3. What to Plan

Considering tomorrow...

Section 3.1 Introduction

This chapter builds off Chapters 1 and 2, and analyzes adopted levels of service and other components necessary to create a vibrant community that implements the adopted community vision - the Vision 2032 Plan. This chapter also investigates what to plan outside of the adopted levels of services; factors which help to create a sustainable, resilient community.

More specifically, this section analyzes:

1. Civic Facilities and Public Infrastructure
   - Recreation
   - Schools
   - Fire
   - Law Enforcement
   - Water/Waste Water
   - Solid Waste
   - Mobility Network
2. Housing
3. Historic, Natural and Cultural Resources
4. Floodplain Management
5. Healthy Communities

Section 3.2 Civic Facilities and Public Infrastructure

A primary driver of the William Burgess Context and Connectivity Blueprint (WB CCB) planning effort is to ensure the civic facilities and public infrastructure necessary to serve the residents within the William Burgess District (WBD) are provided at the same time as the development associated with population growth. While the following provides a basis for projecting needs to meet adopted Levels Of Services (LOS) standards, the LOS standards are not static and will evolve with the community. This analysis provides for a baseline that:

1. Calls attention to the amount and location of land for providing public infrastructure and civic facilities, and
2. To ensure the necessary lands to develop required public infrastructure and civic facilities are reserved for future use, and,
3. The required public infrastructure and civic facilities are developed concurrently with new development.

It is the intent of Nassau County that each new development or redevelopment project provides for its proportionate share of lands, amenities, infrastructure and/or payment of monies to maintain/meet the adopted LOS and other operational impacts of their development project. This report shall not be misconstrued as a means to supersede any future action by Nassau County to amend adopted LOS, infrastructure standards, operational improvements and/or any related fees or other exactions to ensure new development and redevelopment provides for its proportionate share to offset impacts to civic facilities and/or public infrastructure.

For the purpose of this analysis, there is assumed to be a 50% build-out of the WBD under the proposed Transect Based Scenario within the planning horizon of 2045. At 50% build-out, the development potential is up to 7,745 dwelling units. The 50% build-out scenario is based on the stated initiative goal to capture 20-35% of the total growth in Nassau County between 2019 and 2045 within the WBD as projected by the Bureau of Business and Economic Data. The 50% build-out scenario represents the middle tier of the targeted growth capture percentile (24%).

It is assumed that residential development will have a proportionate mix of housing types that will drive the persons per household multipliers. The persons per household multipliers are addressed in each individual study subcategory. As lands/projects seek development permits the actual LOS impact calculations will be performed with each development proposal. The actual persons per household multiplier and related development population will be determined by the actual mixture of housing types proposed and the most update to date persons per household calculation available for each housing type. In other words, the data used in the initial analysis of the WB CCB will, most likely, not be applicable in future years as the persons per household multipliers typical change on an annual basis based on data from BEBR and/or the US Census Bureau. The projections provided herein are best estimates based on the data and assumptions defined in Chapter 2, Why Plan, and Appendix E. The standards defined in Chapter 4 of the WB CCB along with applicable appendices of the WB CCB will further shape application and implementation of LOS standards.

3.2.1 Recreation

New residential development and redevelopment in the County will necessitate expansion of the County's recreation system to support demand created by new residents. New development and redevelopment with a residential component will require the provision of a proportionate share of recreation lands and facilities based on the following rationale:

1. There is a reasonable relationship between the demand and need for incremental park/recreation land and facilities and the type of development; and
2. There is a reasonable relationship between the exaction of park/recreation lands and facilities and the type of development; and
3. There is a reasonable relationship between the amount of park/recreation land and facilities exacted and the type of development.

No lands designated as jurisdictional wetlands or the CHN shall be used to fulfill LOS demand for Regional, Community, or Neighborhood parks.

The Nassau County 2030 Comprehensive Plan addresses different park types and their LOS:

1. Community Parks - Policy ROS.01.04 of the 2030 Comprehensive Plan, provides for an Acreage LOS for Community Parks of 3.35 acres per one-thousand (1,000) people.
2. Regional Parks General - Policy ROS.01.04 of the 2030 Comprehensive Plan, provides for an Acreage LOS for Regional Parks of ten (10) acres per one-thousand (1,000) people.
3. Regional Parks Boat Facility - Policy ROS.01.04 of the 2030 Comprehensive Plan, provides for an Acreage LOS for Boat Facilities of four tenths (0.40) an acre per one-thousand (1,000) people.
4. Neighborhood Parks - Policy FL.02.05 of the 2030 Comprehensive Plan, provides for an Acreage LOS for Neighborhood Parks of four (4) acres per one-thousand (1,000) people within the WBD.
5. Recreation Facilities, Community and Regional Parks - Policy ROS.01.07 provides for recreation facility LOS standards to be used as planning guidelines for the purpose of providing public recreation facilities. The LOS standards are listed below in Table 3.1. Appendices F, G, and H include additional information related to recreation facilities. This includes, but is not limited to, the study prepared by GAI titled Nassau County Park Amenity Estimates dated January 18, 2019, Nassau County prototypical parks and other design standards. The referenced study and material, along with all other appendices, are hereby adopted by reference. In addition, the standards defined in Chapter 4, How to Plan, contains additional provisions that will influence Regional and Community park land dedication, reservation, siting and design.

RESOURCE/FACILITY	POPULATION PER UNIT (MEDIAN)
Baseball/Softball Field	2,500
Basketball Court	5,000
Football/Soccer Field	6,000
Equipped Play Area	10,000
Exercise/Parcours Trails	15,000
Aquatic Center	25,000
Tennis Court	5,000
Boat Ramp Lane	5,000

Table 3.1 Recreation Facilities LOS Standards - Comprehensive Plan Policy ROS.01.07 & ROS.01.04

6. Design, Siting and other Standards - Community and Regional Park: Appendix F, G and H include additional detail related to the intent, siting, and design standards for both Community and Regional Parks and are hereby adopted by reference. In addition, the standards defined in Chapter 4, How to Plan, contain additional provisions that will influence Regional and Community park dedication, reservation, siting and design.
7. Design, Siting and other Standards - Neighborhood Parks : Nassau County Comprehensive Plan Policy ROS.01.05 states: Criteria for the location and design of such facilities shall be included in the Land Development Code (LDC). Consistent with Policy ROS.01.05, Nassau County, in conjunction with Barth and Associates, Inc., created the Nassau County prototypical neighborhood park and related base elements, see Figure 3.1. The prototypical park, base elements and related standards are defined in Appendix H and is hereby adopted by reference. These standards, along with those provisions defined in Chapter 4, How to Plan, of the WB CCB shall control the provision of Neighborhood Parks.

Figure 3.1 Prototypical Neighborhood Park for Nassau County, FL(Barth & Associates, 2019)

Projecting Recreation Demand

Persons Per Household:

For the purpose of this analysis, there is assumed to be a an 50% build-out of the WBD by 2045 under the proposed Transect Based Scenario. At 50% build-out, the projected population expansion is estimated to create up to 7,745 dwelling units. For the purposes of this study, a mixture of housing types is assumed. The mixture is assumed to be 33% Single Family (2.65 pph), 33% Multi-family (1.72 pph) and 33% Duplex/Triplex/Quad (2.43 pph).

Each individual development will determine the actual mix of housing proposed and the associated population. Further, the actual persons per household multipliers utilized at time of development application may be different from that utilized here, as the County's demographics are subject to change. The latest data available shall be used in assessing a development proposal. For this analysis, the persons per household multiplier is as provided in Appendix F.

Acreage and Facility LOS Demand:

Utilizing the adopted LOS defined in the Nassau County 2030 Comprehensive Plan, Table 3.2 defines the projected acreage and amenities necessary to meet recreation demand within the WBD using the proposed Transect Based Scenario at 50% build-out by 2045. Based on the calculations found in Appendix E, 7,745 dwelling units equates to 17,555 persons in the William Burgess District by 2045. The following projected recreation demands are based on projected number of persons in the WBD by 2045.

RECREATION TYPE	LOS	REQUIRED TO MEET LOS	UNIT OF MEASURE
Regional Park	10ac/1,000p	175.55	Acres
Community Park	3.35ac/1,000p	58.81	Acres
Neighborhood Park	4ac/1,000p	70.22	Acres
Regional Park - Boat Facility	.4/1,000p	7.02	Acres
Boat Facility Ramp Lanes	1/5,000p	3.51	Ramp Lanes
Baseball/Softball	1/2,500p	7.02	Fields/Amenities
Basketball	1/5,000p	3.51	Courts/Amenities
Football/Soccer	1/6,000p	2.93	Fields/Amenities
Equipped Play Area	1/10,000p	1.76	Facility(ies)
Exercise/Parcours Trails	1/15,000p	1.17	Facility(ies)
Aquatic Center	1/25,000p	0.70	Facility(ies)
Tennis Courts	1/5,000p	3.51	Courts/Amenities

Table 3.2 Land and Facilities to Meet Recreation Levels of Services Standards at 50% Build-Out Scenario

Additional data and details regarding LOS, siting, recreation standards, and park/amenity design can be found in Appendices F, G, and H. In addition, Chapter 4, How to Plan, includes additional standard that will shape implementation of recreation LOS standards, including, but not limited to, dedication and reservation of lands necessary to meet LOS standards.

3.2.2 Public Schools

General:

The following projections were prepared by Nassau County PEO staff in collaboration with Nassau County School District staff. The student generation rates utilized in this analysis and related break down by school classification is subject to change as Nassau County's demographic make-up changes. Further, the Nassau County School Board (NCSB) operates independent of the Nassau County Board of Commissioners (BOCC). In no way is this analysis intended to usurp the authority of the NCSB in any decision-making process including but not limited to, school siting, school size, school type/classification or construction timing.

The following Comprehensive Plan Policies relate to the Adopted Level of Service for Public Schools:

- Policy PSF.06.01
- Policy PSF.03.01
- Policy PSF.03.03
- Policy PSF.01.04
- Policy PSF.01.05

Based on the Comprehensive Plan, this plan will focus on the impact to the school facilities based on the projected population growth, and uses the policies to require all development and redevelopment to mitigate their impacts on the school facilities within the WBD. This plan will help to ensure that suitable and sufficient lands are available to meet the needs of the School Board, based on the projected 50% build-out population growth in the WBD.

Student Generation Rates:

The purpose of the following projected public school demand is for illustrative purposes to ensure developers, public officials, and citizens realize the spatial aspects of Nassau County's public school LOS standards. Based on NCSB's student generation rates, land within the WBD must be reserved in order to meet LOS standards. To meet the school facility needs within the WBD, more efficient land use patterns must be utilized.

