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Figure 4.49: 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 pPlan and the Village Center development standards and guidelines of this DSAP. Where conflicts exist between DSAP standards and the Nassau County Land Development cCode, 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

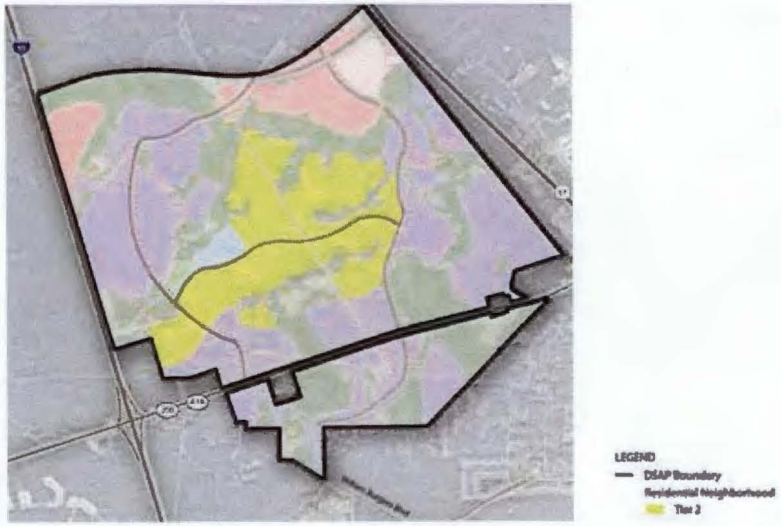
a) To the extent practical, pedestrian walkways should be located between non residential building frontages and vehicular use areas. A pedestrian network connecting public right of ways with private non residential building frontages should be encouraged
b) Bicycle parking should be provided adjacent 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 4.610: Northern Planning Area DSAP Residential Neighborhood

Figure 4.~~7~~11: ~~Southern~~ Central Planning Area DSAP Residential Neighborhood



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

A majority of the Northern Planning Area and ~~the entirety~~ a portion of the ~~Southern~~ Central 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 a community 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~~ 1/4 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. No side yard shall be required where two (2) or more buildings
  - 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 pPlan and the RN development standards and guidelines of this DSAP. Where conflicts exist between DSAP standards and the Nassau County Land Development cCode, 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

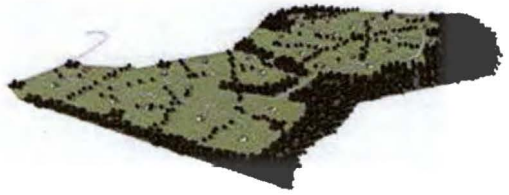
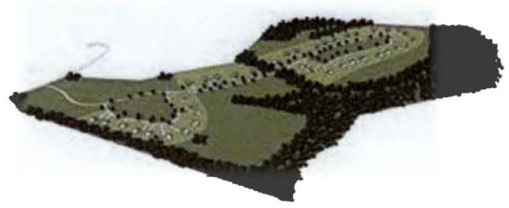


Figure 4.6: Rural Cluster Development



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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), 2012-2017, 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~~ 0.09	~~4.28~~ 4.31
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~~ 0.09	~~1.02~~ 1.05
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 has donated approximately 27 acres to the NCSB for the ~~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~~2)

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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~~ adopted. 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 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, 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.

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 west.

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 all of the segments currently meet the County's adopted Level of Service standard for daily conditions.

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	No. of Lanes	Adopted LOS Standard	Service Volume (1)	Meets Standard?
40	729923	I-95	Duval County Line to SR 200/A1A	62,333	2013	6D	D	110,300	Yes
41A	740158		SR 200/A1A to E-W Interchange Rd	44,000	2013	6D	D	110,300	Yes
41B	740158		E-W Interchange Rd to US 17	44,000	2013	6D	D	110,300	Yes
42	740132		US 17 to GA State Line	55,500	2013	6D	D	110,300	Yes
43/43A	745022	SR 200/A1A	Griffin Rd to I-95	10,000	2013	4D	D	58,800	Yes
44	740182		I-95 to Old Yulee Rd	19,214	2013	4D	D	64,300	Yes
44A	740182		Old Yulee Rd to US 17	19,214	2013	4D	D	36,700	Yes
45/45A	740101		US 17 to Chester Rd	34,000	2013	4D	D	36,700	Yes
46	740105		Chester Rd to Blackrock Rd	36,000	2013	4D	D	36,700	Yes
47/48	740103		Blackrock Rd to Amelia Island Pkwy	37,500	2013	4D	D	64,300	Yes
49		CR 200A/Pages Dairy Rd	US 17 to Chester Rd	3,004	2009	2U	D	16,500	Yes
50	749127	CR 107N/Blackrock Rd	Chester Rd to SR 200/A1A	1,600	2013	2U	D	16,500	Yes
51	740112	CR 107S/Old Nassauville Rd	SR 200/A1A to Amelia Concourse	8,400	2013	2U	D	16,500	Yes
51A			Amelia Concourse to Santa Juana Rd	6,730	2009	2U	D	16,500	Yes
51B		Roses Bluff Rd	Chester Rd to West	1,597	2013	2U	D	16,500	Yes
52	749134	Chester Rd	SR 200/A1A to Pages Dairy Rd	10,600	2013	2U	D	16,500	Yes
53A	749113		Pages Dairy Rd to Goodbread Rd Ext	4,800	2013	2U	D	16,500	Yes
53B	749113		Goodbread Rd Extension to Blackrock Rd	4,800	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	2013	2U	D	16,500	Yes
55	740011	US 17	Duval County Line to Harts Rd	11,200	2013	2U	D	22,200	Yes
	740011		Harts Rd to Sowell Rd	11,200	2013	2U	D	22,200	Yes
56	740011		Sowell Rd to SR 200/A1A	11,200	2013	4D	D	36,700	Yes
57	740104		SR 200/A1A to Pages Dairy Rd	11,400	2013	4D	D	36,700	Yes
58A	740104		Pages Dairy Rd to E-W Interchange Rd	11,400	2013	2U	D	16,500	Yes
58B	745020		E-W Interchange Rd to CR 108	9,300	2013	2U	D	16,500	Yes
59	745020		CR 108 to I-95	9,300	2013	2U	D	21,100	Yes
60	740162		I-95 to GA State Line	3,100	2013	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

Nassau Co. Link ID	FDOT Count Location	Roadway	From/To	AADT	Count Year	No. of Lanes	Adopted LOS Standard	Service Volume (1)	Meets Standard?
	742001	I-95/SR A1A Interchange (2)	NB I-95 to SR A1A Off-ramp	7,500	2013	1L	D	11,100	Yes
	742003		SR A1A to NB I-95 On-ramp	2,200	2013	1L	D	11,100	Yes
	742002		SB I-95 to SR A1A Off-ramp	1,700	2013	1L	D	11,100	Yes
	742000		SR A1A to SB I-95 On-ramp	7,700	2013	1L	D	11,100	Yes
	742004	I-95/US 17 Interchange (2)	NB I-95 to US 17 Off-ramp	300	2013	1L	D	11,100	Yes
	742005		US 17 to NB I-95 On-ramp	3,300	2013	1L	D	11,100	Yes
	742007		SB I-95 to US 17 Off-ramp	3,100	2013	1L	D	11,100	Yes
	742006		US 17 to SB I-95 On-ramp	200	2013	1L	D	11,100	Yes

(1) Capacity values are from the 2009 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, Nassau County Local Roads Traffic Counts (2009)

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).

The segment of SR A1A around the US 17 intersection (Item #210712-3) is programmed for construction in FY 2015.

The segment of SR A1A immediately east of Interstate 95 adjacent to the DSAP (Item #210711-2) is programmed for construction in FY 2016.

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	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	2015	$2,068
			Right of Way	2015-2017	$3,670,219
			Railroad and Utilities	2015	$12,500
			Construction	2015-2016	$586,378
210711-2	SR 200/A1A from I-95 to W. of Still Quarters Rd	Add Lanes	Preliminary Engineering	2015-2016	$138,118
			Right of Way	2015-2018	$4,559,954
			Railroad and Utilities	2016	$245,056
			Construction	2016-2019	$45,436,711
210712-4	SR 200/A1A from W. of Rubin Rd. to East of CR 107/Scott Rd	Add Lanes	Right of Way	2015-2016	$1,318,907
			Environmental	2015	$1,600,000
			Construction	2016-2018	$42,606,078
426031-2	Chester Rd from SR A1A to Green Pine Rd	Add Lanes	Preliminary Engineering	2015	$89,308
			Construction	2018	$9,902,237

Source: FDOT FY2015 – FY2019 Work Program September 19, 2014

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
I/J	Commuter Rail West	Downtown Jacksonville	Macclenney	Study of Limited Service (CSX)	$2.00

Source: Northeast Florida TPO Envision 2035 Long Range Transportation Plan

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.

