Regional Resilience Action Plan

RESILIENT FIRST COAST

REGIONAL RESILIENCE ACTION PLAN

Resilient First Coast

NEFRC NORTHEAST FLORIDA REGIONAL COUNCIL

RESILIENT First Coast

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September 2025

Northeast Florida Residents,

In 2022, the Northeast Florida Regional Council established Resilient First Coast (RFC), a collaborative approach to addressing climate related issues among the seven member counties – Baker, Clay, Duval, Flagler, Nassau, Putnam, and St. Johns. RFC garnered significant support from its members for the development of a Regional Resilience Action Plan. This plan is crucial for addressing climate impacts and related threats to our region. Through funding from the Resilient Florida Program of the Florida Department of Environmental Protection and expertise from RFC members and the Steering Committee, we are thrilled to see this plan come to life.

Since our inception in 1977, the Regional Council has worked to bring communities together to tackle regional challenges, and the development of this robust plan of action underscores the value in thinking regionally. It marks a significant milestone for our region and member governments. We extend our sincere gratitude to the numerous partners who have contributed to this effort and the Steering Committee who provided guidance along the way. A special thanks to the tireless efforts of our Resilient First Coast Co-Chairs, Anne Coglianese of the City of Jacksonville and Jessica Beach of the City of St. Augustine. Their offices dedicated countless hours to drafting, designing, and reviewing the plan.

The development of the plan was driven by the expertise of many specialists, many of whom are integral members of Resilient First Coast, contributing valuable science-based and practical insights. As we prepare to implement the initiatives outlined in the plan, the need to collaborate is evident more than ever. Northeast Florida is stronger and more resilient when working together.

As we move into the implementation phase, let us continue to work hand in hand, ensuring that our region not only survives but thrives in the face of environmental challenges. If you want to become more involved in regional resilience efforts, we also encourage you to learn more about Resilient First Coast. Thank you for your continued support and commitment to building a stronger Northeast Florida.

Sincerely,

Elizabeth Payne
CEO

NEFRC NORTHEAST FLORIDA REGIONAL COUNCIL

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EXECUTIVE SUMMARY

This Regional Resilience Action Plan was developed by the Resilient First Coast Collaborative (Collaborative), which was established in 2022 by the Northeast Florida Regional Council (Council). The Collaborative has over twenty member organizations, a Steering Committee led by a chair and co-chair, four subcommittees, and additional working groups. Stakeholders throughout Northeast Florida, including Baker, Clay, Duval, Flagler, Nassau, Putnam, and St. Johns counties have been involved in this effort, including participants representing local governments, businesses, non-profit organizations, academic institutions, state and local agencies, utilities, and the military.

The Regional Resilience Action Plan begins by defining a clear vision statement, goals, and objectives related to improving regional resilience. Context is provided on Northeast Florida "The First Coast", and various shocks and stressors facing the region today are outlined, including flooding, heat, and hurricanes. Furthermore, the document describes various actions that the Council and the Collaborative can take to improve regional resilience. The regional approach described herein will advance resilience far beyond what could be accomplished by local governments working alone.

This document outlines ways in which regional entities can facilitate cooperation to find effective solutions to regional challenges; describes how the Council and Collaborative can provide resources and guidance to advance work happening at the local level; and how the Council and Collaborative can analyze and synthesize regionally significant data to help inform decision making. This Regional Resilience Action Plan is a living document that will guide action over the next five years for the Northeast Florida region.

WHAT IS REGIONAL RESILIENCE?

Regional resilience is the ability of systems to adapt and thrive in the face of acute shocks (sudden, extreme events that threaten a community) and stressors (long-term pressures that weaken the fabric of the community over time).

WHAT IS A REGIONAL RESILIENCE ACTION PLAN?

A Regional Resilience Action Plan (RRAP) provides a number of goals, objectives, and actions to enable the region as a whole to mitigate and adapt to current and future challenges. The plan provides a framework for cohesive regional collaboration to drive resilience adaptation strategies at the local level, however, the plan does not prescribe a specific set of directives aimed at any one specific program or local government, since there is no one-size-fits-all strategy for achieving resilience. The plan is a voluntary tool that includes a broad set of recommendations and best practices to guide actions at the regional and local levels. Each local government will need to devise their own adaptation plan based on their specific needs, but the actions in this plan will support those efforts.

Regional Resilience

Regional collaboration on resilience efforts across jurisdictions and disciplines is needed to ensure a durable and adaptive built environment, an enhanced quality of life, a healthy environment, and a thriving regional economy. By incorporating sound science, best practices, and lessons learned from regional partners, the Regional Resilience Action Plan will advance resilience goals. Regional resilience will require tailored decision-making based on local and regional data. A regional approach is needed to maximize the resilience of our regionally significant assets, our regionally common assets, and our networks that cross jurisdictional boundaries.

Regional Challenges

Northeast Florida is facing a wide range of challenges, including both acute shocks and chronic stressors, which will need to be managed at a regional level. As such, resilience planning in Northeast Florida should encompass local and regional actions that improve long-term adaptations and enhance the impact of immediate actions to address a myriad of challenges. Moreover, Northeast Florida will need to adapt to population growth, which presents both challenges and opportunities.

Shocks and stressors can be caused by environmental factors or perpetuated through human activities and often do not operate in isolation. The chronic impacts of stressors can adversely impact the ability of local governments to rebound from acute shocks. Communities in Northeast Florida with aging or failing infrastructure and economic inequity will see more significant impacts to their most vulnerable residents in the event of a flood or extreme weather event. While equipping local governments with actions to strengthen their assets and communities against shocks is one part of achieving resilience, systemic issues such as poverty, aging infrastructure, and homelessness must also be included in long-term planning.

Shocks

- Hurricane
- Flooding
- Extreme Heat
- High Winds
- Wildfire
- Tornado
- Extreme Cold
- Pandemic
- Infrastructure Failure
- Power Outage
- Supply Chain Disruption
- Cyber Threat
- Hazardous Materials Incident

Stressors

- Sea Level Rise
- Chronic Flooding
- Coastal Erosion
- Saltwater Intrusion
- Groundwater Threats
- Urban Heat Island Effect
- Drought
- Aging Infrastructure
- Economic Downturn
- Poverty
- Social Inequality
- Lack of Reliable Transportation
- Housing Instability
- Food Insecurity
- Lack of Healthcare
- Chronic and Infectious Disease
- Social Isolation

VISION FOR A RESILIENT FIRST COAST

Northeast Florida will be a place where communities stand united, turning challenges and uncertainties into opportunities for growth, innovation, and shared prosperity. Guided by the Northeast Florida Regional Council and the Regional First Coast Collaborative, the region will harness collective resources and bold strategies to build lasting resilience—safeguarding people, ecosystems, and economies from climate-related threats, rapid growth, and the complex challenges that cross municipal boundaries.

GOALS

+ CREATE A DURABLE AND ADAPTIVE BUILT ENVIRONMENT
+ DEVELOP A THRIVING REGIONAL ECONOMY
+ ENSURE A VIBRANT QUALITY OF LIFE
+ PROMOTE A HEALTHY NATURAL ENVIRONMENT

GOALS & OBJECTIVES

The following goals were developed to represent each of the four key pillars of a resilient region identified by the Council and Collaborative. The regional resilience goals below reflect the overarching targets for the First Coast. The objectives for each goal will serve as guideposts for a more resilient future.

CREATE A DURABLE AND ADAPTIVE BUILT ENVIORNMENT

+ Minimize magnitude and cost of damage to infrastructure
+ Improve development practices and policies
+ Decrease utility service disruptions and recovery time
+ Improve transportation and mobility

DEVELOP A THRIVING REGIONAL ECONOMY

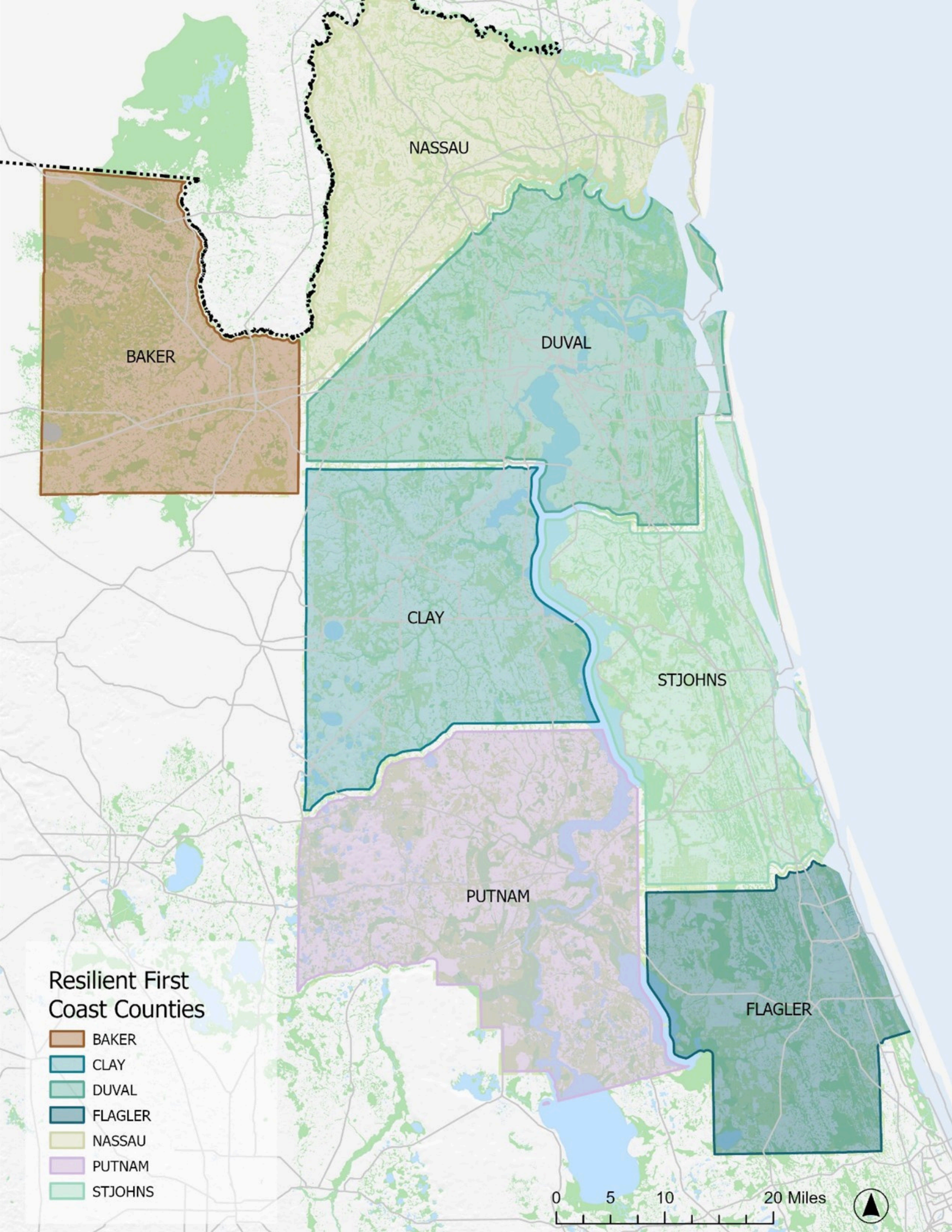
+ Improve education and employment opportunities
+ Increase housing stability
+ Enhance tourism and historic preservation
+ Increase smart growth and development

ENSURE A VIBRANT QUALITY OF LIFE

+ Improve public health and wellness
+ Enhance supply of food, energy, and other critical resources
+ Increase public participation and engagement
+ Minimize disparity

PROMOTE A HEALTHY NATURAL ENVIRONMENT

+ Reduce heat stress
+ Increase biodiversity and ecological services
+ Maximize quality of soil, air, and water
+ Minimize erosion, flooding, and storm impacts


NASSAU
BAKER
DUVAL
CLAY
STJOHNS
PUTNAM
FLAGLER
Resilient First Coast Counties
BAKER
CLAY
DUVAL
FLAGLER
NASSAU
PUTNAM
STJOHNS
0
5
10
20 Miles

THE FIRST COAST

BACKGROUND ON NORTHEAST FLORIDA

Northeast Florida is known as the "First Coast" due to its historical significance as the site of the first permanent European settlement in what is now the continental United States. In 1565, Spanish explorer Pedro Menéndez de Avilés founded St. Augustine, which remains the oldest continuously inhabited European-established city in the continental United States. However, before the First Coast was colonized by Europeans, it had been occupied by Indigenous people for thousands of years. Evidence indicates that people, including the Timucuan, have inhabited the First Coast region for at least 6,000 years. Throughout the years, this region has been defined by its connection with the Atlantic Ocean and the St. Johns River. This connection with the water is especially strong in certain Jacksonville communities and cultures, including the Gullah Geechee Nation.

The term "First Coast" was further popularized in 1983 through a marketing campaign initiated by the Jacksonville Chamber of Commerce. The William Cook Advertising Agency coined the name to promote the Jacksonville metropolitan area, encompassing Duval, Baker, Clay, Nassau, and St. Johns counties. Since then, the First Coast moniker has created a unified regional identity that highlights both the area's historical heritage and its position as the first coastal region travelers encounter when entering Florida from the north.

PRESENT DAY

Today, the First Coast region of Florida is a diverse landscape containing urban, suburban, and rural communities that host a multitude of people from all socioeconomic backgrounds. The region covers 4,428 square miles and consists of Baker, Clay, Duval, Flagler, Nassau, Putnam, and St. Johns Counties and their 25 municipalities. Of these seven counties, three are inland, and four are coastal. Over 1.5 million people reside in Northeast Florida, and the region is expected to see a continuance of its population growth trend in the coming years, with an estimated population north of 2 million by 2050.

The region boasts several significant assets, including Jacksonville Port Authority (JAXPORT), which is the largest container port by volume in the state, as well as Jacksonville International Airport and Naval Air Station Jacksonville (NASJAX). Northeast Florida is also home to multiple major corporations, including Fortune 500 companies CSX, Fidelity National Financial, and FIS.

Florida Blue's corporate headquarters in downtown Jacksonville has 6,000 employees, making it one of the largest major employers in the region. The region is home to some of the best hospitals in the nation, including Mayo Clinic and Wolfson's Children's Hospital, the only Children's Hospital in North Florida.

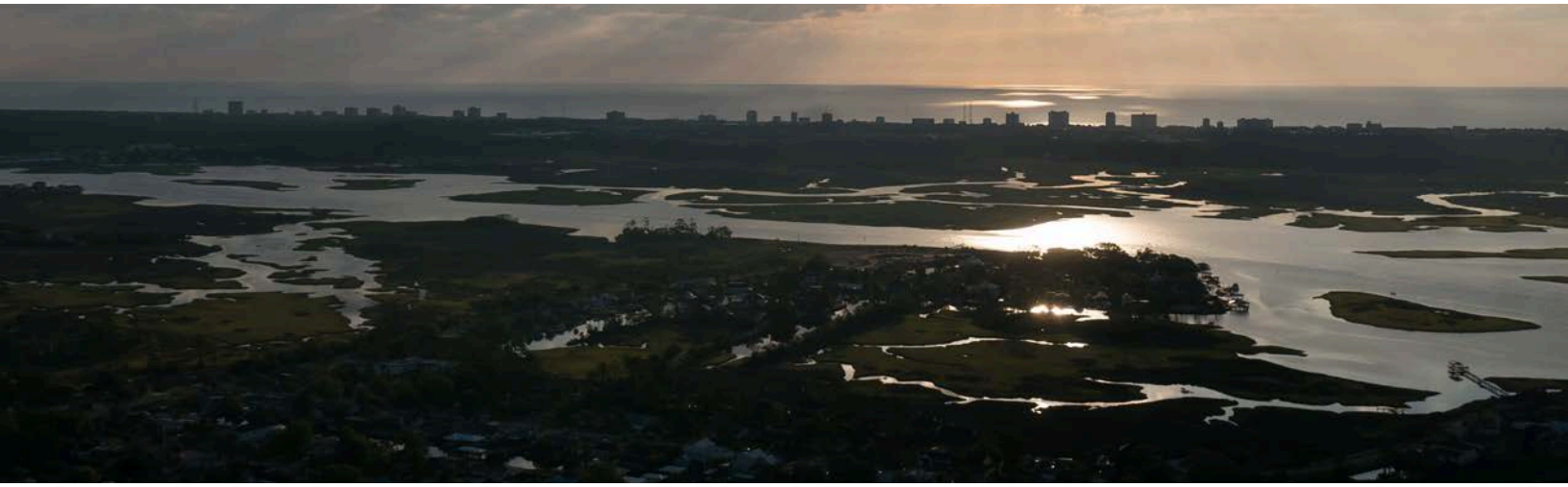
The St. Johns River, which runs through five of the seven counties in the region, is both a natural and economic asset for the region. In July 1998, President William Jefferson Clinton signed legislation designating the Historic St. Johns River as an "American Heritage River." This historic river was and remains a desirable focal point for growth of the community and serves as a major component for recreational amenities and transportation opportunities related to commercial, industrial, and residential developments.

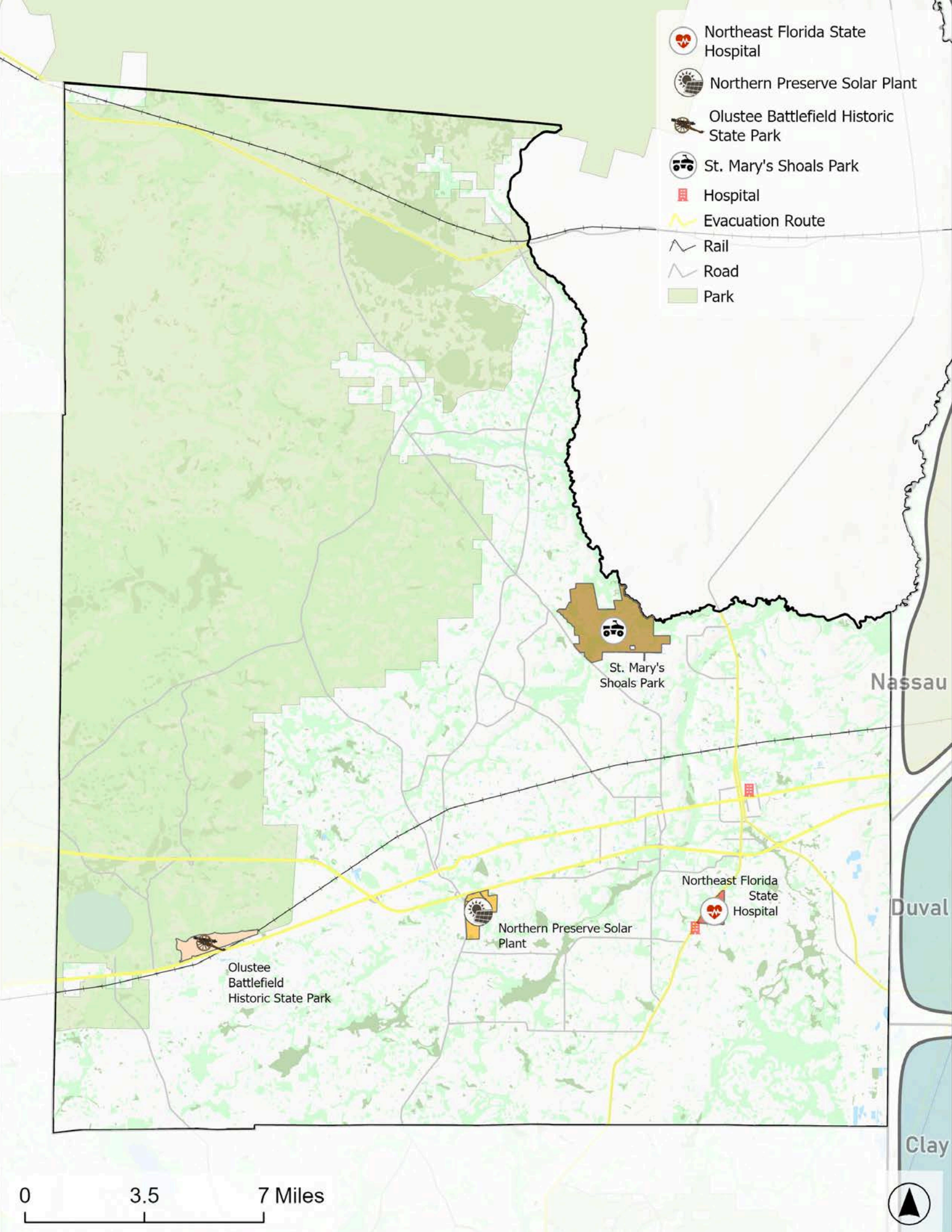
The First Coast region has many sites of cultural, historical, and ecological significance, many of which incorporate the history of the Indigenous tribes that originally inhabited the area. The Timucuan Ecological and Historical Preserve, located in Duval County, is the largest untouched wetland in the state at 46,000 acres, and includes the historical Fort Caroline National Memorial, the site where Spanish and French settlers collided with the Timucua-speaking people nearly four centuries ago. Other sites of historical significance include the Castillo de San Marcos National Monument and Ponce de Leon's Fountain of Youth, both located in St. Augustine's Historic District. Huguenot Memorial Park, dedicated to the first French settlers to arrive in the region in 1500s, is a premier coastal birding site as well as a popular recreational site.

Forty-three percent of the First Coast region is dedicated to agriculture, two percent to industry and commercial use, thirteen percent is otherwise urbanized, and the remaining forty-two percent is covered by a variety of other uses (1). Predominant industries in the region include agriculture, manufacturing, transportation and warehousing, administrative support, waste management, remediation services, healthcare and social assistance, federal government and military, retail, and various hospitality industries (i.e. hotels and restaurants).

The region contains 140 miles of coastline and five barrier islands. Coastal communities along the First Coast include Atlantic Beach, Neptune Beach, Jacksonville Beach, St. Augustine Beach, Fernandina Beach, Ponte Vedra Beach, and Flagler Beach. Economic development along the coastal areas lures a high influx of tourism throughout the year. These communities are characterized by tourism-oriented uses (i.e. hotels, vacation rentals, and bed and breakfasts), restaurants, retail, and residential uses. Many coastal communities are walkable areas with mixed residential and nonresidential uses near the Atlantic Ocean.

Further west are more rural/agricultural and silvicultural lands. These areas are characterized by low-density development and an abundance of cropland and grazing areas for cattle. They also provide abundant opportunities for ecotourism, consisting of hiking trails, biking trails, and maritime activities along the rivers and lakes. Some less populated cities along the St. Johns River consist of both agricultural/silviculture areas, manufacturing, and low-intensity urban areas.