PEO staff used the student generation rate of 0.332, as defined in the Nassau County School Impact Fee Study update, prepared by Fishkind and Associates dated 10/3/2017, coupled with an assumption of 50% build-out of the WBD by 2045 to arrive at a student generation by school classification for the District. In order to calculate student generation rates for the individual school classifications, Nassau County PEO took the overall student generation rate and analyzed the best available data to derive a percentile breakdown of students by school classification. [*NOTE: While the overall number of students generated by population expansion as provided in Table 3.3 is consistent with the NCSB's adopted generation rates, the breakdown of generation rate by school type was executed by PEO staff solely to estimate necessary acreage reservations for future public schools within the WBD and in no way is intended to bind the NCSB to utilize the below breakdown of the overall generation rate by school type.]*

SCHOOL CLASSIFICATION	RESIDENTIAL UNITS AT 50% BUILD-OUT	STUDENT GENERATION RATE	NUMBER OF STUDENTS GENERATED BY 2045 AT 50% BUILD-OUT SCENARIO
Elementary (K-5)	7,744.975	0.152	1,177.24
Middle School (6-8)	7,744.975	0.084	650.58
High School (9-12)	7,744.975	0.096	743.52
Overall	7,744.975	0.332	2,571.33

Table 3.3 Student Generation Rates

Overall student generation rate taken from NCSB 10-3-17 Impact Fee Update by Fishkind and Associates

Based on student generation rates it is projected that following will be needed by 2045 in the WBD under the 50% build-out scenario:

- Two (2) 600 Student Elementary Schools
- One (1) 1,000 Student Middle School
- One (1) 1,200 Student High School

The breakdown of school sites is merely one an example of how the projected demand on the public school system can be mitigated. The breakdown considers the development of four (4) separate school sites within the District by 2045. The NCSB may choose to construct schools of mixed classifications such as a K-8 (elementary & middle combined) or develop a single campus that contains a middle and high school (6-12) such as the Yulee High and Middle school campus.

The NCSB may also choose to provide for additional capacity for a particular school classification within the District and shift the demand of another classification to a school site outside of the WBD but within the same Public School District as defined by the NCSB.

Site Standards and Acreage Requirements:
All potential public school sites shall be reviewed by the Nassau County School District. No public school site shall be accepted except as done so at the direction of the NCSB.

School siting shall be consistent with Chapter 1013, Educational Facilities, of Florida Statute, and the State Requirements for Educational Facilities (SERF) Handbook. Current NCSB standards and practices shall also be applied in school siting and design. This includes, among others, adjusting State recommended standards to account for the unique environmental and ecological challenges in finding an adequate school site, and/or, augmenting potential school sites to meet minimum standards.

The below minimum acreages by school type are provided by the Nassau County School District staff and are subject to change from time to time based on the direction of the Nassau County School Board. Nothing herein shall limit the NCSB from modifying minimum acreage standards.

- Elementary K-2, 3-5 or K- 5 : 27 acres
- K-8 School : 50 acres
- Middle School: 50 acres
- High School: 50 acres

Based on LOS standards, projected population and minimum school site acreage as approximated for this analysis, the WBD will need a total of 181 acres of land reserved for public school sites.

- 54 acres for elementary schools divide between three separate locations
- 50 acre for a middle school
- 50 acre for a high school

As stated above, the actual grade level and student capacity will dictate school site size and location. These estimations are based on the simplest and most straight forward means of estimating acreage demands taking into account school classification and capacity.

3.2.3 Fire Rescue

Each development shall coordinate with the Nassau County Fire Rescue Department to determine need for additional fire station sites, new fire stations and/or provision of additional or specialized equipment.

3.2.4 Law Enforcement

Each development shall coordinate with the Nassau County Sheriff's office to determine need for additional station sites, sheriff sub-stations and/or provision of additional or specialized equipment. All development proposals shall demonstrate consistency with the provisions of the 2030 Comprehensive Plan.

3.2.5 Water/Waste Water

Each development shall coordinate JEA to ensure available capacity for both potable water and sanitary sewer exists to serve proposed development. All development proposals shall demonstrate consistency with the provisions of the 2030 Comprehensive Plan.

3.2.6 Solid Waste

Each development shall demonstrate available capacity for solid waste disposal exists to serve proposed development. All development proposals shall demonstrate consistency with the provisions of the 2030 Comprehensive Plan.

3.2.7 Mobility Network

Each development shall ensure provisions to construct, cause to be constructed, or fund, the adopted mobility network and provide for non-mobility network improvements to support all new development and redevelopment.

3.2.7.1 Mobility and Connectivity

The development pattern in Nassau County over the past several decades has, for the most part, led to auto-dependent, low-density (fewer than 5du/ac) suburban scale development. This development pattern has placed a burden on the existing transportation network. According to the U.S. Census Bureau, in 2013 approximately 86% of all workers in Nassau County traveled by private vehicle, and 76% drove alone. Further compounding the matter, 64.2% of the residents in Nassau County are employed outside of the County. Research by GAI in 2019 found that 89% of workers within the SR-200 corridor study area in Yulee work outside the study area, 85% of those workers commune alone.

A lack of interconnectivity in the transportation network coupled with insufficient parallel facilities has forced the arterial roadways, SR200 and US17, to function not only as arterial roadways but also as collector roads and local streets. The results are increased drive alone trips, increased vehicle miles driven by area residents and employees, decreased acceptability of other travel modes such as walking, biking, transit, carpooling and car sharing trips. Failure to addresses the public policy producing these results will likely lead to a replication of previous development patterns within the WBD which will further exacerbate transportation problems in Nassau County.

The WBD mobility network and Transect based mixed-use plan promotes parallel facilities, and a grid network of roads, and complete streets. Local facilities are proposed to run parallel to SR 200 from Semper Fi Drive to US 17, and parallel to US 17 from SR 200 to Harts Road. The parallel facilities, coupled with a mixed-use development pattern, will allow future road users to reduce their travel on SR 200 and US 17 within the limits identified by using the proposed local roads. These parallel roadways are planned to include bike lanes, sidewalks, and multi-use paths where possible to provide appropriate facilities for all users. According to FHWA these types of geographic areas are likely to assist in reducing drive alone trips, reducing vehicle miles driven by area residents and employees, increasing awareness and raising acceptability of all travel modes by increasing walking, biking, transit, carpooling and car sharing trips . Finally, the proposed overlay text amendment promotes increasing neighborhood mobility and livability. A cursory assessment using the NCHRP trip estimator spreadsheet, indicates the transportation network provides the opportunity to reduce motor vehicle travel.

In accordance with Chapter 163, Florida Statutes, a review of transportation resources and facilities of state importance have been evaluated. The proposed overlay text amendment will have no adverse impacts to the state facilities (SR 200 and US 17). According to the 2017 FDOT D2 LOS Report, adjacent segments of both SR 200 and US 17 will operate at acceptable levels of service and will have available capacity in future years. In addition, consideration was given to the FDOT Context Sensitive Classification and the FDOT Bike/Ped LOS Future Demand Score. Neither of these measures conflict or will be adversely impacted by the proposed overlay text amendment. See attached reports in Appendix Q.

In more general terms, mobility, moving people from one place to another, is important for creating a network where people can get to their needs efficiently. Mobility allows people to have the freedom to safely choose which mode of transportation they would like to use to get to their needs. The WB CCB will include facilities which encourage multi-modal transportation, as well as prepare for transit and provide the ability to utilize technological advances in the future for autonomous vehicles. The district will prepare for transit service within the county, not only bus, but possible future commuter rail. It will include a network of multi-use trails and sidewalks.

Connectivity, having multiple ways to get from one place to another, is essential for creating a network which allows multiple routes for people to use. The network of roads in the WBD will create a complete system which provides for multiple connection points to William Burgess Boulevard, State Road 200, US-17, and provide for an alternate route west of I-95. It will create alternate east/west corridors to William Burgess Boulevard, and multiple north/south corridors. The plan will also provide for cross-connectivity between all developments. The increases in connectivity will disperse the traffic volumes throughout the network, rather than have them concentrated at certain intersections.

As identified in the Mobility Network for the WBD, as shown on Page 136 of this document and in Appendix Q and R, new corridors and access points will be created in the WBD to provide for mobility and connectivity. Further, the WBD will use context sensitive roadway design to ensure the safest conditions for all roadway users. Context sensitive solutions for roadways incorporate land uses and roadway design to create safe, walkable communities. In the WBD, a mixture of land uses will encourage compact development, connected with a network of thoroughfares, multi-use trails, sidewalks, and bicycle facilities to encourage multi-modal transportation. Having a comprehensive, safe network can reduce the need for people to own and/or operate motorized vehicles and creates a more walkable community; a walkable community where people can live, work, play, and stay. Chapter 4 of this plan goes into more detail on required cross-sections for roadways, multi-use trail networks, and the requirements which all development and redevelopment shall comply with.

Section 3.3 Housing + Jobs to Housing Balance Ratio

Who needs affordable housing? According to the U.S. Department of Housing and Urban Development: "Families who pay more than 30 percent of their income for housing are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care. An estimated 12 million renter and homeowner households now pay more than 50 percent of their annual incomes for housing. A family with one full-time worker earning the minimum wage cannot afford the local fair-market rent for a two-bedroom apartment anywhere in the United States."

Housing is also changing. Multigenerational households have reached record levels according to a new study from the Pew Research Center. Around 64 million Americans, or 20 percent of the population, were living in homes with grandparents, grandchildren, or two or more adult generations in 2016. The trend has seen an uptick since 1980, Pew says, with a three percent increase since 2009, the last year of the recession.

In recognition of anecdotal evidence that the County has been facing housing pressures, in 2018, Nassau County and the City of Fernandina Beach partnered to have a housing affordability assessment completed for all of Nassau County. The University of Florida's Shimberg Center for Housing Studies completed the assessment. The Center completed their report in Fall 2018 and results were shared with the County Affordable Housing Advisory Committee and community stakeholders. The report was adopted as by resolution of the Board of County Commissioners on January 28, 2019.

Key Findings include:

1. Nassau is a prosperous county overall, but incomes and housing costs vary widely by region.
2. Most low-income households spend more than they can afford for their housing.
3. Rents outpace wages for several of the county's top industries.
4. The Island region is a magnet for low and moderate wage jobs in the county and metropolitan area.
5. Nassau County's housing stock is growing rapidly, particularly in the Central region.
6. Home sale volume is returning to boom era levels, but affordable home sales to owners are limited.
7. The county's housing stock is dominated by single family homes and mobile homes.
8. The county's supply of multifamily housing (2 or more units) is small.
9. Preserving Nassau County's assisted housing stock is critical to serving low-income renters.
10. Nassau County has a baseline gap of 1,060 rental units that are affordable and available to renters with incomes at or below 50% of AMI.
11. 1,455 owners with incomes of 50.01-80% of AMI are cost-burdened.

Four Key Areas for Local Affordable Housing Strategies to address these findings include: diversifying housing stock, expanding affordable rental housing, expanding affordable homeownership and addressing the jobs-housing transportation link.

In February 2019, Nassau County adopted changes to the Land Development Code to allow accessory dwellings by right in residentially zoned districts. The County will also be pursuing changes to impact fee withholding for qualifying affordable housing projects. It is the goal that such proactive policy changes, as well as those found in the William Burgess District plan that allow for a variety of housing stock and better access to jobs and services, will help position the County to begin addressing the housing affordability issue as well as accommodate the changing nature of households.