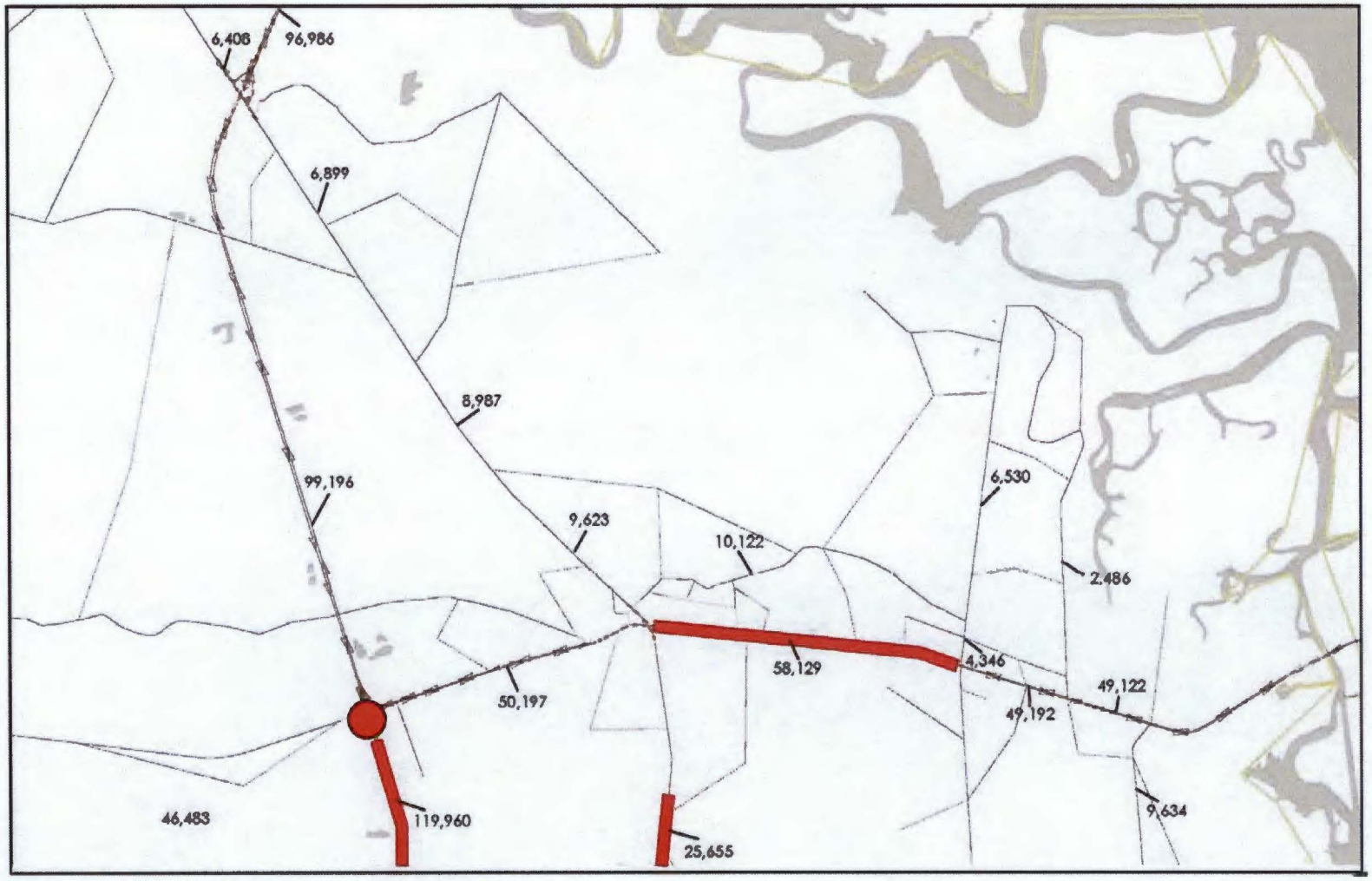
This model run reflects the 2035 Cost Feasible Model as adopted, with the long-term roadway improvements mentioned in the previous section. (The commuter rail system to Nassau County was not included in the model.)

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

Roadway	From/To	No. Lanes	Maximum Service Volume	2035 Baseline without ENCPA			Improvements to Address Backlog
				Raw Model Volume	Daily Volume MOCF =0.97	Capacity Exceeded?	
I-95	Duval County Line to SR 200/A1A	6D	110,300	119,960	116,361	Yes	Widen to 8 lanes
	SR 200/A1A to E-W Interchange Rd	6D	110,300	99,196	96,220		
	E-W Interchange Rd to US 17	6D	110,300	99,196	96,220		
	US 17 to GA State Line	6D	110,300	96,986	94,076		
SR 200/A1A	Griffin Rd to I-95	4D	58,800	46,483	45,089		
	I-95 to Old Yulee Rd	6D	55,300	50,197	48,691		
	Old Yulee Rd to US 17	6D	55,300	48,364	46,913		
	US 17 to Chester Rd	6D	55,300	58,129	56,385	Yes	Widen to 8 lanes
	Chester Rd to Blackrock Rd	6D	55,300	49,122	47,648		
	Blackrock Rd to Amelia Island Parkway	4D	64,300	49,073	47,601		
CR 200A/Pages Dairy Rd	US 17 to Chester Rd	2U	16,500	10,122	9,818		
CR 107N/Blackrock Rd	Chester Rd to SR 200/A1A	2U	16,500	2,486	2,411		
CR 107S/ Old Nassauville Rd	SR 200/A1A to Amelia Concourse	2U	16,500	9,634	9,345		
	Amelia Concourse to Santa Juana Rd	2U	16,500	3,698	3,587		
Chester Rd	SR 200/A1A to Pages Dairy Rd	4D	36,700	5,015	4,865		
	Pages Dairy Rd to CR 108 Extension	4D	36,700	6,530	6,334		
	CR 108 Extension to Blackrock Rd	2U	16,500	2,898	2,811		
Amelia Concourse	SR 200/A1A to CR 107S/Nassauville Rd	4D	36,700	13,097	12,704		
US 17	Duval County Line to Harts Rd	2U	22,200	25,655	24,885	Yes	Widen to 4 lanes
	Harts Rd to Sowell Rd	2U	22,200	24,090	23,367	Yes	Widen to 4 lanes
	Sowell Rd to SR 200/A1A	4D	36,700	12,967	12,578		
	SR 200/A1A to Pages Dairy Rd	4D	36,700	9,415	9,133		
	Pages Dairy Rd to Interchange Rd	2U	21,100	9,623	9,334		
	Interchange Rd to CR 108	2U	21,100	8,987	8,717		
	CR 108 to I-95	2U	21,100	6,899	6,692		
	I-95 to GA State Line	2U	21,100	6,408	6,216		
I-95/SR A1A Interchange	NB I-95 to SR A1A Off-ramp	1L	11,100	23,188	22,492	Yes	Widen to 3 lanes
	SR A1A to NB I-95 On-ramp	1L	11,100	12,112	11,749	Yes	Widen to 2 lanes
	SB I-95 to SR A1A Off-ramp	1L	11,100	12,106	11,743	Yes	Widen to 2 lanes
	SR A1A to SB I-95 On-ramp	1L	11,100	23,776	23,063	Yes	Widen to 3 lanes

Roadway	From/To	No. Lanes	Maximum Service Volume	2035 Baseline without ENCPA			Improvements to Address Backlog
				Raw Model Volume	Daily Volume MOCF =0.97	Capacity Exceeded?	
I-95/US 17 Interchange	NB I-95 to US 17 Off-ramp	1L	11,100	4,192	4,066		
	US 17 to NB I-95 On-ramp	1L	11,100	2,420	2,347		
	SB I-95 to US 17 Off-ramp	1L	11,100	2,420	2,347		
	US 17 to SB I-95 On-ramp	1L	11,100	4,039	3,918		

Source: VHB

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.
- A separate residential neighborhood is located north of the ENCPA. The northern neighborhood (Neighborhood A) is west of Interstate 95 along US 17.
- The southern planning area consists of an industrial park and is located 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 9th Edition rates. As shown in the table, the entire ENCPA is estimated to have a gross trip generation of 369,577 daily trips. Of this total, approximately half (185,808 trips, or 50.2% 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

