link Dist (ft)		574			1816			853		850	
Turn Bay Length (ft)	352					185			225		
Base Capacity (vph)	287	2005			2373	773	610		812		
Starvation Cap Reductn	0	0			0	0	0		0		
Spillback Cap Reductn	0	0			99	0	0		0		
Storage Cap Reductn	0	0			0	0	0		0		
Reduced v/c Ratio	0.25	0.22			0.48	0.08	0.06		0.51		

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 8 (9%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle: 50
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: SR 200/ A1A & I-95 NB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER
Lane Configurations											
Volume (vph)	65	398	0	0	999	59	35	0	363	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0		4.0		
Lane Util. Factor	1.00	0.95			0.91	1.00	1.00		1.00		
Frt	1.00	1.00			1.00	0.85	1.00		0.85		
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		
Satd. Flow (prot)	1770	3539			5085	1583	1770		1583		
Flt Permitted	0.20	1.00			1.00	1.00	0.95		1.00		
Satd. Flow (perm)	370	3539			5085	1583	1770		1583		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	433	0	0	1086	64	38	0	416	0	0
RTOR Reduction (vph)	0	0	0	0	0	34	0	0	267	0	0
Lane Group Flow (vph)	71	433	0	0	1086	30	38	0	149	0	0
Turn Type	pm+pt					Perm	custom		custom		
Protected Phases	7	4			8						
Permitted Phases	4					8	2		2		
Actuated Green, G (s)	51.0	51.0			42.0	42.0	31.0		31.0		
Effective Green, g (s)	51.0	51.0			42.0	42.0	31.0		31.0		
Actuated g/C Ratio	0.57	0.57			0.47	0.47	0.34		0.34		
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0		4.0		
Lane Grp Cap (vph)	287	2005			2373	739	610		545		
v/s Ratio Prot	0.01	c0.12			c0.21						
v/s Ratio Perm	0.13					0.02	0.02		c0.09		
v/c Ratio	0.25	0.22			0.46	0.04	0.06		0.27		
Uniform Delay, d1	15.5	9.6			16.3	13.0	19.8		21.4		
Progression Factor	0.60	0.17			1.00	1.00	1.00		1.00		
Incremental Delay, d2	1.5	0.2			0.6	0.1	0.2		1.2		
Delay (s)	10.8	1.8			16.9	13.1	20.0		22.6		
Level of Service	B	A			B	B	B		C		
Approach Delay (s)		3.1			16.7			22.4		0.0	
Approach LOS		A			B			C		A	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

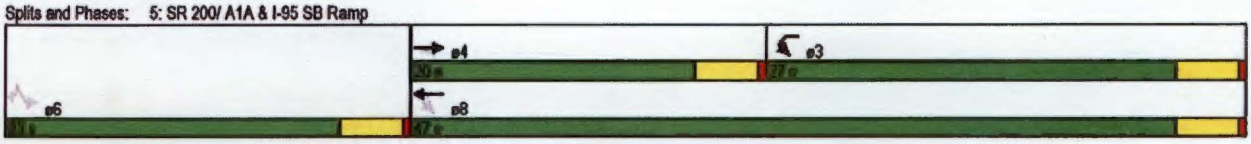
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations		↑↑	↱	↰	↑↑		↰		↱		
Volume (vph)	0	289	76	447	504	0	63	0	103	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0		0	80	0	0
Storage Lanes	0		1	1		0		1	1	0	0
Taper Length (ft)	25		25	25		25		25	25	25	25
Right Turn on Red			Yes			Yes			Yes		
Link Speed (mph)		45			45			30		30	
Link Distance (ft)		1872			654			812		867	
Travel Time (s)		28.4			9.9			18.5		19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	314	83	486	548	0	68	0	112	0	0
Turn Type			Perm	pm+pt			custom		custom		
Protected Phases		4		3	8						
Permitted Phases			4	8			6		6		
Minimum Split (s)		20.0	20.0	8.0	20.0		20.0		20.0		
Total Split (s)	0.0	20.0	20.0	27.0	47.0	0.0	23.0	0.0	23.0	0.0	0.0
Total Split (%)	0.0%	28.6%	28.6%	38.6%	67.1%	0.0%	32.9%	0.0%	32.9%	0.0%	0.0%
Yellow Time (s)		3.5	3.5	3.5	3.5		3.5		3.5		
All-Red Time (s)		0.5	0.5	0.5	0.5		0.5		0.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lead	Lead	Lag							
Lead-Lag Optimize?		Yes	Yes	Yes							
v/c Ratio		0.39	0.19	0.57	0.25		0.14		0.16		
Control Delay		24.6	7.2	9.1	1.4		20.4		0.5		
Queue Delay		0.0	0.0	0.0	0.0		0.0		0.0		
Total Delay		24.6	7.2	9.1	1.4		20.4		0.5		
Queue Length 50th (ft)		60	0	103	6		22		0		
Queue Length 95th (ft)		95	31	177	15		51		0		
Internal Link Dist (ft)		1792			574			732		787	
Turn Bay Length (ft)			190						80		
Base Capacity (vph)		809	426	858	2174		480		680		
Starvation Cap Reductn		0	0	0	0		0		0		
Spillback Cap Reductn		0	0	0	0		0		0		
Storage Cap Reductn		0	0	0	0		0		0		
Reduced v/c Ratio		0.39	0.19	0.57	0.25		0.14		0.16		

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 4 (6%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle: 55
Control Type: Pretimed

Splits and Phases: 5: SR 200/ A1A & I-95 SB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations		↑↑	↱	↰	↑↑		↰		↱		
Volume (vph)	0	289	76	447	504	0	63	0	103	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0		
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00		
Frt		1.00	0.85	1.00	1.00		1.00		0.85		
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583		
Flt Permitted		1.00	1.00	0.52	1.00		0.95		1.00		
Satd. Flow (perm)		3539	1583	969	3539		1770		1583		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	314	83	486	548	0	68	0	112	0	0
RTOR Reduction (vph)	0	0	64	0	0	0	0	0	82	0	0
Lane Group Flow (vph)	0	314	19	486	548	0	68	0	30	0	0
Turn Type			Perm	pm+pt			custom		custom		
Protected Phases		4		3	8						
Permitted Phases			4	8			6		6		
Actuated Green, G (s)		16.0	16.0	43.0	43.0		19.0		19.0		
Effective Green, g (s)		16.0	16.0	43.0	43.0		19.0		19.0		
Actuated g/C Ratio		0.23	0.23	0.61	0.61		0.27		0.27		
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0		
Lane Grp Cap (vph)		809	362	858	2174		480		430		
v/s Ratio Prot		0.09		c0.19	0.15						
v/s Ratio Perm			0.01	c0.16			c0.04		0.02		
v/c Ratio		0.39	0.05	0.57	0.25		0.14		0.07		
Uniform Delay, d1		22.9	21.1	9.8	6.2		19.3		18.9		
Progression Factor		1.00	1.00	0.63	0.18		1.00		1.00		
Incremental Delay, d2		1.4	0.3	2.3	0.2		0.6		0.3		
Delay (s)		24.3	21.4	8.5	1.4		19.9		19.3		
Level of Service		C	C	A	A		B		B		
Approach Delay (s)		23.7			4.7			19.5		0.0	
Approach LOS		C			A			B		A	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