Jobs to Housing Balance Ratio (Reference Data and Analysis 2030 Comp Plan):

A jobs-to-housing balance is a metric of economic sustainability, measuring the relationship between jobs and employment seekers in a specific area. While there are several employment and housing measures available, Nassau County has chosen jobs to housing balance because it is generally superior to the other options and is easier to understand because parity can be expressed as a one-to-one ratio, i.e. one local job to one local worker (California Planning Roundtable, "Deconstructing Job-Housing Balance" 2008, p. 8). With this metric, a low jobs-to housing balance indicates a housing rich "bedroom community" while a high jobs-to-housing balance indicates that the community is a regional employment center. Although there is no single perfect balance, an area is generally considered to be in balance if it maintains a jobs-to housing balance (ratio) of 0.8 to 1.2 (Cervero, Robert, "Jobs-Housing Balance Revisited: Trends and Impacts in the San Francisco Bay Area", Journal of the American Planning Association, Vol.62 No. 4, 1996, pp. 492-511). As part of the 2030 EAR based amendment to the Nassau County Comprehensive Plan, Nassau County and the Department of Community Affairs established a threshold of 0.8 to 1.21 as a healthy jobs to housing ratio for Nassau County.

In 2010, Nassau County had a Jobs to Housing Ratio of 0.63. This low ratio in indicative of a bedroom community. Following the same methodology established in the 2010 EAR, there will be 14,979 employed persons living within the WBD in year 2045. Striving to produce a land-use plan that will result in producing the 'Mid' jobs to housing ratio of 1 job per employed person living within the WBD, the WBD will need to provide opportunity for 14,979 jobs.

Using an average of 450sf per employee for all non-residential land uses combined, the WBD will need to provide for 6,739,276sf of non-residential space. Existing and entitled non-residential square-footage within the WBD provides for 3,834,818sf. In addition, the WB CCB provides for more than 770 acres of mixed-use and/or non-residential land. This includes the Nassau County Judicial/Governmental Complex which is the future home of all Nassau County government offices and the FSCJ Nassau Campus. The 770 acres have an allowable Floor Area Ratio, based on Transect, of 1.5 - 4, respectively, providing for non-residential development potential far in excess of the minimum standard of 6,739,276sf required to produce a 'Mid' jobs to housing balance ratio of 1:1. If only 10% of the total lands which allow for non-residential uses develop at a FAR of 2 the non-residential square-footage, when combined with existing and entitled non-residential square-footage, would result in 10,543,058sf of non-residential space and a jobs to housing ratio of 1.57 to 1. If the non-residential space associated with the ENCPA lands that are located within the WBD are removed from the calculation, then the WBD is left with 8,672,553sf of non-residential space and a jobs to housing ratio of 1.29 to 1.

Section 3.4 Historic Cultural, and Natural Resources

3.4.1 History and Cultural Resources

Nassau County is one of the oldest counties in Florida, dating to c.1824, but the history in the county precedes that date extensively. Numerous archaeological sites in the county record evidence of prehistoric communities, and Nassau was the site of early European contact, dating to 1562, with the arrival of the French on present day Amelia Island. The County has seen occupation by the French, English, Spanish, and Americans, and Revolutionary War and Civil War action. Nassau County tells the story of industry, agriculture, seafaring, railroads, tourism, and life in early Florida in general.

In the William Burgess area, three industries in particular have played a role in shaping development: the railroad, timber industry, and early Florida auto-based tourism. The railroad played a formative role in Nassau County, and will continue to do so in its future. The railroad was the catalyst for the creation of compact mixed-use village centers across Nassau County, the remnants of which remain in Yulee at Harts Road Station. The timber industry transformed the natural landscape of the area as pines were planted. Historic documentation indicates the area was utilized for the turpentine/naval stores industry, and later for logging to supply nearby mills in Fernandina Beach. The former Stone Container Company or Trinity plant, constructed in 1953, on Highway 17 south is another example of a paper-based industrial complex related to the timber industry that is still in use today as an industrial center.

As Florida became a tourism destination and the rise of the automobile began, two transportation corridors shaped and defined the boundaries of the area we know today. Highway 17 South was a major north-south route for travelers from the north journeying to Florida. There are still remnants of early auto-centric development and some remaining tourism-affiliated sites such as hotels and early gas station structures. When I-95 was built, a new transportation corridor created a boundary for the William Burgess area, and the traffic that previously used Highway 17 shifted to the new interstate. Businesses on Highway 17 were impacted, and traveler-related services developed around the I-95 interchange on State Road 200/A1A. Where State Road 200/A1A had previously been an east-west route for internal travel in Nassau County, it too has become a primary tourism roadway bringing people from I-95 to Amelia Island.

The Florida Master Site File (FMSF) is the State of Florida's official inventory of cultural and historical resources. Site and places listed on the site file are not protected in any way; rather, the site file is strictly a listing of resources. The William Burgess study area has two bridges, three archaeological sites, eleven structures, six resource groups, and thirteen cultural resources surveys associated with it and included on the FMSF. The sites are largely related to railroad development, 19th to 20th century inhabitation and the transportation corridors. None of these sites are currently protected by any local regulations.

Preservation and adaptive reuse opportunities exist within the William Burgess Corridor and adjacent to it, especially along Highway 17 and SR 200/A1A: Harts Road Station, Stone Container Company/Trinity plant complex (if not utilized as industrial in the future), and Mid-century tourism related sites such as the hotel at SR200/A1A and gas station at Harts Road. These projects are anticipated to be evaluated as part of the County's SR200/A1A Corridor Design Plan, and potentially could be included in a future Highway 17 Corridor Design Plan.

The County does not currently have a historic preservation program. Individual comprehensive plan policies address historic and cultural resources, but there is not a historic preservation or cultural resource element. The current Land Development Code has a historic and archaeological resource section, but it is incomplete and does not formalize protections for historic and cultural resources. The County is not a Certified Local Government.

However, history can inform the use of space in the WBD, educational opportunities, and design standards. Nassau County's history is unique and tells the story of the County's evolution over time, bringing a sense of place and identity that cannot be found anywhere else. Although there are not substantial existing historic sites and structures left, the remaining structures can be prioritized. And the history and culture of the area can be incorporated into planning in other ways, including interpretive and educational displays, public art, and architectural design standards reflecting the community's past. Themes from the railroad industry, timber industry, and early Florida tourism can inform both architecture, design, and placemaking opportunities in the William Burgess District.

Public Art

Florida's oldest Public Art program, Miami Dade's, began in 1973. There are more than 60 public art programs in the State of Florida. (FL Assoc of Public Art Professionals). Nassau County has an Art in Public Places code, but does not have anything in place yet (County Code Chpt. 1, Art. XI). Incorporating public art into the William Burgess District is one form of placemaking, and presents an opportunity in particular to highlight the history and culture of the community. And, the design and architecture of the area, reinforced through architectural design standards, can be considered as the most visible form of public art.

Public art is not an art 'form.' Its size can be huge or small. It can tower fifty feet high or call attention to the paving beneath your feet. Its shape can be abstract or realistic (or both), and it may be cast, carved, built, assembled, or painted. It can be site-specific or stand in contrast to its surroundings. What distinguishes public art is the unique association of how it is made, where it is, and what it means. Public art can express community values, enhance our environment, transform a landscape, heighten our awareness, or question our assumptions. Placed in public sites, this art is there for everyone, a form of collective community expression. Public art is a reflection of how we see the world – the artist's response to our time and place combined with our own sense of who we are….Public art is a part of our public history, part of our evolving culture and our collective memory. It reflects and reveals our society and adds meaning to our cities. As artists respond to our times, they reflect their inner vision to the outside world, and they create a chronicle of our public experience." (Association for Public Art)

Public art can be integrated into the William Burgess District as part of the County's existing public art ordinance, addressing art on public property and working with Arts and Culture Nassau, the stewards of the County's public art ordinance. Artwork can be incorporated into private development throughout the District as well.

3.4.2 Natural Resources

The WBD is rich with natural resources including land cover, soil types, wetlands, and conservation habitats. This section of the WB CCB discusses these resources.

3.4.2.1 Land Cover

The William Burgess District as well as all of Nassau County lies in the Southern Coastal Plain which is a subtropical, low-elevation ecoregion situated between the Gulf of Mexico and the Atlantic Ocean. Swamps and marshlands occur across the ecoregion. Pasture land has also been an important agricultural resource. Extensive pine plantations, employed for timber production, are a relatively common use of forests in the ecoregion. Aside from agriculture and the extensive pine plantations, tourism and associated service industries are important economically.

Originally, pine and mixed hardwood forests covered much of the ecoregion. The native longleaf pine (Pinus palustris) was the dominant tree species; however, its current extent has been reduced by as much as 98 percent (Wear and Greis, 2002). Forests have been cleared for lumber and converted to pine plantations that favor the faster growing slash (Pinu elliotii) and loblolly pine (Pinus taeda L.) species. Longleaf pine and other forests have also been converted to cropland, pasture, mining, and urban uses.

The Southern Coastal Plain spans from the sandy beaches where the barrier islands meet the Atlantic Ocean to the portion of the mainland that remains within the zone of tidal influence (Edwards, et.al.). Because of the constant fluctuations in tides, salinity, moisture and wind, this is the most dynamic of Florida's ecoregions. The salt marsh consists mostly of tall grass, Spartina augustifolia, and provides an extremely important habitat and breeding ground for fish and shellfish used by inhabitants throughout history for sustenance.

If we look at our county as not just a region but an ecoregion we can begin to understand land use planning from a conservation viewpoint. Richard T.T. Forman defines an ecoregion as "a large unit of land and water typically characterized and delineated by climate, geology, topography, and associations of plants and animals" each depending on one another for survival. The ecoregion-based approach has been adopted by many conservation groups as the most effective way to ward off massive losses of biodiversity.

Figure 3.1 and Table 3.4 (right) illustrate the land cover types in the William Burgess District.