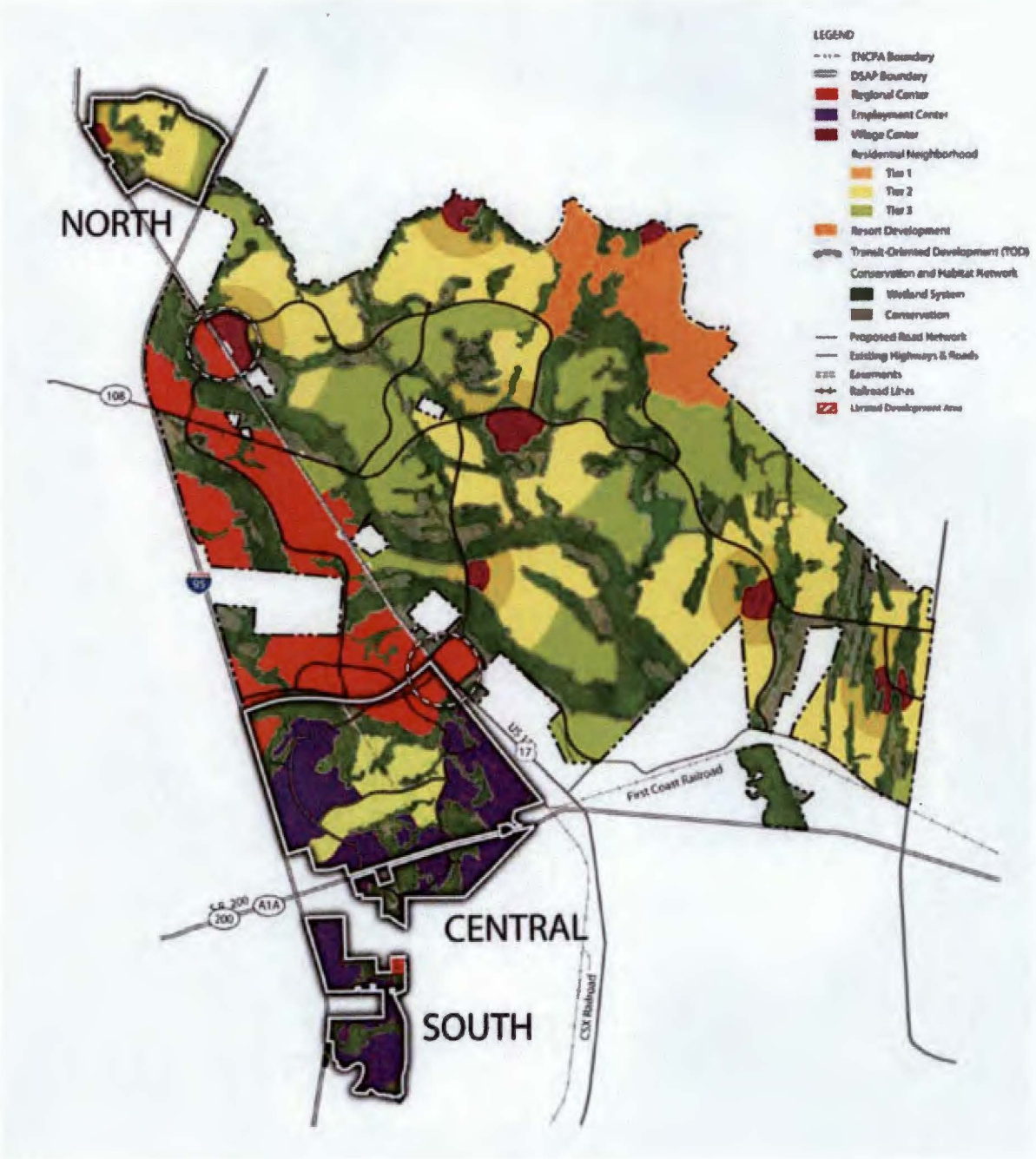


Table B-5
ENCPA Daily Trip Generation

Neighborhood	Land Use	ITE Category	Intensity		Daily Trips
A	SF Residential	210	769	d.u.	6,860
	Retail	820	75,000	s.f.	5,633
	Subtotal				*12,493*
B	SF Residential	210	1,624	d.u.	13,646
	Apartment	220	250	d.u.	1,639
	Retail	820	165,000	s.f.	9,404
	Subtotal				*24,689*
C	SF Residential	210	1,481	d.u.	12,537
	Apartment	220	250	d.u.	1,639
	Retail	820	140,000	s.f.	8,451
	Subtotal				*22,627*
D	SF Residential	210	1,936	d.u.	16,041
	Apartment	220	250	d.u.	1,639
	Retail	820	170,000	s.f.	9,588
	Subtotal				*27,268*
E	SF Residential	210	1,170	d.u.	10,093
	Retail	820	75,000	s.f.	5,633
	Subtotal				*15,726*
F	SF Residential	210	2,433	d.u.	19,794
	Apartment	220	250	d.u.	1,639
	Retail	820	140,000	s.f.	8,451
	Subtotal				*29,884*
G	SF Residential	210	1,439	d.u.	12,210
	Retail	820	95,000	s.f.	6,568
	Subtotal				*18,778*
H	Industrial Park	130	788,505	s.f.	5,386
Resort District	Condominium	230	1,513	units	6,836
	Timeshare (1)	265	1,513	units	7,588
	Apartment	220	157	d.u.	1,075
	Retail	820	125,000	s.f.	7,851
	Hotel	310	400	rooms	3,568
	Subtotal				*26,918*
Employment Center and TOD	Office	750	2,800,000	s.f.	29,585
	SF Residential	210	1,483	d.u.	12,553
	Apartment	220	1,461	d.u.	8,977
	Townhome	230	325	d.u.	1,794
	Retail	820	700,000	s.f.	24,058
	Industrial	130	2,736,495	s.f.	18,690
	Subtotal				*95,657*
Regional Center	SF Residential	210	5,696	d.u.	43,292
	Office	710	500,000	s.f.	4,461
	Office Park	750	490,000	s.f.	5,515
	Retail	820	1,200,000	s.f.	34,151
	Industrial Park	130	400,000	s.f.	2,732
	Subtotal				*90,151*
TOTAL GROSS TRIP GENERATION					**369,577**

Source: ITE Trip Generation, 9th Edition September 22, 2014

(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 at Interchange 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. Eight 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*.
- Vehicle Miles Traveled (VMT) – The daily VMT was calculated in order to assess the impact that the development will have on each roadway facility and on the roadway network as a whole. ***Table B-7*** shows the daily VMT for each segment and for the total ENCPA development area for the previous DSAP submittal. The previous cumulative VMT was 828,061 vehicle-miles. ***Table B-8*** shows the VMT for the DSAP Adjustment, which was calculated as 806,887 vehicle-miles. This is a decrease of approximately 2.5%. This reduction is a result of residential land uses relocating inside the employment center, thus allowing for shorter trips within the Central Planning Area.
- 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-9 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 Interchange Road
- SR 200/A1A from I-95 to US 17
- SR 200/A1A from Chester Road to Blackrock Road

Figure B-4
Aggregate Areas for Trip Distribution Evaluation

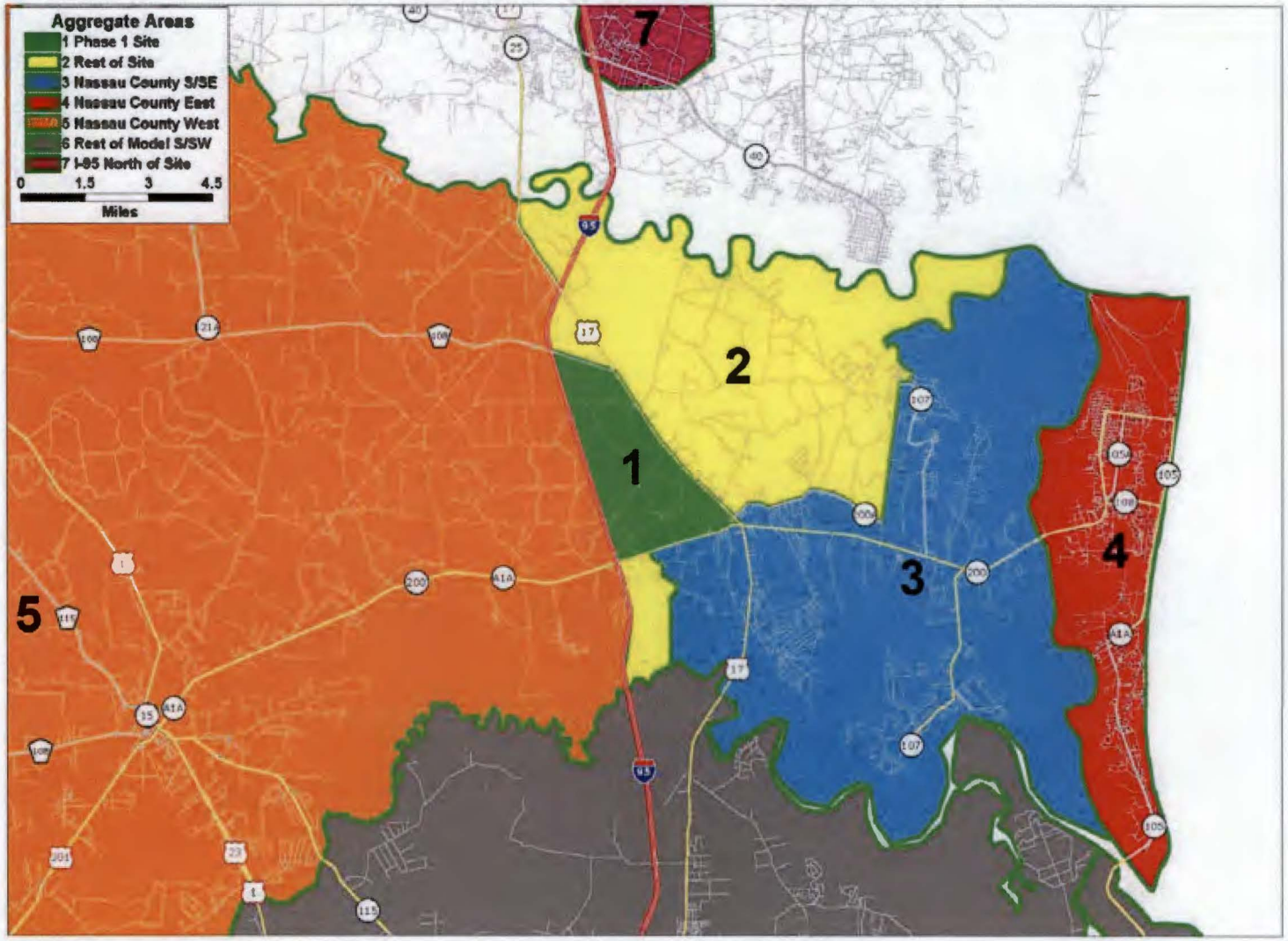


Table B-6
Trip Distribution Summary from Model

Area (from Figure B-4)	Trip Distribution
1 and 2 (ENCPA)	46%
3 and 4 (Eastern Nassau County)	19%
5 (Western Nassau County)	6%
6 (Duval County and points south)	27%
7 (Georgia and points north)	2%
TOTAL	**100.00%**
Within Nassau County	*71%*
Outside Nassau County	*29%*