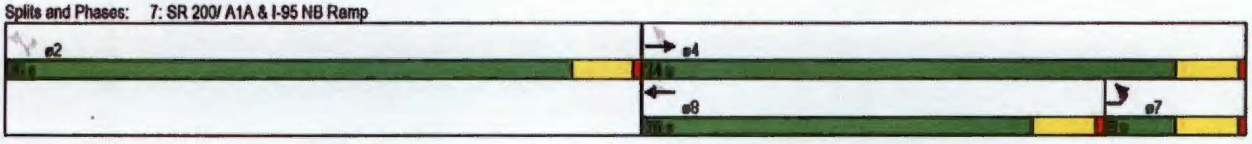
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER
Lane Configurations											
Volume (vph)	80	273	0	0	853	52	150	0	766	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	352		0	120		185		0	225	0	0
Storage Lanes	1		0	1		1		1	1	0	0
Taper Length (ft)	25		25	25		25		25	25	25	25
Right Turn on Red			Yes			Yes			Yes		
Link Speed (mph)		45			45			30		30	
Link Distance (ft)		654			1896			933		930	
Travel Time (s)		9.9			28.7			21.2		21.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)											
Lane Group Flow (vph)	87	297	0	0	927	57	163	0	833	0	0
Turn Type	prm+pt					Perm	custom		custom		
Protected Phases	7	4			8						
Permitted Phases	4					8	2		2		
Minimum Split (s)	6.0	20.0			20.0	20.0	20.0		20.0		
Total Split (s)	8.0	34.0	0.0	0.0	26.0	26.0	36.0	0.0	36.0	0.0	0.0
Total Split (%)	11.4%	48.6%	0.0%	0.0%	37.1%	37.1%	51.4%	0.0%	51.4%	0.0%	0.0%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5		3.5		
All-Red Time (s)	0.5	0.5			0.5	0.5	0.5		0.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag				Lead	Lead					
Lead-Lag Optimize?	Yes				Yes	Yes					
v/c Ratio	0.35	0.20			0.58	0.11	0.20		0.86		
Control Delay	8.1	1.9			21.9	6.0	12.2		19.2		
Queue Delay	0.0	0.0			0.0	0.0	0.0		0.0		
Total Delay	8.1	1.9			21.9	6.0	12.2		19.2		
Queue Length 50th (ft)	6	11			121	0	40		142		
Queue Length 95th (ft)	19	12			160	23	75		#410		
Internal Link Dist (ft)		574			1816			853		850	
Turn Bay Length (ft)	352					185			225		
Base Capacity (vph)	249	1517			1598	537	809		966		
Starvation Cap Reductn	0	0			0	0	0		0		
Spillback Cap Reductn	0	0			0	0	0		0		
Storage Cap Reductn	0	0			0	0	0		0		
Reduced v/c Ratio	0.35	0.20			0.58	0.11	0.20		0.86		

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 56 (80%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle: 55
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: SR 200/ A1A & I-95 NB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NB1	NBT	SBT	SBR
Lane Configurations											
Volume (vph)	80	273	0	0	853	52	150	0	766	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0		4.0		
Lane Util. Factor	1.00	0.95			0.91	1.00	1.00		1.00		
Frt	1.00	1.00			1.00	0.85	1.00		0.85		
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		
Satd. Flow (prot)	1770	3539			5085	1583	1770		1583		
Flt Permitted	0.21	1.00			1.00	1.00	0.95		1.00		
Satd. Flow (perm)	399	3539			5085	1583	1770		1583		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	297	0	0	927	57	163	0	833	0	0
RTOR Reduction (vph)	0	0	0	0	0	39	0	0	243	0	0
Lane Group Flow (vph)	87	297	0	0	927	18	163	0	590	0	0
Turn Type	pm+pt					Perm	custom		custom		
Protected Phases	7	4			8						
Permitted Phases	4					8	2		2		
Actuated Green, G (s)	30.0	30.0			22.0	22.0	32.0		32.0		
Effective Green, g (s)	30.0	30.0			22.0	22.0	32.0		32.0		
Actuated g/C Ratio	0.43	0.43			0.31	0.31	0.46		0.46		
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0		4.0		
Lane Grp Cap (vph)	249	1517			1598	498	809		724		
v/s Ratio Prot	c0.02	0.08			c0.18						
v/s Ratio Perm	0.13					0.01	0.09		c0.37		
v/c Ratio	0.35	0.20			0.58	0.04	0.20		0.82		
Uniform Delay, d1	18.9	12.5			20.1	16.6	11.4		16.4		
Progression Factor	0.26	0.13			1.00	1.00	1.00		1.00		
Incremental Delay, d2	3.7	0.3			1.5	0.1	0.6		9.8		
Delay (s)	8.6	1.9			21.7	16.8	11.9		26.3		
Level of Service	A	A			C	B	B		C		
Approach Delay (s)		3.4			21.4			23.9		0.0	
Approach LOS		A			C			C		A	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

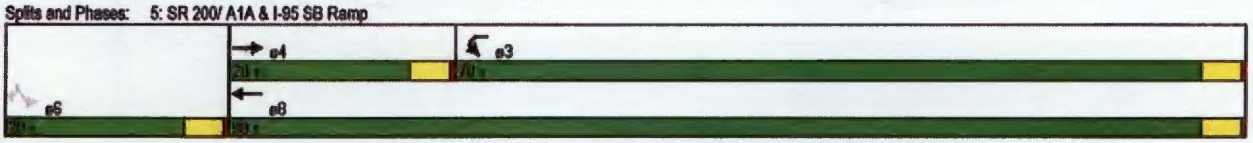
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations		↑↑↑	↱	↰	↑↑↑		↰		↱		
Volume (vph)	0	776	177	1395	357	0	160	0	54	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0		0	80	0	0
Storage Lanes	0		1	1		0		1	1	0	0
Taper Length (ft)	25		25	25		25		25	25	25	25
Right Turn on Red			Yes			Yes			Yes		
Link Speed (mph)		45			45			30		30	
Link Distance (ft)		1872			654			812		870	
Travel Time (s)		28.4			9.9			18.5		19.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	843	192	1516	388	0	174	0	59	0	0
Turn Type			Perm	Prot			custom		custom		
Protected Phases		4		3	8						
Permitted Phases			4				6		6		
Minimum Split (s)		20.0	20.0	8.0	20.0		20.0		20.0		
Total Split (s)	0.0	20.0	20.0	70.0	90.0	0.0	20.0	0.0	20.0	0.0	0.0
Total Split (%)	0.0%	18.2%	18.2%	63.6%	81.8%	0.0%	18.2%	0.0%	18.2%	0.0%	0.0%
Yellow Time (s)		3.5	3.5	3.5	3.5		3.5		3.5		
All-Red Time (s)		0.5	0.5	0.5	0.5		0.5		0.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lead	Lead	Lag							
Lead-Lag Optimize?		Yes	Yes	Yes							
v/c Ratio		1.14	0.49	1.43	0.10		0.68		0.08		
Control Delay		121.3	10.7	230.3	2.0		58.8		0.2		
Queue Delay		0.0	0.0	1.8	0.0		0.0		0.0		
Total Delay		121.3	10.7	232.1	2.0		58.8		0.2		
Queue Length 50th (ft)		~255	0	~1245	9		118		0		
Queue Length 95th (ft)		#342	64	m#611	m7		#205		0		
Internal Link Dist (ft)		1792			574			732		790	
Turn Bay Length (ft)			190						80		
Base Capacity (vph)		740	394	1062	3976		257		724		
Starvation Cap Reductn		0	0	3	0		0		0		
Spillback Cap Reductn		0	0	0	0		0		0		
Storage Cap Reductn		0	0	0	0		0		0		
Reduced v/c Ratio		1.14	0.49	1.43	0.10		0.68		0.08		