Northeast Florida State Hospital
Northern Preserve Solar Plant
Olustee Battlefield Historic State Park
St. Mary's Shoals Park
Hospital
Evacuation Route
Rail
Road
Park
St. Mary's Shoals Park
Nassau
Northeast Florida State Hospital
Duval
Northern Preserve Solar Plant
Olustee Battlefield Historic State Park
Clay
0
3.5
7 Miles

Baker County

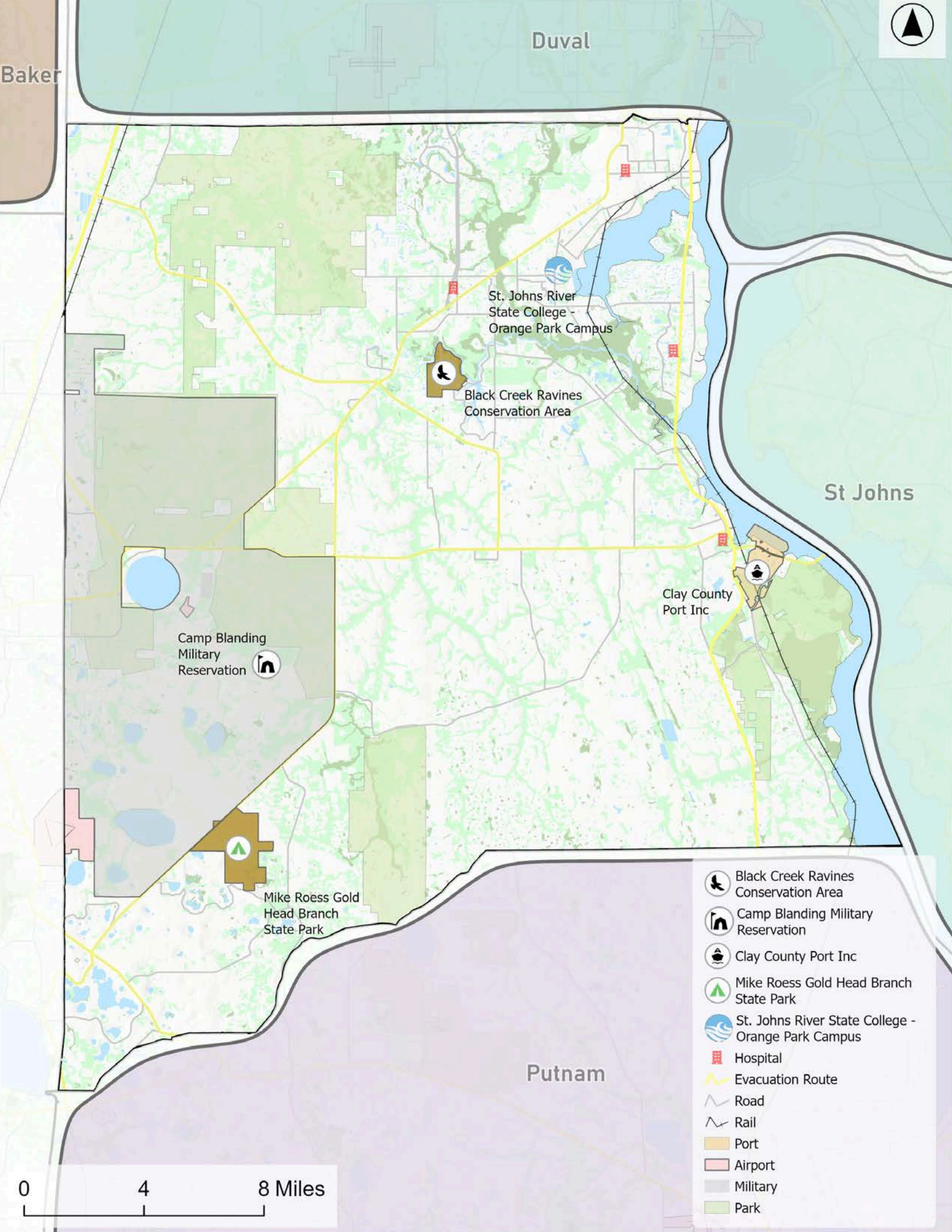
Baker County is an inland area bordering Georgia with a total area of 589 square miles. Baker County is home to the city of Macclenny, which holds the county seat of Baker County. The town of Glen Saint Mary is also located in Baker County, along with four notable rivers: Saint Marys River, Cross Branch, North Prong Saint Marys River, and New River. The St Marys River forms the easternmost border between Georgia and Florida.

Formed in 1861 as the thirty-eighth county in the state of Florida, it was named for James M. Baker, a Judge of the Fourth Judiciary District. Three years after Baker's formation, the only major Civil War battle fought in Florida, the Battle of Olustee, was fought in Baker County. Before the turn of the 20th century, a thriving lumber industry developed here, with sawmills constructed along rivers and waterways, where lumber was brought out by water. As industry and development followed, so did an economic surge of growth to the community.

Prior to development, the untouched landscape contained in Baker County was one of cypress swamps and pine flatwoods. Still, Baker contains a plethora of rural beauty across 220,000 acres of the Osceola National Forest, Osceola Wildlife Management Area, and the portion of the Okefenokee National Wildlife Refuge that extends into Baker County. The city of Macclenny's Lighted Christmas Parade is the second-highest attended event in the county, after the Olustee Battle reenactment.


Credit: Baker Country

BAKER COUNTY	
Population - 2023	28,368
Population Under 18	24.90 %
Population 18 - 64	59.90 %
Population 65 and Over	15.20 %
Veterans	1,570
Median value of owner-occupied housing units	$225,000
Median household income	$70,833
Total employer establishments	451


Duval
Baker
St Johns
Putnam
St. Johns River
State College -
Orange Park Campus
Black Creek Ravines
Conservation Area
Clay County
Port Inc
Camp Blanding
Military
Reservation
Mike Roess Gold
Head Branch
State Park
Black Creek Ravines Conservation Area
Camp Blanding Military Reservation
Clay County Port Inc
Mike Roess Gold Head Branch State Park
St. Johns River State College - Orange Park Campus
Hospital
Evacuation Route
Road
Rail
Port
Airport
Military
Park
0
4
8 Miles

Clay County

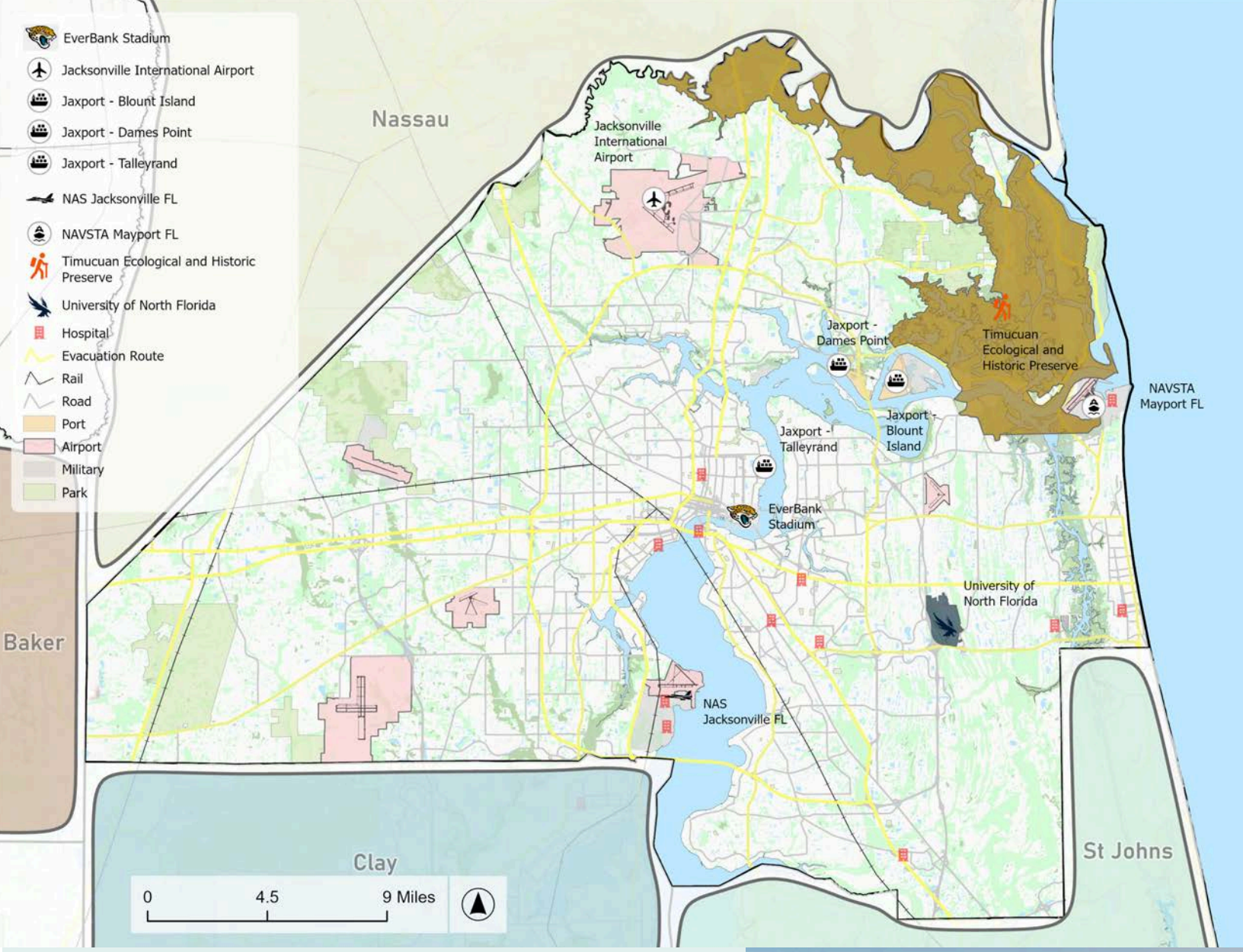
Clay is an inland county that borders the St. Johns River on its east side. Spanning 644 square miles, Clay is home to the cities of Green Cove Springs, Keystone Heights, Orange Park, and Penney Farms, of which Green Cove Springs holds the county seat.

Named after American statesman Henry Clay, Clay County was formed on December 31st, 1858. In addition to thriving cities and neighborhoods with a diverse population, Clay County boasts several historical areas. These include Fort San Fransisco de Pupo, which was built by the Spanish in the 1700s, and the childhood home of Augusta Savage, a key leader in the Harlem Renaissance. The former historic Clay County Courthouse, County Jail, Spring Park Complex, St. Mary's Episcopal Church and Village Improvement Association are also sites of distinction.

Clay County is also home to a plethora of natural beauty. State parks located in the county include Mike Roess Gold Head Branch State Park, one of the state's oldest parks and one of the few remaining examples of an old-growth stand of longleaf pines in the Southeastern United States. Clay County boasts numerous extensive hiking trails, opportunities for horseback riding, and a thriving agricultural community. Clay County has a rich military history and is home to the 73,000-acre Camp Blanding Training Facility.

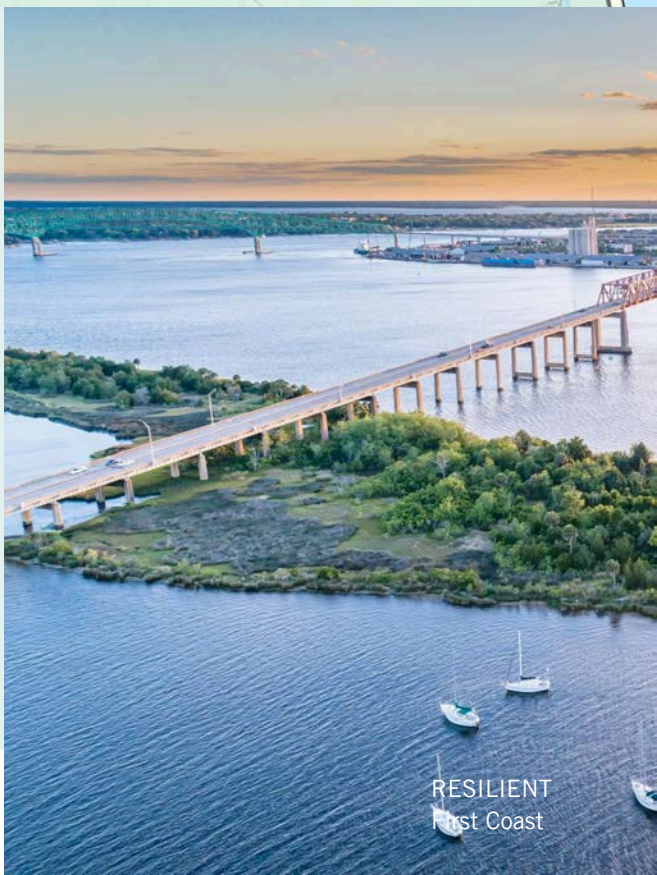
Credit: Explore Clay County

CLAY COUNTY	
Population - 2023	232,439
Population Under 18	22.7%
Population 18 - 64	59.90 %
Population 65 and Over	17.4%
Veterans	27,984
Median value of owner-occupied housing units	$281,500
Median household income	$86,094
Total employer establishments	4,376



Duval County

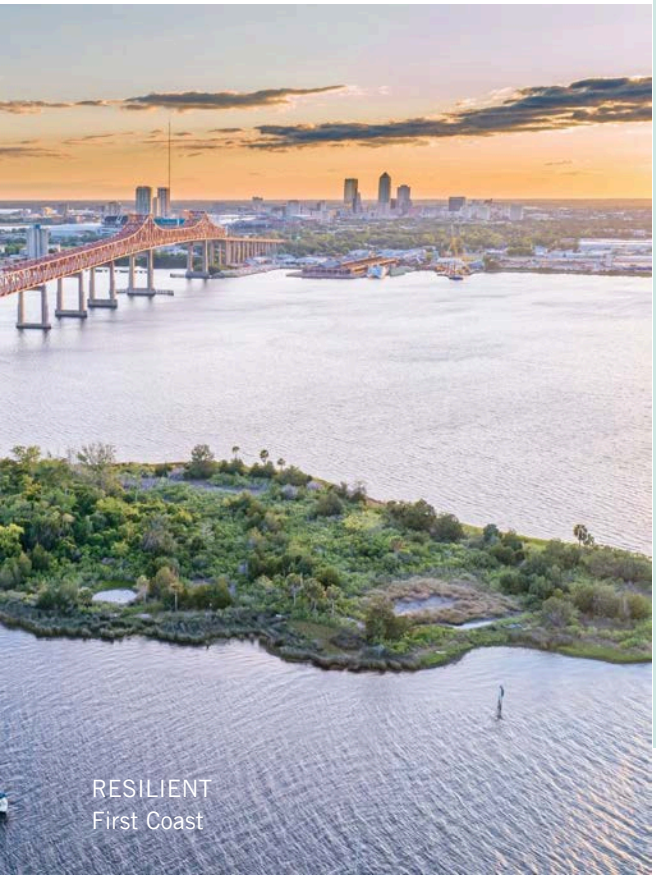
Duval is a sprawling county covering 762.6 square miles of land area, and contains the city of Jacksonville, which is the largest city in the United States by landmass. Named in honor of General William P. DuVal, first civil governor of the Territory of Florida from 1822 to 1834, the formation of Duval County was created on August 12, 1822, by an act of the Legislative Council of the Territory of Florida dividing Florida into four counties, Escambia and Jackson in West Florida, St. Johns and Duval in East Florida. The county boundaries that residents know today were established in February 15, 1875. On October 1, 1968, the government of Duval County was consolidated with the government of the City of Jacksonville, with the exception of Jacksonville Beach, Atlantic Beach, Neptune Beach, and the Town of Baldwin, who are not included in the corporate limits of Jacksonville and who maintain their own municipal governments.



Duval County

Duval County's origins trace back to what the British colonists of the mid 1700s called Cowford, the name deriving from the Seminole phrase *Wacca Pilatka* ("cow's crossing"), referring to a narrow point in the St. Johns River where cattle were driven across the water. During Florida's British period (1763–1783), King's Road connected St. Augustine to Georgia and crossed at this ford, and a ferry service was built in 1765. After Spain ceded Florida to the U.S. in 1821, local settlers, especially Isaiah D. Hart and his neighbors, donated land on the north bank to formally lay out a town in June 1822, and petitioned on June 15 to name it Jacksonville, in honor of General Andrew Jackson. Duval County itself was created later that year by the territorial legislature, named after Governor William P. Duval, with Jacksonville selected as its county seat.

Duval County is located on the Atlantic Ocean and is bisected by the St. Johns River. Due to its significance, the St. Johns River was designated as a "American Heritage River" in 1998. In addition to the St. Johns, Duval has many notable regional assets including an international seaport and airport. It is home to several military facilities, including Naval Station Mayport, Naval Air Station Jacksonville, as well as a Coast Guard. Duval County is also home of the Jacksonville Jaguars NFL Football team and the Sporting JAX soccer club.



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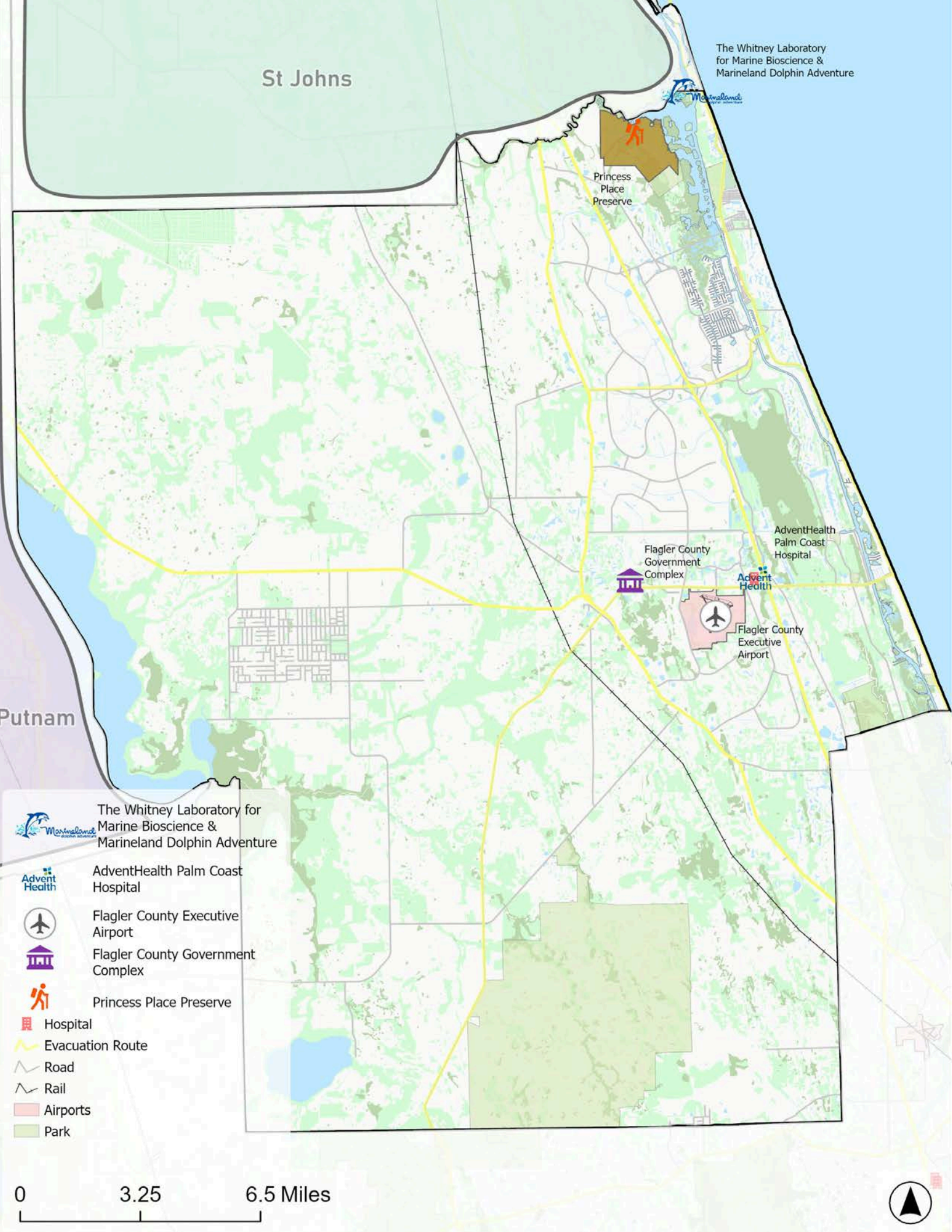
DUVAL COUNTY	
Population - 2023	1,030,822
Population Under 18	22.3%
Population 18 - 64	62.0%
Population 65 and Over	15.70 %
Veterans	80,535
Median value of owner-occupied housing units	$274,900
Median household income	$68,447
Total employer establishments	28,051


St Johns
Putnam
The Whitney Laboratory for Marine Bioscience & Marineland Dolphin Adventure
Princess Place Preserve
Flagler County Government Complex
AdventHealth Palm Coast Hospital
Flagler County Executive Airport
The Whitney Laboratory for Marine Bioscience & Marineland Dolphin Adventure
AdventHealth Palm Coast Hospital
Flagler County Executive Airport
Flagler County Government Complex
Princess Place Preserve
Hospital
Evacuation Route
Road
Rail
Airports
Park
0
3.25
6.5 Miles

Flagler County

Flagler County is a coastal county covering 571 square miles, of which approximately 86 square miles are water, and 132.5 square miles are marshy wetlands. The county is entwined with low sand ridges, shallow valleys, low swamps, and is home to roughly 18 miles of the Intracoastal Waterway (ICW), a dredged canal that bisects the eastern portion of the county. The ICW connects the Matanzas River (which starts in St. Johns County) with the Halifax River (in Volusia County to the south). Florida State Road A1A travels along the county's coast of about 18 miles of beach front. Municipalities within Flagler County include the City of Palm Coast, the City of Flagler Beach, the Town of Beverly Beach, the City of Bunnell, and the Town of Marineland. The City of Bunnell, situated in the geographical center of Flagler County, is the county seat and lies near the intersection of U.S. Highway 1 and State Road 100 (SR 100).

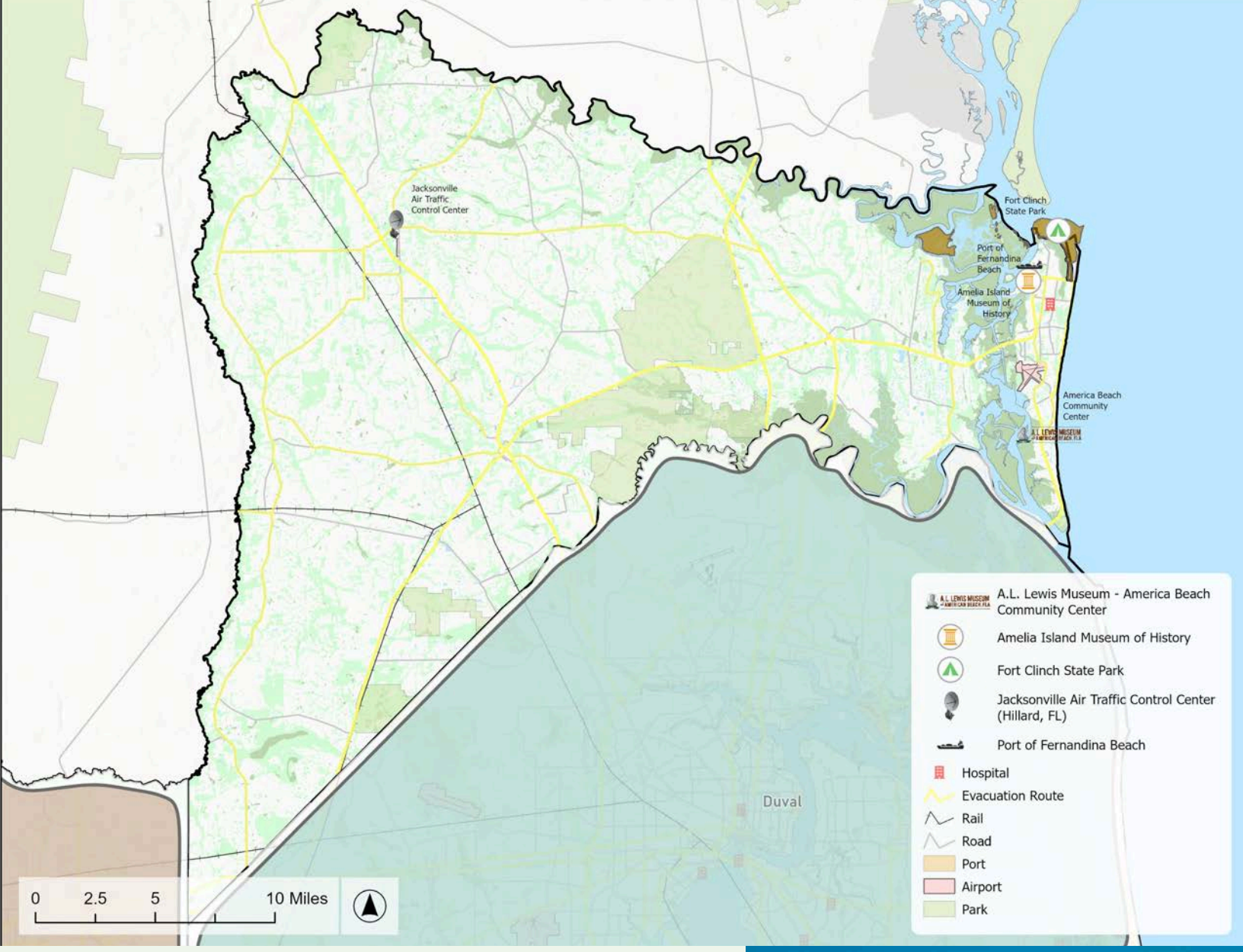
Flagler County was founded in 1917 and named after Henry Flagler, the founder of the Florida East Coast Railway and a significant contributor to the development of the region. Agriculture as well as the production of timber and turpentine became the basis of the local economy, supported by the transportation of goods by the Florida East Coast Railway.