Table B-7
Vehicle Miles Traveled (VMT) Summary – Original Analysis

Roadway	From/To	Net New ENCPA Trips	Segment Length (miles)	VMT
I-95	Duval County Line to SR 200/A1A	30,012	3.1	93,037
	SR 200/A1A to E-W Interchange Rd	37,979	2.0	75,959
	E-W Interchange Rd to US 17	10,752	4.7	50,537
	US 17 to GA State Line	4,216	2.5	10,539
SR 200/A1A	Griffin Rd to I-95	5,416	5.3	28,707
	I-95 to Old Yulee Rd	7,809	2.4	18,743
	Old Yulee Rd to US 17	5,147	0.7	3,603
	US 17 to Chester Rd	5,643	3.2	18,059
	Chester Rd to Blackrock Rd	7,664	1.1	8,430
	Blackrock Rd to Amelia Island Pkwy	5,904	3.8	22,437
CR 200A/Pages Dairy Rd	US 17 to Chester Rd	2,600	3.9	10,138
CR 107N/ Blackrock Rd	Chester Rd to SR 200/A1A	0	5.1	0
CR 107S/ Old Nassauville Rd	SR 200/A1A to Amelia Concourse	0	1.9	0
	Amelia Concourse to Santa Juana Rd	0	1.7	0
Chester Rd	SR 200/A1A to Pages Dairy Rd	14,750	0.5	7,375
	Pages Dairy Rd to CR 108 Extension	6,850	1.9	13,015
	CR 108 Extension to Blackrock Rd	1,835	1.4	2,569
Amelia Concourse	SR 200/A1A to Old Nassauville Rd	897	3.8	3,410
US 17	Duval County Line to Harts Rd	1,405	1.8	2,528
	Harts Rd to Sowell Rd	2,602	2.2	5,723
	Sowell Rd to SR 200/A1A	3,056	0.1	306
	SR 200/A1A to Pages Dairy Rd	6,291	0.2	1,258
	Pages Dairy Rd to Interchange Rd	6,781	1.8	12,206
	Interchange Rd to CR 108	7,104	2.7	19,182
	CR 108 to I-95	11,318	2.2	24,900
	I-95 to GA State Line	4,018	2.4	9,643
I-95/SR A1A Interchange	NB I-95 to SR A1A Off-ramp	0	0.3	0
	SR A1A to NB I-95 On-ramp	968	0.4	387
	SB I-95 to SR A1A Off-ramp	936	0.3	281
	SR A1A to SB I-95 On-ramp	0	0.4	0
I-95/US 17 Interchange	NB I-95 to US 17 Off-ramp	6,358	0.2	1,272
	US 17 to NB I-95 On-ramp	1,213	0.5	607
	SB I-95 to US 17 Off-ramp	1,194	0.3	358
	US 17 to SB I-95 On-ramp	6,471	0.2	1,294
CR 108 Extension	Chester Rd to Interchange Rd	17,275	5.3	91,556
	Interchange Rd to US 17	10,261	1.7	17,443
	US 17 to I-95 Overpass	13,683	1.5	20,524
N-S Regional Center Arterial	SR A1A to DSAP Collector Loop Rd	12,606	0.4	5,042
	DSAP Collector Loop Rd to Interchange Rd	6,200	1.5	9,300
	Interchange Rd to CR 108	25,872	3.6	93,139
	CR 108 to US 17	2,646	1.2	3,175
Interchange Rd	I-95 to N-S Regional Center Arterial	29,163	1.1	32,079

Roadway	From/To	Net New ENCPA Trips	Segment Length (miles)	VMT
Interchange Rd	N-S Regional Center Arterial to US 17	24,447	1.2	29,336
	US 17 to CR 108	21,871	2.1	45,928
DSAP Collector Loop Rd	N-S Regional Center Arterial to Interchange Rd	10,070	2.3	23,160
DSAP Collector	SR A1A to DSAP Collector Loop Rd	13,594	0.8	10,875
TOTAL				**828,061**

Table B-8
Vehicle Miles Traveled (VMT) Summary – Revised Analysis (September 2014)

Roadway	From/To	Net New ENCPA Trips	Segment Length (miles)	VMT
I-95	Duval County Line to SR 200/A1A	34,585	3.1	107,214
	SR 200/A1A to E-W Interchange Rd	38,069	2.0	76,138
	E-W Interchange Rd to US 17	12,052	4.7	56,644
	US 17 to GA State Line	4,498	2.5	11,245
SR 200/A1A	Griffin Rd to I-95	0	5.3	0
	I-95 to Old Yulee Rd	10,534	2.4	25,282
	Old Yulee Rd to US 17	10,426	0.7	7,298
	US 17 to Chester Rd	6,438	3.2	20,602
	Chester Rd to Blackrock Rd	9,569	1.1	10,526
	Blackrock Rd to Amelia Island Pkwy	9,130	3.8	34,694
CR 200A/Pages Dairy Rd	US 17 to Chester Rd	3,809	3.9	14,855
CR 107N/ Blackrock Rd	Chester Rd to SR 200/A1A	0	5.1	0
CR 107S/ Old Nassauville Rd	SR 200/A1A to Amelia Concourse	137	1.9	260
	Amelia Concourse to Santa Juana Rd	5,412	1.7	9,200
Chester Rd	SR 200/A1A to Pages Dairy Rd	15,847	0.5	7,924
	Pages Dairy Rd to CR 108 Extension	7,430	1.9	14,117
	CR 108 Extension to Blackrock Rd	2,328	1.4	3,259
Amelia Concourse	SR 200/A1A to Old Nassauville Rd	1,060	3.8	4,028
US 17	Duval County Line to Harts Rd	2,622	1.8	4,720
	Harts Rd to Sowell Rd	3,452	2.2	7,594
	Sowell Rd to SR 200/A1A	4,282	0.1	428
	SR 200/A1A to Pages Dairy Rd	7,717	0.2	1,543
	Pages Dairy Rd to Interchange Rd	7,159	1.8	12,886
	Interchange Rd to CR 108	6,140	2.7	16,578
	CR 108 to I-95	5,642	2.2	12,412
	I-95 to GA State Line	4,302	2.4	10,325
I-95/SR A1A Interchange	NB I-95 to SR A1A Off-ramp	0	0.3	0
	SR A1A to NB I-95 On-ramp	1,265	0.4	506
	SB I-95 to SR A1A Off-ramp	1,329	0.3	399
	SR A1A to SB I-95 On-ramp	0	0.4	0
I-95/US 17 Interchange	NB I-95 to US 17 Off-ramp	6,517	0.2	1,303
	US 17 to NB I-95 On-ramp	1,163	0.5	582

Roadway	From/To	Net New ENCPA Trips	Segment Length (miles)	VMT
	SB I-95 to US 17 Off-ramp	1,172	0.3	352
	US 17 to SB I-95 On-ramp	6,724	0.2	1,345
CR 108 Extension	Chester Rd to Interchange Rd	15,218	5.3	80,655
	Interchange Rd to US 17	10,455	1.7	17,774
	US 17 to I-95 Overpass	13,145	1.5	19,718
N-S Regional Center Arterial	SR A1A to DSAP E-W Collector	13,782	0.6	8,269
	DSAP E-W Collector to Interchange Rd	15,293	1.3	19,881
	Interchange Rd to CR 108	15,745	3.6	56,682
	CR 108 to US 17	2,854	1.2	3,425
Interchange Rd	I-95 to DSAP Western Loop Collector	27,888	1.1	30,677
	DSAP Western Loop Collector to N-S Regional Arterial	24,004	0.8	19,203
	N-S Regional Center Arterial to US 17	24,234	0.4	9,694
	US 17 to CR 108	17,932	2.1	37,657
DSAP E-W Collector	DSAP Western Loop Collector to N-S Regional Arterial	3,397	1.3	4,416
DSAP Western Loop Collector	SR A1A to DSAP E-W Collector	10,481	0.6	6,289
	DSAP E-W Collector to Interchange Rd	10,161	1.8	18,290
TOTAL				**806,887**