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 8 (7%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle: 150
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: SR 200/ A1A & I-95 SB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBL	SBR	NWL	NWR
Lane Configurations		↑↑↑	↱	↰	↑↑↑		↰		↱		
Volume (vph)	0	776	177	1395	357	0	160	0	54	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0		
Lane Util. Factor		0.91	1.00	1.00	0.91		1.00		1.00		
Frt		1.00	0.85	1.00	1.00		1.00		0.85		
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		
Satd. Flow (prot)		5085	1583	1770	5085		1770		1583		
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00		
Satd. Flow (perm)		5085	1583	1770	5085		1770		1583		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	843	192	1516	388	0	174	0	59	0	0
RTOR Reduction (vph)	0	0	164	0	0	0	0	0	50	0	0
Lane Group Flow (vph)	0	843	28	1516	388	0	174	0	9	0	0
Turn Type			Perm	Prot			custom		custom		
Protected Phases		4		3	8						
Permitted Phases			4				6		6		
Actuated Green, G (s)		16.0	16.0	66.0	86.0		16.0		16.0		
Effective Green, g (s)		16.0	16.0	66.0	86.0		16.0		16.0		
Actuated g/C Ratio		0.15	0.15	0.60	0.78		0.15		0.15		
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0		
Lane Grp Cap (vph)		740	230	1062	3976		257		230		
v/s Ratio Prot		c0.17		c0.86	0.08						
v/s Ratio Perm			0.02				c0.10		0.01		
v/c Ratio		1.14	0.12	1.43	0.10		0.68		0.04		
Uniform Delay, d1		47.0	40.9	22.0	2.8		44.6		40.4		
Progression Factor		1.00	1.00	2.30	0.72		1.00		1.00		
Incremental Delay, d2		78.5	1.1	192.9	0.0		13.4		0.3		
Delay (s)		125.5	42.0	243.5	2.0		58.0		40.7		
Level of Service		F	D	F	A		E		D		
Approach Delay (s)		110.0			194.3			53.6		0.0	
Approach LOS		F			F			D		A	

Intersection Summary			
HCM Average Control Delay	156.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	148.1%	ICU Level of Service	H
Analysis Period (min)	15		

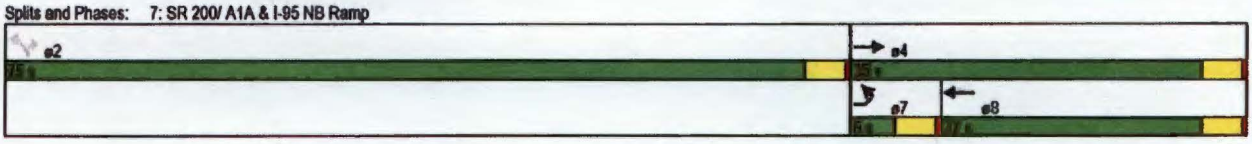
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER
Lane Configurations											
Volume (vph)	65	870	0	0	1716	101	35	0	2012	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	352		0	120		185		0	225	0	0
Storage Lanes	1		0	1		1		1	1	0	0
Taper Length (ft)	25		25	25		25		25	25	25	25
Right Turn on Red			Yes			Yes			Yes		
Link Speed (mph)		45			45			30		30	
Link Distance (ft)		654			1896			933		930	
Travel Time (s)		9.9			28.7			21.2		21.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)											
Lane Group Flow (vph)	71	946	0	0	1867	110	38	0	2187	0	0
Turn Type	Prot					Perm	custom		custom		
Protected Phases	7	4			8						
Permitted Phases						8	2		2		
Minimum Split (s)	8.0	20.0			20.0	20.0	20.0		20.0		
Total Split (s)	8.0	35.0	0.0	0.0	27.0	27.0	75.0	0.0	75.0	0.0	0.0
Total Split (%)	7.3%	31.8%	0.0%	0.0%	24.5%	24.5%	68.2%	0.0%	68.2%	0.0%	0.0%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5		3.5		
All-Red Time (s)	0.5	0.5			0.5	0.5	0.5		0.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag	Lag					
Lead-Lag Optimize?	Yes				Yes	Yes					
v/c Ratio	1.11	0.66			1.39	0.28	0.03		2.13		
Control Delay	106.1	43.7			216.2	17.6	7.2		531.7		
Queue Delay	0.0	0.0			55.4	0.0	0.0		0.0		
Total Delay	106.1	43.7			271.6	17.6	7.2		531.7		
Queue Length 50th (ft)	~59	264			~512	23	9		~2495		
Queue Length 95th (ft)	m#58	m245			#589	72	21		#2760		
Internal Link Dist (ft)		574			1816			853		850	
Turn Bay Length (ft)	352					185			225		
Base Capacity (vph)	64	1433			1340	386	1142		1026		
Starvation Cap Reductn	0	0			0	0	0		0		
Spillback Cap Reductn	0	0			109	0	285		0		
Storage Cap Reductn	0	0			0	0	0		0		
Reduced v/c Ratio	1.11	0.66			1.52	0.28	0.04		2.13		

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle: 150
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: SR 200/ A1A & I-95 NB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL1	NBL	NBR	SEL	SER
Lane Configurations											
Volume (vph)	65	870	0	0	1716	101	35	0	2012	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0		4.0		
Lane Util. Factor	1.00	0.91			0.86	1.00	1.00		1.00		
Frt	1.00	1.00			1.00	0.85	1.00		0.85		
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		
Satd. Flow (prot)	1770	5085			6408	1583	1770		1583		
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00		
Satd. Flow (perm)	1770	5085			6408	1583	1770		1583		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	946	0	0	1867	110	38	0	2187	0	0
RTOR Reduction (vph)	0	0	0	0	0	55	0	0	4	0	0
Lane Group Flow (vph)	71	946	0	0	1867	55	38	0	2183	0	0
Turn Type	Prot					Perm	custom		custom		
Protected Phases	7	4			8						
Permitted Phases						8	2		2		
Actuated Green, G (s)	4.0	31.0			23.0	23.0	71.0		71.0		
Effective Green, g (s)	4.0	31.0			23.0	23.0	71.0		71.0		
Actuated g/C Ratio	0.04	0.28			0.21	0.21	0.65		0.65		
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0		4.0		
Lane Grp Cap (vph)	64	1433			1340	331	1142		1022		
v/s Ratio Prot	c0.04	0.19			c0.29						
v/s Ratio Perm						0.03	0.02		c1.38		
v/c Ratio	1.11	0.66			1.39	0.17	0.03		2.14		
Uniform Delay, d1	53.0	34.9			43.5	35.6	7.1		19.5		
Progression Factor	0.66	1.24			1.00	1.00	1.00		1.00		
Incremental Delay, d2	67.8	0.2			181.6	1.1	0.1		514.5		
Delay (s)	102.7	43.4			225.1	36.7	7.1		534.0		
Level of Service	F	D			F	D	A		F		
Approach Delay (s)		47.6			214.6			525.0		0.0	
Approach LOS		D			F			F		A	