Flagler County's coastlines and ecological resources are a driver of its tourism-focused economy. Notable assets include many beachfront parks such as Washington Oaks Gardens State Park, Bay Drive Park, Jungle Hut Park, Old Salt Park, MalaCompra Park, and Gamble Rogers State Park. Another draw for visitors and residents is its multiple golf courses, including two along the Atlantic Ocean.

RESILIENT
First Coast

Credit: Allen Allnochs

FLAGLER COUNTY	
Population - 2023	131,439
Population Under 18	15.90 %
Population 18 - 64	52.5%
Population 65 and Over	31.6%
Veterans	10,982
Median value of owner-occupied housing units	$333,400
Median household income	$72,923
Total employer establishments	2,635



Nassau County

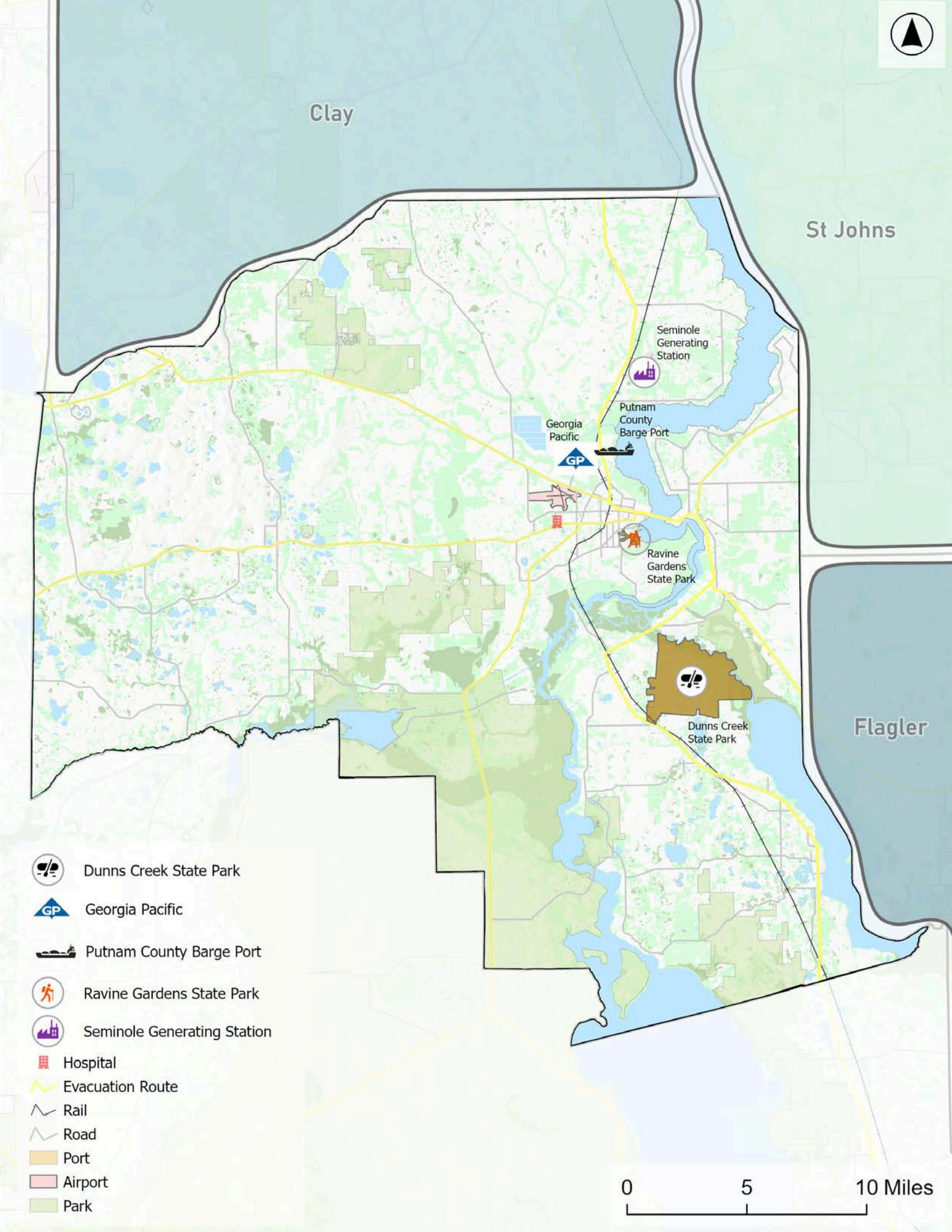
Nassau is a coastal county covering 649 square miles. Bordering Georgia, it is the most northeastern county in Florida. Municipalities located within Nassau County include the City of Fernandina Beach, which serves as the county seat, and the Towns of Callahan and Hilliard. Nassau County features a rich and diverse system of waterways including the St. Marys River which forms much of the County's northern and western boundary, and the Nassau River located in the eastern part of the county.

Nassau County

Nassau County was established in 1824 and was named after the Duchy of Nassau in Germany, though the city of Fernandina Beach dates back farther to the Spanish colonial era. Pre- and post-colonial Florida history remains relevant to Nassau County today. Nassau County is included within the Gullah Geechee Cultural Heritage Corridor, designated by Congress in 2006 to recognize and preserve the culture, history, and contributions of Gullah Geechee communities. American Beach, located on the south end of Amelia Island in Nassau County, Florida, has the distinction of being one of the few remaining beach resort communities in the Nation developed specifically by and for African Americans.

Nassau County boasts a diverse economy that encompasses various sectors, ranging from agricultural activities to ecotourism. Tourism drives the economy at the beaches on the eastern side of the county. However, tree farms comprise a large portion of the western and central portion of Nassau County, and serve two pulp and paper mills located in Fernandina Beach. Sites of recreational, economic, and cultural significance in the county include the Museum of History on Amelia Island, Fort Clinch State Park, Four Creeks Wildlife Management Area, and the oldest existing lighthouse in the state. Main Beach Park in Fernandina Beach hosts events such as the annual Right Whale Festival and Wild Amelia Nature Festival. Amelia Island is also the only island to have flown under eight different nations, a distinction celebrated each year at the Isle of Eight Flags Shrimp Festival.

NASSAU COUNTY	
Population - 2023	101,501
Population Under 18	19.2%
Population 18 - 64	56.5%
Population 65 and Over	24.3%
Veterans	8,787
Median value of owner-occupied housing units	$351,100
Median household income	$88,900
Total employer establishments	2,217


Clay
St Johns
Flagler
Seminole Generating Station
Putnam County Barge Port
Georgia Pacific
GP
Ravine Gardens State Park
Dunns Creek State Park
Dunns Creek State Park
Georgia Pacific
Putnam County Barge Port
Ravine Gardens State Park
Seminole Generating Station
Hospital
Evacuation Route
Rail
Road
Port
Airport
Park
0
5
10 Miles

Putnam County

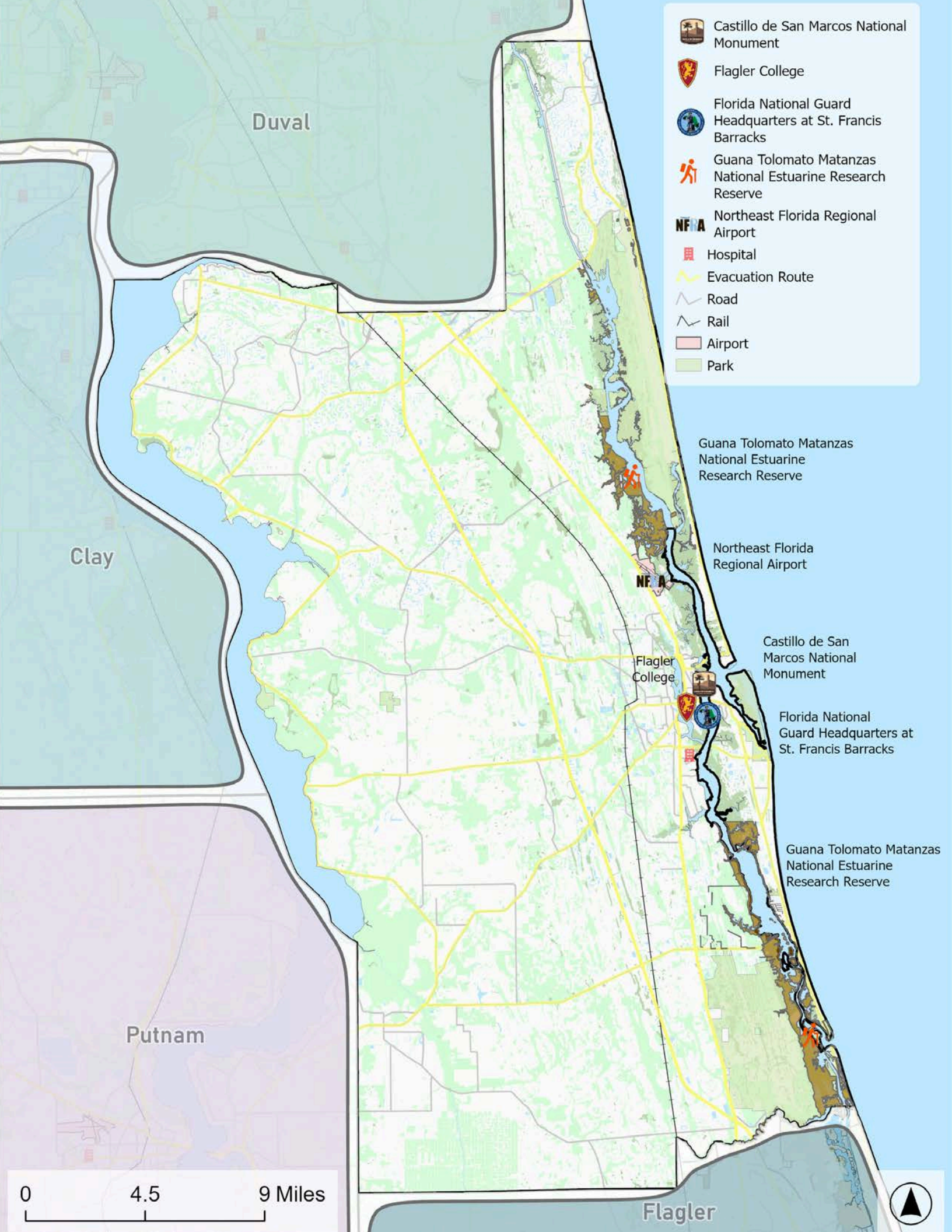
Putnam County is centrally located between Jacksonville, Gainesville, St. Augustine, and Daytona Beach, and covers 722 square miles. The county is home to Palatka, Crescent City, Interlachen, Pomona Park, and Welaka. Palatka is the largest municipality and serves as the county seat. The St. Johns River and its tributaries flow through many of Putnam's communities. The county contains various sinkhole lakes such as Lake Barco and Lake Suggs, where unconsolidated deposits on the surface have slumped into the highly soluble limestone of the upper Floridan aquifer.

Putnam County was created in 1849. The county was named after Benjamin A. Putnam, a lawyer and legislator. Palatka, established in 1821 and chartered in 1853, became a significant transportation hub on the St. Johns River, particularly for steamboat traffic and its connection to the Ocklawaha River. It thrived as a major port and center for lumber, citrus, and tourism, especially in its "golden age" between 1865 and 1895.

Today, Palatka's economy is driven largely by tourism, even being nicknamed the "The Gem of the St. Johns" for its grand hotels. Places of interest include the St. Johns River Center, Bronson-Mulholland House, Welaka National Fish Hatchery and Aquarium, Interlachen Museum, Putnam Historic Museum, David Browning Railroad Museum, Little Blue House Heritage Museum and Art Center, and Mt. Royal Indian Temple Mound. Another draw for tourists is the historic Fort Gates Ferry, which is the oldest in Florida. Downtown Palatka hosts local festivals and events including the Florida Azalea Festival, Blue Crab Festival, and Mug Race. Palatka is also the center point of the Lake Butler to St. Augustine Rails-to-Trails project. The main campus of St. Johns River State College is located in Palatka.

Credit: Discover Florida

PUTNAM COUNTY	
Population - 2023	75,955
Population Under 18	21.1%
Population 18 - 64	54.9%
Population 65 and Over	24.0%
Veterans	6,008
Median value of owner-occupied housing units	$147,300
Median household income	$47,256
Total employer establishments	1,325


Castillo de San Marcos National Monument
Flagler College
Florida National Guard Headquarters at St. Francis Barracks
Guana Tolomato Matanzas National Estuarine Research Reserve
Northeast Florida Regional Airport
Hospital
Evacuation Route
Road
Rail
Airport
Park
Duval
Clay
Putnam
Flagler
Guana Tolomato Matanzas National Estuarine Research Reserve
Northeast Florida Regional Airport
Castillo de San Marcos National Monument
Flagler College
Florida National Guard Headquarters at St. Francis Barracks
Guana Tolomato Matanzas National Estuarine Research Reserve
0
4.5
9 Miles

St. Johns County

Located between Duval and Flagler counties, St. Johns County covers a total of 609 square miles. The county is bordered by the St. Johns River and the Atlantic Ocean. Municipalities within the county include the City of St. Augustine and the City of St. Augustine Beach. The City of St. Augustine has been the county seat since the establishment of St. Johns County.

St. Johns County was founded 1821 and named after a Spanish mission called San Juan del Puerto ("Saint John of the Harbor"). Rich with regional history, St. Augustine is the oldest continuously occupied city in the United States, dating back to 1565. Consequently, St. Johns County hosts several historical landmarks, including the Castillo de San Marcos National Monument, which draws in numerous tourists each year. Other significant sites include Flagler College, Fort Mose, the Old Jail Museum, and the St. Augustine Lighthouse and Maritime Museum.

St. Johns county has a suite of historical, cultural, and natural assets making it ideally positioned to attract visitors and support the tourism industry. Recreational activities and golf courses also help drive the local economy, as well as St. Augustine Beach and downtown St. Augustine. Annually hosted events, such as Nights of Lights, also propel tourism.

RESILIENT
First Coast

ST. JOHNS COUNTY	
Population - 2023	320,110
Population Under 18	21.4%
Population 18 - 64	57.2%
Population 65 and Over	21.4%
Veterans	22,703
Median value of owner-occupied housing units	$457,600
Median household income	$106,169
Total employer establishments	8,295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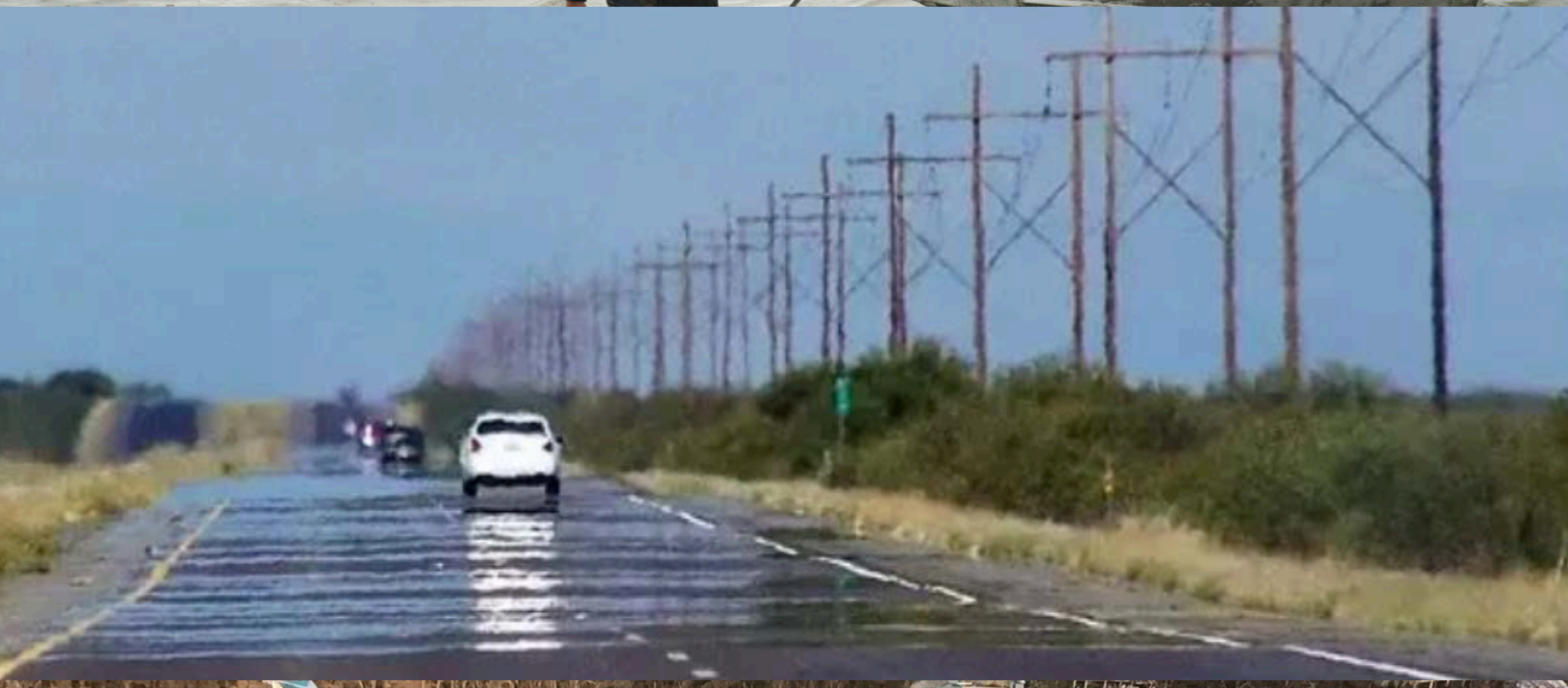


Significant Regional Hazards

The First Coast is facing many challenges due to factors such as climate change and population growth, but three regionally significant hazards stand out above the rest: flooding, heat, and hurricanes.

Flooding

Flooding is a critical issue for Northeast Florida counties because of their proximity to the Atlantic Ocean and St. Johns River. Compound flooding occurs when two or more flood drivers (e.g., tidal surge and heavy rains) occur simultaneously, resulting in more severe and / or frequent flooding. Many areas in Northeast Florida are prone to compound flooding, which can damage assets and adversely impact quality of life for residents. Accordingly, many local governments within Northeast Florida have completed vulnerability assessments to identify areas and assets most at risk from flooding.

Heat

Northeastern Florida also faces challenges due to increasing temperatures. Heat index is one way to assess extreme heat events, and the number of days with a heat index above 90° F is expected to increase from less than 100 to nearly 140 by mid-century. Additionally, the number of days with a heat index above 100° F are projected to increase from less than 20 to more than 60 by mid-century (2). Nighttime temperatures are also increasing, which can exacerbate issues for people with existing conditions and compromise public health. Increased heat may also intensify storms and increase the frequency of severe storms.

Hurricanes

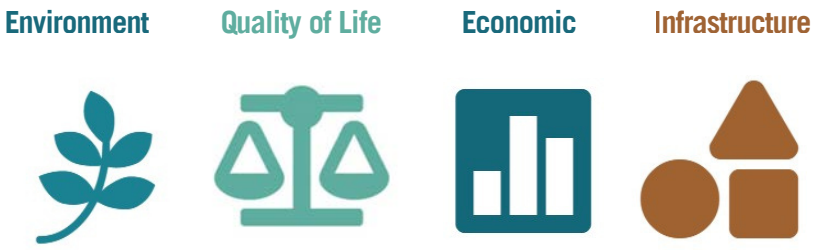
Hurricane tracks do not often travel directly over Northeast Florida. However, there are a few notable exceptions. In 1964, Hurricane Dora made landfall near St. Augustine with winds of 110 mph (175 km/h). The First Coast also experienced impacts from Hurricanes Irma and Matthew, which caused widespread flooding and power outages. However, flash flooding can occur outside of hurricane season, disrupting daily life for residents. Regional resilience will require plans and processes to proactively adapt to rainfall events throughout the year.

Drivers of Vulnerability

- Geographic proximity to water
- Anthropogenic pollution and runoff
- Soil saturation capacity
- Loss of wetlands
- Loss of biodiversity
- Changes in rainfall patterns
- Concentration of septic tanks
- Sensitivity of historical assets
- Power and communication networks
- Information communication practices
- Proliferation of impervious surfaces
- Population growth
- Aging population
- Transient populations
- Cost of flood insurance

DEVELOPING THE REGIONAL RESILIENCE ACTION PLAN

The Northeast Florida Regional Council formed the Resilient First Coast Collaborative in 2022 to create the first ever Regional Resilience Action Plan for Northeast Florida. The purpose of the Collaborative is to bring together people from diverse backgrounds to tackle regional resilience challenges. The Collaborative has over twenty member organizations, a Steering Committee led by a chair and co-chair, four subcommittees, and additional working groups focused on specific projects or outcomes. The Collaborative involved stakeholders throughout Northeast Florida, including Baker, Clay, Duval, Flagler, Nassau, Putnam, and St. Johns Counties. This Collaborative is made up of many partners from multiple sectors, including local government, business, non-profit organizations, academic institutions, state and local agencies, utilities, and the military. Four subcommittees informed the Regional Resilience Action Plan, they each focused on one of the pillars of resilience: environment, quality of life, economic, and infrastructure.



FORMING THE COLLABORATIVE

PHASE 1

Full Collaborative (2022 - 2023)

Members of the Collaborative attended a series of in-person meetings to kick off the development of the RRAP.

Subcommittees (2023)

Four subcommittees were formed, representing each of the four pillars of resilience that had been defined by the collaborative: Environment, Quality of Life, Economic, and Infrastructure.