Source: VHB

Table B-9 REVISED
Year 2035 Roadway Analysis with ENCPA

Roadway	From/To	2035 Baseline without ENCPA			Improvements 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
		Raw Model Volume	Daily Volume (MOCF=0.97)	Capacity Exceeded?					Local Street Connections	Internal Trails System				
I-95	Duval County Line to SR 200/A1A	119,960	116,361	Yes	Widen to 8 lanes	8D	146,500	34,585			150,946	103%	Yes	Additional capacity through N-S Regional Center Arterial and regional commuter rail.
	SR 200/A1A to E-W Interchange Rd	99,196	96,220			6D	110,300	38,069			134,289	122%	Yes	
	E-W Interchange Rd to US 17	99,196	96,220			6D	110,300	12,052			108,272	98%		
	US 17 to GA State Line	96,986	94,076			6D	110,300	4,498			98,574	89%		
SR 200/A1A	Griffin Rd to I-95	46,483	45,089			4D	58,800	0			45,089	77%		
	I-95 to Old Yulee Rd	50,197	48,691			6D	55,300	10,534			59,225	107%	Yes	Additional capacity through Interchange Rd
	Old Yulee Rd to US 17	48,364	46,913			6D	55,300	10,426			57,339	104%	Yes	Additional capacity through Interchange Rd
	US 17 to Chester Rd	58,129	56,385	Yes	Widen to 8 lanes	8D	73,800	6,438			62,823	85%		
	Chester Rd to Blackrock Rd	49,122	47,648			6D	55,300	9,569			57,217	103%	Yes	Additional capacity through intersection improvements
	Old Nassauville Rd to Amelia Island Pkwy	49,073	47,601			4D	64,300	9,130			56,731	88%		
CR 200A/Pages Dairy Rd	US 17 to Chester Rd	10,122	9,818			2U	16,500	3,809	-571	-190	12,866	78%		
CR 107N/ Blackrock Rd	Chester Rd to SR 200/A1A	2,486	2,411			2U	16,500	0			2,411	15%		
CR 107S/ Old Nassauville Rd	SR 200/A1A to Amelia Concourse	9,634	9,345			2U	16,500	137			9,482	57%		
	Amelia Concourse to Santa Juana Rd	3,698	3,587			2U	16,500	5,412			8,999	55%		
Chester Rd	SR 200/A1A to Pages Dairy Rd	5,015	4,865			4D	36,700	15,847			20,712	56%		
	Pages Dairy Rd to CR 108 Extension	6,530	6,334			4D	36,700	7,430			13,764	38%		
	CR 108 Extension to Blackrock Rd	2,898	2,811			2U	16,500	2,328			5,139	31%		
Amelia Concourse	SR 200/A1A to Old Nassauville Rd	13,097	12,704			4D	36,700	1,060			13,764	38%		
US 17	Duval County Line to Harts Rd	25,655	24,885	Yes	Widen to 4 lanes	4U	64,300	2,622			27,507	43%		
	Harts Rd to Sowell Rd	24,090	23,367	Yes	Widen to 4 lanes	4U	64,300	3,452			26,819	42%		
	Sowell Rd to SR 200/A1A	12,967	12,578			4D	36,700	4,282			16,860	46%		
	SR 200/A1A to Pages Dairy Rd	9,415	9,133			4D	36,700	7,717			16,850	46%		
	Pages Dairy Rd to Interchange Rd	9,623	9,334			2U	21,100	7,159			16,493	78%		
	Interchange Rd to CR 108	8,987	8,717			2U	21,100	6,140			14,857	70%		
	CR 108 to I-95	6,899	6,692			2U	21,100	5,642			12,334	58%		
	I-95 to GA State Line	6,408	6,216			2U	21,100	4,302			10,518	50%		
I-95/SR A1A Interchange	NB I-95 to SR A1A Off-ramp	23,188	22,492	Yes	Widen to 3 lanes	3L	33,300	0			22,492	68%		
	SR A1A to NB I-95 On-ramp	12,112	11,749	Yes	Widen to 2 lanes	2L	22,200	1,265			13,014	59%		
	SB I-95 to SR A1A Off-ramp	12,106	11,743	Yes	Widen to 2 lanes	2L	22,200	1,329			13,072	59%		
	SR A1A to SB I-95 On-ramp	23,776	23,063	Yes	Widen to 3 lanes	3L	33,300	0			23,063	69%		
I-95/US 17 Interchange	NB I-95 to US 17 Off-ramp	4,192	4,066			1L	11,100	6,517			10,583	95%		
	US 17 to NB I-95 On-ramp	2,420	2,347			1L	11,100	1,163			3,510	32%		
	SB I-95 to US 17 Off-ramp	2,420	2,347			1L	11,100	1,172			3,519	32%		
	US 17 to SB I-95 On-ramp	4,039	3,918			1L	11,100	6,724			10,642	96%		
CR 108 Extension	Chester Rd to Interchange Rd					2U	16,500	15,218	-2,283	-761	12,174	74%		
	Interchange Rd to US 17					2U	16,500	10,455	-1,568	-523	8,364	51%		
	US 17 to I-95 Overpass					2U	16,500	13,145	-1,972	-657	10,516	64%		

East Nassau Employment Center DSAP

Roadway	From/To	2035 Baseline without ENCPA			Improvements 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
		Raw Model Volume	Daily Volume (MOCF=0.97)	Capacity Exceeded?					Local Street Connections	Internal Trails System				
N-S Regional Center Arterial	SR A1A to DSAP E-W Collector					4D	36,700	13,782	-2,067	-689	11,026	30%		
	DSAP E-W Collector to Interchange Rd					4D	36,700	15,293	-2,294	-765	12,234	33%		
	Interchange Rd to CR 108					4D	36,700	15,745	-2,362	-787	12,596	34%		
	CR 108 to US 17					4D	36,700	2,854	-428	-143	2,283	6%		
Interchange Rd	I-95 to DSAP Western Loop Collector					6D	55,300	27,888	-4,183	-1,394	22,311	40%		
Interchange Rd	DSAP Western Loop Collector to N-S Regional Center Arterial					4D	36,700	24,001	-3,601	-1,200	19,203	52%		
	N-S Regional Center Arterial to US 17					4D	36,700	24,234	-3,635	-1,212	19,387	53%		
	US 17 to CR 108					4D	36,700	17,932	-2,690	-897	14,345	39%		
DSAP E-W Collector	DSAP Western Loop Collector to N-S Regional Center Arterial					2U	16,500	3,397	-510	-170	2,717	16%		
DSAP Western Loop Collector	SR A1A to DSAP E-W Collector					2U	16,500	10,481	-1,572	-524	8,385	51%		
	DSAP E-W Collector to Interchange Rd					2U	16,500	10,161	-1,524	-508	8,129	49%		

Table B-9 REVISED, cont.
Year 2035 Roadway Analysis with ENCPA

North-South Cordon Line Analysis (Cordon Line located north of SR A1A – immediately south of Interchange Rd)

North-South Roadway	From/To	Maximum Service Volume	2035 Daily Roadway Volume	Roadway Capacity Used
I-9S	SR 200/A1A to E-W Interchange Rd	110,300	134,289	122%
N-S Regional Center Arterial	DSAP E-W Collector to Interchange Rd	36,700	12,234	33%
DSAP Western Loop Collector	DSAP E-W Collector to Interchange Rd	16,500	8,129	49%
US 17	Pages Dairy Rd to Interchange Rd	21,100	16,493	78%
Chester Road	Pages Dairy Rd to CR 108 Extension	36,700	13,764	38%
Total – all North-South Routes		**221,300**	**184,910**	**84%**

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	12,174	74%
CR 200A/Pages Dairy Road	US 17 to Chester Rd	16,500	12,866	78%
SR 200/A1A	US 17 to Chester Rd	73,800	62,823	85%
Total – all East-Est Routes		**106,800**	**87,863**	**82%**

An important component of the mobility approach is the provision of transportation capacity through network connectivity and alternate routes. ***Table B-9*** 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 US 17, it is proposed that parallel capacity be provided through Interchange Road. 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 Blackrock Road intersection. In the case of Interstate 95, it is proposed that parallel capacity be provided via the North-South Regional Center Arterial 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 at Interchange Road
3) Interchange Road
4) US 17 widening
5) N-S Regional Center Arterial
6) DSAP Western Loop Collector
7) Traffic signals at major intersections
8) SR A1A Intersection Improvements
9) I-95/SR A1A Interchange improvements
10) SR A1A and William Burgess Boulevard Intersection improvements
11) Internal multi-use trail system (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.