LAND COVER TYPE	LAND COVER NAME	DESCRIPTION
5240	Salt Marsh	Estuarine wetland inundated with saltwater by daily tides with a dense grass layer. (FNAI)
183332	Coniferous Plantations	Pine plantations that are artificially generated by planting seedling stock or seeds. (SJRWMD)
2233	Mixed Wetland Hardwoods	Wetland hardwood communities which are composed of a large variety of hardwood species tolerant of hydric conditions yet exhibit an ill-defined mixture of species. (FLUCCS)
1311	Mesic Flatwoods	Flatland with sand substrate; open pine canopy with a layer of low shrubs and herbs; longleaf pine and/or slash pine, saw palmetto, gallberry, dwarf live oak, wiregrass. (FNAI)
2240	Mixed Hardwood-Coniferous Swamps	Includes mixed wetlands forest communities in which neither hardwoods nor conifers achieve a 66 percent dominance of the crown canopy composition. (FLUCCS)
1400	Mixed Hardwood-Coniferous	Mix of hardwood and coniferous trees where neither is dominant
22211	Hydric Pine Flatwoods	Forest with a sparse to moderate canopy of Slash pine. The understory is grasses, wiregrass, forbs, and at times with sparse saw palmetto. (FLUCCS)
2112	Mixed Scrub-Shrub Wetland	Wetlands areas that are dominated by woody vegetation less than 20 feet in height. This can occur in many situations, but in most cases involves transitional or disturbed communities on drier sites. Persistent examples of shrub wetlands include shrub bogs and willow swamps. (SJRWMD)

Table 3.4 Natural Community types with greater than 100 acres in the William Burgess District

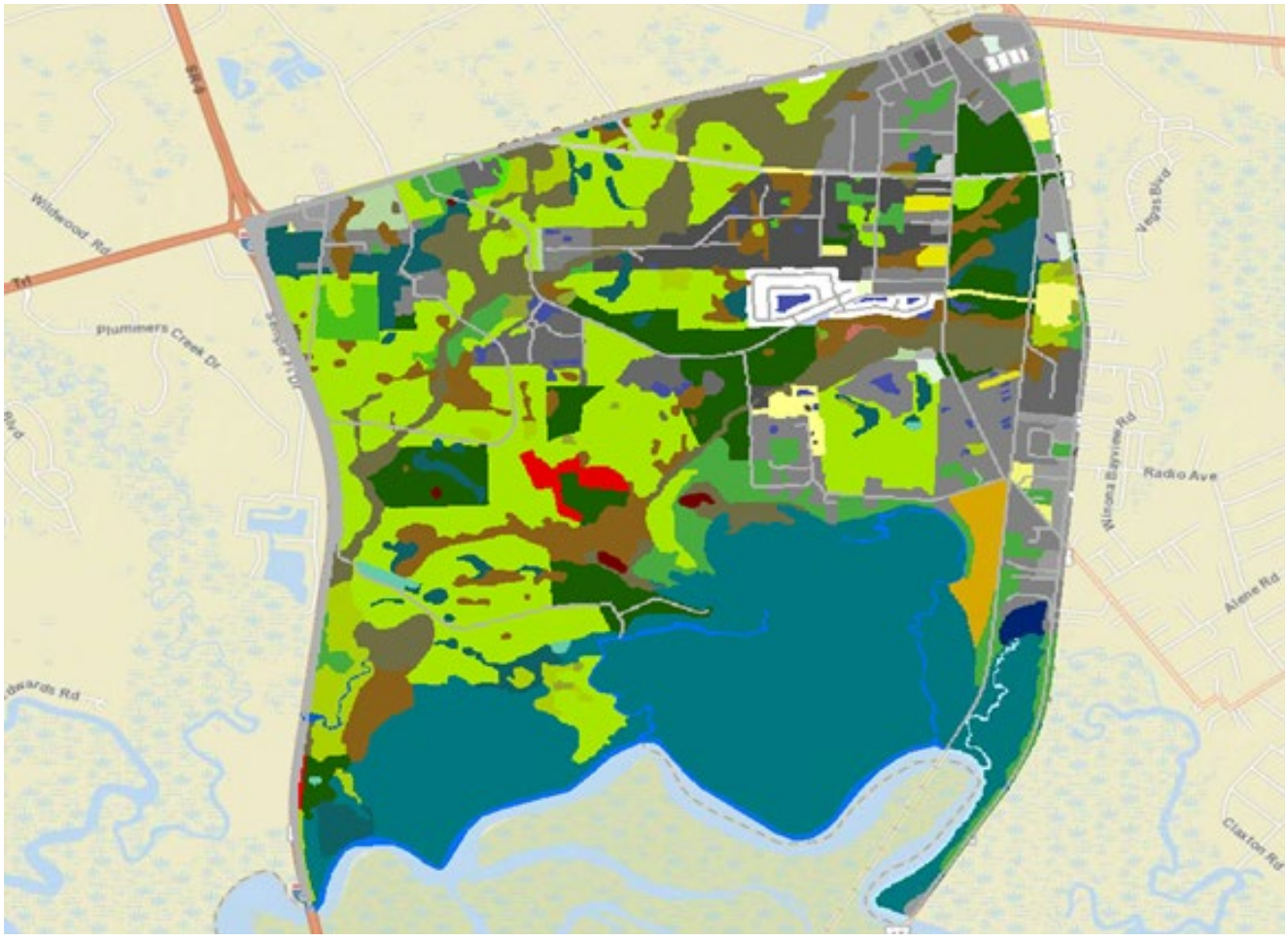


Figure 3.2 Florida Cooperative Land Cover from www.fnai.org/landcover.cfm

3.4.2.2 Wetlands

According to the Florida Department of Environmental Protection (FDEP):
"Florida wetlands are defined as those areas that are inundated or saturated by surface water or ground water at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or alluvial, or possess characteristics that are associated with reducing soil conditions.

The prevalent vegetation in wetlands generally consists of facultative or obligate hydrophytic macrophytes that are typically adapted to areas having soil conditions described above. These species, due to morphological, physiological or reproductive adaptations, have the ability to grow, reproduce or persist in aquatic environments or anaerobic soil conditions. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto."

Wetlands provide numerous benefits to society. In addition to providing ecological benefits for wildlife and natural systems, they help to reduce potential impacts from flooding and provide for water filtration and groundwater recharge. For these reasons, it is important to conserve wetlands and to maintain them in their natural state. Although stormwater management ponds can provide some drainage benefits, "they do not provide the same ecological and environmental functions as natural wetlands," (Environmental Planning and Land Use Management, p. 347).

Based on National Wetlands Inventory data, there are approximately 2,235 acres of wetlands in the William Burgess corridor. Within the WBD, all wetlands identified by the St. Johns River Water Management District (SJRWMD), and other delineated wetlands, are designated as T-1 Natural Zone, and development within that zone is prohibited unless permitted for impacts through the appropriate state and federal agencies. The T-1 Natural Zone is also referred to as the Conservation Habitat Network (CHN). Based on current wetland policies in Nassau County, limited filling of wetlands will be allowed, subject to approval from local, state, and federal agencies. However, it is the intent of the WB CCB that wetlands ecological corridors based on the exciting network of wetlands will be preserved.

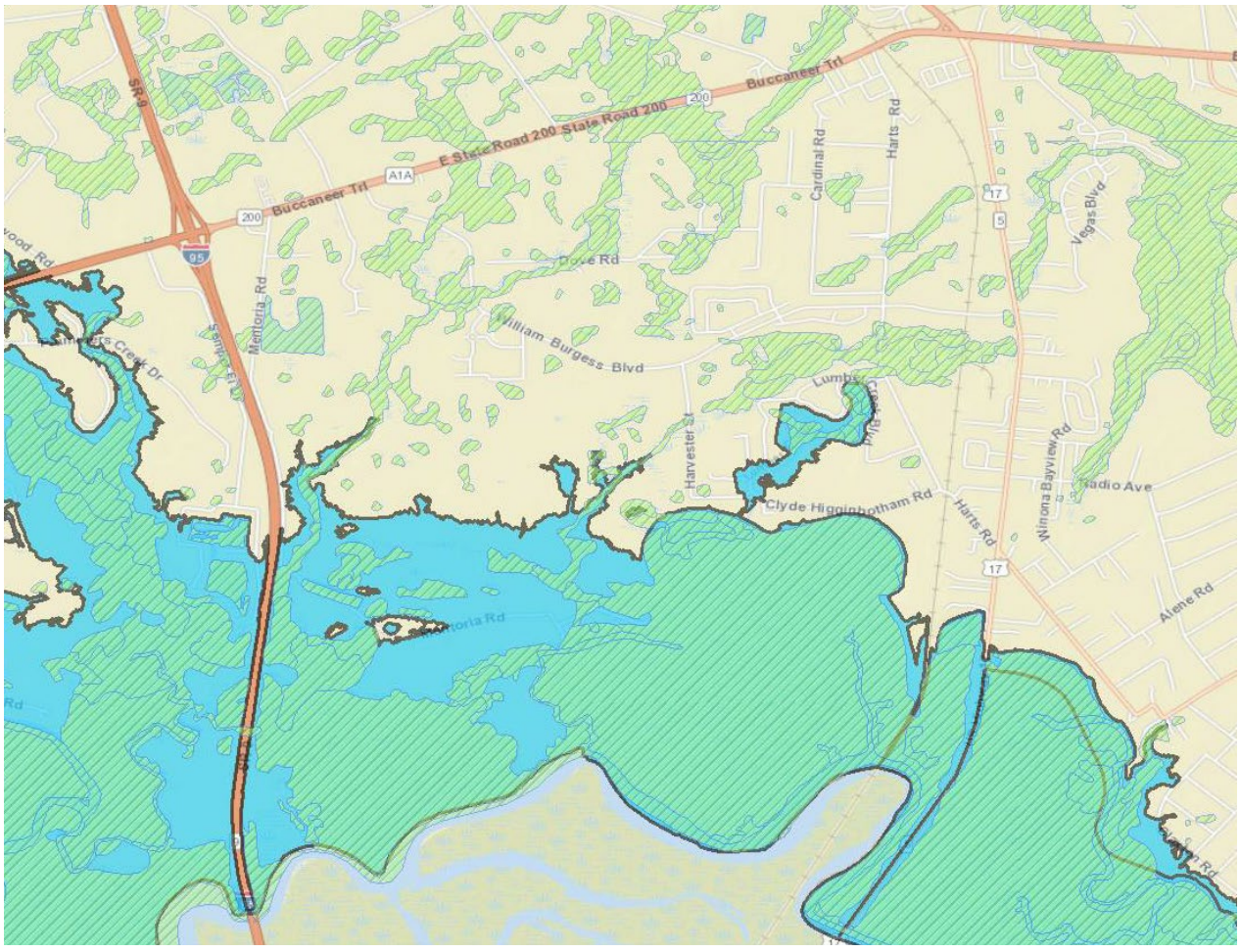


Figure 3.3 Wetlands within the William Burgess District

3.4.2.3 Soils

Table 3.5, below, shows the soil types found within the William Burgess District, and the total number of acres each soil type accounts for in the district.

NASSAU COUNTY, FLORIDA (FL089)			
MAP UNIT SYMBOL	MAP UNIT NAME	ACRES IN AOI	PERCENT OF AOI
2	Arents, nearly level	10.2	0.20%
4	Echaw fine sand	10.8	0.20%
6	Hurricane-Pottsburg fine sands, 0 to 5 percent slopes	513.9	7.90%
7	Kingsland mucky peat, frequently flooded	9.0	0.10%
9	Leon fine sand, 0 to 2 percent slopes	860.3	13.20%
1	Mandarin fine sand, 0 to 2 percent slopes	291.7	4.50%
11	Chaires fine sand	11.8%	0.20%
13	Goldhead fine sand	205.3	3.20%
14	Rutlege mucky fine sand, frequently flooded	25.4	0.40%
16	Ellabelle mucky fine sand, frequently flooded	484.7	7.50%
17	Urban Land	36.6	0.60%
18	Lynn Haven-Wesconnett-Leon complex, depressional	15.3	0.20%
19	Leon fine sand, tidal	38.6	0.60%
20	Ortega fine sand, 0 to 5 percent slopes	77.9	1.20%
22	Sapelo-Leon fine sand	1,188.10	18.30%
23	Ocilla fine sand, 0 to 5 percent slopes	5.1	0.10%
24	Kingsferry fine sand	10.8	0.20%
25	Maurepas muck, frequently flooded	2.6	0.00%
27	Ridgewood fine sand, 0 to 5 percent slopes	28.4	0.40%
28	Tisonia mucky peat, tidal	1,513.50	23.30%
32	Aqualfs, loamy	17.6	0.30%
33	Goldhead-Meadowbrook fine sands depressional	295.3	4.50%
34	Croatan muck, frequently flooded	53	0.80%
39	Evergreen-Leon mucks, depressional	182	2.80%
51	Albany fine sand, 0 to 5 percent slopes	49.1	0.80%
99	Water	187.2	2.90%

Table 3.5 Soils found within the William Burgess District

The most common soil type in the study area is Tisonia mucky peat found primarily in the marsh along the Nassau River. These soils are very poorly-drained and generally most suitable for wildlife habitat. Sapelo-Leon Fine Sand and Leon Fine Sand are the next most common soil types, both of which are poorly-drained.