Goals, Objectives, and Best Practices (2023 - 2024)

Subcommittee members met to define goals and objectives to advance regional resilience. Best practices were developed for each of the four pillars and case studies were identified that exemplified each of these best practices.

Phase 1 Complete (2024)

The RRAP Phase 1 was approved by the steering committee, shared with the Collaborative, and was published online.

RESILIENCE PLANNING

The development of this Regional Resilience Action Plan (Action Plan) was funded by the Florida Department of Environmental Protection's Resilient Florida Program. The Department awarded the Northeast Florida Regional Council funds to create a Regional Resilience Action Plan to address the growing concerns of the region about the effects of flooding and sea level rise on their communities. Additionally, this project was supported by funding provided by the Economic Development Administration via a grant-funded position for disaster recovery and by other organizations via in-kind contributions to address additional broader concerns.

The Regional Resilience Action Plan was developed in two phases. During the first phase, the Collaborative developed goals, objectives, and best practices (3). During the second phase, actions were defined, and narratives were developed for each action, along with potential partners and example metrics. During the next and final phase of the planning process, the Collaborative will develop metrics and will identify funding sources and relevant resources to incorporate into the Plan. During each phase, members of the Steering Committee and members of the four subcommittees provided invaluable insight and information. The creation of the Regional Resilience Action Plan benefited from diverse perspectives from subject matter experts in a range of fields and participants from all over the First Coast.

What made this planning process unique was that it focused on the ways in which regional entities can contribute to regional resilience by empowering local governments to advance their resilience goals. In this way, the RRAP will enable the region as a whole to mitigate and adapt to current and future challenges.

PHASE 2 | PHASE 3

Draft Actions (Winter 2025)

The writing team reviewed all materials from Phase 1 and drafted actions that aligned with the goals, objectives, and best practices that had been developed by the subcommittees. Draft actions were submitted to the steering committee and the subcomittees for review. Actions were refined based on feedback received.

Narratives for Actions (Spring 2025)

Narratives were developed for each of the actions. Narratives described the action as well as the types of shocks and stressors to be addressed by that action. Subactions were also fleshed out at this time. Narratives were reviewed by the steering committee and subcommittees and revised in accordance with feedback provided.

Partners (Summer 2025)

Potential partners who had been identified by the subcommittees were contacted to determine who would be interested in participating in the implementation of the actions outlined in the RRAP.

Metrics, Relevant Resources, and Funding Sources (2025 - 2026)

During the final phase of planning, the Collaborative will develop metrics to measure success for each action, identify relevant resources to aid in the implementation of actions, and will specify potential funding sources to advance resilience goals.

ADAPTATION ACTIONS

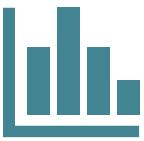
BUILDING RESILIENCE AT A REGIONAL SCALE

The Resilient First Coast *Regional Resilient Action Plan* is organized to ensure that actions at the regional level translate into practical solutions for local governments, businesses, and organizations. The plan outlines actions that can be taken by the Council and its partners in the Collaborative to leverage resources and reduce the lift required to advance regional resilience. The plan provides a framework for cohesive regional collaboration to drive resilient adaptation strategies at the local level. This pioneering thinking defined the three ways in which regional entities can affect change: 1) facilitation - actions that influence regional resilience in ways that could not be easily accomplished by local governments, 2) guidance - actions that provide resources to local governments and organizations throughout the region to inform resilience at the local level, and 3) analysis - actions that generate, report on, and/or synthesize data to inform decision making at the regional and local levels.

FACILITATE

GUIDE

ANALYZE



HOW TO READ AN ACTION

The 34 actions and 83 subactions within Regional Resilience Action Plan are organized by three types of implementation: Facilitate, Guide, and Analyze. Actions have a consistent format. The title of each action describes the work that is proposed to be done by the Collaborative and / or Council. Each action begins with a narrative that describes the challenge(s) being addressed and its significance for regional resilience. Within the narrative for each action and subaction, specific tasks for the Collaborative / Council are proposed to advance regional resilience.

ACTION TITLE

The narrative explains the resilience value of each action and describes the challenge(s) being addressed by that action. The narrative also describes the need for regional action on the topic at hand.

Subaction Title

Most of the actions, but not all, contain subactions. Each subaction describes the specific type of work to be undertaken to by the Collaborative / Council to advance regional resilience. Some subactions contain multiple tasks that the Collaborative / Council can take to improve resilience at the regional and local scale. In some cases, examples are provided to illustrate similar successful programs and projects.

IMPLEMENTATION PARTNERS

Public and private partners that have agreed to collaborate with the Northeast Florida Regional Council are listed by each action for which they have agreed to assist. This is not meant to be a comprehensive list of partners - other partners may join at a later date.

FACILITATE

Working together to stay ahead of the curve on shocks and stressors that influence our region and advocating for regional scale efforts to facilitate resilience in ways that could not be easily accomplished by local governments.

1 CONSERVE AND PROTECT THE REGION'S WATER RESOURCES

Water is fundamental to Northeast Florida's survival and resilience, serving the imperative needs of drinking water supplies, ecosystem health, economic vitality as well as recreational opportunities. The region's unique geography centered around extensive waterways including the St. Johns River system creates both opportunities and challenges for water resource management. The state's foundational statutes and rules, notably 403.067 Florida Statute (F.S.) and 373 F.S., provide the framework to protect and restore these vital water resources through the identification of impaired waters and the subsequent establishment of TMDLs (Total Maximum Daily Loads) and BMAPs (Basin Management Action Plans). Northeast Florida's water resources face increasing pressures from population growth, development, and climate change. This is true for a range of water resources, ranging from our aquifers that supply potable water to coastal marshes that provide natural flood protection. Therefore, regional coordination is essential to ensure sustainable management of these vital resources while addressing emerging challenges such as saltwater intrusion, nutrient pollution, toxic soils, and aging infrastructure.

1.1 Promote practices that improve water quality to protect groundwater and surface waters

Northeast Florida's water quality faces challenges stemming from the region's geology, extensive development, and diverse land uses. Additionally, increasing flooding frequency exacerbates water quality risks by mobilizing accumulated pollutants from urban surfaces, toxic soils, agricultural areas, and aging infrastructure. In 2017, the Regional Community Institute of Northeast Florida led an effort called Water Beyond Borders in partnership with the State of Georgia, resulting in a report identifying three main action items for the St. Marys River: interstate coordination, data and monitoring, and low impact development. The Collaborative will continue to advance these action items, including fostering collaboration.

The St. Johns River Water Management District (SJRWMD) plays a central role in protecting the region's water resources through regulatory oversight, monitoring programs, and educational initiatives. The Collaborative will support SJRWMD's efforts for public awareness and outreach and ensure that local initiatives align with district-wide protection strategies. Likewise, the Collaborative will work with the St. Marys River Management Committee, the St. Marys Riverkeeper, St. Johns Riverkeeper, Matanzas Riverkeeper, and others to protect water resources. The Collaborative will also host training events on state and federal water quality regulations and will share best practices for complying with these regulations.

1.2 Support conversion of septic to sewer by garnering public support and financial support

Aging septic systems represent a significant threat to water quality. Recent assessments of vulnerability demonstrate the extent of septic-related water quality risks throughout the region. The City of St. Augustine completed a comprehensive vulnerability assessment in 2021, which can provide a model for other communities to identify and prioritize conversion efforts based on scientific data. The City of Jacksonville is currently conducting its own septic system vulnerability assessment.

To further augment these efforts, the Collaborative will address the challenge of septic-to-sewer conversion by building public support through distributing information about the benefits of septic-to-sewer conversion and the programs available to help offset costs to residents. The Collaborative will also help identify funding opportunities to offset the costs of conversion for utilities, municipalities, and individual homeowners and will help eligible applicants apply for these funds.

1.3 Support annual reporting of water quality data for transparency and accountability

Transparent water quality reporting builds public trust while enabling informed decision-making. Northeast Florida's diverse stakeholder community, including residents, tourists, agricultural producers, and commercial fishers, all depend on access to reliable water quality information. Furthermore, the region's economic dependence on water-related activities makes accurate, accessible reporting particularly important for maintaining public confidence and supporting tourism and recreation industries. The Collaborative will support reports like the State of the River Report for the Lower St. Johns River Basin for other water resources within the region; this will require coordination with agencies conducting water quality data and may require partnerships with local universities, colleges and non-profit organizations, such as local Riverkeepers. The Collaborative will also encourage the development of ADA compliant, publicly accessible documents that translate technical data into understandable formats for all audiences.

1.4 Encourage regional water supply planning efforts to protect potable water resources

Northeast Florida's water supply plan must account for growing population needs, increasing development pressure, and the compounding impacts of climate change. Water conservation is the most cost-effective and environmentally sustainable approach to meeting future water needs while building resilience to climate impacts.

Additionally, saltwater intrusion poses one of the most significant threats to the region's potable water resources. As sea levels rise and storm surge events intensify, saltwater penetrates further inland through surface waters and underground aquifer systems. The Collaborative will collaborate with water management district staff and local governments to develop a water supply plan that protects potable water resources while meeting regional demands. The Collaborative will encourage the protection of aquifer recharge areas as part of the regional strategy for water conservation.

IMPLEMENTATION PARTNERS

City of Jacksonville / Clay Soil and Water Conservation District / Flagler College Department of Natural Sciences / Florida Fish and Wildlife Conservation Commission / Guana Tolomato Matanzas National Estuarine Research Reserve / Jacksonville University Marine Science Research Institute / Matanzas Riverkeeper / St. Johns Riverkeeper / St. Johns River Water Management District / St. Marys Riverkeeper / St. Marys River Management Committee / University of Florida IFAS Extension Baker County and Duval County

2 ENCOURAGE PREPARDNESS FOR WILDFIRES

Wildfire has the potential to impact all of Northeast Florida. Counties in Northeast Florida have a higher Wildfire Hazard Potential than most other counties in the nation. Duval County has the highest relative risk in the region with a Wildfire Hazard Potential greater than 92.4% of counties in the nation (4). St. Johns County has the lowest relative risk in the region; however, their risk is still greater than 86.2% of counties in the nation (4). Wildfire risk is especially great in the Wildland Urban Interface where development occurs near wooded areas.

Protecting communities in Northeast Florida from wildfire requires a unified regional response to ensure all counties and forestry partners are working towards a shared goal of reducing wildfire risks. Coordination between fire departments, forestry, land managers, and local governments working on fire prevention throughout Northeast Florida will establish a baseline understanding of current practices. Regional coordination may also identify novel strategies to reduce fuel loads and protect structures from wildfires.

Credit: U.S Fish and Wildlife Service Southeast

2.1 Ensure that land managers are using effective and scientific wildfire reduction practices

Wildfire risks can be reduced through consistent land management to reduce fuel loads, like overgrown underbrush and downed trees. Information about best practices for fuel reduction, including prescribed burns and mechanical clearing, is widely available to land managers. Unfortunately, many municipalities in the region lack the capacity to routinely manage public lands to reduce fuel loads, which is why the Collaborative will lead efforts to secure funding for regional wildfire mitigation. Additionally, the Collaborative will share lessons learned and solutions for common concerns with local governments to improve land management. Moreover, facilitating conversations between entities with heavy equipment and trained staff will help leverage existing resources and allow for collaboration between local governments and other partners to maximize fuel reduction.

In addition to the potential for damage to assets and impacts to natural ecosystems, wildfire smoke can also adversely affect air quality and public health throughout the region. Prescribed burns can reduce wildfire risks but can also temporarily impact air quality. The Collaborative will facilitate coordination between those that conduct prescribed burns for land management with environmental professionals that regulate air quality to find compromises, allowing prescribed fires to proceed.

2.2 Support smart building practices and fire-wise landscaping to protect structures

Preparing structures to withstand fire is crucial for protecting infrastructure, especially within the Wildland Urban Interface. Structures can be made more resilient by using fire-resistant building materials and by making sure that landscaping is properly designed and maintained to minimize combustible materials. For example, La Plata County, Colorado successfully reached an agreement with a local developer that requires each newly built cabin to maintain vegetation consistent with the Wildfire Mitigation and Evacuation Plan, and also requires the use of fire-resistant building materials. To help reduce wildfire risks in Northeast Florida, the Collaborative will disseminate information on fire-resistant building practices, landscaping to mitigate wildfire risks, and other fire-wise practices.

2.3 Increase regional collaboration to improve fire response and preparedness

Local governments often have intergovernmental agreements in place for emergency response, including agreements to respond collaboratively to fires. These agreements are part of the local governments' preparedness plans to ensure a quick and efficient response when fires break out. The Collaborative will investigate interagency agreements between firefighting entities in Northeast Florida and will determine if there are any potential gaps where such agreements are not currently in place. Where partnerships do not exist, the Collaborative will facilitate coordination between local governments and other firefighting entities to establish interagency agreements for fire response.

IMPLEMENTATION PARTNERS

Baker County Sheriff's Office Division of Emergency Management / City of Jacksonville Emergency Preparedness Division / Clay County Division of Emergency Management / Flagler County Emergency Management Office / Florida Fish and Wildlife Conservation Commission / Nassau County Emergency Management Division / Putnam County Emergency Management Division / St. Johns River Water Management District / St. Johns County Emergency Management Department / University of Florida IFAS Extension Baker County

3 MAINTAIN HEALTHY AIR QUALITY AND REDUCE GREENHOUSE EMISSONS

Northeast Florida's environmental resilience depends on its air quality. Air quality directly impacts the public health of all residents in Northeast Florida. Coordination is essential to promote activities that improve air quality throughout the region.

3.1 Promote activities that will improve air quality

Air quality has a direct correlation with quality of life, and those in vulnerable populations are at an elevated risk for respiratory illness when exposed to low air quality. The Collaborative will facilitate meetings between environmental professionals responsible for air quality across the region to identify key issues and develop solutions, aligning with the Clean Air Northeast Florida Regional Priority Climate Action Plan (PCAP), 2023. Smoke can be particularly harmful for residents, with wildfires causing extreme impacts on public health. The Collaborative will work with local governments to reduce wildfire risks and manage air quality during prescribed burns.

3.2 Promote activities that reduce greenhouse gas emissions

The Council is part of the Clean Air Northeast Florida (CANF) program, which aims to reduce greenhouse gas emissions and improve air quality across Duval, Clay, St. Johns, and Nassau counties. The key components of this program include developing a regional climate action plan, fostering workforce development in green jobs, and supporting communities and sectors who could benefit from air quality improvements. Moving forward, the Collaborative will explore options to expand workforce development for jobs that reduce greenhouse gas emissions, as was done by the New York State Energy Research and Development Authority, in their Clean Energy Workforce Development program to prepare the workforce for clean energy job opportunities.

Additionally, the Collaborative will seek to connect local governments in our region with those elsewhere that have successfully implemented programs to reduce greenhouse gas emissions, like Orlando's "Green Works Orlando" initiative, which aims to make the city more sustainable through energy efficiency, green building practices, and conservation efforts.

IMPLEMENTATION PARTNERS

Conserve Nassau / Jacksonville Environmental Protection Board

4 PROMOTE SUPPLY OF NATIVE PLANTS FOR LANDSCAPING, RESTORATION, AND REFORESTATION

Plants that are native to Northeast Florida are adapted to local conditions and provide unique benefits. For example, native oak trees provide food and habitat for thousands of animals. Using Florida native plants in local landscapes helps to conserve water resources that would otherwise be needed for intensive irrigation of non-native plants. Landscaped areas with native plants typically require less maintenance than those planted with non-native species, reducing the use of pesticides and fertilizers. In addition to landscaping, the restoration and reforestation of native habitats also requires native plants.

Unfortunately, many native plants are not commercially available. Regional coordination is needed to ensure a steady supply of native plants in Northeast Florida. Public engagement is needed to shift consumer behavior and drive demand for native plants. The more educated the public is about the many benefits of native plants, the more likely they will be to use native plants in their own landscaping and to support public projects with native landscaping. Ensuring that nurseries and commercial suppliers are carrying a supply of native plants and trees will ensure that consumers from across the region have expanded access to native species.

4.1 Collaborate with wholesale growers and local retail nurseries to source diverse native trees

Many native tree species are not commercially available, which prevents them from being used for landscaping, ecological restoration, and reforestation. For instance, there are several varieties of trees that have been approved for planting for Jacksonville's public works projects but cannot be procured across the region. These include hawthorne, spruce pine, bluff oak, hickory, persimmon, catalpa, sugarberry, sourwood, ogeechee tupelo, sand post oak, Chapman oak, bluejack oak, Florida yew, sand pine, and turkey oak, and Ashe magnolia.

The Collaborative will ensure that local governments are aware of the Florida Association of Native Nurseries (FANN) and that they know how to navigate the FANN website to find native trees available at local nurseries. The Collaborative will also work with local wholesale growers and retail nurseries and encourage them to provide a wide range of native trees. To this end, the Collaborative will coordinate with local governments to develop a comprehensive list of tree species to be used for public projects. Planting a variety of native trees will increase biodiversity, which promotes resilience.

4.2 Explore feasibility of establishing a regional nursery of native plants

To address the scarcity of native plants and avoid reliance on local nurseries for supply, the Collaborative could help local governments evaluate the feasibility of establishing a regional nursery. A regional nursery would increase the number and type of native plants available for municipal projects and may also reduce the cost of acquiring plants for these projects. The Collaborative will work with local governments to identify potentially suitable sites that could be used as nurseries. To ensure nurseries are properly staffed and that plants are raised under the correct conditions to maximize their survival and growth, the Collaborative could coordinate with local governments and local colleges to explore the development of training and / or apprenticeship programs.

IMPLEMENTATION PARTNERS

Audubon Florida / Conserve Nassau / First Coast Invasive Working Group / Florida Association of Native Nurseries / Florida Department of Transportation / Florida Fish and Wildlife Conservation Commission / Florida Institute for Built Environment Resilience / Ixia Chapter of the Florida Native Plant Society / Native Plant Horticulture Foundation / University of Florida IFAS Extension Baker County / Urban Land Institute North Florida /

5 PROMOTE THE CONSERVATION AND RESTORATION OF ECOLOGICALLY SIGNIFICANT NATURAL ECOSYSTEMS

Northeast Florida is home to many vibrant natural areas, including pine forests, hardwood hammocks, salt marshes, and oyster reefs. These natural areas support local wildlife, including threatened and endangered species, like the bald eagle, manatee, and gopher tortoise. In addition to providing habitat, natural ecosystems provide a wide range of ecological benefits and improve regional resilience. Large natural areas covered by trees can help alleviate the urban heat island effect (i.e., increased temperatures in more developed urban areas relative to less developed rural areas). Wetlands and other natural areas also store and treat stormwater that could otherwise contribute to flooding and runoff-related pollution. Protecting natural areas improves quality of life for residents and preserves vital ecosystem services. By tackling conservation and restoration from a regional perspective, the Collaborative will assist local governments in prioritizing projects, maximizing the benefits of conservation and restoration efforts in Northeast Florida.

5.1 Support efforts to conserve and restore estuarine and freshwater wetlands

Wetlands are critically important for water storage. For instance, during heavy rainfall events, one acre of wetlands can store 1.5 million gallons of floodwater (5). Wetlands also improve water quality and provide habitat for native wildlife. Coastal wetlands, like salt marshes and mangroves, can also help protect shorelines from erosion. It is estimated that wetlands provide $23 billion dollars in coastal protection services annually (5). The regulatory framework of the state, particularly 373 F.S. (Environmental Resource Permitting) governs activities that impact wetlands and other surface waters, including dredging, filling and stormwater management systems. Unfortunately, wetlands are being lost and degraded in Florida and globally.

Preserving wetlands ensures the continued provision of valuable ecosystem services. Restoration of wetlands can reestablish functions that have been lost due to habitat degradation. The Collaborative will support the conservation and restoration of wetlands by facilitating discussions between wetland ecologists, hydrologists, land managers, and decision makers. Improved coordination will provide insights into restoration opportunities, such as identifying potential restoration sites, exploring novel techniques, and helping to prioritize conservation projects.

The Collaborative will also connect local governments in our region with other municipalities that have successfully preserved wetlands, such as Orlando. Likewise, the Collaborative can connect restoration practitioners in our region with those involved in successful restoration projects elsewhere, like the Bolsa Chica Wetland Restoration Project in California.

5.2 Encourage biodiversity by protecting native ecosystems and planting native species

Redundancy improves resilience, which is why having a wide range of species (i.e., biodiversity) makes natural ecosystems more resilient to disturbances, such as hurricanes and diseases. Preserving native biodiversity requires strategic land management, such as removal of invasive plants and implementation of prescribed burns. Where native plant communities have been disturbed, planting native species can help restore ecosystem services by improving water conservation and providing habitat for local wildlife.

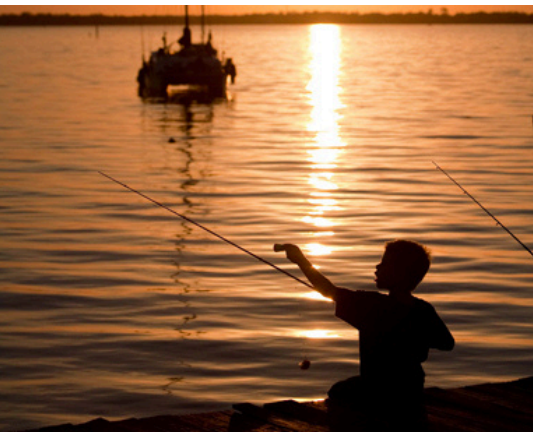
The Collaborative will facilitate the protection of native ecosystems by working with the First Coast Invasive Working Group to provide training on invasive plant species and by discouraging the sale of invasive plants across the region. Moreover, the Collaborative will work with the Native Plant Society to educate local governments and the public about the importance of protecting and planting native plants.

Decision-makers will be more likely to promote the protection of native ecosystems if they are aware of the valuable services and benefits these ecosystems provide. Therefore, the Collaborative will lead efforts to inform decision-makers about the economic benefits provided by natural ecosystems and will encourage the development of policies that protect natural areas and native species.

5.3 Support national, state, and local parks and nature preserves

Nature preserves and parks are valuable community resources, providing public access to natural ecosystems and valuable recreational opportunities. Parks and nature preserves improve property values and promote tourism. These spaces also improve quality of life for residents, enabling physical activity and encouraging mental wellbeing. Previously, the Council provided support in convening local professionals for an Ecotourism and Trails Steering Committee to share information about regional trail work, share information about funding opportunities, and identify gaps in any trail work that the Council could support. Additionally, the Council secured assistance from the National Park Service's Rivers Trails and Conservation Assistance Program for work on three different projects across the region, which are currently underway.



Moving forward, the Collaborative will support national, state, and local parks by expanding the reach of non-profit organizations that promote the parks, such as the Timucuan Parks Foundation. The Collaborative will advocate for the preservation of existing nature preserves and encourage the creation of new nature preserves.

Moreover, the Collaborative will advocate for the protection and acquisition of properties that are needed to connect parks and preservation areas throughout the region. In this way, the Collaborative will support public lands that provide vital resilience functions.

5.4 Promote health of marine and estuarine ecosystems that support fisheries

Marine and estuarine ecosystems are the backbone of Northeast Florida both geographically and culturally, which is why these systems are protected at the state and federal level, e.g., Environmental Resource Permitting (373 F.S.) and Section 404 of the Clean Water Act. However, marine and estuarine ecosystems are being impacted by a range of stressors, including nutrient runoff and shoreline hardening. Regional collaboration is needed to address these impacts and protect valuable marine and estuarine resources.