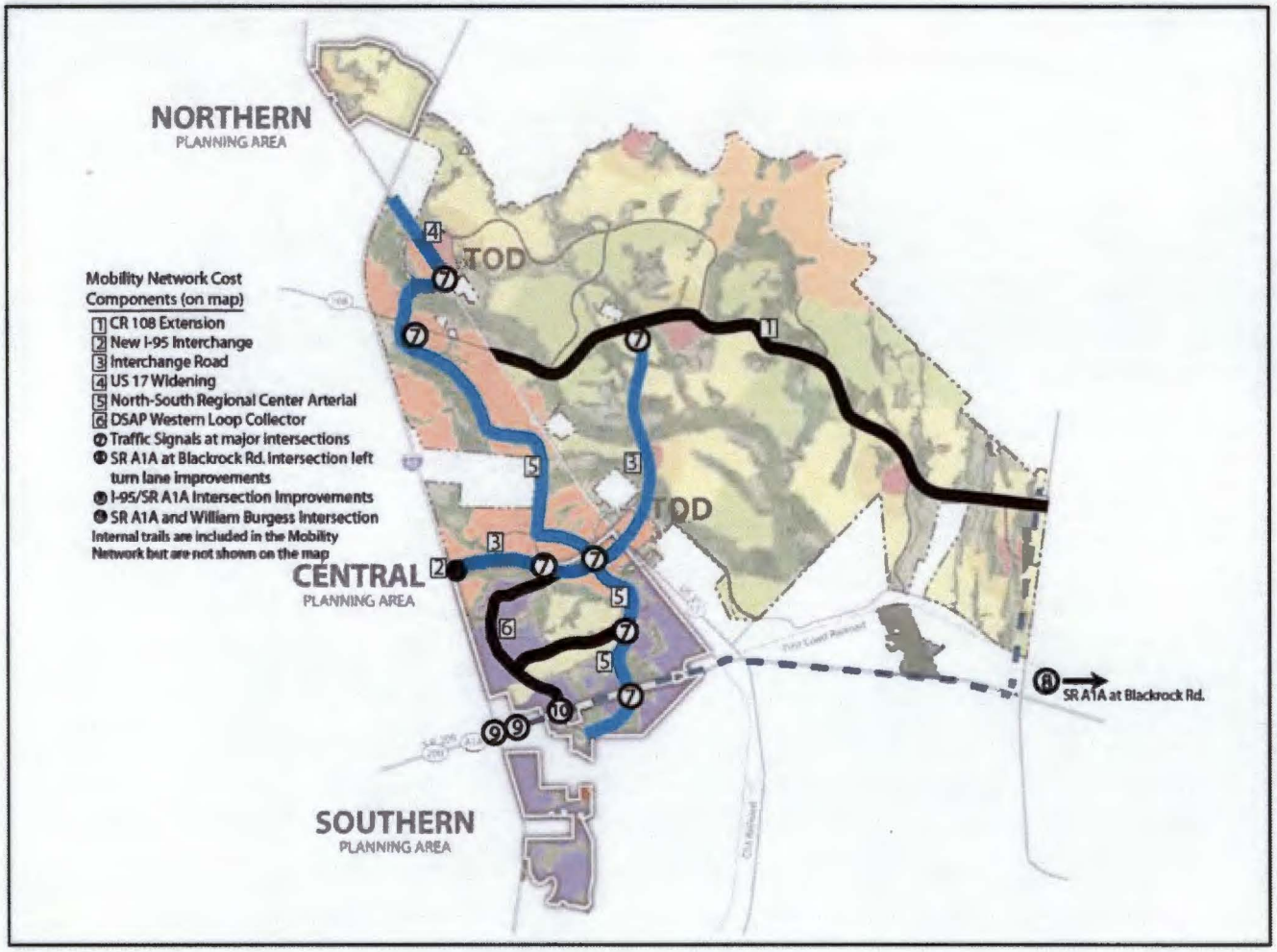
Table B-10 summarizes the estimated ENCPA costs for the Mobility Network in Year 2012. As shown in the table, the total estimated cost is **$138.9 million**.

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.

The ENCPA share of the cost is assumed to be 100 percent.

Figure B-5 (REVISED 9/26/14)
Recommended ENCPA Mobility Network



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 50 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.

Table B-10 REVISED
Mobility Improvements Summary

Roadway/Segment	Length (miles)	Improvement	Design and Construction Cost per Mile			Design and Construction Subtotal	ROW Subtotal	Total Cost
			Roadway	Multi-Use Path (12')	Sidewalk			
CR 108 Extension								
US 17 to Interchange Rd	1.7	New 2-lane road	$3,027,000	$163,321	$102,285	$5,597,430	$498,000	**$6,095,430**
Interchange Rd to Resort Area	3.7	New 2-lane road	$3,027,000	$163,321	$102,285	$12,182,642	$1,083,000	**$13,265,642**
Resort Area to Chester Rd	1.6	New 2-lane road	$3,027,000	$163,321	$102,285	$5,268,170	$468,000	**$5,736,170**
Interchange Rd								
I-95 to DSAP Western Loop Collector	1.1	New 4-lane road	$4,644,000	$163,321	$102,285	$5,400,567	$322,000	**$5,722,567**
DSAP Western Loop Collector to N-S Regional Arterial	0.8	New 4-lane road	$4,644,000	$163,321	$102,285	$3,927,685	$234,000	**$4,161,685**
N-S Regional Center Arterial to US 17	0.4	New 4-lane road	$4,644,000	$163,321	$102,285	$1,963,842	$117,000	**$2,080,842**
US 17 to CR 108	2.1	New 4-lane road	$4,644,000	$163,321	$102,285	$10,310,173	$615,000	**$10,925,173**
Interchange Rd at I-95		New interchange				$23,650,000	$75,000	**$23,725,000**
DSAP Western Loop Collector	3.7	New 2-lane road	$3,027,000	$163,321	$102,285	$12,182,642	$787,000	**$12,969,642**
N-S Regional Center Arterial								
US 17 to CR 108	1.2	New 4-lane road	$4,644,000	$163,321	$102,285	$5,891,527	$351,000	**$6,242,527**
CR 108 to Interchange Rd	3.6	New 4-lane road	$4,644,000	$163,321	$102,285	$17,674,582	$1,054,000	**$18,728,582**
Interchange Rd to SR 200/A1A	1.9	New 4-lane road	$4,644,000	$163,321	$102,285	$9,328,251	$556,000	**$9,884,251**
US 17								
N-S Regional Center Arterial to I-95	1.2	Widen to 4 lanes	$5,676,000	$163,321	$102,285	$7,129,927	$87,000	**$7,216,927**
Traffic Signals (at 8 major intersections)		Install new signal				$2,800,000		**$2,800,000**
SR A1A Intersection Improvements		Dual left lanes at Blackrock Rd		**Cost included with Traffic Signals at major intersections**				
SR A1A/I-95 Interchange Improvements		Interchange improvements				$700,000		**$700,000**
SR A1A/William Burgess Blvd Intersection Improvements		Intersection improvements				$500,000		**$500,000**
Internal multi-use trail system	50	New multi-use trail		$163,321		$8,166,050		**$8,166,050**
TOTAL						**$132,673,488**	**$6,247,000**	**$138,920,488**

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 3,269 residential units and 6,236,495 square feet of non-residential uses (retail, office and industrial). This program for the Central Planning Area generates an estimated 95,657 daily trips at buildout. ***Table B-11*** summarizes the development program and its trip generation.

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

- **North – South Regional Center Arterial (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.
- **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 the East-West Interchange Road.
- **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-11
DSAP Trip Generation

North Area – Neighborhood A

Land Use	ITE Category	Intensity		Daily Trips
SF Residential	210	769	du	6,860
Retail	820	75,000	sf	5,633
Gross Total – North Area				**12,493**

Central Area – Employment Center

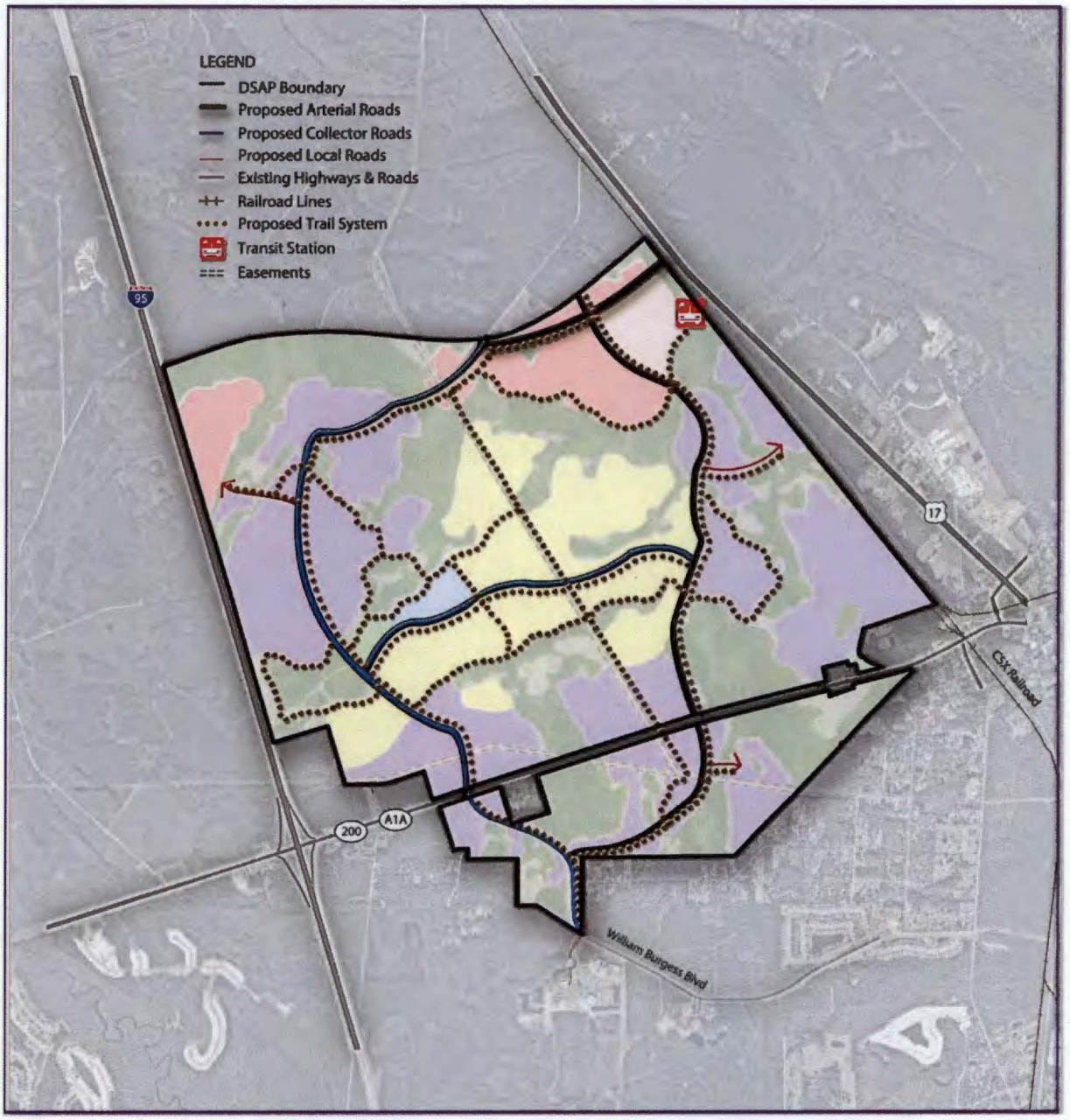
Land Use	ITE Category	Intensity		Daily Trips
Office Park	750	2,800,000	sf	29,585
SF Residential	210	1,483	du	12,553
Apartment	220	1,461	du	8,977
Townhome	230	325	du	1,794
Retail	820	700,000	sf	24,058
Industrial Park	130	2,736,495	sf	18,690
Gross Total – Central Area				**95,657**

South Area – Neighborhood H

Land Use	ITE Category	Intensity		Daily Trips
Industrial Park	130	788,505	sf	5,386
Gross Total – South Area				**5,386**

Source: ITE Trip Generation, 9th Edition

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 20 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.