Intersection Summary			
HCM Average Control Delay	314.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.92		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	148.1%	ICU Level of Service	H
Analysis Period (min)	15		

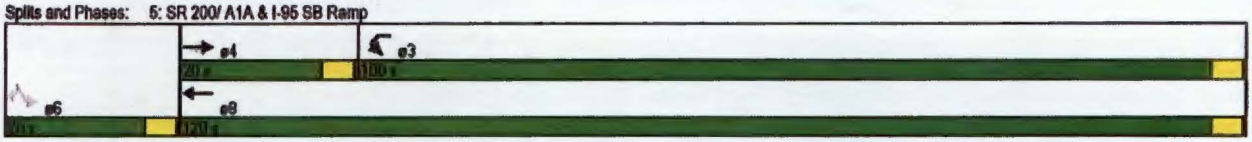
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations		↑↑↑	↱	↰	↑↑↑		↰		↱		
Volume (vph)	0	484	76	2292	907	0	127	0	103	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0		0	80	0	0
Storage Lanes	0		1	1		0		1	1	0	0
Taper Length (ft)	25		25	25		25		25	25	25	25
Right Turn on Red			Yes			Yes			Yes		
Link Speed (mph)		45			45			30		30	
Link Distance (ft)		1872			654			812		867	
Travel Time (s)		28.4			9.9			18.5		19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	526	83	2491	986	0	138	0	112	0	0
Turn Type			Perm	Prot			custom		custom		
Protected Phases		4		3	8						
Permitted Phases			4				6		6		
Minimum Split (s)		20.0	20.0	8.0	20.0		20.0		20.0		
Total Split (s)	0.0	20.0	20.0	100.0	120.0	0.0	20.0	0.0	20.0	0.0	0.0
Total Split (%)	0.0%	14.3%	14.3%	71.4%	85.7%	0.0%	14.3%	0.0%	14.3%	0.0%	0.0%
Yellow Time (s)		3.5	3.5	3.5	3.5		3.5		3.5		
All-Red Time (s)		0.5	0.5	0.5	0.5		0.5		0.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag		Lead	Lead	Lag							
Lead-Lag Optimize?		Yes	Yes	Yes							
v/c Ratio		0.91	0.33	2.05	0.23		0.68		0.29		
Control Delay		81.2	14.8	499.3	0.3		77.3		1.9		
Queue Delay		0.0	0.0	78.4	0.0		0.0		0.0		
Total Delay		81.2	14.8	577.7	0.3		77.3		1.9		
Queue Length 50th (ft)		176	0	~3630	4		123		0		
Queue Length 95th (ft)		#245	51	m#1225	m3		#210		0		
Internal Link Dist (ft)		1792			574			732		787	
Turn Bay Length (ft)			190						80		
Base Capacity (vph)		581	254	1214	4213		202		386		
Starvation Cap Reductn		0	0	96	0		0		0		
Spillback Cap Reductn		0	0	0	0		0		0		
Storage Cap Reductn		0	0	0	0		0		0		
Reduced v/c Ratio		0.91	0.33	2.23	0.23		0.68		0.29		

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 18 (13%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle: 150
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: SR 200/ A1A & I-95 SB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations		↑↑↑	↱	↰	↑↑↑		↰		↱		
Volume (vph)	0	484	76	2292	907	0	127	0	103	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0		
Lane Util. Factor		0.91	1.00	1.00	0.91		1.00		1.00		
Frt		1.00	0.85	1.00	1.00		1.00		0.85		
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		
Satd. Flow (prot)		5085	1583	1770	5085		1770		1583		
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00		
Satd. Flow (perm)		5085	1583	1770	5085		1770		1583		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	526	83	2491	986	0	138	0	112	0	0
RTOR Reduction (vph)	0	0	74	0	0	0	0	0	99	0	0
Lane Group Flow (vph)	0	526	9	2491	986	0	138	0	13	0	0
Turn Type			Perm	Prot			custom		custom		
Protected Phases		4		3	8						
Permitted Phases			4				8		6		
Actuated Green, G (s)		16.0	16.0	96.0	116.0		16.0		16.0		
Effective Green, g (s)		16.0	16.0	96.0	116.0		16.0		16.0		
Actuated g/C Ratio		0.11	0.11	0.69	0.83		0.11		0.11		
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0		
Lane Grp Cap (vph)		581	181	1214	4213		202		181		
v/s Ratio Prot		c0.10		c1.41	0.19						
v/s Ratio Perm			0.01				c0.08		0.01		
v/c Ratio		0.91	0.05	2.05	0.23		0.68		0.07		
Uniform Delay, d1		61.3	55.2	22.0	2.6		59.6		55.4		
Progression Factor		1.00	1.00	2.04	0.09		1.00		1.00		
Incremental Delay, d2		20.1	0.5	473.6	0.0		17.2		0.8		
Delay (s)		81.4	55.8	518.4	0.2		76.7		56.1		
Level of Service		F	E	F	A		E		E		
Approach Delay (s)		77.9			371.5			67.5		0.0	
Approach LOS		E			F			E		A	

Intersection Summary			
HCM Average Control Delay	312.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.74		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	143.0%	ICU Level of Service	H
Analysis Period (min)	15		