Commercial and recreational fisheries are economically important and support local businesses. The Collaborative will support fisheries by promoting the health of marine and estuarine ecosystems through education and outreach. Educational campaigns sponsored by the Collaborative will help residents understand the consequences of personal pollution and help prevent trash and pollutants from entering important habitats, including the ocean, rivers, and tributaries. The Collaborative will also provide educational seminars and conduct community outreach on the importance of estuarine habitats that support fisheries, like salt marshes and oyster reefs. The Collaborative will continue to work with the South Atlantic Salt Marsh Initiative to identify coastal areas throughout the region that are critical for the landward migration of salt marshes and will work with local governments to preserve and protect these areas, which will provide habitat for commercially and recreationally important fisheries in the future.

5.5 Support efforts to protect and restore beaches and dunes

Beaches draw many visitors to Northeast Florida, supporting the tourism that drives northeast Florida's economy. Beaches and sand dunes provide protection for beachfront properties, reducing the impacts of coastal erosion and storm surge. Dune plants stabilize the sand and provide habitat for wildlife. The Collaborative will help protect beaches and dunes by educating decision makers and members of the public about their ecological and economic significance.
The Collaborative will also support beach and dune restoration by bringing together regional experts to discuss upcoming projects, share innovative ideas, and identify funding opportunities.

IMPLEMENTATION PARTNERS

City of Jacksonville / Conserve Nassau / Groundwork Jacksonville / Florida Fish and Wildlife Conservation Commission / Guana Tolomato Matanzas National Estuarine Research Reserve / Jacksonville University Marine Science Research Institute / Matanzas Riverkeeper / Nassau County Conservation Land Aquisition and Management / North Florida Land Trust / St. Johns County Land Acquisition Management Program / St. Johns Riverkeeper / St. Marys Riverkeeper / Timucaun Park Foundation / Trust for Public Land / University of Florida - Whitney Laboratory / University of Florida IFAS Extension Baker, Clay and Duval Counties / Urban Land Institute North Florida / Waterfront Alliance & WEDG® (Waterfront Edge Design Guidelines)

6 SUPPORT RESILIENT UTILITIES

Given Northeast Florida's unique vulnerability to a wide range of natural disasters and severe weather events, maintaining a resilient utility system is critical to all communities in our region. When utility systems — such as potable water, wastewater, and electricity — are crippled due to an extreme event, economic stability and public safety are jeopardized. To ensure resilience of utilities amidst a variety of shocks and stressors, a regional strategy is needed to encourage diverse energy sources, facilitate conversations between utility providers, and support improvements to capacity in anticipation of future population growth. Together these activities will support resilient utilities, benefiting all communities within Northeast Florida.

6.1 Encourage diversification of the energy grid

Relying upon only a few types of energy sources increases susceptibility to power failure relative to a diversified energy grid system. The Collaborative will ensure resilient utilities by encouraging the use of a wide variety of power sources, such as natural gas, solar, wind, and others. The Collaborative will also engage with utility providers and share the importance of diversification of the energy grid for resilience. Additionally, the Collaborative can facilitate conversations between local governments and utility suppliers with those in other regions that have successfully diversified their utilities and who have implemented other measures to increase resilience. For example, moving power lines underground and / or proactive tree trimming near above ground power lines can help keep the power flowing.

During major storms or grid-wide failures, decentralized systems (like microgrids and community-scale solar-plus-storage) can keep essential services powered (hospitals, shelters, emergency hubs). These systems add redundancy to the grid and ensure that in the case of a natural disaster or system failure, essential services remain operational across the entire region, not just in certain jurisdictions. The Collaborative will promote the development of microgrids for critical infrastructure (e.g., water treatment facilities and emergency shelters) in coordination with utilities and local governments.

IMPLEMENTATION PARTNERS

TBD

6.2 Facilitate collaboration between local utility providers to promote resilient measures

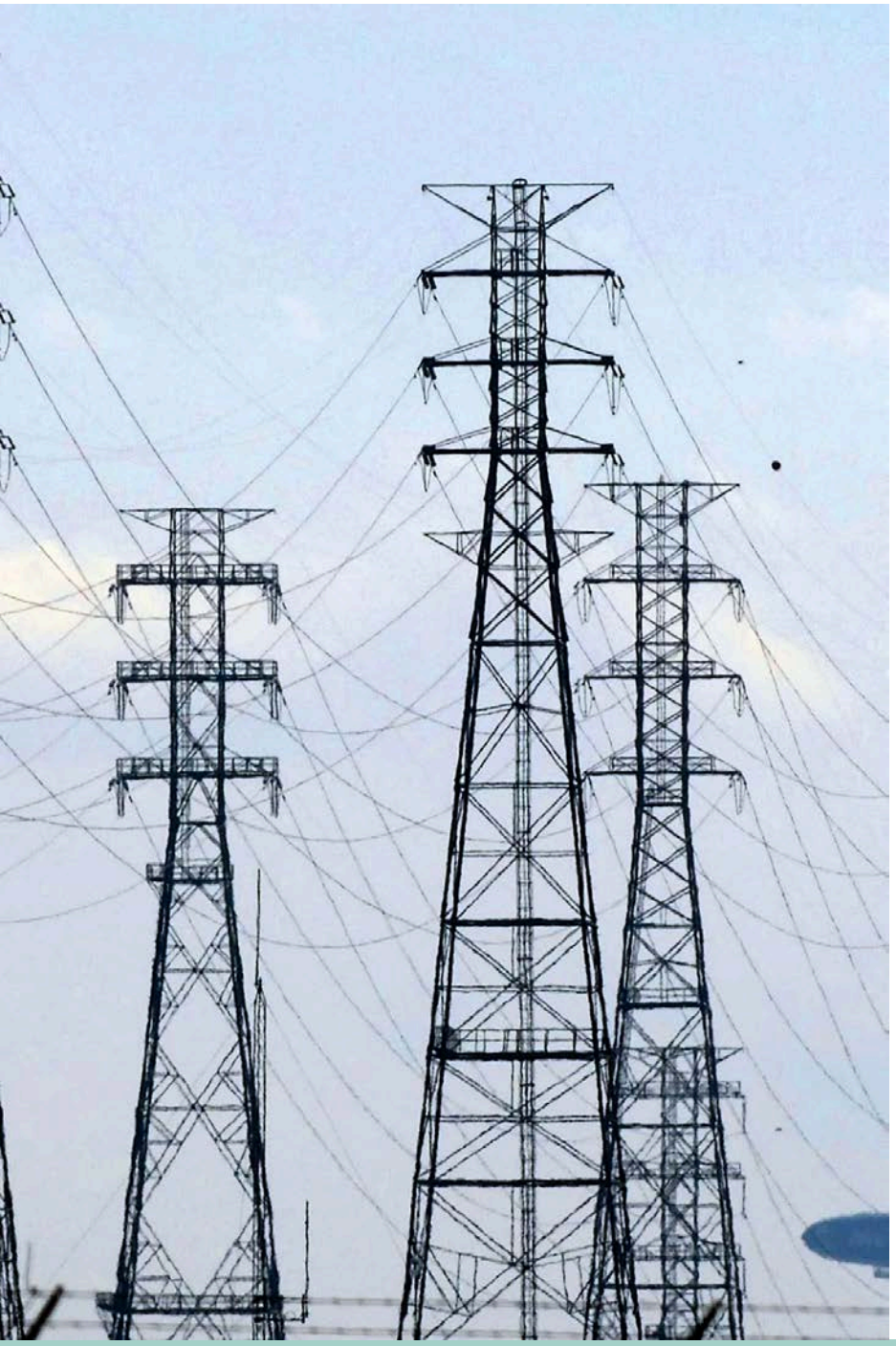
The Collaborative will promote resilience by facilitating conversations between utility providers. Discussions will focus on lessons learned from past utility disruptions and how to avoid disruptions in the future. For example, JEA can share how they have improved their grid to localize power outages and how they monitor their grid to quickly respond to power outages. The Collaborative will facilitate partnerships between utility providers and public institutions, like the one JEA has with the University of North Florida, to explore opportunities to increase resilience. The Collaborative will also facilitate conversations between utility providers and local governments to promote open communication regarding the provision of services during various types of disturbances, such as heat waves, freeze events, and severe storms.

6.3 Support capacity improvements to accommodate continued population growth

Northeast Florida is experiencing rapid growth, and utility suppliers will need to increase capacity to accommodate new consumers. The Collaborative will facilitate capacity improvements by helping utility suppliers understand population growth and development trends across the region. Utility suppliers will be able to use this information to target improvements in areas that are experiencing the most rapid growth, focusing capacity where it is needed most. The Collaborative can also encourage local utility providers to continue their efforts to promote conservation of energy and water resources to reduce demand. Additionally, the Collaborative will ensure that utility planning is coordinated with local governments' comprehensive plans.

7 SUPPORT RESILIENT TECHNOLOGY AND DIGITAL COMMUNICATIONS NETWORKS

In an increasingly digital world, Northeast Florida's resilience depends significantly on robust technology infrastructure and reliable communication networks. From emergency response coordination to everyday business operations, these systems are vital lifelines connecting our communities. When storms, cyber-attacks, or other disruptions threaten these networks, the region's ability to respond and recover is directly impacted. Regional coordination is essential to ensure reliable digital connectivity throughout Northeast Florida, with a particular focus on cybersecurity and affordable access to broadband services.



7.1 Encourage local governments to actively address cyber security risks

As digital systems become more integrated into critical infrastructure, the threat of cyberattacks represents a growing vulnerability for the Northeast Florida communities. These attacks pose a significant risk to various public infrastructure such as water production, wastewater treatment utilities, as well as the electrical grid. Disruptions to these systems could lead to severe public health crises, environmental damage, and widespread societal and economic impact. The Collaborative will stay abreast of online training events to improve cybersecurity and will share information about these trainings with local governments. The Collaborative will also encourage coordination between local, state, and federal agencies on cybersecurity matters.

7.2 Support expanded access to broadband internet

Affordable and continued digital access is fundamental to community resilience, ensuring all residents can access vital information and services during both normal operations and emergencies. While almost all of Duval County has broadband access, significant gaps remain across the other counties in the region, for instance western Nassau County and other rural areas. The Collaborative will coordinate with local governments to leverage state and federal funding opportunities to support the expansion of broadband statewide. The Collaborative will support raising awareness about affordability programs that provide discounted internet rates such as Supplemental Nutrition Assistance Program (SNAP) eligible households, addressing the digital divide in low-income communities.

IMPLEMENTATION PARTNERS

Clay County Department of Information Services

8 SUPPORT REGIONAL TRANSPORTATION NETWORKS

Resilient regional transportation networks are essential for daily commuters and are critical for evacuation during hazardous events, such as hurricanes and wildfires. Transportation networks are also vital for a thriving regional economy and residents' quality of life. Since transportation corridors extend beyond municipal boundaries, collaboration at the regional level is required to make substantial progress on resilience. Regional coordination is needed to encourage investment in regionally significant modes of transit and to support improvements to regionally significant transportation assets.

8.1 Collaborate with local governments to ensure safe and sufficient evacuation routes

Evacuation routes are critical infrastructure and serve an important role in protecting residents from hazardous conditions, such as storm surge. A resilient First Coast requires that residents have access to safe evacuation routes. The Collaborative will facilitate coordination between local governments to ensure that evacuation routes are clearly defined and well delineated on regional maps. The Collaborative will work with local governments to ensure that roads along evacuation routes are properly maintained, and that evacuation routes are improved to reflect growing populations in multiple areas across the region. In addition, the Collaborative will aim to explore the diversification of swift and efficient evacuation methods that incorporate a variety of transportation options. In each of these efforts, the Collaborative will take a proactive approach to facilitating counties in their coordinated efforts to offer reliable evacuation services.

8.2 Support improvements to existing regionally significant transportation assets

Improvements to existing infrastructure will be needed for transportation networks in Northeast Florida to remain resilient, allowing for the safe and efficient transport of people and goods into and out of the region. Resilient transportation networks must be designed for future conditions—not just today's needs. Incorporating data on sea level rise, flood zones, wildfire risk, and extreme heat projections can help ensure infrastructure investments are durable and cost-effective long-term. The Collaborative will ensure that local governments have access to these data and encourage them to use it for transportation improvement projects. Critical facilities such as JaxPort and Jacksonville International Airport will require continued investment in order to serve the region resiliently in the future. Likewise, railroads also provide essential services for the region. The Collaborative will coordinate with public and private partners to support improvements to and investment in existing transit systems, thereby promoting resilient transportation and protecting essential services.

8.3 Encourage investment in regionally significant transit

As populations continue to grow in Northeast Florida, there will be a need for additional transportation infrastructure and a diversification of transportation modes. Individual counties alone cannot advance regional transit innovations; however, the Collaborative can advocate for regional scale improvements. The Collaborative will support resilient transit by encouraging public and private investment in new modes of transportation, including but not limited to high-speed rail (such as the Brightline in southeast Florida that connects Miami, Fort Lauderdale, and West Palm Beach). Encouraging the expansion of regionally significant transit, such as adding new Amtrak routes, is another way the Collaborative will promote resilient transportation.

IMPLEMENTATION PARTNERS

Flagler County Emergency Management Office / Florida Department of Transportation / Florida Institute for Built Environment Resilience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9 SUPPORT REGIONAL SUPPLY CHAINS AND PROVIDE LOGISTICAL SUPPORT FOR COMMERCE

Resilient communities require reliable supply chains. When supply chains fail (due to extreme weather, global pandemics, or other causes), residents and businesses do not receive essential supplies, disrupting the economy and reducing quality of life for residents. By proactively supporting regional supply chains and providing logistical support for commerce, the Collaborative will promote emergency preparedness and improve regional resilience.

9.1 Encourage critical service entities to maintain reserves of vital resources

Critical service entities, such as hospitals and utility providers, must maintain adequate reserves of vital resources to ensure continuity of services if supply chains are disrupted. For example, hospitals should stock generators to prepare for power outages so that they can continue to provide essential services during extreme weather events. Likewise, utility providers should stock extra transformers and other equipment needed to restore power after a hurricane. The Collaborative will encourage critical service entities to store extra resources that are vital to their mission so that services can be maintained during a supply chain failure.

9.2 Encourage commerce into and out of the region by building and maintaining partnerships with distributors

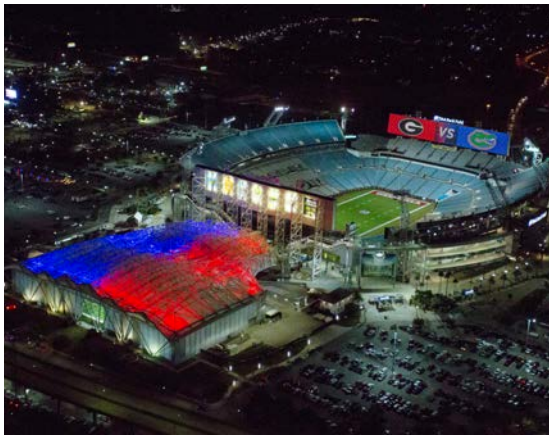
The strength of our regional economy depends upon distributors, who provide goods from all over the world to Northeast Florida and send goods from Northeast Florida worldwide. The Collaborative will support commerce by building and maintaining professional relationships with distributors that work in our region. The Collaborative will also encourage distributors to do business with small and emerging businesses in Northeast Florida.

IMPLEMENTATION PARTNERS

Nassau County Chamber of Commerce / Putnam County Chamber of Commerce / St. Johns County Chamber of Commerce

10 ENCOURAGE REGIONAL EVENTS

Regional events promote community cohesion, which has been demonstrated to increase resilience. Northeast Florida already hosts a large number of events each year, but there is ample opportunity to expand the number and types of events that are held in the region. The Collaborative will encourage existing and new regional events in Northeast Florida.



10.1 Promote events that facilitate social cohesion and cultural exchange

Fostering a sense of connection among members of the community is a critical part of increasing city and county resilience. By promoting opportunities for social cohesion and exchange, such as festivals, heritage events, and cultural celebrations, a shared sense of identity and responsibility can be created. Over the years, the Council has promoted and/or participated in many events, including the A1A Super Scenic Garage Sale and other regional initiatives that bring communities together. The Collaborative will promote regional events and encourage public participation using their professional connections, social media presence, and website. For example, the Collaborative can promote events such as regional fairs, the Florida-Georgia football game, golf tournaments at The Players Club Sawgrass, and others. Likewise, the Collaborative can promote regional entertainment events, such as those hosted at the St. Augustine Amphitheatre.

The Collaborative can also seek guidance on hosting regional events from cities such as Miami, who hosts the Art Basel Miami Beach show and the Calle Ocho Music Festival, as part of their efforts to celebrate the area's diverse heritage by showcasing local artists and performers.

10.2 Support educational events to inform residents about regional resilience work and steps they can take to become more resilient

Involving the public in community decisions allows for a feeling of shared responsibility and mutual investment, and public education is a vital part of that involvement. Familiarizing members of the community with the concept of resilience, educating them on specific resilience work being done at the city and county level, and how they can contribute to increasing the resilience of their community is essential for public buy-in. The Council conducts public engagement across various regional planning initiatives, including comprehensive vulnerability assessments, adaptation plans, Military Installation Readiness Review, and others to ensure meaningful community input and broader outreach. The Collaborative will further work with resilience professionals to increase their participation in regional events to spread awareness of and appreciation for resilience work. An upcoming opportunity could be the East Central Florida Regional Resilience Collaborative, which the Council is planning to host in the next year. At these events, professionals in the field of resilience can help people understand steps that they can take to become more resilient.

By providing opportunities for community members to gain insight into resilience at regional events, the Collaborative will increase public engagement, hopefully inspiring members of the community to advocate for and assist with resilience projects in their community.

10.3 Facilitate partnerships to bring new national events to the region

National events such as competitions, festivals, concerts, and conferences bring people to our communities, contributing to our local culture and boosting our economy. Partnerships are key to executing successful large-scale events. Partners are needed to provide sizable venues, schedule entertainment, arrange for concessions and vendors, and garner public participation. Moving forward, the Collaborative will work with local governments to identify suitable sites for different types of national events. The Collaborative will reach out to agencies and entities that host these types of events and will encourage them to consider holding their future events in Northeast Florida.

IMPLEMENTATION PARTNERS
Amelia Island Convention & Visitors Bureau / Clay County Tourism Department / Duval County Tourist Development Council / Flagler County Emergency Management Office / Putnam County Tourist Development Council

11 IMPROVE NORTHEAST FLORIDA FLOOD AND HOMEOWNERS' INSURANCE MARKETS

Currently, the state of Florida faces significant challenges in its insurance market, particularly for flood and homeowners' coverage. The region is experiencing limited insurance providers, rising premiums, and cautious insurers who are hesitant about writing new policies, especially in high-risk areas and for older homes.

The National Flood Insurance Program (NFIP), administered by FEMA, is the primary provider of flood insurance in the U.S. Communities in Northeast Florida must participate in the NFIP by enforcing floodplain management standards for their residents to be eligible for NFIP coverage. Many areas in Northeast Florida, particularly those near the coast and rivers, are designated as Special Flood Hazard Areas (SFHAs) by FEMA. Only a few private flood insurance companies offer alternatives to NFIP policies.

The cost of flood and homeowner's insurance is an issue of national concern, and state legislation in Florida is exploring options to mitigate costs and increase accessibility for homeowners across the state. The Collaborative will strive to serve as a collective voice on behalf of the counties in state and federal conversations about insurance. The Collaborative will aim to improve the stability and affordability of flood and homeowner's insurance in Northeast Florida by improving community resilience and fostering a better understanding between local governments and the insurance industry.

11.1 Assist local governments throughout Northeast Florida in maintaining and improving participation in FEMA's Community Rating System program

The Community Rating System (CRS) is a voluntary FEMA program that provides incentives for communities that exceed minimum floodplain management requirements of the NFIP. Communities in the CRS receive flood insurance premium discounts ranging from 5% to 45% based on their classification, Class 9 to 1.

Currently, the Council hosts the Northeast Florida CRS Users Group meeting several times a year with Community Rating System representatives. These virtual meetings equip communities with new information through presentations from subject matter experts. They also provide a forum for CRS coordinators across the region to share updates on their CRS activities and seek guidance from each other. Further, these efforts are in alignment with the federal regulations outlined in 44 CFR 59-78, which detail the foundational requirements for NFIP participation and the criteria for the CRS.

IMPLEMENTATION PARTNERS

Flood Mitigation Industry Association / Conserve Nassau / Flagler County Emergency Management Office / Florida Floodplain Managers Association / Florida Institute for Built Environment Resilience / NOAA Office for Coastal Management / Northeast Florida Community Rating System Users Group

The Collaborative will strengthen the existing Northeast Florida Users Group by facilitating meetings to identify specific challenges that have prevented counties from maintaining or advancing the CRS class rating and to discuss specific actions local governments can take to maintain or improve their rating. In this way, the Collaborative will ensure that local governments within the Northeast Florida region have consistently high participation in the CRS program and are consistently managing their flood risks, which will reflect well on the region as a whole.

11.2 Facilitate discussions with insurance industry to showcase effective risk reduction measures being implemented in Northeast Florida

Communication gaps between local risk reduction efforts and insurance industry assessments prevent communities from receiving appropriate credits for resilience investments. The Collaborative will host meetings or workshops bringing together representatives from the insurance industry and local government. With these meetings, the Collaborative will bridge the gap between the risk reduction efforts undertaken in Northeast Florida and the insurance industry's assessment of those risks, potentially leading to more favorable insurance rates and increased market competition.

12 FOSTER PUBLIC ENGAGEMENT ON RESILIENCE

The success of regional resilience efforts relies on public support, which can only be garnered through meaningful engagement and outreach. Many people are not aware of the work being done at the local, regional, state, and federal levels to improve resilience to shocks and stressors like flooding caused by storm surges and sea-level rise. It is of foremost importance to educate the public about the meaning of resilience and its importance in their daily lives. Educating the public about the risks and opportunities for different types of infrastructure will also help them understand the work being done in the field of resilience. It is also necessary to provide a forum for public comment about resilience, including current constraints and opportunities. By fostering public engagement on resilience, the Collaborative will strengthen resilience efforts throughout the region.

12.1 Support community engagement by creating content for people of all backgrounds, ages, and abilities

People from different generations and walks of life connect with different content, which is why content must be carefully crafted for various audiences. For example, the type of information that will speak to environmental professionals is very different than the type of information that will capture the attention of people with no prior exposure to resilience topics. Resilience should be discussed using plain language without jargon and include illustrative examples. Materials should also be made available in multiple languages, including Spanish. Materials should also be made accessible using information graphics that will resonate with individuals regardless of their literacy level. To advance regional understanding of resilience, the Collaborative will develop a wide range of educational content that will target different sectors, ages, and abilities.

For example, the Council is working on a project with the South Atlantic Salt Marsh Initiative to develop materials that will help a broad audience understand the importance of salt marsh ecosystems and how they are likely to migrate over time to keep pace with sea level rise.

12.2 Promote resilience using a variety of communication methods to reach a broad audience

People have different preferred modes of learning; some prefer to listen, while others prefer to read. Some prefer to get information from social media, while others are more apt to pay attention to a flyer posted in a public space. The Collaborative will use a wide range of communication techniques to reach a broad audience and foster public engagement on resilience. Some means and modes of communication will include the use of traditional media (radio and television), social media, and websites.