3.4.2.4 Wildlife

The FNAI Biodiversity Matrix provides site information on rare species occurrence in the state of Florida. The matrix offers built-in interpretation of the likelihood of species occurrence for each 1-square-mile Matrix Unit across the state. The report includes a site map and list of species and natural communities by occurrence status: Documented, Documented-Historic, Likely, and Potential. The Biodiversity Matrix includes all species and natural communities tracked by the Florida Natural Areas Inventory, including all federal listed species. Species that are common and wide-ranging in Florida are not included.

According to the FNAI Biodiversity Matrix, species of note which have a high likelihood of occurrence in the William Burgess District area include the Eastern Indigo Snake and Wood Stork. Other potential significant species include the Florida Burrowing Owl, Worthington's Marsh Wren, and the Gopher Tortoise. Descriptions of the various species can be found in the FNAI Field Guide Descriptions at https://www.fnai.org/FieldGuide/index.cfm.

Conservation Habitat Network

The 2030 Comprehensive Plan establishes objectives related to protection of ecological resources within the County:
OBJECTIVE CS.02
OBJECTIVE CS.03
OBJECTIVE CS.06
CHN General Guidelines and Standards (FL 13.07(A))

The concept of the Conservation Habitat Network (CHN) is established in the Master Plan for the East Nassau Community Planning Area (ENCPA) which was adopted as an amendment to the Nassau County Comprehensive Plan. The CHN loosely consists of waterbodies, wetlands, buffers and uplands that have been removed from development to provide open space for conservation purposes.

In the WBD, the CHN and T-1 Natural Zone are one in the same. The intent of the T-1 Natural Zone is to preserve the natural habitat and limit the impact to the ecological resources within the WBD.

Wildlife Corridor Design

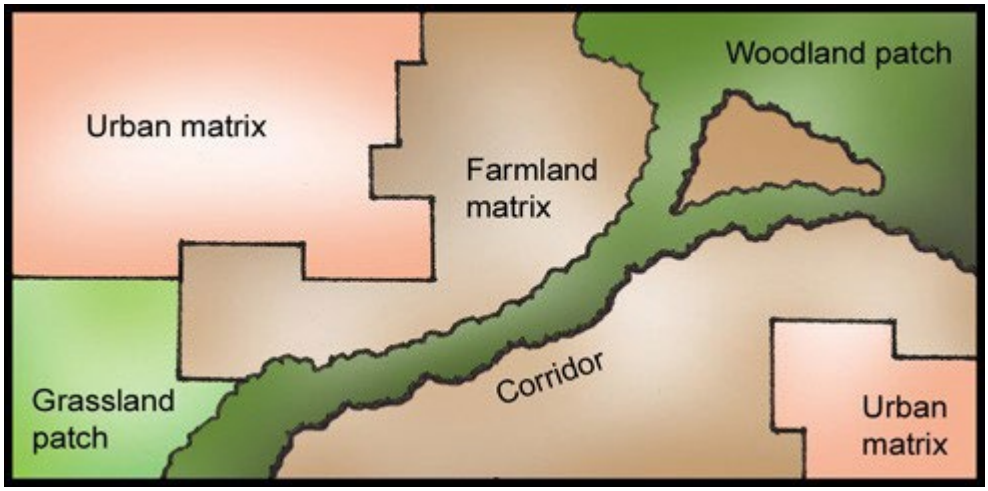


Figure 3.4 Wildlife Corridor Example

1. Design Considerations:

There are a number of resources for conservation network planning, including the USDA and the FWC. The USDA provides guidelines for conservation planning in their report "Conservation Buffers: Design Guidelines for Buffers, Corridors, and Greenways," (2008).

2. Corridors – Key Principles

- Continuous corridors are better than fragmented corridors
- Wider corridors are better than narrower corridors
- Natural connectivity should be maintained or restored
- Two or more corridor connections between patches (redundancy) are better than one

3. Key Design Considerations for Corridors (USDA)

- Design corridors at several spatial and temporal scales.
- Provide quality habitat in a corridor whenever possible.
- Locate corridors along dispersal and migration routes.
- Corridors, particularly regional corridors, should not be limited to a single topographic setting.
- Similarity in vegetation between corridors and patches is beneficial.
- Restore historical connections and generally avoid linking areas not historically connected.

4. Road and Wildlife Crossings

When wildlife corridors are bisected by roads, safe passage should be provided through culverts, bridges, and/or overpasses. Landscape-scale assessments can aid in locating wildlife crossings. When using culverts for crossings, include culverts of mixed-sized classes and avoid creating barriers to movement like debris grates. Design guides are available.

5. Roadside Corridors

In areas with limited habitat, roadsides may be beneficial for some species although for others it may be detrimental. Manage vegetation height to maintain visibility to reduce potential vehicle-wildlife collisions. Use native plants and maintain plant vigor by mowing or burning every 3 to 5 years. Burn or mow in blocks to ensure some portion remains undisturbed.

3.4.3 Resiliency and Sustainability

Flooding, stormwater, drainage are top of mind with elected officials and community based on recent storm events like Matthew and Irma, but also because of everyday flooding after thunderstorms. It is not uncommon to hear on a weekly basis from citizens in the county regarding road flooding issues or that they have been dropped from their flood insurance. The community has indicated they are ready for action. The County's Emergency Operations Center (EOC) is housed in William Burgess District in the Civic Center, as are other critical civic functions. Other future civic uses, such as schools, must take into account their ability to serve as emergency shelters.

Potential Hazards and Hazard Mitigation

Florida is vulnerable to both natural hazards and technological and human-caused hazards. The most common hazards to Florida are wildfires, floods, and sea level rise; however, hurricanes have historically inflicted catastrophic destruction.

Hazard mitigation is defined as any action taken to reduce or eliminate the long-term risk to human life and property from manmade or natural hazards. Hazard mitigation aims to make human development and the natural environment safer and more resilient and generally involves enhancing the built environment to significantly reduce risks and vulnerability to hazards. Mitigation can also include removing the built environment from disaster prone areas and maintaining natural mitigating features, such as wetlands or floodplains. Hazard mitigation makes it easier and less expensive to respond to and recover from disasters by breaking the damage and repair cycle.

Storm Surge

Storm surge is a rise of water generated by a storm, over and above the predicted astronomical tides. Storm surge should not be confused with storm tide, which is defined as the water level rise due to the combination of storm surge and the astronomical tide (Normal Tide + Surge = Storm Tide).

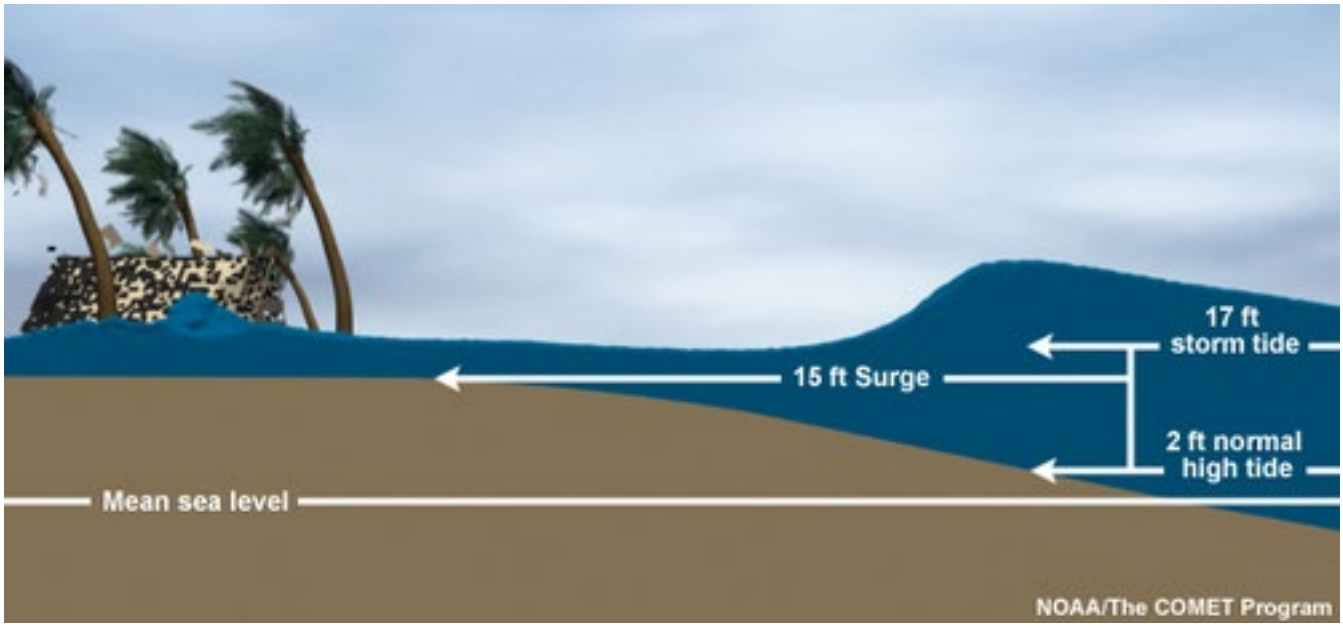
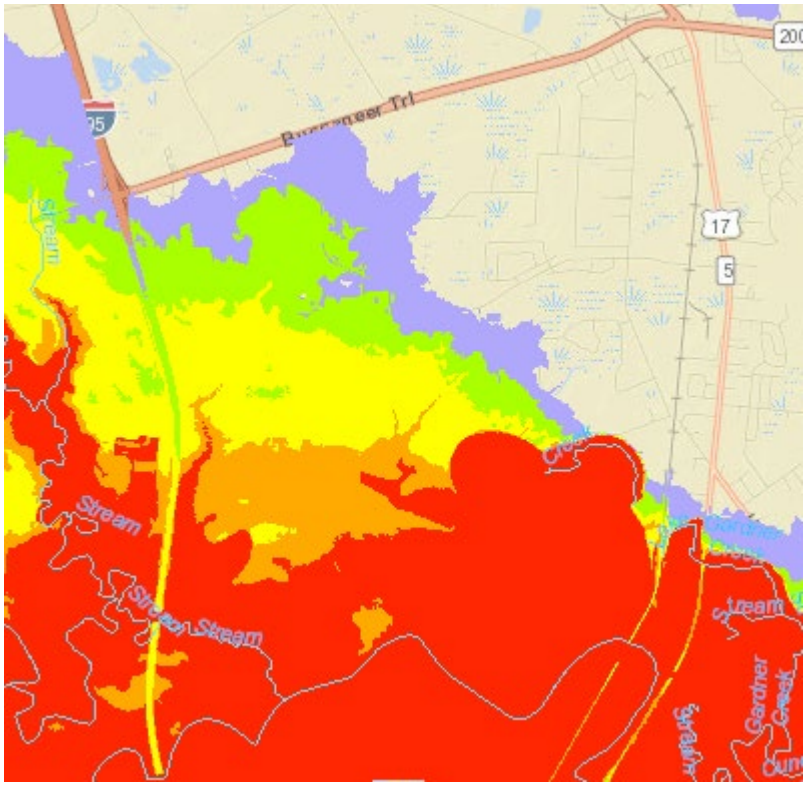


Figure 3.5 Storm Surge vs Storm Tide

The Sea, Lake and Overland Surges from Hurricanes (SLOSH) model is a computerized numerical model developed the National Oceanic and Atmospheric Administration (NOAA), specifically the National Weather Service's (NWS) National Hurricane Center (NHC), to estimate storm surge heights resulting from historical, hypothetical, or predicted hurricanes by taking into account the atmospheric pressure, size, forward speed, and track data. These maps make it clear that storm surge is not just a beachfront problem, with the risk of storm surge extending many miles inland from the immediate coastline in some areas.