Since the Market Street Preliminary Development Plan (PDP) is being submitted in conjunction with this DSAP amendment, refer to the Market Street Transportation Impact Analysis for short-term (five-year) conditions.

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 12,493 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 788,505 square feet of industrial development; this program produces an estimated 5,386 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 120,000 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	120,000 sq ft	0.09 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	0.09	4.31

**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.

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	120,000 sq ft	0.09 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	0.09	1.0

**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.

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 2011-2012 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 2015/16 enrollment.

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

School	FISH Capacity	2015/16 Projected Enrollment	LOS	Available Capacity
Yulee Primary	778	802	95%	-63
Yulee Elementary	795	831	95%	-76
Yulee Middle	801	909	100%	-108
Yulee High	1,121	981	100%	140

**Source: 2011-12 Nassau County School Board 5-yr Facilities Work Program*

Per Table C-6b, 5-year deficits are projected at both the elementary and middle school levels. 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 2011-2012 Educational Facilities Plan.

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	2015/16 Projected Enrollment	LOS	Available Capacity
ELH Elem	710	541	95%	133
Southside Elem	723	581	95%	105
Fernandina Middle	715	606	100%	109
Fernandina High	1,129	791	100%	338

**Source: 2011-12 Nassau County School Board 5-yr Facilities Work Program*

It appears that adequate capacity exists within the adjacent Fernandina CSA to accommodate the projected 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 2011-2012 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. 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.

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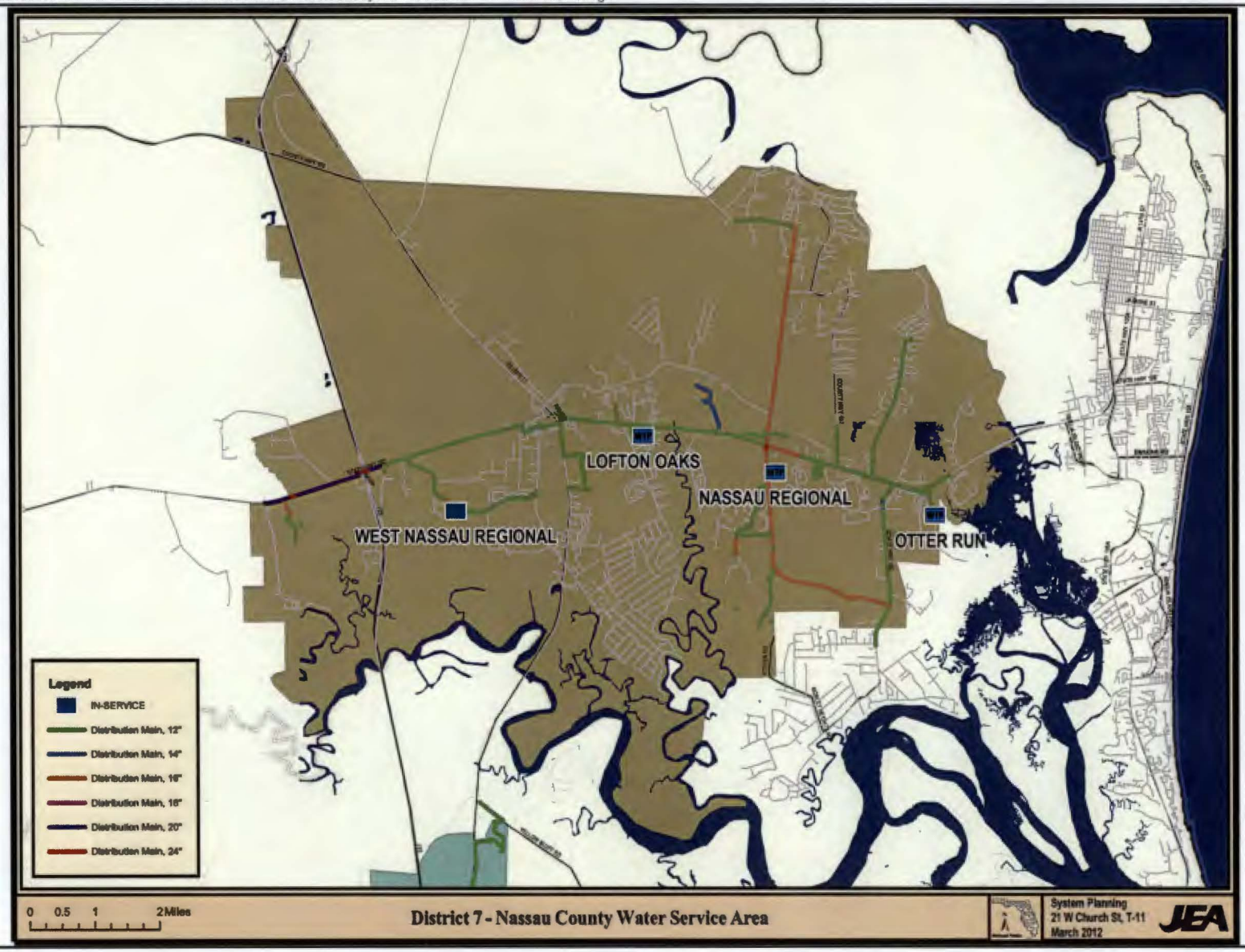

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Terra Pointe DSAP

JEA District 7 - Water Service Area

May 2012

Figure C-2-1

N

N.T.S.

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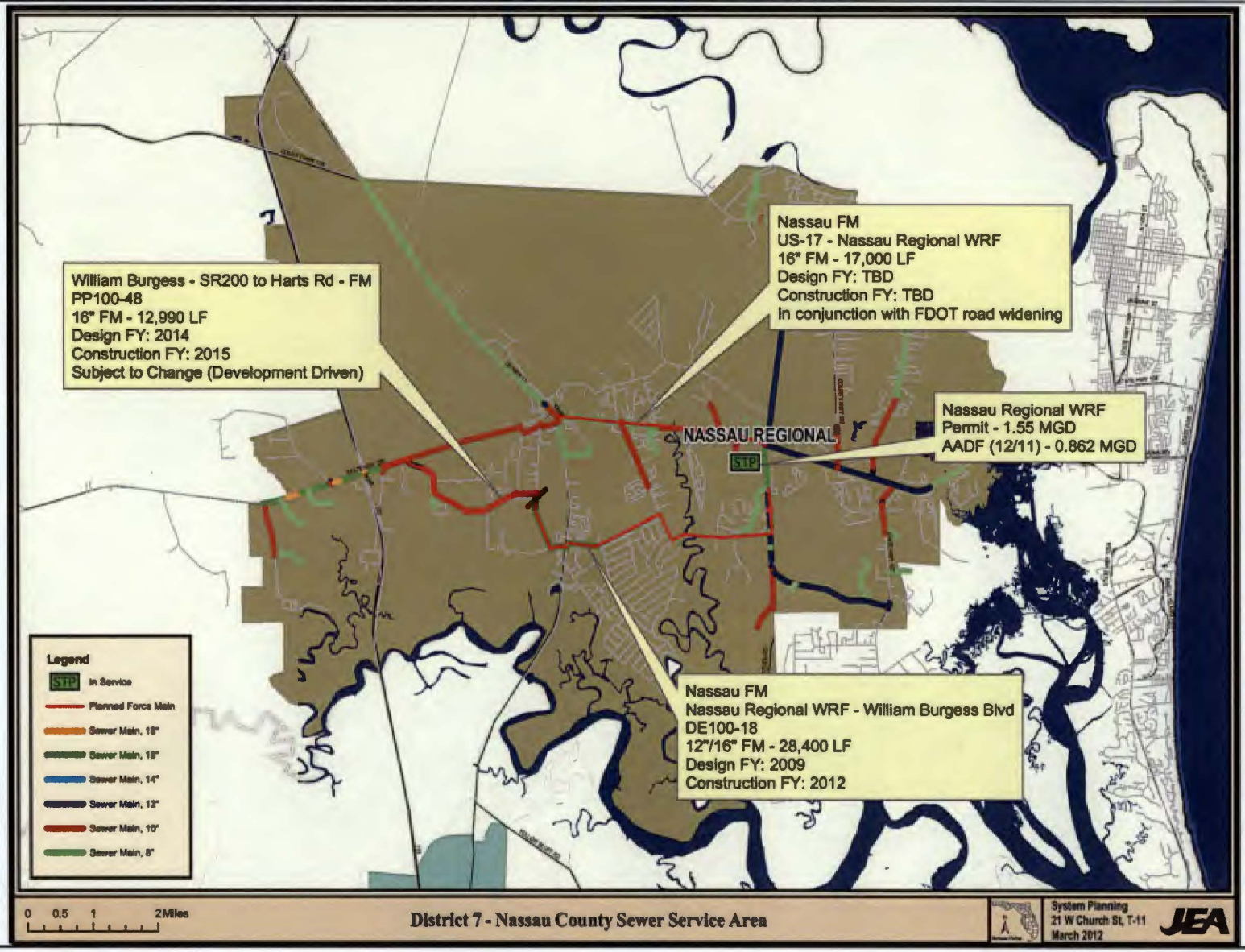