Paper flyers and handouts may also be used to reach those without access to the internet. Hosting informational exhibits at regional events will be another way for the Collaborative to reach a broad audience. Additionally, the Collaborative should work with community leaders to reach a diverse audience (i.e., trusted messenger delivery). The Collaborative will also encourage local governments to invest in informational signage in public spaces to educate people about the work being done to increase resilience region-wide.

IMPLEMENTATION PARTNERS

Blue Zones Project Jacksonville / Conserve Nassau / Flagler County Emergency Management Office / Florida Institute for Built Environment Resilience / Groundwork Jacksonville / Guana Tolomato Matanzas National Estuarine Research Reserve / Jacksonville University Marine Science Research Institute / NOAA Office for Coastal Management / Northeast Florida Community Rating System Users Group / University of Florida - Whitney Laboratory

13 FACILITATE PARTNERSHIPS TO ADVANCE RESILIENCE WORK

Partnerships are paramount for building regional resilience. Bringing together people from the public and private sectors, community partners, and governmental agencies will be necessary to advance resilience goals. Collaborating with people who have diverse perspectives and different fields of expertise can help identify fresh ideas and novel solutions for problems, such as sea level rise and flooding. The Collaborative has the ability to facilitate partnerships and inspire cross-disciplinary collaboration needed to advance resilience goals.

13.1 Advance public-private partnerships to leverage expertise and funding

Collaboration between public and private sectors can create novel opportunities that could not be created by either the public or private sector operating alone. Often, municipalities have needs for goods and services they are unable to procure due to funding limitations and / or restrictive procurement processes. The private sector has more flexibility when it comes to procurement and often has more financial freedom to invest in novel projects. In this way, the private sector can pick up where the public sector leaves off. Previously, the Council has facilitated such partnerships, including the Public/Private Regional Resiliency (P2R2), which aimed to address the impacts of sea level rise and develop a regional strategy to incentivize population and private development to locate outside of vulnerable areas.

The current inclusion of the public sector in the Resilient First Coast Collaborative continues this tradition of meaningful public-private engagement. Moving forward, the Collaborative will continue to work with local governments, private institutions, and industries to advance resilience goals and ensure that both public and private sectors benefit from collaboration on resilience projects. For example, the Collaborative can learn from work done in Ft. Lauderdale where city employees worked with local developers, public agencies at the county and state level, private businesses, and neighbors to build greenways, parks and neighborhood green spaces.

13.2 Promote community partnerships to advance ideas and projects

Coordination between local governments and community organizations is necessary to advance resilience initiatives that require public support. Community organizations have close ties with local neighborhood leaders and know how to garner support from the public. Community leaders facilitate grassroot efforts to raise support for resilience projects in ways that the public and private sector cannot.

Community organizations are also vitally important for ensuring that the ideas of people in their neighborhoods are heard by local governments. The Collaborative will work closely with neighborhood organizations and other non-profit community groups to understand the concerns of the residents throughout the Northeast Florida region. The Collaborative will also work to advance community-led projects that will address resilience-related concerns, including flooding and the urban heat island effect.

13.3 Support intergovernmental partnerships with state and federal agencies, including the military to increase regional readiness

Establishing and maintaining good working relationships between local, regional, state, and federal governmental agencies is essential for achieving regional resilience. The Northeast Florida Regional Council already partners with state and federal agencies, like the Florida Department of Environmental Protection and U.S. Fish and Wildlife Service, via professional networks like the Northeast Estuarine Restoration Team and South Atlantic Salt Marsh Initiative. Recently, the Northeast Florida Regional Council kicked off a Military Institution Readiness Review process that includes participation by many local, regional, state, and federal agencies. Through such partnerships, the Council and Collaborative will leverage expertise and resources to maximize regional resilience benefits.

IMPLEMENTATION PARTNERS

Conserve Nassau / Flagler County Emergency Management Office / Local Initiatives Support Corporation Jacksonville / NOAA Office for Coastal Management

GUIDE

Developing best practices, writing standardized language, compiling case studies and other resources and references to aid local governments in quickly and effectively deploying resilient solutions.

14 ENCOURAGE SMART GROWTH AND BUILDING PRACTICES

Northeast Florida is poised for substantial growth over the next few decades. The way this growth is managed will shape the future resilience and livability of Northeast Florida. By adopting smart growth practices, communities throughout the region can ensure that development is occurring in a way that will accommodate a rise in population without increasing the risk of hazards, such as flooding or the urban heat island effect. Smart growth practices include guiding new building in areas of the region with the lowest risk of experiencing hazards (e.g., flooding and wildfire), ensuring infill development occurs in areas that are well connected to transportation options, and strategically increasing the density of housing to reduce the negative impacts of sprawl. Smart growth practices throughout Northeast Florida can be bolstered by regional cooperation to share best practices, evaluate a suite of potential incentives, and develop language to be used in local policy making. Smart growth practices can also be advanced by learning from municipalities like Ft. Lauderdale, who has adopted smart growth policies that encourage infill development, redevelopment of underutilized sites, and revitalization of urban neighborhoods to promote , connected and vibrant communities.

14.1 Evaluate incentives for smart building practices to encourage resilient infrastructure

Accommodating population growth in Northeast Florida will require strategic development, and development will be driven by profit. Monetary and non-monetary incentives are effective tools for promoting the use of smart building practices and resilient development. The Collaborative will guide smart growth by gathering information on incentives used in other regions to inform decision making in Northeast Florida.

The Collaborative will facilitate local governments' efforts to encourage resilient development by compiling best practices from communities that have successfully implemented incentive programs for smart growth. Additionally, the Collaborative will draft language for use in ordinances and other land use policies. By providing consistent guidance and making policy resources available to local governments throughout Northeast Florida, the Collaborative will make the implementation of smart growth policies more achievable and streamlined.

14.2 Develop guidance for local governments and private developers to promote infill and increase density in strategic areas

A critical step to increasing smart growth throughout Northeast Florida is to increase development density in areas of the region that are furthest removed from hazards. Current development patterns favor sprawling single-family subdivisions, causing negative impacts ranging from increased pollution to habitat fragmentation. Strategically increasing density not only reduces urban sprawl but also creates additional benefits, such as increased walkability.

To support smart growth throughout the region, the Collaborative will draft guidance on how to increase density in a way that reduces present and anticipated risks. Lessons learned from other municipalities across the nation and within Florida will be used by the Collaborative to develop guidance for local governments in Northeast Florida. Additionally, the Collaborative will compile and summarize case studies that incorporate practices, such as multiuse commercial spaces, tiny homes, accessory dwelling units, and other novel methods of increasing density and promoting vibrant communities.

14.3 Develop sample language for local governments to incorporate into legislative documents such as comprehensive plans, building codes, and ordinances

Every local government has cornerstone documents that steer development patterns. Documents such as comprehensive plans, building codes, ordinances, and land development procedures guide growth at the local and regional levels. The Collaborative will assist local governments in developing and improving these documents by compiling examples from places where smart growth has been successfully incorporated into public policies. For example, the City of Miami has adopted language into their comprehensive plan and land development regulations to address flooding.

Moving forward, the Collaborative will identify planning documents from other areas that have successfully reduced risks while accommodating growing populations. These planning documents will then be reviewed to identify commonalities and unique content that should be considered by those in the First Coast region. The Collaborative will provide recommended language for local governments to include in their comprehensive plans, building codes, and ordinances to encourage smart growth practices.

14.4 Provide guidance on projects where local governments successfully repurposed vacant land

Vacant land or underutilized spaces are potential locations for resilience projects. For example, undeveloped parcels could be graded and planted to serve as stormwater retention basins, adding biodiversity and ecological functions to once derelict land. Municipalities across the country have successfully repurposed vacant lands to improve resilience. Lessons learned from these projects like Vacant to Vibrant (6) will be useful for guiding efforts in Northeast Florida. The Collaborative will compile case studies, evaluate lessons learned, and develop guidance on how to best transform vacant properties into resilience projects.

14.5 Educate public sector and development community about resilient building practices

Innovations are happening every day, allowing for smarter more resilient buildings that can better withstand flooding, high winds, wildfire, and can even reduce the urban heat island effect. To encourage smart building practices, the Collaborative will stay abreast of innovative technology and novel approaches for building resiliently and will share this information with local governments, members of the public, and the development community. The Collaborative will ensure that best practices for building resilient infrastructure are publicly available and easily accessible. The Collaborative will also share information about programs such as the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) certification program and the Institute for Sustainable Infrastructure (ISI) Sustainable Infrastructure Envision Framework, which are useful for identifying opportunities to improve the resilience of public and private infrastructure.

14.6 Encourage advances in stormwater management to reduce flooding and improve water quality

As extreme precipitation events become more frequent, traditional gray infrastructure approaches may prove inadequate. Sudden intense storms or "cloudbursts" can overwhelm conventional systems. The Collaborative will promote green stormwater infrastructure as the preferred approach for new development and retrofit projects. Green stormwater infrastructure offers resilience by working with natural hydrology while providing multiple co-benefits including habitat creation, urban heat reduction, and improved aesthetics. The Collaborative will also keep up to date on novel products and cutting-edge technology to manage stormwater and will share this information with local governments.

IMPLEMENTATION PARTNERS

Conserve Nassau / Florida Green Building Coalition / Flood Mitigation Industry Association / Florida Insitute for Built Environment Resilience / Institute for Sustainable Infrastructure / Smart Surfaces Coalition

15 PROMOTE RESILIENT AND AFFORDABLE HOUSING

Safe, resilient, and affordable homes are fundamental to community resilience. Northeast Florida faces the dual challenge of accommodating population growth while ensuring new and existing homes can withstand increasing climate risks. The region's housing stock includes everything from historic homes requiring specialized resilience retrofits to new developments that must incorporate the latest sustainable building practices. Regional coordination is important to promote innovative housing options, support retrofit programs, and ensure access to affordable housing options for all income levels.

15.1 Develop best practices for housing retrofits to improve safety and quality

Existing housing stock throughout Northeast Florida requires strategic retrofits to improve resilience to flooding, high winds, and extreme heat as well as enhancing the indoor environmental quality. This is especially true for retrofitting historic homes, which requires thoughtful planning and construction. The Collaborative will compile retrofit guidance from relevant sources (such as FEMA) and will promote educational efforts to support a wide range of retrofitting projects (e.g., new and historic homes). Relevant resources from programs such as Elevate Florida and MySafeFloridaHome that provide funding assistance for private retrofits will be shared. Best practices guidance will also focus on indoor environmental quality improvements including thermal comfort, lighting, air quality, and noise reduction. Similar work is being done in Portland, Oregon to expand access to energy efficiency programs for all residents.

15.2 Provide and maintain resources on current affordable housing funding and programs

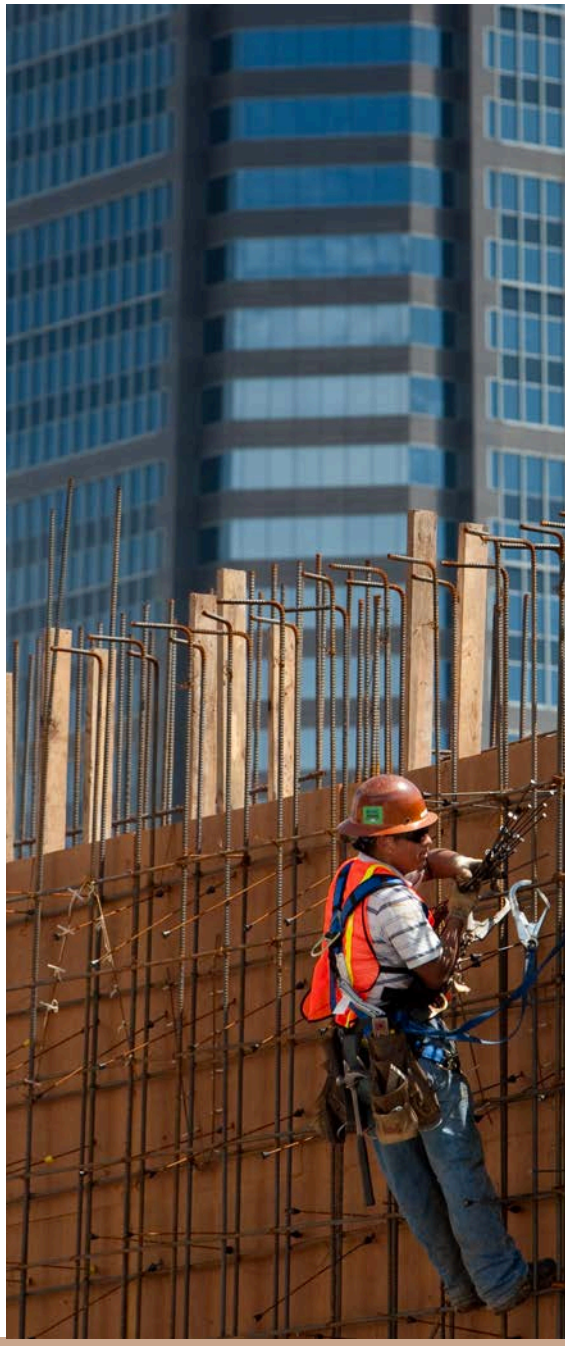
Access to information about affordable housing programs and funding is often a barrier for both developers and potential homeowners. The Collaborative will promote awareness of programs and other funding mechanisms that support affordability through a comprehensive compilation of resources. The Collaborative will distribute this information to interested stakeholders using a variety of means and methods, including but not limited to posting this information online.

15.3 Compile successful case studies and best practices for innovative housing options

Innovative housing options are essential for creating resilient, affordable communities that can accommodate diverse populations and income levels. The Collaborative will compile case studies of innovative housing approaches including non-single-family options, tiny homes, accessory dwelling units, and other possible solutions that increase density while maintaining community character. Examples will be drawn from Florida projects while including relevant examples from similar communities elsewhere. For example, Nassau County, Florida codified tiny home development in the Comprehensive Plan's Future Land Use Element, Land Development Code, and mobility/impact fees.

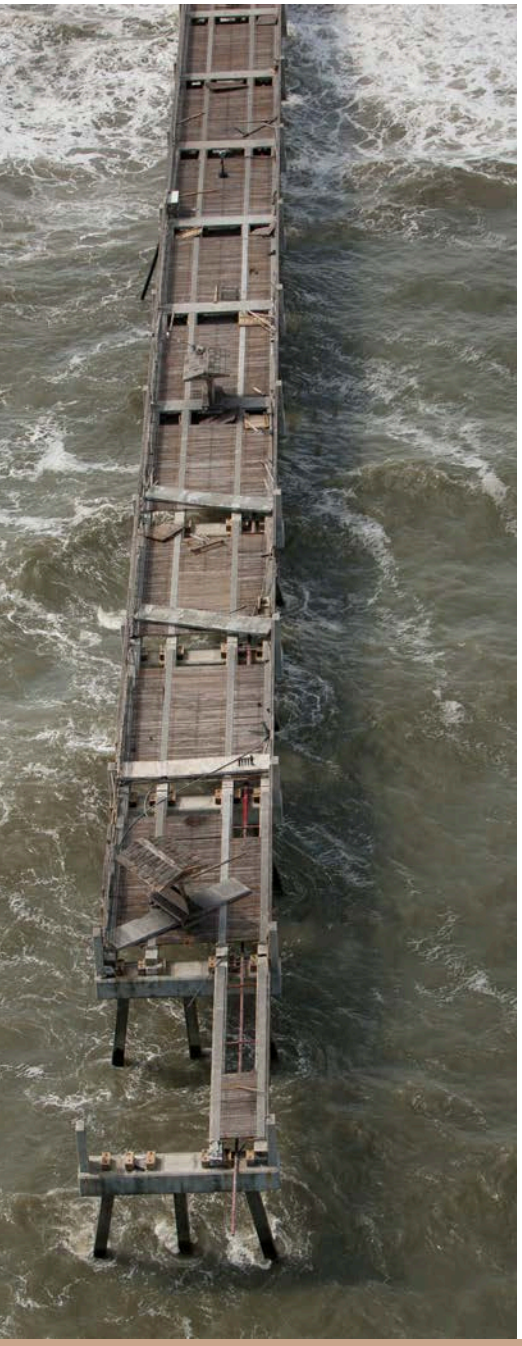
IMPLEMENTATION PARTNERS

Florida Housing Coalition / Flood Mitigation Industry Association / Florida Institute for Built Environment Resilience / Local Initiatives Support Corporation Jacksonville / University of Florida



16 IDENTIFY ADAPTATION OPTIONS FOR CRITICAL INFRASTRUCTURE TO ENHANCE RESILIENCE

Northeast Florida's extensive coastline, intricate network of waterways centered around the St. John's River, and predominantly low-lying topography create vulnerabilities that endanger critical infrastructure in the region. When critical infrastructure fails during hazardous events, cascading impacts can disrupt essential services, hampering emergency response and recovery efforts. To strengthen resilience at the local level, it is imperative to identify vulnerabilities and develop adaptation strategies for critical infrastructure. These efforts directly build upon the vulnerability assessments mandated by 380.093 F.S., Florida's Statewide Flooding and Sea Level Rise Resilience Plan, which ensures that the adaptation options directly address the identified risks.



16.1 Develop best practices for protecting critical assets

When relocating critical infrastructure is impractical or cost-prohibitive, protecting this infrastructure becomes necessary to reduce downtime and maintain operations during and after hazardous events. Effective strategies include elevating critical equipment, implementing flood barriers and waterproofing, incorporating wind-resistant measures, and others. Furthermore, methodologies such as cost-benefit analysis and life cycle analysis can be used to identify the most effective and sustainable protective measures, considering both initial investments and long-term operational costs. To further guide communities through these complex adaptation decisions, the Collaborative will provide local governments with resources and tools for implementing both traditional engineering solutions and nature-based approaches to protect critical assets. The Collaborative can also compile lessons learned from other municipalities in Florida who have made significant investments to protect their critical assets, including St. Petersburg and Tampa.

16.2 Compile case studies for the relocation of vulnerable assets

While hardening infrastructure represents an essential adaptation strategy, some critical assets can and should be relocated away from high-risk areas to ensure long-term functionality. In the past, the Council provided technical assistance to local governments to apply for funding to relocate vulnerable assets. The Collaborative will identify programs that have successfully relocated critical infrastructure and summarize lessons learned. The Collaborative will use this information to provide guidance to local governments on regionally significant assets that could be relocated versus those that should be adapted through elevation, flood-proofing, or other resilience measures.

IMPLEMENTATION PARTNERS

Conserve Nassau / Flagler County Emergency Management Office / Flood Mitigation Industry Association / Florida Institute for Built Environment Resilience / Smart Surfaces Coalition / US Army Corps of Engineers

17 SUPPORT SHORELINE STABILIZATION OF NATURAL AND MODIFIED SHORELINES

Shorelines are the first line of defense against erosion and storm damage. Stabilizing shorelines is necessary to protect upland areas from the impacts of wave energy, boat wakes, and storm surge. Shoreline stabilization projects must be built with the future in-mind and must account for future sea-level rise. Therefore, it is necessary for those working on these projects to stay abreast of future sea-level change projections. Making sure this data is publicly accessible and easily accessible can help ensure projects are designed appropriately. Both nature-based solutions and armoring are used to protect shorelines.

Nature-based solutions provide a suite of co-benefits in addition to mitigating erosion, including improving water quality and enhancing wildlife habitat. In Northeast Florida, nourishment is standard practice for protecting beaches and defending coastal properties from sea-level change and storm surge. However, shoreline armoring via sea walls and / or riprap is standard practice for protecting riverine shorelines from erosion and sea-level change. By providing information on best practices for shoreline stabilization, including nature-based solutions and armoring, the Collaborative will make shorelines throughout the region more resilient.

17.1 Draft example ordinances for shorelines stabilization practices

State and federal regulations govern shoreline stabilization practices and protect against adverse impacts to coastal ecosystems, e.g., Florida's Environmental Resource Permitting (373 F.S.) and Section 404 of the Clean Waters Act and Section 10 of the Rivers and Harbors Act. Additionally, coastal municipalities have established ordinances that regulate shoreline stabilization practices to maximize their efficacy and to reduce environmental impacts. For example, municipalities typically regulate sea wall height, and some account for future conditions. Many municipalities regulate the type of materials that can be used for armoring. A few municipalities require nature-based solutions to be considered before a sea wall or other armoring is permitted. Likewise, some municipalities are developing dune protection ordinances. By compiling language used in such ordinances, the Collaborative will provide examples for local governments that can be used to guide the development of new ordinances that will improve local building practices and increase the resilience of shorelines. For example, the Collaborative can learn from Tampa, who has adopted an ordinance to regulate seawall construction, repair, and maintenance to address flooding and erosion.

17.2 Encourage use of living shorelines and nature-based solutions where possible

Nature-based solutions offer a wide range of ecological benefits, including improving water quality. It makes sense to use nature-based solutions, like living shorelines, where they are feasible. Such work has been done successfully in St. Petersburg and elsewhere across Florida. However, living shorelines will not be successful in all areas. Some areas may have too high wave energy due to a large fetch, or they may not have the right bathymetry to support a living shoreline. It is, therefore, necessary to evaluate where living shorelines and other nature-based solutions can be installed successfully and to encourage their use where conditions are appropriate. The Collaborative will promote the use of nature-based solutions, including living shorelines, by providing information to local governments and coastal contractors about construction best management practices, as well as opportunities for and limitations of nature-based solutions.

IMPLEMENTATION PARTNERS

Conserve Nassau / Florida Fish and Wildlife Conservation Commission / Florida Institute for Built Environment Resilience / Guana Tolomato Matanzas National Estuarine Research Reserve / Jacksonville University Marine Science Research Institute / NOAA Office of Coastal Management / Northeast Florida Estuarine Restoration Team / St. Johns River Water Management District / University of Florida - Whitney Laboratory / University of Florida IFAS Extension Baker County / US Army Corps of Engineers

18 PROMOTE RESILIENT AGRICULTURE

Agriculture supplies a large number of jobs and is a major contributor to the economy in Northeast Florida. In fact, forty-three percent of the region's acreage is dedicated to agriculture. Throughout the Northeast Florida region, a variety of crops are grown, cattle farms are prominent in rural areas, and silviculture is a profitable industry. Given its prevalence, agriculture has the potential to greatly influence water conservation and water quality, which are vitally important for regional resilience. By promoting resilient agriculture, the Collaborative will improve the economy and protect valuable water resources.

18.1 Support resilient land use practices and best management practices for agriculture

Agricultural enterprises in Northeast Florida provide many goods and services to people in the region and beyond. However, unless best management practices are used, agriculture can be deleterious to the environment. For example, some crops require a huge amount of fresh water, fertilizer, and herbicides to be successful, which is not resilient. On the other hand, resilient agriculture makes use of best practices like the thoughtful selection of cultivars and smart land use practices, such as diversification of crops and crop rotation. Another novel technique that could be used in Northeast Florida to increase resilience is silvopasture, which combines forestry with grazing livestock. The Collaborative will research best practices for resilient agriculture and share this information with the public, focusing its outreach on members of the agricultural community. For example, the Collaborative can help spread the word about resources such as the Florida Department of Agriculture and Consumer Services' Florida Small Farms and Specialty Livestock Operations 2024 manual. The Collaborative may also choose to partner with organizations such as the Florida State Horticultural Society, who is hosting its 2026 conference in Jacksonville. The Collaborative will also support regional efforts to increase composting to reduce food waste and improve crop quality.