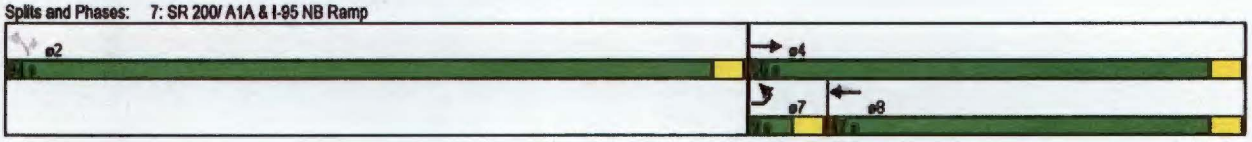
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER
Lane Configurations											
Volume (vph)	80	532	0	0	3101	185	150	0	1659	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	352		0	120		185		0	225	0	0
Storage Lanes	1		0	1		1		1	1	0	0
Taper Length (ft)	25		25	25		25		25	25	25	25
Right Turn on Red			Yes			Yes			Yes		
Link Speed (mph)		45			45			30		30	
Link Distance (ft)		654			1896			933		930	
Travel Time (s)		9.9			28.7			21.2		21.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)											
Lane Group Flow (vph)	87	578	0	0	3371	201	163	0	1803	0	0
Turn Type	Prot					Perm	custom		custom		
Protected Phases	7	4			8						
Permitted Phases						8	2		2		
Minimum Split (s)	8.0	20.0			20.0	20.0	20.0		20.0		
Total Split (s)	9.0	56.0	0.0	0.0	47.0	47.0	84.0	0.0	84.0	0.0	0.0
Total Split (%)	6.4%	40.0%	0.0%	0.0%	33.6%	33.6%	60.0%	0.0%	60.0%	0.0%	0.0%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5		3.5		
All-Red Time (s)	0.5	0.5			0.5	0.5	0.5		0.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead				Lag	Lag					
Lead-Lag Optimize?	Yes				Yes	Yes					
v/c Ratio	1.38	0.31			1.71	0.38	0.16		1.87		
Control Delay	244.2	41.8			354.1	27.8	14.7		417.0		
Queue Delay	0.0	0.0			123.6	0.0	0.1		0.0		
Total Delay	244.2	41.8			477.7	27.8	14.8		417.0		
Queue Length 50th (ft)	~107	205			~1311	96	67		~2460		
Queue Length 95th (ft)	m#137	m231			#1365	169	105		#2725		
Internal Link Dist (ft)		574			1816			853		850	
Turn Bay Length (ft)	352					185			225		
Base Capacity (vph)	63	1889			1968	531	1011		965		
Starvation Cap Reductn	0	0			0	0	0		0		
Spillback Cap Reductn	0	0			272	0	253		0		
Storage Cap Reductn	0	0			0	0	0		0		
Reduced v/c Ratio	1.38	0.31			1.99	0.38	0.22		1.87		

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle: 150
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: SR 200/ A1A & I-95 NB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NB	NBR	SEL	SER
Lane Configurations											
Volume (vph)	80	532	0	0	3101	185	150	0	1659	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0		4.0		
Lane Util. Factor	1.00	0.91			0.86	1.00	1.00		1.00		
Frt	1.00	1.00			1.00	0.85	1.00		0.85		
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		
Satd. Flow (prot)	1770	5085			6408	1583	1770		1583		
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00		
Satd. Flow (perm)	1770	5085			6408	1583	1770		1583		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	578	0	0	3371	201	163	0	1803	0	0
RTOR Reduction (vph)	0	0	0	0	0	44	0	0	60	0	0
Lane Group Flow (vph)	87	578	0	0	3371	157	163	0	1743	0	0
Turn Type	Prot					Perm	custom		custom		
Protected Phases	7	4			8						
Permitted Phases						8	2		2		
Actuated Green, G (s)	5.0	52.0			43.0	43.0	80.0		80.0		
Effective Green, g (s)	5.0	52.0			43.0	43.0	80.0		80.0		
Actuated g/C Ratio	0.04	0.37			0.31	0.31	0.57		0.57		
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0		4.0		
Lane Grp Cap (vph)	63	1889			1968	486	1011		905		
v/s Ratio Prot	c0.05	0.11			c0.53						
v/s Ratio Perm						0.10	0.09		c1.10		
v/c Ratio	1.38	0.31			1.71	0.32	0.16		1.93		
Uniform Delay, d1	67.5	31.2			48.5	37.3	14.2		30.0		
Progression Factor	0.53	1.33			1.00	1.00	1.00		1.00		
Incremental Delay, d2	212.0	0.2			323.0	1.8	0.3		420.8		
Delay (s)	247.7	41.6			371.5	39.0	14.5		450.8		
Level of Service	F	D			F	D	B		F		
Approach Delay (s)		68.6			352.8			414.6		0.0	
Approach LOS		E			F			F		A	

Intersection Summary			
HCM Average Control Delay	341.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.83		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	143.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
5: SR 200/ A1A & I-95 SB Ramp

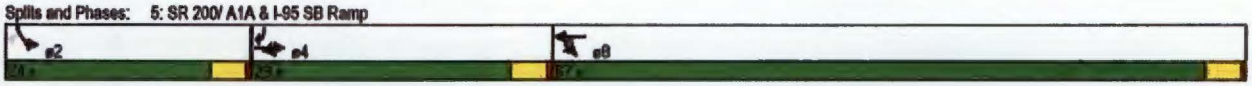
3/7/2013

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations		↑↑↑	↱	↰↰	↑↑		↰		↱		
Volume (vph)	0	776	177	1395	357	0	160	0	54	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0		0	80	0	0
Storage Lanes	0		1	2		0		1	1	0	0
Taper Length (ft)	25		25	25		25		25	25	25	25
Right Turn on Red			Yes			Yes			Yes		
Link Speed (mph)		45			45			30		30	
Link Distance (ft)		1872			654			812		870	
Travel Time (s)		28.4			9.9			18.5		19.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	843	192	1516	388	0	174	0	59	0	0
Turn Type			Prot	Split			Prot		custom		
Protected Phases		4	4	8	8		2		4		
Permitted Phases									2		
Minimum Split (s)		20.0	20.0	20.0	20.0		8.0		20.0		
Total Split (s)	0.0	29.0	29.0	67.0	67.0	0.0	24.0	0.0	29.0	0.0	0.0
Total Split (%)	0.0%	24.2%	24.2%	55.8%	55.8%	0.0%	20.0%	0.0%	24.2%	0.0%	0.0%
Yellow Time (s)		3.5	3.5	3.5	3.5		3.5		3.5		
All-Red Time (s)		0.5	0.5	0.5	0.5		0.5		0.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag											
Lead-Lag Optimize?											
v/c Ratio		0.80	0.40	0.84	0.21		0.59		0.07		
Control Delay		51.6	8.1	18.0	8.7		55.3		0.1		
Queue Delay		0.0	0.0	0.0	0.0		0.0		0.0		
Total Delay		51.6	8.1	18.0	8.7		55.3		0.1		
Queue Length 50th (ft)		228	0	164	31		126		0		
Queue Length 95th (ft)		280	61	188	40		203		0		
Internal Link Dist (ft)		1792			574			732		790	
Turn Bay Length (ft)			190						80		
Base Capacity (vph)		1059	482	1802	1858		295		895		
Starvation Cap Reductn		0	0	0	0		0		0		
Spillback Cap Reductn		0	0	0	0		0		0		
Storage Cap Reductn		0	0	0	0		0		0		
Reduced v/c Ratio		0.80	0.40	0.84	0.21		0.59		0.07		

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 110 (92%), Referenced to phase 2:SBL and 6:, Start of Green
Natural Cycle: 70
Control Type: Pretimed