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Terra Pointe DSAP

JEA District7 - Sewer Service Area

May 2012

Figure C-3-1

N

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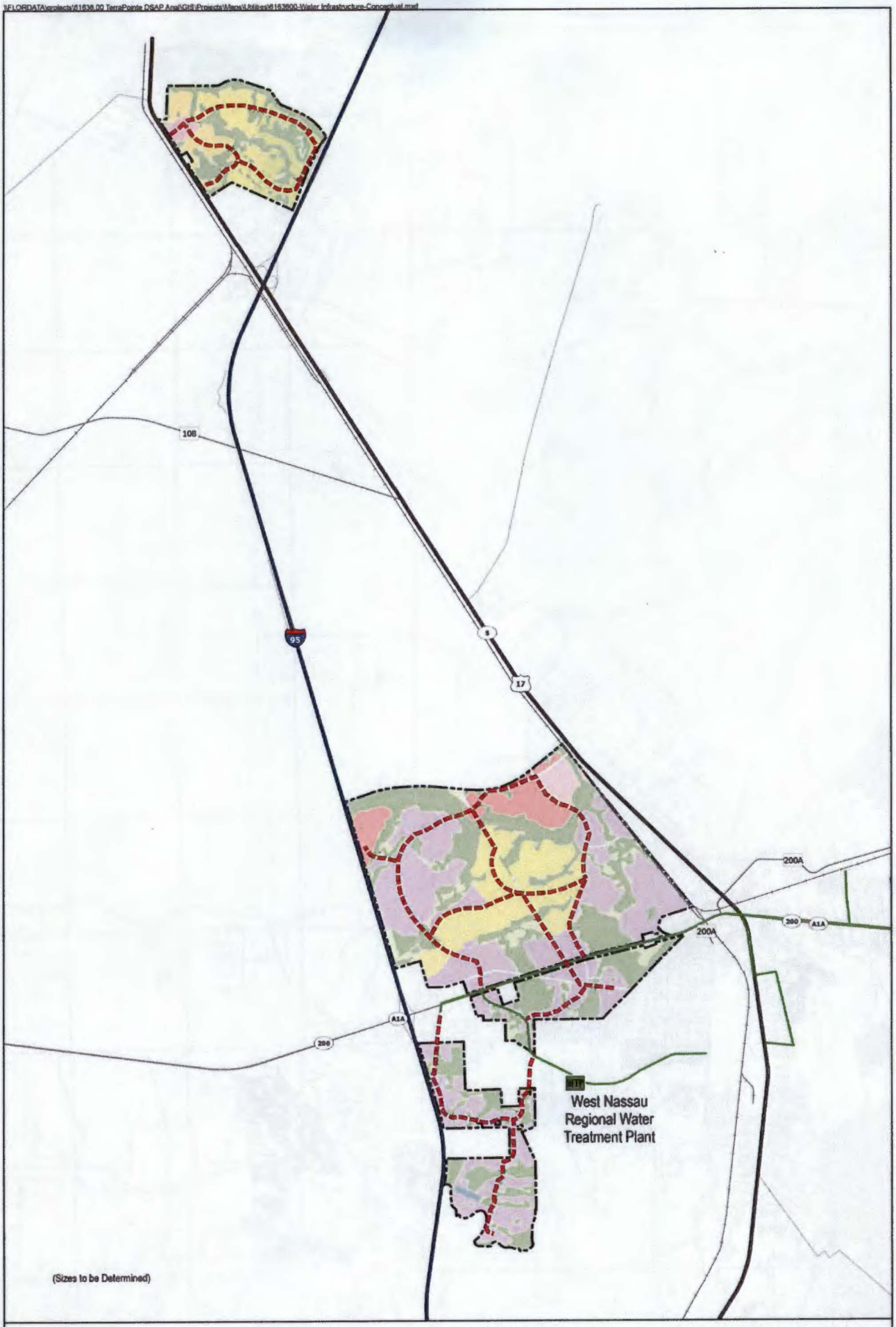

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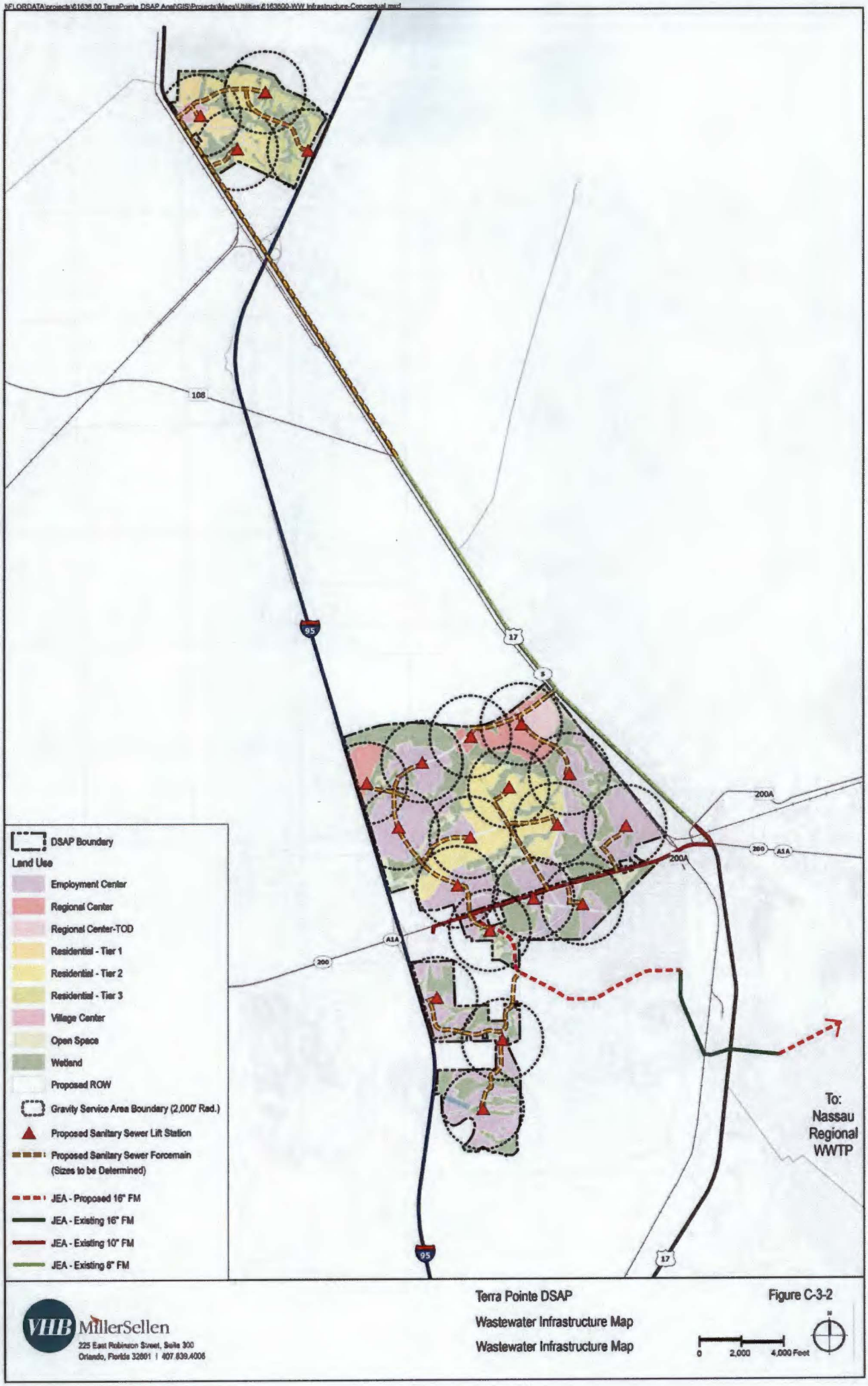
Terra Pointe DSAP
Water Infrastructure Map
October 2014

Figure C-2-2

0 2,000 4,000 Feet



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Terra Pointe DSAP
Wastewater Infrastructure Map
Wastewater Infrastructure Map

Figure C-3-2

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 - 1/2 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, pass-by capture, or transit ~~should not~~ shall be applied to the trip generation for individual PDPs and have no impact on the Mobility Fee to be assessed to land uses included in the Individual PDPs (per unit in the case of residential land uses and per square foot in the case of non-residential developments), 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 below ~~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%
	1-95 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 1-95 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~~ DSAP Western Loop Collector	New 4-lane road
DSAP Western Loop Collector to N-S Regional Center Arterial	New 4-lane road
~~East Frontage Rd~~N-S Regional Center Arterial 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**~~ DSAP Western Loop Collector	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	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	
(cost included with Traffic Signals at major intersections)	Dual left turn lanes at Blackrock Rd
~~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)	
SR A1A/William Burgess Blvd Intersection Improvements	Intersection improvements