18.2 Promote agricultural practices that increase resilience to heat and drought

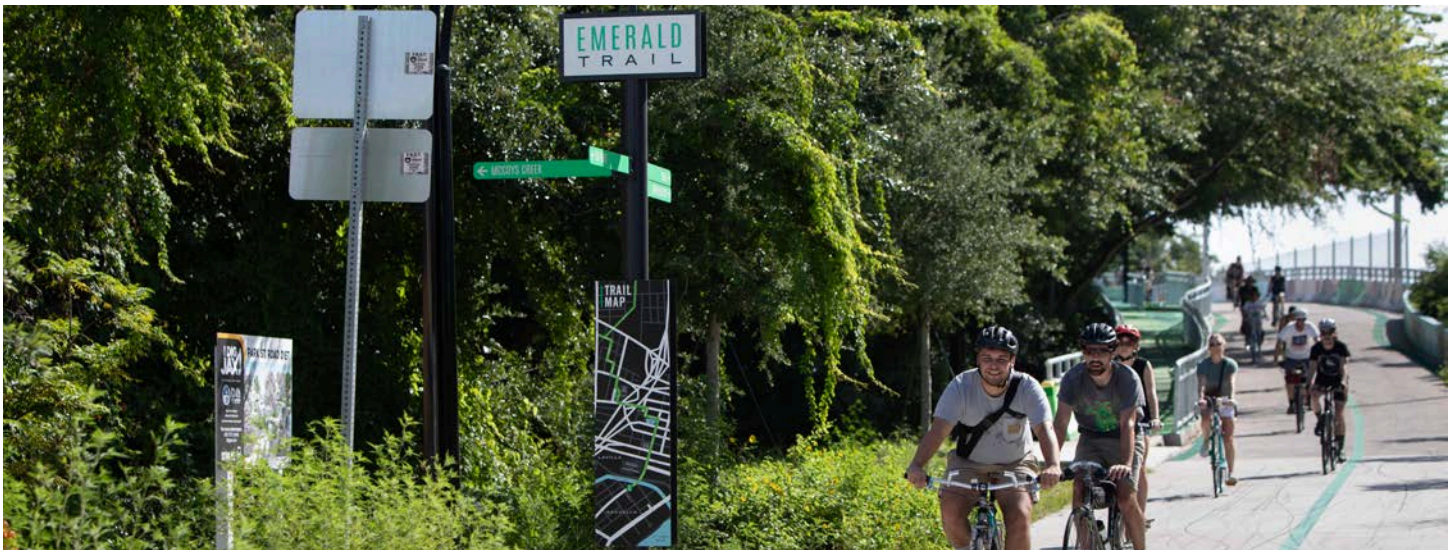
Conditions in Northeast Florida can be challenging for agriculture, especially during extended periods of high heat and drought. Selecting drought-tolerant cultivars developed to withstand our region's heat can improve resilience. Best practices such as drip irrigation can also be used to make operations more resilient and conserve water resources. Supplementing soils with organic material (e.g., compost) can also help retain moisture in the soil, increasing drought tolerance. The Collaborative will promote these agricultural practices and identify others that will improve resilience. The Collaborative will share information on best practices for combatting heat and drought with members of the agricultural community and with other interested stakeholders, such as home gardeners.

IMPLEMENTATION PARTNERS

Center for Sustainable Agricultural Excellence and Conservation / Clay Soil and Water Conservation District / Northeast Florida Farmers Consortium / St. Johns River Water Management District / University of Florida IFAS Extension Baker and Duval Counties

19 PROMOTE DIVERSE TRANSPORTATION OPTIONS AND SUPPORT SAFE MULTIMODAL TRANSPORTATION

Communities are only resilient if their transportation systems are resilient. Diverse transportation options afford people a higher quality of life and ensure equitable access to city resources. Diverse transportation options are critically important for resilience, as not everyone has access to a personal vehicle and public transportation is often limited in Northeast Florida. The Collaborative will promote resilience by supporting safe multimodal transportation options, including public transit, bicycling, and walking.



19.1 Draft complete streets ordinances for local governments

Complete streets are designed for all users, including those with limited mobility who rely upon mobility devices. Complete streets make room for public transportation, like buses, as well as cyclists and pedestrians. For example, Rosemary Avenue in City Place, West Palm Beach, brings together multiple complete street elements, such as wide pedestrian and cycling paths, narrow vehicle lanes, crosswalks, landscaping, as well as access to businesses.

Many complete streets also incorporate smart surfaces that help manage stormwater and reduce the urban heat island effect, like permeable pavement and / or curb extensions with bioretention. The Collaborative will compile complete street ordinances that have been executed across the United States and will identify several high-quality examples that include smart surfaces. These examples will be used to draft a complete street ordinance that can be adopted by local governments interested in improving multimodal transportation, while simultaneously improving stormwater management and addressing the urban heat island effect.

19.2 Promote and distribute safe bike lane design standards

Professional organizations such as the National Association of City Transportation Officials (NACTO) and the American Association of State Highway and Transportation Officials (AASHTO) have developed design standards for safe bike lanes. Bike lane design may be informed by AASHTO's Guide for the Development of Bike Facilities and NACTO's Urban Bikeway Design Guide. The Collaborative will gather examples of safe bike lane design standards and share these with local governments. In this way, the Collaborative will promote the use of safe bike lanes across the region, improving cyclist safety.

19.3 Foster safe and walkable streetscapes

Walkable streetscapes improve quality of life by providing public access to necessities like hospitals and grocery stores and amenities such as parks. While some streetscapes within Northeast Florida are pedestrian friendly, other areas pose a serious threat to pedestrians. According to a 2024 Smart Growth America Study (7), Jacksonville was ranked as the 15th most dangerous city for pedestrians in the United States. The Collaborative will promote safe and walkable streetscapes by advocating for continuous sidewalks and / or multiuse paths to connect neighborhoods with public transit (i.e., first and last mile improvements). The Collaborative will also foster safe and walkable streetscapes by supporting programs like Vision Zero that aim to eliminate traffic fatalities and serious injuries.

IMPLEMENTATION PARTNERS

Florida Council on Aging / Florida Department of Transportation / Florida Institute for Built Environment Resilience / Jacksonville Transportation Authority / North Florida Transportation Planning Organization / Transportation Disadvantaged Local Coordinating Board, Northeast Florida

20 SUPPORT ECONOMIC GROWTH THROUGHOUT THE REGION

A strong economy provides a solid foundation for resilience, and in turn resilient communities invest in economic growth. The economy in Northeast Florida is primarily driven by tourism, but other industries contribute significantly to the region's economic prosperity. Agriculture has been a staple in the region for many generations and continues to support a wide range of jobs. Commercial and industrial enterprises are also thriving in the region. However, it is necessary to support continued economic growth throughout the region to ensure a resilient future.

20.1 Help local governments support small and emerging businesses

Small and emerging businesses give communities character and serve a vital role in the local economy. The Collaborative will promote small and emerging businesses by providing opportunities for affordable advertising at regional events. The Collaborative will also support small and emerging businesses by hosting guest lectures by successful entrepreneurs, who will speak to new and upcoming business owners. The Collaborative will also advocate for local banks to provide low-interest loans to small and emerging businesses that need assistance.

20.2 Support local commerce, including commercial, industrial, and agricultural enterprises

Several different sectors contribute to the economy in Northeast Florida, including commercial, industrial, and agricultural enterprises. The Collaborative will need to understand the opportunities and challenges faced by each sector to guide economic growth. The Collaborative will compile case studies showing how various enterprises successfully prepared for and / or responded to disruptions caused by different events, such as hurricanes and heat waves. The Collaborative will evaluate these case studies and share lessons learned with relevant local businesses, who can use this information to better prepare for and / or respond to future disruptive events.

IMPLEMENTATION PARTNERS

JAXUSA Partnership / Nassau County Chamber of Commerce / Putnam County Chamber of Commerce / St. Johns County Chamber of Commerce

20.3 Support regional marketing and branding to support local economy

Investing in regional resilience will set Northeast Florida apart from many other areas. The Collaborative will make sure that promotional materials about Northeast Florida reflect the region's commitment to resilience. Marketing the region as resilient should attract new residents and businesses, strengthening the local economy. To this end, the Collaborative will work with Visit Florida and others to brand Northeast Florida as a leader in resilience and showcase other unique qualities about the region.

20.4 Share best practices and successful examples of local governments fostering economic prosperity by creating pathways to economic participation and reducing barriers

Although the economy in Northeast Florida is relatively strong, not everyone living in the region has the same opportunities for economic participation and prosperity. The Collaborative will empower local governments with the resources they need to facilitate economic prosperity in historically underserved communities and to enable people from these communities to participate in the local economy. The Collaborative will identify examples of successful programs from other cities and counties that have increased economic prosperity for low-income households and historically underserved communities. Lessons learned will be shared with local governments by the Collaborative, who will encourage the establishment of similar economic programs in Northeast Florida.

Credit: Jacksonville University

21 CREATE AN INDUSTRY OF RESILIENCE PROFESSIONALS

The field of resilience requires a wide range of professionals with different sets of expertise and types of experience. As the region moves towards being more resilient, it will need a pool of qualified applicants to take on new resilience roles. Training young professionals and equipping them with skills needed to be competitive in the resilience field is something that educators in Northeast Florida should pursue in earnest. Likewise, local governments in Northeast Florida will need to develop workforce development programs to foster young professionals and give them valuable first-hand experience working in the field of resilience.

21.1 Aid the development of workforce development programs

Workforce development programs are critical for training young professionals with no experience in the field of resilience. By providing structured education and supervised on-the-job training, local governments can empower young professionals to take on resilience roles. The Collaborative will invest in the future of resilience by promoting education within the field. The Collaborative will find case studies and provide examples of workforce development programs that have been successfully implemented elsewhere and will outline best practices for workforce development programs in our region. The Collaborative will also work with local schools and universities to promote awareness about resilience-focused workforce development programs in Northeast Florida.

21.2 Develop and promote competitive educational programs with local universities and colleges

Local colleges and universities have a key role to play in expanding knowledge of resilience principles and best practices. By developing competitive education programs focused on resilience, local colleges and universities will bring new students to the region, who may choose to stay and become part of the workforce. The Collaborative will work with local colleges and universities to develop resilience programs with curriculums focused on real-world applications. For example, courses could include instruction on the design, installation, and maintenance of green infrastructure. Other courses may teach how urban planning can be used to minimize the urban heat island effect and reduce flooding-related impacts to infrastructure. The Collaborative will promote these resilience-focused educational programs throughout the region and beyond.

IMPLEMENTATION PARTNERS

Conserve Nassau / Flood Mitigation Industry Assocation

22 PROMOTE DEPLOYMENT OF GREEN INFRASTRUCTURE AND NATURE-BASED SOLUTIONS

The number of intense rainfall events in Northeast Florida is expected to increase over the next few decades. The consequences of these increased rainfall events will be felt by local governments throughout the region. In some areas, existing stormwater infrastructure may not be sufficient to handle such an increase in precipitation, and stormwater systems may be strained during cloudburst events. Retrofitting existing infrastructure or building new stormwater facilities would be an expensive way to tackle this regional problem, but the deployment of green infrastructure may be a cost-effective solution. Regional coordination will increase the acceptance and implementation of green infrastructure practices by local governments in Northeast Florida, increasing the region's resilience to increased rainfall.

Green infrastructure and nature-based solutions mimic natural ecosystems and provide a range of ecosystem services that promote resilience. Compared to traditional gray infrastructure (i.e., manufactured solutions, such as curbs and gutters), green infrastructure has many co-benefits, such as reducing the urban heat island effect, improving water quality, enhancing wildlife habitat, increasing property values, and supporting mental and physical wellbeing. Efforts to increase green infrastructure and nature-based solutions can be supported by compiling case studies and by identifying best practices to inform future projects.

22.1 Create educational materials for the public, decision-makers, and elected officials

Numerous case studies from other regions show that green infrastructure can be deployed at a lower cost than traditional gray infrastructure stormwater systems. However, many members of the public, as well as decision-makers, such as practitioners, local government employees, and elected officials, are not familiar with green infrastructure and nature-based solutions. The Collaborative will disseminate existing resources and tailor resources to specific audiences to maximize their impact. By curating educational materials for various audiences, the Collaborative will promote the use of green infrastructure and other nature-based solutions across the region. For example, the Collaborative can help distribute information developed by the International Union for Conservation of Nature (IUCN). The IUCN engages with policymakers by providing scientific research, policy guidance, and practical examples of how integrating nature into policy and planning can yield significant environmental, social, and economic benefits. The IUCN's efforts in educating policymakers aim to influence policy decisions and promote the widespread adoption of nature-based solutions.

22.2 Compile regional best practices, design guidelines, and case studies of green infrastructure and nature-based solutions

Green infrastructure and nature-based solutions have been successfully deployed across the nation. By compiling case studies, design guidelines, and best practices from other regions, the Collaborative will better inform local project implementation. Understanding what has worked well in similar areas will be helpful for local governments, as will understanding lessons learned from past projects. The Collaborative will also translate information from green infrastructure projects completed in other regions, like the St. Petersburg - Tampa area, into concepts that are relevant to Northeast Florida.

22.3 Identify successful incentive programs for green infrastructure and nature-based solutions

Many municipalities have established incentive programs to encourage green infrastructure practices and nature-based solutions. Across the nation, different forms of incentives have been used to promote the use of green infrastructure practices, including non-monetary incentives.

The Collaborative will investigate existing incentive programs and evaluate successful policies. Moreover, the Collaborative will work with private landowners and developers within Northeast Florida to understand what kind of incentive programs may work best in our region.

22.4 Support creation of green streets

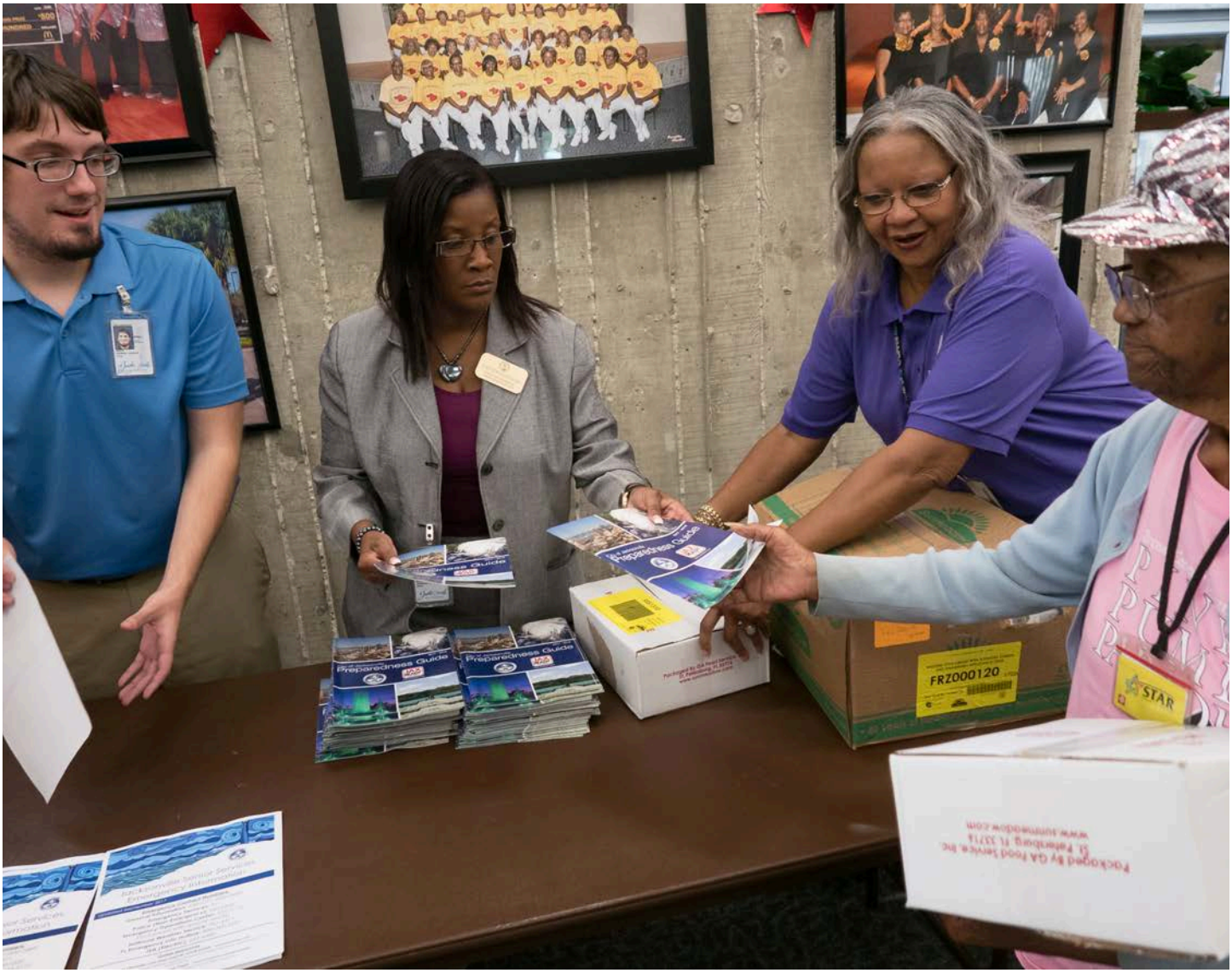
All municipalities in Northeast Florida have rights-of-way along public roads that can be used to help manage stormwater. Green streets include green infrastructure practices, such as tree wells, curb extensions, and bioswales that are designed to manage stormwater. Green streets may also include cool or permeable pavements that reduce the urban heat island effect. The Collaborative will better support the creation of green streets by compiling policies and guidance from other municipalities where green streets have been successfully deployed. Local governments in Northeast Florida will be able to leverage this information to develop their own policies and create a network of green streets to reduce flooding and heat. The Collaborative will also coordinate with the Florida Department of Transportation and will advocate for concurrent standards for green streets at the local, regional, and state level.

IMPLEMENTATION PARTNERS

Conserve Nassau / Florida Department of Transportation / Florida Institute for Built Environment Resilience / Jacksonville University Marine Science Research Institute / NOAA Office for Coastal Management / Urban Land Institute North Florida

23 RECOMMEND INNOVATIVE EMERGENCY PREPAREDNESS PRACTICES AND PROCESSES

Regional resilience requires an enhanced capability to prepare for, response to, and recover from increasingly frequent and extreme weather-related emergencies. Northeast Florida faces compound risks from hurricanes, multiple flood sources, extreme heat, and wildfire threats, which requires coordinated responses from all seven counties. During emergency situations, direct coordination between state-level agencies and local governments are critically important to ensure an efficient and rapid response. However, the Collaborative can play a proactive role in preparing for emergency situations, providing a strong foundation for emergency response activities. The Collaborative will promote efficient collaboration between local governments while proactively identifying and developing innovative strategies that build upon successful local models and emerging best practices.



23.1 Compile, update, and distribute educational resources about weather hazards and changing weather patterns

Emergency preparedness requires locally relevant information addressing Northeast Florida's unique hazards and vulnerabilities. The Collaborative will leverage existing resources from entities like the National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Climate Central, and others tailoring information to Northeast Florida's specific risk profile and sharing it in accessible formats for use throughout the region. Further, the Collaborative will expand successful models like Jacksonville's Emergency Preparedness Guide and JaxReady App throughout the region.

23.2 Share resources about improved extreme temperature response

Extreme heat events are becoming more frequent and severe across Northeast Florida. Jacksonville is developing standard procedures for activating and operating their emergency operations center during periods of extreme heat. This could serve as a model that benefits other local governments in the region with appropriate adaptation for local conditions and resources. The Collaborative will facilitate the sharing of extreme heat response protocols and lessons learned from other regions facing similar heat challenges, while supporting the development of strategies specific to the Northeast Florida conditions.

23.3 Support advanced training opportunities for emergency managers

Effective emergency management requires a comprehensive understanding of community vulnerabilities including infrastructure risks, social and economic dependencies, and evolving climate-related impacts. The Collaborative will support advanced training for emergency managers across the region sharing insights from vulnerability assessments and understanding the various risks facing the communities. The Collaborative will also facilitate peer learning opportunities among emergency managers across the region by initiating dialogues on successful approaches and experiences with various hazard events.

23.4 Assist emergency management offices with the improvement and distribution of guidance for residents

Clear and high-quality guidance must reach all residents across the seven-county region. However, individual emergency management offices may lack resources to develop comprehensive materials independently or ensure coordinated messaging during regional events. The Collaborative will support these offices to enhance their capacity for developing and distributing guidance materials in accessible formats and updated infographics to improve emergency preparedness outreach efforts. These efforts will further strengthen outreach across diverse language and literacy levels, utilizing established and trusted community messengers to ensure that critical guidance is understood and actionable by all populations within the region.

IMPLEMENTATION PARTNERS

Baker County Sheriff's Office Division of Emergency Management / City of Jacksonville Emergency Preparedness Division / Clay County Division of Emergency Management / Flagler County Emergency Mangement Office / Nassau County Emergency Management Division / Putnam County Emergency Management Division / St. Johns County Emergency Management Department

24 GUIDE SMART MANAGEMENT OF CULTURAL AND HISTORICAL RESOURCES

Northeast Florida has a rich culture and many unique historical resources that bring in visitors from all over the world. Protecting these assets is essential to maintaining the character of the region and to support tourism. Much work has already been done in St. Augustine to protect cultural and historical resources, such as the Castillo de San Marcos and the Lightner Museum. However, other communities in Northeast Florida need guidance to better protect their cultural and historical resources. These communities can benefit from learning from successful programs, like the "Weather it Together" program in Annapolis, Maryland, which was created to improve the resilience of cultural and historic resources. Annapolis uses the National Historic Landmarks Program as well as three historic districts to designate and prioritize significant cultural areas. Identifying regionally significant historical and cultural assets in Northeast Florida will require close coordination with local governments as well as public engagement. For example, members of the Gullah Geechee Nation should be involved in conversations about culturally significant sites, historical places, and important structures. Once there is a comprehensive list of cultural and historical resources in Northeast Florida, the Collaborative can guide the smart management of these assets.

Credit: City of Saint Augustine

24.1 Provide resources to support the protection of assets and spaces with cultural significance

Financial and human resources are needed to support the protection of culturally and historically significant areas and assets throughout Northeast Florida. The Collaboraitve will garner public support for the protection of these areas and assets by sharing information about their significance at regional events. The Collaborative will also maintain a list of volunteers interested in helping to protect and preserve cultural and historical resources and will share this information with those who manage these resources. Additionally, the Collaborative will investigate grants and other funding opportunities to support the protection of assets and spaces with cultural significance.

24.2 Issue guidance for local governments to maintain the character of historic neighborhoods

Historic neighborhoods have unique traits that must be maintained to keep their character intact. Without oversight, the character of historic neighborhoods could be lost. The Collaborative will identify all organizations and agencies that provide such oversight in Northeast Florida and keep a list of points-of-contact for their representatives. The Collaborative will also review ordinances, codes, and other legislative language related to preserving historic neighborhoods and will identify ways in which to strengthen protections without adding time or difficulty to the permitting process for residents wishing to make improvements to their homes.

IMPLEMENTATION PARTNERS

City of Fernandina Beach / City of Jacksonville / City of Jacksonville Beach / City of Neptune Beach / City of St. Augustine / Clay County Parks and Recreation Department / Florida Public Archaeology Network / Florida Trust for Historic Preservation Regional Council 3 / Gullah Geechee Cultural Community Trust Inc. / Hastings Main Street, Inc.