Splits and Phases: 5: SR 200/ A1A & I-95 SB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations		↑↑↑	↱	↰↰	↑↑		↰		↱		
Volume (vph)	0	776	177	1395	357	0	160	0	54	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0		
Lane Util. Factor		0.91	1.00	0.97	0.95		1.00		1.00		
Frt		1.00	0.85	1.00	1.00		1.00		0.85		
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00		
Satd. Flow (prot)		5085	1583	3433	3539		1770		1583		
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00		
Satd. Flow (perm)		5085	1583	3433	3539		1770		1583		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	843	192	1516	388	0	174	0	59	0	0
RTOR Reduction (vph)	0	0	152	0	0	0	0	0	37	0	0
Lane Group Flow (vph)	0	843	40	1516	388	0	174	0	22	0	0
Turn Type			Prot	Split			Prot		custom		
Protected Phases		4	4	8	8		2		4		
Permitted Phases									2		
Actuated Green, G (s)		25.0	25.0	63.0	63.0		20.0		45.0		
Effective Green, g (s)		25.0	25.0	63.0	63.0		20.0		45.0		
Actuated g/C Ratio		0.21	0.21	0.52	0.52		0.17		0.38		
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0		
Lane Grp Cap (vph)		1059	330	1802	1858		295		646		
v/s Ratio Prot		c0.17	0.03	c0.44	0.11		c0.10		0.01		
v/s Ratio Perm									0.01		
v/c Ratio		0.80	0.12	0.84	0.21		0.59		0.03		
Uniform Delay, d1		45.1	38.6	24.2	15.2		46.2		23.7		
Progression Factor		1.00	1.00	0.55	0.55		1.00		1.00		
Incremental Delay, d2		6.2	0.8	4.4	0.2		8.4		0.1		
Delay (s)		51.3	39.3	17.7	8.6		54.6		23.8		
Level of Service		D	D	B	A		D		C		
Approach Delay (s)		49.1			15.9			46.8		0.0	
Approach LOS		D			B			D		A	

Intersection Summary			
HCM Average Control Delay	29.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER
Lane Configurations											
Volume (vph)	65	870	0	0	1718	101	35	0	2012	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	352		0	120		185		0	225	0	0
Storage Lanes	1		0	1		1		1	1	0	0
Taper Length (ft)	25		25	25		25		25	25	25	25
Right Turn on Red			Yes			Yes			Yes		
Link Speed (mph)		45			45			30		30	
Link Distance (ft)		654			1696			933		930	
Travel Time (s)		9.9			28.7			21.2		21.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)											
Lane Group Flow (vph)	71	946	0	0	1867	110	38	0	2187	0	0
Turn Type	Split					Prot	Prot		custom		
Protected Phases	4	4			8	8	2		8		
Permitted Phases									2		
Minimum Split (s)	20.0	20.0			20.0	20.0	20.0		20.0		
Total Split (s)	26.0	26.0	0.0	0.0	73.0	73.0	21.0	0.0	73.0	0.0	0.0
Total Split (%)	21.7%	21.7%	0.0%	0.0%	60.8%	60.8%	17.5%	0.0%	60.8%	0.0%	0.0%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5		3.5		
All-Red Time (s)	0.5	0.5			0.5	0.5	0.5		0.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag											
Lead-Lag Optimize?											
v/c Ratio	0.22	1.02			0.51	0.11	0.15		1.05		
Control Delay	14.2	42.7			15.9	2.4	47.0		49.5		
Queue Delay	0.0	0.0			0.0	0.0	0.0		0.0		
Total Delay	14.2	42.7			15.9	2.4	47.0		49.5		
Queue Length 50th (ft)	12	~65			239	0	26		~1047		
Queue Length 95th (ft)	m28	#343			270	24	60		#1196		
Internal Link Dist (ft)		574			1816			853		850	
Turn Bay Length (ft)	352					185			225		
Base Capacity (vph)	325	932			3685	957	251		2091		
Starvation Cap Reductn	0	0			0	0	0		0		
Spillback Cap Reductn	0	0			0	0	0		0		
Storage Cap Reductn	0	0			0	0	0		0		
Reduced v/c Ratio	0.22	1.02			0.51	0.11	0.15		1.05		

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle: 130
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: SR 200/ A1A & I-95 NB Ramp

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER
Lane Configurations											
Volume (vph)	65	870	0	0	1718	101	35	0	2012	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0		4.0		
Lane Util. Factor	1.00	0.91			0.86	1.00	1.00		0.88		
Frt	1.00	1.00			1.00	0.85	1.00		0.85		
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00		
Satd. Flow (prot)	1770	5085			6408	1583	1770		2787		
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00		
Satd. Flow (perm)	1770	5085			6408	1583	1770		2787		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	946	0	0	1867	110	38	0	2187	0	0
RTOR Reduction (vph)	0	0	0	0	0	47	0	0	0	0	0
Lane Group Flow (vph)	71	946	0	0	1867	63	38	0	2187	0	0
Turn Type	Split					Prot	Prot		custom		
Protected Phases	4	4			8	8	2		8		
Permitted Phases									2		
Actuated Green, G (s)	22.0	22.0			69.0	69.0	17.0		86.0		
Effective Green, g (s)	22.0	22.0			69.0	69.0	17.0		86.0		
Actuated g/C Ratio	0.18	0.18			0.58	0.58	0.14		0.72		
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0		4.0		
Lane Grp Cap (vph)	325	932			3685	910	251		2090		
v/s Ratio Prot	0.04	c0.19			0.29	0.04	0.02		c0.60		
v/s Ratio Perm									0.18		
v/c Ratio	0.22	1.02			0.51	0.07	0.15		1.05		
Uniform Delay, d1	41.7	49.0			15.3	11.3	45.2		17.0		
Progression Factor	0.31	0.25			1.00	1.00	1.00		1.00		
Incremental Delay, d2	1.0	27.1			0.5	0.1	1.3		33.1		
Delay (s)	14.1	39.6			15.8	11.4	46.4		50.1		
Level of Service	B	D			B	B	D		D		
Approach Delay (s)		37.8			15.6			50.0		0.0	
Approach LOS		D			B			D		A	

Intersection Summary			
HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
5: SR 200/ A1A & I-95 SB Ramp

3/9/2013

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰↰	↑↑					↰↰		↱
Volume (vph)	0	484	76	2292	907	0	0	0	0	127	0	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0	0		0	0		80
Storage Lanes	0		1	2		0	0		0	2		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1872			654			864			812	
Travel Time (s)		28.4			9.9			19.6			18.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	526	83	2491	986	0	0	0	0	138	0	112
Turn Type			Prot	Split						Prot		custom
Protected Phases		4	4	8	8					2		4
Permitted Phases												2
Minimum Split (s)		20.0	20.0	20.0	20.0					20.0		20.0
Total Split (s)	0.0	27.0	27.0	123.0	123.0	0.0	0.0	0.0	0.0	20.0	0.0	27.0
Total Split (%)	0.0%	15.9%	15.9%	72.4%	72.4%	0.0%	0.0%	0.0%	0.0%	11.8%	0.0%	15.9%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5		3.5
All-Red Time (s)		0.5	0.5	0.5	0.5					0.5		0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.76	0.29	1.04	0.40					0.43		0.23
Control Delay		79.1	14.5	40.2	2.1					77.1		8.8
Queue Delay		0.0	0.0	0.3	0.3					0.0		0.0
Total Delay		79.1	14.5	40.5	2.3					77.1		8.8
Queue Length 50th (ft)		210	0	~656	28					76		0
Queue Length 95th (ft)		257	55	#560	31					114		53
Internal Link Dist (ft)		1792			574			784			732	
Turn Bay Length (ft)			190									80
Base Capacity (vph)		688	286	2403	2477					323		484
Starvation Cap Reductn		0	0	2	745					0		0
Spillback Cap Reductn		0	0	0	0					0		0
Storage Cap Reductn		0	0	0	0					0		0
Reduced v/c Ratio		0.76	0.29	1.04	0.57					0.43		0.23

Intersection Summary	
Area Type:	Other
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 8 (5%), Referenced to phase 2:SBL and 6:, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	

Queue shown is maximum after two cycles.