The map represents the storm surge heights that a person should prepare for before a storm, given uncertainties in the forecast. The map shows a reasonable estimate of worst-case scenario flooding of normally dry land at particular locations due to storm surge. There is a 1-in-10 chance that the storm surge flooding at any particular location could be higher than the values shown on the map.

Per Florida Statute 163.3178(2)(h), the coastal high-hazard area (CHHA) is the area below the elevation of the Category 1 storm surge line as established by the SLOSH model. Per Policy CHA.05.01 of the 2030 Comprehensive Plan, SLOSH Category 1 is defined as the CHHA. In the WBD, properties in the CHHA cannot increase densities and intensities, per Comprehensive Plan Policy CHZ.05.02. In addition, the county will limit public facilities in the CHHA zones, including, but not limited to, roads and public parks, accept for water dependent uses such as boat ramps, kayak launches, river front promenades and multi-use trails, per Comprehensive Plan Policy CHZ.06.01 and CHZ.06.03. Approximately 1,530 acres of the William Burgess District are CHHA/SLOSH Category 1 (see Figure 3.5 (right)).



*Storm Strength	Nassau
Category 1	Up to 7.1′
Category 2	Up to 11.2′
Category 3	Up to 14.9′
Category 4	Up to 19.0′
Category 5	Up to 23.5′

Figure 3.6 Storm Surge Categories in the WBD

Sea Level Rise

The Fernandina Beach NOAA tide gauge is the one of the oldest in the state and closest to this study area. This gauge has shown SLR rise of 8.28 inches since it started recording in 1897. Based just on this historic SLR trend, anticipating up to an additional one foot is not unrealistic over the next 100 years. However, that is on low end of what scientific models are predicting at this point. See Figure 3.6 (below) for the Sea Level Rise prediction curves.

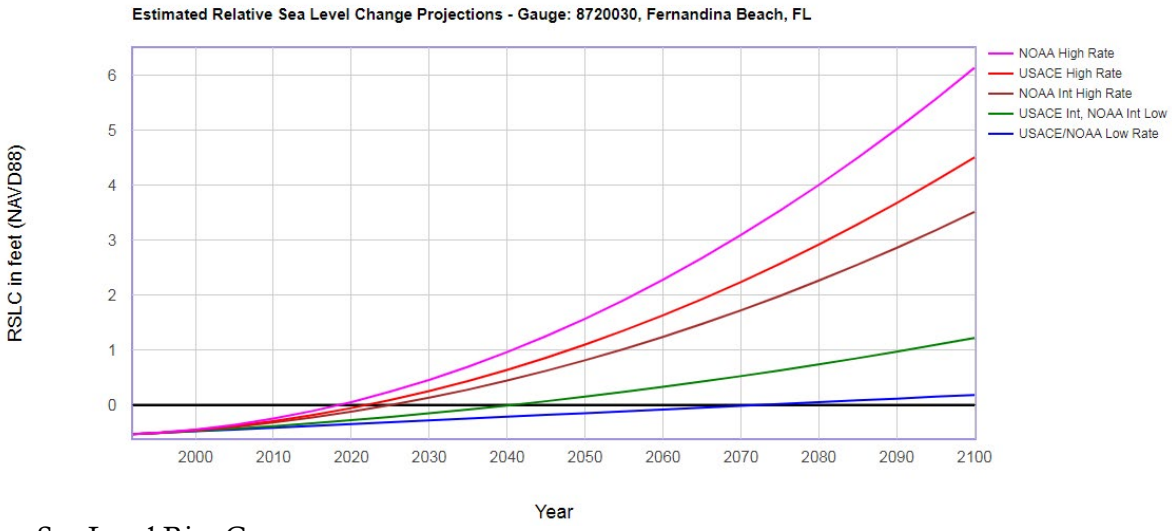


Figure 3.7 Sea Level Rise Curve

Scientists agree that sea level will continue to rise and that by the end of this century it will stand somewhere between two to seven feet higher than it is today. What that means for a particular area depends largely on local factors.

Rising sea level affects the salinity of both surface water and ground water through salt-water intrusion. Shallow coastal aquifers such as those in the William Burgess District are at risk to this salt-water intrusion process. Salt water intrusion raises the water table, which decreases the amount of rainwater the ground can absorb, which leads to greater flooding occurrences, especially during large storm events such as hurricanes.

The following data sources inform Nassau County's relationship to coastal and inland flooding and sea level rise:

- Nassau County Flood Zones – Effective August 2, 2017 (FEMA Flood Insurance Rate Maps)
- Wetlands Mapping Data – National Wetlands Inventory, Florida Land Use Classification Cover System, St. John's River Water Management District
- Nassau County Storm Surge Map and Coastal High Hazard Area (area below elevation of Storm Surge Category 1 per Comprehensive Plan Policy CHZ.05.01 and F.S. 163.3178(2)(h).)
- National Oceanic and Atmospheric Administration Tides and Currents – Historic Tide Gauge Data, Fernandina Beach (Recording since May 8, 1897)
- National Oceanic and Atmospheric Administration Office for Coastal Management – Sea Level Rise Viewer
- United States Army Corps of Engineers – Sea-Level Change Curve Calculator

In early 2019, the Nassau County Board of County Commissioners accepted a Florida Department of Environmental Protection (DEP) grant award to complete a Vulnerability Assessment for certain parts of the County. A Vulnerability Assessment reviews future exposure to existing developed areas and future areas of development, financial exposure, and risks to significant environmental and cultural resources. This project will specifically help the County assess the overall environmental and economic vulnerabilities related to flooding and sea level rise risks.
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Adaptation Planning for Sea Level Rise

Adaptation to sea level rise are the steps a community takes to become more resilient to the impacts of rising seas over a period of time. Adaptation strategies are complimentary of each other, rather than mutually exclusive, and may be applied comprehensively based on the context of a community's varying needs and vulnerabilities. Several adaptation strategies a community may use to address current and future coastal flooding include: protection, accommodation, strategic relocation, avoidance, and policy measures/procedural strategies. Strategies included in the William Burgess District include proactive floodplain management, low impact design elements, and placement of more intense and/or dense land uses outside of the Coastal High Hazard Area.

Water Quality

A wellhead protection area is a surface and subsurface land area regulated to prevent contamination of a well or well-field supplying a public water system. This program, established under the Safe Drinking Water Act (42 U.S.C. 330f-300j), is implemented through state governments. The Florida DEP Wellhead Protection Rule establishes a 500-foot radius circular Wellhead Protection Area around all wells which serve community and non-transient non-community public water supply systems. These systems include residences, stores, RV parks, hotels or churches, schools, factories, large businesses with their own drinking water supplies, and includes a range of sizes from small mobile home courts to city and county utilities.

The US Environmental Protection Agency (EPA) maintains a data base of State Water Quality Reports provided under the Clean Water Act. Recent reports note several issues with the Nassau River and Plummer Creek. In 2002, the assessment of the EPA based on these reports categorized the River and Creek as polluted. From that point forward no assessments were performed although as late as 2012 Technical Reports reported decreased oxygen, high levels of bacteria and other microbes, increased turbidity and high levels of nitrogen and phosphorus.

Measures within the WBD can be taken to improve water quality for run-off by using low impact development techniques to filter stormwater and runoff before it enters the creeks, rivers, and aquifers.

Invasive Plant Management

A non-native plant is one not native to the area where it growing. In their native ranges, plants generally do not become a nuisance. Today, with modern transportation, many exotic plants have caught a free ride to Florida. Once here, they are free from natural enemies that existed in their home range (animals that eat them, plant diseases, etc.), and can outgrow and replace Florida's native plants. Some non-native plants become invasive within the new ecology and pose a direct and urgent threat to the economy, health and wildlife of the area.

Not all non-native plants are invasive. But the ability to take over and crowd out the native plant material and compete for water and nutrients has an adverse effect on Nassau County's biodiversity and ecosystems – the very beauty cherished in Nassau County. There are tremendous eradication and control costs associated with agriculture, forests, fisheries, navigation and storm water management.

Identification and education can assist in removal and prevention efforts. Responsible disposal and prevention of spread on boats and construction vehicles can help minimize their spread. Maintaining the maximum amount of native plant material during development and minimizing clearcut practices can reduce the opportunities for invasive

plants to establish and spread.
The benefits of native plants are:

- Low water requirements
- Significant reduction of water runoff and, consequently, flooding
- Low maintenance therefore reduce the need for time, chemical and fertilizer
- Native plants attract a variety of birds, butterflies, and other wildlife by providing diverse habitats and food sources

The WBD will limit the use of non-native plans and restrict the use of invasive plant materials.

Peril of Flood Comprehensive Plan Amendments

In early 2019, the County approved changes to the 2030 Comprehensive Plan to comply with state Peril of Flood Requirements found in Chapter 163, F.S. This improves the County's Comprehensive Plan to proactively plan for our community and address citizen concerns about flooding, floodplain management, and resiliency.