25 EDUCATE HOMEOWNERS AND HOME BUYERS ON RISK REDUCTION

Northeast Florida is attracting many new homeowners, who may not be familiar with the region's unique risks from flooding, extreme weather events, and wildfires. Many existing homeowners would also benefit from learning about actions they can take to increase their property's resilience and reduce potential damage. Understanding flood zone designations, practical home protection measures, and the benefits of native landscaping can significantly reduce vulnerability to climate-related hazards while potentially lowering insurance costs and increasing property values. The Collaborative will provide guidance to the local governments and organizations across the region to help equip residents with knowledge and resources to understand the climate-related risks to their properties and methods to implement appropriate mitigation measures.

25.1 Curate resources on the importance of flood zone designations and flood insurance

Homeowners may purchase property in flood zones without fully understanding their risks and responsibilities. Flood risk information must be localized and presented in ways that homeowners and homebuyers can easily understand and apply to their specific properties. The Collaborative will increase homeowners and homebuyers' understanding of flood risks, flood insurance requirements, and the financial implications of living in flood-prone areas by guiding local governments in curating easy to understand and locally available resources. The Collaborative will further support a data-driven approach and leverage modern technology, such as a user-friendly GIS-based map dashboard, to make complex risk information more accessible to property owners.

25.2 Share best practices for safeguarding homes against extreme weather and wildfire

Property-level protection measures can significantly reduce damage from extreme weather and wildfires. Home improvements might also result in insurance discounts. The Collaborative will guide local governments to help provide homeowners with practical information on proactive and cost-effective measures to protect their properties from increasingly severe weather events and wildfire risks. The Collaborative will also provide information on new and innovative measures to weatherize homes to protect them against extreme heat and freeze events.

25.3 Develop educational materials on the benefits of trees and native landscaping

Native landscaping and properly maintained trees provide multiple benefits for property resilience, including flood mitigation through improved stormwater absorption, wind protection, energy cost reduction through shading and cooling, and enhanced property values. The use of native vegetation can also reduce water use and may require less chemical fertilizer and herbicide. The Collaborative will provide guidance to local governments in creating educational and outreach materials that explain these benefits using accessible language and visual aids.

IMPLEMENTATION PARTNERS

Flagler County Emergency Management Office / Flood Mitigation Industry Association / Florida Institute for Built Environment Resilience / Ixia Chapter Florida Native Plant Society / University of Florida IFAS Extension Duval County

26 PROMOTE PUBLIC HEALTH AND QUALITY OF LIFE

Communities are only as resilient as their residents, which is why investing in the health and quality of life of people across the region is a top priority. Addressing mental and physical health are equally important for maintaining a resilient population. Certain communities need targeted assistance to overcome issues such as homelessness, poverty, and food insecurity. Having a coordinated regional effort to address these issues will help improve resilience across Northeast Florida.

26.1 Provide guidance about successful programs that have helped to improve mental health

All counties throughout Northeast Florida will benefit from residents having increased access to mental health services. The Collaborative will support mental health across the region by providing resources to those in need, helping them gain access to existing mental health programs. For example, the Collaborative can work with United Way to increase awareness of the 988 Call Center that provides suicide counseling services. The Collaborative can also help local governments establish programs like Mental Health Matters Jax to connect people with mental health resources in their community.

26.2 Foster physical health of residents by providing resources and targeted programs

Local governments play an important role in providing opportunities for safe exercise and educational programs to improve health outcomes. The Collaborative will look at cities that have Councils on Health and / or Wellness and will identify actionable steps that local governments can take to establish similar advisory boards to promote public health. The Collaborative can also promote local races, like the Gate River Run, and will encourage participation from people of all abilities to motivate them to move more.

The Collaborative can learn from a lot from programs being offered in Gainesville, such as the Active Streets Gainesville initiative, which temporarily closes streets to vehicular traffic, allowing residents to walk, bike, and engage in various fitness activities. The city of Gainesville also partners with local schools and organizations to provide educational workshops on health-related topics. The Collaborative could examine the feasibility of offering similar events and workshops in Northeast Florida.

Public facilities such as parks and multiuse trails are critically important for residents seeking to maintain a healthy lifestyle. The Collaborative will foster physical health by providing information to local governments about how they can fund projects like the Emerald Trail in Jacksonville, which provides a safe place for outdoor recreation and connects communities. The Collaborative can also help promote the use of multiuse trails throughout Northeast Florida by distributing maps and information about these amenities.

26.3 Safeguard public health by supporting regionally significant hospitals with information on innovative practices and protocols

Hospitals are critical infrastructure and are essential to maintaining resilient communities. For communities to be resilient, hospitals must continue to operate effectively even in the face of diverse shocks and stressors, ranging from extreme heat events to financial challenges. The Collaborative will collaborate with regionally significant hospitals and inform them about best practices for resilience, including backup power supply and microgrids. The Collaborative will also make sure that hospitals are aware of practices like establishing redundant internet sources for continued operations when there are system-wide outages caused by regional-scale disturbances such as hurricanes.

Additionally, the Collaborative will provide hospitals with information to help them remain financially stable, including education about state and federal programs that offset costs of uncompensated care for uninsured patients. The Collaborative will share information on programs such as Healthlink JAX and Jax Care Connect that provide access to primary care, avoiding people from making unnecessary emergency room visits.

26.4 Distribute resources to aid in the support of vulnerable populations and communities

Many different organizations and agencies provide support to vulnerable populations and communities in Northeast Florida, including but not limited to veterans, people experiencing homelessness, people with disabilities, and people living in poverty. However, many people are not aware that these services exist or are not familiar with how to access the services they need. The Collaborative will provide information about programs that help address food insecurity, such as Meals on Wheels and Feeding Northeast Florida. The Collaborative will encourage local governments to provide free transportation to grocery stores, like that provided by the Jacksonville Transportation Authority (JTA). The Collaborative will also increase access to wrap-around services, such as workforce development and assistance with housing, through organizations like Jax Care Connect.

26.5 Promote remediation of toxic soils and brownfield sites

Contaminated sites and brownfield sites not only pose public health risks but also limit economic development opportunities. Contaminated soils and brownfield sites present opportunities for environmental restoration and economic revitalization. By prioritizing and promoting cleanup of these sites, communities can improve public health, reduce contaminant runoff into waterways, and create new spaces for development or green infrastructure. The Collaborative will support local governments by compiling existing information on brownfield sites throughout the region, such as that maintained by the Florida Department of Environmental Protection on their Geoviewer website. The Collaboration will also track available federal and state grants and will aid local governments in applying for these funding opportunities. The Collaborative will also ensure that successful remediation techniques are being used by connecting brownfield remediation specialists from across the region and state.

IMPLEMENTATION PARTNERS

Baptist Medical Center Beaches / HCA Florida Memorial Hospital Jacksonville / Mayo Clinic Jacksonville / St. Johns River Water Management District / UF Health St. Johns

ANALYZE

The collection, synthesis, and objective interpretation of data to inform local and regional resilience actions. Investigations into regional shocks and stressors to inform decisions at the local and regional levels.

27 CREATE AN INVENTORY OF PROJECTS UTILIZING NATURE BASED SOLUTIONS

Nature-based solutions are cost-effective methods for managing stormwater and provide a suite of co-benefits, which has prompted municipalities in Northeast Florida to increase their investment in nature-based solutions. As the use of nature-based solutions increases in Northeast Florida, it will be helpful for the Collaborative to maintain an inventory of projects, including key information such as each project's location, size, nature-based solutions implemented, permit numbers, timing of construction / completion, and point(s)-of-contact. Metrics of success will also be tracked, including water storage capacity and / or water quality improvements achieved by each of the projects. This information, including quantitative measures of nutrient reduction, can then be used by local governments to support grant applications. Local governments can use this information to identify projects that have been successfully implemented in our region and to establish a network of contacts to facilitate future projects.

IMPLEMENTATION PARTNERS

Conserve Nassau / Florida Institute for Built Environment Resilience / NOAA Office of Coastal Management / St. Johns River Water Management District / US Army Corps of Engineers

28 TRACK WATER QUALITY TRENDS

Northeast Florida's water resources are the foundations of the region's ecological health, economic vitality, and quality of life. The region's rivers, estuaries, and coastal waters face mounting pressures from urban development, altered hydrology, increased stormwater runoff, and climate related impacts including flooding and sea level rise. These stressors can degrade water quality, threatening both natural ecosystems and the communities that depend on clean water resources. The state's regulatory framework, particularly 403.067 F.S. and 62-303 F.A.C., guide the identification of impaired waters and the subsequent establishment of TMDLs and BMPAs which are designed to improve water quality and track progress towards restoration.

While several agencies and entities currently conduct water quality monitoring in the region, including SJRWMD, FDEP, USGS, the St. Marys River Management Committee, and municipalities like City of Jacksonville, coordination between these efforts is limited. A coordinated regional approach to water quality monitoring is essential to protect vital resources, inform restoration efforts, and enhance Northeast Florida's climate resilience.

The Collaborative will maintain an up-to-date inventory of all agencies and entities conducting water quality monitoring and analysis to facilitate ongoing coordination and knowledge sharing. The Collaborative will also bring these agencies and entities together to establish a community of practice focused on regional coordination. Further, by initiating dialogues to establish standardized data collection and reporting protocols in the region, The Collaborative will help create a more cohesive understanding of water quality trends across Northeast Florida. The Collaborative could also amplify outreach for the State of the Lower St. Johns River and other water quality reports throughout the region. Further, the Collaborative could also provide support to fill critical data gaps in under-monitored tributaries, gather input to track emerging containments like per- and polyfluoroalkyl substances (PFAS), and help build awareness through citizen science programs.

IMPLEMENTATION PARTNERS

Clay Soil and Water Conservation District / Flagler College Department of Natural Sciences / Florida Fish and Wildlife Conservation Commission / Florida Institute for Built Environment Resilience / Jacksonville University Marine Science Research Institute / Matanzas Riverkeeper / St. Marys Riverkeeper / St. Marys River Management Committee / St. Johns Riverkeeper / St. Johns River Water Management District / University of Florida IFAS Extension Duval County

29 EVALUATE MAJOR CHANGES IN HEAT PATTERNS AND MONITOR CONTRIBUTING FACTORS

While Northeast Florida is no stranger to hot summers, the region is experiencing more frequent and severe extreme heat events that affect the health and well-being of our communities. The region is not uniformly impacted by heat – some areas are much warmer than others. In 2022, the University of North Florida partnered with the City of Jacksonville to complete a heat study that showed a difference of 11.8°F between the coolest and warmest sections of Jacksonville (8). Spatial differences in heat are driven by several factors, including but not limited to the amount of tree canopy and impervious surfaces, as well as changing global weather patterns. Understanding factors driving spatial differences in heat can help guide decision-making at the local level.

Tracking heat at the regional level will help identify trends that transcend county boundaries and provide downscaled heat data that counties might not be able to gather without assistance. Inventories are needed to evaluate major changes in heat patterns, tree canopy, and impervious surfaces in order for decision makers to reduce vulnerability to extreme heat at the local and regional levels. Creating and maintaining these inventories in perpetuity is essential for a consistent and well-rounded understanding of heat and the factors driving it.

29.1 Create a regional heat inventory

Creating a regional heat inventory is necessary to track trends in extreme heat that affect communities across Northeast Florida. Centralizing the collection and reporting of heat data will require consistent data formatting and robust data management that will streamline analyses at the regional level for years to come. A regional heat inventory will help identify target areas for future interventions to address disparities in heat vulnerability.

To this end, the Collaborative will create and maintain a heat inventory that will build off past efforts and ongoing work to capture data on heat across the region. By creating a comprehensive heat inventory for all of Northeast Florida, the Collaborative will enable other local governments in the First Coast region to make better-informed decisions to address rising temperatures.

29.2 Track regional tree canopy

Tree canopy is a critical metric in determining the overall heat resilience of a community. In some areas of Northeast Florida tree canopy cover is being reduced by development, which impacts surrounding areas. Trees reduce heat through evaporative cooling and by providing shade. Areas with greater tree canopy tend to have lower temperatures than areas with less tree canopy, as well as higher property values. The Collaborative will evaluate tree canopy at the regional level, documenting differences across the region and identifying potential causes of rising temperatures (e.g., canopy loss). Tracking canopy at the regional level ensures that decision makers have the data they need to make well-informed decisions regarding tree preservation and tree planting.

29.3 Track impervious surface cover

Analyzing impervious surface cover at the local and regional level provides insight into development patterns that may be increasing extreme heat exposure across the region. Increasing land area covered by impervious surfaces increases the ambient air temperature, but not all impervious surfaces (e.g., asphalt and concrete) contribute the same amount to the urban heat island effect. By tracking land coverage and types of impervious surfaces, the Collaborative will assist local governments in identifying changes and will help guide decisions to address heat.

IMPLEMENTATION PARTNERS

Florida Institute for Built Environment Resilience / Jacksonville University Marine Science Research Institute / NOAA Office for Coastal Management / NOAA Southeast and Carribean Regional Collaboration Team

30 DEVELOP AND MAINTAIN CURRENT GREENHOUSE GAS EMISSIONS DATA TO IDENTIFY TRENDS

Greenhouse gas emissions contribute to changes in global climate and impact public health and quality of life. Greenhouse gas emissions are comprised of point and non-point sources, including exhaust emissions from vehicles, gases emitted from burning fossil fuels for electricity, and methane released from cattle. Some municipalities have taken steps to track greenhouse gas emissions as a starting point for setting goals to reduce emissions. The City of Jacksonville completed a greenhouse gas inventory for Duval County and found that powering public buildings and operating the city's vehicle fleet contribute the most to the county's emissions. Greenhouse gas emission inventories were also conducted for other counties within the Jacksonville Municipal Service Area, including Baker, Clay, Nassau and St. Johns, an analysis was also completed for Palm Coast in Flagler County. These reports are based on 2019 data, which is quickly becoming out-of-date.

It will be necessary to repeat these greenhouse gas emission inventories to determine if counties are meeting their goals. The Collaborative will work with local governments to develop and maintain greenhouse gas emissions data for Northeast Florida. Moreover, the Collaborative will analyze greenhouse gas emissions data to identify temporal trends, such as an increase or reduction in emissions over time by county and for the region.

IMPLEMENTATION PARTNERS

ICLEI - Local Governments for Sustainability

31 RESEARCH POPULATION TRENDS TO UNDERSTAND GROWTH PATTERNS

Communities in Northeast Florida are growing at different rates, and keeping track of population trends is essential for planning for the future. Understanding where people are moving to and from is crucial for urban planners, who work to make our cities and counties more resilient. The region is also experiencing climate-driven relocation from more vulnerable areas and internal migration as residents move away from high-risk coastal areas. The University of Florida's Bureau of Economic and Business Research (BEBR) program collects and analyzes population and demographic data across Florida and is the official data source for the state legislature. The BEBR program has robust data at the state and county level, and the program provides science-based estimates for place level (city, town, villages) population data. This data is publicly available online. Some parts of Northeast Florida (Clay, Duval, Nassau, and St. Johns) have even more detailed data (parcel-scale) that were developed by BEBR using GIS modeling software, but other areas are lacking such detailed data (i.e., Putnum and Flagler Counties).

The Collaborative will stay abreast of BEBR research and will use current and historical data to analyze spatial trends in population growth across Northeast Florida. The Collaborative will document changes in population size for individual municipalities as well as trends in population growth for the Northeast Florida region as a whole. The Collaborative will also look at pathways for funding the development of detailed data for all municipalities in Northeast Florida as well as for climate migration research that will shape the region's future development patterns and resilience needs, which may require partnering with non-governmental organizations.

IMPLEMENTATION PARTNERS

Conserve Nassau / Florida Department of Transportation / University of Florida Bureau of Economic and Business Research

32 INVENTORY CRITICAL AND SIGNIFICANT ASSETS

The increasing frequency of extreme weather events, from unprecedented flooding and record-breaking heat waves, necessitates a thorough assessment of critical infrastructure vulnerabilities throughout Northeast Florida. Understanding which assets are most vulnerable to hazards is essential for developing effective resilience strategies across the region. These efforts are directly aligned with and driven by F.S. 380.093 which mandates the development of Florida's Statewide Flooding and Sea Level Rise Resilience Plan, requiring communities to conduct comprehensive vulnerability assessments and identify critical infrastructure. By inventorying regionally critical and significant assets, the Collaborative will set the stage for future efforts to protect or relocate these assets.

32.1 Compile and assess local vulnerability assessments

Vulnerability is the tendency of an asset to be adversely affected if one or more hazards were to occur. Vulnerability assessments are studies that predict the impacts of different types of hazards (such as flooding) on community assets in both natural and built environments. The requirements for vulnerability assessments in Florida are established under 380.093 F.S., which specifies the asset categories requiring evaluation, flooding scenarios to be considered, and the need for sensitivity analysis across different hazard intensities.

Vulnerability assessments can be vitally important for obtaining funding to support resilience efforts. For example, Miami conducted extensive vulnerability assessments to address the city's susceptibility to sea-level rise, flooding, hurricanes, extreme heat, and other climate-related hazards. These assessments informed initiatives like the Miami Forever Bond, a $400 million general obligation bond program to fund resilience projects including flood mitigation, infrastructure upgrades, and affordable housing.

The Council currently assists local governments with the development of comprehensive vulnerability assessments with funding from the Florida Department of Environmental Protection's (FDEP) Resilient Florida Grant Program. To support regional efforts, the Collaborative hosts and maintains Northeast Florida's Vulnerability Assessment Portal as a centralized resource. This portal compiles completed assessments across the region and serves as a valuable reference for local governments. In the future, the Collaborative will build on these efforts by analyzing vulnerability assessments on a regional scale.

32.2 Maintain inventory of regionally significant assets

Regionally Significant Assets are critical infrastructure, facilities and systems that are essential to the function, safety, and cultural identity of Northeast Florida as a region. These assets may include essential services such as hospitals and fire stations that serve populations across municipal boundaries, as well as culturally and historically significant sites like Castillo de San Marcos in St. Augustine that define the region's heritage and supports its tourism economy. Having a comprehensive inventory of these regionally significant assets is important for establishing the region's resilience and adaptation strategy.

As part of the FDEP's Regional Resilience Entity (RRE) Grant, NEFRC undertook a comprehensive review of the statewide dataset on critical facilities and has developed a detailed geodatabase of critical assets specific to the region, building on the statewide datasets. The Collaborative will further maintain an inventory that enables the identification, assessment, and prioritization of these regionally significant assets. By maintaining this inventory, the Collaborative will enable the local government in the First Coast Region to better understand interdependencies between systems, prioritize investments, and coordinate emergency response efforts.

IMPLEMENTATION PARTNERS

Florida Department of Transportation / Florida Institute for Built Environment Resilience / US Army Corps of Engineers


Jax Beaches
Daytona Beach
San Marco Blvd

33 EVALUATE DISTRIBUTION OF RESOURCES TO ENSURE VULNERABLE COMMUNITIES ARE SERVED, INCLUDING AN ASSESSMENT OF FOOD SECURITY

A resilient city or county must ensure access to essential services such as clean water, nutritious food, and safe shelter for vulnerable communities. Unfortunately, many individuals within our communities are lacking access to basic necessities. Many programs exist to provide assistance but are not being tracked at the regional scale. The Collaborative will track existing programs that provide essential services to vulnerable communities to identify gaps in service. The Collaborative will also use existing data from the Florida Department of Health to investigate food security in Northeast Florida and will track the percentage of people living with food insecurity by county over time. This data will be used by the Collaborative to identify gaps in service and to ensure more members of vulnerable communities are provided with access to basic needs.

IMPLEMENTATION PARTNERS

Center for Sustainable Agricultural Excellence and Conservation / Conserve Nassau

34 IDENTIFY GRANTS AND FUNDING OPPORTUNITIES FOR RESILIENCE WORK

Keeping track of grants and funding opportunities requires a substantial amount of time and effort. Currently, municipalities are tracking a number of grants and funding opportunities, but they may not be aware of all potential sources of funding. The Collaborative will keep a comprehensive list of all available grants and funding opportunities related to resilience, thereby reducing duplicative efforts by individual municipalities. The Collaborative will also track key information such as application deadlines, match requirements, and funding minimums and maximums. The Collaborative will make this information readily accessible on its website and will notify local governments when new funding opportunities become available.

IMPLEMENTATION PARTNERS

Florida Institute for Built Environment Resilience / Southeast Sustainability Directors Network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APPENDIX

IMPLEMENTATION MATRIX

SCALE	ACTION	DESCRIPTION
	1	Conserve and protect the region's water resources
	2	Encourage preparedness for wildfires
	3	Maintain healthy air quality and reduce greenhouse emissions
	4	Promote supply of native plants for landscaping, restoration, and reforestation
	5	Promote the conservation and restoration of ecologically significant natural ecosystems
	6	Support resilient utilities
	7	Support resilient technology and digital communication networks
	8	Support regional transportation networks
	9	Support regional supply chains and provide logistical support for commerce
	10	Encourage regional events
	11	Improve Northeast Florida flood and homeowners' insurance markets
	12	Foster public engagement on resilience
	13	Facilitate partnerships to advance resilience work
	14	Encourage smart growth and building practices
	15	Promote resilient and affordable housing
	16	Identify adaptation options for critical infrastructure to enhance resilience
	17	Support shoreline stabilization of natural and modified shorelines
	18	Promote resilient agriculture
	19	Promote diverse transportation options and support safe multimodal transportation
	20	Support economic growth throughout the region

SCALE	ACTION	DESCRIPTION
	21	Create an industry of resilience professionals
	22	Promote deployment of green infrastructure and nature-based solutions
	23	Recommend innovative emergency preparedness practices and processes
	24	Guide smart management of cultural and historical resources
	25	Educate homeowners and home buyers on risk reduction
	26	Promote public health and quality of life
	27	Create an inventory of projects utilizing nature-based solutions
	28	Track water quality trends
	29	Evaluate major changes in heat patterns and monitor contributing factors
	30	Develop and maintain current greenhouse gas emissions data to identify trends
	31	Research population trends to understand growth patterns
	32	Inventory critical and significant assets
	33	Evaluate distribution of resources to ensure vulnerable communities are served, including an assessment of food security
	34	Identify grants and funding opportunities for resilience work

FACILITATE

GUIDE

ANALYZE

Greenhouse gases	Gases in the Earth's atmosphere that trap heat, contributing to the greenhouse effect and warming the planet.
Green infrastructure	Using natural systems and vegetation to manage stormwater and improve environmental conditions in urban areas.
Infill development	The process of building on vacant or underutilized land within existing urban or suburban areas.
Invasive plants	Non-native plants that spread aggressively, outcompeting native species and potentially causing harm to ecosystems, agriculture, or human health.
Native plants	Those that occur naturally in a specific region or ecosystem, having evolved and adapted to the local climate, soil, and other environmental conditions over a long period.
Nature based solutions	Actions that utilize, protect, manage, or restore natural or modified ecosystems to address societal challenges, simultaneously providing benefits for both people and the environment.
Prescribed Burns	The intentional application of fire to land under specific conditions to achieve management goals.
Resilience	The ability to anticipate, prepare for, respond to, and recover from acute shocks and chronic stressors.
Regional resilience	The ability of a region to anticipate, prepare for, respond to, and recover from disturbances, whether natural disasters, economic shocks, or other challenges.
Silviculture	the growing and cultivation of trees
Smart growth	An urban planning and transportation theory focused on directing development towards existing communities, promoting compact, walkable, and transit-oriented development, and minimizing urban sprawl.
Vacant land	A parcel of land that is not currently in use.

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