Splits and Phases: 5: SR 200/ A1A & I-95 SB Ramp

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	484	76	2292	907	0	0	0	0	127	0	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0		4.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.97		1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		5085	1583	3433	3539					3433		1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		5085	1583	3433	3539					3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	526	83	2491	986	0	0	0	0	138	0	112
RTOR Reduction (vph)	0	0	72	0	0	0	0	0	0	0	0	86
Lane Group Flow (vph)	0	526	11	2491	986	0	0	0	0	138	0	26
Turn Type			Prot	Split						Prot		custom
Protected Phases		4	4	8	8					2		4
Permitted Phases												2
Actuated Green, G (s)		23.0	23.0	119.0	119.0					16.0		39.0
Effective Green, g (s)		23.0	23.0	119.0	119.0					16.0		39.0
Actuated g/C Ratio		0.14	0.14	0.70	0.70					0.09		0.23
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0		4.0
Lane Grp Cap (vph)		688	214	2403	2477					323		400
v/s Ratio Prot		c0.10	0.01	c0.73	0.28					c0.04		0.01
v/s Ratio Perm												0.01
v/c Ratio		0.76	0.05	1.04	0.40					0.43		0.06
Uniform Delay, d1		70.9	64.0	25.5	10.6					72.7		51.2
Progression Factor		1.00	1.00	0.59	0.17					1.00		1.00
Incremental Delay, d2		7.9	0.5	23.9	0.2					4.1		0.3
Delay (s)		78.8	64.5	38.8	2.0					76.8		51.5
Level of Service		E	E	D	A					E		D
Approach Delay (s)		76.8			28.4			0.0			65.5	
Approach LOS		E			C			A			E	

Intersection Summary			
HCM Average Control Delay	37.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	532	0	0	3101	185	150	0	1659	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	352		0	120		185	0		225	0		0
Storage Lanes	1		0	1		1	1		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		654			1896			942			928	
Travel Time (s)		9.9			28.7			21.4			21.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	578	0	0	3371	201	163	0	1803	0	0	0
Turn Type	Split					Prot	Prot		custom			
Protected Phases	4	4			8	8	2		8			
Permitted Phases									2			
Minimum Split (s)	20.0	20.0			20.0	20.0	20.0		20.0			
Total Split (s)	30.0	30.0	0.0	0.0	108.0	108.0	32.0	0.0	108.0	0.0	0.0	0.0
Total Split (%)	17.6%	17.6%	0.0%	0.0%	63.5%	63.5%	18.8%	0.0%	63.5%	0.0%	0.0%	0.0%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5		3.5			
All-Red Time (s)	0.5	0.5			0.5	0.5	0.5		0.5			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.32	0.74			0.86	0.20	0.56		0.81			
Control Delay	14.1	15.5			30.0	8.0	73.5		13.3			
Queue Delay	0.0	0.0			0.0	0.0	1.4		0.0			
Total Delay	14.1	15.5			30.0	8.0	74.9		13.3			
Queue Length 50th (ft)	23	56			861	48	170		560			
Queue Length 95th (ft)	m48	102			895	88	255		668			
Internal Link Dist (ft)		574			1816			862			848	
Turn Bay Length (ft)	352					185			225			
Base Capacity (vph)	271	778			3920	1005	292		2232			
Starvation Cap Reductn	0	0			0	0	0		0			
Spillback Cap Reductn	0	0			0	0	37		0			
Storage Cap Reductn	0	0			0	0	0		0			
Reduced v/c Ratio	0.32	0.74			0.86	0.20	0.64		0.81			

Intersection Summary	
Area Type:	Other
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 168 (99%), Referenced to phase 2:NBL and 6:, Start of Green	
Natural Cycle: 90	
Control Type: Pretimed	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 7: SR 200/ A1A & I-95 NB Ramp

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	532	0	0	3101	185	150	0	1659	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0		4.0			
Lane Util. Factor	1.00	0.91			0.86	1.00	1.00		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1770	5085			6408	1583	1770		2787			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1770	5085			6408	1583	1770		2787			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	578	0	0	3371	201	163	0	1803	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	2	0	0	0
Lane Group Flow (vph)	87	578	0	0	3371	165	163	0	1801	0	0	0
Turn Type	Split					Prot	Prot		custom			
Protected Phases	4	4			8	8	2		8			
Permitted Phases									2			
Actuated Green, G (s)	26.0	26.0			104.0	104.0	28.0		132.0			
Effective Green, g (s)	26.0	26.0			104.0	104.0	28.0		132.0			
Actuated g/C Ratio	0.15	0.15			0.61	0.61	0.16		0.78			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0		4.0			
Lane Grp Cap (vph)	271	778			3920	968	292		2230			
v/s Ratio Prot	0.05	c0.11			c0.53	0.10	0.09		c0.49			
v/s Ratio Perm									0.15			
v/c Ratio	0.32	0.74			0.86	0.17	0.56		0.81			
Uniform Delay, d1	64.1	68.8			27.0	14.3	65.3		11.4			
Progression Factor	0.18	0.16			1.00	1.00	1.00		1.00			
Incremental Delay, d2	2.2	4.6			2.7	0.4	7.5		3.3			
Delay (s)	14.0	15.5			29.7	14.7	72.8		14.7			
Level of Service	B	B			C	B	E		B			
Approach Delay (s)		15.3			28.9			19.5			0.0	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Exhibit "E"

Transportation Impact Analysis (TIA) Methodology

The following Exhibit summarizes the recommended methodology for completing Transportation Impact Analyses (TIAs) associated with Preliminary Development Plans (PDPs). The purpose of the TIA is to identify the short-term impacts associated with the incremental development of the East Nassau Community Planning Area (ENCPA) and the associated DSAPs. The results of the TIA are intended to identify needed transportation improvements and prioritize the use of mobility fee funds toward those improvements, consistent with the provisions of the applicable DSAP Development Order.

Analysis Area

The analysis area is defined as follows:

- For PDPs generating fewer than 500 daily trips – adjacent access points and nearest intersection included in the Mobility Network
- For PDPs generating between 500 and 1,000 daily trips – ½ mile radius from the project site
- For PDPs generating more than 1,000 daily trips – one mile radius from the project site

Within the ENCPA, the analysis includes all roadway segments included as part of the Mobility Network as well as major intersections. Site access points are also included in the analysis. Outside the ENCPA, the analysis should include all arterial and collector roadways within the required radius. Roadway segments and intersections outside the ENCPA are included in the analysis to identify potential mitigating improvements included in the ENCPA Mobility Network – for example, parallel roadway corridors or internal roadway connections. The list of ENCPA Mobility Network improvements is included at the end of this document.

Analysis Timeframe

An existing conditions analysis should be performed using the most recent available roadway counts. If no roadway counts are available from the past twelve (12) months, then the latest available roadway counts should be used and adjusted to the existing year using the model growth rates in this methodology document.