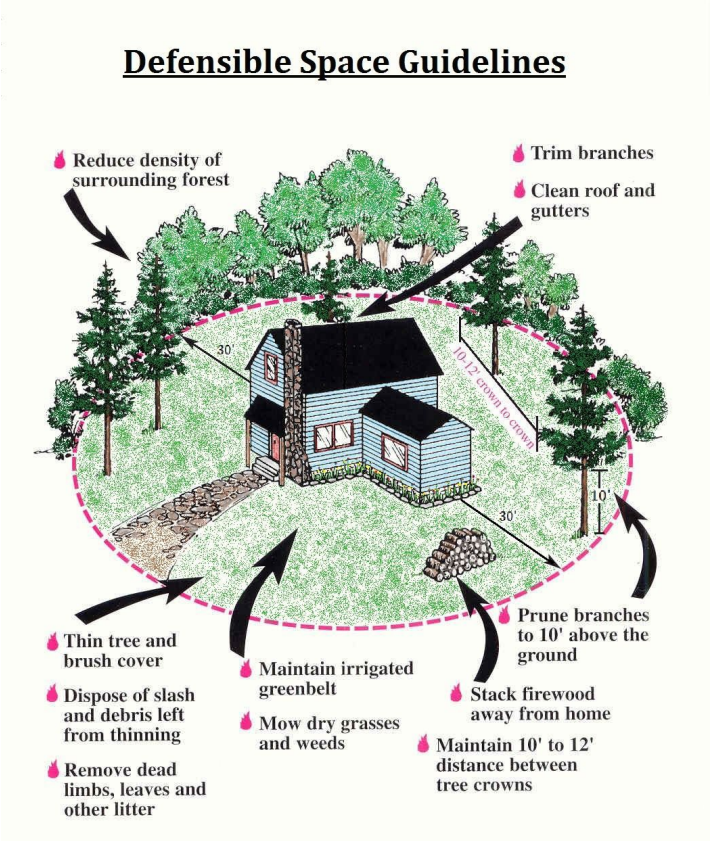
Wildfire Mitigation

Much of our area is considered "wildland/urban interface" at risk to wildfire. Over the past five years (2013-2017) Nassau had 206 wildfires that burned 1,538 acres; less than 25% of those fires were caused by nature (lightning), all others were "man-made" (e.g., debris burning, equipment, railroad sparks, etc.). Our Nassau County and Fernandina Beach firefighters partner with Emergency Management and the Florida Forest Service to advocate for fire prevention and mitigation through public outreach with the FireWise and ReadySetGo! Programs.

The wildland-urban interface (WUI) is defined in the National Fire Plan as the area where houses and wildland vegetation coincide. Areas mapped as low-risk include urban areas and large agricultural properties that have a low probability of wildfire occurring and/or a high level of suppression capabilities.

The FFS wildfire mitigation program has two major components designed to reduce risk throughout the state: Fuel Reduction and Information and Education.

The CHN serves as a buffer for Wildfire Mitigation in certain areas.



Types of Wildland-Urban Interface: 1) Boundary, 2) Intermix, and 3) Island or occluded

Stormwater Management

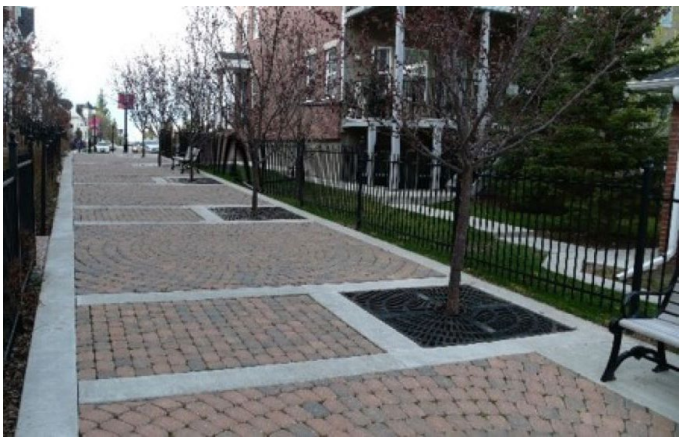
Until recently storm water and its associated runoff have been handled through highly engineered methods designed to move stormwater away from the built environment. Recent methods have utilized integrated storm water management techniques that utilize localized structures to keep water closer to where it has fallen to more closely mimic the natural and pre-development drainage of a site.

Best Management Practices (BMP) have been developed to address pollution prevention activities, quality and quantity control. These BMP's are based on a variety of structures capable of managing and controlling surface run-off through techniques, such as infiltration, detention, conveyance and/or rain harvesting. In general, they employ physical, chemical, and/ or biodegradation processes to improve the quality of surface run-off by minimizing the amount of storm water-based pollutants washed into nearby watercourses. The structures help to reduce flood impacts by temporarily storing water, often filtering the pollutants at source, and encouraging `infiltration of storm water into the ground. The design of structures can often be geared towards reducing impacts across the flood pathways and at distant impact sites further down a catchment area.

Stormwater management does not have to be limited to the traditional retention pond of yesteryear. Stormwater management strategies can be designed in a creative way that is both functional and an amenity to the community.

Methods for controlling surface runoff include:

- Downspout Disconnection
- Rainwater Harvesting
- Rain Gardens
- Planter Boxes
- Bioswales
- Permeable Pavements
- Green Streets and Alleys
- Green Parking
- Green Roofs
- Urban Tree Canopy
- Land Conservation



Dark Skies

Light pollution, the inappropriate use of artificial light at night, is an environmental pollutant that harms our planet and robs us of the opportunity to experience the wonder of a natural night sky. Proper lighting can be utilized that allow for safe use of public and private spaces without adversely affecting our heath, and the health of nighttime species. As an example, the Nassau County Code addresses beachside lighting as it affects migrating and nesting turtles, although all areas of the county can benefit from the reduction of light pollution.

Implementation of policy regarding lighting and dark skies relates to energy efficiency, ecology, human health, and public safety.

Reduction of Heat Island Effects

According to the Environmental Protection Agency, "urban heat islands" occur when cities replace natural land cover with dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat. This effect increases energy costs, air pollution levels, and heat-related illness and mortality. Climate change will likely lead to more frequent, more severe, and longer heat waves during summer months.

In a growing area like the William Burgess District where land is positioned to be converted from greenfields to developed sites, being thoughtful about the heat island effect is an important consideration relative not only to a more environmentally smart community, but also a healthy community safe for its citizens.

Strategies around ensuring a robust tree canopy, green roofs, and vegetation can help reduce urban heat island effects. Vegetation shades building surfaces, deflects radiation from the sun, and releases moisture into the atmosphere. "Cool roofs" and ensuring more green open space are additional strategies

Green Building/Energy Efficient Buildings

In 2017, about 39% of total U.S. energy consumption was consumed by residential and commercial building sectors. Approximately 40% of materials produced by the economy go into the built environment. Finding ways to promote increased energy efficiency and smart sourcing and/or reuse of materials in the built environment is an important factor in ensuring environmentally sensitive development.

While various certification programs exist regarding the "Green" nature of a structure, principles of these programs can be incorporated into building and site design regardless. In Florida, public structures are required to meet a sustainable building rating system or green building code. Florida Statute 255.2575 regarding energy-efficient and sustainable buildings states that "all county, municipal, school district, water management district, state university, Florida College System institution, and state court buildings shall be constructed to comply with a sustainable building rating system or a national model green building code. This section applies to all county, municipal, school district, water management district, state university, Florida College System institution, and state court buildings the architectural plans of which are commenced after July 1, 2008."

Energy efficient building designs are encouraged in the WBD.

Section 3.5 Floodplain Management

Floods

A flood or flooding refers to the general or temporary conditions of partial or complete inundation of normally dry land areas from the overflow of inland or tidal water and of surface water runoff from any source. Floodplains are defined as any land areas susceptible to being inundated by water from any flooding source.

Flooding can occur in any season and can occur in several ways:

- River and lakes that overflow due to excessive rain
- Waterways that are blocked with debris and overflow
- Water containment structures such as levees, dams or water and sewer systems can break
- Strong winds from tropical storms or hurricanes cause a storm surge by pushing seawater on to land

Flood stages are the water elevations at which varying levels of damage to personal property occurs. Locally heavy precipitation may produce flooding in areas other than delineated floodplains or along recognized drainage channels. If local conditions cannot accommodate intense precipitation through a combination of infiltration and surface runoff, water may accumulate and cause flooding. Several variations of flooding occur in our area due to the effects of severe thunderstorms, tropical cyclones, seasonal rain, and other weather-related conditions.

Flooding impacts the public, first responders, private property, public infrastructure and facilities, the environment, cultural resources, and a community's economy.

Floodplain Management

Floodplain management is the operation of a community program of preventive and corrective measures to reduce the risk of current and future flooding, resulting in a more resilient community. These measures take a variety of forms, are carried out by multiple stakeholders with a vested interest in responsible floodplain management and generally include requirements for zoning, subdivision or building, building codes and special-purpose floodplain ordinances. A floodplain manager is the principal community administrator in the daily implementation of flood loss reduction activities including enforcing the community's flood damage prevention ordinance, updating flood maps, plans, and policies of the community, and any of the activities related to administration of the National Flood Insurance Program (NFIP).

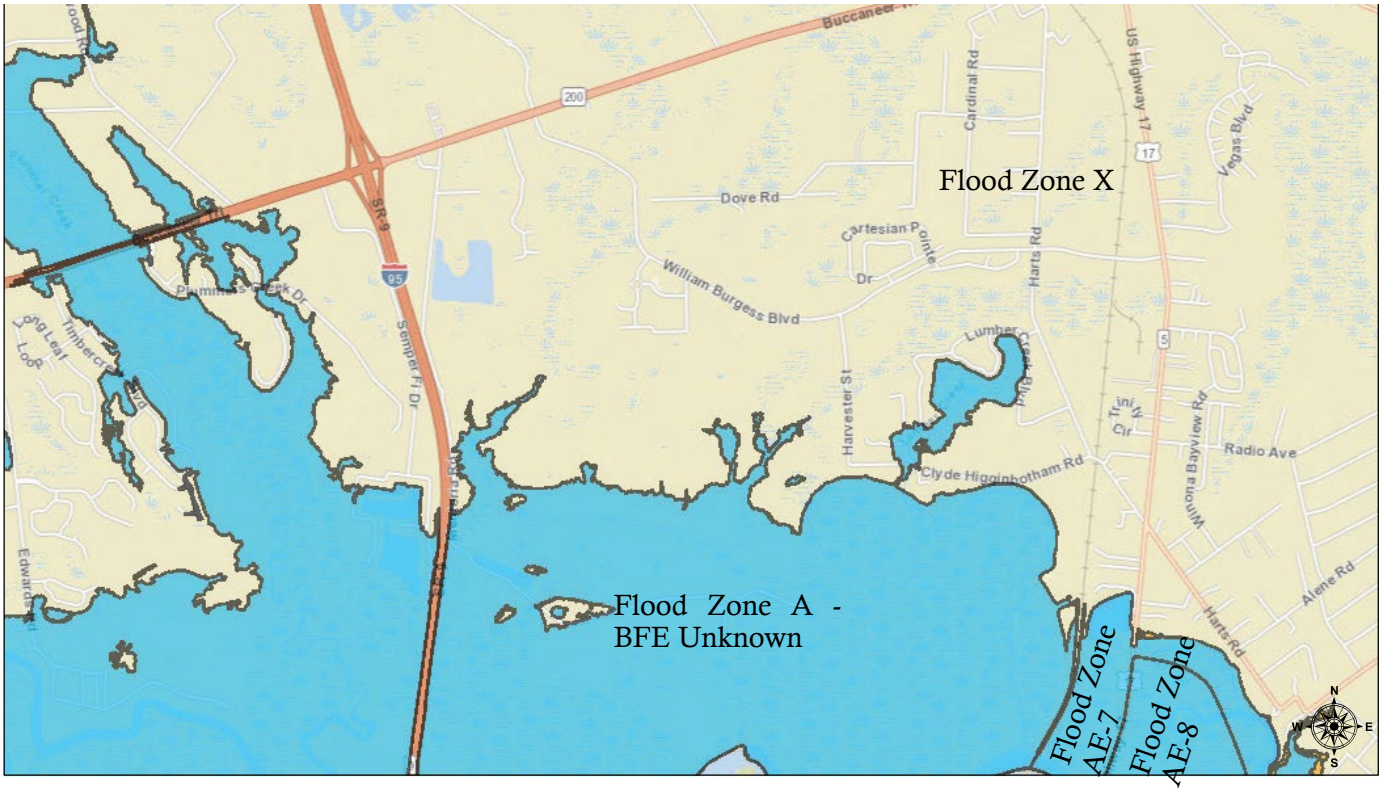


Figure 3.8 William Burgess District Flood Zones

While FEMA has minimum floodplain management standards for communities participating in the National Flood Insurance Program (NFIP), adopting higher standards will lead to safer, stronger, more resilient communities.

Floodplains

According to FEMA, a floodplain is any land area susceptible to being inundated by floodwaters, from any source. The USGS further defines a floodplain as the relatively flat lowland that borders a river, and is usually dry but is subject to flooding.

To establish floodplains, FEMA adopted the base flood elevation, which is the level of a flood that has a one percent probability of occurring in any given year. This level of flood is referred to as the base flood, the one percent flood, or the 100-year flood. The area that would be inundated by a base flood is called the 100-year floodplain. This is often misunderstood because many assume such a flood would only occur once every 100 years; however, as explained, the "100" number is referring to the one percent chance of the flood reaching that specified floodplain IN ONE YEAR.

Flood zones describe the land area in terms of its risk of flooding. Flood zones, floodplain boundaries, and base flood elevations are shown on the FEMA flood maps. Areas identified as a high flood hazard area on the Flood Insurance Rate Map (FIRM) is identified as a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. In high-risk areas, there is at least a 1 in 4 chance of flooding during a 30-year mortgage. SFHA's may have higher Base Flood Elevations (BFE) to ensure the safety of the buildings built in the flood zone. BFE is the computed elevation to which flood waters are anticipated to rise during the base (1-percent-annual-chance) flood event. BFEs, typically rounded to the nearest whole foot, are shown on the flood map for areas where a detailed study has been completed. BFE is the regulatory requirement for the elevation or floodproofing of buildings.

There are approximately 2,231 acres of land area located within the SFHA in the WBD.

Flood Risk Reduction

It is important for those located in the floodplain and those responsible for activity in the floodplain (public officials, invertors, and those relying on activities in the floodplain) to ensure that those in the floodplain understand the nature of the risks they face and the seeps that may be taken to reduce this risk. In communities that are part of the National Flood Insurance Program (NFIP), those portions of the community located in the SFHA are subject to mandatory insurance purchase and special land-use requirements including minimum first-floor elevations for new construction. FEMA's Community Rating System (CRS) identifies actions that can be taken by the community to reduce their risk and gives insurance premium reductions for communities that take appropriate mitigation actions.

Such actions include: structure elevation, land use planning and zoning, property acquisition or relocation, construction standards and building codes, natural storage, hazard forecasting, early warning systems and emergency plans, dry and wet floodproofing, and insurance.

Determining Base Flood Elevations in Approximate A Zones

Zone A identifies an approximately studied special flood hazard area for which no BFEs have been provided. Although BFEs are not provided, the community is still responsible for ensuring that new development within approximate Zone A areas is constructed using methods that will minimize flood damages. This often requires obtaining or calculating BFEs at a development site. Developers, property owners, engineers, surveyors, and others at the local level who may be required to develop BFEs for use in approximate Zone A areas. Any development or redevelopment in an A Zone shall comply with the Nassau County Code of Laws and Ordinances.

At this point in time, Nassau County requires developers of a five (5) acre parcel or a development of 50 lot or more subdivision, to perform a Hydrologic and Hydraulic study to determine the BFE of the acreage. In this case, an analysis should be conducted to determine the location of the 100-year floodplain and the BFE. Due to the development pressure in the WBD, it is our anticipation that a study will be done to determine the BFE in areas currently defined as Flood Zone A in the future.

For more information regarding Floodplain Management, please see the County's website: http://www.nassaucountyfl.com/774/Flood-Resources

Section 3.6 Healthy Communities

Human health is linked with the health of the environment. Much research has been done on the effects of the patterns of human settlement on human and environmental health. Both need to thrive synergistically. Planners in Nassau County have taken this into account when designing the WBD. Protecting areas of the natural environment for the benefit of water quality, air quality, and local flora and fauna also benefits the mental and physical health of the residents who will reside in the new community.

The connection between the health of a community and land use planning dates back to the middle of the nineteenth century when in big cities; health reforms were put in place to remedy unsanitary conditions and overcrowding. Today, however, public health concerns center around obesity and accompanying cardiovascular disease and diabetes which results from a sedentary lifestyle and excessive caloric intake of unhealthy types of fried, packaged or convenience foods.

Protecting the public health, welfare and safety has been the goal of planning since its origin. Nassau County planners have intentionally incorporated accessible and attractive amenities into the William Burgess District design in order to assist in efforts to improve the health of our community's citizens by encouraging healthy lifestyles through the built environment.

> *According to the Centers for Disease Control, only one in five adults, get the required amount of physical activity. Planners can, through the healthy design of communities, create places where it is easier to exercise.*

Collaborative land use planning can have a positive effect on many factors related to the health of the physical environment and the people who live within it such as:

- The opportunity for economic sufficiency;
- Locations for participating in physical activity;
- Options for safe transportation;
- A variety of housing choices including affordability;
- Healthy air and water quality; and
- Good mental health fostered by connections to social opportunities and public green space.

Nassau County Community Health

Since 2011, the Nassau County Community Health Improvement Planning group, together with local community public health professionals, non-profit partners, and faith-based members, has utilized the National Association of County and City Health Officials' (NACCHO) community-driven strategic planning process called Mobilizing for Action through Planning and Partnerships (MAPP). Through the MAPP process, Nassau County health officials collaborate to assess and achieve improved public health outcomes for county residents.

Every three years the community partners meet in September to discuss the findings of the most recent Community Health Assessment (CHA) for Nassau County. The partners then set priorities for the top areas of concern to address in the next three-year time period. In September 2018, the priorities to be addressed in the 2019-2021 Community Health Improvement Plan were determined to be:

- Housing & Healthy Places
- Access to Care
- Behavioral Health & Substance Abuse
- Health Disparities
- Community Support

Using statistics obtained from the Florida Health Charts website, the Health Planning Council of Northeast Florida, Inc. has prepared a report for Nassau County documenting indicators and developing initiatives http://nassau.floridahealth.gov/programs-and-services/community-health-planning-and-statistics/_documents/nassau-county-community-health-status-assessment-october-2018.pdf

According to the 2018 County Health Rankings, of the 67 counties in the state of Florida, Nassau County has the following standings:

- Nassau ranks 17th for Health Behaviors
- 17th for Clinical Care
- 5th for Socioeconomic Environment
- 57th for Physical Environment

Smart Growth

County planning officials can help boost Nassau County's rank with the smart growth design principles. These principles have been incorporated in regulations for the William Burgess District. In fact, the Florida Division of Environmental Health, the first public health agency in the United States to become a partner in the national Smart Growth Network, understands that urban planning and land-use patterns have a direct impact on public health and neighborhood prosperity. To this end, the Centers for Disease Control and Prevention's Community Preventive Services Task Force, recommends land use and environmental design interventions that increase physical activity. These include:

- Street connectivity;
- Sidewalk and trail infrastructure;
- Bicycle infrastructure;
- Public transit infrastructure and access;
- Mixed land use environments that increase the diversity and proximity of local destinations where people live, work, and spend their recreation and leisure time; and,
- Access to parks, and other public or private recreational facilities.

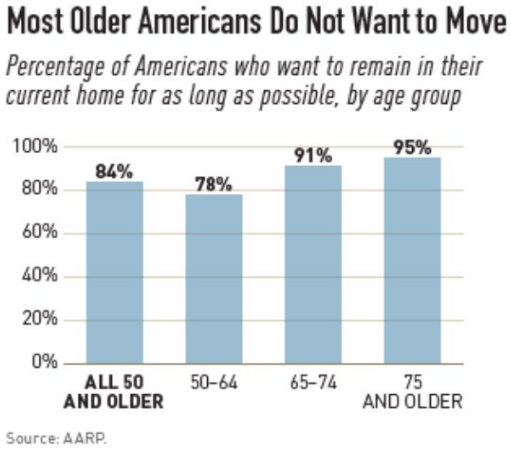
Development patterns that promote healthy living by encouraging walking, bicycling and other physical activity improve the quality of life for residents and can drive down healthcare costs. This is important to young and old alike. A study released in the Journal of Gerontology showed that older people with weak muscles are 50 percent more likely to die earlier. Having communities which encourage active transportation and recreation can help to support stronger muscles in our aging population.

Jay Walljasper, editor of On the Commons online magazine writes that walking and biking trails are the new Urban Commons where citizens are "seeking out a place to connect with neighbors, understand our surroundings and gain a sense of place."

Ryan Gavel, the concept originator of the Atlanta Beltline, a trail that circles the city of Atlanta, says, "I can go to the grocery store, we can go to the park. Our kids spend a lot less time in the car. It's just an amazing way of life..."

Aging in Place

Aging in Place is a concept of providing infrastructure, services, and opportunities that allow people to live independently in their homes as they age. The majority of people over 50 want to stay in their own homes as long as possible, according to a survey by AARP. 21% of Nassau County residents are age 65 and older. According to The University of Florida's Bureau of Economic Business Research (BEBR), that percentage is going to increase to 29% by 2045. In order to allow our residents to age in place, the design of our communities must be conducive to an aging society.



SENIORS FOCUS GROUP

The Florida Department of Health and a Partnership for a Healthier Nassau County conducted a focus group for seniors during the Community Health Needs Assessment held on May 22, 2015 at the Nassau County Council on Aging senior center in Hilliard. The focus group asked the seniors eight questions related to health. For five of the eight questions the reason stated by the seniors that health issues prevailed was lack of adequate transportation.

According to AARP, our communities are not prepared for an aging society. AARP therefore, developed an online assessment tool to encourage action by consumers and policymakers. The AARP Livability Index is a method by which the organization scores neighborhoods across the U.S. for the services and amenities that impact our lives the most. Users can search the Index by ZIP Code to find an overall livability score, as well as a score for each of seven major livability categories highlighted below. It is the first tool of its kind to measure livability at the neighborhood level for the entire country.

Yulee's livability score (2018) is 55 out of 100 based on the following categories:
Housing - Affordability and access (Score 53)
Neighborhood - Access to life, work, and play (Score 38)
Transportation - Safe and convenient options (Score 38)
Environment - Clean air and water (Socre 63)
Health - Prevention, access and quality (Score 48)
Engagement - Civic and social involvement (Score 86)
Opportunity - Inclusion and possibilities (Score 63)

https://livabilityindex.aarp.org/search#Yulee+FL+32097+USA

The WB CCB will help to increase the livability score by offering more housing options, better access to "live, work, play" opportunities within the District, encourage healthier living, promote development patterns which protect the environment, provide alternate modes of transportation and safe access to a comprehensive thoroughfare network, add to opportunities for civic engagement, and offer better opportunities for residents of all ages.