The analysis year shall be defined as the buildout year for the proposed PDP. The buildout year consistent with that used in the Future Conditions Analysis and should be reasonably achievable.

For roadway segments, the analysis should address daily conditions. For intersections, the analysis should address AM peak and PM peak conditions. Intersections should be analyzed using either the latest version of Highway Capacity Software (HCS) or Synchro.

Trip Generation

Trip generation calculations should use rates and equations from the current edition of the Institute of Transportation Engineers' Trip Generation. For land uses where ITE data may not represent local conditions, a trip generation study may replace published rates. The methodology for trip generation studies should follow the ITE Trip Generation Handbook, and a minimum of three sites should be surveyed. Reductions for internal capture or transit should not be applied to the trip generation for individual PDPs, as these reductions have already been factored into the overall calculation of transportation impacts and fees for the ENCPA. However, reductions for pass-by trips for retail uses may be applied.

Trip Distribution

The distribution of trips associated with the PDP should be estimated using the most current adopted version of the Northeast Florida Regional Planning Model (NERPM). For smaller PDPs generating fewer than 1,000 daily trips, the traffic distribution may be estimated based on existing traffic patterns. The model should be updated to reflect the transportation network and land use assumptions as follows:

- Transportation Network Assumptions – The transportation network should include existing arterial and collector roadways. Future facilities to be included in the analysis should be limited to roadway segments with committed construction funding within the next five (5) years. For analysis purposes, roadway segments with existing backlogs (based on actual traffic levels) shall be assumed to include necessary improvements to address the backlog.

- Land Use Assumptions – The land use data for the NERPM model should be developed through interpolation between the base and forecast years. Within the ENCPA, background development should be limited to the existing development at the time of the application, plus any other parcels with approved TIAs.

Trips from Other Approved ENCPA Development

Project trips from nearby approved PDPs within the analysis area should be added to the future background traffic volumes in determining the total build condition traffic volumes. The trips associated with these PDPs should be obtained from the associated TIA.

Future Conditions Analysis

The future conditions analysis should address operating conditions for roadway segments and intersections within the analysis area for the PDP. The future conditions analysis year shall be the proposed buildout year for the PDP. The analysis should identify whether roadway segments and intersections will operate at the County's adopted Level of Service standard with the addition of traffic from the PDP. For intersections, the Level of Service standard shall be assumed to be the same as that of the adjacent roadway segments. Annual growth rates to be used for area roadway segment volumes and intersection volumes are found in the table on the following page. The values are based on the ENCPA Mobility Analysis included with the Employment Center DSAP application. For any roadways not in the table, the growth rate for the nearest similar facility should be applied.

Summary of Annual Background Growth Rates

Roadway	From/To	Growth Rate
I-95	Duval County Line to SR 200/A1A	2.94%
	SR 200/A1A to E-W Interchange Rd.	3.12%
	E-W Interchange Rd. to US 17	3.12%
	US 17 to GA State Line	2.39%
SR 200/A1A	Griffen Rd. to I-95	6.39%
	I-95 to Old Yulee Rd.	4.25%
	Old Yulee Rd. to US 17	4.09%
	US 17 to Chester Rd.	2.00%
	Chester Rd. to Blackrock Rd.	2.00%
	Old Nassauville Rd. to Amelia Island Parkway	2.00%
CR 200A/Pages Dairy Rd.	US 17 to Chester Rd.	4.78%
CR 107N/Blackrock Rd.	Chester Rd. to SR 200/A1A	2.00%
CR 107S/Old Nassauville Rd.	SR 200/A1A to Amelia Concourse	2.00%
	Amelia Concourse to Santa Juana Rd.	2.00%
Chester Rd.	SR 200/A1A to Pages Dairy Rd.	2.00%
	Pages Dairy Rd. to CR 108 Extension	2.00%
	CR 108 Extension to Blackrock Rd.	2.00%
US 17	Duval County Line to Harts Rd.	3.67%
	Sowell Rd. to SR 200/A1A	2.00%
	SR 200/A1A to Pages Dairy Rd.	2.00%
	Pages Dairy Rd. to Interchange Rd.	2.00%
	Interchange Rd. to CR 108	2.00%
	CR 108 to I-95	2.00%
	I-95 to GA State Line	3.36%
I-95/SR A1A Interchange	NB I-95 to SR A1A Off-ramp	5.44%
	SR A1A to NB I-95 On-ramp	6.62%
	SB I-95 to SR A1A Off-ramp	7.79%
	SR A1A to SB I-95 On-ramp	5.42%
I-95/US 17 Interchange	NB I-95 to US 17 Off-ramp	7.74%
	US 17 to NB I-95 On-ramp	2.00%
	SB I-95 to US 17 Off-ramp	2.00%
	US 17 to SB I-95 On-ramp	7.91%

Access Points

An intersection analysis shall be completed for all site access points (roadways or driveways) to adjacent roadways. An intersection analysis should also be completed for the nearest intersection where the site access connects to the ENCPA Mobility Network.

Recommended Improvements

The results of the TIA will be used to identify transportation improvements necessary to serve development in the associated PDP, consistent with the provisions of the applicable DSAP Development Order. Transportation improvements required in this process will be limited to roadway segments and intersections included in the ENCPA Mobility Network and applicable DSAP but may include improvements outside the analysis area. A PDP applicant may propose in its TIA to address transportation impacts by means of transportation or mobility improvements other than those in the ENCPA Mobility Network. Improvements identified or proposed in the TIA may be completed in phases–for example, the first two lanes of a four-lane roadway, or a portion of a roadway segment needed to provide site access. Also, such phasing may be tied to monitoring and/or development levels. Practical transportation improvements are encouraged, so as to maximize the efficiency of available infrastructure and minimize upfront infrastructure costs ahead of actual demand.

Attachment __

Transportation Improvements Included in ENCPA Mobility Network

Roadway/Segment	Improvement
CR 108 Extension	
US 17 to Interchange Rd	New 2-lane road
Interchange Rd to Resort Area	New 2-lane road
Resort Area to Chester Rd	New 2-lane road
Interchange Road	
Interstate 95 to N-S Regional Center Arterial	New 4-lane road
East Frontage Rd to US 17	New 4-lane road
US 17 to CR 108	New 4-lane road
Interchange Road at I-95	New interchange
Employment Center Collector Roads	New 2-lane road
N-S Regional Center Arterial	
US 17 to CR 108	New 4-lane road
CR 108 to Interchange Road	New 4-lane road
Interchange Road to SR 200/A1A	New 4-lane road
US 17	
N-S Regional Center Arterial to I-95	Widen to 4 lanes
Traffic Signals (at 8 new major intersections)	Install new signal
SR A1A / I-95 Interchange Improvements	
Dual westbound left turn lanes onto southbound ramp	New turn lane
Dual southbound left turn lanes off southbound ramp	New turn lane
Dual northbound right turn lanes off northbound ramp	New turn lane
SR A1A Intersection Improvements	
Dual left turn lanes at SR A1A/Chester Rd	New turn lane
Dual left turn lanes at SR A1A/Blackrock Rd	New turn lane

Internal multi-use trail system (off-street)	